

# San Lorenzo River Parkway Phase III

## Initial Study/Mitigated Negative Declaration

May 2018

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# Abbreviations and Acronyms

ACM	asbestos-containing materials
ADA	American Disabilities Act
AP	Alquist-Priolo Earthquake Fault Zoning
AQMP	Air Quality Management Plan
BFE	Base Flood Elevation
BMP	Best Management Practices
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
CalFire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBS	California Building Codes
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH <sub>4</sub>	Methane
CHRIS	California Historical Resources Information System
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO <sub>2</sub>	carbon dioxide
CRHR	California Register of Historical Resources
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
Farmland	Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
Fisheries	National Marine Fisheries
FRP	fibre reinforced polymer
FTA	Federal Transportation Authority
GHG	Greenhouse gas
HCP	Habitat Conservation Plan
HTL	high tide line
K-12	kindergarten through grade twelve
lbs/day	pounds per day
LBP	lead-based paint
MBARD	Monterey Bay Air Resources District
MBSST	Monterey Bay Sanctuary Scenic Trail
MBTA	Migratory Bird Treaty Act of 1918
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MLD	Most Likely Descendent
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NCCP	Natural Community Conservation Plans

ABBREVIATIONS AND ACRONYMS

NO <sub>x</sub>	Nitrogen
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OHWM	ordinary high water mark
PM <sub>10</sub>	Particulate matter less than or equal to 10 microns
Project	San Lorenzo River Parkway Phase III
SB	Senate Bill
SCCRTC	Santa Cruz County Regional Transportation Commission
SCM	state construction manual
sf	square feet
SLR	San Lorenzo River
SLR Trestle Bridge	San Lorenzo River Trestle Bridge
SMP	Soil Management Plan
SO <sub>x</sub>	sulfurous gases
SOI	Secretary of the Interior's
USACE	United States Army Corps of Engineer
USFWS	United States Fish and wildlife Service
VOC	volatile organic compounds
WGCEP	Working Group on California Earthquake Probabilities

**City of Santa Cruz  
Environmental Checklist Form/Initial Study**

**I. Background**

- 1. Application No:** Not applicable
- 2. Project Title:** San Lorenzo River Parkway Phase III Project
- 3. Lead Agency Name and Address:**

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

- 4. Contact Person and Phone Number:**

Jim Burr, Transportation Planner, (831) 420-5426

- 5. Project Location:**

The project is located across the span of the San Lorenzo River Trestle Bridge, near the mouth of San Lorenzo River and adjacent to the Santa Cruz Beach Boardwalk amusement park, in the City of Santa Cruz, Santa Cruz County (**Figures 1 and 2**). All figures are presented at the end of Section II, following page 13.

- 6. Project Applicant's/Sponsor's Name and Address:**

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

- 7. General Plan Designation:**

Coastal Recreation/Natural Areas below the San Lorenzo River Trestle Bridge; Regional Visitor Commercial on the western side; Low Medium Density Residential (10.1-20 DU/acre) on the eastern side

- 8. Zoning:**

OFR – Ocean Front Recreational below the bridge in sand area; FP – Flood Plain for the San Lorenzo River; CB – Beach Commercial on the western side; RL – Multiple Residence Low Rise on the eastern side.

- 9. Description of the Project:**

**Project Overview**

The San Lorenzo River Parkway Phase III Project (project) includes the replacement of the existing 4-foot-wide wooden walkway, located on the San Lorenzo River Trestle Bridge (SLR Trestle Bridge), with a 10-foot-wide concrete multi-use path (also called trail) (**Figures 3 to 6**). Like the existing

structure, the replacement structure would be approximately 300-feet long and connect to the existing concrete access ramps at each end of the bridge. The existing ramp on the western end was constructed approximately two years ago, and there would be no modifications. The existing ramp on the eastern end was constructed approximately 28 years ago and would be modified to improve the connection and flow of pedestrian and bicycle traffic. The total area of disturbance for the project would be approximately 250-square feet (sf) on the ground to modify the east connection, and approximately 2,100-sf in the air over the San Lorenzo River to remove the existing walkway and install the replacement path.

### **Project Background**

The purpose of the project is to improve access across the San Lorenzo River with a wider multi-purpose path for pedestrians, bicyclists, and other users. The current 4-foot-wide path is narrow, and it is difficult for users to pass one another. The project is also part of the City's larger San Lorenzo River Parkway Project, improving access and natural resources along the river, and part of the Santa Cruz County Regional Transportation Commission's (SCCRTC) Coastal Rail Trail project, representing a portion of Segment 8 identified in the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Final Master Plan<sup>1</sup>.

In May 2016, the SCCRTC conducted an engineering study to determine if the replacement path could be attached to the SLR Trestle Bridge like the current walkway or if it required a separate structure. The study, *RTC-MP 19.43 SLR Bridge Walkway Widening Feasibility Report* (Jacobs, 2016), determined that the SLR Trestle Bridge would support the wider replacement path with minor structural modifications. Furthermore, the existing water conveyance pipeline that spans the trestle adjacent to the existing walkway could remain in place without disruption to water service during project construction.

### **Project Construction**

The general approach for construction is to remove the existing wooden walkway, and either modify or replace the existing cantilever structure that supports the walkway. The replacement path would be supported by a similar cantilever structure connected to the SLR Trestle Bridge. There would be no new pilings in the river and no modifications to the existing pilings or abutments supporting the SLR Trestle Bridge.

The replacement path would be generally in the same location as the existing walkway, but would extend approximately 6 feet further northward over the river due to the increased width. The elevation of the replacement

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<sup>1</sup> Refer to the Santa Cruz County Regional Transportation Commission (SCCRTC) website for more information about the Monterey Bay Sanctuary Scenic Trail Network Master Plan. <https://sccrtc.org/projects/multi-modal/monterey-bay-sanctuary-scenic-trail/mbsst-master-plan/>

path would be modified slightly to provide a level gradient and facilitate connection with the existing ramps at each end.

The elevation at the west end would conform to the existing landing and ramp, which was constructed in 2014 and designed to accommodate future widening of the SLR Trestle Bridge walkway. The east end may be a few feet higher than the existing grade, and would include a curved bend to tie into and conform to the existing ramp up to East Cliff Drive. A level landing pad would be provided at the transition supported with a drilled pier set back from the bluff edge.

To connect to the existing ramp at the east end, the project would infringe on the unpaved area adjacent to two eucalyptus trees (**Figures 2 and 5**). The trees would be avoided to the greatest extent possible, but the project would likely require trimming branches and possibly ground disturbance around the root system. Removal of the trees would occur only as necessary, in coordination with the city urban forester, if it was determined that project implementation would result in damage to the roots of the tree and the overall decline in the health of the trees, creating a potential safety issue.

The existing retaining wall, located at the east end between the SLR Trestle Bridge and the East Cliff overcrossing, would remain in place. The reconfiguration of the east landing or platform, where the replacement path would connect to the existing ramp, would be designed such that it would not preclude construction of a future trail along the railroad corridor continuing eastward.

The proposed materials for the 300-foot-long replacement path are steel and concrete for longevity and low maintenance. Alternative materials that may be considered for the replacement path include fibre reinforced polymer (FRP) composite decking, steel plates, or preservative-treated wood (treated wood). Although the City does not plan to use treated wood, any use of treated wood would be in accordance with the California Coastal Commission's recommendations for materials and best management practices<sup>2</sup>.

The project would be constructed in accordance with the current California Building Standards Code (CBC), of which the primary objective is to ensure public safety, with a secondary goal of minimizing property damage and maintaining function during and following a seismic event. Additionally, the project would be constructed in accordance with the recommendations included in the *Geotechnical Investigation for Proposed Pedestrian Walkway, MBSST Segment 8, San Lorenzo River Railroad Trestle Bridge Widening* (Dees & Associates 2018).

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<sup>2</sup> May 18, 2018, email from Sarah Carvill, Coastal Planner, Central Coast District Office, California Coastal Commission, to Mike Ferry, Senior Planner, City of Santa Cruz Department of Planning and Community Development.

**Staging.** The project staging area is planned for the existing parking lot located immediately northwest of the SLR Trestle Bridge at 300 Riverside Avenue in the City of Santa Cruz (**Figure 2**). Use of the parking lot would be in coordination with the property owner, the Seaside Company. The parking lot is currently used for a combination of public parking and materials storage for the maintenance of the Santa Cruz Beach Boardwalk amusement park (hereinafter called Santa Cruz Boardwalk). Throughout project implementation, there would be no ground disturbing activities undertaken at the staging area.

**Schedule.** It is assumed that construction activities would occur over the course of 30 weeks, beginning in Fall 2018 and ending in Spring 2019. **Table 1** outlines the construction duration for each portion of the project. Construction hours would occur during daylight and would be in accordance with the City's Noise Ordinance (Section 9.36.010).

<b>Table 1. Estimated Construction Duration for Project Implementation</b>	
<b>Construction Action</b>	<b>Duration</b>
Mobilize construction materials/equipment to the site, Site preparation	2 weeks
Demolish existing wooden walkway	8 weeks
Install cantilever to support replacement path	8 weeks
Install concrete deck of replacement path and connections to existing ramps	6 weeks
Install replacement path railing and striping	6 weeks
Total	30 weeks

**Equipment and Materials.** Construction equipment that is anticipated for use includes metal cutting/torching equipment to remove existing steel material, welding machines to install new steel, a jack hammer and plate vibrator to modify the east landing, and a small crane to install new steel and other components, as needed. There would be no pile driving equipment.

Construction materials would be delivered along the existing railroad alignment adjacent to the proposed replacement path on the SLR Trestle Bridge. Alternately, materials could be delivered to the site incrementally on the replacement path as it is constructed. Waste and debris from demolishing the existing walkway would be transported along the railroad alignment or removed incrementally as the walkway is demolished. Solid waste that is generated could be hauled to the City of Santa Cruz Resource Recovery Facility at Dimeo Lane or another approved waste disposal facility.

## Water Quality and Air Quality Protection Measures

The following measures would be implemented during construction.

1. A fabric debris containment device would be installed under the existing trestle and span several feet beyond the edge of the proposed replacement path to ensure construction debris and materials do not enter the San Lorenzo River. The debris containment device would be secured to draped steel cables that would extend from the existing trestle, and would remain in place during all construction activities over the water (**Figures 6 and 7**).
2. Plastic sheeting would be placed around construction activities disrupting lead-based paint to contain air-borne particulate lead material from entering the surrounding ambient air and San Lorenzo River.
3. Any painting required for the project (e.g., path railings) would occur offsite 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.
4. All construction activities would be conducted in accordance with the City's Storm Water and Grading Ordinances (Chapters 16.19 Storm Water and Urban Runoff Pollution Control and 18.45 Excavation and Grading Regulations) and the City's *Construction Work Best Management Practices, Chapter 4 of the Best Management Practices Manual for the City's Storm Water Management Program* (revised June 2014). This includes preparation and implementation of a City-approved Erosion Control Plan, which would specify detailed water quality protection and erosion/sediment control best management practices (BMPs). It also includes requirements for equipment and vehicle maintenance, materials storage, and other construction practices which could result in the inadvertent release of fuel, motor oil, and other hazardous fluids and materials. It also includes measures to ensure proper disposal of construction and demolition waste, including asbestos and other debris containing hazardous materials. The BMPs would be selected to represent the best available technology that is economically achievable, and are subject to review and approval by the City. The City would perform routine inspections of the construction area to verify the BMPs are being properly implemented and protection measures are being maintained. The City would notify the contractor immediately if there was a violation that would require immediate compliance.
5. To reduce the generation of fugitive dust throughout project implementation, the construction contractor would be required to prepare and implement dust control measures at the construction and

staging areas, which would include: water all active construction areas as needed based on the type of construction activity, soil, and wind exposure; maintain at least 2-feet of freeboard, or cover dirt and loose materials, in haul trucks; cover inactive storage piles and stock piles of dirt; and sweep any roadways/paths if visible soil material remains at the end of the work day.

### **Traffic Control Plan**

A traffic control plan would be prepared to minimize project effects on local traffic around the project site, including the roadways around the Santa Cruz Beach Boardwalk to the west and East Cliff Drive/Murray Street to the east, as these areas support steady traffic from local residents, commuters, and tourists (**Figure 2**).

The traffic control plan would ensure that roadways and pedestrian/bicycle paths (except the existing walkway on the SLR Trestle Bridge) remain open throughout project construction to the greatest extent possible, and that any lane and path closures would be safely and effectively managed, with detours clearly identified. Emergency access would be retained on all roadways during construction.

The existing walkway along the SLR Trestle Bridge would be closed for the duration of the construction period, and an Exclusion Zone and Pedestrian/Bicycle Detour would be established. The Exclusion Zone would extend under the bridge, on the bridge, and around the bridge (e.g., coned, delineated using caution tape and signs, and monitored for public encroachment). It is anticipated that pedestrians and bicyclists would be detoured using the Santa Cruz Riverwalk on the west side of the river, the sidewalk along East Cliff Drive on the east side of the river, and Riverside Avenue bridge to cross the river (**Figure 2**).

Prior to the start of construction activities, signage would be installed on the detour route and would include the dates for construction, contact information for the City liaison to answer project specific questions, and detour information to minimize the effects of temporary pedestrian/bicycle path closures. Additionally, the local safety personnel (e.g., police and fire department) would be informed of any detours or lane closures to maintain effective emergency service access throughout the duration of the project.

City designated truck routes would be used by construction equipment to import and export material from the project area. The route from Highway 1 would be Ocean Street to San Lorenzo Boulevard to Riverside Avenue to Beach Street, where the staging area would be located. For export, the route would be Beach Street to 3<sup>rd</sup> Street to Riverside Avenue to San Lorenzo Boulevard to Ocean Street or Laurel Street, connecting to Highway 1 northbound or southbound. Alternative routes would also be considered. Construction vehicles would not be allowed to travel down Leibbrandt

Avenue, Park Place, or Kaye Street in the Beach Flats residential neighborhood.

### **Construction Plan**

In accordance with guidance received from the California Coastal Commission<sup>3</sup>, a Construction Plan would be provided to the Executive Director of the California Coastal Commission. The Construction Plan would identify the specific location of all construction areas, all staging areas, all storage areas, all construction access corridors (to the construction sites and the staging area), and all public pedestrian access corridors in site plan view. The Construction Plan would follow required criteria provided by the California Coastal Commission<sup>3</sup>.

### **10. Other public agencies whose approval is required:**

- California Coastal Commission – Coastal Development Permit
- California Department of Fish and Wildlife (CDFW) – Section 1602 Lake and Streambed Alteration Agreement/Environmental Commitments Record
- Santa Cruz County Regional Transportation Commission (SCCRTC) – Approval
- City of Santa Cruz– Design Permit, Historic Alteration Permit, Project Approval, and Certification of the Mitigated Negative Declaration
- City of Santa Cruz Parks and Recreation Department – Heritage Tree Permit (to be determined)

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<sup>3</sup> May 18, 2018, email from Sarah Carvill, Coastal Planner, Central Coast District Office, California Coastal Commission, to Mike Ferry, Senior Planner, City of Santa Cruz Department of Planning and Community Development.

## II. Environmental Setting and Surrounding Land Uses

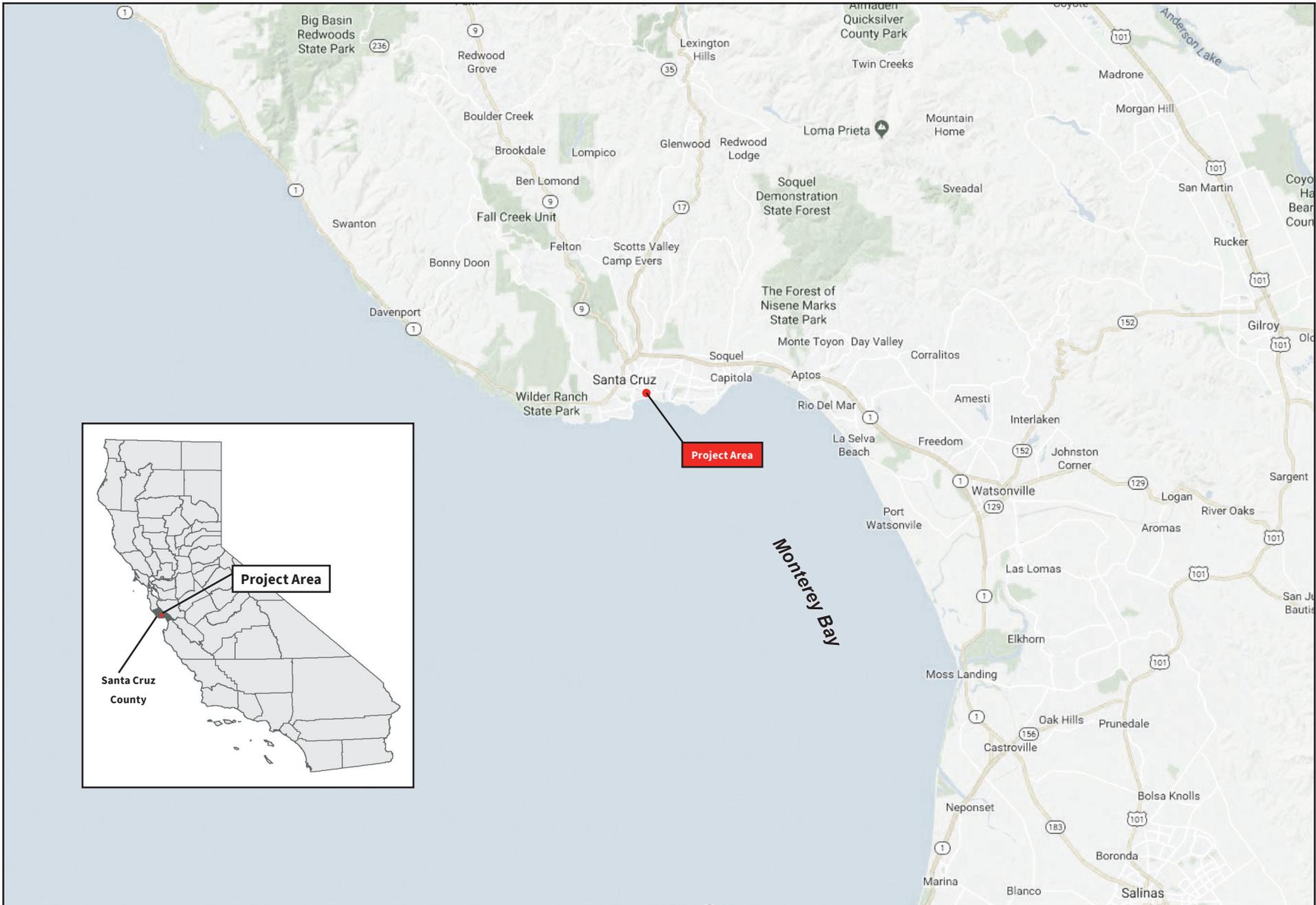
The project area includes the SLR Trestle Bridge over the San Lorenzo River, just above the river mouth entering Monterey Bay, and the landings on each side connecting the path with the access ramps (comprising approximately 2,500 square feet). The project area also includes the planned staging area, where materials and equipment may be stored, on the parking lot immediately northwest of the SLR Trestle Bridge (**Figures 2 and 3**).

The SLR Trestle Bridge currently includes a four-foot-wide walkway with a chain link fence secured to metal poles on both sides. The railway is located immediately south of and at the same elevation as the walkway. However, access to the railway tracks is not permitted, and fencing has been installed to deter the use of the railway line by the public.

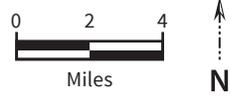
There are a variety of land uses that surround the project area. The San Lorenzo River flows beneath the SLR Trestle Bridge, from the San Lorenzo Valley to the north into the Monterey Bay just south of the bridge. On the east side, there is a mix of medium and low density residential development along East Cliff Drive. On the west side, there is the Santa Cruz Boardwalk and associated parking, and a mix of commercial and residential development.

The SLR Trestle Bridge walkway/path connects to the following existing paths: Santa Cruz Riverwalk (also called the San Lorenzo River Parkway), which includes levee trails on each side of the river); the Beach Street bicycle track and sidewalk, extending in front of the Santa Cruz Beach Boardwalk (part of Rail Trail Segment 8), which connects to the West Cliff Drive path and future Rail Trail Segment 7; and East Cliff Drive sidewalks and bike lanes (**Figure 8**).

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Source: Google Maps, 2018



**Figure 1**  
Regional Location  
San Lorenzo River Parkway Phase III



Source: Google Maps, 2018

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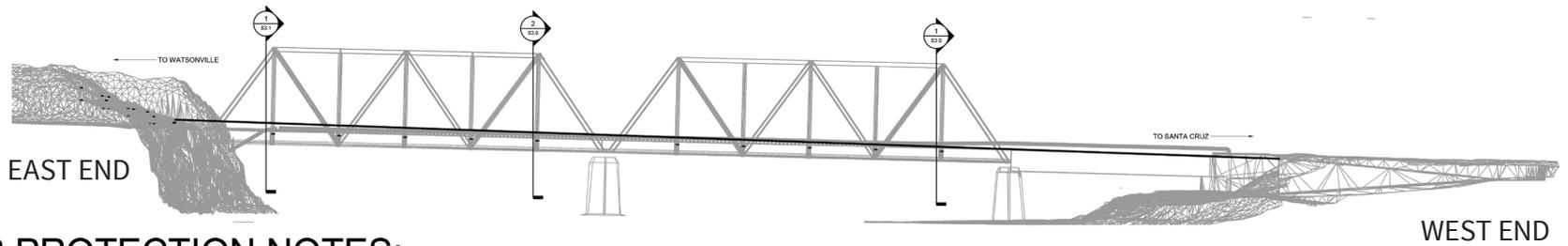


AREA OF POTENTIAL EFFECT

Source: Mesiti-Miller Engineering February 13, 2018



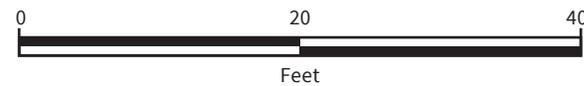
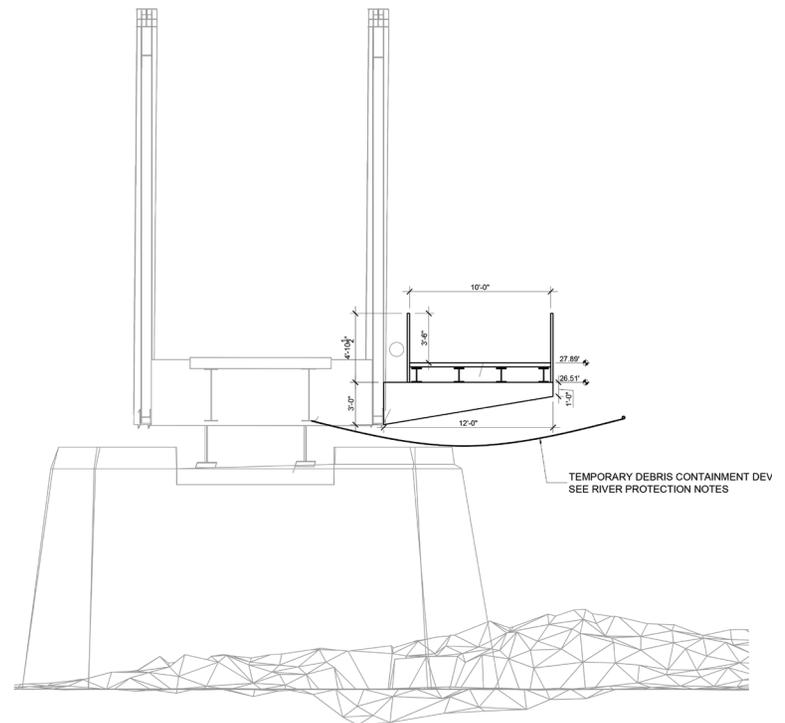
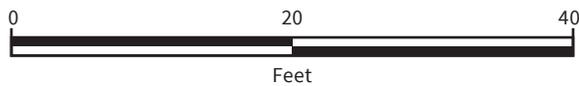
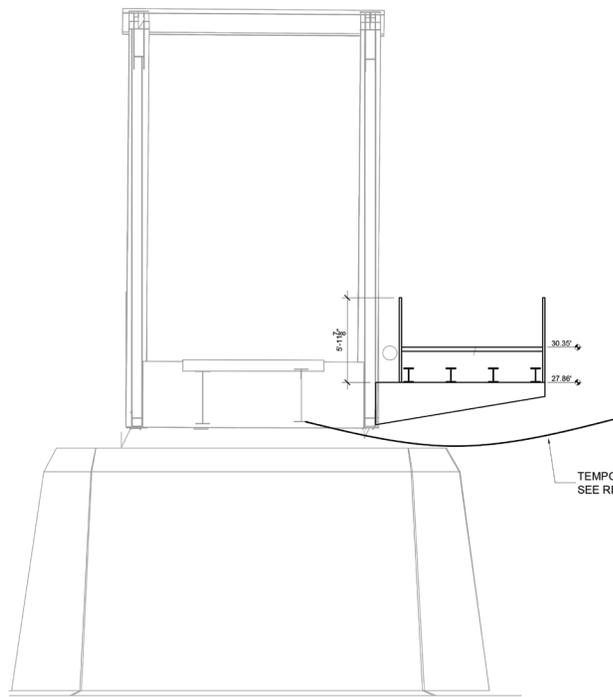
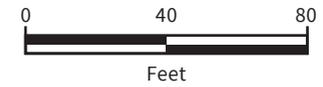




## RIVER PROTECTION NOTES:

### TEMPORARY RIVER PROTECTION:

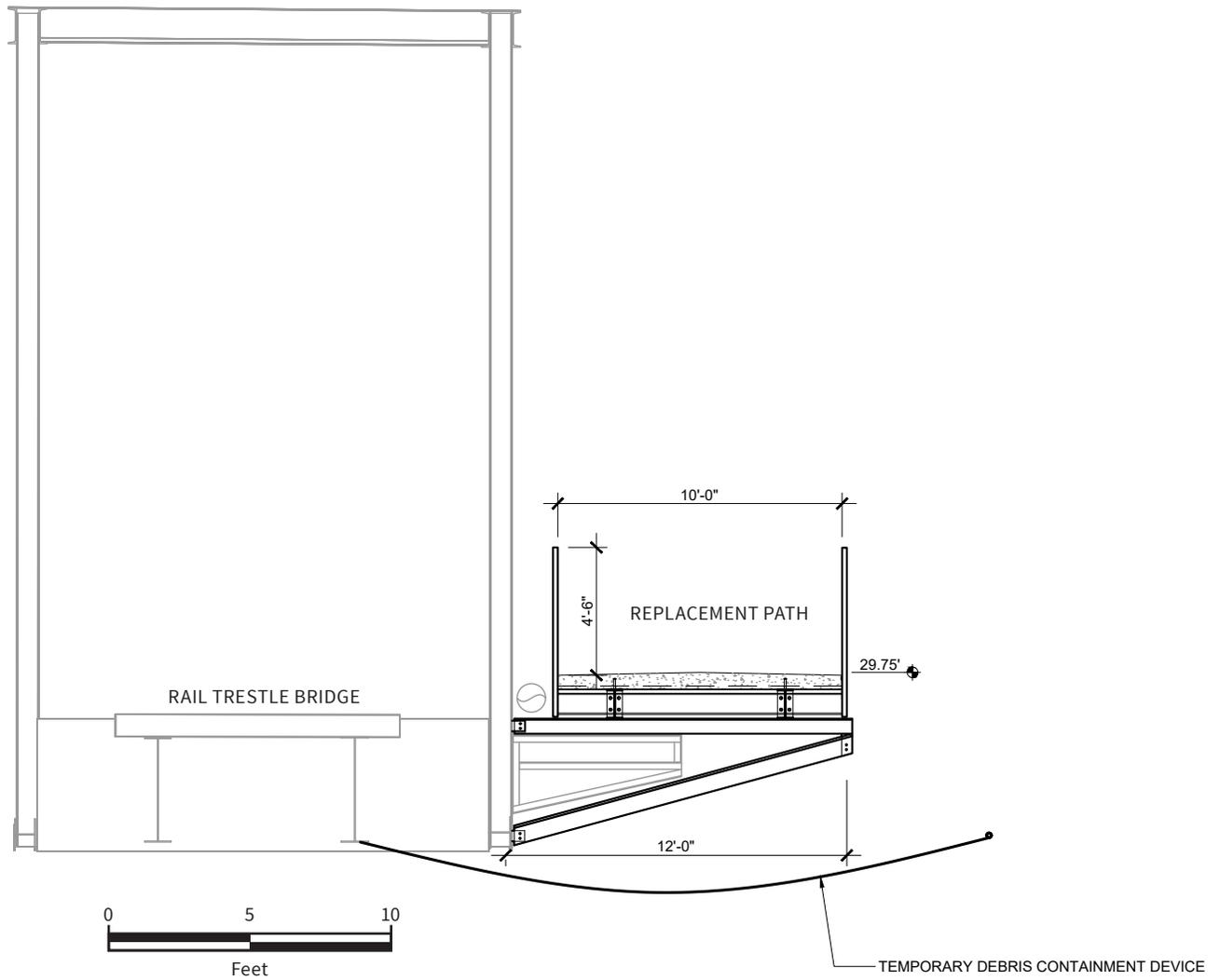
1. PRIOR TO CONSTRUCTION, INSTALL TEMPORARY CONTAINMENT DEVICE TO PREVENT ANY AND ALL DEBRIS FROM ENTERING RIVER. CONTAINMENT SHALL NOT BE PLACED IN THE WETTED CHANNEL BUT SHALL SPAN ACROSS THE WETTED CHANNEL. ALL DEBRIS SHALL BE REMOVED FROM THE CONTAINMENT DEVICE.



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Source: Mesiti-Miller Engineering February 13, 2018

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Source: Mesiti-Miller Engineering February 13, 2018



Harris & Associates

**Figure 7**  
Replacement Path Cross Section with Debris Containment Device  
San Lorenzo River Parkway Phase III

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Source: Google Maps, 2018

### III. Environmental Checklist

**Environmental Factors Potentially Affected by the Project:** The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Unless Mitigation is Incorporated" as indicated by the checklist on the following pages. All potentially significant impacts could be reduced to a less than significant level with mitigation.

	Aesthetics		Agricultural & Forest Resources		Air Quality
X	Biological Resources	X	Cultural Resources		Geology/Soils
	Greenhouse Gas Emissions	X	Hazards & Hazardous Materials	X	Hydrology/Water Quality
	Land Use/Planning		Mineral Resources		Noise
	Population/Housing		Public Services		Recreation
	Transportation/Traffic	X	Utilities/Service Systems	X	Mandatory Findings of Significance

#### **Instructions for Preparing the Environmental Checklist:**

1. A brief explanation is required for all answers (see V. "Explanation of Environmental Checklist Responses") and should be adequately supported by sound rationale and the information sources a lead agency cites in the parentheses (see VI. References). A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant (without mitigation). A "Potentially Significant Impact" is appropriate if there is substantial evidence that any effect may be significant, even with implementation of mitigation measures. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

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

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>1. AESTHETICS. Would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	
<p><b>2. AGRICULTURE AND FOREST RESOURCES.</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement Methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless 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? (V.1b-Figure 4.15-1 in DEIR)				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:</b>				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	
<b>4. BIOLOGICAL RESOURCES. Would the project:</b>				
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		X		

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
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?		X		
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?			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?				X
g) Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten or eliminate a plant or animal community?			X	
<b>5. CULTURAL RESOURCES. Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	
<b>6. GEOLOGY AND SOILS. Would the project:</b>				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> <li>i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (V.lc)</li> <li>ii. Strong seismic ground shaking?</li> <li>iii. Seismic-related ground failure, including liquefaction?</li> <li>iv. Landslides? (V.lb-DEIR Figure 4.10-3)</li> </ul>			X	
b. Result in substantial soil erosion or the loss of topsoil?			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
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?				X
<b>7. GREENHOUSE GAS EMISSIONS. Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	
c) Substantially Increase Potential Exposure to Risks Associated with Climate Change?				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>8. HAZARDS &amp; HAZARDOUS MATERIALS. Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
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?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ miles of an existing or proposed school?		X		
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?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a safety hazard for people residing or working in the project area?				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
<b>9. HYDROLOGY AND WATER QUALITY. Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (for example, the production rate of pre-existing nearby wells would				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise substantially degrade water quality?			X	
g) Place housing within a 100-year flood-hazard area as mapped on a federal Flood Hazard Boundary or				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Flood Insurance Rate Map or other flood hazard delineation map?				
h) Place within a 100-year flood-hazard area structures which would impede or redirect flood flows?			X	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j) Inundation by seiche, tsunami, or mudflow?		X		
<b>10. LAND USE AND PLANNING. Would the project:</b>				
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>11. MINERAL RESOURCES. Would the project:</b>				
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? (V.1a)				X
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?				X
<b>12. NOISE: Would the project:</b>				
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?			X	
b) Result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?			X	
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
without the project?				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
<b>13. POPULATION AND HOUSING. Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>14. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:</b>				
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X
<b>15. RECREATION. Would the project:</b>				
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?			X	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	
<b>16. TRANSPORTATION/TRAFFIC. Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
b) Conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?				X
e) Result in inadequate emergency access?			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	
<b>17. TRIBAL CULTURAL RESOURCES</b>				
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		X		
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section		X		

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe				
<b>18. UTILITIES AND SERVICE SYSTEMS. Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction or which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to				X

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
serve the project's projected demand in addition to the provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?		X		
<b>19. MANDATORY FINDINGS OF SIGNIFICANCE. Would the project:</b>				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of			X	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources):	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects.)				
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

**DISCUSSION OF ENVIRONMENTAL CHECKLIST**

See Section V. **Explanation of Environmental Checklist Responses.**

**LIST OF REQUIRED MITIGATION MEASURES**

A summary of the mitigation measures identified are listed below.

- *Mitigation Measure BIO-1: Implement Protective Measures for Migratory Birds during Construction*
- *Mitigation Measure BIO-2: Conduct Preconstruction Surveys for Bats and, if found, Implement Protection Measures*
- *Mitigation Measure CR-1: Prior to Project Implementation, Prepare an SOI Standards for Rehabilitation Memorandum to Ensure Project Compliance with SOI Standards*
- *Mitigation Measure CR-2: Monitor Ground Disturbing Activities on East Bank, and Stop Work in the Event of Unexpected Occurrence of Cultural Resources during Construction*
- *Mitigation Measure HAZ-1: Conduct Preconstruction Surveys for Lead-Based and Asbestos Containing Materials on the SLR Trestle Bridge, and Implement Protective Measures*

**IV. 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 (City of Santa Cruz), including the mitigation measures identified herein. A MITIGATED NEGATIVE DECLARATION will be prepared.	X
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.	

  
 Lee Butler, Director of Planning and  
 Community Development, City of Santa Cruz

5/14/18  
 Date

## V. Explanation of Environmental Checklist Responses

### 1. AESTHETICS

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Have a substantial adverse effect on a scenic vista;*
  - b. *Substantially damage scenic resources, including visually prominent trees, rock outcrops, or historic buildings along a state scenic highway;*
  - c. *Substantially degrade the existing visual character or quality of the site and surroundings, i.e., be incompatible with the scale or visual character of the surrounding area; or*
  - d. *Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.*
- a) Adverse Effect on Scenic Vista – Less Than Significant.** The SLR Trestle Bridge walkway/path could be considered a scenic vista because it provides views in all directions, including views of the Monterey Bay, coastline and bluffs; Santa Cruz Beach Boardwalk and Municipal Wharf; San Lorenzo River Parkway; Downtown Santa Cruz; and mountains to the north.

The City of Santa Cruz General Plan 2030 identifies urban views just north of the SLR Trestle Bridge from the San Lorenzo River (City of Santa Cruz, 2012a). The SLR Trestle Bridge has not been identified as supporting panoramic views of the City; however, the SLR Trestle Bridge is visible from local roadways and surrounding land uses.

Additionally, the SLR Trestle Bridge is visible from East Cliff Drive, which has been identified as a popular scenic route through the City in the City's General Plan 2030 (City of Santa Cruz, 2012a). Scenic routes have been defined as local roadways that provide views of important landmarks, built structures or natural features within the City. East Cliff Drive, as it borders the project area, provides views of both the Santa Cruz Boardwalk, which has been identified as a City Landmark (City of Santa Cruz, 2012a), and the greater Monterey Bay, which has been identified as a scenic resource.

**Impact Analysis.** Implementation of the project would result in widening the existing walkway along the northern side of the SLR Trestle Bridge from 4 feet to 10 feet. The safety fencing would be replaced with similar fencing, and but would not substantially modify views of or from the SLR Trestle Bridge. The replacement path would be the same length, have similar safety fencing, and have the same or similar elevation. As described above, the elevation may be 1-2 feet higher or lower to provide a level gradient and facilitate connection with the existing ramps at each end. There would be no design features

implemented that would substantially change views either from or of the SLR Trestle Bridge or adjacent land uses. Therefore, the permanent impact to scenic vistas as a result of project implementation would be **less than significant**.

Throughout construction activities, the SLR Trestle Bridge would be closed to the public, and would have construction-related equipment and water/air quality protection devices (e.g., plastic sheeting material and fabric debris containment device) attached to the structure for up to 30 weeks, as described above. This would result in temporary changes in views to and from the SLR Trestle Bridge.

Construction activities would primarily occur on the north side of the SLR Trestle Bridge, which is less visible from the Santa Cruz Municipal Wharf, located southwest of the project site, where the City General Plan has identified a significant panoramic view within the City of Santa Cruz. Urban views from the Santa Cruz Riverwalk (San Lorenzo River Parkway) would be largely preserved throughout project implementation, as there are no design features that would occur within the river below the SLR Trestle Bridge, and views from the river to the SLR Trestle Bridge would return to existing conditions following construction activities.

The construction-related impact to scenic vistas would be temporary. Once constructed, the views of and from the SLR Trestle Bridge would be similar to existing conditions, and the wider path would improve access to the scenic vista. Therefore, this impact would be **less than significant**. No mitigation would be required.

- b) Damage Scenic Resources within State Scenic Highway – No Impact.** The project area is not located within or adjacent to a state scenic highway (City of Santa Cruz, 2012) (Caltrans, 2018), nor is it located along a City designated scenic road (City of Santa Cruz, 2012).
- c) Degrade Visual Character or Quality of the Area – Less Than Significant.** As described under (a), the project area is visible from a number of adjacent land uses, including the Santa Cruz Beach Boardwalk, Monterey Bay coastline and beaches, and the heavily travelled East Cliff Drive and Beach Street roadways. Furthermore, the SLR Trestle Bridge has been featured in movies and provides character to the City of Santa Cruz.

**Impact Analysis.** During construction, the SLR Trestle Bridge walkway would be closed to public access, and the visual character would be temporarily altered by construction activities, equipment, and materials (e.g., plastic sheeting material and fabric debris containment device). Following project construction activities, the widened trail along the SLR Trestle Bridge would provide similar views to adjacent land uses, would look similar to the existing walkway from adjacent land uses, and views of the project area would remain largely

unchanged as construction materials would be removed completely from the project area. The changes to the overall visual character and quality of the project area would be minor and largely unchanged following project implementation. Therefore, this impact would be **less than significant**. No mitigation would be required.

- d) **New Source of Substantial Light or Glare – Less Than Significant**. The existing walkway on the SLR Trestle Bridge does not include lights and is not illuminated at night; however, the access ramps that connect to the walkway on both the east and west sides are illuminated with light standards that remain lit through the night.

**Impact Analysis.** The replacement path would have low-level lighting for safety, either on the safety fence similar to the bridge on the path through Arana Gulch to the east. The lighting along the existing access ramps on the east and west sides would remain unchanged. Although the project would introduce a new source of light on the trestle path, it would be very low level, substantially dimmer than the lights on the ramps leading to the bridge, and thus would not create substantial additional light or glare that would adversely affect day or nighttime views in the area. Therefore, the addition of light into the project area as a result of project implementation would be **less than significant**. No mitigation would be required.

The replacement path would be concrete and could be a lighter color than the existing walkway, which could slightly but not substantially increase glare within the project area. The path would be flat, elevated and surrounded by safety fencing, minimizing views from adjacent land uses. Furthermore, the connecting ramps on each side of the SLR Trestle Bridge and surrounding sidewalks are concrete, so the path would be a continuum of the existing materials. Because the use of concrete for the new trail along the SLR Trestle Bridge would not provide a significant increase in glare from, or within the project area, this impact would be **less than significant**. No mitigation would be required.

During construction, there could be additional glare from the sun reflecting off the glass and metal on construction equipment along the SLR Trestle Bridge and staging area. This would be similar to any glare from vehicles and equipment currently stored and parked in the staging area. The additional glare would be temporary, limited to daytime hours, and similar to cars and trucks that are currently associated with the existing land uses that border the project area. Further, people affected by the glare are moving through the area and would not experience prolonged exposure.

Therefore, the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views of the area. This impact would be **less than significant**. No mitigation would be required.

## 2. AGRICULTURE AND FOREST RESOURCES.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Convert prime farmland, unique farmland or farmland of state importance to non-agricultural uses;*
  - 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;*
  - d. *Result in the loss of forest land or conversion of forest land to non-forest use; or*
  - e. *Involve other changes to 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.*
- a) Convert Farmland – No Impact.** The project area does not contain any lands that have been designated as Prime Farmland, Unique Farmland or Farmland, as shown on the maps prepared by the Farmland Mapping and Monitoring Program of the California Resources Agency (California Resources Agency, 2014). The entire project area has been mapped as Urban and Built Up Land, which is defined as land that is occupied by structures with a building density of at least 1 unit to 1.5 acres. There would be no reduction in farmland or agricultural resources, or conversion of existing agricultural land uses to non-agricultural uses. Therefore, there would be **no impact**.
- b) Conflict with Zoning for Agricultural Use or Williamson Act Contract – No Impact.** There are no lands within or adjacent to the project area that are under a Williamson Act contract (California Department of Conservation, 2016). The project area is located above and adjacent to the San Lorenzo River in a highly developed area of the City of Santa Cruz that does not support agricultural land uses, and is not located adjacent to agricultural land uses. The project area is zoned as a mixture of Ocean Front Recreational, Flood Plain, Beach Commercial and Multiple Residence Low Rise, which are not considered to be agricultural zones. Therefore, there would be **no impact**.
- c) Conflict with Zoning for Forest Land or Timberland – No Impact.** The project area is not located on or near lands that have been zoned for forest lands, timberlands or Timberland Production (City of Santa Cruz, 2012). The project area is zoned as a mixture of Ocean Front Recreational, Flood Plain, Beach Commercial and Multiple Residence Low Rise, which are not considered to be agricultural zones (City of Santa Cruz, 2004). Therefore, the project would not

conflict with existing zoning for or cause rezoning of forest land or timberland. There would be **no impact**.

- d) Convert Forest Land – No Impact.** As described above, no forest land occurs within the project area, or within the immediate vicinity of the project area (City of Santa Cruz, 2012). The project area is located along the SLR Trestle Bridge above the San Lorenzo and includes the embankments on either side where the replacement path would connect to the existing ramps. Although the project could result in the loss of up to two eucalyptus trees on the east side, as discussed in Section 4, Biological Resources, the project would not result in the loss of forest land or conversion of forest land to non-forest use. There would be **no impact**.
- e) Convert Farmland or Forest Land – No Impact.** As described above, there is no farmland or forest land within or adjacent to the project area. The project would widen the existing path on the SLR Trestle Bridge and would not involve other changes in the existing environmental which, due to their location or nature, could result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Therefore, there would be **no impact**.

### **3. AIR QUALITY.**

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. Conflict with or obstruct implementation of the applicable air quality plan;*
- b. Violate any air quality standards or contribute substantially to an existing or projected air quality violation, i.e. result in generation of emissions of or in excess of 137 pounds per day for VOC or No<sub>x</sub>, 550 pounds per day of carbon monoxide, 150 pounds per day of sulfur oxides (SO<sub>x</sub>), and/or 82 pounds per day of PM<sub>10</sub> (due to construction with minimal earthmoving on 8.1 or more acres per day or grading/excavation site on 2.2 or more acres per day for PM<sub>10</sub>) pursuant to impact criteria for significance developed by the MBUAPCD<sup>2</sup> (MBUAPCD, "CEQA Air Quality Guidelines," February 2008);*
- c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);*
- d. Expose sensitive receptors to substantial pollution concentrations; or*

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<sup>2</sup> Note that the Monterey Bay Unified Air Pollution Control District (MBUAPCD) is now called Monterey Bay Air Resources District (MBARD).

e. *Create objectionable odors affecting a substantial number of people.*

a) **Conflict with Air Quality Plan – Less Than Significant.** The Monterey Bay Air Resources District (MBARD) Air Quality Management Plan (AQMP) is the applicable air quality plan for the project area. MBARD was required under the California Clean Air Act (CCAA) to develop an attainment plan to address ozone violations by July 1991. The CCAA requires MBARD to periodically prepare and submit a report to the California Air Resources Board (CARB) that assesses its progress toward attainment of the California ambient air quality standards (CAAQS). The most recent update (2012-2015) is the seventh update to the 1991 AQMP. It shows that the region continues to make progress toward meeting the state ozone standard.

**Impact Analysis.** Project construction would result in short-term emissions generated by construction activities and equipment, but would not generate long-term emissions.

As described in the MBARD CEQA Air Quality Guidelines (MBUAPCD, 2008), 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., volatile organic compounds (VOC) or oxides of nitrogen (NO<sub>x</sub>)], are accommodated in the emission inventories of the AQMP. Projects that propose use of typical construction equipment and practices would not have a significant impact on the attainment and maintenance of ozone ambient air quality standards and would therefore not conflict with the AQMP. Construction of the replacement path on the SLR Trestle Bridge would not require any non-typical construction equipment or practices. No underwater construction would be required. As such, emissions from project construction would be accommodated in the AQMP inventories.

Following construction, pedestrians and bicyclists using the path would not generate emissions. Further, the project would not result in new population growth or generate new vehicle trips. Policies and elements of the AQMP support green building concepts and improved pedestrian and bicycle access. The proposed project would improve pedestrian and bicycle accessibility in the City and support use of alternative forms of transportation. The wider path would likely encourage more people to walk or bike instead of using their car to travel between the east and west sides of the San Lorenzo River. Therefore, the project would support the goals of the AQMP and would not conflict with or obstruct implementation of the existing air quality management plan for the region. Impacts to the applicable air quality plan would be **less than significant**. No mitigation would be required.

b,c) **Violate Air Quality Standards or Increase Criteria Pollutants – Less Than Significant.** The federal Clean Air Act of 1970 required the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards

(NAAQS) for six criteria pollutants with states retaining the option to adopt more stringent standards or to include other specific pollutants. The US EPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," 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 nonattainment or attainment designation. The project is located in the North Central Coast Air Basin (NCCAB). The U.S. EPA classifies the NCCAB as in attainment or unclassified for all pollutants with respect to federal air quality standards. The NCCAB is not in nonattainment status for any pollutant.

The state of California, under the CCAA, has established standards for criteria pollutants that are generally stricter than federal standards. The CARB establishes air quality standards in the state and measures progress in reducing pollutant emissions. The NCCAB is currently in nonattainment status for respirable particulate matter (PM<sub>10</sub>), and transitional nonattainment status for ozone. An area is designated transitional nonattainment if, during a single calendar year, the state standard is not exceeded more than three times at any monitoring location within the applicable district.

**Impact Analysis.** Construction of the proposed project would result in temporary increases in air pollutant emissions. The MBARD identifies a quantitative threshold for PM<sub>10</sub> emissions of 82 pounds per day (lbs/day) for direct and cumulative impacts. The MBARD identifies general earthmoving screening values to determine consistency with this threshold. Projects that propose grading of up to 8.2 acres total, with minimal earthmoving or grading of 2.2 acres per day or less, are considered not to exceed the threshold of 82 lbs/day.

Project construction would result in minimal earth movement because it involves replacement of the aerial walkway that is attached the SLR Trestle Bridge. On the west side, the path would connect to the existing ramp with no earth disturbance because it is wide enough to accommodate 10-foot path. On the east side, existing landing is not wide enough and requires a new landing and footing to accommodate the wider path and connect to the existing ramp, which would result in ground disturbance of approximately 250 square feet (0.0057 acre). As such, construction of the project would not exceed the PM<sub>10</sub> threshold.

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, 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 NOx. The proposed project would employ typical construction equipment, and would not require any non-typical construction equipment or techniques that have not been accounted for in the NCCAB emissions inventories.

Following construction, the path would be used by pedestrians and bicyclists that would not result in an increase in criteria pollutant emissions. Therefore, construction and operational impacts related to emissions of criteria pollutants would be **less than significant**. No mitigation would be required.

- d) Expose Sensitive Receptors to Pollution – Less Than Significant.** MBARD defines sensitive receptors for CEQA purposes as any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. Sensitive receptors also include long term care hospitals, hospices, prisons, and dormitories or similar live-in housing. In the project area, there is residential development on both the east and west sides of the SLR Trestle Bridge. On the west side, the closest residence is approximately 600 feet from the landing; and on the east side, the closest residence (an apartment building) is located approximately 35 feet from the landing.

**Impact Analysis.** Project construction would result in construction-related emissions, including diesel particulate matter which is classified as a toxic air contaminant, adjacent to residences, thus exposing sensitive receptors to short-term criteria pollutant emissions. However, the MBARD screening criteria assumes that projects that would involve less than 8.2 acres of grading would result in less than significant PM10 emissions. The project would involve total grading of 250 square feet (0.0057 acre), less than one tenth of one percent of the screening criteria. Bases on the MBARD screening criteria, the construction equipment and activities planned, and the relatively short duration of work adjacent to the residence on the east side (approximately 15 of the 30 total weeks of construction, not consecutive), the PM 10 emissions would be minimal and not expose sensitive receptors to substantial pollutant concentrations. Following construction, use of the bicycle and pedestrian path would not generate any long-term criteria pollutants. Therefore, impacts to sensitive receptors would be **less than significant**. No mitigation would be required.

- e) Create Objectionable Odors - Less Than Significant.** The project area is located within a highly developed area, surrounded by residential and commercial development, public beaches, the Santa Cruz Boardwalk, and Santa Cruz Riverwalk.

**Impact Analysis.** Project construction could expose residents, tourists and recreators adjacent to the project area to odors from construction equipment. Based on the planned construction methodology, only a few pieces of

construction equipment would be in operation simultaneously. Emissions of sulfurous gases (SO<sub>x</sub>), the main source of odors from construction equipment, would be extremely limited<sup>3</sup> and short-term. Following construction, the trail would support pedestrian and bicycle use, similar to existing conditions, and would not include any source of new long-term odors. Therefore, the proposed project would have a **less than significant**. No mitigation would be required

#### 4. BIOLOGICAL RESOURCES.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Have a substantial adverse effect, either directly or through habitat modifications on; or substantially reduce the number or restrict the range of any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;*
- b. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;*
- c. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;*
- d. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;*
- e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*
- f. *Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan; OR*
- g. *Substantially reduce the habitat of a fish or wildlife species; Cause a fish or wildlife population to drop below self-sustaining levels; or Threaten to eliminate a plant or animal community.*

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<sup>3</sup> Monterey Bay Air Resources District (formerly Monterey Bay Unified Air Pollution Control District). CEQA Air Quality Guidelines. 2008.

The information in this discussion is based on the *Biotic Assessment of San Lorenzo River Parkway Phase III Project* (Ecosystems West, 2018) (**Appendix A**).

**a-c) Adverse Effect on Listed Species, Riparian Habitat, Sensitive Natural Communities or Wetlands – Less Than Significant with Mitigation.**

Qualified biologists reviewed relevant background information pertaining to the project, including available site photographs, USFWS, CDFW, the California Natural Diversity Database (CNDDDB), and California Native Plant Society (CNPS) occurrence records for special-status plants and wildlife occurrences within or near the project area, and other relevant documents or communications from resource specialists. Distribution information for special-status wildlife species was reviewed to determine which species have the potential to occur in or near the project area. The biologists then conducted field surveys of the project area on March 14 and 26, 2018.

**Existing Habitat Types and Listed Species.** The project area and adjacent land uses were found to support six habitat types: developed, ruderal, eucalyptus grove, mudstone embankment, beach/sandbar, and aquatic. These habitat types were observed to determine the common and special status plant and animal species that utilize, or have the potential to utilize, each habitat type, and are discussed below.

*Developed/Landscaped.* The SLR Trestle Bridge and existing walkway, concrete abutments, western and eastern connections, landscaped areas and adjacent roadways, walkways/trails and railway alignment are considered developed/landscaped habitats. During the project area surveys, non-native rock pigeon (*Columbia livia*) were observed utilizing the SLR Trestle Bridge and walkway for nesting activities. The bridge and walkway also provide potential roosting habitat for gull (*Larus* sp.) and cormorant (*Phalacrocorax* sp.) species. A song sparrow and scrub jay were observed in the landscaped areas below the residences southeast of the SLR Trestle Bridge.

The SLR Trestle Bridge provides only marginal habitat for roosting bat species, and no signs of bats were observed. The metal bridge provides minimal thermal buffering from cold or heat and is exposed to wind and weather from the San Lorenzo River and Monterey Bay. As a result, the openings and crevices on the bridge do not provide the protection or thermal stability, as temperatures would be too unstable and cold, to provide suitable maternity roost habitat. Bats may utilize the bridge as a summer night roost when temperatures and weather have more moderate fluctuations; however, there would be no construction activities associated with the project during this time.

*Ruderal.* Ruderal habitats are those that have been influenced by repeated or ongoing human disturbance, and are present next to the developed portions of the project area.

On the western side of the SLR Trestle Bridge, the embankments between the Santa Cruz Riverwalk and beach/sandbar are considered ruderal habitats. Non-native grasses such as slender oat (*Avena barbata*), annual blue grass (*Poa annua*), Italian rye grass (*Festuca perennis*), foxtail barely (*Hordeum murinum*), and other weedy plant species such as black mustard (*Brassica nigra*), cutleaf geranium (*Geranium dissectum*), English ivy (*Hedera helix*), Bermuda buttercup (*Oxalis pes-caprae*), and ice plant (*Carpobrotus edulis*) were observed on the embankments. No wildlife was observed in this area.

On the eastern side of the bridge, the areas immediately adjacent to the railway alignment and paths are also considered ruderal. Abundant non-native grasses in these areas include ripgut brome (*Bromus diandrus*) and upright veldt grass (*Ehrharta erecta*). Other invasive species such as jubata grass (*Cortaderia jubata*), Bermuda buttercup, French broom (*Genista monspessulana*), and milk thistle (*Silybum marianum*) are prevalent. Escaped ornamentals such as pincushion flower (*Scabiosa atropurpurea*) and nasturtium (*Tropaeolum polyphyllum*) were also observed. California ground squirrel [*Otospermophilus (Spermophilus) beecheyi*] was seen in the ruderal habitat on the eastern side of the railroad bridge.

There is no clear transition between ruderal and landscaped areas on the eastern side of the bridge. Several native species were observed in this area and were likely planted as landscaping because of their placement and alignment adjacent to the eastern connection with the SLR Trestle Bridge: white sage (*Salvia apiana*), ornamental buckwheat (*Eriogonum* sp.), sticky monkeyflower (*Mimulus aurantiacus*) and California fuschia (*Epilobium canum*). Poison oak (*Toxicodendron diversilobum*) was also growing on the steep embankment to the south of the SLR Trestle Bridge amongst landscaping plants associated with the residence located immediately above the embankment southeast of the project area.

*Eucalyptus Grove.* Within the eastern portion of the project area, a mature grove of blue gum eucalyptus (*Eucalyptus globulus*) trees extends as a relatively narrow strip along both sides of the eastern connection to the SLR Trestle Bridge, and along the steep San Lorenzo River embankment. The grove supports a semi-open tree canopy over the developed, landscaped, and ruderal areas east of the SLR Trestle Bridge.

Several individual monarch butterflies (*Danaus plexippus*) were observed in this area during both field surveys. Monarch autumnal and wintering habitat is created by trees that provide a diversity of suitable roost limb structure, seasonally appropriate sun/shade exposure and wind protection from windbreak trees, topographic features, or other structures in most, if not all, directions. Roosting monarch butterflies, particularly in a state of nocturnal torpor, are sensitive to even slight changes in wind, temperature, light

penetration, and noise vibrations. Although the blue gum tree flowers may provide nectar for monarch butterflies, the grove consists of a relatively narrow strip of trees which is directly exposed to prevailing wind and precipitation from the San Lorenzo River and Monterey Bay. Based on these characteristics, the eucalyptus trees within and adjacent to the project area provide poor habitat for roosting monarchs.

Avian species, including native nesting birds, may utilize the eucalyptus grove for nesting and roosting. Although there were no native nesting birds observed during project area surveys, rock pigeons, European starlings (*Sturnus vulgaris*), double-crested cormorant (*Phalacrocorax auritus*) and Anna's hummingbird (*Calypte anna*) were present within the eucalyptus grove. It is assumed that native nesting birds may also utilize this area throughout the year. Native nesting birds, as well as their nests and eggs, are 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 Code of Federal Regulations Section 13).

*Mudstone Embankment.* Adjacent to the project area, the east side of the San Lorenzo River is bounded by a steep mudstone embankment. Much of the embankment is vertical or almost vertical; however, in some areas the embankment transitions to less steep areas that have accumulated some shallow mineral soils and leaf litter of blue gum eucalyptus. There is no clear transition between the embankment, blue gum grove, ruderal and developed habitats along the east side of the SLR Trestle Bridge. During project area surveys, a black phoebe (*Sayornis nigricans*) was observed flying, feeding and perching on the concrete abutment that ties the bridge into the embankment. There are no project components that would be located within or immediately adjacent to this area.

*Beach/Sandbar.* Adjacent to the western portion of the project area, the San Lorenzo River is bounded by a tidal beach and sand bar, which is considered sensitive habitat. Rip rap, granite (non-native rock), and concrete support the embankments to the Santa Cruz Riverwalk west of the beach. Further to the south, a concrete seawall protects the Santa Cruz Beach Boardwalk from high tides and high storm flows. The beach and sandbar provide habitat for numerous shorebirds. The following avian species were observed foraging along the beach and sandbar: snowy egret (*Egretta thula*), great egret (*Ardea alba*), western gull (*Larus occidentalis*), American coot (*Fulica Americana*), greater yellowlegs (*Tringa melanoleuca*), and mallard (*Anas platyrhynchos*). One female mallard had a brood of young foraging with her. There are no project components that would be located within or immediately adjacent to this area.

*Aquatic.* The SLR Trestle Bridge spans the tidal estuary of the San Lorenzo River which enters the Monterey Bay just south of the project area. The San Lorenzo

River provides habitat for a range of wildlife species, including birds, fish and marine mammals, some of which are protected fish and marine mammal species. The following common avian species were observed utilizing the aquatic habitat of the San Lorenzo River: western gull, American coot, mallard, pie-billed grebe (*Podilymbus podiceps*), common golden-eye (*Bucephala clangula*), ruddy duck (*Oxyura jamaicensis*), and bufflehead (*Bucephala albeola*).

The San Lorenzo River is designated critical habitat for Central California Coast steelhead (*Oncorhynchus mykiss*) and Central California Coast coho (*Oncorhynchus kisutch*), listed as threatened and endangered, respectively, under the federal Endangered Species Act. These species are known to occur within the river. The tidewater goby (*Eucyclogobius newberryi*) is also known to occur incidentally in the San Lorenzo River; however, the river is not designated as critical habitat for this species.

Southern sea otter (*Enhydra lutris nereis*) occasionally forages in the estuarine waters of the San Lorenzo River. Eastern Pacific harbor seal (*Phoca vitulina richardsi*) and California sea lion (*Zalophus californianus*) rarely enter the estuarine waters of the San Lorenzo River. Under high tide conditions these species may follow fish runs into the river. The southern sea otter is federally-listed as threatened, State-listed as CDFW "fully protected" and all three marine mammal species are protected under the Marine Mammal Protection Act.

The aquatic habitat in the project area is also classified as "Riverine, Tidal Unconsolidated Bottom, Sand" (R1UB2) by the National Wetlands Inventory. This area does not contain adjacent non-tidal wetlands or tributaries. The aquatic habitat is classified as "other waters of the U.S." by the Army Corps of Engineers (USACE) because the tidal waters in the vicinity of the project lack emergent vegetation. The San Lorenzo River is subject to Section 404 of the Clean Water Act (CWA) and Rivers and Harbors Act Sections 9 and 10, with jurisdiction by the USACE up to the ordinary highwater mark (OHWM) or high tide line (HTL), whichever is higher. The OHWM is defined as "the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR § 328.3)". The HTL is defined as the intersection with land and the water's surface at the maximum height reached by the rising tide. The OHWM or HTL is clearly identifiable along the eastern embankment and on the bridge abutments demarcated by a water stained line. This line was located at approximately 6 feet in elevation, based on a benchmark on one of the bridge abutments (NAVD '88).

There are no project components that would be located within or immediately adjacent to the aquatic habitat that supports or includes critical habitat for special status species fish or wildlife, or is within habitat that is under the jurisdiction of the USACE.

CDFW regulates all work within lakes and streams below the break in bank through Section 1602 of the Fish and Game Code. Work along the eastern connection with the SLR Trestle Bridge and platform improvements would be performed within the eastern embankment of the San Lorenzo River below the "break in bank". Therefore, implementation of the project within the eastern portion of the project area would be within the jurisdiction of the CDFW, and the project would be required to follow any requirements established by the CDFW.

**Impact Analysis.** Once the replacement path is constructed and in use, there would be no ongoing project features that would impact sensitive species or habitats within or adjacent to the project area. The replacement path on the SLR Trestle Bridge would provide the same function as the existing walkway, and there would be no ongoing work associated with the project beyond normal maintenance and repairs that would be the same or less as the existing conditions. Therefore, impacts from project operation would be less than significant, and potential impacts would be from project construction.

As described in Section I, under Water Quality and Air Quality Protection Measures, the project includes several measures and BMPs to minimize construction impacts to sensitive biological resources. These include installation of a fabric debris containment device affixed to the south side of the SLR Trestle Bridge, under the existing walkway and replacement path; and includes erosion, sedimentation and dust control measures. Construction related impacts that may occur as a result of project implementation are discussed below.

There are no sensitive plant or terrestrial wildlife species that occur within or immediately adjacent to the project area that would be impacted through project implementation. While two sensitive habitat types (beach/sand bar and aquatic) are located immediately adjacent to the project area, there would be no in-water work or work within these habitats. Further, construction activities would not produce high intensity sound levels, such as pile driving, that may otherwise impact wildlife utilizing these areas adjacent to the SLR Trestle Bridge. Therefore, impacts to sensitive plants, terrestrial wildlife and habitats would be **less than significant** with no mitigation required.

Short-term noise impacts may affect migratory birds that utilize the eucalyptus trees within the eastern project area for nesting and breeding. Throughout the remainder of the project area, including the staging area, it is unlikely that similar impacts would occur because the project area is surrounded by constant noise generating land uses, including the Santa Cruz Beach Boardwalk and traffic on local roadways. There are no other large trees present within or in close proximity

to the project area. Short-term noise impacts would occur primarily from the operation of heavy construction equipment to improve the eastern connection and platform of the SLR Trestle Bridge adjacent to the eucalyptus trees. Potential adverse effects on nesting and breeding birds along the eastern connection to the SLR Trestle Bridge would be reduced to less than significant with implementation of *Mitigation Measure BIO-1: Implement Protective Measures for Migratory Birds during Construction* to ensure compliance with the requirements of the Migratory Bird Treaty Act. Therefore, this impact would be **less than significant with mitigation**.

There is a chance that construction activities could damage the root system of the southernmost eucalyptus tree and result in its death or removal of the tree(s). As described above, the eucalyptus trees within and adjacent to the project area provide poor habitat for roosting monarchs; thus, the potential impact to monarch butterflies is considered **less than significant** with no mitigation required.

Construction activities could disturb bat roosting habit. However, this is considered unlikely because the SLR Trestle Bridge provides only marginal habitat for bat species. The bridge does not provide the protection or thermal stability to support bat roosts, as wind conditions and temperatures would be too unstable and cold; therefore, they are not expected to be present within the project area. However, the bridge does support openings and crevices where bats may be present. Therefore, potential adverse effects on roosting bats would be reduced to less than significant with implementation of *Mitigation Measure BIO-2: Conduct Preconstruction Surveys for Bats and, if found, Implement Protection Measures*. Therefore, this impact would be **less than significant with mitigation**.

CDFW regulates all work within lakes and streams below the break in bank through Section 1602 of the Fish and Game Code. Work would be performed below the break in bank within the eastern portion of the project area, along the east bank of the San Lorenzo River, to improve the connection and existing platform with the SLR Trestle Bridge. The City would consult with CDFW to obtain a Lake and Streambed Alteration Agreement prior to implementation of the project. The agreement would include any measures that CDFW deems necessary to minimize the impacts of construction activities on water quality and biological resources, beyond the debris containment device and other BMPs included in the Project Description. Therefore, further mitigation would not be required to protect the eastern bank of the San Lorenzo River, and this impact would be **less than significant**.

In summary, potential impacts to sensitive natural communities, including riparian habitat and wetlands, would be less than significant with no mitigation

required. The potential impacts to listed species would be **less than significant with mitigation**, presented below.

- *Mitigation Measure BIO-1: Implement Protective Measures for Migratory Birds during Construction.* If project activities are initiated outside of the breeding bird season (defined as February 1 through September 15 by CDFW) (Oey pers. com), no additional measures or BMPs outside of those defined in the Project Description would be required to protect migratory birds. If project activities are initiated during the breeding bird season, or a lull in construction activities of greater than 2 weeks occurs during the breeding bird season, a preconstruction survey for nesting and/or breeding birds will be conducted by a qualified biologist within the eucalyptus tree canopy. If breeding birds or nests are observed within the eucalyptus tree canopy, the biologist will identify and establish an appropriate buffer, based on standard protocols such as the Nesting Bird Management Plan (PG&E, 2015) to protect nesting activities from disturbance, in coordination with the construction contractor. If an appropriate buffer may not be established, construction activities will be halted until after the young have fledged the nests.
- *Mitigation Measure BIO-2: Conduct Preconstruction Surveys for Bats and, if found, Implement Protection Measures.* Prior to the initiation of construction activities, a qualified biologist will conduct a preconstruction bat survey to determine if bat species are utilizing the SLR Trestle Bridge for roosting. If bat species are discovered, the biologists will install appropriate exclusion devices prior to the onset of demolition activities, in coordination with the construction contractor. Exclusion devices would follow those techniques recommended in California Bat Mitigation Techniques, Solutions, and Effectiveness (H.T. Harvey & Associates et al. 2004) or other standard protocols approved by the California Department of Fish and Wildlife (CDFW).

**d) Interfere with Wildlife Movement – Less Than Significant.** There are no sensitive plant or terrestrial wildlife species that occur within or immediately adjacent to the project area. Aquatic wildlife species that move within the San Lorenzo River include Central California Coast steelhead and Central California Coast coho, and occasionally tidewater goby, Southern sea otter, Eastern Pacific harbor seal, and California sea lion.

**Impact Analysis.** No project components would be located within the San Lorenzo River or other sensitive or critical habitats that have been identified adjacent to the project area. To prevent debris and other materials from entering the water during construction, a fabric debris containment device would be installed on the SLR Trestle Bridge below the walkway construction area, and plastic sheeting would be placed around construction activities that could disrupt lead-based paint (refer to Section I, under Water Quality and Air

Quality Protection Measures). Furthermore, construction would not include pile driving or activities that would result in substantial noise or vibration that adversely affect wildlife movement. Therefore, implementation of the project would not impact the San Lorenzo River, nor interfere with sensitive aquatic or beach habitats located adjacent to the project area, either through direct contact with the water, or through the inadvertent exposure of the river and sensitive habitats to construction materials, excessive noise or ground borne vibration.

Additionally, the eucalyptus grove located within and adjacent to the eastern project area would be exposed to short-term construction related noise; however, these trees are not considered overwintering habitat for monarch butterflies and would continue to provide sap for occasional use by individual monarch butterflies. Potential impacts to the butterflies from tree removal are addressed in the discussion above.

Therefore, the San Lorenzo River and sensitive aquatic, beach and eucalyptus habitats would remain largely under existing conditions; and the project would not interfere 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. This impact would be **less than significant**. No mitigation would be required.

- e) **Conflict with Local Policies or Ordinances – Less Than Significant.** The project area is located within the Coastal Zone that has been established by the California Coastal Commission for the City of Santa Cruz (**Figure 2**), and thus is subject to the requirements of the California Coastal Act and City of Santa Cruz Local Coastal Plan (City of Santa Cruz 1994). All development within the Coastal Zone is managed to maintain a balance of natural and built areas, while protecting biological resources and providing public access to utilize the coast of California. Because the SLR Trestle Bridge is located within the Coastal Zone, implementation of the project would require a Coastal Development Permit. The project supports the overall goals of development within the Coastal Zone to protect biological resources while enhancing safe public access to the coast.

The project area is also subject to the City-Wide Creeks and Wetlands Management Plan (City of Santa Cruz, 2006) that provides a comprehensive approach to managing aquatic and wetland habitats within the City, including the San Lorenzo River. The purpose of the plan is to protect these habitats throughout the City, while providing safe public access and recreational opportunities for the public to view and enjoy these environments. The project supports a number of goals within this plan, including providing minimal lighting surrounding aquatic resources that provides adequate safety for the public, protecting and minimizing impacts on aquatic resources as projects are

implemented throughout the City, and enhancing and providing safe recreational opportunities for the public enjoyment of these resources.

Potential tree removal requires evaluation to determine if the tree is considered a heritage tree by the City of Santa Cruz Parks and Recreation Department, in which case compliance with the City of Santa Cruz Heritage Tree Ordinance (City of Santa Cruz Municipal Code 9.56). This would require an application to be submitted to the City of Santa Cruz Parks and Recreation Department, and compliance with the requirements of the Ordinance that may include fees and/or additional native tree plantings.

**Impact Analysis.** The project would not conflict with local policies and ordinances protecting biological resources, including those contained in the City's General Plan 2030, Local Coastal Plan, City-Wide Creeks and Wetlands Plan, and San Lorenzo Urban River Plan (City of Santa Cruz 2003).

The new lighting on the replacement path would be minimal lighting for public safety, which would have minimal impact on biological resources and be consistent with policies for enhancing and providing safe recreational opportunities for public enjoyment. Further, wildlife in the area are likely acclimated to the nighttime lighting in the area, including the all-night lighting on both the east and west access ramps to the SLR Trestle Bridge, as well as lights and activities from the adjacent Santa Cruz Boardwalk.

If construction activities disrupt or damage the roots of the eucalyptus tree(s) on the east side of the trestle, tree removal may be required; and the City would comply with the City of Santa Cruz Heritage Tree Ordinance. The Ordinance requires the City to obtain approval and a survey by a qualified arborist prior to tree removal. Because the City would comply with requirements set forth for tree removal in the Heritage Tree Ordinance, this impact would be **less than significant**. No mitigation would be required.

f) **Conflict with adopted Habitat Conservation Plan – No Impact.** There are no existing or pending Habitat Conservation Plans or Natural Community Conservation Plans that include the project area. Therefore, there would be **no impact**.

g) **Reduce Fish or Wildlife Habitat Species – Less Than Significant.** The project area is along the SLR Trestle Bridge above the San Lorenzo River, which is considered sensitive habitats and/or wildlife and plant communities.

**Impact Analysis.** As described in the discussions above, the project does not include components that would directly impact the San Lorenzo River or other fish and wildlife habitat. The project includes the implementation of protective measures and BMPs during project construction to protect the San Lorenzo River and sensitive habitats surrounding the project area. These measures include the fabric debris containment device that would be installed below the bridge,

plastic sheeting around activities that could disrupt lead-based paint, and erosion, sedimentation and dust control measures. Therefore, the project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten or eliminate a plant or animal community. This impact would be **less than significant**. No mitigation would be required.

## 5. CULTURAL RESOURCES.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines\*;*
- b. *Cause a substantial adverse change in the significance of an archaeological resource;*
- c. *Disturb any human remains, including those interred outside of formal cemeteries; or*
- d. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.*

The information in this discussion is based on the *Cultural Resources Study, MBSST Segment 8, San Lorenzo River Railroad Trestle Bridge – Trail Widening Project* (Rincon, 2018a).

**a) Change in Significance of Historical Resource – Less Than Significant with Mitigation.** To identify previously recorded cultural resources within a 0.25-mile radius of the project area, a qualified archaeologist conducted a field visit on December 6, 2017, and background research that included a search of the California Historical Resources Information System (CHRIS) at the Northwest Information Center (NWIC) at Sonoma State University on February 1, 2018. The CHRIS records search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list.

In addition to the CHRIS records search, the archaeologist also reviewed the listings of the City of Santa Cruz Historic Building Survey, the City of Santa Cruz Historic Context Statement (Lehmann, 2000), and the City of Santa Cruz 2030 General Plan and associated documentation, specifically the Cultural Resources Background Report (LSA Associates, 2006). These documents provided prehistoric and historic context for the current project area.

The SLR Trestle Bridge was built in 1905 and qualifies as a locally designated historical resource as defined by CEQA. Under Section 15064(b) of the State CEQA Guidelines, a project that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment.

**Impact Analysis.** The proposed project would result in the removal and replacement of the existing adjoining walkway or footbridge on the north side of the SLR Trestle Bridge. Because the walkway element was not constructed as part of the original bridge, it is not essential in conveying the significance of the bridge as a historic resource. Therefore, the removal of the walkway would not directly cause material impairment of a historic resource. However, the construction of the new path to replace the existing walkway could affect or obscure those physical elements that convey the historical significance of the bridge. It is anticipated that the replacement walkway can be completed in a manner that is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards), thereby avoiding significant adverse impacts. Further, because the SLR Trestle Bridge is listed as a historic structure by the City, the project will require review by the City of Santa Cruz Historic Commission with a recommendation to the City Council when they review the Design Permit and certify the IS/MND. Therefore, with implementation of *Mitigation Measure CR-1: Prior to Project Implementation, Prepare an SOI Standards for Rehabilitation Memorandum to Ensure Project Compliance with SOI Standards*, the project would have a **less than significant impact with mitigation** on historical resources.

- *Mitigation Measure CR-1: Prior to Project Implementation, Prepare an SOI Standards for Rehabilitation Memorandum to Ensure Project Compliance with SOI Standards.* A qualified architectural historian meeting the Secretary of the Interior's (SOI) Professional Qualifications Standards shall be retained to review project plans and to ensure the replacement path is consistent with the SOI Standards. This input will ensure the avoidance of any direct/indirect physical changes to historical resources. The findings and recommendations of the architectural historian or historic architect shall be documented in an SOI Standards Project Review Memorandum, at the schematic design phase. This memorandum shall analyze all project components for compliance with the SOI Standards for Rehabilitation. Project components to be analyzed shall include direct and indirect changes to the historical resources and their setting. Should design modifications be necessary to bring the project into compliance with the SOI Standards, the memorandum will document those recommendations. This document will subsequently be submitted to the City of Santa Cruz Department of Planning and Community Development and City of Santa Cruz Historic Commission for review and comment. The City shall

incorporate any recommended design modifications into the project prior to project implementation.

**b,c) Change in the Significance of Archaeological Resources, or Disturb Human Remains – Less Than Significant with Mitigation.** The SLR Trestle Bridge is located at the mouth of the San Lorenzo River in Santa Cruz. Two prehistoric archaeological sites have been recorded in close proximity to the project site; however, no archeological resources were identified during the field survey conducted by the qualified archaeologist on February 5, 2018. There are also no known occurrences of human remains that have been identified within, or in close proximity, to the project area.

**Impact Analysis.** Based on the presence of identified resources near the project area and the location of the project area on the San Lorenzo River, which would have been an attractive location for prehistoric settlement because of natural resources offered by the river, the project area is located in a sensitive area for archaeological resources. Therefore, unknown cultural resources may be discovered through ground disturbing activities along the eastern connection of the SLR Trestle Bridge. However, this is a very small area, approximately 250 square feet. The remainder of the project would be implemented above the San Lorenzo River; therefore, no ground disturbance would occur throughout the remainder of the project area. With implementation of *Mitigation Measure CR-2: Monitor Ground Disturbing Activities within the Eastern Portion of the Project Area*, this impact would be **less than significant with mitigation** incorporated.

- *Mitigation Measure CR-2: Monitor Ground Disturbing Activities on East Bank, and Stop Work in the Event of Unexpected Occurrence of Cultural Resources during Construction.* Prior to ground disturbing construction activities on the eastern bank, the City will retain a qualified archaeologist, who meets the Secretary of the Interior's Professional Qualifications Standards as promulgated in 36 CFR 61 and who has experience with precontact, historic period, and tribal resources, to monitor ground-disturbing activities on the east bank. Potential resources include subsurface historic features such as artifact-filled privies, wells, and refuse pits, and artifact deposits, along with concentrations of adobe, stone or concrete walls or foundations, and concentrations of ceramic, glass, or metal materials. Potential Native American archaeological materials include obsidian and chert flaked stone tools (such as projectile and dart points), midden (culturally derived darkened soil containing heat-affected rock, artifacts, animal bones, and/or shellfish remains), and/or groundstone implements (such as mortars and pestles).

If cultural resources are encountered, the archaeologist shall have the authority to temporarily halt or redirect ground-disturbing activities until the material is evaluated and appropriate course of action is determined by the

archaeologist and City lead engineer. The City shall implement the following measures consistent with Section 24.12.430, Protection of Archaeological Resources, of the Santa Cruz Municipal Code<sup>4</sup>.

1. Developer's Action on Discovery of Artifacts or Remains During Excavation or Development. Any person exercising a development permit or building permit who, at any time in the preparation for or process of excavating or otherwise disturbing earth, discovers any human remains of any age or any artifact or any other object which reasonably appears to be evidence of an archaeological/cultural resource, shall:

a. Immediately cease all further excavation, disturbance, and work on the project site;

b. Cause staking to be placed completely around the area of discovery by visible stakes not more than ten feet apart forming a circle having a radius of not less than one hundred feet from the point of discovery; provided, that such staking need not take place on adjoining property unless the owner of the adjoining property authorizes such staking;

c. Notify the Santa Cruz County sheriff-coroner and the city of Santa Cruz planning director of the discovery unless no human remains have been discovered, in which case the property owner shall notify only the planning director;

d. Grant permission to all duly authorized representatives of the sheriff-coroner and the planning director to enter onto the property and to take all actions consistent with this section.

2. Coroner's Action on Discovery of Remains. If human remains are discovered, the sheriff-coroner or his/her representative shall promptly inspect the remains to determine the age and ethnic character of the remains and shall promptly, after making such determinations, notify the planning director. If the remains are found to be Native American in origin, the sheriff-coroner shall notify the Native American Heritage Commission. The Native American Heritage Commission will identify the Native American most likely descendant who will provide recommendations for the proper treatment of the remains and associated artifacts per California State Resources Code Section 5079.9.

3. Planning Director's Action on Discovery of Artifacts. If any artifacts are discovered, the planning director shall cause an on-site inspection of the property to be made. The purpose of the inspection shall be to determine whether the discovery is of an archaeological resource or cultural resource. In making a determination, the planning director may also consult with

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<sup>4</sup> <http://www.codepublishing.com/CA/SantaCruz/html/SantaCruz24/SantaCruz2412.html#24.12.430>

Native American groups, qualified archaeologists, or others with the necessary expertise.

4. Discovery Not an Archaeological/Cultural Resource. Upon determining that the discovery is not of an archaeological/cultural resource, the planning director shall notify the property owner of such determination and shall authorize the resumption of work.

5. Discovery an Archaeological/Cultural Resource. Upon determining that the discovery is of an archaeological/cultural resource, 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.

6. Mitigation Plan. The property owner or his/her agent shall prepare any required mitigation plan. The mitigation plan 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 and may consult with Native Americans, archaeologists, or other interested persons to ensure proper protection of the resource. When the director is satisfied that the mitigation plan is adequate, the director shall authorize the resumption of work in conformance with the mitigation plan.

**d) Destroy Unique Paleontological Resource – Less Than Significant.** Based on information presented in the Cultural Resources Study conducted by Rincon Consultants (2018), no paleontological resources were identified on the project site. However, the sandy beach located along the Santa Cruz Boardwalk southwest of the project area is within an area mapped as Holocene Alluvium geologic formation (City of Santa Cruz, 2012). This formation is generally considered too young to contain paleontological resources, yet it is considered moderately sensitive for paleontological resources because it is underlain by sedimentary geologic units that have a high paleontological sensitivity.

**Impact Analysis.** Although the sandy beach located along the Santa Cruz Boardwalk may contain paleontological resources, this area would not be impacted by implementation of the project as there are no project elements located within or adjacent to this area. The project would result in minimal ground disturbance on the east bank. Therefore, impacts to paleontological resources would not be expected, and the potential impact to paleontological resources would be **less than significant**. No mitigation would be required.

## **6. GEOLOGY AND SOILS.**

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional*

standards, a project impact would be considered significant if the project would:

- a. Expose people or structures to potential substantial adverse effects resulting from the rupture of a known earthquake fault, seismic ground shaking, landslides, or seismic-related ground-failure, including liquefaction, and that cannot be mitigated through the use of standard engineering design techniques;
- b. Result in substantial soil erosion or the loss of topsoil and subsequent sedimentation into local drainage facilities and water bodies;
- 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 an onsite or offsite landslide or slope failure;
- d. Be located on an expansive soil, as defined by the Uniform Building Code (1997) or subject to other soil constraints that might result in deformation of foundations or damage to structures, creating substantial risks to life or property; or
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available.

The information in this section is based on the *Geotechnical Investigation for Proposed Pedestrian Walkway, MBSST Segment 8, San Lorenzo River Railroad Trestle Bridge Widening* (hereinafter *Geotechnical Investigation*) (Dees & Associates 2018) (**Appendix B**), as well as the *Geohazards Technical Study, MBSST Segment 8, San Lorenzo River Railroad Trestle Bridge – Trail Widening Project* (hereinafter *Geohazards Study*) (Rincon, 2018b).

**a,c) Expose People/Structures to Seismic-Related Risk– Less Than Significant.** The project site is located in an area of relatively high seismic activity and earthquake potential. There are several active and potentially active faults within Santa Cruz County, including: San Andreas (11.1 miles to the northeast), San Gregorio (10 miles to the southwest), Zayante (8 miles to the northeast), San Gregorio (10 miles to the southwest), Monterey Bay (6.8 miles to the southwest), and numerous fault branches of these major faults. The inferred (concealed) Ben Lomond fault is approximately 3,000 feet west of the project area. The San Andreas Fault is the largest and most active of the faults in the site vicinity; however, each fault is considered capable of generating moderate to severe ground shaking.

The Alquist-Priolo Earthquake Fault Zoning (AP) Act provides regulatory zones to prevent the construction of buildings used for human occupancy on the surface trace of active faults. There are AP maps that cover other parts of Santa Cruz County, but there is no AP map available for the project area or within 1,000 feet

of the project area. However, the project does not propose the construction of buildings.

It is reasonable to assume that there will be at least one moderate to severe earthquake from one of the faults during the next 50 years. The United States Geological Survey's Working Group on California Earthquake Probabilities (WGCEP) estimates that each region of California will experience a magnitude 6.7 or larger earthquake in the next 30 years, and there is a 63 percent chance of at least one magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Area region between 2007 and 2036.

An earthquake or seismic event can cause intense shaking of sediments and ground failure, such as liquefaction and landslides. Liquefaction is the transformation of loose, water-saturated sand or silt into a liquid state. A landslide is a general term that describes a wide variety of mass downslope movements of soil and rock. The project site is not located within a landslide hazard area, based on the Santa Cruz County Landslide Hazard Area Map and a review of site characteristics.

The project site is located in an area having high potential for liquefaction, according to the liquefaction map provided in the City's 2030 General Plan and on the depth to groundwater, soil characteristics, and probable earthquake intensities and durations for the project area. However, according to the USGS Geologic Map of Santa Cruz County, California (1997), the eastern bridge abutment may have been constructed into basement rock (Tp), and this has been confirmed in the *Geotechnical Investigation* prepared for the project (Dees & Associates 2018).

**Impact Analysis.** There are no active faults located within or adjacent to the project area. Therefore, it is not expected that the project area would be subject to the risk of fault rupture. Although the project site is in an area having high potential for liquefaction, as described above, the only ground-disturbing activities would be modifications to the east landing, which is located on bedrock according the *Geotechnical Investigation* prepared for the project (Dees & Associates 2018) and thus not susceptible to liquefaction.

The project would be constructed in accordance with the current CBC, which includes design criteria for different types of structures and methods for obtaining ground motion inputs, and in accordance with the recommendations set forth in the *Geotechnical Investigation* (Dees & Associates 2018). Therefore, this impact would be **less than significant**. No mitigation would be required.

- b) Soil Erosion or the Loss of Topsoil – Less Than Significant.** Soil erosion is the loss of top soil by water and wind; and soil erosion potential is related to texture, organic matter content, soil structure, and permeability. Soils with erosion factors (K factors) greater than 0.4 are considered highly erodible. According to the United

States Department of Agriculture's Soil Survey Geographic Database, the soil within the project area has a K factor of .32, which is not highly erodible.

Given the proximity of the project area to the ocean, soil erosion could be accelerated by wave action, tidal currents, wave currents, surface runoff, drainage, and high winds.

**Impact Analysis.** The project area does not contain soils that are considered highly erodible. Further, the project is predominately suspended in the air, as the replacement path would be attached to the SLR Trestle Bridge, and only makes contact with the ground and soil where it connects to the existing ramps on the west and east ends. Ground disturbance is required on the east end, within an approximately 250-square-foot area, because the landing requires modification. This area includes minimal topsoil because it is a highly disturbed and constructed on bedrock. The area, therefore, is not considered susceptible to substantial soil erosion or loss of topsoil. Furthermore, during construction, BMPs would be implemented to minimize potential erosion or loss of topsoil. As described in Section I under Water Quality and Air Quality Protection Measures, this includes preparation and implementation of a City-approved Erosion Control Plan, which would specify detailed water quality protection and erosion/sediment control BMPs.

Once the replacement path is constructed, it would function and be exposed to natural elements, similar to existing conditions with the current walkway. Although the project area is exposed to natural elements that may accelerate soil erosion, it is not anticipated that the replacement path would exacerbate soil erosion or the loss of top soil, nor that scour would occur around project elements compromising structure, because it would be an aerial attached to the SLR Trestle Bridge and connect with the east and west landings in a similar manner as the existing walkway.

The modifications to the east landing would be designed in accordance with recommendations set forth in the *Geotechnical Investigation* (Dees & Associates 2018) (**Appendix B**) to minimize susceptibility to erosion and scour from the elements. Further, the landing would have a slight slope to direct stormwater runoff southeast to the existing catch basin, similar to existing conditions. Therefore, the modified landing would not alter the existing drainage pattern in a manner that would result in substantial erosion, siltation, or scour.

Therefore, this impact would be **less than significant**. No mitigation would be required.

- d) Expansive Soils – No Impact.** Expansive soils shrink or swell depending upon water content and can cause damage to structures. Soils with a high clay content are more susceptible to swelling than sand or gravel soils. The area in which ground disturbance is proposed, at the eastern connection to the SLR Trestle Bridge, is

constructed on bedrock; therefore, minimal disturbance to soils would occur through project implementation. The limited soils that may be disturbed through project implementation within this area are not considered expansive (Santa Cruz County GIS Mapping, 2016). The soils all have slow permeability and are moderately well drained, and are unlikely to pond or support flooding. They have low shrink swell potential, and are not expansive by nature. Therefore, the project would not be located on expansive soil, as defined in Table 18-1-B of the CBC, creating substantial risks to life and property. There would be **no impact**.

- e) **Septic Tanks – No Impact.** There are no septic tanks, leach fields, or alternative waste water disposal systems proposed as part of or affected by the project. Therefore, there would be **no impact**.

## 7. GREENHOUSE GAS EMISSIONS.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;*
  - b. *Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases; or*
  - c. *Substantially increase potential exposure to risks associated with climate change.*
- a) **Generate GHG Emissions – Less Than Significant.** Global warming is the observed increase in the average temperature of the Earth's surface and atmosphere caused by increased greenhouse gas (GHG) emissions, which can contribute to changes in global climate patterns resulting in global climate change. GHG emissions are the result of both natural and anthropogenic activities, and the primary sources of these emissions is caused by the consumption of fossil fuels for power generation and transportation, forest fires, decomposition of organic waste, and industrial processes. Principal GHG's that enter the atmosphere as a result of human activities are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

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 S-3-05 and AB 32 (Health & Safety Code, § 38501 et seq.) both seek to achieve 1990 emissions levels by the year 2020. Senate Bill (SB) 32 codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. Executive Order S-3-05 further requires that California's GHG emissions be 80 percent below 1990 levels by the year 2050.

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. The proposed 2017 scoping plan update identifies GHG reductions by emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels by 2030. CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize operational GHG emissions, and that achieving no net additional increase in on-going annual GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development.

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.** Project construction would result in limited, short-term GHG emissions from fossil fuel use from the operation of construction equipment and worker vehicle and truck trips. Emissions from project construction would occur for less than one year. Because construction emissions are finite, neither the CARB scoping plan nor City CAP identify reductions strategies or goals for short-term construction emissions, but rather focus on ongoing annual emissions as they relate to emissions reduction goals.

Following construction, the project would not result in any long-term ongoing GHG emissions. The replacement path would be similar to existing walkway, and would not result in substantial changes compared to existing conditions. It would accommodate pedestrian and bicycle use and would not include a source of GHG emissions. Further, the wider path may encourage more pedestrians and bicyclists to use the path as a means of travel, which could reduce vehicular use and GHG emissions. Therefore, the project would not have any on-going GHG emissions and would not impact the ability of the state or City to meet GHG reduction goals.

Additionally, as stated in the Air Quality discussion (3d), project construction emissions would be minimal because the disturbance area would be less than one quarter of an acre, total daily emissions would be limited because very

few pieces of equipment would be able to operate simultaneously, and only 42 truck trips would be required for project construction (refer to 16. Transportation/Traffic, b). Because the project would result in only short-term minimal construction emissions, the project would not generate GHG emissions that would have a significant impact on the environment.

This impact would be **less than significant**. No mitigation would be required.

- b) Conflict with Applicable Plan – Less than Significant.** The applicable plans for the proposed project are CARB's statewide emissions reduction targets and the City CAP, as described above.

**Impact Analysis.** As described under (a), the project would not result in any ongoing annual GHG emissions that would impact the state or City's ability to meet emissions reduction targets. Additionally, both the scoping plan to meet statewide targets and the City's CAP focus on reducing vehicle miles travelled as key component in meeting reduction targets. Specifically, community reduction strategies in the sustainable transportation and land use planning category in the CAP include reducing trips by car and increasing bike ridership by providing a safe bicycle network. The project would improve the City's pedestrian and bicycle network and promote use of non-vehicular transportation. Therefore, the project would support the goals and strategies of the applicable plans, and there would be no conflict with the applicable plans. This impact would be **less than significant**. No mitigation would be required.

- c) Increase Exposure to Risks of Climate Change – No Impact.** Potential impacts or risks of climate change in California include sea level rise, loss of water supply and snow pack, more large forest fires, damage to agriculture, public health impacts, and habitat destruction<sup>5</sup>. The project area is located near the mouth of the San Lorenzo River where the river meets the Monterey Bay. This is an area of dynamic change as the project area conditions vary throughout the year as environmental factors, including the weather, fluctuate.

The proposed project would replace an existing walkway along the SLR Trestle Bridge, which is elevated approximately 25 feet above the San Lorenzo River. The project would not result in the construction of any new structures that would be at risk for sea level rise inundation, result in any population increase, and nor result in any increased demand for water or exposure to forest fires or health impacts. Therefore, the project would not increase potential exposure to risks associated with climate change. There would be **no impact**.

## **8. HAZARDS & HAZARDOUS MATERIALS.**

*In accordance with the California Environmental Quality Act (CEQA), State CEQA*

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<sup>5</sup> Office of the Attorney General. 2018. Climate Change Impacts in California. Available online: <https://oag.ca.gov/environment/impact> Accessed January 10, 2018.

Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:

- 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 materials or waste within  $\frac{1}{4}$  miles of an existing or proposed school;
- d. Be located on a site that 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. Impair the implementation of or physically interfere with an adopted emergency response or evacuation plan; or
- f. Expose people or structures to a significant risk of loss, injury or death involving wildland fires.

The information in this section is based on the *Hazardous Materials Technical Study, MBSST Segment 8, San Lorenzo River Railroad Trestle Bridge – Trail Widening Project* (Rincon, 2018c) (**Appendix C**).

**a-c) Create a Hazard to the Public or Environment, or Handle Hazardous Materials near a School – Less Than Significant with Mitigation.** A hazard to the public or environment could occur through the routine transport, use or disposal of hazardous materials. It could also occur if there's a reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, or if hazardous emissions are emitted or hazardous materials are handled within 0.25 mile of a school.

Although there are no schools within 0.25 mile of the project site, the Nuevo Dia Child Development Center, a limited enrollment day care and preschool program, is located approximately 0.20 to the west, at 135 Leibrandt Avenue in the Beach Flats neighborhood. Gault Elementary School is located approximately 0.75 mile to the northeast, and Santa Cruz High School is located approximately 1.0 mile to the northwest.

**Impact Analysis.** Once constructed, the replacement path would be used by pedestrians and bicyclists and would not involve the routine transport, use, or disposal of hazardous materials which could create a hazard to the public or environment. However, construction activities could create a hazard to construction workers, the public, and/or the environment as the project area is surrounded by the San Lorenzo River and land uses that are widely used by the public.

During project construction, construction workers, the public and environment could be exposed to hazardous materials from the following activities.

- The demolition of the existing walkway, paint, framework sections, joints, and other appurtenances on the circa-1905 San Lorenzo River Railroad Trestle Bridge, due to its age, could result in the release of asbestos-containing materials (ACM) in some fabricated trestle components and heavy metals (lead) in paint coatings.
- The disturbance of shallow soil to modify the eastern landing could result in the release of hydrocarbons, heavy metals, and organochlorine pesticides given the proximity of the soil to historically active railroad tracks. However, this 250-square-foot area was previously disturbed when the landing was constructed and the area was cut to support the train trestle, and the contaminants would unlikely be absorbed and retained in the bedrock. Therefore, minimal risk is expected.
- Construction vehicles and equipment use fuel, oil, engine fluids and other hazardous substances that would be transported and used throughout the project area, and could be inadvertently released through leaks, spills or accidents.

As described in Section I, Background, the project includes several measures to control the release of hazardous materials, in accordance with local and state regulations. As described under Water Quality and Air Quality Protection Measures, plastic sheeting would be placed around the construction activities disrupting lead-based paint to contain air-borne particulate lead material; a fabric debris containment device would be installed under the existing trestle to ensure construction debris doesn't enter the river; and dust control measures would be implemented to minimize fugitive dust, paint chips, and other vagrant airborne particles that may be generated during the proposed Project.

Additionally, the project would comply with the City's *Construction Work Best Management Practices, Chapter 4 of the Best Management Practices Manual for the City's Storm Water Management Program* (revised June 2014). This includes requirements for equipment and vehicle maintenance, materials storage, and other construction practices which could result in the inadvertent release of fuel, motor oil, and other hazardous materials. This includes proper disposal of demolition waste (including asbestos and other debris containing hazardous materials), such as keeping demolition waste covered and ensuring adequate space within the trucks as loads of the demolished materials are transported to the Santa Cruz Resource Recovery Facility and Recycling Center, which has a facility designated for hazardous materials disposal, to ensure that materials are contained and hazardous materials are not being emitted.

Further, as described in Section I under Traffic Control Plan, the existing walkway along the SLR Trestle Bridge would be closed and a detour route provided for the duration of the approximately 30-week construction schedule. Construction truck routes through the Beach Flats neighborhood would be limited to approved arterial collectors; and construction trucks and equipment would not travel on Park Place, Kaye Street, or Liebrandt Avenue (the location of Nueva Dia Child Development Center). Furthermore, construction activities would occur primarily from the railroad trestle; equipment used would be limited in size; and handwork would be the primary construction methodology. There would be no equipment that would be positioned along East Cliff Drive that would extend into the project area; therefore, equipment present within the project area would be minimal.

Within the previously disturbed eastern project area where minimal ground disturbance would occur, clean fill would be brought in, as needed, to modify the proposed landing. The City would also perform routine inspections of the construction area to verify the BMPs are being properly implemented and protection measures are being maintained. The City would notify the contractor immediately if there was a violation that would require immediate compliance.

With implementation of the measures described above and *Mitigation Measure HAZ-1 (Conduct Preconstruction Survey for Lead-Based and Asbestos Containing Materials on the SLR Trestle Bridge, and Implement Protective Measures)* to ensure worker protection and public safety, the project would not create a significant hazard to the public or environment, or emit hazardous emissions or handle acutely hazardous materials within 0.25 mile of a school. The impact would be **less than significant with mitigation**.

- *Mitigation Measure HAZ-1: Conduct Preconstruction Surveys for Lead-Based and Asbestos Containing Materials on the SLR Trestle Bridge, and Implement Protective Measures.* The following measures will be implemented prior to and during construction to minimize the risk of exposure to hazardous materials.
  - Prior to removal/demolition of the existing walkway, a preconstruction lead-based paint (LBP) survey shall be conducted. If LBP is identified, the construction contractor shall inform the Project Manager immediately so that the handling and removal of LBP can be completed by properly trained and protected employees.
  - Prior to removal/demolition of the existing walkway, a preconstruction state construction manual (SCM) survey shall be conducted. If asbestos containing materials (ACM) are identified, the construction contractor shall inform the Project Manager immediately so that the handling and removal of ACM can be completed by properly trained and protected

employees.

- Prior to disturbance of soil on the eastern bank/bluff, shallow soil samples shall be collected and tested for hydrocarbons, heavy metals, and organochlorine pesticides given the proximity of the soil to historically active railroad tracks. If impacted soil is identified, the construction contractor shall inform the Project Manager immediately so that the handling, sampling, and removal of impacted soil can be completed by properly trained and protected employees. If more soil than anticipated is disturbed, then a Soil Management Plan (SMP) shall be prepared to detail soil sampling procedures and aid in the characterization of potentially impacted soil for disposal.
- If impacted soil, ACM and or lead-impacted hazardous materials are generated during construction of the project, the soil/materials shall be stored appropriately and properly labeled pending disposal according to recommendations included in the Hazardous Materials Technical Study conducted by Rincon Consultants, Inc. in March 2018.

**d) Project Located on List of Hazardous Materials Sites– No Impact.** The project area is not located on a site identified as containing hazardous materials, based on a review of the hazardous materials site lists compiled pursuant to Government Code Section 65962, including SWRCB GeoTracker, DTSC EnviroStor, DTSC Hazardous Waste and Substances Site List, the National Pipeline Mapping System, as well as the Division of Oil, Gas, and Geothermal Resources website (Rincon, 2018c). Therefore, there would be **no impact**.

**e,f) Project Located near Airport – No Impact.** The project area is not located within two miles of a public or private airport, in the vicinity of a private air strip, or in an area for which an airport land use plan has been developed or adopted. There would be **no impact**.

**g) Impair or Interfere with Emergency Response/Evacuation Plan – Less than Significant.** The proposed project is located within the jurisdiction of the City of Santa Cruz and therefore shall comply with the City of Santa Cruz Emergency Operations Plan or the City of Santa Cruz Hazard Mitigation Plan (City of Santa Cruz, 2013 and 2017).

**Impact Analysis.** The project would not involve the development of structures or facilities that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. During construction, as described in Section I under Traffic Control Plan, roadways and emergency access would be retained, and local safety personnel (e.g., police and fire department) would be contacted regarding any lane closures or detours. Although the SLR Trestle Bridge would be closed to pedestrians/bicyclists, this closure would not impede

implementation of the applicable Santa Cruz Emergency Operations Plan or the draft City of Santa Cruz Hazard Mitigation Plan (City of Santa Cruz 2013, 2017). This impact would be **Less than Significant**. No mitigation would be required.

- h) Expose People or Structures to Wildland Fires – No Impact.** The project site is located in a developed urbanized area that is surrounded by residential and commercial uses, as well as the San Lorenzo River. The project area is not within or adjacent to wildlands or densely vegetated areas, and is not located in a Fire Hazard Severity Zone or Very High Hazard Severity Zone for wildland fires (California Department of Forestry and Fire Protection [CalFire] 2007; CalFire 2008). Therefore, the project would not expose people or structures to significant risk of loss, injury, or death involving wildland fires. There would be **no impact**.

## **9. HYDROLOGY AND WATER QUALITY.**

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. Violate any water quality standards or waste discharge requirements;*
- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge;*
- c. Substantially alter the existing drainage pattern of the site or area or alteration of a stream in a manner that would result in substantial offsite erosion or siltation or flooding;*
- d. Substantially increase the rate or amount of surface runoff which would exceed capacity of existing or planned storm drain facilities, cause downstream or offsite drainage problems, or increase the risk or severity of flooding in downstream areas;*
- e. Substantially degrade surface water quality;*
- f. Result in construction of habitable structures within a 100-year floodplain as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would expose people or structures to a significant risk of loss, injury or death due to flooding;*
- g. Locate structures within a 100-year flood hazard area that would impede or redirect flood flows;*
- h. Expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam; or*

- i. *Expose people or structures to a significant risk of loss, injury or death as a result in inundation by seiche, tsunami, or mudflow.*

**a.f) Violate any Water Quality Standards or Degrade Water Quality – Less Than**

**Significant.** The SLR Trestle Bridge is located above the San Lorenzo River, just north of where the river enters the Monterey Bay National Marine Sanctuary. Rainwater currently flows over and through the openings of the existing railway and walkway. On the west end of the trestle, surface drainage flows into landscaped vegetation on each side of the railway and walkway. On the east end of the trestle, most of the runoff from the railroad bed is directed to the catch basin located on each side of the track just behind the abutment. Drainage along the existing ramp and landing flows into the northern catch basin (visible and labeled “SDCB” in **Figure 5**). The catch basins appear to discharge water onto the river bank adjacent to the southern bridge abutment where it flows down into the river below.

The project would replace the existing walkway attached to the north side of the trestle with a wider path in generally the same location. The replacement path would connect with the existing landings and access ramps on each side. The landing and ramp on the east side require modifications to connect with the wider path, but the west side does not. There are no project activities during or after construction that would occur within the San Lorenzo River.

**Impact Analysis.** The project is replacement of an elevated 300-foot-long pedestrian/bicycle path and does not include commercial, industrial or other activities that would generate contaminants or discharge runoff either directly or indirectly into a public or private water supply, or reduce water quality in local water bodies. The replacement path would function the same as the current path. Further, the access ramp and landing on the east side would direct water to the existing catch basin to the southeast, on the north side of the tracks, similar to existing conditions. Therefore, the modified landing would not alter the existing drainage pattern in a manner that would further degrade water quality or result in substantial erosion, siltation, or scour.

During construction, stormwater runoff could contain soil and other pollutants such as fuels, oils, grease, lubricants, solvents and other materials associated with construction equipment and activities. However, any potential impacts that could occur as a result of the release of the above-mentioned materials would be minimized and contained through implementation of BMPs. As described in Section I under Water Quality and Air Quality Protection Measures, the project includes installation of a fabric debris containment device that would be installed under the existing trestle and span several feet beyond the edge of the proposed trail, and would be secured to draped steel cables that would extend from the existing trestle (**Figures 6 and 7**). The debris containment device would remain in place during all construction activities

over the water, and would prevent materials from construction activities from entering the river below. Additionally, plastic sheeting would be placed around construction activities disrupting lead-based paint to contain air-borne particulate lead material from entering the surrounding ambient air and river below. Any painting required for the project (e.g., path railings) would occur offsite in certified and approved paint shops, and materials would be delivered to the project site ready for installation.

All construction activities would be conducted in accordance with the City's Storm Water and Grading Ordinances (Chapters 16.19 Storm Water and Urban Runoff Pollution Control and 18.45 Excavation and Grading Regulations) and the City's *Construction Work Best Management Practices, Chapter 4 of the Best Management Practices Manual for the City's Storm Water Management Program*. This includes preparation and implementation of a City-approved Erosion Control Plan, which would specify detailed water quality protection and erosion/sediment control BMPs. It also includes requirements for equipment and vehicle maintenance, materials storage, and other construction practices which could result in the inadvertent release of fuel, motor oil, and other hazardous fluids and materials. It also includes measures to ensure proper disposal of construction and demolition waste, including asbestos and other debris containing hazardous materials. The BMPs would be selected to represent the best available technology that is economically achievable, and are subject to review and approval by the City. The City would perform routine inspections of the construction area to verify the BMPs are being properly implemented and protection measures are being maintained. The City would notify the contractor immediately if there was a violation that would require immediate compliance.

Finally, to reduce the generation of fugitive dust throughout project implementation, the construction contractor would be required to prepare and implement dust control measures at the construction and staging areas, which would include: water all active construction areas as needed based on the type of construction activity, soil, and wind exposure; maintain at least 2-foot of freeboard, or cover dirt and loose materials, in haul trucks; cover inactive storage piles and stock piles of dirt; and sweep any roadways/paths if visible soil material remains at the end of the work day.

Therefore, the project would not degrade water quality and no water quality standards or waste discharge requirements would be violated. The impact would be **less than significant**. No mitigation would be required.

- b) Deplete Groundwater Supplies or Interfere with Groundwater Recharge – No Impact.** Groundwater provides 5% of drinking water in Santa Cruz, with surface water supplying the rest. However, local groundwater basins are threatened from over pumping and seawater intrusion in other parts of the County.

Groundwater recharge primarily occurs from stormwater runoff percolating or moving downward from surface water to groundwater, and substantial amounts of impervious surface can inhibit this hydrologic process.

**Impact Analysis.** Implementation of the project would not result in a substantial increase in new impermeable surfaces throughout the project area, as the majority of the project would occur in the air along the SLR Trestle Bridge. The landing on the west side requires no modification. The landing on the east side requires minor modification to connect with the wider path and provide a gentler curve to the access ramp; and the overall impervious surface that results from project implementation would be similar or slightly less than existing conditions.

The proposed project would also not use groundwater, in any way affect groundwater, or require any additional water supply throughout the project area above existing conditions. Therefore, there would be **no impact**.

**c-e) Alter Existing Drainage Patterns or Increase Runoff – Less Than Significant.**

Altering the existing drainage pattern of the site or area could occur through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite. Increasing stormwater runoff by adding new impervious surfaces would increase the amount of stormwater entering drainage systems.

**Impact Analysis.** The project is replacement of the walkway attached to the SLR Trestle Bridge located above and adjacent to the San Lorenzo River. The project would not include grading, new impervious surface or any other changes that would alter the topography or drainage patterns in the project area, or contribute runoff water that would exceed the capacity of the storm water drainage system. Modifications to the landing on the east side would result in the same amount of impervious surface, or slightly less, and the landing would have a slight slope to direct stormwater runoff southeast to the existing catch basin, similar to existing conditions. Therefore, the modified landing would not alter the existing drainage pattern in a manner that would result in substantial erosion or siltation, or increase the rate of surface water runoff that would result in flooding, compromise the capacity of storm drainage system, or increase sources of polluted runoff.

As described in the discussion (a,f) above, the project includes BMPs and erosion control measures to minimize erosion and sediment that could enter the San Lorenzo River during construction. This area would remain largely unchanged from existing conditions following the completion of construction activities. There would be no ongoing activities that would result in further sedimentation or erosion into the San Lorenzo River. Therefore, the project would not substantially alter existing drainage patterns, and this impact would

be **less than significant**. No mitigation would be required.

**g) Locate Housing in Flood Hazard Area – No Impact.** The proposed project does not include any housing; therefore, there would be **no impact**.

**h,i) Locate Structure in Flood Hazard Area and Expose People/Structures to Flooding Risks – Less Than Significant.** According to the Federal Emergency Management Agency (FEMA) Flood Map, the project area is located within a Special Flood Hazard Area (<https://msc.fema.gov/portal>, flood map 06087C0334F, effective September 29, 2017). The San Lorenzo River is a Regulatory Floodway, and the planned staging area is within an area without Base Flood Elevation (BFE). The landings and access ramps on each side of the existing and proposed path is in an Area of Minimal Flood Hazard, although the lower part of the western ramp is within the BFE. The existing walkway attached to the SLR Trestle Bridge and the proposed replacement path are approximately 25 feet above the water surface, above the base flood elevation line at 13 feet NAVD. The San Lorenzo River has flood protection levees, but there are no dams

**Impact Analysis.** Although the project area is located within the Flood Hazard Area, the existing walkway attached to the SLR Trestle Bridge and the proposed replacement path, as well as the east landing to be modified, are located above the base flood elevation line and above the banks of the San Lorenzo River. The staging area, which is located in Flood Hazard Area, would be used for short-term equipment and materials storage during construction, which is similar to its existing use as a parking lot and storage area. The project would not include the construction of any new structures that could impede or redirect flood flows.

Although the project would be located above and adjacent to the San Lorenzo River, the project would be outside the levee banks along the river and would not impact the waterway or the levees in any way. Therefore, implementation of the project would not expose people or structures to a risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

The impact would be **less than significant**. No mitigation would be required.

**j) Inundation by Seiche, Tsunami or Mudflow – Less Than Significant.** Much of the coastal area in the City of Santa Cruz is susceptible to tsunami inundation due to its proximity to the coast. The San Lorenzo River terminates at the Pacific Ocean, and the project area is located approximately 1,000 feet north of the Pacific Ocean. Based on the review of the California Geologic Survey Tsunami Inundation Map for Emergency Planning, Santa Cruz Quadrangle (July 1, 2009), the project area is susceptible to tsunami inundation. Tsunamis cannot be prevented and can cause massive destruction to infrastructure and loss of

life. The National Oceanic and Atmospheric Administration operate a Pacific tsunami warning system that gives advance notice to allow evacuation of threatened areas.

**Impact Analysis.** The project area is located in an area susceptible to tsunami inundation, exposing pedestrians and bicyclists using the path along the SLR Trestle Bridge to the risks of tsunami inundation, which include destruction of the path and injury or loss of life similar to existing conditions. Currently there are signs within the area, near the Santa Cruz Boardwalk and along East Cliff Drive, alerting the public that they are entering a tsunami inundation area. These signs would remain in place following project implementation. Because the land uses within the project area would remain largely the same following project implementation, and signage associated with tsunami risks would remain in place, this impact would be less than significant. No mitigation would be required.

## 10. LAND USE AND PLANNING.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Physically divide an established community;*
  - b. *Conflict with any applicable City land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect; or*
  - c. *Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan.*
- a) Physically Divide an Established Community – No Impact.** The existing walkway on the SLR Trestle Bridge provides a pedestrian/bicycle connection between the established neighborhoods on the west and east sides of the San Lorenzo River. The replacement path would be wider and safer, thus improving the connectivity between established communities, which is considered beneficial. Therefore, there would be **no impact**.
- b) Conflict with Applicable Land Use Plans – No Impact.** The project, which includes replacing the existing walkway on the SLR Trestle Bridge with a wider path, is consistent with applicable plans and policies in relevant planning documents, including the City's General Plan 2030 (2012a), Local Coastal Program (1994, as amended), Climate Action Plan (2012b), and Active Transportation Plan (2017). The project is also an allowed use within the General Plan land use designations identified in Section I.

The General Plan Parks, Recreation and Open Space Goals and Policies include providing safe and clean trails that are widely accessible throughout

the City, and providing continuous trails along the coast, connecting West Cliff Drive to East Cliff Drive, to provide a continuous trail for pedestrians and bicyclists. The project would improve access across the San Lorenzo River with a wider multi-purpose trail that is compliant with the American with Disabilities Act (ADA) for pedestrians, bicyclists, and other users. The current 4-foot-wide path is narrow, and it is difficult for users to pass one another.

The project is included in the City's Active Transportation Plan (2017) and is also part of larger projects supported by the City, including: 1) the San Lorenzo River Parkway Project, representing Phase III, to improve access and natural resources along the river, and 2) the Santa Cruz County Regional Transportation Commission's Coastal Rail Trail project, representing a portion of Segment 8 identified in the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Final Master Plan<sup>6</sup>.

Therefore, the proposed project would not conflict with any planning regulations or policies adopted for the purpose of avoiding or mitigating environmental effects, and there would be **no impact**.

- c) Conflict with Applicable Conservation Plans – No Impact.** There are no Habitat Conservation Plans or Natural Community Conservation Plans applicable to the project area; therefore, there would be **no impact**.

## 11. MINERAL RESOURCES.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- 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?*
- a,b) Loss of Mineral Resources – No Impact.** The City of Santa Cruz is primarily developed. There are no mines, areas of known mineral resources or designated areas for mineral resource preservation within the City or the General Plan 2030 Planning Area (City of Santa Cruz, 2012). Further, the project would involve a minor amount of shallow soil disturbance on the eastern end of the SLR Trestle Bridge to modify the landing, and the remainder of the project area would occur above the San Lorenzo River along the trestle. Therefore, the project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the

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<sup>6</sup> Refer to the Santa Cruz County Regional Transportation Commission (SCCRTC) website for more information about the Monterey Bay Sanctuary Scenic Trail Network Master Plan. <https://sccrtc.org/projects/multi-modal/monterey-bay-sanctuary-scenic-trail/mbsst-master-plan/>

state, nor result in the loss of availability of a locally-important mineral resource recovery site delineation on a local general plan, specific plan, or other land use plan. There would be **no impact**.

## 12. NOISE.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Expose persons to or generate noise levels in excess of standards established in the City's "Land Use Noise Compatibility" table in the General Plan;*
- b. *Expose persons to or generate excessive groundborne vibration or groundborne noise levels;*
- c. *Result in a substantial permanent increase in ambient noise levels above existing levels if it will expose outdoor activity areas of noise-sensitive land uses to a 5 dB increase in noise where existing noise levels are below 60 dBA  $L_{dn}$  or a 3 dB increase in noise where existing noise levels are between 60 and 65 dBA  $L_{dn}$ ; or*
- d. *Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels.*

**a,c) Increase in Permanent Noise – Less than Significant.** The existing conditions in the project area include noise from a variety of sources, including the Santa Cruz Boardwalk activities and rides, vehicular traffic, recreation activities, sounds of the ocean, and occasionally the Santa Cruz Beach Train.

**Impact Analysis.** The project would replace the existing walkway on the SLR Trestle Bridge with a wider path, which would enhance pedestrian and bicycle use. The anticipated noise level from people using the replacement path would be similar to the existing noise level, and is not considered a significant source of operational noise. Thus, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above existing noise levels without the project, nor would the project generate or expose people to noise levels in excess of standards established in the City's General Plan and Noise Ordinance (Chapter 9.36). This impact would **less than significant**. No mitigation would be required

**b) Ground Borne Vibration or Noise Levels – Less than Significant.** Land uses that are considered vibration-sensitive<sup>7</sup> (in which groundborne vibration could potentially interfere with operations or equipment) include hospitals and research operations. The land uses surrounding the project area include residences and recreational and tourist-supporting uses, including the Santa

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<sup>7</sup> Federal Transit Administration (FTA), Office of Planning and Environment. 2006. Transit Noise & Vibration Impact Assessment. May 2006.

Cruz Boardwalk, parking lots, and hotels. These are not considered vibration sensitive land uses.

The main concern associated with groundborne vibration is individual residential annoyance. The Federal Transportation Authority (FTA) has published vibration impact criteria to determine whether vibration would potentially result in an annoyance to residents. Construction vibration is subject to the FTA's infrequent event criteria because operation of vibration-generating equipment is anticipated to be intermittent throughout the day in the vicinity of an individual receptor. Residences and hotels fall into FTA Land Use Category 2, which is a receptor where people normally sleep. The FTA identifies 80 VdB as the generation level from infrequent events that would potentially disturb residents. The amusement park would conservatively fall into Category 3, which is the least vibration sensitive category. The FTA identifies 83 VdB as the generation level from infrequent events that would potentially disturb Category 3 uses (institutional uses with primarily daytime uses).

**Impact Analysis.** The project, which includes replacement of the elevated walkway along the SLR Trestle Bridge with a wider path, would not result in permanent groundborne vibration or noise. However, construction activities could result in a limited amount of groundborne vibration and noise. Table NOI-1 includes representative typical vibration levels for construction equipment required for the proposed project. **Table NOI-1** presents vibration levels from standard construction equipment, similar to what would be required for the project. Although a bulldozer is not anticipated to be required for construction, it is included below to present a worst-case conservative estimate for construction equipment. Jackhammers may be used during modification of the east landing. Nonetheless, these vibration levels would be reduced to a maximum of 83 Vdb beyond 35 feet from the construction area and 80 VdB beyond 45 feet from the construction area. The uses within 35 feet of the construction area include the Santa Cruz Boardwalk to the west and a residential apartment complex to the east.

<b>Table NOI-1. Vibration Source Levels for Construction Equipment</b>			
<b>Construction Equipment</b>	<b>Approximate VdB at 25 feet</b>	<b>Approximate VdB at 35 feet(1)</b>	<b>Approximate VdB at 45 feet(1)</b>
Large Bulldozer <sup>8</sup>	87	83	79
Loaded Trucks	86	82	78
Jackhammer	79	75	71
Small Bulldozer	58	54	49
(1) Based on the formula $VdB = VdB(25\text{ feet}) - 30\log(d/25)$ provided by the FTA (2006) Source: FTA 2006			

The Santa Cruz Boardwalk is within 35 feet of the construction area. Therefore, park attendees would have the potential to be exposed to vibration levels in excess 83 VdB when construction activities take place at the western end of the project area. However, construction would occur within the off-season for the Boardwalk, and the portion of the Boardwalk that is within 35 feet of the construction area includes a ride, which generates vibration of its own. It is unlikely that riders and park attendees in general would be able to distinguish construction vibration from the activity within amusement park itself, or would be too engaged for construction vibration to be an annoyance. Exposure to groundborne vibration would be less than significant.

The residential apartment complex, located on East Cliff Drive immediately southeast of the trestle, is located approximately 35 feet from the construction area. Residents of this complex would be located within 45 feet of construction and would have the potential to be exposed to vibration levels in excess of 80 VdB when construction activities take place at the eastern end of the project area, if all the equipment presented in Table NOI-1 is used. However, construction activities would take place during the day and would not interfere with sleep. At 35 feet from the construction area, the apartment complex would not be exposed to vibration levels that would interfere with primarily daytime activities (83 VdB), and vibration levels would not be a significant nuisance to daytime activities at the apartment complex. Exposure to groundborne vibration at the residential apartment complex throughout project implementation would be less than significant.

Therefore, the project would not result in exposure of person to or generation of excessive groundborne vibration or groundborne noise levels, and this impact would be **less than significant**. No mitigation would be required.

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<sup>8</sup> The use of a large bulldozer is not expected for the project; the inclusion of the Large Bulldozer provides a conservative estimate for the range of potential levels of vibration that may occur as a result of project implementation.

d) **Increase in Temporary or Periodic Noise – Less than Significant.** Ambient noise levels in the project area are characterized by a variety of sources, including the Santa Cruz Boardwalk activities and rides, vehicular traffic, recreation activities, sounds of the ocean, and occasionally the Santa Cruz Beach Train. Construction activities have the potential to result in short-term increases in ambient noise level primarily from the operation of heavy construction equipment. The closest sensitive receptor to the construction area is the apartment complex located on East Cliff Drive, approximately 35 feet southeast of the project area.

**Impact Analysis.** Construction equipment that is anticipated for use includes metal cutting/torching equipment to remove existing steel material, welding machines to install new steel, and a small crane to install new steel and other components, as needed. Other construction equipment that may be required include a small loader/backhoe and miscellaneous trucks. A jack hammer and plate vibration may be used to modify the east landing. Sound levels from typical construction equipment range from 60 dBA to 90 dBA Leq at 50 feet from the source<sup>9</sup>. There would be no pile driving associated with the project, which generates higher than typical noise levels.

Construction activities would temporarily increase noise levels in the residential area. However, the area surrounding the project area is currently exposed to a variety of ambient noise sources, most notably the Santa Cruz Boardwalk which is open most of the year. Vehicular traffic on East Cliff Drive and the ocean also contribute to the noise environment. Although the path across the SLR Trestle Bridge would be closed throughout construction activities, the surrounding trails and land uses around the project area would continue to support heavy pedestrian and bicycle traffic.

Section 9.36.010 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 which 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. Construction of the project would occur during daylight hours, which would be consistent with the noise ordinance. Construction noise would be temporary and intermittent, and noise levels would fluctuate throughout any given day. Given other sound sources in the area, and due to the limited duration and short-term nature of the construction, temporary construction noise is considered a **less than significant** impact. No mitigation would be required.

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<sup>9</sup> Federal Highway Administration (FHWA), 2008. Roadway Construction Noise Model (RCNM), Version 1.1. December 8.

**e,f) Project Located near Airport – No Impact.** The project area is not located within an area for which an airport land use plan has been developed, nor within two miles or the general vicinity of a public airport or private airstrip. There would be **no impact**.

### 13. POPULATION AND HOUSING.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure;*
  - b. *Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere; or*
  - c. *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.*
- a) Induce Population Growth – No Impact.** The project would replace the existing walkway on the SLR Trestle Bridge with a wider path, for improved access and safer use for pedestrians and bicyclists. Although the wider path may encourage additional users, it is anticipated that use of the replacement path would be similar to existing conditions. The project would not induce substantial population growth in the area, either directly by proposing new homes or businesses, or indirectly by removing an obstacle or extending roads and infrastructure. There would be **no impact**.
- b,c) Displace Housing or People – No Impact.** The project would not displace existing housing nor people, necessitating the construction of replacement housing elsewhere. There would be **no impact**.

### 14. PUBLIC SERVICES.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- *Result in substantial adverse physical impacts associated with provision of new or physically altered facilities, the construction of which could cause significant impacts, in order to maintain acceptable service for a) fire protection, b) police protection, c) schools, d) parks, or e) other public facilities.*
- a,b) Increased Demand for Fire and Police Protection – Less Than Significant.** The project area includes the existing path on the SLR Trestle Bridge, access ramps, and nearby parking lot for construction staging. Public services in the project

area include fire protection from the Santa Cruz Fire Department and police protection from the City of Santa Cruz Police Department.

**Impact Analysis.** The project would replace the existing walkway along the SLR Trestle Bridge with a wider path that follows the same alignment with improved connection along the eastern end of the trail. The project would provide a wider, safer path which may increase use of the path. However, the project would not result in population growth or the need for additional public services, including fire and police protection. The project would not result in any new permanent facilities, structures, or uses that would generate the need for additional fire or police services, which would result in adverse effects on response times and service ratios.

Maintenance of the replacement path would be provided by the City. Although the wider path could result in an increase in use, it is not expected to be substantial nor create the need for additional maintenance in the project area. The replacement path is expected to require less maintenance than the existing walkway. This impact would be **less than significant**. No mitigation would be required.

**c-e) Increased Demand for Schools, Parks and Other Public Services – No Impact.** The project area includes the existing path on the SLR Trestle Bridge, access ramps, and nearby parking lot for construction staging. The project area does not include any schools, parks or residents requiring these services. The project would not result in population growth or any new permanent facilities, structures, or uses that would generate the need for additional parks and schools, or other public services and facilities. There would be **no impact**.

## 15. RECREATION.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Increase the use of existing parks or recreational facilities such that substantial physical deterioration would occur or be accelerated; or*
- b. *Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.*

**a,b) Increase Use of or Require Expansion of Recreational Facilities – Less than Significant.** The project includes replacement of the existing walkway along the SLR Trestle Bridge, which is used as a transportation corridor and recreation trail, with a wider path, which would improve transportation and recreation for pedestrians, and bicyclists. Nearby parks and recreation uses include the levee trails along the San Lorenzo River Parkway (Santa Cruz Riverwalk), the Santa Cruz Boardwalk, ocean beaches, and neighborhood parks in the Beach

Flat neighborhood west of the river and Seabright neighborhood east of the river.

**Impact Analysis.** The wider replacement path could increase use of the SLR Trestle Bridge as a means of transportation and recreation within Santa Cruz, which could also result in a slight increase in the use of existing parks and recreational facilities in the area. However, it is not anticipated that the use of existing parks and recreational facilities would increase such that substantial physical deterioration of the facilities would occur or be accelerated. The project does not include new recreational facilities or require the construction or expansion of new facilities, which could have an adverse effect on the environment. Therefore, this impact would be **less than significant**. No mitigation would be required.

## 16. TRANSPORTATION/TRAFFIC.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;*
- b. *Change the level of service of a State Highway roadway segment from acceptable operation (LOS A, B, or C) to deficient operation (LOS D, E or F);*
- c. *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;*
- d. *Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment);*
- e. *Result in inadequate emergency access; or*
- f. *Conflict with adopted policies, plans, programs that support supporting alternative transportation (for example, bus turnouts, bicycle racks).*

**a.f) Conflict with Applicable Plans and Policies – Less Than Significant.** Applicable plans and policies include the City's General Plan 2030 (2012a), which includes policies encouraging pedestrian and bicycle facilities, and the Bicycle Transportation Plan (2008) and more recent Active Transportation Plan (2017), both of which include the project as a planned project.

The project would require temporary closure of the SLR Trestle Bridge to pedestrian and bicycle use during the anticipated 30-week construction period. To maintain connectivity, pedestrians and bicyclists would be detoured to an alternate route across the San Lorenzo River at Riverside Avenue.

As described in Section I under Traffic Control Plan, a Pedestrian/Bicycle Detour would be established by the City. Pedestrians and bicyclists would be detoured using the Santa Cruz Riverwalk on the west side of the river, the sidewalk along East Cliff Drive on the east side of the river, and Riverside Avenue bridge to cross the river (**Figure 2**). The City would clearly demarcate the detour route by the use of standard temporary traffic control devices and signage.

**Impact Analysis.** During construction, the distance and time to travel across the San Lorenzo River would be increased. Although the Traffic Control Plan would provide a detour route to maintain connectivity for pedestrians and bicyclists throughout the area that is currently supported by the SLR Trestle Bridge walkway, it would lengthen the distance necessary to cross the San Lorenzo River. The current walkway along the SLR Trestle Bridge structure is approximately 300 feet long, while the detour route would be 0.9 mile. This distance is the minimum necessary to cross the San Lorenzo River via the nearest bridge to the project area (Riverside Avenue). The greater distance would inconvenience pedestrians and bicyclists attempting to cross the river near the coastline. However, the detour would be limited to the construction period and would be clearly marked, and would provide for traffic safety. The Santa Cruz Riverwalk is a designated bike path, as shown in **Figure 8** and Figure 6 of the City's Active Transportation Plan (February 28, 2017), which would separate pedestrians and bicyclists from vehicular traffic. As described above, a traffic control plan would be developed that would include identified detour routes and required notification and signage for the public to ensure continuous access around the project area along the alternative alignments identified.

Over the long term, implementation of the project would increase the capacity of the SLR Trestle Bridge to accommodate pedestrians and bicyclists, by replacing the existing 4-foot-wide path with a 10-foot-wide upgraded path. The wider walkway would allow for an incremental increase in public use of an already popular trail. It would also provide for greatly improved

accommodation of both pedestrians and cyclists passing one another in opposing directions of travel, and improve access from the eastern project area by smoothing out the existing turn along the eastern connection. Implementation of the proposed project would improve an existing facility designed for the exclusive use of pedestrians and bicyclists.

Because implementation of the project would improve access across the SLR Trestle Bridge for pedestrians and bicyclists, effective alternative routes would be identified for users to navigate throughout the 30-week construction window, project implementation would support local policies and plans to enhance recreational opportunities within the City. This impact would be **less than significant**. No mitigation would be required.

- b) Conflict with an Applicable Congestion Plan Management Program – Less Than Significant.** Construction activities would involve the transportation of materials to and from the project area via haul trucks on City streets. As described in Section I under Traffic Control Plan, City-designated truck routes that would be used between Highway 1 and the staging area, located in the parking lot northwest of the SLR Trestle Bridge. These routes include Ocean Street, San Lorenzo Boulevard, Riverside Avenue, Beach Street, 3<sup>rd</sup> Street, Laurel Street, Bay Street and West Cliff Drive.

**Impact Analysis.** Once constructed, the wider replacement bridge would facilitate pedestrian and bicyclist circulation across the San Lorenzo River via the SLR Trestle Bridge, which does not provide access for motor vehicles. Operation of the project would not interface directly with the vehicular roadway system of the City, and would therefore not affect vehicular levels of service or traffic congestion on nearby roadways.

During project construction, increased truck traffic on haul routes through the City and around the staging area may increase traffic congestion. Additionally, there would be a short-term reduction in parking available at the staging area.

**Truck Traffic on Haul Routes.** It is possible to estimate the number of truck trips based on the volume of material imported and exported throughout construction implementation. The estimated 2,000 square feet of exported material translates to approximately 223 cubic yards, assuming a one-foot depth of material from the existing cantilevered walkway. In addition, an estimated 2 cubic yards of soil would be exported, resulting in total export of 225 cubic yards. This analysis conservatively assumes that the volume of material import for construction of the new walkway would be roughly twice the volume of export because of the new walkway's greater width. Therefore, construction would require the transport of an estimated 675 cubic yards of material. A one-way truck trip during construction typically accommodates 16 cubic yards of material, according to the California Emissions Estimator Model

(CalEEMod), Version 2016.3.2, produced by the South Coast Air Quality Management District. An estimated 42 truck trips (675 cubic yards/16 cubic yards per truck trip) would be required to transport construction material to and from the project area. This number of truck trips, spread across the anticipated 30-week construction period, would incrementally increase vehicle traffic on designated haul routes.

The traffic circulation plan that would be developed through the project would ensure that all haul trips that are necessary throughout project construction activities would adhere to the designated City haul routes that have been identified by the City (City of Santa Cruz, 2012). Therefore, through adherence to the haul routes identified through the City within the project traffic circulation plan, the project would have a **less than significant** impact on the overall traffic circulation throughout the City throughout project implementation.

**Loss of Parking in Staging Area.** Construction staging activity also would temporarily affect vehicular circulation near the Boardwalk amusement park. During the estimated 30-week construction period, it is expected that 30 parking spaces would be occupied for staging activity at the River Lot managed by the Santa Cruz Seaside Company. The River Lot currently has approximately 890 parking spaces available for public use, based on a review of satellite imagery provided by Google Earth. The use of 30 parking spaces in this lot would reduce the number of available spaces by 3.4 percent.

The short-term reduction in parking supply at the Beach Lot at the Boardwalk amusement park would not substantially affect parking capacity near the project area. Two other parking lots providing access to the Santa Cruz Boardwalk and would remain open to public use during construction: the Liebrandt Lot north of Beach Drive and Liebrandt Street, and the Santa Cruz Beach Public Parking Lot north of Beach Drive between Cliff Street and Riverside Avenue. Furthermore, construction activities would occur during the off-season for the Santa Cruz Boardwalk. The impacted spaces are also currently used intermittently for equipment and materials storage for the Boardwalk amusement park and are not always available for public use. Therefore, construction staging would not have an adverse effect on parking, and this impact would be **less than significant**.

**c) Change Air Traffic Patterns that Results in Substantial Safety Risks – No Impact.**

The project would replace an existing walkway along the SLR Trestle Bridge with a wider path, and would not include any features that would impact air traffic patterns. There would be no change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks. Therefore, there would be **no impact**.

- d) **Increase Hazards due to Design Feature – No Impact.** The project does not include any design features that would substantially increase hazards, such as sharp curves, dangerous intersections, or incompatible uses. Rather, the project would improve safety by providing a wider path to improve separation between pedestrians and bicyclists on the bridge; replacing the turn from the east landing to the access ramp with a more gradual curve; and installing low-level safety lighting on the path along the trestle which currently remains unlit throughout the nighttime hours. Therefore, there would be **no impact**.
- e) **Inadequate Emergency Access – Less Than Significant.** The project would replace the walkway along the SLR Trestle Bridge with a wider path, and would not permanently alter any public roadways throughout the project area in any way that would impair implementation of an adopted emergency response plan or emergency evacuation plan.

**Impact Analysis.** During project construction, there may be temporary lane closures and slow-moving construction vehicles could delay or obstruct the movement of emergency vehicles within the general vicinity of the project area. As described in Section I, the project includes the implementation of a traffic control plan, which would include notifying emergency service providers of construction activities and retaining emergency access at all times surrounding the project area, as there are no roadways within the project area. Therefore, this impact would be **less than significant**. No mitigation would be required.

## 17. TRIBAL CULTURAL RESOURCES.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- *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.*

- a,b) **Adverse Change in Significance of Tribal Cultural Resources – Less than Significant with Mitigation.** AB 52 was enacted on July 1, 2015, and 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” (Public Resources Code Section 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 Section 21084.3).

Public Resources Code 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:

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 these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding tribal cultural resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to “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 within the jurisdiction of the lead agency.

The City of Santa Cruz has not received AB 52 notification requests from any tribes, and no tribal cultural resources have been identified on-site.

**Impact Analysis.** During construction, ground disturbing activities on the east end to modify the landing could result in the inadvertent discovery of previously unidentified tribal cultural resources. According to Appendix G of the State CEQA Guidelines, an impact to tribal cultural resources from the project would be significant if the project would cause a substantial adverse change in the significance of a tribal cultural resource that meets the criteria listed in Public Resources Code Section 21074. With implementation of *Mitigation Measures CR-2: Monitor Ground Disturbing Activities within the Eastern Portion of the Project Area, and Stop Work if Unexpected Cultural Resources*, this impact would be **less than significant with mitigation**.

- *Mitigation Measure CR-2: Monitor Ground Disturbing Activities on East Bank, and Stop Work in the Event of Unexpected Occurrence of Cultural Resources during Construction.* This mitigation measure is described under

5. Cultural Resources (b, c).

**18. UTILITIES AND SERVICE SYSTEMS.**

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. *Exceed wastewater treatment requirements of the Regional Water Quality Control Board;*
- b. *Result in a water demand that exceeds water supplies available from existing entitlements and resources, and new or expanded supplies or entitlements may be needed;*
- c. *Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;*
- d. *Require or result in construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;*
- e. *Result in wastewater flows exceed treatment plant capacity; or*
- f. *Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste demands.*

**a,b,e) Water and Wastewater Treatment- No Impact.** The project would replace the existing walkway along the SLR Trestle Bridge with a wider path. The project would not generate wastewater, and thus would not result in a change in existing wastewater collection lines, affect nor require water or wastewater treatment facilities, result in the construction of new water or wastewater treatment facilities, would not exceed wastewater treatment requirements of the RWQCB, and would not need any improvements by the existing Wastewater Treatment Provider, as conditions would not change. There would be **no impact**.

**c) New or Expanded Storm Water Drainage Facilities- No Impact.** The project would replace the existing walkway along the SLR Trestle Bridge with a wider path, and there would be no changes requiring new or expanded storm water drainage facilities. As described under Hydrology and Water Quality (9), the project would not result in any additional structures or new impervious surfaces that would change drainage patterns or otherwise generate additional stormwater runoff. The project includes modifying the landing at the eastern connection with the SLR Trestle Bridge trail to accommodate the wider replacement path, which would minimally increase impermeable surfaces. Therefore, the project would not result in the need for new or expanded stormwater drainage facilities, and there would be **no impact**.

d) **Water Supply – Less Than Significant.** During project construction, small amounts of water would be used for construction related activities (e.g., dust control), but once constructed, the replacement path would not require any water supply, which the construction contractor would obtain through approved sources and entitlements. No additional water use would be required to implement the project, and no new or expanded entitlements would be needed once the improved trail was constructed along the SLR Trestle Bridge.

**Impact Analysis.** The project would not require additional water supplies beyond the small amount used for construction related activities (e.g., dust control). Therefore, sufficient water would be available through existing entitlements, and no new or expanded entitlements would be needed. Therefore, the impact would be **less than significant**. No mitigation would be required.

f) **Landfill Capacity for Solid Waste – Less Than Significant.** The project area is served by the City of Santa Cruz Resource Recovery Facility, located 3 miles north of the City limits off of Highway 1, at 605 Dimeo Lane. This facility includes a sanitary landfill, recycling center and green waste drop-off facility.

**Impact Analysis.** Project construction would generate demolition waste from removal of the existing walkway along the SLR Trestle Bridge. Expected materials include metal and debris, and depending on the materials used previously for construction, these materials may include asbestos, lead or other hazardous materials. The Resource Recovery Facility has the ability to dispose of the solid waste generated by the project. Therefore, solid waste generated by project implementation would be supported by the City facility or other approved facility.

Once constructed, the project is not expected to generate solid waste beyond existing conditions. The wider replacement path may generate additional users, but any additional trash is expected to be accommodated in the receptacles provided at each landing.

Therefore, this impact would be **less than significant**. No mitigation would be required.

g) **Solid Waste Regulations – Less Than Significant with Mitigation.** As described above, project construction would generate demolition waste that may include asbestos, lead or other hazardous materials.

**Impact Analysis.** As described in Section I, Background, the project would comply with the City's *Construction Work Best Management Practices, Chapter 4 of the Best Management Practices Manual for the City's Storm Water Management Program* (revised June 2014). This includes proper disposal of demolition waste (including asbestos and other debris containing

hazardous materials), such as keeping demolition waste covered and ensuring adequate space within the trucks as loads of the demolished materials are transported to Santa Cruz Resource Recovery Facility or other approved facility.

Additionally, through the implementation of *Mitigation Measure HAZ-1 (Conduct Preconstruction Survey for Lead-Based and Asbestos Containing Materials on the SLR Trestle Bridge, and Implement Protective Measures)*, further measures would be implemented if it was determined that lead, asbestos or other hazardous materials containing solid waste are generated by project construction activities. These materials would be handled, transported and disposed at an approved facility by the appropriate specialists to ensure the safety of workers, and those exposed to the materials.

Therefore, with implementation of the City's *Construction Work Best Management Practices, Chapter 4 of the Best Management Practices Manual for the City's Storm Water Management Program, and Mitigation Measure HAZ-1 (Conduct Preconstruction Survey for Lead-Based and Asbestos Containing Materials on the SLR Trestle Bridge, and Implement Protective Measures)*, the project would be in compliance with federal, state and local statutes and regulations related to solid waste. This impact would be **less than significant with mitigation**.

## 19. MANDATORY FINDINGS OF SIGNIFICANCE.

*In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:*

- a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory;*
- b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects.); or*
- c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.*

a) **Potential to Degrade the Quality of the Environment and Adversely Affect Biological Resources – Less Than Significant with Mitigation.** The discussions presented in the Biological Resources and Cultural Resources discussions above address the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

The following mitigation has been included to reduce potential effects on these resources to a level below significance.

- *Mitigation Measure BIO-1: Implement Protective Measures for Migratory Birds during Construction*
- *Mitigation Measure BIO-2: Conduct Preconstruction Surveys for Bats and, if found, Implement Protection Measures*
- *Mitigation Measure CR-1: Prior to Project Implementation, Prepare an SOI Standards for Rehabilitation Memorandum to Ensure Project Compliance with SOI Standards*
- *Mitigation Measure CR-2: Monitor Ground Disturbing Activities on East Bank, and Stop Work in the Event of Unexpected Occurrence of Cultural Resources during Construction*

As a result of this evaluation, there is no substantial evidence that, after mitigation, significant effects associated with this project would result. Therefore, the project impacts would be **less than significant with mitigation.**

b) **Cumulatively Impacts – Less Than Significant.** In addition to project specific impacts, this evaluation considered the potential incremental effects of the project that could contribute to a significant cumulative impact. The significant cumulative impacts to which the project would contribute are air quality, greenhouse gas/climate change, and traffic.

Both air quality and greenhouse gas analyses presented in the Air Quality and Greenhouse Gas discussions above are cumulative in nature in that the analysis of individual impacts is undertaken in the context of the air quality basin and global climate change arena, respectively. The short-term construction emissions would be minimized through best management practices and measures described in the Project Description, and the project would not exceed MBARD emissions thresholds for criteria pollutants. Therefore, the project would not result in a considerable contribution to significant cumulative impacts for air quality and greenhouse gas.

As presented in the Transportation/Traffic discussion above, none of the roads

providing access to the project area are expected to be significantly affected by project implementation. Short term impacts that would occur during construction would be minimized through the traffic control plan, as described in the Project Description.

Therefore, the project would not result in a considerable contribution to significant cumulative impacts, and the impact would be **less than significant**.

- c) Adverse Effects on Human Beings – Less Than Significant with Mitigation.** The potential for adverse direct or indirect effects to human beings was considered in the evaluation of environmental impacts above. Based on this evaluation, project construction activities could expose hazardous materials associated with demolition and removal of the existing walkway, as described in the Hazards and Hazardous Materials discussion above. Through implementation of the Water Quality and Air Quality Protection Measures identified in the project description (Section I, Background) and mitigation identified in the Hazards and Hazardous Materials section, the project would not cause substantial adverse effects on human beings, and the impact would be **less than significant with mitigation**. Further, the project would replace the narrow walkway that is currently located along the SLR Trestle Bridge with a wider trail that includes safety lighting and safer more gradual curve on the eastern connection which would be beneficial to human beings.
- *Mitigation Measure HAZ-1: Conduct Preconstruction Surveys for Lead-Based and Asbestos Containing Materials on the SLR Trestle Bridge, and Implement Protective Measures*

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# Appendix A

## Biotic Assessment of San Lorenzo River Parkway Phase III Project

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April 7, 2018

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**Subject: Biotic Assessment of San Lorenzo River Parkway Phase III Project, Santa Cruz, California.**

Dear Mr. Hendsbee,

The City of Santa Cruz proposes to replace the existing pathway attached to the San Lorenzo Railroad (SLR) Trestle Bridge across the San Lorenzo River. This letter report summarizes the results of EcoSystems West Consulting Group's (EcoSystems West) survey of biological resources in the vicinity of the Project Area. The objectives of the assessment were to:

- Characterize the habitat types in the proposed Project Area and identify common wildlife species that utilize those habitat types;
- Conduct a determination of potential jurisdictional Wetlands and Waters of the U.S.;
- Identify sensitive plants, habitats, and wildlife species occurring, or potentially occurring, in the vicinity of the Project Area; and
- Determine potential impacts to sensitive biological resources.

## **PROJECT DESCRIPTION**

The San Lorenzo River Parkway Phase III Project (project) includes the replacement of the existing 4-foot-wide wooden walkway, located on the north side of the San Lorenzo Railroad Trestle Bridge (SLR Trestle Bridge), with a 10-foot-wide concrete multi-use path (also called trail). Refer to **Figures 1 to 8**, at the end of this report for the project location and project plans.

Like the existing structure, the replacement structure would be approximately 330-feet long and connect to the existing concrete access ramps at each end of the bridge. The existing ramp on the western end was constructed approximately two years ago, and there would be no modifications. The existing ramp on the eastern end was constructed approximately 28 years ago and would be modified to improve the connection and flow of pedestrian and bicycle traffic. The total area of disturbance for the project would be approximately 250-square feet (sf) on the ground to modify the east connection, and approximately 3,300-sf elevated above the San Lorenzo River to remove the old wooden walkway and install the new concrete path.

### Project Background

The purpose of the project is to improve access across the San Lorenzo River with a multi-purpose path for pedestrians, bicyclists, and other users. The current 4-foot-wide path is narrow and difficult for users to pass one another. The project is also part of the City's larger San Lorenzo River Parkway Project, improving access and natural resources along the river, and part of the Santa Cruz County Regional Transportation Commission's Coastal Rail-Trail project, representing a portion of Segment 8 identified in the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Final Master Plan.

In May 2016, the SCCRTC conducted an engineering study to determine if the replacement path could be attached to the SLR Trestle Bridge similar to the current walkway or if it required a separate structure. The study, RTC-MP 19.43 SLR Bridge Walkway Widening Feasibility Report (Jacobs, 2016), determined that the SLR Trestle Bridge would support the wider replacement path with no super structure modifications. Furthermore, the existing water conveyance pipeline that spans the trestle adjacent to the existing walkway could remain in place without disruption to water service during project construction.

The proposed material for the 330-foot-long replacement path may be concrete for longevity and low maintenance. Alternative materials that may be considered for the trail include FRP decking, steel plates or treated wood. However, for the purposes of the environmental analyses, it was assumed that concrete would be the selected construction material, as the impacts from concrete would also encompass the impacts that would result from the use of either steel plates or treated wood.

To connect to the existing ramp at the east end, the project would infringe on the unpaved area adjacent to two mature eucalyptus trees (**Figures 3 and 5**). The trees would be avoided to the greatest extent possible. The project would likely require trimming branches and ground disturbance around the root system. It may be determined that tree removal is necessary for project implementation or if project activities damage tree roots and compromise the overall health of the trees.

The retaining wall, located at the east end between the SLR Trestle Bridge and the East Cliff overcrossing, would remain in place. The reconfiguration of the platform, where the replacement path would connect to the existing ramp, would be designed such that it would not preclude construction of a future trail along the railroad corridor continuing eastward.

### Project Staging and Construction

The project staging area is planned for the existing parking lot located at the west end of the project area at 300 Riverside Avenue in the City of Santa Cruz (**Figure 2**). Use of the parking lot would be in coordination with the Seaside Company. The parking lot is currently used for a combination of public parking and materials storage for the maintenance of the Boardwalk amusement park. Throughout project implementation, there would be no ground disturbing activities undertaken at the staging area.

The general approach for construction is to remove the existing walkway and either modify or remove the existing cantilever structure that supports the walkway. The replacement path would be supported by a similar cantilever structure connected to the SLR trestle. There would be no new pilings in the river and no modifications to the existing pilings or abutments supporting the SLR Trestle Bridge. The east end may be a few feet higher than the existing pathway and include a curved bend to tie into to the existing ramp

## Biotic Assessment of San Lorenzo River Parkway Phase III Project

up to East Cliff Drive. A level landing pad will be provided at the transition supported with a drilled pier set back from the bluff edge.

The replacement path would be generally in the same location as the existing walkway, but would extend approximately 6 feet further northwest over the river. The elevation of the replacement path may be 1 to 2 feet higher or lower to provide a level gradient and facilitate connection with the existing ramps.

It is assumed that construction activities would occur over the course of 30 weeks, beginning in September, 2018, and ending in April, 2019. **Table 1** outlines the construction duration for each portion of the project.

**Table 1. Approximate Construction Duration for Project Implementation**

Construction Action	Approximate Duration
Mobilization of construction materials and equipment to the site and site preparation	2 weeks
Demolition of existing walkway	8 weeks
Superstructure - Installation of cantilever to support replacement path	8 weeks
Installation of concrete deck and connections to existing ramps	6 weeks
Railing and striping	6 weeks
<b>Total</b>	<b>30 weeks</b>

Anticipated construction equipment for use throughout project implementation includes metal cutting/torching to remove existing steel material, welding machines to install new steel, small crane to install new steel and other components, as needed. No pile driving equipment would be required.

Construction materials would be delivered along the existing railroad alignment that runs parallel to the proposed trail on the SLR Trestle Bridge. Similarly, waste and debris from demolishing the existing wooden walkway would be transported along the railroad alignment and hauled to an appropriate disposal facility. A “bridge diaper” would be employed to catch any construction debris or residues produced by construction activities and equipment and prevent such debris from falling into the San Lorenzo River.

### BIOLOGICAL ASSESSMENT

EcoSystems West biologists reviewed literature, resource databases, and other relevant local documents to identify sensitive plants, wildlife species, and habitats with potential to occur in the vicinity of the Project Area. An official species list was requested from USFWS on 28 March 2018. The preliminary list is included in **Attachment A**. From these sources EcoSystems West biologist developed a target list of species with potential to occur. We eliminated from consideration those species not likely to occur, based on available habitat, known occurrence locations, distribution information, dispersal distances (for wildlife) and knowledge of the local biological resources.

EcoSystems West biologists conducted surveys of the Project Area on 14 and 26 March 2018 and evaluated the Project Area, characterized all habitat types, and assessed the availability of suitable habitat for sensitive plants and wildlife species.

The project area and immediate surroundings consist of five habitat types: developed, ruderal, eucalyptus grove, mudstone embankment, beach/sandbar, and aquatic. On the eastern side of the railroad bridge, there is no clear transition between developed, ruderal, eucalyptus grove, and mudstone embankment habitat types, as described below.

### Developed/Landscaped

The San Lorenzo Railroad Trestle Bridge and existing pathway, the concrete abutments, the existing western and eastern ramps, adjacent roadways, walkways, railway alignments, and landscaped areas are considered developed/landscaped habitats. During our 26 March 2018 survey we observed non-native rock pigeon (*Columba livia*) utilizing the bridge and walkway for nesting activities. The bridge and walkway also provide potential roosting habitat for gull (*Larus* sp.) and cormorant (*Phalacrocorax* sp.) species. We observed a song sparrow and scrub jay in the landscaped areas below the residences to the southwest of the railway bridge. The bridge provides only very marginal habitat for roosting bat species for the following reasons: the openings and crevices on the bridge do not provide suitable maternity roost habitat, the bridge is constructed of metal which provides minimal thermal buffering from cold or heat, the bridge is exposed to wind and weather off the San Lorenzo River and Monterey Bay.

### Ruderal

Ruderal habitats are present next to the developed portions of the project area. Ruderal habitats are those that have been influenced by repeated or ongoing human disturbance. On the western side of the bridge, the embankments between the Santa Cruz Riverwalk and beach/sandbar are considered ruderal habitats. During our site visits, we observed non-native grasses such as slender oat (*Avena barbata*), annual blue grass (*Poa annua*), Italian rye grass (*Festuca perennis*), foxtail barley (*Hordeum murinum*), and other weedy plant species such as black mustard (*Brassica nigra*), cutleaf geranium (*Geranium dissectum*), English ivy (*Hedera helix*), Bermuda buttercup (*Oxalis pes-caprae*), and ice plant (*Carpobrotus edulis*) in the embankments. We observed California ground squirrel [*Otospermophilus* (= *Spermophilus beecheyi*)] in the ruderal habitat on the eastern side of the railroad bridge.

On the eastern side of the bridge, the areas immediately adjacent to the railway alignment, ramp and pathways are also considered ruderal. Abundant non-native grasses in these areas include ripgut brome (*Bromus diandrus*) and upright veldt grass (*Ehrharta erecta*). Other invasive species such as jubata grass (*Cortaderia jubata*), Bermuda buttercup, French broom (*Genista monspessulana*), and milk thistle (*Silybum marianum*) are prevalent. Escaped ornamentals such as pincushion flower (*Scabiosa atropurpurea*) and nasturtium (*Tropaeolum polyphyllum*) were also observed.

There is no clear transition between ruderal and landscaped areas on the eastern side of the bridge. We observed several native species on the eastern side of the bridge that were likely planted as landscaping because of their placement and alignment adjacent to the eastern ramp: white sage (*Salvia apiana*), ornamental buckwheat (*Eriogonum* sp.), sticky monkeyflower (*Mimulus aurantiacus*) and California fuschia (*Epilobium canum*). We also observed poison oak (*Toxicodendron diversilobum*) growing on the steep embankment to the south of the railroad bridge amongst landscaping plants associated with the residence located immediately above the embankment southeast of the Project Area.

### Eucalyptus Grove

On the eastern side of the railroad trestle, a mature grove of blue gum eucalyptus (*Eucalyptus globulus*) trees extends as a relatively narrow strip along both sides of the eastern ramp and along the steep

## Biotic Assessment of San Lorenzo River Parkway Phase III Project

embankment. The grove supports a semi-open canopy over the developed, landscaped, and ruderal areas west of the bridge. Project activities would require branch trimming and possible removal of two mature eucalyptus trees located immediately adjacent to the existing and proposed eastern ramps. These trees are over 14 inches in diameter (measured at 4.5 feet from the ground) and a Heritage Tree Permit from the City of Santa Cruz Parks and Recreation Department will be required for tree removal.

We observed several individual monarch butterflies (*Danaus plexippus*) in this area during our field surveys. Blue gum tree flowers may provide nectar for monarch butterflies; however, the grove does not provide autumnal or winter roosting habitat for monarchs. The grove consists of a relatively narrow strip of trees which is directly exposed to prevailing wind and precipitation off the San Lorenzo River and Monterey Bay. In general, monarch autumnal and wintering habitat are created by trees that provide 1) a diversity of suitable roost limb structure, with 2) seasonally appropriate sun/shade exposure, and 3) wind protection from windbreak trees, topographic features, or other structures in most if not all directions. Based on these characteristics, the eucalyptus trees within and adjacent to the Project Area provide poor habitat for roosting monarchs. Roosting monarch butterflies, particularly in a state of nocturnal torpor, are sensitive to even slight changes in wind, temperature, light penetration, and noise vibrations. As a result, this grove does not have potential to serve as autumnal or overwintering roost sites for monarchs.

The eucalyptus trees provide habitat for nesting and roosting avian species. During our surveys, we observed the following species utilizing the eucalyptus trees: European (non-native) starling (*Sturnus vulgaris*), double-crested cormorant (*Phalacrocorax auritus*), and Anna's hummingbird (*Calypte anna*).

### Mudstone Embankment

In the vicinity of the project area, the east side of the San Lorenzo River is bounded by a steep mudstone embankment. Much of the embankment is vertical or almost vertical; but in some areas the embankment transitions to less steep areas that have accumulated some shallow mineral soils and a leaf litter of blue gum eucalyptus. There is no clear transition between the embankment, blue gum grove, ruderal and developed habitats on the east side of the bridge. The understory consists entirely of non-native weedy and invasive species.

We observed a black phoebe (*Sayornis nigricans*) flying, feeding and perching on the concrete abutment that ties the bridge into the embankment.

### Beach/Sandbar

In the immediate vicinity of the project area, on the west side of the railroad bridge, the San Lorenzo River is bounded by a tidal beach and sand bar. The beach/sandbar is considered a sensitive habitat. Rip rap, granite (non-native rock), and concrete support the embankments to the riverwalk west of the beach. Further to the south, a concrete seawall protects the Santa Cruz Beach Boardwalk from high tides and high storm flows. The beach and sandbar provide habitat for numerous shorebirds. We observed the following avian species foraging along the beach and sandbar: snowy egret (*Egretta thula*), great egret (*Ardea alba*), western gull (*Larus occidentalis*), American coot (*Fulica Americana*), greater yellowlegs (*Tringa melanoleuca*), and mallard (*Anas platyrhynchos*). One female mallard had a brood of young foraging with her. No impacts to this habitat are anticipated.

### Aquatic

## Biotic Assessment of San Lorenzo River Parkway Phase III Project

The railroad bridge spans the tidal estuary of the San Lorenzo River which enters the Monterey Bay just south of the project area. The aquatic habitat in the project area is classified as “Riverine, Tidal Unconsolidated Bottom, Sand” (R1UB2) by the National Wetlands Inventory. The Project Area does not contain adjacent non-tidal wetlands or tributaries. The aquatic habitat is classified as “other waters of the U.S. by the Army Corps of Engineers (ACOE) because the tidal waters in the vicinity of the project lack emergent vegetation.

The San Lorenzo River provides habitat for a range of wildlife species, including fish, birds, and marine mammals, including protected fish and marine mammal species.

The San Lorenzo River is subject to Section 404 of the Clean Water Act (CWA) and Rivers and Harbors Act Sections 9 and 10 jurisdiction by the Army Corps of Engineers (Corps) up to the ordinary high water mark (OHWM) or high tide line (HTL), whichever is higher.

The OHWM is defined as “that line on the shore established by fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas ((33 CFR § 328.3). The HTL is defined as the intersection with land and the water’s surface at the maximum height reached by the rising tide.

The OHWM or HTL is clearly identifiable along the eastern embankment and on the bridge abutments demarcated by a water stained line. This line was located at approximately 5.5 feet in elevation, based on a benchmark on one of the bridge abutments (NAVD ’88). No work will be performed below the OHWM or HTL.

CDFW regulates all work within lakes and streams below the break in bank through Section 1602 of the Fish and Game Code. Work will be performed below the “break in bank” for this project and as a result, CDFW may require a Lake and Streambed Alteration Agreement (LSAA) that may include additional measures to protect water quality and/or other biological resources.

We observed the following avian species utilizing the aquatic habitat of the San Lorenzo River: western gull, American coot, mallard, pie-billed grebe (*Podilymbus podiceps*), common golden-eye (*Bucephala clangula*), ruddy duck (*Oxyura jamaicensis*), and bufflehead (*Bucephala albeola*). One female mallard had a brood of young foraging with her.

No impacts to aquatic habitat are anticipated.

### Fish

The San Lorenzo River is designated critical habitat for Central California Coast steelhead (*Oncorhynchus mykiss*) and coho (*Oncorhynchus kisutch*), listed as threatened and endangered, respectively, under the federal Endangered Species Act, and these species are known to occur within the river. The tidewater goby (*Eucyclogobius newberryi*) is known to occur incidentally in the San Lorenzo River; the river is not designated as critical habitat for this species.

No in-water work will be conducted during this project. The estuarine waters of the San Lorenzo River will be protected by a “bridge diaper,” which will be employed to catch any construction debris or residues produced by construction activities and equipment and prevent such debris from falling into the river. No activities that produce high intensity sound levels (such as pile driving) will be employed for this project.

## **Biotic Assessment of San Lorenzo River Parkway Phase III Project**

Construction-related noises levels will be low to moderate and are comparable to existing ambient noise levels associated with the Santa Cruz Boardwalk and vehicle traffic. We do not anticipate that technical assistance and/or formal consultation with NOAA NMFS and/or USFWS will be required for this project.

### **Nesting Bird Species**

Avian species may utilize the eucalyptus grove for nesting. Native nesting birds, their nests, and eggs are 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 Code of Federal Regulations Section 13). Rock pigeons and European starlings are not protected by the MBTA. The nesting bird season is defined as February 1 – September 15 by CDFW (Oey, M., Pers. Comm., 2017).

### **Bat Species**

The bridge provides only marginal habitat for roosting bat species for the following reasons: the openings and crevices on the bridge do not provide suitable maternity roost habitat, the bridge is constructed of metal with provides minimal thermal buffering from cold or heat, the bridge is exposed to wind and weather off the San Lorenzo River and Monterey Bay. Bats may utilize the bridge as a summer night roost.

### **Marine Mammal Species**

Southern sea otter (*Enhydra lutris nereis*) occasionally forages in the estuarine waters of the San Lorenzo River. Eastern Pacific harbor seal (*Phoca vitulina richardsi*) and California sea lion (*Zalophus californianus*) rarely enter the estuarine waters of the San Lorenzo River. Under high tide conditions these species may follow fish runs into the river.

The southern sea otter is federally-listed as Threatened, State-listed as CDFW “Fully Protected” and all three marine mammal species are protected under the MMPA.

No in-water work will be conducted during this project. As previously stated, the estuarine waters of the San Lorenzo River will be protected by a “bridge diaper,” which will employed to catch any construction debris or residues produced by construction activities and equipment and prevent such debris from falling into the river. No activities that produce high intensity sound levels (such as pile driving) will be employed for this project. Construction-related noises levels will be low to moderate and are comparable to existing ambient noise levels associated with the Santa Cruz Boardwalk and vehicle traffic. We do not anticipate that technical assistance and/or formal consultation with NOAA NMFS and/or USFWS will be required for this project.

## Biotic Assessment of San Lorenzo River Parkway Phase III Project

### CONCLUSION

No sensitive plant or terrestrial wildlife species occur within the project area. While two sensitive habitat types (beach/sand bar and aquatic) are located immediately adjacent to the project area, with best management practices (BMPs) in place, no temporary or permanent impacts to these habitats are anticipated.

The project's construction specifications include implementation of BMPs to avoid and minimize environmental impacts during construction. These BMPs are consistent with those required by the regulatory agencies for previously approved similar construction activities. No direct, indirect, or cumulative significant impacts to biological resources are anticipated as a result of this project.

CDFW regulates all work within lakes and streams below the break in bank through Section 1602 of the Fish and Game Code. Work will be performed below the break in bank for this project and CDFW may require a Lake and Streambed Alteration Agreement that may include additional measures to protect water quality and/or other biological resources.

The California Coastal Commission requires a Coastal Development Permit for all development projects in the Coastal Zone to ensure compliance with California Coastal Act the City of Santa Cruz Local Coastal Program. The proposed project is located in the Coastal Zone.

The City of Santa Cruz Parks and Recreation Department requires a Heritage Tree Permit for the pruning of greater than 25% of a tree or tree removal of all heritage trees (trees with a diameter of 14 inches or greater measured at 4.5 feet from the ground). If project activities necessitate removal or significant pruning of the two eucalyptus trees immediately adjacent to the eastern ramp, this permit would be required.

To further avoid impacts to biological resources, implement the following additional BMPs:

- Incorporate a "bridge diaper" into project plans, which will catch any construction debris or residues produced by construction activities and equipment and prevent such debris from falling into the river.
- If project activities are initiated outside of the breeding bird season [defined as February 1 – September 15 by CDFW (Oey, M., Pers. Comm., 2017)], no BMPs would be required. If project activities are initiated during the breeding bird season or a lull in construction activities of greater than 2 weeks occurs during the breeding bird season, conduct a breeding bird survey. If native breeding birds are utilizing the eucalyptus tree canopy, establish buffers appropriate to the observed nesting species based on standard protocols such as the Nesting Bird Management Plan (PG&E 2015) to protect nesting activities from disturbance, or resume activities after young have fledged.
- Prior to initiating construction activities, conduct a preconstruction bat survey to determine if bat species are utilizing the bridge for roosting. If bat species are present, install exclusion devices prior to initiating demolition activities, following the recommendations of H.T. Harvey and Associates et al. (2004) or other standard bat exclusion protocols.

Please do not hesitate to contact EcoSystems West with any questions or comments.

Sincerely,

Erin McGinty

## Biotic Assessment of San Lorenzo River Parkway Phase III Project

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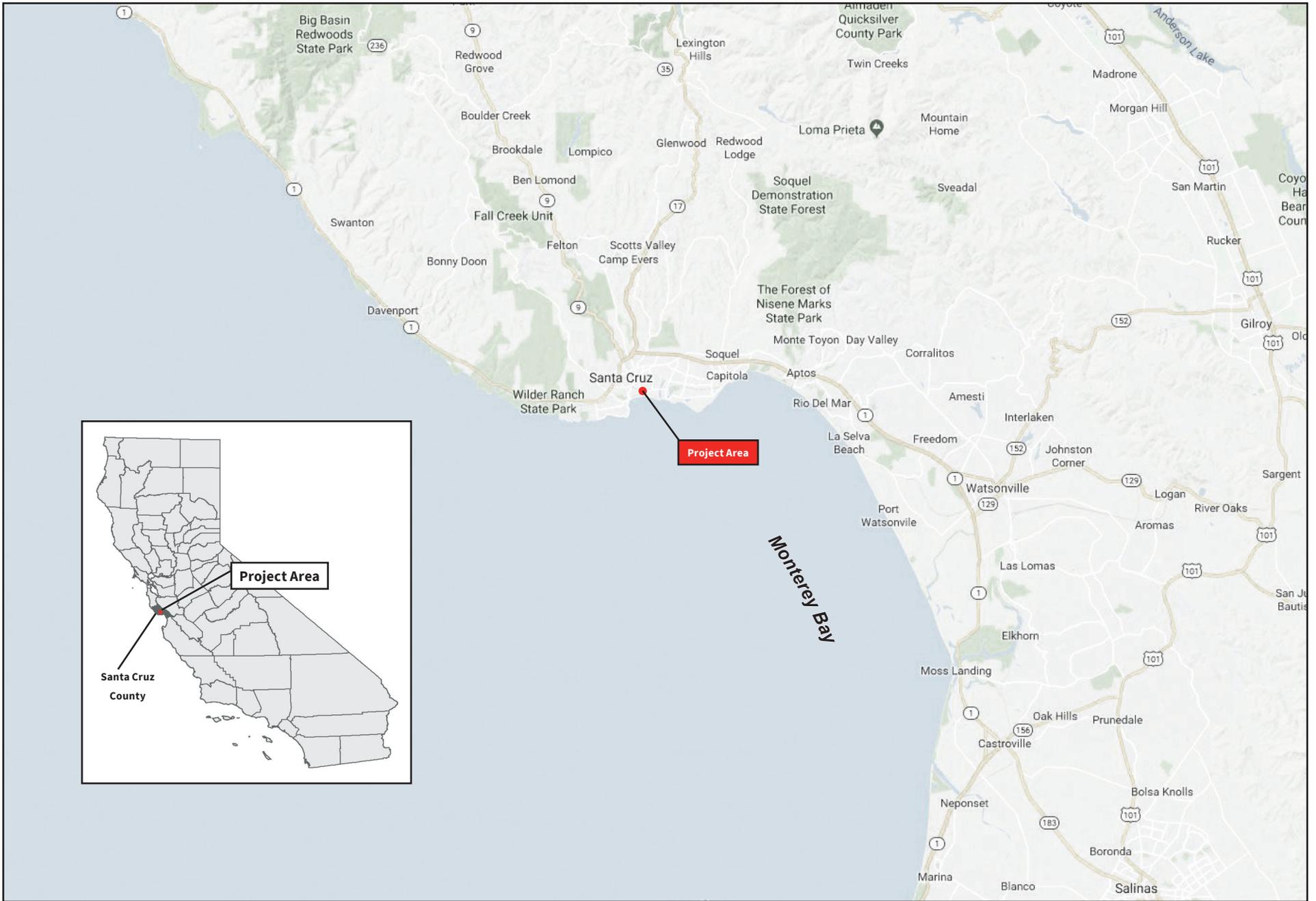
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Source: Google Maps, 2018

**Figure 1**  
Regional Location  
San Lorenzo River Parkway Phase III



Source: Google Maps, 2018

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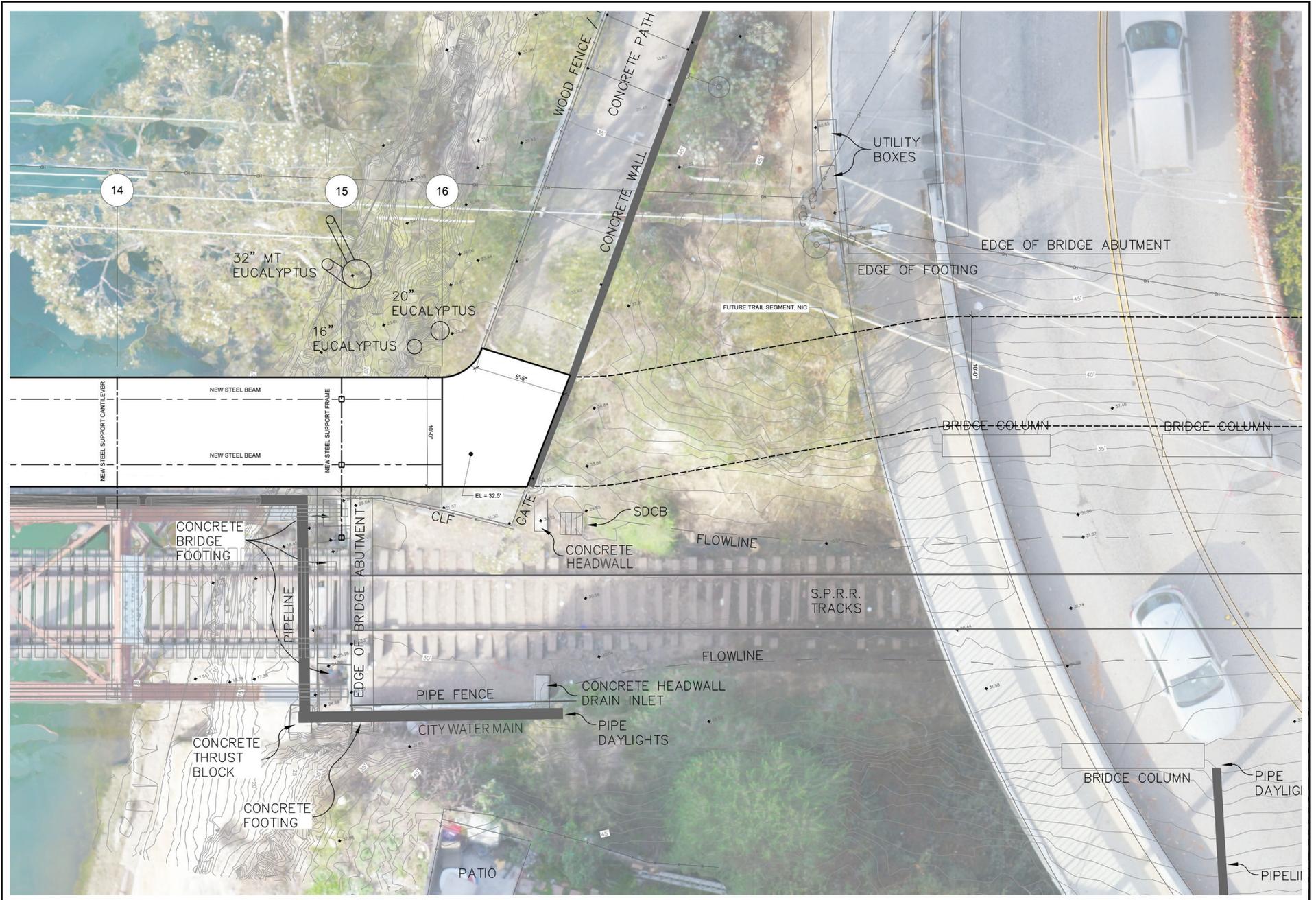


AREA OF POTENTIAL EFFECT

Source: Mesiti-Miller Engineering February 13, 2018



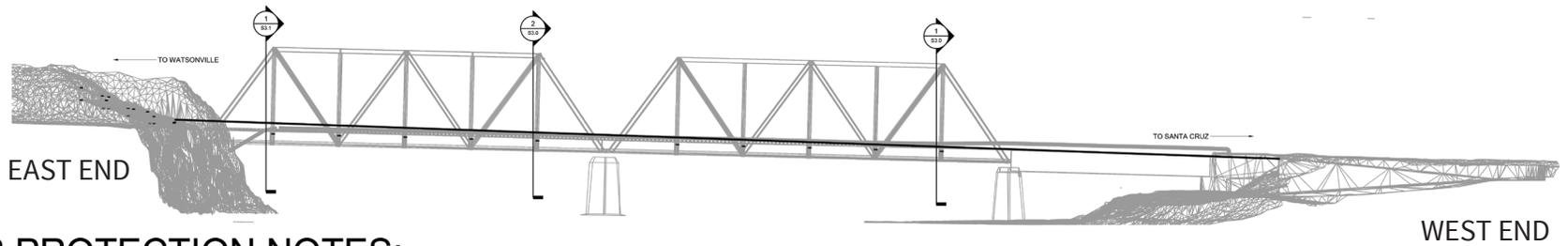
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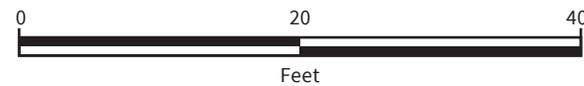
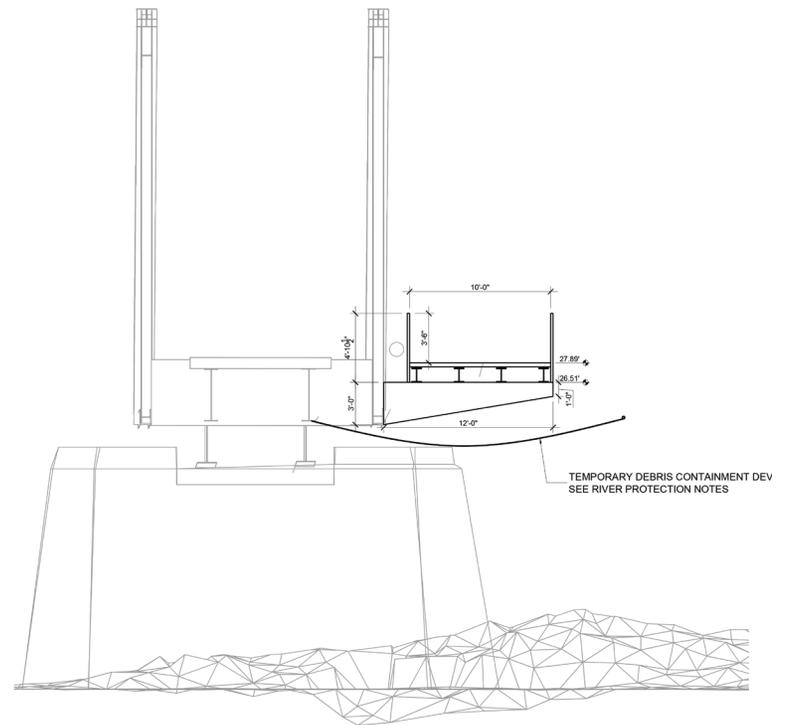
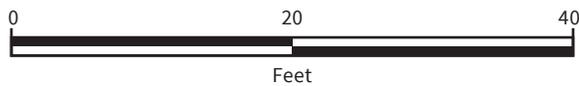
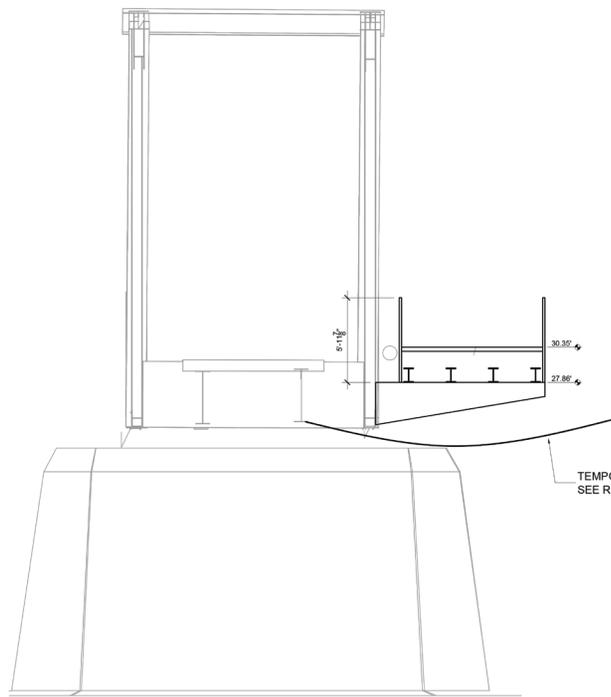
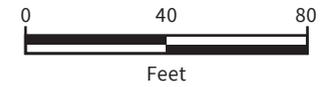
**Figure 5**  
East End Connection and Access Ramp  
San Lorenzo River Parkway Phase III



## RIVER PROTECTION NOTES:

### TEMPORARY RIVER PROTECTION:

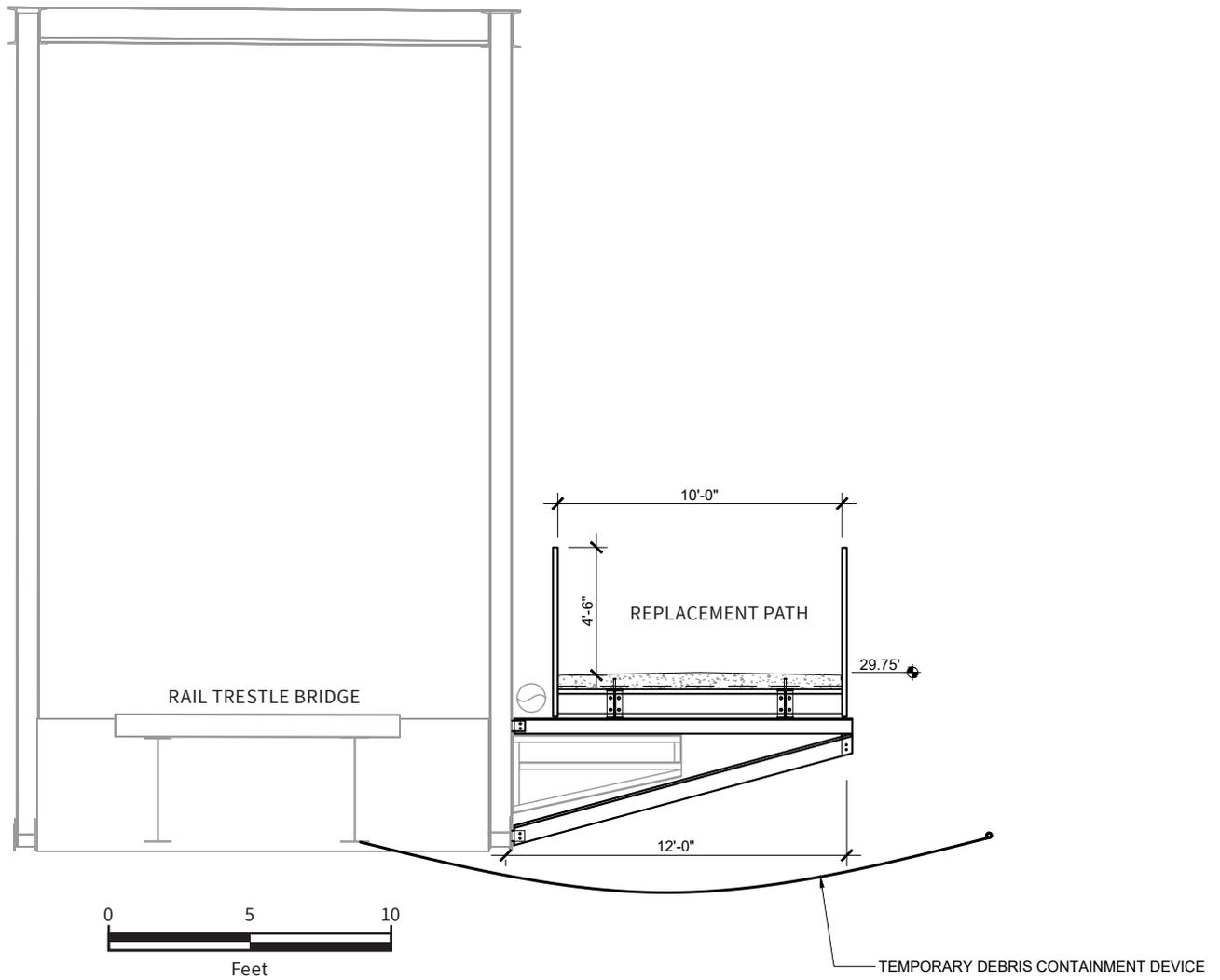
1. PRIOR TO CONSTRUCTION, INSTALL TEMPORARY CONTAINMENT DEVICE TO PREVENT ANY AND ALL DEBRIS FROM ENTERING RIVER. CONTAINMENT SHALL NOT BE PLACED IN THE WETTED CHANNEL BUT SHALL SPAN ACROSS THE WETTED CHANNEL. ALL DEBRIS SHALL BE REMOVED FROM THE CONTAINMENT DEVICE.



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Source: Mesiti-Miller Engineering February 13, 2018

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Source: Mesiti-Miller Engineering February 13, 2018



Harris & Associates

**Figure 7**  
Replacement Path Cross Section with Debris Containment Device  
San Lorenzo River Parkway Phase III

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Source: Google Maps, 2018

# Attachment A

U.S. Fish and Wildlife Service Species List

March 28, 2018

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Santa Cruz County, California



## Local office

Ventura Fish And Wildlife Office

☎ (805) 644-1766

📅 (805) 644-3958

2493 Portola Road, Suite B  
Ventura, CA 93003-7726

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please [contact NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Southern Sea Otter *Enhydra lutris nereis*  
 No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/8560>

Threatened  
 Marine mammal

## Birds

NAME	STATUS
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Least Bell's Vireo <i>Vireo bellii pusillus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/5945">https://ecos.fws.gov/ecp/species/5945</a>	Endangered
Marbled Murrelet <i>Brachyramphus marmoratus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/4467">https://ecos.fws.gov/ecp/species/4467</a>	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6749">https://ecos.fws.gov/ecp/species/6749</a>	Endangered
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a>	Threatened

## Reptiles

NAME	STATUS
San Francisco Garter Snake <i>Thamnophis sirtalis tetrataenia</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5956">https://ecos.fws.gov/ecp/species/5956</a>	Endangered

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

California Tiger Salamander *Ambystoma californiense* Threatened  
 There is **final** critical habitat for this species. Your location is outside the critical habitat.  
<https://ecos.fws.gov/ecp/species/2076>

## Fishes

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a>	Endangered

## Insects

NAME	STATUS
Ohlone Tiger Beetle <i>Cicindela ohlone</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8271">https://ecos.fws.gov/ecp/species/8271</a>	Endangered
Zayante Band-winged Grasshopper <i>Trimerotropis infantilis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/1036">https://ecos.fws.gov/ecp/species/1036</a>	Endangered

## Flowering Plants

NAME	STATUS
Marsh Sandwort <i>Arenaria paludicola</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2229">https://ecos.fws.gov/ecp/species/2229</a>	Endangered
Santa Cruz Tarplant <i>Holocarpha macradenia</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6832">https://ecos.fws.gov/ecp/species/6832</a>	Threatened
Scotts Valley Polygonum <i>Polygonum hickmanii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/3222">https://ecos.fws.gov/ecp/species/3222</a>	Endangered
Scotts Valley Spineflower <i>Chorizanthe robusta</i> var. <i>hartwegii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/7108">https://ecos.fws.gov/ecp/species/7108</a>	Endangered

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your

## project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

**Allen's Hummingbird** *Selasphorus sasin*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9637>

Breeds Feb 1 to Jul 15

**Ashy Storm-petrel** *Oceanodroma homochroa*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/7237>

Breeds May 1 to Jan 15

**Bald Eagle** *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Jan 1 to Aug 31

**Black Oystercatcher** *Haematopus bachmani*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9591>

Breeds Apr 15 to Oct 31

**Black Skimmer** *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

**Black Swift** *Cypseloides niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8878>

Breeds Jun 15 to Sep 10

<p><b>Black Turnstone</b> <i>Arenaria melanocephala</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p><b>Black-chinned Sparrow</b> <i>Spizella atrogularis</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9447">https://ecos.fws.gov/ecp/species/9447</a></p>	Breeds Apr 15 to Jul 31
<p><b>Burrowing Owl</b> <i>Athene cunicularia</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a></p>	Breeds Mar 15 to Aug 31
<p><b>California Thrasher</b> <i>Toxostoma redivivum</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Jul 31
<p><b>Clark's Grebe</b> <i>Aechmophorus clarkii</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Dec 31
<p><b>Costa's Hummingbird</b> <i>Calypte costae</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  <a href="https://ecos.fws.gov/ecp/species/9470">https://ecos.fws.gov/ecp/species/9470</a></p>	Breeds Jan 15 to Jun 10
<p><b>Golden Eagle</b> <i>Aquila chrysaetos</i>  This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.  <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a></p>	Breeds Jan 1 to Aug 31
<p><b>Gull-billed Tern</b> <i>Gelochelidon nilotica</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9501">https://ecos.fws.gov/ecp/species/9501</a></p>	Breeds May 1 to Jul 31
<p><b>Lawrence's Goldfinch</b> <i>Carduelis lawrencei</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9464">https://ecos.fws.gov/ecp/species/9464</a></p>	Breeds Mar 20 to Sep 20

- Lewis's Woodpecker *Melanerpes lewis* Breeds Apr 20 to Sep 30  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/9408>
- Long-billed Curlew *Numenius americanus* Breeds elsewhere  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/5511>
- Marbled Godwit *Limosa fedoa* Breeds elsewhere  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/9481>
- Mountain Plover *Charadrius montanus* Breeds elsewhere  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/3638>
- Nuttall's Woodpecker *Picoides nuttallii* Breeds Apr 1 to Jul 20  
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  
<https://ecos.fws.gov/ecp/species/9410>
- Oak Titmouse *Baeolophus inornatus* Breeds Mar 15 to Jul 15  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/9656>
- Rufous Hummingbird *selasphorus rufus* Breeds elsewhere  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/8002>
- Short-billed Dowitcher *Limnodromus griseus* Breeds elsewhere  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/9480>
- Tricolored Blackbird *Agelaius tricolor* Breeds Mar 15 to Aug 10  
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/3910>

**Whimbrel** *Numenius phaeopus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

**Willet** *Tringa semipalmata*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Wrentit** *Chamaea fasciata*

Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Yellow-billed Magpie** *Pica nuttalli*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9726>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

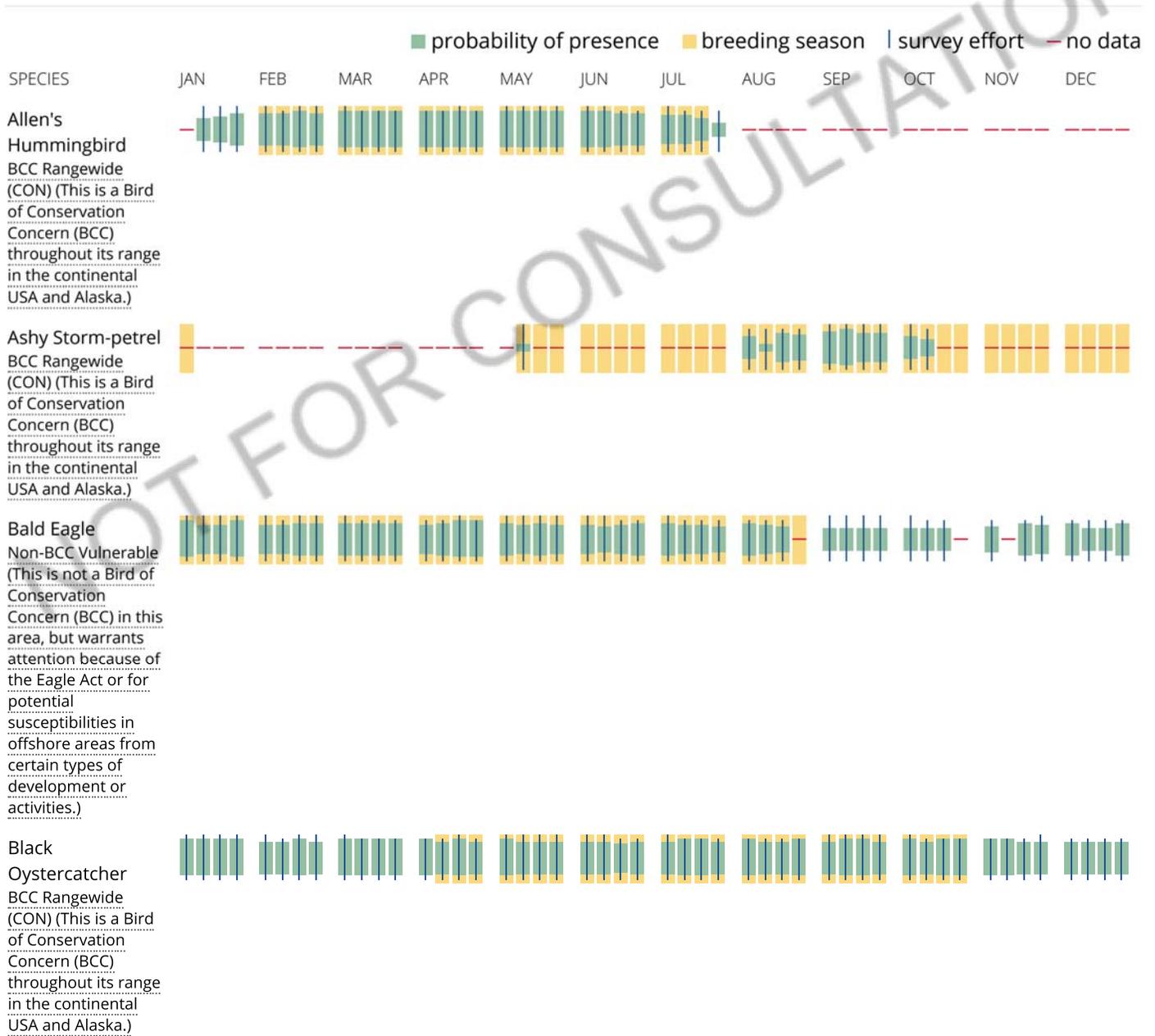
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

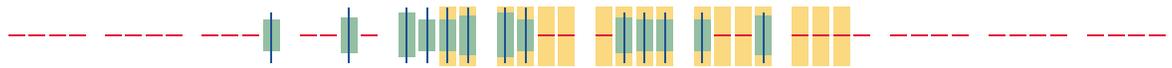
A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

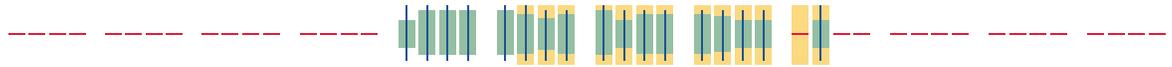
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



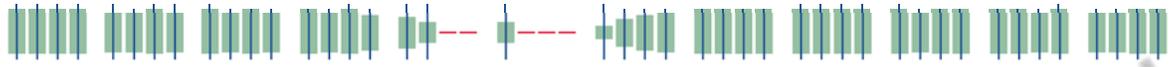
Black Skimmer  
 BCC Rangewide  
 (CON) (This is a Bird  
 of Conservation  
 Concern (BCC)  
 throughout its range  
 in the continental  
 USA and Alaska.)



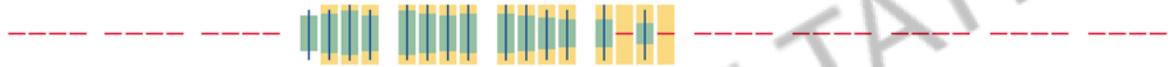
Black Swift  
 BCC Rangewide  
 (CON) (This is a Bird  
 of Conservation  
 Concern (BCC)  
 throughout its range  
 in the continental  
 USA and Alaska.)



Black Turnstone  
 BCC Rangewide  
 (CON) (This is a Bird  
 of Conservation  
 Concern (BCC)  
 throughout its range  
 in the continental  
 USA and Alaska.)



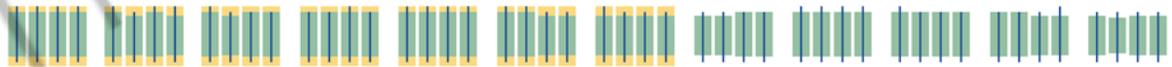
Black-chinned  
 Sparrow  
 BCC Rangewide  
 (CON) (This is a Bird  
 of Conservation  
 Concern (BCC)  
 throughout its range  
 in the continental  
 USA and Alaska.)



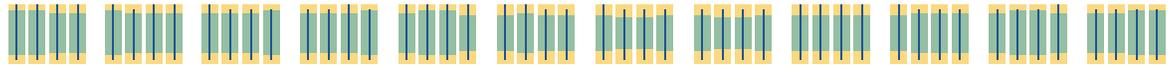
Burrowing Owl  
 BCC - BCR (This is a  
 Bird of Conservation  
 Concern (BCC) only in  
 particular Bird  
 Conservation Regions  
 (BCRs) in the  
 continental USA)



California Thrasher  
 BCC Rangewide  
 (CON) (This is a Bird  
 of Conservation  
 Concern (BCC)  
 throughout its range  
 in the continental  
 USA and Alaska.)



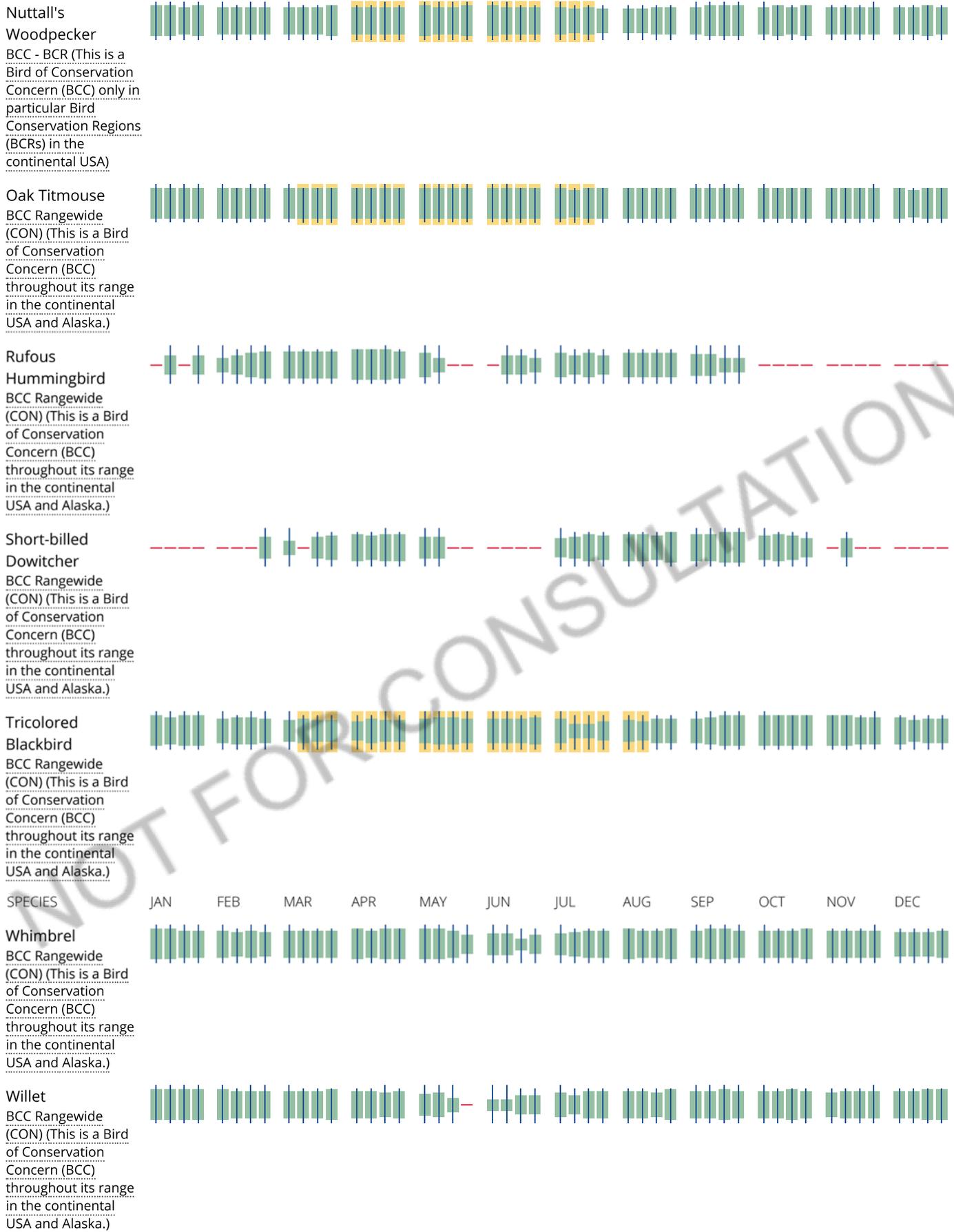
Clark's Grebe  
 BCC Rangewide  
 (CON) (This is a Bird  
 of Conservation  
 Concern (BCC)  
 throughout its range  
 in the continental  
 USA and Alaska.)

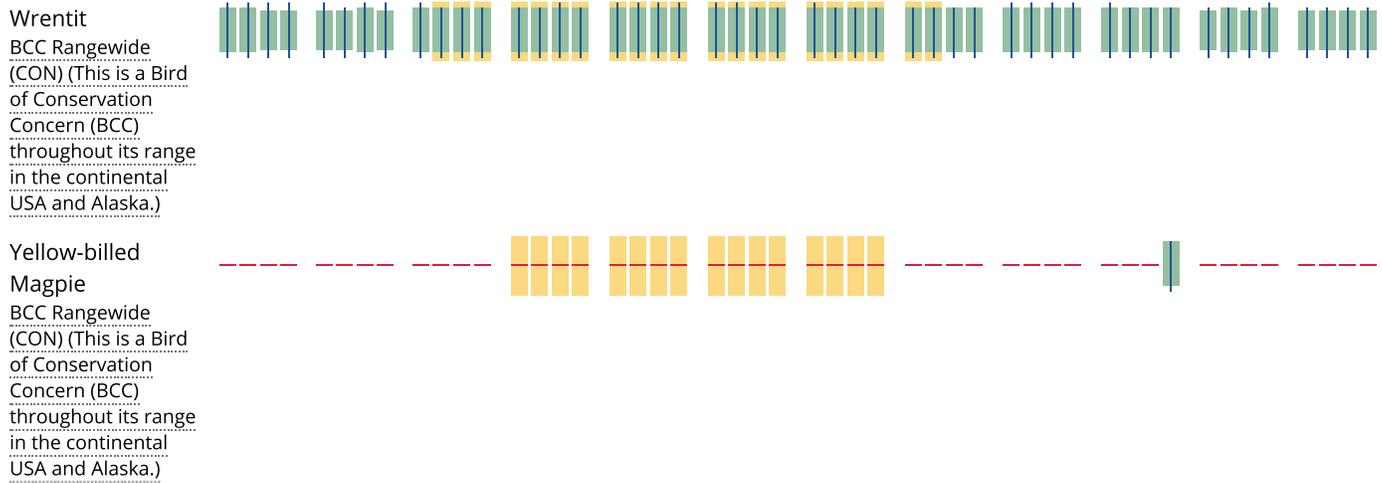


Costa's  
 Hummingbird  
 BCC - BCR (This is a  
 Bird of Conservation  
 Concern (BCC) only in  
 particular Bird  
 Conservation Regions  
 (BCRs) in the  
 continental USA)









### Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

### What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

# Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act<sup>1</sup> and the Convention on International Trade in Endangered Species of Wild Fauna and Flora<sup>2</sup>.

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries<sup>3</sup> [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [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.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

Southern Sea Otter *Enhydra lutris nereis*  
<https://ecos.fws.gov/ecp/species/8560>

## Facilities

## National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

# Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

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# Appendix B

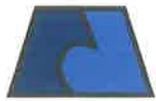
Geotechnical Investigation for  
Proposed Pedestrian Walkway, MBSST Segment 8, San  
Lorenzo River Railroad Trestle Bridge Widening

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**GEOTECHNICAL INVESTIGATION**  
**For**  
**PROPOSED PEDESTRIAN WALKWAY**  
**MBSST (Rail Trail) Segment 8**  
**San Lorenzo River Railroad Trestle Bridge Widening**  
**Santa Cruz, California**

**Prepared**  
**For**  
**MESITI-MILLER ENGINEERING**  
**Santa Cruz, California**

**Prepared By**  
**DEES & ASSOCIATES, INC.**  
**Geotechnical Engineers**  
**Project No. SCR-1200**  
**MARCH 2018**



March 13, 2018

Project No. SCR-1200

MESITI-MILLER ENGINEERING  
224 Walnut Avenue, Suite B  
Santa Cruz, California 95060

Attention: Dale Hendsbee

Subject: Geotechnical Investigation

Reference: Proposed Pedestrian Walkway  
MBSST (Rail Trail) Segment 8  
San Lorenzo River Railroad Trestle Bridge Walkway Widening.  
Santa Cruz, California

Dear Mr. Hendsbee:

As requested, we have completed a Geotechnical Investigation for the eastern abutment of the Rail Trail walkway improvements proposed at the referenced site. The existing walkway attached to the San Lorenzo River railroad trestle will be widened and improved. The improvements will include a new walkway approach at the east end of the trestle.

The purpose of our investigation was to evaluate the soil and bedrock conditions at the east end of the trestle bridge and provide geotechnical recommendations for design and construction of the walkway improvements proposed at the eastern end of the existing bridge.

This report presents the results, conclusions and recommendations of our investigation. If you have any questions regarding this report, please call our office.

Very truly yours,

**DEES & ASSOCIATES, INC.**

  
Rebecca L. Dees  
Geotechnical Engineer  
G.E. 2623



Copies: 4 to Addressee

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# GEOTECHNICAL INVESTIGATION

## **Introduction**

This report presents the results of our Geotechnical Investigation for the proposed Rail Trail walkway improvements proposed at the eastern end of the existing railroad trestle bridge at the referenced site.

## **Purpose and Scope**

The purpose of our investigation was to evaluate the soil and bedrock conditions at the eastern end of the railroad trestle bridge and provide geotechnical recommendations for design and construction of the proposed walkway approach ramp improvements. Our investigation is limited to the new foundation proposed at the east end of the approach ramp and improvements that may be required to widen the existing land-based walkway where it meets the new approach ramp. Evaluation of the existing trestle bridge foundation and abutments are beyond the scope of our services.

The specific scope of our services was as follows:

1. Site reconnaissance and review of available data in our files pertinent to the site and vicinity.
2. Exploration of subsurface conditions by observing the soil and bedrock exposed on the slope and review of the geologic investigation prepared for the project by Zinn Geology, dated 11 March 2018.
3. Engineering analysis and evaluation of the resulting data. Based on our findings, we have developed geotechnical design criteria and recommendations for the walkway foundations, retaining wall criteria for the upslope side of the land-based walkway expansion, general site grading, concrete slab-on-grade, and general site drainage.
4. Preparation of this report presenting the results of our investigation.

## **Project Location and Description**

The project site is located at the eastern end of the existing San Lorenzo River railroad trestle bridge that borders East Cliff Drive in Santa Cruz, California, Figure 1. A narrow walkway exists along the northern side of the trestle bridge. The walkway will be replaced with a wider walkway and a new approach ramp will be constructed at the eastern end of the trestle. The existing abutment approach ramp will remain at the western end of the bridge.

The eastern river bank is very steeply inclined and the walkway and bridge decks are located about 30 feet above the base of the river. The existing eastern bridge abutment is located on a bench carved into the bedrock slope face about 5 feet below the top of the bank. See Figures 2 and 3. The new walkway foundation will be located about 5 to 10 feet behind the top of the steep river bank. The walkway approach ramp will span between the new foundations and the existing bridge structure.

### **Subsurface Soil Conditions**

Subsurface soil conditions were explored by visually observing the bedrock exposed on the river bank slope and observing the soil and bedrock conditions exposed in the cutslopes along the railroad approach to the trestle.

The entire river bank slope and the lower section of existing walkway are comprised of Pliocene aged Purisima Formation silty sandstone and sandy siltstone. Marine terrace deposits overly the bedrock and the slope above the walkway is mostly comprised of soil. The proposed walkway approach ramp foundation will be founded into bedrock. Retaining wall foundations constructed near the base of the walkway will also be founded into bedrock. We did not explore the soil conditions along the upper sections of the walkway. Additional subsurface exploration will be required if retaining walls are proposed to replace the existing retaining walls along the upper sections of the walkway.

A geologic evaluation of the bedrock conditions was performed by Zinn Geology and a discussion of their investigation is presented in their report, dated March 11, 2018. A copy of the geologic report is included in Appendix B of this report. The geologic report indicates the bedrock is jointed and the joints are steeply inclined. A map and section showing the rock bedding and jointing is included on Plate 1 of the Geologic Investigation and reproduced on Figures 2 and 3 of this report.

### **Drainage and Groundwater**

Most of the runoff from the railroad bed is directed to catch basins located on each side of the track just behind the abutment. There are depressed areas along the railroad bed that pond and some water may make its way over the river bank slope around the bridge abutment. Drainage along the existing walkway approach flows into the northern catch basin. The catch basins appear to discharge water onto the river bank adjacent to the southern bridge abutment where it flows down into the river below.

### **Seismicity**

The following is a general discussion of seismicity in the project area. A detailed discussion of seismicity is beyond the scope of our services.

The closest faults to the site are the Zayante Fault, the San Andreas Fault, the Monterey Bay Fault, and the San Gregorio Fault. The San Andreas Fault is the largest and most active of the faults in the site vicinity. However, each fault is considered capable of generating moderate to severe ground shaking. It is reasonable to assume that the proposed development will be subject to at least one moderate to severe earthquake from one of the faults during the next fifty years.

Zayante Fault Zone	San Andreas Fault Zone	San Gregorio Fault Zone	Monterey Bay Fault Zone
8.0 miles Northeast	11.1 miles Northeast	10.0 miles Southwest	6.8 miles Southwest

Structures designed according to the 2016 California Building Code may use the following parameters in their analysis. The following ground motion parameters may be used in

seismic design and were determined using the USGS Seismic Design Map and ASCE 7-10.

Ss	S1	SMs	SM1	SDs	SD1
1.500 g	0.600 g	1.500 g	0.780 g	1.000 g	0.520 g

PGAm	0.5 g
------	-------

### **Liquefaction**

Liquefaction occurs when saturated fine-grained sands, silts and sensitive clays are subject to shaking during an earthquake and the water pressure within the pores builds up leading to loss of strength. There is a high potential for liquefaction to occur within the sandy deposits along the river bed; however, there is a very low potential for liquefaction to occur in the bedrock which will support the proposed walkway improvements.

### **Landsliding and Slope Stability**

The following is a general discussion of slope stability and landsliding in the vicinity of the eastern bridge abutment. Please refer to the geologic investigation by Zinn Geology, Appendix B, for a detailed discussion of landsliding and slope stability at the project site.

There is a very low potential for rotational type landslides to occur along the river bank in the vicinity of the bridge trestle. There is a potential for rock falls or slabs of bedrock to fall off the slope face during strong seismic shaking or from root growth that can separate rock pieces along their fractures.

Historical stereopair aerial photographs were analyzed by Zinn Geology to determine the slope retreat rate over the past 90 years and the retreat rate was so small it could not be measured. The older photographs have low resolution and there is some tree cover that may hide small movements so the geologist has recommended designing for a 5 feet setback for the proposed foundations.

## DISCUSSIONS AND CONCLUSIONS

Primary geotechnical concerns for the project include setting foundations back from the top of the river bank slope, controlling site drainage and designing structures to resist strong seismic shaking.

The walkway approach ramp and any new retaining walls proposed to retain cuts may be supported on spread footing foundations or drilled piers embedded into sandstone/siltstone bedrock. Foundations should be setback from the top edge of the river bank slope. If spread footing foundations are used, the footings should be setback at least 10 feet from the top edge of the slope. If drilled piers are used, the piers may be located as close as 5 feet to the top edge of the slope as long as passive resistance is neglected in the upper 10 feet of pier length.

The walkway is supported on a combination of soil and bedrock subgrades. The lower areas of the walkway are located on bedrock and the upper walkway areas are most likely supported on soil. The subgrade soil below new concrete slabs-on-grade should be well compacted to provide a firm base for slab support. If any loose soil or fill is encountered below proposed slabs, the loose soil and fill should be removed and replaced with compacted engineered fill. Compaction is not required where dense bedrock is exposed.

Surface runoff should be directed away from foundations and concentrated runoff should be collected. Collected runoff may be dispersed at the base of the river bank slope in a controlled manner.

The proposed improvements will most likely experience strong seismic shaking during the design lifetime. Structures should be designed utilizing current seismic design standards.

## RECOMMENDATIONS

The following recommendations should be used as guidelines for preparing project plans and specifications:

### Site Grading

1. The geotechnical engineer should be notified **at least four days** prior to any grading or foundation excavating so the work in the field can be coordinated with the grading contractor and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.
2. Areas to be graded or receive foundations should be cleared of obstructions and other unsuitable material and debris. All organic materials shall be stripped from any areas to receive foundations or slabs. Voids created during site clearing should be backfilled with engineered fill.
3. Permanent cut slopes excavated into soil should be inclined no steeper than 2:1 (horizontal to vertical). Permanent cut slopes excavated into sandstone or siltstone bedrock should be inclined no steeper than 1:1 (horizontal to vertical).
4. After the earthwork operations have been completed and the geotechnical engineer has finished their observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the geotechnical engineer.

### Concrete Slabs-on-Grade

5. The upper 8 inches of subgrade soil below concrete slabs-on-grade should be moisture conditioned to 1 to 2 percent over optimum moisture content and compacted to at least 90 percent relative compaction. Compaction is not required where dense bedrock is exposed.
6. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557.
7. All concrete slabs-on-grade can be expected to suffer some cracking and movement. However, thickened exterior edges, a well-prepared subgrade including pre-moistening prior to pouring concrete, adequately spaced expansion joints and good workmanship should reduce cracking and movement.

### Retaining Wall Lateral Pressures

8. Retaining structures should be designed to resist both lateral earth pressures and any additional surcharge loads.
9. Unrestrained retaining walls may be designed to resist an active lateral earth

pressure of 45 pcf equivalent fluid weight for level backfills, 53 pcf equivalent fluid weight for backslopes inclined up to 3:1 (horizontal to vertical) and 86 pcf equivalent fluid weight for backslopes inclined up to 2:1 (horizontal to vertical).

10. Restrained retaining walls may be designed to resist an at rest earth pressure of 66 pcf equivalent fluid weight for level backfills, 89 pcf equivalent fluid weight for backfills inclined up to 3:1 (horizontal to vertical) and 118 pcf equivalent fluid weight for backslopes inclined up to 2:1 (horizontal to vertical).

11. Retaining walls over 6 feet high should include an added seismic component of 16 pcf, equivalent fluid weight. Dynamic surcharges should be added to the above active lateral earth pressures. The resultant dynamic pressure should be applied at a point 0.6 H above the base of the wall.

12. The above lateral pressures assume that the walls are fully drained to prevent hydrostatic pressure behind the walls. Drainage materials behind the wall may consist of ¾-inch drainrock wrapped in filter cloth or Class 1 or Class 2 permeable material (Caltrans Specification 68). Wrap filter fabric around Class 1 permeable material. No filter fabric is required with Class 2 permeable material. The drains should extend from the base of the walls to within 12 inches of the top of the backfill. A perforated pipe should be placed (holes down) about 1 to 2 inches above the bottom of the wall and be tied to a suitable drain outlet. Wall backdrains should be plugged at the surface with clayey material to prevent infiltration of surface runoff into the backdrains.

### **Foundations**

13. Foundations should be setback at least 5 feet from slopes. Plate 1 of the Geologic Investigation in Appendix B and Figure 2 in Appendix A has a line showing the 5 feet setback at the top of the river bank slope. Foundations should not be placed between the setback line and the river bank slope.

14. If spread footing foundations are used, the bases of the footings should be setback at least 10 feet from the top edge of the river bank slope.

15. If drilled piers are used, the piers may be located as close as 5 feet to the top edge of the slope as long as passive resistance is neglected in the upper 10 feet of pier length. The neglected zone may be reduced (linearly) as the pier moves away from the slope until there is no active zone 10 feet from the slope top.

### **Conventional Spread Footing Foundations**

16. Conventional spread footings embedded into sandstone bedrock, and designed in accordance with the above, may be used to support walkway and retaining wall foundations.

17. Footings should be embedded a minimum of 12 inches into sandstone/siltstone bedrock and be a minimum of 12 inches wide.

18. Footings located adjacent to other footings or utility trenches should have their bearing surfaces founded below an imaginary 1:1 plane projected upward from the bottom edge of the adjacent footings or utility trenches.

19. Foundations designed in accordance with the above may be designed for an allowable soil bearing pressure of 4,000 psf. The allowable bearing capacity may be increased by 1/3 for short term seismic and wind loads.

20. Total and differential settlements are anticipated to be less than 1/2 inch.

21. Lateral load resistance for structures supported on footings may be developed in friction between the foundation bottom and the supporting subgrade. A friction coefficient of 0.35 is considered applicable.

22. Where footings are poured neat against firm subgrade, a passive lateral earth pressure of 400 pcf may be used. All topsoil and the top 4 inches of sandstone should be neglected in passive design.

23. Prior to placing concrete, foundation excavations should be observed by the soils engineer.

#### **Drilled Concrete Piers**

24. Piers may be located as close as 5 feet to the top edge of the slope as long as passive resistance is neglected in the upper 10 feet of pier length. The neglected zone may be reduced (linearly) as the pier moves away from the slope until there is no active zone 10 feet from the slope top.

25. Piers located at least 10 feet from the top edge of the river bank slope should be embedded at least 3 feet into sandstone bedrock. Piers located closer than 10 feet to the top edge of the river bank slope should be embedded a minimum of 5 feet below the neglected zone.

26. Piers should be at least 12 inches in diameter and spaced at least 3 pier diameters apart, center to center.

27. Piers may be designed using an allowable end bearing capacity of 4,000 psf. This value may be increased by 1,000 psf per foot of embedment up to a maximum of 15,000 psf. The allowable bearing capacity may be increased by one-third under short term wind or seismic loads. The bases of the pier excavations need to be clean to support the end bearing capacities indicated above.

28. Piers may be designed for an allowable skin friction of 350 psf. The top foot of sandstone/siltstone bedrock should be neglected in friction design.

29. Total and differential settlements for foundations supported on deep foundations are anticipated to be less than 1/2 inch.

30. For passive lateral resistance an equivalent fluid weight (EFW) of 400 pcf times 3.0 pier diameters may be used below the neglected zone. Piers located more than 10 feet from the top of the river bank slope should neglect at least the top foot of sandstone in passive design.

31. Prior to placing concrete, pier excavations should be observed by the soils engineer.

#### **Site Drainage**

32. Surface runoff from improvements should be collected and not allowed to flow over the top of the river bank slope in an uncontrolled manner.

33. Concentrated runoff should not be discharged onto the river bank slope. Collected runoff may be dispersed near the base of the slope.

#### **Plan Review, Construction Observation, and Testing**

34. Dees & Associates, Inc. should be provided the opportunity for a general review of the final project plans prior to construction to evaluate if our geotechnical recommendations have been properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. Dees & Associates, Inc. also requests the opportunity to observe and test grading operations and foundation excavations at the site. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.

## LIMITATIONS AND UNIFORMITY OF CONDITIONS

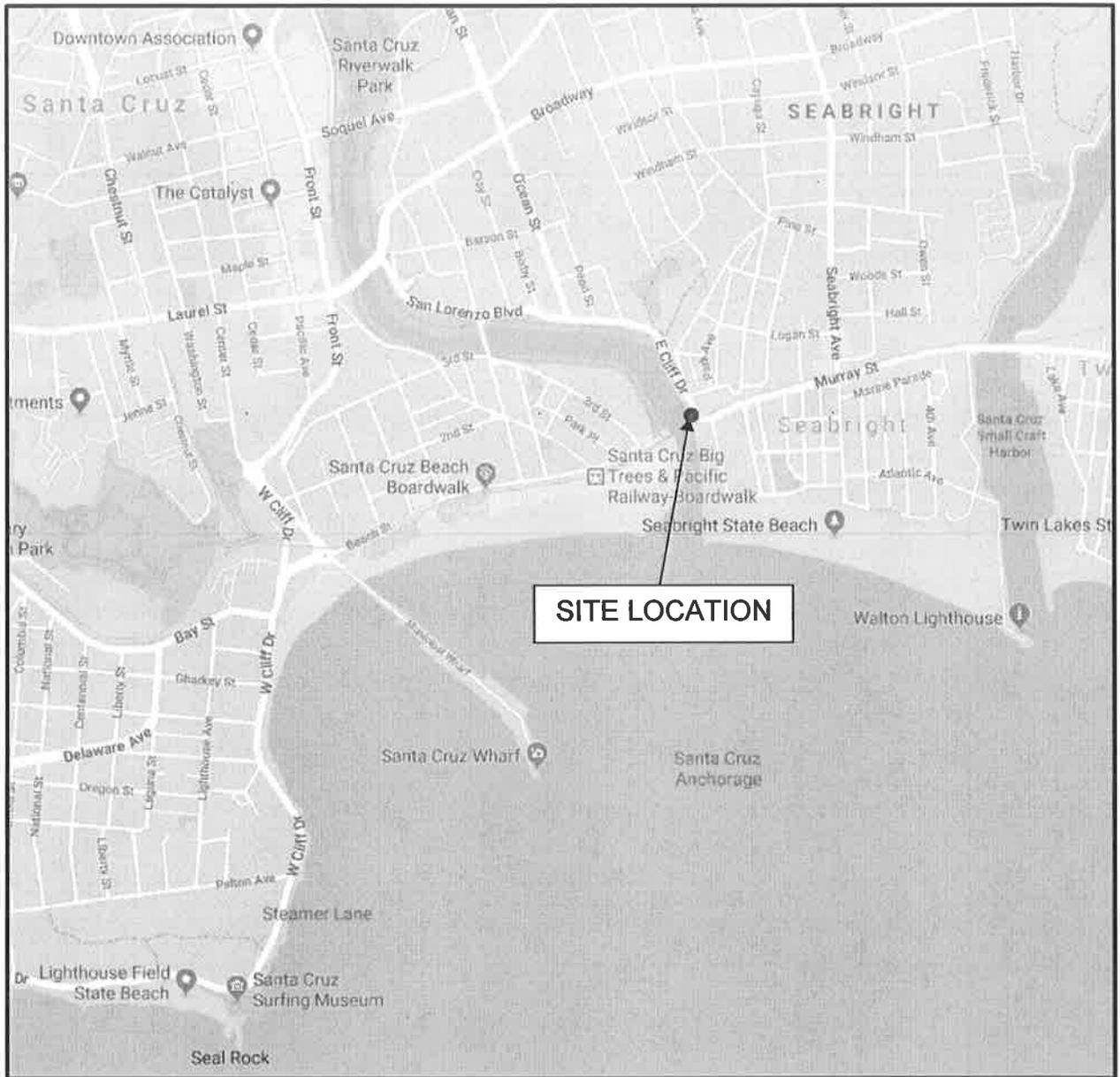
1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be given.
2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field. The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. No other warranty expressed or implied is made.
3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report should not be relied upon after a period of three years without being reviewed by a soil engineer.

**APPENDIX A**

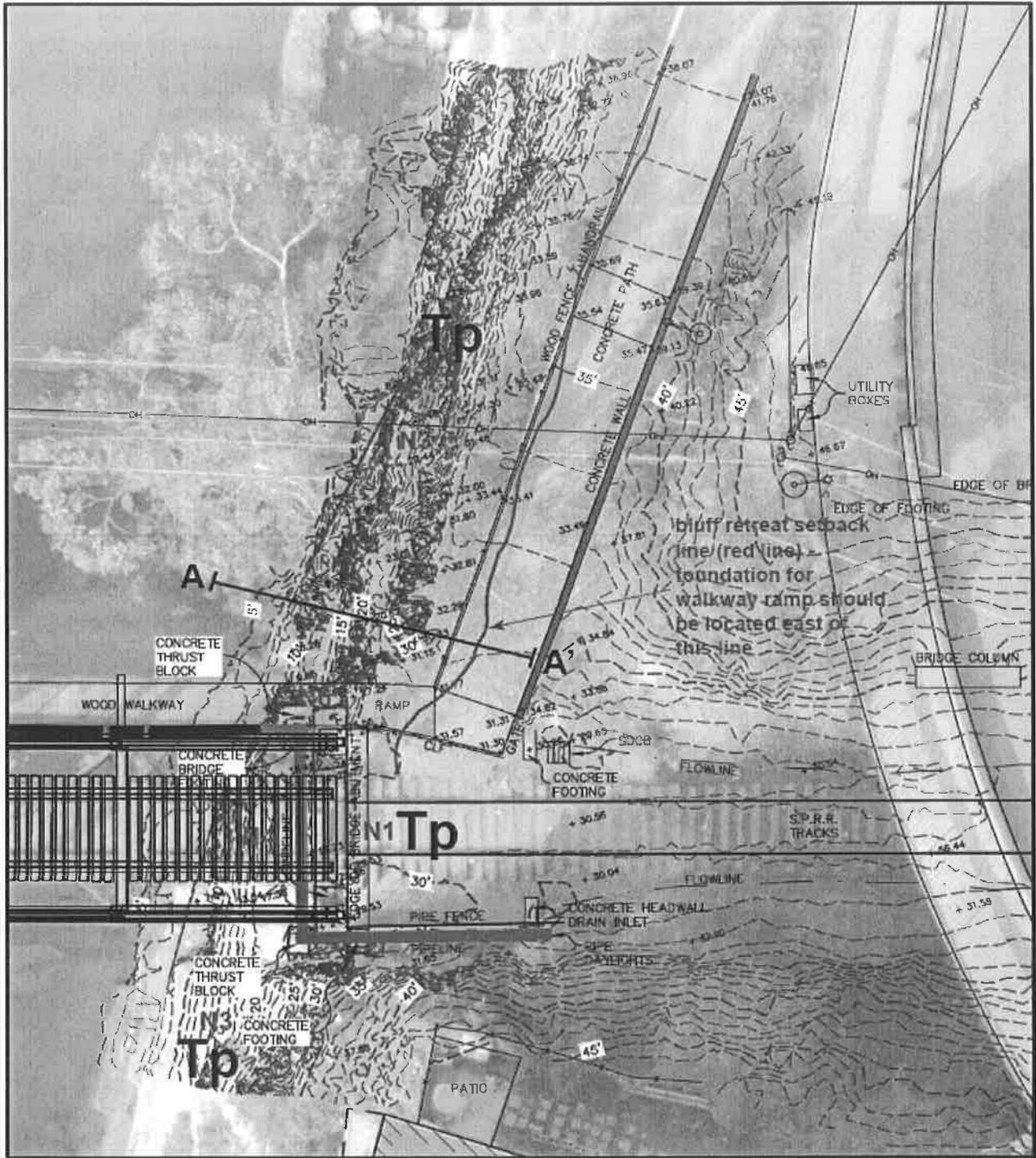
**Site Vicinity Map**

**Site Plan**

**Geologic Cross Section**

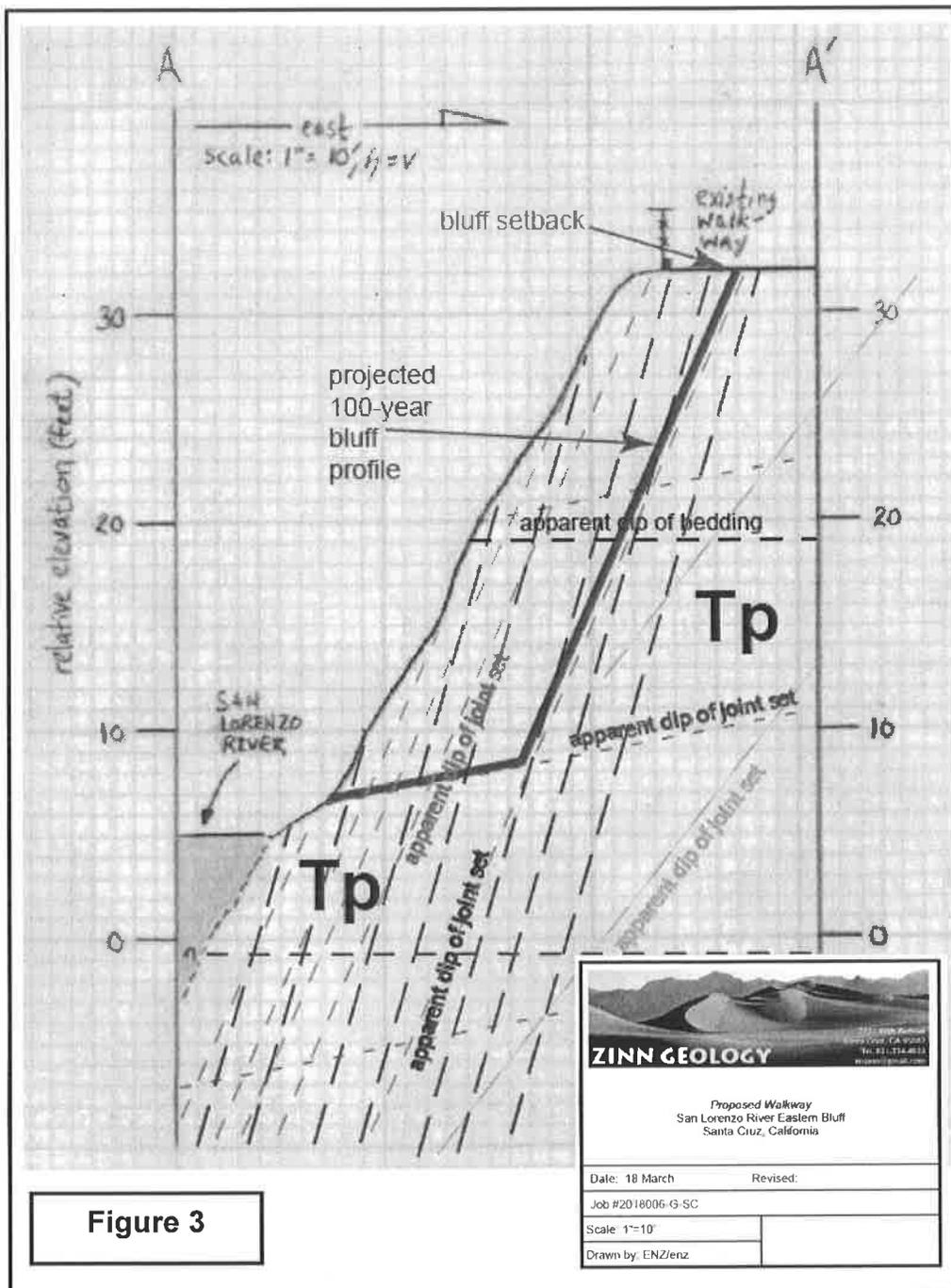


**SITE VICINITY MAP**  
**Figure 1**



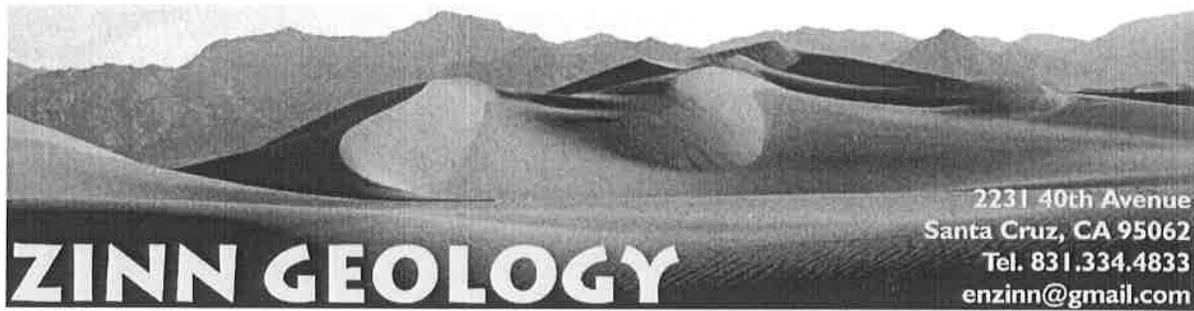
**SITE PLAN  
Figure 2**

# GEOLOGICAL CROSS SECTION



**APPENDIX B**

**Geologic Investigation by Zinn Geology**



11 March 2018

Job #2018006-G-SC

Dees & Associates, Inc.  
Attention: Ms. Becky Dees  
501 Mission Street  
Santa Cruz, CA.95060

Re: Focused geological investigation on river bluff retreat  
San Lorenzo River East Bluff At Railroad Crossing  
Santa Cruz, California

Dear Ms. Dees:

This letter and attendant graphics present the results of our river bluff retreat investigation for the eastern San Lorenzo River bluff where it intersects the railroad, east of the Santa Cruz Beach Boardwalk in the City of Santa Cruz (Figure 1). The objective of the investigation is to characterize the processes contributing to and triggering the retreat of the top of the river bluff at this site and to issue mitigation recommendations, where warranted, for the proposed development.

It is our understanding that a new, wider walkway will replace the existing suspended walkway that is currently attached to the existing railroad trestle. The load of the new walkway will be distributed via the trestle to the different foundation structures that currently support the trestle, including the west and east bank abutments and two supports in the river. It is also our understanding that the suspended portion of the new walkway will be connected with the on-land portion of the walkway with a ramp that will be founded in the bedrock at the top of the bluff (Plate 1).

#### **SCOPE OF INVESTIGATION**

The scope of work performed for this investigation included:

1. A review of published and unpublished literature relevant to the geology of the site and vicinity.
2. Analysis of stereo-pair aerial photographs to help assess historic rockfall events and attempt to calculate the long term bluff retreat rate.
3. Geologic mapping of the site.
4. Preparation of this and accompanying illustrations.

It is important to note that we have only addressed the hazards and risks presented to the proposed foundation for the transitional ramp that connects the suspended walkway to the on-land walkway. We have not addressed the other foundation elements (the west abutment and two in-river supports) as part of this scope of work. We also have not addressed the impacts that loading from trestle might have on the bluff at the eastern abutment.

## **REGIONAL GEOLOGIC SETTING**

The site is located along a steep, north-south trending bluff overlooking the San Lorenzo River, near its entry into Monterey Bay (Figure 1). This is one of many such bluffs and sea cliffs along the northern coast of Monterey Bay, characterized by gently dipping, late Tertiary sedimentary rocks overlain by nearly horizontal, Quaternary marine terrace deposits.

The north-south orientation of the bluff in this area mimics planes of weakness in the bedrock, called joints, which have probably controlled the long-term pattern of erosion by the San Lorenzo River. As shown on Figure 1, the bluff currently overlooks a wide beach that has formed west of the bluff, stretching from San Lorenzo Point (due south of the subject property) to Cowell Beach (west of the subject property). Although the beach fluctuates seasonally and annually, it has remained fairly wide on average over historical time, due to the large seasonal influx of sediment from the San Lorenzo River. Moreover, the north-south trending bluff projects out into Monterey Bay and acts as a natural groin, trapping some of the beach sand moving southeast via littoral drift. We will return to the site-specific geologic setting of the subject property in our discussion of potential geologic hazards, below.

The site is also located on the coastal plain just west of the central Santa Cruz Mountains and within the California Coast Range Geomorphic Province. The Santa Cruz Mountains are formed by a series of rugged, linear ridges and valleys following the pronounced northwest to southeast structural grain of central California geology. Underlying most of the Santa Cruz Mountains is a large, elongate prism of granitic and metamorphic basement rocks, known collectively as the Salinian Block. These rocks are separated from contrasting basement rock types to the northeast and southwest by the San Andreas and San Gregorio-Sur Nacimiento strike-slip fault systems, respectively. Overlying the granitic basement rocks is a sequence of dominantly marine sedimentary rocks of Paleocene to Pliocene age and non-marine sediments of Pliocene to Pleistocene age (Figure 2; Regional Geologic Map).

Throughout the Cenozoic Era, this portion of California has been dominated by tectonic forces associated with lateral or "transform" motion between the North American and Pacific lithospheric plates, producing long, northwest-trending faults such as the San Andreas and San Gregorio, with horizontal displacements measured in tens to hundreds of miles. Accompanying the northwest direction of the horizontal (strike-slip) movement of the plates have been episodes of compressive stress, reflected by repeated episodes of uplift, deformation, erosion and subsequent redeposition of sedimentary rocks. Near the crest of the Santa Cruz Mountains, this

tectonic deformation is most evident in the sedimentary rocks older than the middle Miocene, and consists of steeply dipping folds, overturned bedding, faulting, jointing, and fracturing. Along the coast, the ongoing tectonic activity is most evident in the formation of a series of uplifted marine terraces.

In addition to tectonic effects, major changes in sea level caused by worldwide climatic fluctuations over the past million years have left their geologic imprint on the Monterey Bay region. During the last glacial maximum, between about 20,000 and 18,000 years ago, sea level stood as much as 300 to 400 feet below its present elevation (Helley et al., 1979). The streams presently draining the Santa Cruz Mountains eroded and flowed across a broad coastal plain. Between about 15,000 to 6,000 years ago sea level rose rapidly as glaciers melted. As sea level rose throughout this interval stream base levels were raised causing alluvial sediments to be deposited within their channel and on the flood plains around the Monterey bay. At the coastline tidal marshes were simultaneously migrating inland while the streams were backfilling their channels. Along portions of the coastline the end result was a complex interfingering of beach deposits, marsh and lagoon deposits and stream deposits (Dupré; 1975 and 1990).

## **REGIONAL SEISMIC SETTING**

California's broad system of strike slip faulting has had a long and complex history. Some of these faults present a seismic hazard to the subject properties. The most important of these are the San Andreas, Zayante-Vergeles, Monterey Bay-Tularcitos and San Gregorio fault zones (Figure 2). These faults are either active or considered potentially active (Petersen et al., 1996; Working Group On Northern California Earthquake Potential [WGNCEP], 1996). Seismicity associated with these faults is shown on Figure 3 (Regional Seismicity Map).

We see no reason to discuss the historical activity of the listed faults, since it will not change the outcome of the design accelerations for the proposed ramp. If it becomes necessary to qualitatively assess the historical earthquakes on the regional faults later in the project, we will address that issue with a supplemental letter.

## **SITE GEOLOGIC SETTING**

The Local Geologic Map (Figure 4) and Geological Site Map & Cross Section (Plate 1) depict the relevant topographic and geologic information on the subject site. We explored and mapped the site this past spring (March 2018).

### **Topography**

The site is located along the edge of a broad, uplifted marine terrace. The natural ground surface east of and above the site slopes very gently toward the river bluff, where it drops off steeply. The railroad grade east of the site has been notched into the terrace, creating a cut that is about

20 feet deep. The railroad grade steps down approximately five feet to a bench that has been cut into the bedrock in the side of the steep river bluff. The bench is almost completely occupied by the trestle abutment, so we do not know how far back the bench has been notched into the river bluff.

The proposed transitional ramp will occupy the railroad grade at the top of the river bluff, as well as span the river bluff that projects out beyond the abutment notch. The bluff drops very steeply for about 25 feet to the river's edge. The intersection of the bluff and the river water is occupied by what appears to have been a historical concrete sluice; we have not determined how or when this concrete structure was constructed.

The bluff appeared to project down for at least five feet or more below the water level between the railroad grade and the river during this investigation. The elevation of the water and exposed bedrock is controlled by the seasonal changes to the river mouth and beach, south of the site. The smaller coastal waves associated with the spring through the fall weather typically create a beach that blocks the river mouth, causing the river to become impounded and higher below the site. When the river mouth is open during the winter, the water level drops and the river flows at higher velocities, which can cause sand bars to migrate laterally and vertically as they are pushed out to sea.

### **Earth Materials**

The river bluff below the proposed ramp is a nearly vertical approximately 30+ foot exposure of bedrock of the Pliocene Purisima Formation, consisting of a very fine grained silty sandstone to sandy siltstone. The Purisima Formation dips to the south between 3 and 5 degrees on the site, based on regional mapping by Clark (1981) and our observation of a thin claystone bed outcropping along the river bluff about 20 feet above the river. We noted two dominant joint sets in the bedrock exposed in the river bluff; one set is on spacing of about five to ten feet, strikes N10E and dips 75 degrees between the east and the west. The other dominant set is on spacing of about 20 feet, strikes N30W and dips 68 degrees to the southwest. Two less prevalent joint sets, on spacing of about 20 to 40 feet, are also present in the bluff, with strikes and dips of N80W/27SW and N37W/54SW. Note that the average trend of the river bluff along this stretch is about parallel to the N10E joint set, suggesting the long-term erosion of the bluff has been controlled by these planes of weakness in the bedrock.

The first several sets of bluff parallel joints appear to be slightly dilated and filled with soil as well as Eucalyptus tree root mats and balls (see Appendix B). A large Eucalyptus root ball is present below the site in an area that looks like a small rock fall evacuation scar. It is likely that the root ball wedged into a near vertical bedrock joint, causing the slab of rock in front of it to peel off and fall in the river below.

## **Drainage And Groundwater**

Drainage of surface water on the property occurs by overland sheet flow toward the San Lorenzo River. A small portion of the rainfall that hits the site probably infiltrates into the ground and enters the groundwater regime. Seasonal groundwater may perch within the marine terrace deposits above the less permeable Purisima Formation bedrock that lies above the site and near the top of the cut for the railroad grade.

Surface drainage off the railroad grade appears to be captured by inlets that carry the storm water away from the trestle abutment. Storm water and rainfall east of the inlets will pond and flow over the top of the abutment and the bench notched into the bluff.

We did not observe any seeps within the bedrock or at the contact between the marine terrace deposits and bedrock. We did not observe any stains on the bluff face that would indicate long term seepage. We hasten to add, however, that very little rainfall had occurred in this area in the fall and winter preceding our investigation. Hence, the conditions noted during our field work are not necessarily indicative of the magnitude of seepage that may occur during wetter years.

## **GEOLOGIC HAZARDS**

The potential geologic hazards that could affect the proposed ramp are 1) intense seismic shaking, 2) landsliding, and 3) long-term erosion. The following sections address these hazards.

### **Seismic Shaking Hazard**

Seismic shaking at the site will be intense during the next major earthquake along local fault systems. Seismic shaking values for any structures designed on the site should at least adhere to the minimum prescriptive design values outlined in the 2016 California Building Code. The seismic shaking values should be developed by the Project Geotechnical Engineer of Record as part of their soils report for the design of proposed structures.

### **Landsliding**

Both the seismic setting and the site-specific geology influence the stability of the bluffs in this area. Intense ground shaking could trigger failure of the river bluff on the site. Local newspaper coverage (summarized in Youd and Hoose, 1978) and the Carnegie Commission report (Lawson et al., 1908) of the 1906 earthquake disclosed no documented accounts of large-scale cliff failure in Santa Cruz County due to the earthquake, although there was much sloughing of "earth" from the bluffs near Capitola (Lawson et al., 1908, p. 272). The surface of the river and beach sand deposits below the site (abutting the Santa Cruz Beach Boardwalk) was apparently disrupted during the 1906 earthquake due to liquefaction and lateral spreading (Youd and Hoose, 1978).

The 1989 Loma Prieta earthquake generated numerous localized coastal and river bluff failures in Santa Cruz County, including soil sloughing, rockfalls, blufftop fissuring, and shallow translational landslides (Sydnor et al., 1990). However, we did not observe any evidence of catastrophic failure of the bluff on the subject property during our analysis of stereo aerial photographs taken on 18 October 1989. In contrast, we did observe evidence of recent landsliding within the marine terrace deposits only on one of the neighboring properties to the south, on both the 1973 and 1989 aerial photographs. The total combined retreat of the bluff top for those two events was between five and ten feet. The 1989 failure was clearly in response to the intense seismic shaking generated by the Loma Prieta earthquake. It also appears that the 1989 failures coincided with the failure area noted on the 1973 photographs.

We did not observe any measurable retreat of the bluff at the proposed ramp location on the historical stereopair aerial photographs. It is important to note, however, that this portion of the bluff was obscured by tree canopy and the trestle on the photos, so it is possible that some bluff failures could have occurred and the evidence would be obscured. As noted in the "Earth Materials" section, the first several sets of bluff parallel joints appear to be slightly dilated and filled with soil as well as tree root mats and balls below the site. It is likely that the slabs of rock on the face of the bluff will eventually fall if triggered by seismic shaking or statically via continued growth and wedging by the tree roots.

Given the conditions discussed above, it is our opinion that first two feet of bedrock on the face of the bluff will fail in the near future below the ramp site. The failure of those slabs of rock along the bluff-parallel joint set will leave a fresh scar on the face of the bluff and the gradual dilation of the next joint sets in from the face will begin anew. In our opinion, it will take approximately 100 years for the top of the bluff at the site to fail back five feet, in the form of slab-type rock falls triggered by seismic shaking and root wedging. The failures will involve the entire bedrock bluff from the railroad grade to the river water level, leaving a near vertical bluff face. We have plotted the position of the future bluff configuration on both the site specific geology map (Plate 1) and the geologic cross section (Plate 2).

In our opinion, we consider it unlikely that the foundation for the proposed ramp will be threatened by bluff-top retreat within the next 100 years if it is set behind the bluff retreat line depicted on our plates.

### **Erosion**

During our aerial photographic analysis of the river bluff on the subject property, we noted that the bluff has been sculpted by episodic river erosion. It is possible that the San Lorenzo River will continue to erode the toe of the bluff, but over the economic lifetime of the proposed development it is more likely that the river will erode the much softer and unconsolidated alluvial and beach sand deposits during large flooding events. Hence, we consider it unlikely that lateral

erosion by the San Lorenzo River will undermine and destroy the existing residence and proposed addition.

The old remnant concrete flume present at the base of the bluff near the river water level also appears to afford some protection with respect to bluff erosion too.

Overall, erosion has not caused the river bluff to retreat enough since 1928 (the date of the oldest aerial photo) to allow us to measure the effects of these processes, at least within the resolution of the aerial photographs. Additionally, it does not appear that the trestle abutment (constructed in the late 1800's?) has ever been undermined or removed by erosion.

## **FINDINGS**

Based on the information gathered and analyzed, it is our opinion that the proposed ramp is subject to "Lowest possible risk to occupants of the structure" (as defined in Appendix C), provided our recommendations are followed. Appendix C should be reviewed in detail by all property owners to determine whether an that risk as defined in the appendix is acceptable. If this level of risk is unacceptable to the property owners or developers, then the geologic hazards in question should be mitigated to reduce the corresponding risks to an acceptable level.

The upper 30+ feet of the bluff, sloping up to about 75 degrees, exposes bedrock that is the Pliocene Purisima Formation and consists of a very fine grained silty sandstone to sandy siltstone, with some claystone interbeds. The Purisima Formation dips south between three and five degrees on the subject property. The bedrock joint set that is primarily responsible for the orientation of the river bluff on the subject property has an attitude of N10E/75SW.

We did not observe any evidence of groundwater seeping out of the bluff face.

The site is located in an area of high seismic activity and will be subject to strong seismic shaking in the future.

The overall bluff-top retreat measured on historical aerial photographs is nil since 1928.

Overall, erosion has not caused the river bluff to retreat enough since 1928 (the date of the oldest aerial photo) to allow us to measure the effects of these processes, at least within the resolution of the aerial photographs. Additionally, It does not appear that the trestle abutment (constructed in the late 1800's?) has ever been undermined or removed by erosion.

Although we did not measure any historical retreat of the bluff, it is our opinion that first two feet of bedrock on the face of the bluff will fail in the near future below the ramp site. The failure of those slabs of rock along the bluff-parallel joint set will leave a fresh scar on the face of the bluff and the gradual dilation of the next joint sets in from the face will begin anew. In our opinion, it

will take approximately 100 years for the top of the bluff at the site to fail back five feet, in the form of slab-type rock falls triggered by seismic shaking and continued root wedging. The failures will involve the entire bedrock bluff from the railroad grade to the river water level, leaving a near vertical bluff face. We have plotted the position of the future bluff configuration on both the site specific geology map and cross section (Plate 1). In our opinion, we consider it unlikely that the foundation for the proposed ramp will be threatened by bluff-top retreat within the next 100 years if it is set behind the bluff retreat line depicted on our plates, which takes up to five feet of long term retreat into account.

## **RECOMMENDATIONS**

1. The foundation for the transitional walkway ramp should be founded at least five feet from the top of the bluff, as depicted on our Geological Site Map (Plate 1) and Geological Cross Section (Plate 2).
2. The transitional walkway ramp may also be further protected from the complete removal of the eucalyptus trees that are wedging roots into the bedrock joints.
3. The lifetime of the ramp may be extended if the face of the bluff below the ramp is bolted with a rock bolt system that will put the exposed bedrock into compression. If this mitigation is pursued, the developer may also want to rock bolt the face of the bluff below the trestle abutment. Stabilizing the bluff in this fashion may also negate the need for deep piers set behind the bluff setback line, pending input by the Project Geotechnical Engineer Of Record.
4. Seismic shaking values for any structures designed for the site should at least adhere to the minimum prescriptive design values outlined in the 2016 California Building Code. The seismic shaking values should be developed by the Project Geotechnical Engineer of Record as part of their soils report for the design of proposed structures.
5. We recommend that all drainage from improved surfaces be collected and dispersed below the site into the river. Drainage should be controlled in such a way as to avoid ponding or concentrated discharge on the bluff.
6. We recommend that our firm be provided the opportunity for a review of the design and specifications in order that our recommendations may be properly interpreted and implemented. If our firm is not accorded the privilege of making the recommended review we can assume no responsibility for misinterpretation of our recommendations.

## **INVESTIGATION LIMITATIONS**

1. The conclusions and recommendations noted in this report are based on probability and in no way imply the site will not possibly be subjected to ground failure or seismic shaking so intense

that structures will be severely damaged or destroyed. The report does suggest that building structures at the subject site, in compliance with the recommendations noted in this report, is an "lowest possible risk to occupants of the structure" risk as defined in Appendix C.

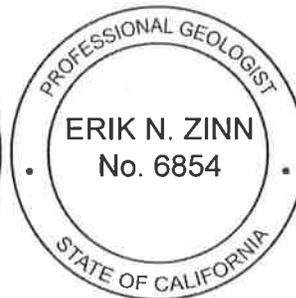
2. This report is issued with the understanding that it is the duty and responsibility of the owner or his representative or agent to ensure that the recommendations contained in this report are brought to the attention of the architect and engineer for the project, incorporated into the plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. If any unexpected variations in soil conditions or if any undesirable conditions are encountered during construction or if the proposed construction will differ from that planned at the present time, Zinn Geology should be notified so that supplemental recommendations can be given.

Sincerely,  
**ZINN GEOLOGY**



Erik N. Zinn  
Principal Geologist  
P.G. #6854, C.E.G. #2139



Attachments: Appendix A - Figures  
Appendix B - Photographs of site  
Appendix C - Scale of acceptable risks from geologic hazards  
Plate 1 - Geological site map & cross section

## REFERENCES

### Aerial Photographs

DATE FLOWN	FLIGHT LINE	PHOTO NUMBERS	PRINTS
6/1/1928	131-119	SC32	Black & White
4/1/31		29,30	Black & White
6/5/56	CJA-4R	51,52	Black & White
12/6/61	SC 1	35-37	Black & White
11/30/65	SC 1	13,14	Black & White
5/11/65	SC 1	69-70	Black & White
4/11/73	6	1,2	Black & White
10/5/76	DNOD-AFU-C	172, 173	Color
10/13/82	AV-2192-06	8,9	Black & White
3/26/86		227,228	Color
10/18/89	AV3662-A 4	4-6	Black & White
6/22/94	14	1,2	Black & White
9/20/97	WAC-97CA 15	1-3	Black & White
6/7/01	CCC-BQK-C	123-5 through -7	Color

The aerial photographs listed above are available for viewing at the University of California at Santa Cruz Map Library.

### Literature

- Clark, J.C., 1981, Stratigraphy, paleontology, and geology of the central Santa Cruz Mountains, California Coast Ranges, U. S. Geological Survey Professional Paper 1168, 51 p., 2 plates.
- Dupré, W.R., 1975, Geology and liquefaction potential of Quaternary deposits in Santa Cruz County, California, U. S. Geological Survey Miscellaneous Field Studies Map MF 648, 2 sheets, scale 1:62,500.

- Dupré, W.R., 1991, Quaternary geology of the Southern California Coast Ranges, in Morrison, R.B., ed., Quaternary nonglacial geology: conterminous U.S.: The geology of North America, Volume K-2, p. 176-184.
- Helley, E.J., Lajoie, K.R., Spangle, W.E., and Blair, M.L., 1979, Flatland deposits of the San Francisco Bay Region, California - their geology and engineering properties, and their importance to comprehensive planning, U.S. Geological Survey Professional Paper 943, 88 p.
- Jennings, C.W. et al., 1975, Fault map of California, California Division of Mines and Geology, California Geologic Data Map Series, map no. 1.
- Lawson, A.C. et al., 1908, The California Earthquake of April 18, 1906, Report of the State Earthquake Investigation Commission, Carnegie Institute of Washington, Publication 87, 2 v., 600 p.
- Petersen, M.D., Bryant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Lienkaemper, J.J., McCrory, P.A., and Schwartz, D.P., 1996, Probabilistic seismic hazard assessment for the State of California, California Division of Mines and Geology Open-File Report 96-08 and U.S. Geological Survey Open-File Report 96-706.
- Sydnor, R.H., Griggs, G.B., Weber, G.E., McCarthy, R.J., and Plant, N., 1990, Coastal bluff landslides in Santa Cruz County resulting from the Loma Prieta earthquake of 17 October 1989, in McNutt, S.R., and Sydnor, R.H. (Editors), The Loma Prieta (Santa Cruz Mountains), California Earthquake of 17 October 1989, California Division of Mines and Geology Special Publication 104, p. 67-82.
- Working Group on California Earthquake Probabilities, 1988, Probabilities of large earthquakes occurring in California on the San Andreas fault, U.S. Geological Survey Open-File Report 88-398, 62 p.
- Working Group on California Earthquake Probabilities, 1990, Probabilities of large earthquakes in the San Francisco Bay region, California, U.S. Geological Survey Circular 1053, 51 p.
- Working Group on Northern California Earthquake Potential, 1996, Database of potential sources for earthquakes larger than magnitude 6 in northern California, U.S. Geological Survey Open-File Report 96-705, 53 p.
- Youd, T.L., and Hoose, S.N., 1978, Historic ground failures in northern California triggered by earthquakes, U. S. Geological Survey Professional Paper 993, 177 p.

**APPENDIX A**

**FIGURES**



**BASE MAP:** Santa Cruz 7.5' Quadrangle, United States  
 Geological Survey, 1954 (Photorevised 1994), Scale: 1:24000

**SITE**

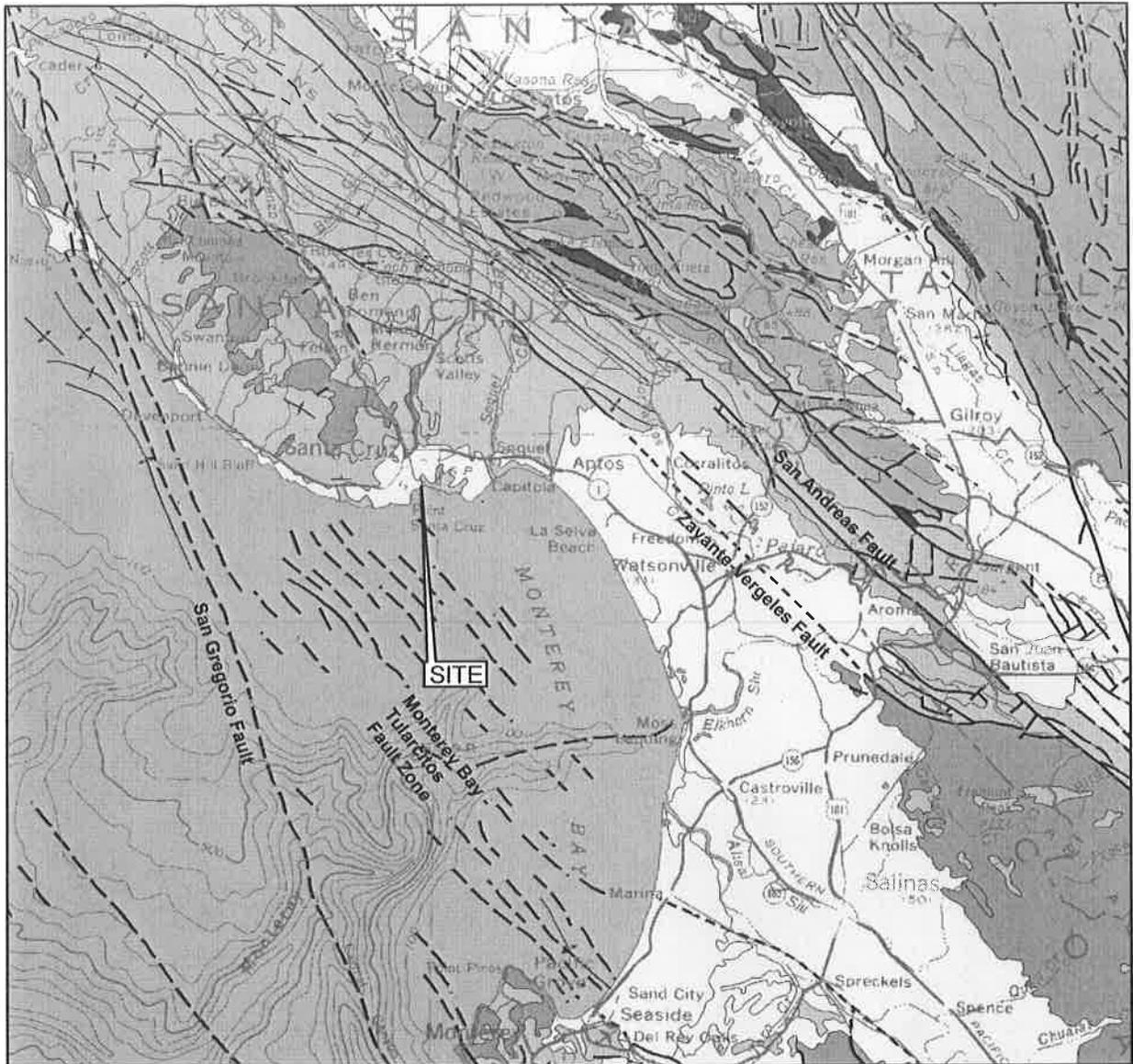


SCALE 1:24,000



**Topographic Index Map**  
*Proposed Walkway*  
 San Lorenzo River Eastern Bluff  
 Santa Cruz, California

**FIGURE #**  
**1**  
 JOB #  
 2018006-G-SC



Reference: Jennings, C.W., 1977. Geologic Map of California. California Department of Conservation, Division of Mines and Geology, scale 1:750,000.  
 Digital Data: Saucedo, G.J., Bedford, D.R., Raines, G.L., Miller, R.J., and Wentworth, C.M., 2000. GIS Data for the Geologic Map of California: California Department of Conservation, Division of Mines and Geology, CD-ROM 2000-007, ver. 2.0.

**EXPLANATION**

**Geologic Units**

- |  |                                |  |  |
|--|--------------------------------|--|--|
|  | Quaternary Deposits            |  | Pre-Tertiary Volcanic Rocks                |
|  | Quaternary Volcanics           |  | Granitic Intrusive Rocks                   |
|  | Tertiary Sedimentary Rocks     |  | Franciscan Complex                         |
|  | Tertiary Volcanic Rocks        |  | Ultramafic Rocks                           |
|  | Pre-Tertiary Sedimentary Rocks |  | Pre-Tertiary Metamorphic Rock              |
|  |                                |  | Pre-Cambrian Metamorphic and Igneous Rocks |

**Symbols**

- |  |                              |  |           |
|--|------------------------------|--|-----------|
|  | contact                      |  | anticline |
|  | fault, certain               |  | monocline |
|  | fault, approx. located       |  | syncline  |
|  | fault, concealed or inferred |  |           |



SCALE 1:500,000  
 10 Miles 0



**Regional Geologic Map**  
*Proposed Walkway*  
 San Lorenzo River Eastern Bluff  
 Santa Cruz, California

**FIGURE #**  
**2**  
 JOB #  
 2018006-G-SC





**BASE MAP:** Plate 2 from Clark, 1981, Stratigraphy, Paleontology, and Geology of the Central Santa Cruz Mountains, California Coast Ranges, Professional Paper 1168, scale 1:24,000.

**EXPLANATION**

**Earth Materials**

- Qal** Alluvium
- Qm** Marine Terrace Deposits
- Tp** Purisima Formation
- Tsc** Santa Cruz Mudstone
- Tsm** Santa Margarita Sandstone

**Symbols**

-  Earth materials contact - triangle where well exposed; queried where uncertain
-  Strike and dip of beds



SCALE 1:24,000



**ZINN GEOLOGY**

**Local Geologic Map**  
*Proposed Walkway*  
 San Lorenzo River Eastern Bluff  
 Santa Cruz, California

**FIGURE #**

**4**

JOB #  
 2018006-G-SC

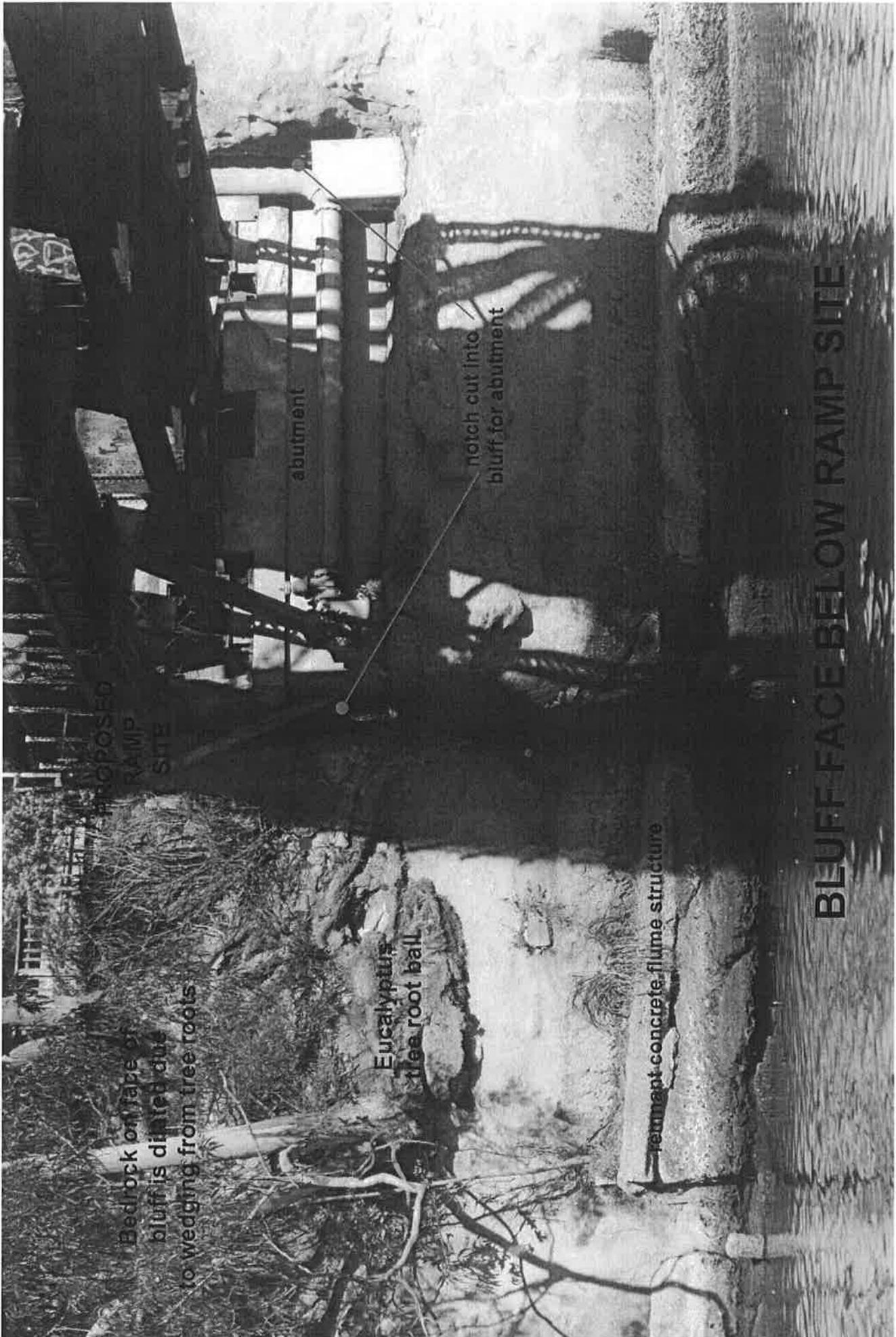
**APPENDIX B**  
**PHOTOGRAPHS OF SITE**

# SOUTH RAILROAD GRADE CUT

Dilated joint with soil and roots in it

Dilated joint





Bedrock on face of bluff is dilated due to wedging from tree roots

Eucalyptus tree root ball

remnant concrete flume structure

abutment

notch cut into bluff for abutment

# BLUFF FACE BELOW RAMP SITE



PROPOSED  
RAMP SITE

Eucalyptus  
tree root ball

remnant concrete flume structure

Eucalyptus  
tree root mat

Bedrock on face of  
bluff is dilated due  
to wedging from tree roots

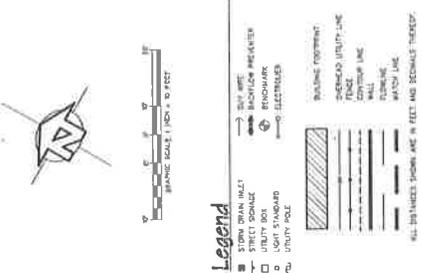
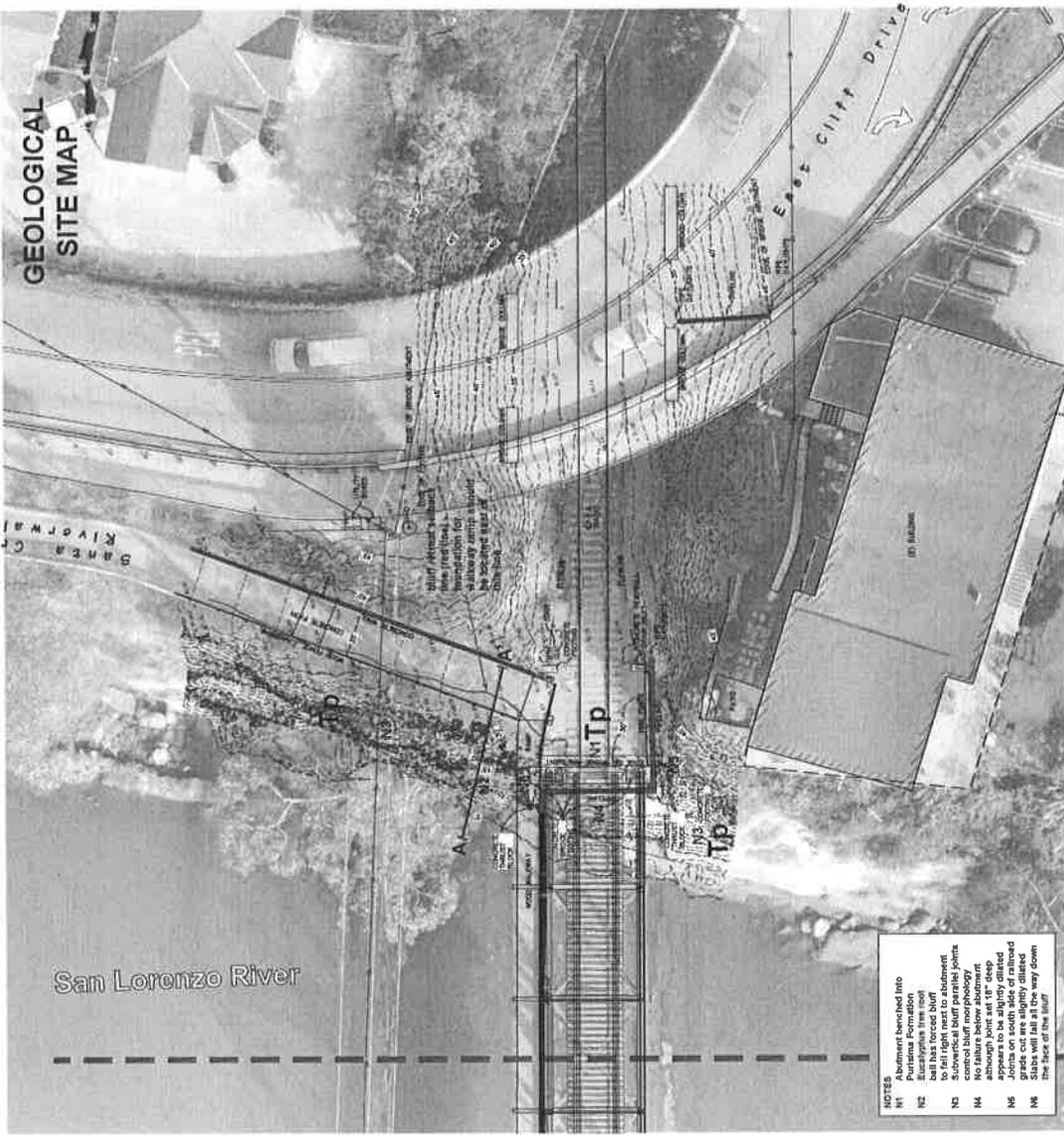
# BLUFF FACE NORTH OF RAMP SITE

## **APPENDIX C**

### **SCALE OF ACCEPTABLE RISKS FROM GEOLOGIC HAZARDS**

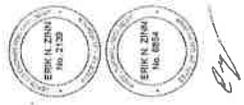
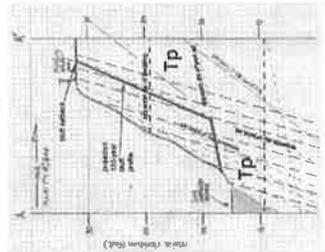
<b>SCALE OF ACCEPTABLE RISKS FROM SEISMIC GEOLOGIC HAZARDS</b>		
Risk Level	Structure Types	Extra Project Cost Probably Required to Reduce Risk to an Acceptable Level
Extremely low <sup>1</sup>	Structures whose continued functioning is critical, or whose failure might be catastrophic: nuclear reactors, large dams, power intake systems, plants manufacturing or storing explosives or toxic materials.	No set percentage (whatever is required for maximum attainable safety).
Slightly higher than under "Extremely low" level. <sup>1</sup>	Structures whose use is critically needed after a disaster: important utility centers; hospitals; fire, police and emergency communication facilities; fire station; and critical transportation elements such as bridges and overpasses; also dams.	5 to 25 percent of project cost. <sup>2</sup>
Lowest possible risk to occupants of the structure. <sup>3</sup>	Structures of high occupancy, or whose use after a disaster would be particularly convenient: schools, churches, theaters, large hotels, and other high rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings such as fire stations, secondary utility structures, extremely large commercial enterprises, most roads, alternative or non-critical bridges and overpasses.	5 to 15 percent of project cost. <sup>4</sup>
An "ordinary" level of risk to occupants of the structure. <sup>3,5</sup>	The vast majority of structures: most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.	1 to 2 percent of project cost, in most cases (2 to 10 percent of project cost in a minority of cases). <sup>4</sup>
<p><sup>1</sup> Failure of a single structure may affect substantial populations.</p> <p><sup>2</sup> These additional percentages are based on the assumptions that the base cost is the total cost of the building or other facility when ready for occupancy. In addition, it is assumed that the structure would have been designed and built in accordance with current California practice. Moreover, the estimated additional cost presumes that structures in this acceptable risk category are to embody sufficient safety to remain functional following an earthquake.</p> <p><sup>3</sup> Failure of a single structure would affect primarily only the occupants.</p> <p><sup>4</sup> These additional percentages are based on the assumption that the base cost is the total cost of the building or facility when ready for occupancy. In addition, it is assumed that the structures would have been designed and built in accordance with current California practice. Moreover the estimated additional cost presumes that structures in this acceptable-risk category are to be sufficiently safe to give reasonable assurance of preventing injury or loss of life during and following an earthquake, but otherwise not necessarily to remain functional.</p> <p><sup>5</sup> "Ordinary risk": Resist minor earthquakes without damage; resist moderate earthquakes without structural damage, but with some non-structural damage; resist major earthquakes of the intensity or severity of the strongest experienced in California, without collapse, but with some structural damage as well as non-structural damage. In most structures it is expected that structural damage, even in a major earthquake, could be limited to repairable damage. (Structural Engineers Association of California)</p> <p>Source: <i>Meeting the Earthquake</i>, Joint Committee on Seismic Safety of the California Legislature, Jan. 1974, p.9.</p>		

<b>SCALE OF ACCEPTABLE RISKS FROM NON-SEISMIC GEOLOGIC HAZARDS<sup>6</sup></b>		
Risk Level	Structure Type	Risk Characteristics
Extremely low risk	Structures whose continued functioning is critical, or whose failure might be catastrophic: nuclear reactors, large dams, power intake systems, plants manufacturing or storing explosives or toxic materials.	1. Failure affects substantial populations, risk nearly equals nearly zero.
Very low risk	Structures whose use is critically needed after a disaster: important utility centers; hospitals; fire, police and emergency communication facilities; fire station; and critical transportation elements such as bridges and overpasses; also dams.	1. Failure affects substantial populations. Risk slightly higher than 1 above.
Low risk	Structures of high occupancy, or whose use after a disaster would be particularly convenient: schools, churches, theaters, large hotels, and other high rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings such as fire stations, secondary utility structures, extremely large commercial enterprises, most roads, alternative or non-critical bridges and overpasses.	1. Failure of a single structure would affect primarily only the occupants.
"Ordinary" risk	The vast majority of structures: most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.	1. Failure only affects owners /occupants of a structure rather than a substantial population.  2. No significant potential for loss of life or serious physical injury.  3. Risk level is similar or comparable to other ordinary risks (including seismic risks) to citizens of coastal California.  4. No collapse of structures; structural damage limited to repairable damage in most cases. This degree of damage is unlikely as a result of storms with a repeat time of 50 years or less.
Moderate risk	Fences, driveways, non-habitable structures, detached retaining walls, sanitary landfills, recreation areas and open space.	1. Structure is not occupied or occupied infrequently.  2. Low probability of physical injury.  3. Moderate probability of collapse.
<sup>6</sup> Non-seismic geologic hazards include flooding, landslides, erosion, wave runup and sinkhole collapse		



SEE SHEET 2 FOR CONTINUATION

**GEOLOGICAL CROSS SECTION**



**ZINN GEOLOGY**

**GEOLOGICAL SITE MAP & CROSS SECTION**

San Lorenzo River Eastern Span  
 Santa Cruz, California

Scale: 1" = 50' FEET  
 Date: 1/18/16  
 Drawn by: E. Zinn

**Plate 1**

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## Appendix C

Hazardous Materials Technical Study, MBSST Segment 8, San  
Lorenzo River Railroad Trestle Bridge – Trail Widening Project

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**Rincon Consultants, Inc.**

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www.rinconconsultants.com

March 5, 2018  
Project No: 17-04616

Dale Hendsbee  
Mesiti-Miller Engineering, Inc.  
224 Walnut Avenue, Suite B  
Santa Cruz, California 95060  
Via email: Dale@m-me.com

**Subject: Hazardous Materials Technical Study  
Monterey Bay Sanctuary Scenic Trail (MBSST) Segment 8  
San Lorenzo River Railroad Trestle Bridge – Trail Widening Project  
Santa Cruz, California**

Dear Mr. Hendsbee:

This report presents our findings of a Hazardous Materials Technical Study for the Monterey Bay Sanctuary Scenic Trail (MBSST) Rail Trail Segment 8 San Lorenzo River Railroad Trestle Bridge – Trail Widening Project (Project) located in Santa Cruz, California. This report has been prepared for Mesiti-Miller Engineering, Inc. (Mesiti-Miller) by Rincon Consultants, Inc. (Rincon) in accordance with our contract dated November 21, 2017.

## Project Description

As described in the Request for Qualifications document dated June 29, 2017, it is our understanding that the Project is located near the mouth of the San Lorenzo River in the City of Santa Cruz, and entails replacing the existing 4-foot-wide walkway on the San Lorenzo River Railroad Trestle Bridge (milepost 19.43) with a new multi-use trail that is 10 to 12 feet wide. The structure is approximately 306 feet long and connects to the existing access ramps at each end of the bridge. The Project would involve installation of a new landing and footing at the eastern ramp, which was constructed approximately 28 years ago, to maintain the connection to East Cliff Drive above and to accommodate a future extension to Segment 9 of the Rail Trail. The western ramp was constructed approximately two years ago and no modifications are anticipated. It is our understanding that the existing railroad tracks are inactive at this time and that although trains come to the Boardwalk, they do not currently cross the San Lorenzo River Railroad Trestle Bridge. Construction is expected to be initiated in the summer of 2018, with anticipated completion date of early 2019.

## Purpose and Scope

The purpose of this Hazardous Materials Technical Study is to examine the potential for hazardous materials that may be encountered by subcontractors and the public as a result of the proposed Project, and the effects that such materials may have on proposed future development. Of particular concern is



the potential for lead-based paint (LBP) or asbestos-containing materials (ACM) that may be disturbed during structural analysis or construction. Additionally, it is our understanding that the existing railroad ties, which may consist of hydrocarbon-treated wood, will not be disturbed as part of the proposed Project. We expect that there may be minor soil disturbance on the east bluff potentially to accommodate the wider landing needed for the widened cantilevered section.

Rincon has reviewed available documents pertaining to the proposed Project as well as hazardous materials information available online through the California Department of Toxic Substances Control (DTSC) and other oversight agencies.

The following sections describe potential impacts relating to hazardous materials for the Project.

## Hazardous Materials Evaluation

Hazardous material regulatory data reviewed included leaking underground storage tank (LUST) cleanup, cleanup programs, military, and land disposal sites tracked through the State Water Resources Control Board (SWRCB) GeoTracker database and the DTSC EnviroStor database.

### *GeoTracker and EnviroStor Review*

There are no SWRCB GeoTracker or DTSC EnviroStor sites located within 1,000 feet of the Project site.

### *CORTESE Review*

There are no Cortese listings (DTSC Hazardous Waste and Substances Site List) within 5 miles of the Project site (see attachment).

### *DOGGR Review*

Based on a review of the Division of Oil, Gas, and Geothermal Resources (DOGGR) website, the Project site is located in the Coastal District; however, there are no oil wells located within 1,000 feet of the Project site (DOGGR, 2018).

### *Hazardous Material Pipelines Review*

The National Pipeline Mapping System (NPMS) website indicates that there are no hazardous liquid pipelines and no gas transmission pipelines located within a quarter mile of the Project site. The NPMS website did not report any pipeline accidents or incidents within 1,000 ft. of the Project site (NPMS, 2018).

### *Trestle Components*

The removal of existing trestle components (e.g., paint, framework sections, joints, and other appurtenances) requires proper management for their reuse or disposal. The potential contaminants of concern consist of ACM in some fabricated trestle components, and heavy metals (lead) in paint coatings. Consequently, an LBP and ACM survey should be completed prior to the commencement of the proposed Project.

If generator knowledge is not available regarding fabricated materials or coatings, or a survey cannot be conducted, then trestle joint compounds and/or paint coating should be assumed to contain asbestos and/or lead, and should be managed accordingly. If potential ACM is discovered during construction and



there is a concern over friability or if LBP is suspected, additional sampling may be required. A State-certified abatement and industrial hygiene firm should be retained to support abatement activities, where necessary.

Because the existing railroad ties will reportedly not be disturbed under the actions of this Project, hazards associated with these components have not been included in this document.

### *Soil*

Minor soil disturbance may be expected on the east bluff to accommodate the wider landing needed for the widened cantilevered section. Given the proximity of the soil to historically active railroad tracks, there is the potential for shallow soil located on the eastern bluff to be impacted by hydrocarbons, heavy metals, and organochlorine pesticides.

### *Groundwater and Surface Water*

It is our understanding that groundwater and surface water will not be encountered or disturbed as part of the proposed Project. However, it should be noted that asbestos and lead-based paint should be properly disposed offsite and should be prevented from entering San Lorenzo Creek River water.

## Recommendations

The following measures are recommended to reduce the risk of exposure to hazardous materials during construction of the Project.

**Dust Control.** It is our understanding that the proposed Project may include surface cleaning/refurbishment, sandblasting, the attachment of new materials to the existing trestle components, and the potential for minor amount of soil disturbance on the east bluff. Therefore, a dust control plan (DCP) should be prepared for the Project. The purpose of the DCP is to set forth best management practices to be followed to minimize fugitive dust, paint chips, and other vagrant airborne particles that may be generated during the proposed Project. Additionally, no particulate matter generated during abatement and construction activities should be allowed to enter the San Lorenzo River.

**Public Foot Traffic.** Pedestrian traffic on the San Lorenzo River Railroad Trestle Bridge should be limited during Project construction. Additionally, the construction contractor(s) should set up an Exclusion Zone which extends under the bridge, on the bridge, and around the bridge. The Exclusion Zone should be coned, delineated using caution tape and signs, and monitored for public encroachment.

**Lead-Based Paint Materials.** A lead-based paint survey should be completed prior to construction of the proposed Project. If LBP is identified, the construction contractor should inform the Project Manager immediately so that the handling and removal of LBP can be completed by properly trained and protected employees.

**Asbestos-Containing Materials.** An ACM survey should be completed prior to construction of the proposed Project. If ACM is identified, the construction contractor should inform the Project Manager immediately so that the handling and removal of ACM can be completed by properly trained and protected employees.

**Impacted Soil.** If soil along the eastern bluff will be disturbed, then shallow soil samples should be collected prior to construction of the proposed Project. If impacted soil is identified, the construction contractor should inform the Project Manager immediately so that the handling, sampling, and removal



of impacted soil can be completed by properly trained and protected employees. If more soil than anticipated is disturbed, then a Soil Management Plan (SMP) should be prepared to detail soil sampling procedures and aid in the characterization of potentially impacted soil for disposal.

**Storage and Labeling.** If impacted soil, ACM and or lead-impacted hazardous materials are generated during construction of the proposed Project, the soil/materials should be stored appropriately and properly labeled pending disposal. Impacted soil should be contained in properly labeled, DOT-approved 55-gallon industrial drums. Impacted soil should be containerized separate from ACM or lead-impacted materials. A minimal amount of hazardous material should be stored onsite. Because fuel for equipment and other materials may be stored onsite or at a nearby staging area, coordination with the Project team should occur to determine if a Hazardous Materials Business Plan (HMBP) will be needed. In general, hazardous material and impacted soil should be covered and stored off the ground in secondary containment or on an impervious surface. Hazardous materials should not be stored near the water or where water flows, and incompatible materials should not be stored together. The State of California (Health & Safety Code § 25507) requires an owner or operator of a facility to establish and implement an HMBP if the facility handles or stores a hazardous material or mixture containing a hazardous material that has a quantity at any one time during the reporting year equal to or greater than 500 pounds of a solid substance, 55 gallons of a liquid, or 200 cubic ft. of compressed gases. The HMBP should be prepared in accordance with the California Health & Safety Code § 25507.

Should you have any questions concerning this review, please do not hesitate to contact either of the undersigned.

Sincerely,  
**Rincon Consultants, Inc.**

Meghan Hearne, GIT  
Environmental Scientist

Ed Morelan, PG, CEG  
Principal, Senior Engineering Geologist

Attachment – Cortese Review Documentation



## References

- California Department of Conservation. Division of Oil, Gas, and Geothermal Resources Well Finder. Available online: <http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx>. Accessed February 2018.
- California Department of Toxic Substances Control (DTSC). EnviroStor online data management system. Available online: <http://www.envirostor.dtsc.ca.gov/public/search.asp?basic=True>. Accessed February 2018.
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- Santa Cruz, City of. City of Santa Cruz 2030 General Plan. Available online: <http://www.cityofsantacruz.com/home/showdocument?id=33418> Accessed February 2018.
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**HAZARDOUS WASTE AND SUBSTANCES SITE LIST**

For additional information and listing of sites, please refer to the [California Environmental Protection Agency's Cortese web pages](#)

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<a href="#">REPORT</a> <a href="#">MAP</a>	<a href="#">SITE / FACILITY NAME</a>	<a href="#">ESTOR / EPA ID</a>	<a href="#">PROGRAM TYPE</a>	<a href="#">STATUS</a>	<a href="#">ADDRESS DESCRIPTION</a>	<a href="#">CITY</a>	<a href="#">ZIP</a>	<a href="#">CALENVIROSCREEN SCORE</a>	<a href="#">COUNTY</a>
<a href="#">REPORT</a> <a href="#">MAP</a>	SYNTEX	43360114	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3300 HILLVIEW AVE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	MOYER CHEMICAL	60001663	STATE RESPONSE	ACTIVE	1300,1310, 1336 OLD BAYSHORE HWY	SAN JOSE	95112	86-90%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	MANSION GROVE	43280031	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	4101 LICK MILL BOULEVARD	SANTA CLARA	95054	26-30%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	SOUTH BAY ASBESTOS AREA	43490060	FEDERAL SUPERFUND - LISTED	ACTIVE - <b>LAND USE RESTRICTIONS</b>	FT OF LIBERTY ST GUADALUPE RIV	SAN JOSE	95002	81-85%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	HEWLETT PACKARD BUILDINGS 28A, B, AND C	43350089	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	CORNER OF PAGE MILL RD AND PORTER DRIVE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	TELEDYNE MEC	43360088	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3165 PORTER DR	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	AYDIN ENERGY	43360085	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE - <b>LAND USE RESTRICTIONS</b>	3180 HANOVER STREET	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	GILROY - MGP - 1	43490064	STATE RESPONSE	BACKLOG	MONTEREY/6TH/OLD GILROY	GILROY	95020	86-90%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	TOWN & COUNTRY VILLAGE SHOPPING CENTER	43590001	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE - <b>LAND USE RESTRICTIONS</b>	2980 & 3030 STEVENS CREEK BOULEVARD	SAN JOSE	95113	41-45%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	HEWLETT PACKARD BUILDING 15	43360078	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3215 PORTER DRIVE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	COHERENT INC	43360115	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3210 PORTER DR	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	SMITHKLINE AND FRENCH LABORATORIES LOCKHEED	43360079	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3400 HILLVIEW AVENUE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	MISSILES AND SPACE CO BLDG 255	43280130	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3170 PORTER DRIVE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	WATKINS JOHNSON COMPANY (SRP)	43360076	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3333 HILLVIEW AVENUE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	VARIAN	43360086	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	611 HANSEN WAY	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	HILLVIEW - ELEANOR AREA PLUME	43490059	STATE RESPONSE	BACKLOG	BTW HILLVIEW;ELEANOR AVE&SAN ANTONIO RD	LOS ALTOS	94022	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	ALMADEN QUICKSILVER COUNTY PARK	43100001	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	ALAMITOS ROAD & HICKS ROAD	SAN JOSE	95110	6-10%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	HILLVIEW PORTER PLUME	43360077	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	HILLVIEW AVENUE AND PORTER DRIVE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	TELEDYNE SINGER	43360073	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	3176 PORTER DRIVE	PALO ALTO	94304	1-5%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	DELIA'S CLEANERS	60000349	STATE RESPONSE	ACTIVE	7335 BOLINGER ROAD	CUPERTINO	95014	16-20%	SANTA CLARA
<a href="#">REPORT</a> <a href="#">MAP</a>	EL PUEBLO ROAD PLUME	44490005	STATE RESPONSE	BACKLOG	EL PUEBLO ROAD	SCOTTS VALLEY	95066	6-10%	SANTA CRUZ
<a href="#">REPORT</a> <a href="#">MAP</a>	SHORT'S SCRAP IRON AND METAL, INC	45500010	STATE RESPONSE	BACKLOG	2041 GIRVAN ROAD	REDDING	96001	31-35%	SHASTA
<a href="#">REPORT</a> <a href="#">MAP</a>	IRON MOUNTAIN MINE	45100001	FEDERAL SUPERFUND - LISTED	ACTIVE	OFF HWY 299 - 9 MI NW OF REDDING	REDDING	96001	36-40%	SHASTA
<a href="#">REPORT</a> <a href="#">MAP</a>	VALLEY PLATING COMPANY	45340001	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE -	3872 EL CAJON	SHASTA LAKE	96019	31-35%	SHASTA

<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	J H BAXTER CO	47240001	FEDERAL SUPERFUND - LISTED	LAND USE RESTRICTIONS CERTIFIED / OPERATION & MAINTENANCE - LAND USE RESTRICTIONS	422 MILL STREET	WEED	96094	61-65%	SISKIYOU
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	BLUE LEDGE MINE	60001382	FEDERAL SUPERFUND - LISTED	ACTIVE	2 MILES SOUTH OF OREGON ON ROAD 1060	ROGUE RIVER NATIONAL FOREST	00000	21-25%	SISKIYOU
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	SOUTHERN PACIFIC, SUISUN MARSH	48400001	STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE - LAND USE RESTRICTIONS	END OF CHADBORNE RD, SUISUN MARSH	FAIRFIELD	94585	41-45%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	TRAVIS AFB - IR/MMRP	48970001	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	5025 ACRES; 3 MILES EAST OF FAIRFIELD, CA	TRAVIS	94535	NA	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	MARE ISLAND NAVAL SHIPYARD	48970002	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	W END OF TENNESSEE STREET, MARE ISLAND INTERSECTION OF	VALLEJO	94590	81-85%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	WICKES FOREST INDUSTRIES	48240001	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	HOLDENER & A STREETS	ELMIRA	95625	61-65%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	BENICIA ARSENAL (J09CA0756)	48970007	STATE RESPONSE	ACTIVE	BETWEEN HWY 680 & 4TH STREET	BENICIA	94510	56-60%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	RELATED HEALTH RESEARCH BENICIA ARSENAL, AREA I, BUILDING 50 COMPLEX	48990004	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	U.C., DAVIS (ITEH) - OLD DAVIS ROAD	DAVIS	95616	56-60%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	BENICIA ARSENAL, AREA I, BUILDING 165	60001959	STATE RESPONSE	ACTIVE	946 TYLER ROAD	BENICIA	94510	56-60%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	DIXON NAVAL RESERVE TRAINING FACILITY	48970003	STATE RESPONSE	ACTIVE	750 JACKSON STREET	BENICIA	94510	56-60%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	MARE ISLAND WESTON	48000004	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	750 DUMP ROAD - PO BOX 2135	VALLEJO	94592	81-85%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	MARE ISLAND LENNAR	48330003	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	900 WALNUT AVENUE, QUARTERS D	VALLEJO	94592	81-85%	SOLANO
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	BODEGA HEAD GUNNERY RANGE - J09CA7290	80001096	STATE RESPONSE	ACTIVE		BOLINAS		6-10%	SONOMA
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	PETER PAN CLEANERS	60000979	STATE RESPONSE	ACTIVE	2231 MENDOCINO AVENUE	SANTA ROSA	95403	51-55%	SONOMA
<a href="#">[REPORT]</a>		ECODYNE DRAINAGE DITCH	60002525	STATE RESPONSE	ACTIVE	930 SHILOH ROAD	WINDSOR	95492		SONOMA
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	ECODYNE POND	49240001	STATE RESPONSE	ACTIVE	930 SHILOH RD	WINDSOR	95492	46-50%	SONOMA
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	PETALUMA BOMB TARGET	80001081	STATE RESPONSE	ACTIVE		PETALUMA		41-45%	SONOMA
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	VALLEY WOOD PRESERVING, INC.	50240001	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	2237 SOUTH GOLDEN STATE BLVD	TURLOCK	95380	96-100%	STANISLAUS
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	RIVERBANK ARMY AMMUNITION DEPOT	50340001	FEDERAL SUPERFUND - LISTED	ACTIVE	5300 CLAUS ROAD	RIVERBANK	95367	71-75%	STANISLAUS
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	CROWS LANDING NALF	50970001	STATE RESPONSE	ACTIVE	1.5 MI NW OF CROWS LANDING; (T6S R8E) MCHENRY AVE.,	CROWS LANDING	95313	76-80%	STANISLAUS
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	MODESTO GROUNDWATER CONTAMINATION	50950002	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	SOUTH OF ORANGEBURG AVE. (BEHIND HALFORD'S CLEANERS AT 941 MCHENRY AVE.)	MODESTO	95351	81-85%	STANISLAUS
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	CUSTOM CHROME AND BUMPER	51340009	STATE RESPONSE	ACTIVE	335 GARDEN HIGHWAY	YUBA CITY	95991	81-85%	SUTTER
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	MODERN DRY CLEANERS	60001154	STATE RESPONSE	ACTIVE	609 WALNUT STREET	RED BLUFF	96080	51-55%	TEHAMA
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	CORNING CITY DISPOSAL SITE	52490006	STATE RESPONSE	ACTIVE	RAWSON & CARONA, SE CORNER	CORNING	96021	71-75%	TEHAMA
<a href="#">[REPORT]</a>	<a href="#">[MAP]</a>	FORMER VILLAGE CLEANERS	60001053	STATE RESPONSE	BACKLOG	2615 S. MOONEY BLVD.	VISALIA	93277	71-75%	TULARE

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