

DRAFT FOR PUBLIC REVIEW

**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**SAN FRANCISCO BAY TRAIL RICHMOND GAP CLOSURE -
POINT PINOLE TO WILSON POINT CONTRA COSTA COUNTY,
CALIFORNIA**



LSA

May 2025

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**INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION**

**SAN FRANCISCO BAY TRAIL POINT PINOLE TO WILSON POINT
CONTRA COSTA COUNTY, CALIFORNIA**

Submitted to:

East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, California 94605

Prepared by:

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Project No. BKF2102



May 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
-X	Railroad Corridor Combining District
AB	Assembly Bill, also aggregate base
ABAG	Association of Bay Area Governments
Air Basin	San Francisco Bay Area Air Basin
Air District	Bay Area Air Quality Management District
AMP	Archaeological Monitoring Plan
Basin Plan	Water Quality Control Plan
Bay Trail	San Francisco Bay Trail
BCDC	San Francisco Bay Conservation and Development Commission
bgs	below ground surface
BMPs	best management practices
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CALGreen Code	California Green Building Standards Code
California Register	California Register of Historical Resources
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CGP	Construction General Permit

CH ₄	methane
Clean Air Plan	Air District 2017 Clean Air Plan
CNDDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
County	Contra Costa County
CRPR	California Rare Plant Rank
CWA	federal Clean Water Act
dB	decibel(s)
dBA	a-weighted decibel(s)
DBH	diameter at breast height
District	East Bay Regional Park District, also Park District
District Master Plan	East Bay Regional Park District 2013 Master Plan
EO	Executive Order
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	Geographic Information Systems
GPS	Global Positioning System

GWP	global warming potential
H-I	Heavy Industrial
HE-C	Housing Element Consistency
HFCs	hydrofluorocarbons
HMMP	Habitat Mitigation and Monitoring Plan
HSP	health and safety plan
in/sec	inches per second
IS/MND	Initial Study/Mitigated Negative Declaration
L _{dn}	day-night average noise level
L _{eq}	equivalent continuous sound level
L _{max}	maximum instantaneous noise level
LOS	level of service
MCV	<i>Manual of California Vegetation</i> , Second Edition
MLD	Most Likely Descendant
MOU	Memorandum of Understanding
MSE	mechanically stabilized earth
MTC	Metropolitan Transportation Commission
N ₂ O	nitrous oxide
NAHC	Native American Heritage Commission
NGVD	National Geodetic Vertical Datum
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center

NWS	National Weather Service
OPR	California Governor's Office of Planning and Research
OS	Open Space
P-1	Planned Unit
PA	Planned Area
Park District	East Bay Regional Park District, also District
PCB	polychlorinated biphenyls
PFCs	perfluorocarbons
Phase I ESA	Phase I Environmental Site Assessment
PM ₁₀	particulate matter less than 10 microns in size
PM _{2.5}	particulate matter less than 2.5 microns in size
PPV	peak particle velocity
PR	Parks and Recreation
PRC	Public Resources Code
project	San Francisco Bay Trail Point Pinole to Wilson Point Project
PS	Public and Semi-Public
R-6	Single-Family Residential
ROG	reactive organic gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCS	Sustainable Communities Strategy
SF ₆	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SLF	Sacred Lands File

SMP	Site Management Plan
SO ₂	sulfur dioxide
SOI	Sphere of Influence
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
TACs	toxic air contaminants
TMDLs	total maximum daily loads
UPRR	Union Pacific Railroad
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
Water Board	San Francisco Bay Regional Water Quality Control Board
YBM	young bay mud

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1.0 PROJECT INFORMATION

1. Project Title:

San Francisco Bay Trail Point Pinole to Wilson Point

2. Lead Agency Name and Address:

East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605

3. Contact Person and Phone Number:

Suzanne Wilson
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605
(510) 544-2609/swilson@ebparks.org

4. Project Location:

The project site consists of a linear trail alignment that begins approximately 1 mile east of where Atlas Road enters Point Pinole Regional Shoreline and connects to Wilson Point at the Pinole Shores Park, approximately 3,300 feet west of Pinole Shores Drive. The project alignment is adjacent to and within the Union Pacific Railroad (UPRR) right of way. The railroad is immediately adjacent to the San Pablo Bay shoreline, with the Bay to the north. The project site is bordered by Richmond to the west and southwest and Pinole to the east.

5. Project Sponsor's Name and Address:

East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605

6. General Plan Designation:

City of Richmond: Open Space (OS); Unincorporated Contra Costa County: Public and Semi-Public (PS) and Parks and Recreation (PR)

7. Zoning:

City of Richmond: Planned Area (PA); Unincorporated Contra Costa County: Planned Unit (P-1), Heavy Industrial (H-I), Railroad Corridor Combining District (-X), Single-Family Residential (R-6)

8. Description of Project:

The East Bay Regional Park District (District or Park District) proposes to open approximately 1 mile of the San Francisco Bay Trail (Bay Trail) along the San Pablo Bay shoreline and UPRR right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at the Pinole Shores Park in Contra Costa County, California (project). The Bay Trail is a planned and

partially completed 500-mile multi-use trail connecting the shorelines of all nine San Francisco Bay Area counties and encircling San Pablo and San Francisco bays. More than 350 miles of the trail are currently completed and open for public use. The proposed project would close a gap between existing segments of the Bay Trail in the Point Pinole Regional Shoreline and Wilson Point at the Pinole Shores Park. A more detailed project description is provided in Section 2.0

9. Surrounding Land Uses and Setting:

The project site is surrounded by a variety of land uses. Surrounding land uses include industrial, residential, railroad, resource lands, and recreational parklands owned by a variety of landowners, including private and public entities. The project site is adjacent to several developed residential neighborhoods within Richmond and unincorporated Contra Costa County, including the Montalvin Manor neighborhood and Tara Hills neighborhood.

10. Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):

- Contra Costa County Flood Control and Water Conservation District
- Contra Costa County
- United States Army Corps of Engineers
- Regional Water Quality Control Board (RWQCB)
- California Department of Fish and Wildlife (CDFW)
- San Francisco Bay Conservation and Development Commission

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On behalf of the Park District, LSA contacted the Native American Heritage Commission (NAHC) on September 15, 2021, for a search of its Sacred Lands File (SLF). Ms. Katy Sanchez, NAHC Associate Environmental Planner, responded to the SLF search request on September 15, 2021, stating that the results were positive and to contact the tribes on the list provided. In December 2023, the Park District requested an updated Native American list for Contra Costa County (County).

On March 12, 2024, the Park District transmitted letters (via certified mail and electronic mail) to the individuals on the Native American list for Contra Costa County regarding this project, requesting a response to consult pursuant to Assembly Bill (AB) 52 within 30 days. For the tribes that had not responded by March 27, 2024, the Park District cultural resources staff placed follow-up phone calls.

Three tribes requested AB 52 consultation: the Ohlone Indian Tribe, the Confederated Villages of Lisjan Nation, and the Indian Canyon Mutsun Band of Costanoan. A summary of the correspondence and AB 52 consultation efforts is provided in Section 4.18, Tribal Cultural Resources. The outcomes of the AB 52 consultation with the Ohlone Indian Tribe, the Confederated Villages of Lisjan Nation, and the Indian Canyon Mutsun Band of Costanoan resulted in Mitigation Measures TCR-1 through TCR-4, which are incorporated into Section 4.18. All NAHC correspondence and consultation notes/records are on file with the Park District.

2.0 PROJECT DESCRIPTION

The East Bay Regional Park District (District or Park District) proposes to open approximately 1 mile of the San Francisco Bay Trail (Bay Trail) along the San Pablo Bay shoreline and Union Pacific Railroad (UPRR) right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at Pinole Shores Park in Contra Costa County, California (project). The Bay Trail is a planned and partially completed 500-mile multi-use trail connecting the shorelines of all nine San Francisco Bay Area counties and encircling San Pablo and San Francisco bays. More than 350 miles of the trail are currently completed and open for public use. The proposed project would close a gap between existing segments of the Bay Trail in the Point Pinole Regional Shoreline and Wilson Point at the Pinole Shores Park.

2.1 CONTACT PERSON

Any questions or comments regarding this Initial Study/Mitigated Negative Declaration (IS/MND), its assumptions, or its conclusions should be referred to:

Suzanne Wilson
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605
E-mail Address: swilson@ebparks.org

OR

Rourke Healey
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605
E-mail Address: rhealy@ebparks.org

2.2 PROJECT LOCATION

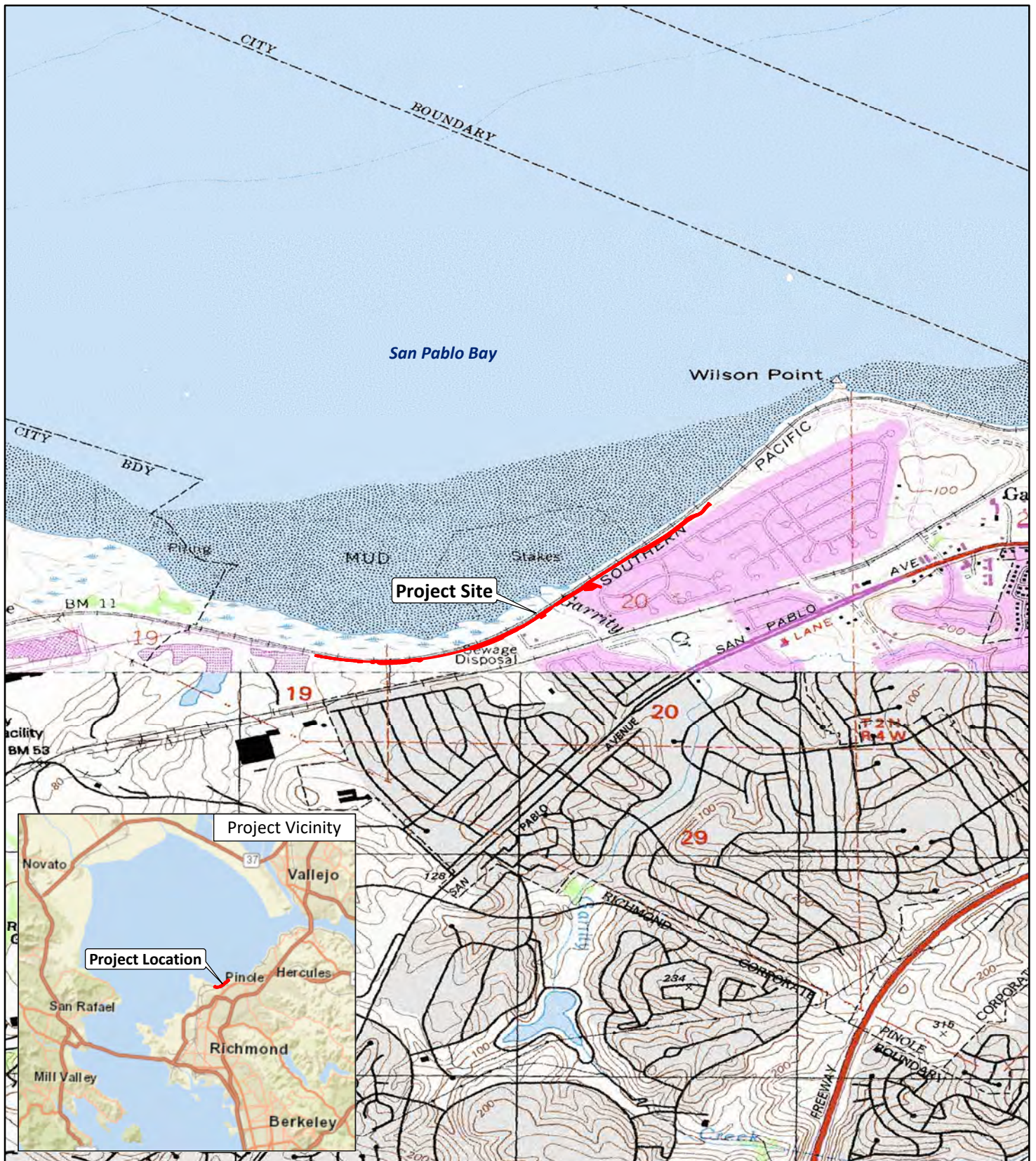
The project site is in the San Francisco Bay Area, within the city of Richmond and an unincorporated area of Contra Costa County. The project site consists of a linear trail alignment that begins approximately 1 mile east of where Atlas Road enters Point Pinole Regional Shoreline and connects to Wilson Point at Pinole Shores Park, approximately 3,300 feet west of Pinole Shores Drive (Figure 1). The project alignment is adjacent to and within the UPRR right-of-way. The railroad is immediately adjacent to the San Pablo Bay shoreline, with the Bay to the north. The project site is bordered by Richmond to the west and southwest and Pinole to the east.

The project site is surrounded by a variety of land uses and neighborhoods. Surrounding land uses include industrial, residential, railroad, resource lands, and recreational parklands owned by a variety of landowners, including private and public entities. The project site is adjacent to several developed neighborhoods within Richmond and unincorporated Contra Costa County, including the Montalvin Manor neighborhood and Tara Hills neighborhood. Figure 2 depicts an aerial photograph of the project site and surrounding uses.

2.3 PROJECT BACKGROUND

The Park District is the lead agency for the proposed Wilson Point Segment of the Bay Trail. The District will obtain all necessary easements and agreements and will design, construct, manage, and maintain the proposed trail segment subject to agreements with the UPRR and other landowners.

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LSA

LEGEND

█ Project Site



0 1000 2000
FEET

SOURCE: BKF (01/2025); USGS 7.5' Quad.- Richmond, CA (1983) and Mare Island, CA (1980)

I:\B\BKF2102\GIS\Maps\IS-MND\Figure 1_Project Location and Vicinity.mxd (2/25/2025)

FIGURE 1

*San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Project Location and Vicinity Map*

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LSA

LEGEND

Project Site



0 312.5 625
FEET

SOURCE: BKF (01/2025); Google Maps (2025).

I:\B\BKF2102\GIS\Maps\IS-MND\Figure 2_Aerial Photo of the Project Site.mxd (2/21/2025)

FIGURE 2

*San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Aerial Photo of the Project Site*

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The District has an existing Memorandum of Understanding (MOU) that was renegotiated in 2016 with the UPRR, the owner of the subject railroad right-of-way. The existing MOU provides for trail use along specific segments of the project area, within the inland outermost 15 feet of the railroad right-of-way.

2.4 ENVIRONMENTAL SETTING

The project area includes the UPRR right-of-way, a heavily used rail corridor. The predominant width of the right-of-way is 100 feet accommodating an existing double track. The track runs roughly east-west along this segment of the railroad. The majority of the proposed alignment is adjacent to or just outside of the gravel area next to the UPRR tracks, within disturbed grassland habitat.

North of the tracks is tidal marsh and rock-hardened shoreline. This area is owned by the California State Lands Commission and leased and managed by the District. South of the railroad right-of-way extending from the Pinole Point Business Park to approximately 2,000 feet east is undeveloped wetland area. East of this wetland area, south of the railroad right-of-way, are several publicly owned properties including a small wastewater pump station and a community center ballfield owned and operated by the County, an undeveloped parcel owned by the District, and an undeveloped parcel that used to be occupied by Seaview Elementary School and is still owned by West Contra Costa Unified School District. East of the former school site is a residential neighborhood elevated above the shoreline and railroad on a low coastal bluff. An approximately 50-foot-long and 12-foot-wide segment of Garrity Creek intersects the project site. This creek segment appears to be tidally influenced, is unvegetated along its center, and includes a narrow band of brackish marsh plant species along both of its lower creek banks.

Each of the ownerships described above are demarcated by existing chain-link fences of varying heights, predominantly 6 feet or shorter. Fences are maintained by private contractors to the property owners and the UPRR.

The UPRR right-of-way in the project area contains many underground utilities. Identified utilities in the project area include a not-in-use Pacific Gas & Electric Co. transmission line, a Kinder-Morgan petrochemical line, an MCI and Qwest telephone line, and a West County Wastewater District sewer line. Because of the numerous utilities, the trail would be designed to overlie the majority of them but would still allow for continued easy access and trail reconstruction, if necessary, following utility maintenance and repair.

2.5 PROJECT DESCRIPTION

2.5.1 Recreational Trail

The proposed recreational trail would be constructed adjacent to or within the UPRR right-of-way. The proposed multi-use trail would generally be 10 feet wide with asphalt concrete surfacing and 2-foot unpaved shoulders on both sides for a total of 14 feet. The proposed trail would be designed in accordance with the District's standard for multi-use trails and would provide maintenance and emergency access.

The typical 3-inch-thick asphalt concrete paving would be placed over a 6-inch section of Class 2 aggregate base, compacted to 95 percent relative compaction. Consistent with the recommendations in the Preliminary Geotechnical Report the following measures would be implemented to prevent impacts to paved areas: lime treatment of the subgrade, increasing the aggregate base section, and/or adding cutoff curbs or edge drains to limit moisture transmission from the edges of the pavement. The paved trail surface would be out sloped at 2 percent to provide drainage and to meet Americans with Disabilities Act standards. The maximum grade of the trail alignment would be 5 percent. Two concrete boardwalks would be installed over wetland areas and one bridge would be constructed to span Garrity Creek. Near its northern terminus, the proposed trail would run along the bluff behind 8 to 10 homes immediately east of the former school site. This segment of the proposed trail would be constructed into the slope with retaining walls up to 10 feet high, which would require removal of a portion of an abandoned fuel transmission pipeline. Figure 3 shows the proposed project.

In several areas, the trail section would need to be built up to provide a transition grade to higher-lying areas, or to place the trail above the 100-year flood elevation of 6 feet and to provide a site line to San Pablo Bay. The minimum trail surface elevation would be 8 feet, and generally in the 9- to 19-foot elevation range along the UPRR right-of-way. In the eastern section of the trail alignment, the trail elevation would rise up to 50 feet in elevation to run along the coastal bluff. Grading would be balanced on site. The project would borrow or spoil fill/export along the proposed trail alignment within District-owned properties or through agreements with underlying property owners. No utility relocations are anticipated; however, as described above, removal of a portion of the abandoned transmission pipeline would be required.

2.5.1.1 Trail Access and Staging

Point Pinole Regional Shoreline would be the primary staging area and access point for the proposed trail segment. The park's hours vary between 8:00 a.m. to 7:00 p.m. and 8:00 a.m. to 4:00 p.m. depending on the time of year. The Bay Trail has a curfew of 10:00 p.m. to 5:00 a.m. However, bicycle commuters may apply for a permit from the District allowing them to use the trail for commute purposes during the daily closure. Parking is currently \$3 per vehicle and would be required for trail users leaving a vehicle within the park while using the Bay Trail. The District may develop a second formal access point and trailhead on the parcel owned by the Park District between the Seaview School property and the Montara Bay Community Center (potential development of a staging area is not part of this project). The Montara Bay Community Center property, owned by Contra Costa County, provides ample parking and could provide direct access to the District parcel. Currently, the Montara Bay Community Center and ballfields are only open via reservation through the County. If this were to become an access point to the project, the Park District would develop a management, maintenance, and parking agreement with Contra Costa County Sanitation District and Contra Costa County Public Works, the owner and the operator, respectively, of the existing informal gravel parking area serving the community center and ballfields. Figure 4 shows the proposed construction access.



LSA

LEGEND

- Limit of Grading
- Limit of Work (Temporary Impact)
- Stations

Impacts

- Permanent Impact - At Grade Trail
- Permanent Impact - Boardwalk
- Permanent Impact - Bridge
- Permanent Impact - Retaining Walls
- Temporary Impact



0 50 100
FEET

SOURCE: BKF (01/2025); Nearmap (07/2023).

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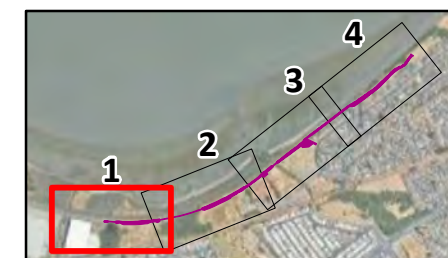


FIGURE 3
SHEET 1 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Proposed Project

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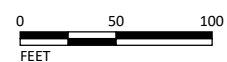
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LEGEND

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- Limit of Work (Temporary Impact)
- Stations

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- Permanent Impact - Bridge
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- Temporary Impact



SOURCE: BKF (01/2025); Nearmap (07/2023).

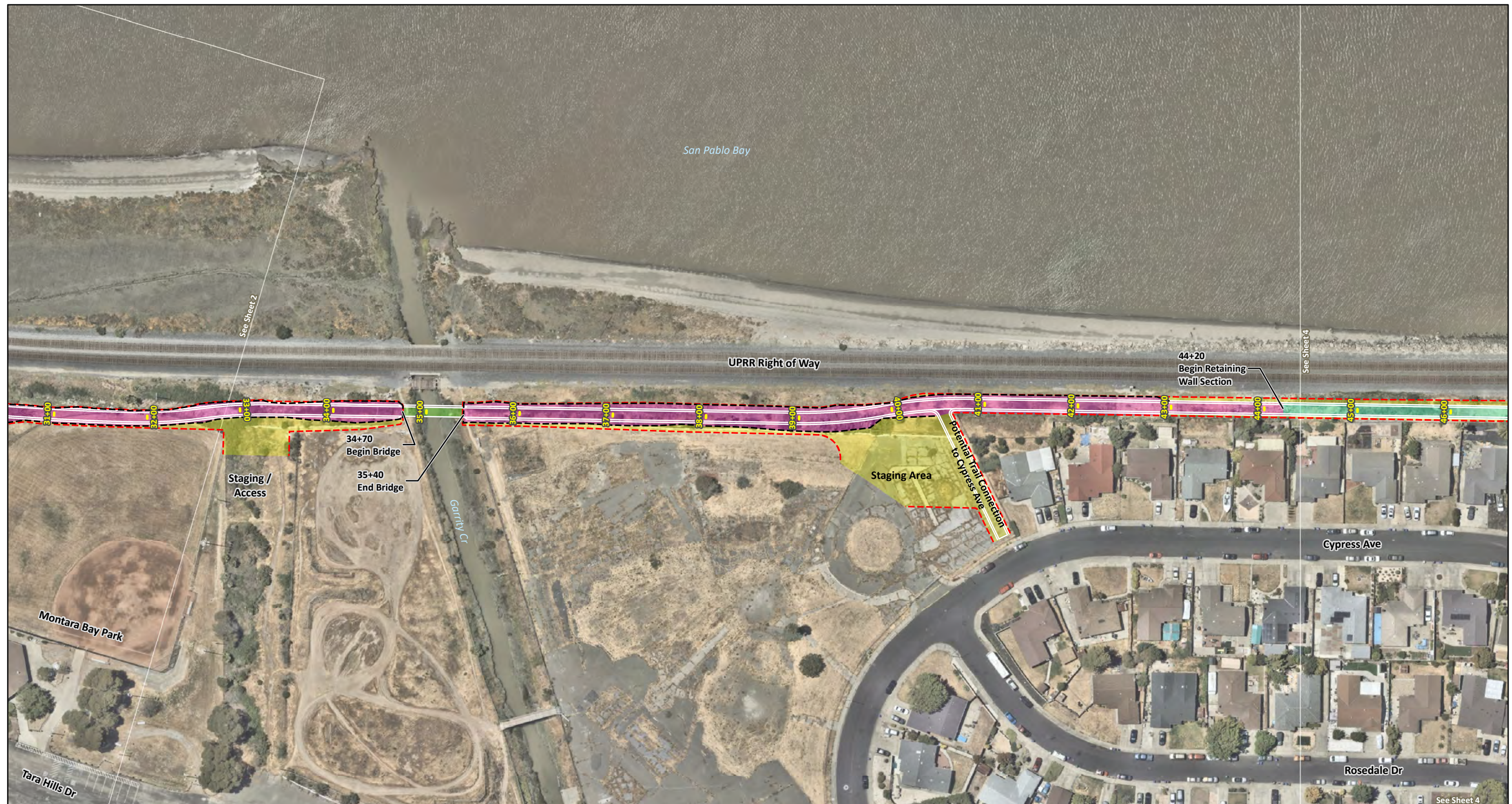
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FIGURE 3
SHEET 2 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Proposed Project

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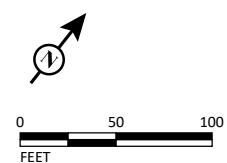
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LEGEND

- Limit of Grading
- Limit of Work (Temporary Impact)
- Stations

Impacts

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- Permanent Impact - Boardwalk
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- Permanent Impact - Retaining Walls
- Temporary Impact



SOURCE: BKF (01/2025); Nearmap (07/2023).

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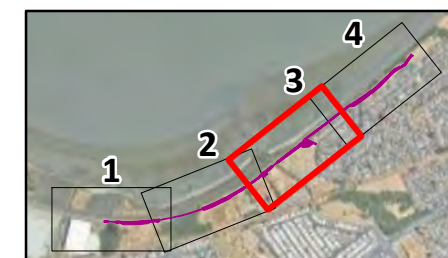


FIGURE 3
SHEET 3 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Proposed Project

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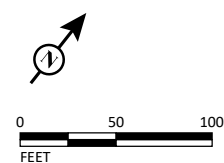
LSA

LEGEND

- Limit of Grading
- Limit of Work (Temporary Impact)
- Stations

Impacts

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- Permanent Impact - Boardwalk
- Permanent Impact - Bridge
- Permanent Impact - Retaining Walls
- Temporary Impact



SOURCE: BKF (01/2025); Nearmap (07/2023).

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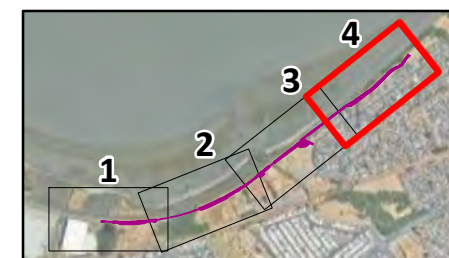


FIGURE 3
SHEET 4 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Proposed Project

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2.5.1.2 Wetland Crossings and Bridge

As described above, two concrete boardwalks with guard rails would be installed over wetland areas and one bridge would be constructed to span Garrity Creek. The proposed boardwalks would be supported on 16- to 24-inch-diameter concrete piers spaced 16 feet apart. Drilled piers or driven piles are anticipated to be 30 to 40 feet long, based on Bay mud depth of less than 20 feet.

A 60-foot-long, 12-foot-wide prefabricated bridge with guard rails would be installed for trail users to cross Garrity Creek. The proposed bridge structure would provide 3 feet of vertical clearance to the creek and the bridge abutments would be at least 5 feet from the edge of the creek bank. Because the bridge would clear span the creek, no impacts to the creek would occur.

2.5.1.3 Maintenance

Trail maintenance would be conducted from the trail itself. Elevated deck maintenance would take place from the proposed bridge deck. The trail and bridge would be designed to accommodate light-duty maintenance vehicles to accommodate periodic maintenance activities, as well as emergency services, if needed.

2.5.2 Construction

Construction of the proposed project would commence in 2026 and would extend for approximately 12 to 24 months. Construction hours would be during daylight hours, from approximately 8:00 a.m. to 5:00 p.m., daily. Construction staging would be on the project site adjacent to the proposed trail alignment. Construction workers, equipment and deliveries would access the site from the west via Atlas Road, the existing Bay Trail segment, and Tara Hills Road; construction access from the east would be provided by Cypress Avenue and Pinole Shores Drive. The maximum depth of excavation for the retaining walls on the cut slope below the existing residences would be between 10 and 15 feet. Piles in the wetland area would extend 30 to 40 feet below ground surface (bgs) and the bridge abutment at the creek crossing would extend approximately 10 feet bgs. Detailed construction information for specific trail segments is provided below based on the station numbers along the trail alignment as shown on Figure 3.

- **Station 4+93.18 to 10+42.76.** Construction of this section of the trail would consist of raising a portion of the existing trail. Construction would include removal of the existing asphalt concrete trail and preparation/compaction of the subgrade, requiring a depth of excavation of approximately 12 inches. Mechanically stabilized earth (MSE) retaining walls would be installed, as needed. These retaining walls would have no foundation or footing, requiring limited ground disturbance.
- **Station 11+50 to 17+50, 23+50 to 34+70, 35+40 to 44+20, 48+10 to 58.94.** Construction for these sections of the trail would consist of cut and fill on the hillside and construction of the paved trail on the compacted material. Construction would begin with clearing and grubbing using dozers and tree removal equipment as needed. Where cutting into the hillside would be necessary, dozers, scrapers and excavators would be used to remove excavated material.

Dump trucks or scrapers would be used to transport approximately 3,200 cubic yards of cut to fill locations within the project site. Approximately 2,450 cubic yards of import would be transported from off-site locations or from District property at the east end of the project. Trailside slopes would be graded at a slope of 2:1 or flatter where possible. The trail base material would be dumped from a truck, spread by a grader and compacted using a roller prior to placing the finish surface material. The finish surface material for these sections of the trail would consist of asphalt concrete, which would be placed using an asphalt paver and rollers. Shoulders would be decomposed granite over a compacted aggregate base (AB). Other minor equipment, such as backhoes, would be used to excavate and place drainage pipes.

- **Station 44+20 to 48+10.** This section of trail falls within UPRR right-of-way and has a limited allowable width. Construction for this section of the trail would consist of cuts and fills immediately under the trail bounded by retaining walls at heights needed to conform with existing grade. Construction would begin with clearing and grubbing using dozers and tree removal equipment as needed.

Where cutting into the hillside would be necessary, dozers, scrapers and excavators would remove excavated material. Dump trucks and scrapers would be used to cut and transport fill and mostly cut material across and beyond this section of trail. The trail base and shoulder material would be dumped from a truck, spread by a grader, and compacted using a roller prior to placing the finish surface material. The finish surface material for these sections of the trail would consist of asphalt concrete, which would be placed using an asphalt paver and rollers.

- **Station 10+42.76 to 11+50, 17+50 to 23+50, 34+70 to 35+40.** Within these sections, a concrete deck structure would be constructed to elevate the trail and carry it over wetlands, water or sensitive habitat areas. A cast-in-place concrete structure would be constructed on single-pile bents with drilled or driven shaft foundations. The cast-in-place concrete structure would require the use of falsework, concrete trucks and concrete pumping equipment. Drilled shaft foundations would require a drill/auger/driver rig. Minor equipment, such as a small crane and delivery trucks, would also be used for construction of this portion of the elevated structure.

2.6 REQUIRED PERMITS AND APPROVALS

While the District is the CEQA Lead Agency for the proposed project, other agencies also have discretionary authority related to the project and approvals or serve as a responsible and/or trustee agency in connection to the proposed project. Table 2.A lists these agencies and potential permits and approvals that may be required.

Table 2.A: Potential Permits and Approvals

Regulatory Agency	Permits/Approvals
Union Pacific Railroad	Construction and Maintenance
San Francisco Bay Conservation and Development Commission	Major Permit
United States Army Corps of Engineers	Nationwide Permit 14
California Department of Fish and Wildlife	Lake and Streambed Alteration Agreement
Regional Water Quality Control Board	Water Quality Certification
City of Richmond	Planning and Building Permits
Contra Costa County	Planning and Building Permits
Contra Costa County (property owner)	Easement, Construction and Maintenance
West Contra Costa Sanitation District (property owner)	Easement, Construction and Maintenance
West Contra Costa USD (property owner)	Easement, Construction and Maintenance

Source: LSA (2023)

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3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist in Chapter 3.0.

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

3.1 DETERMINATION

On the basis of this initial evaluation:

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

Signature

Date

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4.0 CEQA ENVIRONMENTAL CHECKLIST

4.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a. *Would the project have a substantial effect on a scenic vista? (Less Than Significant Impact)*

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. According to the Contra Costa County General Plan,¹ scenic resources in the County include scenic ridges, hillsides, rock outcroppings, and the San Francisco Bay/Delta estuary system. The largest and most prominent ridges form the backdrop for much of the developed portions of Contra Costa County. Views of these major ridgelines help to reinforce the rural feeling of the county's rapidly growing communities and provide an important balance to current and planned development. The other major scenic resource of Contra Costa County is the extensive water and delta system of San Francisco, San Pablo, and Suisun bays. This waterway system provides a pleasant contrast to the landforms of the area. As required by the General Plan, these major scenic resources should be considered when evaluating nearby development proposals and treated as aesthetic opportunities, which should be incorporated into the design of any new development.

Richmond is a predominantly built-out environment, with the majority of natural open space areas limited to the city's edges. Richmond's proximity to the Bay, combined with the gradual topographic changes from the coastal edge to the mountain ranges, provide a wide range of natural hillside and bay views from various areas. Long-range views within Richmond are generally expansive because of the flat terrain throughout the city. However, due to the flat terrain, existing mature trees and

¹ Contra Costa County Department of Conservation and Development. 2005a. *Contra Costa County General Plan 2005-2020*. January 18.

buildings often block views. Various points throughout Richmond have views of the shoreline or the hillside that would constitute a locally recognized scenic vista or corridor.²

The proposed trail would be immediately adjacent to the San Pablo Bay shoreline, which is considered a locally recognized scenic vista/corridor in the City of Richmond General Plan.³ Construction staging would be on the project site adjacent to the proposed trail alignment. Under existing conditions, the project area generally consists of Union Pacific Railroad (UPRR) right-of-way consisting of disturbed grassland habitat. The proposed trail would predominantly consist of asphalt concrete paving and above-grade improvements and would include retaining walls that would primarily be 3 to 4 feet in height, elevated boardwalks with guardrails over two wetland areas and along a bluff, and a prefabricated bridge over Garrity Creek. Although these features would be above grade and visible from the adjacent publicly owned properties including a small wastewater pump station and community center ballfield, residences at the east end of the trail alignment, and other uses adjacent to the trail alignment, these structures would not significantly impede scenic vistas or views of the Bay from adjacent uses.

The Contra Costa County General Plan encourages recreational uses in resource areas such as San Pablo Bay, and provision of multi-use trails to facilitate recreation use. Additionally, the Richmond Municipal Code Section 15.04.205.030 provides development standards for projects within parks and recreation districts that protect valued scenic corridors and views. These standards include:

- Development shall be subordinate to and blend harmoniously with the natural and open space qualities of the surrounding area where it is located. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized, and successive padding or terracing of building sites shall be avoided. In all cases, appropriate landscaping, preservation of vegetation, design, and building materials shall be required by the City to reduce as much as practicable the visibility of development.
- Signs shall not be more numerous, larger, or more noticeable than is necessary to provide directions and information about permissible uses.
- Visibility of development from roads, parks, and other development shall be subordinate to and blend harmoniously with the natural and open space qualities of the area where located.

Project elements would not include tall structures that might obscure views of the surrounding open space environment. The proposed trail would increase public access to the Bay, affording trail users scenic views from the proposed trail alignment. The proposed project would not result in substantial adverse effects on scenic vistas and this impact would be less than significant.

² City of Richmond Development Services Department. 2011. *Richmond General Plan Draft Environmental Impact Report*. February.

³ Ibid.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

State Route 24 and Interstate 680 are officially designated State scenic highways within Contra Costa County as determined by the California Department of Transportation.⁴ These highways are both more than 10 miles southeast of the project site. The project site is not visible from either of these State-designated scenic highways due to distance. Therefore, the project would not have a visual impact on these designated scenic routes.

San Pablo Avenue is the nearest route that is designated in the Scenic Routes Plan of the Transportation and Circulation Element of the Contra Costa General Plan.⁵ San Pablo Avenue is 0.3 mile southeast of the project site and has been designated as a Connecting Road. However, the project site is not visible from San Pablo Avenue due to existing development and mature trees. No impact to scenic resources within a State scenic highway would occur as a result of implementation of the proposed project and no mitigation is required.

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

While the project site itself is undeveloped, the surrounding area is characterized by urban development, including the railroad right-of-way, public facilities (e.g., small wastewater pump station, community center ballfield, former school site), and single-family residential development. As noted in Chapter 1.0, Project Information, the project site is designated as Open Space (OS) in the City of Richmond General Plan and Public and Semi-Public (PS) and Parks and Recreation (PR) in the Contra Costa County General Plan. The site is zoned Planned Area by the City of Richmond and Planned Unit (P-1), Housing Element Consistency (HE-C), Heavy Industrial (H-I), Railroad Corridor Combining District (-X), and Single-Family Residential (R-6) by Contra Costa County. Publicly owned parks and playgrounds are a permitted use within the R-6 district, which has a minimum allowable lot size of 6,000 square feet and a maximum height of 35 feet. Publicly owned community buildings, parks, and playgrounds are a conditionally permitted use within the HE-C district, which has an allowable density between 17 and 30 dwelling units per acre and a maximum building height of 45 feet. There are no lot area, height, or side yard regulations or limitations in the H-I district. As described below, upon completion, project elements would be at grade or low-standing (less than 25 feet tall) and would be consistent with County standards.

The proposed project would result in the construction of an extension of the Bay Trail connecting Point Pinole Regional Shoreline and Wilson Point at Pinole Shores Park. The proposed recreational

⁴ California Department of Transportation. 2018. *California State Scenic Highway System Map*. Website: <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa> (accessed October 26, 2022).

⁵ Contra Costa County Department of Conservation and Development. 2005b. *Contra Costa County General Plan 2005-2020, Transportation and Circulation Element*. Figure 5-4 Scenic Routes Plan. January 18.

trail would be approximately 1 mile long, constructed adjacent to or within the UPRR right-of-way. Under existing conditions, the project area generally consists of UPRR right-of-way consisting of disturbed grassland habitat. Views of San Pablo Bay, as well as residential and industrial development, are available at the project site.

Construction activities and equipment could be visible from residential areas at the eastern terminus of the trail alignment and adjacent recreational areas, resulting in temporary visual impacts during the project's approximately 12-to-24-month construction phase. Equipment required for trail construction would be removed following completion of the trail.

The proposed multi-use trail would generally be 10 feet wide with asphalt concrete surfacing and 2-foot unpaved shoulders for a total of 14 feet. Two concrete boardwalks with guardrails would be installed over wetland areas. Proposed boardwalks would be supported on 16- to 24-inch diameter concrete piers spaced 16 feet apart. Drilled piers or driven piles are anticipated to be 30- to 40-feet long, based on Bay Mud depth of less than 20 feet. A 60-foot long, 12-foot-wide prefabricated bridge with guard rails would be installed for trail users to cross Garrity Creek. The proposed bridge structure would provide 3 feet of vertical clearance to the creek and the bridge abutments would be at least 5 feet from the edge of the creek bank. Near its northern terminus, the proposed trail would run along the bluff behind 8 to 10 homes immediately east of the former school site.

In several areas, the trail section would need to be built up to provide a transition grade to higher lying areas, or to place the trail above the 100-year flood elevation of 6 feet National Geodetic Vertical Datum (NGVD), and to provide a sight line to San Pablo Bay. The minimum trail surface elevation would be 8 feet and generally in the 9- to 19-foot elevation range along the UPRR right-of-way. In the eastern section of the trail alignment, the trail elevation would rise to a 50-foot elevation to run along the coastal bluff.

Although the proposed project would introduce new built elements into an undeveloped site, the project has been designed to preserve scenic views of the San Pablo Bay shoreline. The trail alignment would be largely along the existing UPRR tracks, in an area characterized by existing infrastructure (e.g., railroad tracks, fencing) thereby preserving the visual quality of the most important visual feature of the project site – the Bay. Further, although the project site is largely undeveloped, adjacent lands are developed with residential, industrial, and public recreational uses; therefore, construction of a trail within this landscape would not change its visual character or quality.

The project has been designed to minimize visual impacts to the surrounding area, and conditions after project completion would be similar to the existing visual character of the project site. Further, the proposed project would be consistent with City and County regulations and development standards. Therefore, impacts to visual character of the project site would be less than significant.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)

Surrounding land uses consist primarily of undeveloped open space, industrial uses, residential uses, railroad, and recreational parklands. Light sources in the project vicinity include lights associated

with nearby residences and other development, streetlights, and vehicle headlights/taillights from nearby roadways. Daytime sources of glare include reflections off light-colored surfaces, windows, and trains traveling on the railroad tracks.

No permanent sources of lighting or glare would be installed as part of the proposed project. Temporary construction-related sources of light (if any) would be removed upon completion of construction. Therefore, the proposed project would not affect day or nighttime views in the area. There would be no impact related to this topic, and no mitigation is required.

4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California 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, the Forest Legacy Assessment Project, and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

- a. *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (No Impact)*

The California Department of Conservation Farmland Mapping and Monitoring Program classifies lands along the trail alignment as "Urban and Built-Up Land" and "Other Land."⁶ Urban and Built-Up land is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Other Land is defined as land not included in any other mapping category and commonly includes low density rural developments; brush, timber,

⁶ California Department of Conservation. 2018. *Contra Costa County Important Farmland 2016*. Division of Land Resource Protection, Website: www.conservation.ca.gov/dlrp/fmmp/Pages/ContraCosta.aspx (accessed October 26, 2022).

wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and waterbodies smaller than 40 acres. Therefore, the proposed project is not on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and the proposed project would not convert any farmland to a non-agricultural use. Implementation of the proposed project would have no impact relating to this topic, and no mitigation is required.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? (No Impact)

The California Land Conservation Act of 1965, also referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or open space use. The California Department of Conservation maps the project site as "Non-enrolled land" or land not enrolled in a Williamson Act contract. No portion of the proposed trail would cross a parcel under a Williamson Act contract.⁷ Additionally, the project is zoned as Planned Area (PA) within the City of Richmond and Planned Unit (P-1), Heavy Industrial (H-I), Railroad Corridor Combining District (-X), Single-Family Residential (R-6) within unincorporated Contra Costa County. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. Implementation of the proposed project would have no impact relating to this topic, and no mitigation is required.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? (No Impact)

The project site is not used for timberland production, nor is it zoned for forest land or timberland. No forest lands or timberland are on the project site. Therefore, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Implementation of the proposed project would have no impact relating to this topic, and no mitigation is required.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use? (No Impact)

Implementation of the proposed project would not result in the loss of any forest land or convert forest land to non-forest use. Refer to Response 4.2.c above. The proposed project would have no impact relating to this topic, and no mitigation is required.

⁷ Contra Costa County Department of Conservation and Development. 2017. *2016 Agricultural Preserves Map*. Website: www.contracosta.ca.gov/DocumentCenter/View/882/Map-of-Properties-Under-Contract?bidId= (accessed October 26, 2022).

- e. *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (No Impact)*

Implementation of the proposed project would not result in any other changes to the existing environment that would convert farmland to a non-agricultural use or convert forest land to non-forest use. Refer to Responses 4.2.a and 4.2.b above. The proposed project would have no impact relating to this topic, and no mitigation is required.

4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

The project site is in the San Francisco Bay Area, within Richmond and an unincorporated area of Contra Costa County, which is within the jurisdiction of the Bay Area Air Quality Management District (Air District), which regulates air quality in the San Francisco Bay Area Air Basin (Air Basin). Air quality conditions in the Air Basin have improved significantly since the Air District was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen substantially. In Richmond, Contra Costa County, and the rest of the air basin, exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Within the Air District, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀, PM_{2.5}), and lead have been set by both the State of California and the federal government. The State has also set standards for sulfate and visibility. The Air Basin is under State non-attainment status for ozone and particulate matter standards. The Air Basin is classified as non-attainment for the federal ozone 8-hour standard and non-attainment for the federal fine particulate matter (PM_{2.5}) 24-hour standard.

a. *Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less Than Significant Impact)*

The applicable air quality plan is the Air District 2017 Clean Air Plan (Clean Air Plan),⁸ which was adopted on April 19, 2017. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most

⁸ Bay Area Air Quality Management District. 2017. *Clean Air Plan*. April 19.

heavily affected by air pollution; and reduce greenhouse gas (GHG) emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project (1) supports the goals of the Clean Air Plan, (2) includes applicable control measures from the Clean Air Plan, and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

Clean Air Plan Goals. The primary goals of the Bay Area Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate.

The Air District has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed below, implementation of the proposed project would result in less than significant operation-period emissions and, with implementation of Mitigation Measure AIR-1, the project would result in less than significant construction-period emissions. Therefore, the project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures. The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutant Measures.

Stationary Source Control Measures. The Stationary Source Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the Air District and then enforced by Air District Permit and Inspection programs. Since the project would not include any stationary sources, the Stationary Source Measures of the Clean Air Plan are not applicable to the project.

Transportation Control Measures. The Air District identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, toxic air contaminants (TACs), and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project includes approximately 1 mile of the Bay Trail along the San Pablo Bay shoreline and UPRR right-of-way. The Bay Trail is a planned and partially completed 500-mile multi-use trail connecting the shorelines of all nine San Francisco Bay Area counties and encircling San Pablo and San Francisco bays. More than 350 miles of the trail are currently completed and open for public use. The proposed project would close a gap between existing segments of the Bay Trail in Point Pinole Regional Shoreline and Wilson Point at the Pinole Shores Park. Therefore, the proposed project would support the ability to use alternative modes of transportation, would promote initiatives to reduce vehicle trips and vehicle miles traveled (VMT), and would increase the use of alternate means of transportation. As such, the project would promote Air District initiatives to reduce vehicle trips and VMT and would increase the use of alternate means of transportation.

Energy Control Measures. The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the Energy Control Measures of the Clean Air Plan do not apply to the project.

Building Control Measures. The Air District has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The proposed project would not include any buildings; therefore, the Building Control Measures of the Clean Air Plan are not applicable.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the project.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to enact ordinances that promote urban-tree plantings. Since the project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the project.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works, and promoting the use of biogas recovery systems. Since these measures apply to publicly owned treatment works and local government agencies (and not individual projects), the Water Control Measures are not applicable to the project.

Super-GHG Control Measures. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the Air District and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the project.

Clean Air Plan Implementation. As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control

Measures. Therefore, the project would not disrupt or hinder implementation of a control measure from the Clean Air Plan, and this impact would be less than significant.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less Than Significant with Mitigation Incorporated)

The Air Basin is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. The Air Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the Air District considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential project-level construction- and operation-related air quality impacts.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxides (NO_x), reactive organic gases (ROG), directly emitted particulate matter (PM_{2.5} and PM₁₀), and TACs such as diesel exhaust particulate matter.

Project construction activities would include grubbing and land clearing, grading and excavation, drainage, utility, subgrade, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the grubbing and land clearing phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The Air District has established standard measures for reducing fugitive dust emissions (PM₁₀). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, ROG, and some soot particulate (PM_{2.5} and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using the California Emissions Estimator Model (CalEEMod) version 2022.1, consistent with Air District recommendations. As stated in Chapter 2.0, Project Description, project construction would begin Spring 2026 and continue for 12 to 24 months; therefore, to be conservative, this analysis assumes that project construction would take place for approximately 12 months. In addition, the project construction equipment list and number of on-site trucks were provided by the District and was included in CalEEMod. This analysis conservatively assumes that all on-site trucks would be heavy-duty trucks and would travel approximately 20 miles to and from the site per day. In addition, dump trucks or scrapers would transport approximately 3,200 cubic yards of cut to fill locations within the project site and approximately 2,450 cubic yards of import would be transported from off-site locations or from District property at the east end of the project, which was included in CalEEMod. The remaining 10,000 cubic yards of soil would be balanced on site. This analysis also assumes the use of Tier 2 construction equipment as allowed for under the California Air Resources Board (CARB) in-use off-road diesel fueled fleets regulation. Other construction details are not yet known; therefore, default assumptions (e.g., construction worker trips) from CalEEMod were used. Construction-related emissions are presented in Table 4.A, below. CalEEMod outputs are provided in Appendix A.

Table 4.A: Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO _x	Exhaust PM ₁₀	Fugitive Dust PM ₁₀	Exhaust PM _{2.5}	Fugitive Dust PM _{2.5}
2026	0.4	12.4	0.4	14.6	0.4	1.6
2027	0.1	3.9	0.1	4.8	0.1	0.5
Average Daily Emissions	0.4	12.4	0.4	14.6	0.4	1.6
Air District Thresholds	54.0	54.0	82.0	BMP	54.0	BMP
Exceed Threshold?	No	No	No	No	No	No

Source: LSA (April 2025).

Air District = Bay Area Air Quality Management District

BMP = best management practices

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

ROG = reactive organic gases

As shown in Table 4.A, construction emissions associated with the project would not exceed the Air District's thresholds for ROG, NO_x, exhaust PM₁₀, and exhaust PM_{2.5} emissions. However, to ensure that construction-period PM_{2.5} and PM₁₀ fugitive dust emissions would be reduced to a less than significant level, the Air District requires the implementation of Air District Basic Construction Mitigation Measures. Therefore, Mitigation Measure AIR-1, which requires that the District implement dust control measures during project construction, would be required and would reduce construction-related air quality impacts of PM₁₀ and PM_{2.5} and fugitive dust emissions, consistent with Air District Basic Construction Mitigation Measures.

Mitigation Measure AIR-1

To meet the Bay Area Air Quality Management District (Air District) fugitive dust threshold, the following Air District Basic Construction (best management practice) Mitigation Measures shall be implemented:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and person to contact at the East Bay Regional Park District regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of Mitigation Measure AIR-1, construction-related air quality impacts would be less than significant. As such, with implementation of Mitigation Measure AIR-1, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria

pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard.

Operational Emissions. Long-term air pollutant emission impacts are those typically associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed project.

PM₁₀ emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM₁₀ occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. No lighting is proposed; therefore, the proposed project would not generate energy source emissions.

Typically, area source emissions consist of direct sources of air emissions at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment.

The proposed project includes approximately 1 mile of the Bay Trail and would connect to existing segments of the Bay Trail in the Point Pinole Regional Shoreline and Wilson Point at the Pinole Shores Park. As discussed in Section 4.17, Transportation, since the proposed project consists of a low-intensity multi-use trail, the proposed project is unlikely to result in a substantial or measurable increase in VMT. As such, since the project would not result in a significant increase in the generation of vehicle trips or VMT that would increase air pollutant emissions. The project would not result in a substantial source of energy or area source emissions. Therefore, operation of the proposed project would not 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 standards. Impacts would be less than significant.

Localized CO Impacts. Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The Air District CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed transportation projects. A screening level analysis using guidance from the Air District CEQA Guidelines was performed to determine the project's impacts. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the Air District CEQA Guidelines, a proposed project would result in a less than significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the proposed project would not conflict with the policies or programs of the Contra Costa Transportation Authority. As identified above, the proposed trail would not result in a significant increase in the generation of vehicle trips or VMT. Therefore, the project's contribution to peak-hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. As such, the proposed project would not result in localized CO concentrations that exceed State or federal standards. This impact would be less than significant.

c. Would the project expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant Impact)

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

According to the Air District, a project would result in a significant impact if it would individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10 in 1 million, increase non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient PM_{2.5} increase greater than 0.3 micrograms per cubic meter (µg/m³). A significant cumulative impact would occur if the project in combination with other projects within a 1,000-foot radius of the project site would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100 in 1 million, an increased non-cancer risk of greater than 10 on the hazard index (chronic), or an ambient PM_{2.5} increase greater than 0.8 µg/m³ on an annual average basis. Impacts from substantial pollutant concentrations are discussed below.

The project site is surrounded by a variety of land uses and neighborhoods. Surrounding land uses include industrial, residential, railroad, resource lands, and recreational parklands owned by a variety of landowners, including private and public entities. The project site is adjacent to several developed neighborhoods within Richmond and unincorporated Contra Costa County, including the Montalvin Manor neighborhood and Tara Hills neighborhood. Sensitive receptors are adjacent to the project site, including residential uses.

As described above, construction of the proposed project may expose surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants

(i.e., usually diesel-fueled vehicles and equipment). However, construction contractors would be required to implement the Air District's Basic Construction Mitigation Measures as specified in Mitigation Measure AIR-1. With adherence to Mitigation Measure AIR-1, project construction emissions would be below the Air District's significance thresholds. Additionally, due to the linear nature of the project, construction activities at any one receptor location would take place for a limited duration. Once the project is constructed, the project would not be a source of substantial emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction or operation. With implementation of Mitigation Measure AIR-1, potential impacts would be less than significant.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less Than Significant Impact)

During construction, the various diesel-powered vehicles and equipment in use on site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the project site. Additionally, the proposed uses that would be developed within the project site are not expected to produce any offensive odors that would result in frequent odor complaints. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and impacts would be less than significant.

4.4 BIOLOGICAL RESOURCES

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

To identify special-status plant and animal species known to occur or potentially occurring in the project site vicinity, the following resources were queried: (1) California Department of Fish and Wildlife California Natural Diversity Database⁹ (CNDDB) for species records within a 5-mile radius of the project site using Geographic Information Systems (GIS) software; (2) California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California¹⁰ for records of special-status plant species in the Benicia, Briones Valley, Cordelia, Cuttings Wharf, Mare Island, Petaluma Point, Richmond, San Quentin, and Sears Point 7.5-minute United States Geological Survey (USGS)

⁹ California Department of Fish and Wildlife. 2023. California Natural Diversity Database, commercial version dated November 2023. Biogeographic Data Branch, California Department of Fish and Wildlife, Sacramento.

¹⁰ California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website: <https://www.rareplants.cnps.org> (accessed November 28, 2023).

quadrangles; (3) United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation on-line system;¹¹ (4) eBird;¹² and (5) milkweed tracker.¹³

Biologists conducted field surveys on September 7, 2021, August 19, 2022, and November 17, 2023. During these surveys, preliminary information on vegetation types, wildlife habitat, and potential jurisdictional features (e.g., wetlands) were collected and a jurisdictional wetland investigation was conducted. The field investigations of potentially jurisdictional wetlands occurring on the site were conducted using the routine determination method given in the *United States Army Corps of Engineers Wetlands Delineation Manual*¹⁴ and the revised procedures in the Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region (Version 2.0) (Arid West Supplement)¹⁵. Boundaries were determined by following a combination of the limits of hydrophytic vegetation, the limits of observed wetland hydrology, topographic breaks, and aerial orthophoto interpretation. The previous preliminary draft jurisdictional delineation¹⁶ prepared for the project site was also reviewed. The jurisdictional delineation is provided as Appendix B.

The scientific and vernacular nomenclature for the plant and wildlife species used in this analysis are from the following standard sources: plants, Baldwin et al.¹⁷ and updates listed on the Jepson Herbarium website;¹⁸ amphibians and reptiles, Crother;¹⁹ birds, American Ornithologists' Union and supplements through 2023;²⁰ and mammals, Bradley et al.²¹

- ¹¹ United States Fish and Wildlife Service. 2023. Information for Planning and Consultation (IPaC). November 28.
- ¹² eBird. 2023. eBird: An online database of bird distribution and abundance [web application]. Ithaca, N.Y.: Cornell Lab of Ornithology.
- ¹³ Xerces Society for Invertebrate Conservation, Idaho Department of Fish and Game, Washington Department of Fish and Game, National Fish and Wildlife Foundation, and United States Fish and Wildlife Service. 2023. Western Monarch Milkweed Mapper. Website: <https://www.monarchmilkweedmapper.org>.
- ¹⁴ United States Army Corps of Engineers Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. *Technical report Y-87-1*. Vicksburg, Mississippi: United States Army Engineers Waterways Experiment Station.
- ¹⁵ United States Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, Mississippi: United States Army Engineer Research and Development Center.
- ¹⁶ Questa Engineering Corporation and Alta Planning + Design (Questa and Alta). 2005. Wilson Point San Francisco Bay Trail Preliminary Engineering Study and Biological Assessment. Prepared for East Bay Regional Park District. May 26.
- ¹⁷ Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, eds. 2012. *The Jepson Manual: Vascular Plants of California, Second Edition*. Berkeley: University of California Press.
- ¹⁸ Jepson Flora Project. 2023. Jepson eFlora, Website: <https://ucjeps.berkeley.edu/eflora/> (accessed December 2023).
- ¹⁹ Crother, B.I., ed. 2017. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding, pp. 1-102. *SSAR Herpetological Circular* No. 43.
- ²⁰ American Ornithologists' Union. 1998. *Check-list of North American Birds*. 7th Edition. Washington, D.C.: American Ornithologists' Union.
- ²¹ Bradley, R.D., L.K. Ammerman, R.J. Baker, L.C. Bradley, J.A. Cook, R.C. Dowler, D.J. Schmidly, F.B. Stangl, Jr., R.A. Van Den Bussche, and B. Würsig. 2014. Revised Checklist of North American Mammals North of Mexico, 2014. *Occasional Papers, Museum of Texas Tech University* No. 237.

The project site is on the southern/southeastern side of the UPRR tracks between Point Pinole Regional Shoreline and Pinole Shores Park. Salt marsh wetlands and the San Pablo Bay are on the northern side of the UPRR tracks. Wetlands, ruderal (weedy) grasslands, a ballfield, and residential development are to the south and southwest of the project site.

Vegetation and Cover Types. Vegetation types on the project site were classified, where possible, according to *A Manual of California Vegetation, Second Edition (MCV)*,²² which is based on the National Vegetation Classification Hierarchy. Three vegetation types classified under the MCV occur on the project site: creeping rye grass turfs (*Elymus [Leymus] triticoides* Herbaceous Alliance), arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance), and cattail marsh (*Typha* spp. Herbaceous Alliance). Other vegetation types observed include non-native annual grassland (consisting of mostly Wild Oats Grassland [*Avena (barbata, fatua)* Semi-Natural Herbaceous Stands] and Annual Brome Grasslands [*Bromus (diandrus, hordeaceus)* - *Brachypodium distachyon* Semi-Natural Herbaceous Stands]) and brackish marsh (consisting of mostly bulrush (*Schoenoplectus* spp.), alkali bulrush (*Bolboschoenus maritima*), and mosquito fern [*Azolla filiculoides*] as well as some pickleweed [*Salicornia pacifica*]). The project site includes a segment of Garrity Creek. Scattered native and non-native trees and shrubs occur along the project site but are too sparsely distributed to categorize into distinct vegetation types, with the exception of arroyo willow thickets. Other cover types on the site include paved and graveled hardscape and a ball field, which are mapped as Developed. Table 4.B lists the major land cover types mapped in the project area. Figure 5 depicts these land cover types within the project site.

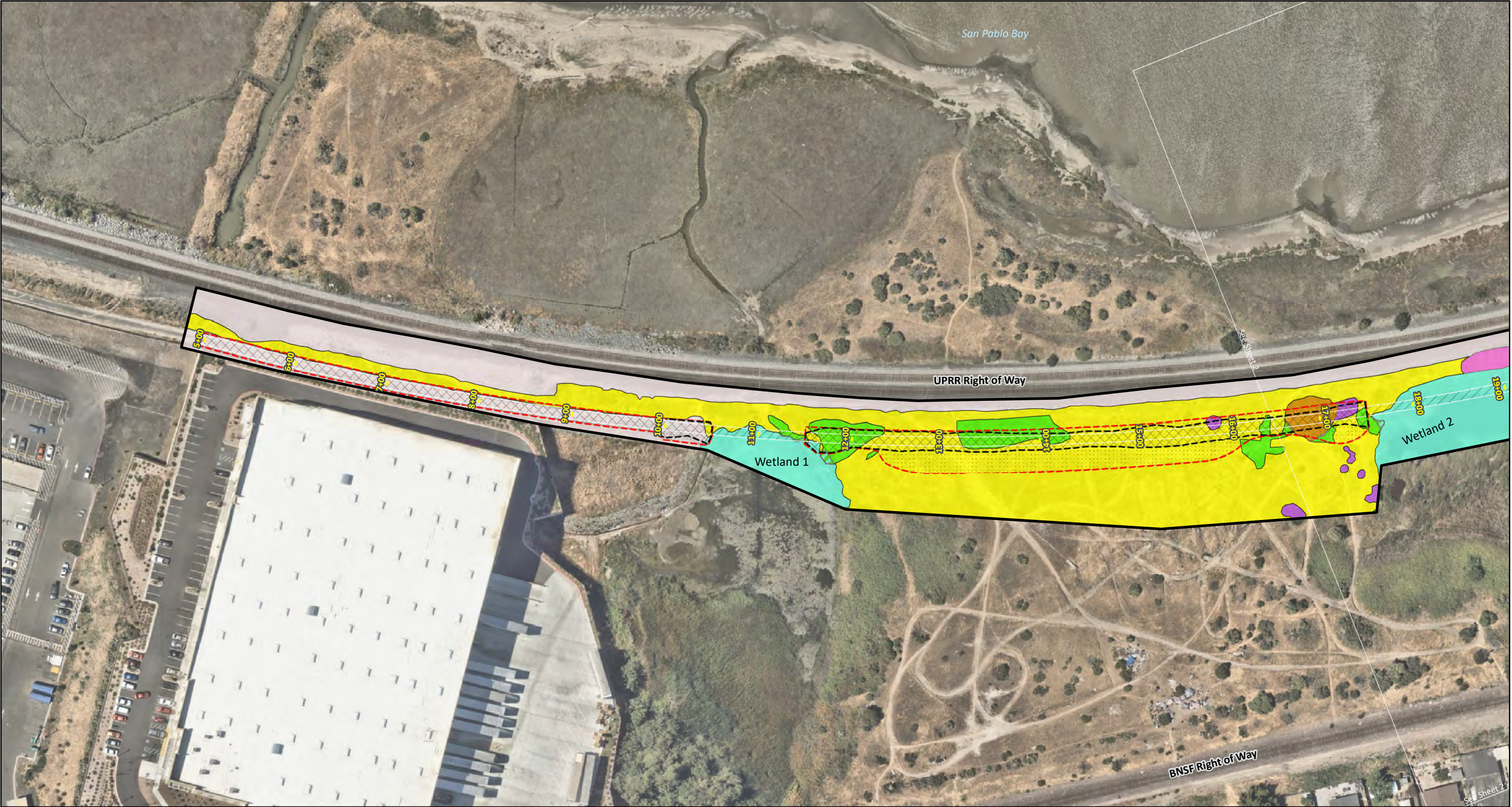
Table 4.B: Vegetation Types within the Project Site

General Vegetation Type	Vegetation Alliance	Acres
Shrubland Vegetation	Arroyo willow thickets (<i>Salix lasiolepis</i> Shrubland Alliance)	0.101
Grassland Vegetation	Ruderal nonnative annual grassland (<i>Avena barbata</i> – <i>Bromus [diandrus, hordeaceus]</i> Provisional Semi-Natural Herbaceous Alliance)	6.418
	Creeping rye grass turfs (<i>Elymus triticoides</i> * Herbaceous Alliance)	0.320
Wetland Vegetation	Wetland	1.599
	Wetland/Arroyo willow thickets	0.539
	Wetland/Creeping rye grass turfs	0.031
	Giant Reed Breaks (<i>Arundo donax</i> Semi-Natural Herbaceous Stands)	0.026
Woodland and Shrubland Vegetation	Trees and shrubs	0.593
Creek	Garrity Creek (Open Water)	0.040
Developed	Developed	2.770
Total		12.438

Source: Compiled by LSA (2023)

Note: Revisions to the scientific plant names have occurred since the publication of *A Manual of California Vegetation, Second Edition* (Sawyer et al.) in 2009. Changes are noted with an asterisk (*). For creeping rye grass (*Elymus triticoides*), the current name was changed from *Leymus triticoides*.

²² Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation*, Second Edition. Sacramento: California Native Plant Society.



LSA

LEGEND

- Study Area (12.44 ac.)
- Permanent Impact - At Grade
- Permanent Impact - Boardwalk
- Permanent Impact - Bridge
- Permanent Impact - Retaining Walls
- Temporary Impact

Land Cover

- Ruderal Non-native Annual Grassland
- Trees and Shrubs
- Creeping-rye Grass Turfs
- Wetland / Creeping-rye Grass Turf
- Arroyo Willow Thickets
- Wetland / Arroyo Willow Thicket
- Wetland
- Open Water (Garrity Creek)
- Giant Reed Patch
- Developed

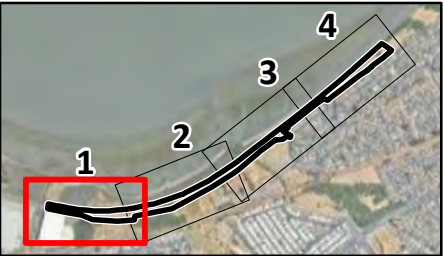


FIGURE 5
SHEET 1 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Project Site and Land Cover

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LSA

LEGEND

Study Area (12.44 ac.)

- Permanent Impact - At Grade
- Permanent Impact - Boardwalk
- Permanent Impact - Bridge
- Permanent Impact - Retaining Walls
- Temporary Impact

Land Cover

- Ruderal Non-native Annual Grassland
- Trees and Shrubs
- Creeping-rye Grass Turfs
- Wetland / Creeping-rye Grass Turf
- Arroyo Willow Thickets
- Wetland / Arroyo Willow Thicket
- Wetland
- Open Water (Garrity Creek)
- Giant Reed Patch
- Developed



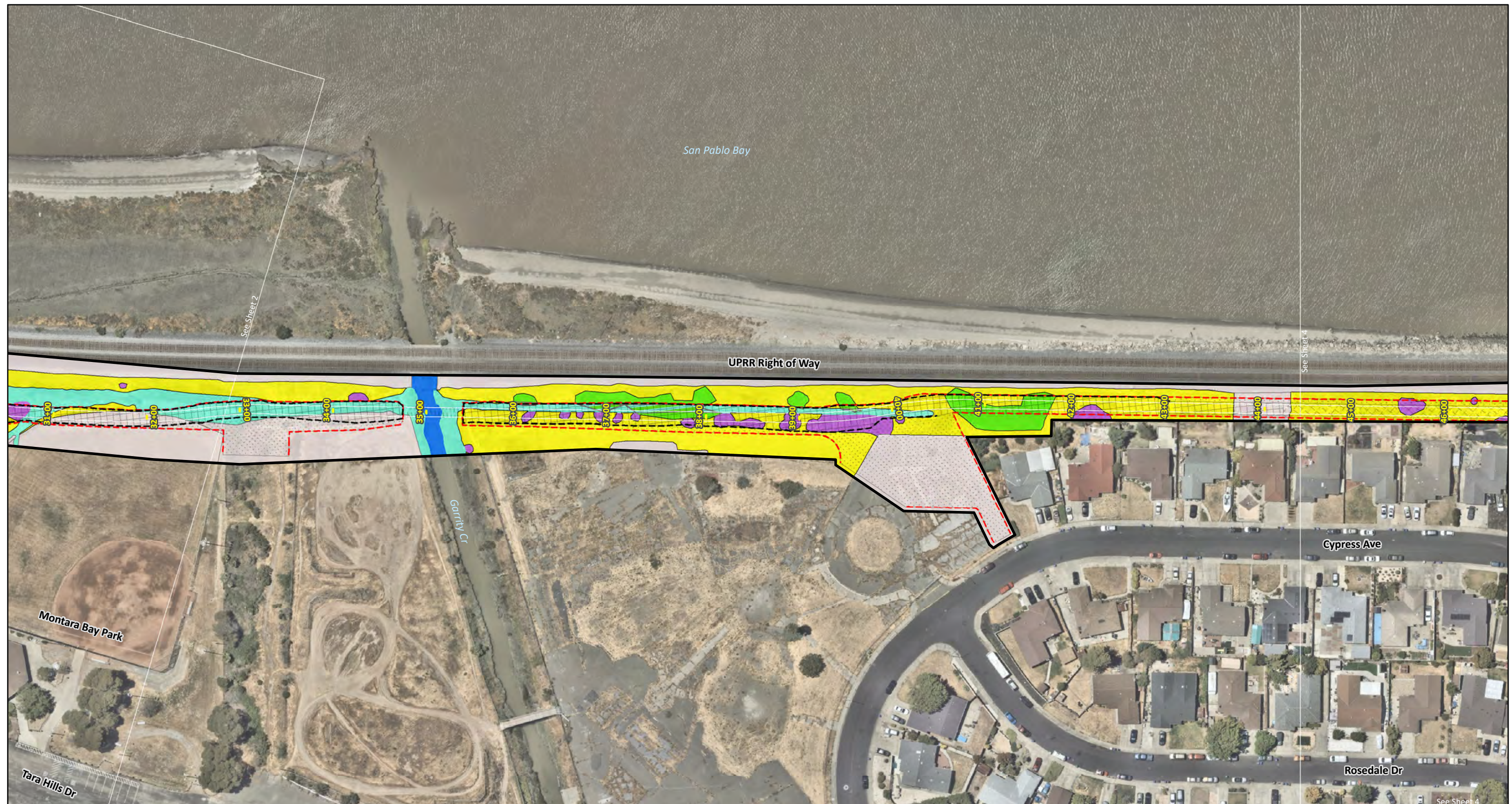
FIGURE 5
SHEET 2 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Project Site and Land Cover

SOURCE: BKF (01/2025); LSA (02/2025); Nearmap (07/2023).

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LSA

LEGEND

Study Area (12.44 ac.)

- Permanent Impact - At Grade
- Permanent Impact - Boardwalk
- Permanent Impact - Bridge
- Permanent Impact - Retaining Walls
- Temporary Impact

Land Cover

- Ruderal Non-native Annual Grassland
- Trees and Shrubs
- Creeping-rye Grass Turfs
- Wetland / Creeping-rye Grass Turf
- Arroyo Willow Thickets
- Wetland / Arroyo Willow Thicket
- Wetland
- Open Water (Garrity Creek)
- Giant Reed Patch
- Developed



FIGURE 5
SHEET 3 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Project Site and Land Cover

SOURCE: BKF (01/2025); LSA (02/2025); Nearmap (07/2023).

I:\B\BKF2102\GIS\Maps\Bio IS-MND\Figure 5_Project Site and Land Cover_202502.mxd (2/25/2025)

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LSA

LEGEND

Study Area (12.44 ac.)

- Permanent Impact - At Grade
- Permanent Impact - Boardwalk
- Permanent Impact - Bridge
- Permanent Impact - Retaining Walls
- Temporary Impact

Land Cover

- Ruderal Non-native Annual Grassland
- Trees and Shrubs
- Creeping-rye Grass Turfs
- Wetland / Creeping-rye Grass Turf
- Arroyo Willow Thickets
- Wetland / Arroyo Willow Thicket
- Wetland
- Open Water (Garrity Creek)
- Giant Reed Patch
- Developed

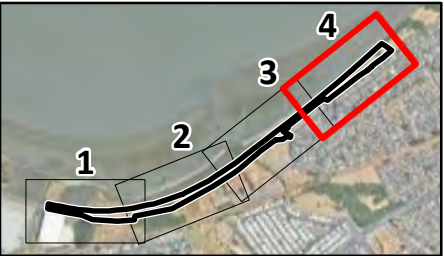


FIGURE 5
SHEET 4 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Project Site and Land Cover

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Ruderal Non-Native Annual Grassland. The majority of the project site supports nonnative annual grassland, which includes a combination of Wild Oats Grassland (*Avena* [*barbata*, *fatua*] Semi-Natural Herbaceous Stands) and Annual Brome Grasslands (*Bromus* [*diandrus*, *hordeaceus*— *Brachypodium distachyon* Semi-Natural Herbaceous Stands]). Grass species observed in the annual grasslands are almost exclusively non-native grasses, including wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), velvet grass (*Holcus lanatus*), and Italian ryegrass (*Festuca perennis*). Nonnative forbs observed include black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), wild radish (*Raphanus sativa*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Helminthotheca echinoides*), field hedge parsley (*Torilis arvensis*), sweet fennel (*Foeniculum vulgare*), field bindweed (*Convolvulus arvensis*), cutleaf geranium (*Geranium dissectum*), curly dock (*Rumex crispus*), teasel (*Dipsacus fullonum*), English plantain (*Plantago lanceolata*), stinkwort (*Dittrichia graveolens*), and vetch (*Vicia* spp.). Native plants observed in the annual grasslands include small patches of lupine (*Lupinus* sp.), mugwort (*Artemisia douglasiana*), and California poppy (*Eschscholzia californica*).

Creeping Rye Grass Turfs. This vegetation type is dominated by a creeping rye grass, a facultative wetland plant that grows on poorly drained clay soils that are seasonally wet. Stands of creeping rye grass turf on the project site were found on slopes within the non-native grassland. This vegetation type is considered a sensitive natural community in the California Natural Diversity Database (CNDDDB). This vegetation type has a high concern for conservation with the CNDDDB rarity ranking of G3 S3 (Globally and State rare, uncommon or threatened, but not immediately imperiled, but assigned rank is uncertain). The density and composition of the creeping rye grass turfs vegetation type is variable depending on its location; near the seasonal wetlands, creeping rye grass comprises nearly 100 percent cover while in upland areas, creeping rye grass ranges in cover between 15 and 50 percent with nonnative annual grass and forb species, such as wild oats, ripgut brome, soft chess, and black mustard, comprising the remaining cover.

Arroyo Willow Thickets. Stands of arroyo willow thickets (totaling 0.6 acre) are within the project site. The stands are dominated by arroyo willow (*Salix lasiolepis*) and contain understory vegetation consisting of invasive English ivy (*Hedera helix*), nasturtium (*Tropaeolum majus*), and Himalayan blackberry (*Rubus armeniacus*), as well as various other herbaceous plants. The arroyo willow thickets that are growing along the wetlands are considered riparian habitat under CEQA and by CDFW.

Wetlands. Two seasonal wetland swales, two wetland basins, one willow wetland seep, one wetland seep, and two brackish marsh wetlands associated with Garrity Creek were delineated at or near the project site, as shown in Table 4.C. These wetlands are composed of primarily hydrophytic plant species, including brass buttons (*Cotula coronopifolia*), saltgrass (*Distichlis spicata*), bird's-foot trefoil (*Lotus corniculatus*), alkali heath (*Frankenia salina*), tall nutsedge (*Cyperus eragrostis*), meadow barley (*Hordeum brachyantherum*), dodder (*Cuscuta californica*), rabbit-foot's grass (*Polypogon monspeliensis*), cattail, bulrush, alkali bulrush, and pickleweed.

Table 4.C: Potential Waters of the United States

Potential Jurisdictional Feature	Square Feet	Acreage
Garrity Creek (Section 10 Other Water)	1,742	0.040
Wetland 1	6,490	0.149
Wetland 2	49,136	1.128
Seasonal Wetland Swale 3	10,498	0.241
Brackish Marsh Wetland 4a	915	0.021
Brackish Marsh Wetland 4b	1,220	0.028
Seasonal Wetland Swale 5	4,312	0.099
Willow Seep Wetland 6	21,693	0.498
Seep Wetland 7	174	0.004
Total	96,180	2.208

Source: Compiled by LSA (2023).

The westernmost wetland basin is predominantly vegetated with bulrush and mosquito fern and appears to be a former tidal brackish marsh, which is currently diked off from San Pablo Bay by the railroad fill embankment and appears to be experiencing only muted tidal influence. Vegetation species observed within the basin are hydrophytic and include brass buttons, pickleweed, and cattail.

The easternmost wetland basin is dominated by freshwater vegetation, primarily cattail, but also contains pickleweed and alkali bulrush. This basin is drained by a partially plugged culvert that connects under the UPRR to a narrow channel that connects to San Pablo Bay.

Brackish marsh wetlands occur along the lower banks of Garrity Creek, which crosses through the project site.

Creek. An approximately 50-foot-long and 12-foot-wide segment of Garrity Creek intersects the project site. This creek segment appears to be tidally influenced, is unvegetated along its center, and includes a narrow band of brackish marsh plant species along both of its lower creek banks. Brackish marsh species observed along the lower banks include cordgrass (*Spartina* sp.), marsh jaumea (*Jaumea carnosa*), fat-hen (*Atriplex prostrata*), and pickleweed. These wetlands are mapped as Brackish Marsh Wetland 4 on Figure 3 in Appendix B. Marsh gumplant (*Grindelia stricta*), toyon (*Heteromeles arbutifolia*), and non-native grassland plant species are present along the upper banks and/or above the top of bank of the channel.

Riparian Vegetation. The project site contains riparian vegetation along the margins of Wetlands 1 and 2 and within the banks and brackish marsh vegetation along both sides of Garrity Creek. Much of the arroyo willow thickets grow adjacent to the wetlands. A stand of invasive giant reed (*Arundo donax*) is present north of Wetland 2 (Figure 5); although an invasive plant, this stand would be considered riparian vegetation under CEQA since it is associated with Wetland 2.

Trees and Shrubs. Tree and shrub species within the project site include various native and ornamental species. Trees observed include native coast live oak (*Quercus agrifolia*) and

nonnative Monterey cypress (*Hesperocyparis macrocarpa*), juniper (*Juniperus* sp.), date palm (*Phoenix* sp.), Peruvian pepper (*Schinus molle*), olive (*Olea europaea*), and plum (*Prunus* sp.). Native shrubs include coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), and toyon. Nonnative shrubs include oleander (*Nerium oleander*), beavertail cactus (*Opuntia basilaris*), cotoneaster (*Cotoneaster* sp.), and Himalayan blackberry. Understory plants observed among the trees and shrubs include ice plant (*Carpobrotus* sp.), English ivy, nasturtium, and various non-native herbaceous grasses and forbs.

Developed. Developed areas within or adjacent to the project site includes the existing paved trails; houses and structures; a ballfield; and various paved surfaces.

Soils. Soils on the project site are mapped as Tierra loam, 9 to 15 percent slopes, MLRA 14 (TaD) in the southeastern portion of the site; Omni silty clay (Ob) surrounding the ballfield; Cropley clay, 2 to 5 percent slopes (CkB) at the former school site; and potentially Novato silty clay (Map Unit Symbol Ra) along the shoreline and near the railroad tracks.²³ Each soil is formed from relatively fine-grained toe slope alluvium. The Tierra soil is rated as non-hydric. The Omni soil is rated as 95 percent hydric. The Cropley soil itself is rated non-hydric but has a 10 percent hydric rating because of potential inclusions of Pescadero and Clear Lake soils. The Novato soil is rated 95 percent hydric. Much of the soils observed on the site appear to be imported fill and may not match the mapped soils.

Soils with a pH over 7.5 are generally considered alkaline; therefore, the Omni and Novato soils are alkaline through their entire profile. The Cropley soil is alkaline (greater than 7.5 pH) below 11 inches in depth, which may not count as alkaline, as the definition may concentrate on the pH of the surface horizons (root zones). The Tierra soil is not alkaline. Although the two large/semi- or former tidal wetlands are mapped as occurring in Tierra soil, which is not listed as alkaline, the soil mapping may be in error and both wetlands, assuming they existed prior to the railroad berm drainage disruption, are likely in either Omni or Novato soils. The tidal, brackish, anaerobic soils have alkaline/high pH characteristics. None of the upland soils are listed as alkaline.

Wildlife. The project site is just southeast of the San Pablo Bay shoreline and fringing arroyo willow thickets and tidal salt marsh on the opposite side of the UPRR (Figure 5). The site is mostly within an undeveloped area near the Bay, portions of which have been disturbed by off-road vehicle use. The northeastern portion of the project site is near existing residential development.

Trees and shrubs on the project site provide nesting habitat for bird species, such as white-tailed kite (*Elanus leucurus*), bushtit (*Psaltiriparus minimus*), and California scrub-jay (*Aphelocoma californica*). The open grassland provides habitat for ground-nesting passerines, such as western meadowlark (*Sturnella neglecta*), although nonnative predators from nearby developments may limit reproductive success. During the winter, the resident bird community may be supplemented by species that breed further north or at higher elevations.

²³ United States Department of Agriculture Natural Resources Conservation Service. 2023. Web Soil Survey. Website: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed August 18).

The wetlands provide seasonal breeding habitat for Pacific treefrog (*Pseudacris regilla*) and other common amphibians such as California slender salamander (*Batrachoseps attenuatus*) and arboreal salamander (*Aneides lugubris*) may breed under rocks, leaf litter, woody debris, or other surface objects on or adjacent to the project site. Nearby grassland provides foraging habitat for these species as well as common reptiles, such as southern alligator lizard (*Elgaria multicarinata*), gopher snake (*Pituophis catenifer*), and common garter snake (*Thamnophis sirtalis*).

Common mammal species likely to occasionally forage on and/or move through the project site include northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and black-tailed deer (*Odocoileus hemionus columbianus*). Botta's pocket gopher (burrows) and racoon tracks were observed at or near the project site. Other small mammal species likely to occur on site include house mouse (*Mus musculus*) and roof rat (*Rattus rattus*). The grasslands and wetlands also provide foraging habitat for common bat species, such as big brown bat (*Eptesicus fuscus*) and Brazilian free-tailed bat (*Tadarida brasiliensis*), although roosting habitat (e.g., abandoned buildings or bridges, trees with large decaying hollows) were not observed at the project site.

Table 4.D lists wildlife species observed during the reconnaissance-level surveys. Many additional species are likely to occur on the site throughout the year based on the review of other databases.

a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (Less Than Significant with Mitigation Incorporated)*

Special-status species are defined as:

- Species that are listed, formally proposed for listing, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act
- Plant species on California Rare Plant Rank (CRPR) Lists 1A, 1B, and 2 in the CNPS Inventory of Rare and Endangered Plants
- Animal species designated as Species of Special Concern or Fully Protected by the CDFW
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the *State CEQA Guidelines*
- Species considered being a taxon of special concern by the relevant local agencies

Table 4.D: Wildlife Species Observed During the Field Surveys

Common Name	Scientific Name	Status
Reptiles		
Western fence lizard	<i>Sceloporus occidentalis</i>	R
Birds		
Scaup sp.	<i>Aythya</i> sp.	W
Western grebe	<i>Aechmophorus occidentalis</i>	R
Rock pigeon	<i>Columba livia</i>	R/I
Eurasian collared-dove	<i>Streptopelia decaocto</i>	R/I
Mourning dove	<i>Zenaida macroura</i>	R
Anna's hummingbird	<i>Calypte anna</i>	R
Killdeer	<i>Charadrius vociferus</i>	R
Western gull	<i>Larus occidentalis</i>	R
California gull	<i>Larus californicus</i>	R
Forster's tern	<i>Sterna forsteri</i>	S
Brown pelican	<i>Pelecanus occidentalis</i>	R
Great egret	<i>Ardea alba</i>	R
Snowy egret	<i>Egretta thula</i>	R
Turkey vulture	<i>Cathartes aura</i>	R
Osprey	<i>Pandion haliaetus</i>	R
White-tailed kite	<i>Elanus leucurus</i>	R
Nuttall's woodpecker	<i>Picoides nuttallii</i>	R
Hairy woodpecker	<i>Leuconotopicus villosus</i>	R
Black phoebe	<i>Sayornis nigricans</i>	R
California scrub-jay	<i>Aphelocoma californica</i>	R
American crow	<i>Corvus brachyrhynchos</i>	R
Oak titmouse	<i>Baeolophus inornatus</i>	R
Barn swallow	<i>Hirundo rustica</i>	S
Bushtit	<i>Psaltiriparus minimus</i>	R
Northern mockingbird	<i>Mimus polyglottos</i>	R
Western bluebird	<i>Sialia mexicana</i>	R
House sparrow	<i>Passer domesticus</i>	R/I
House finch	<i>Haemorhous mexicanus</i>	R
Lesser goldfinch	<i>Spinus psaltria</i>	R
Song sparrow	<i>Melospiza melodia</i>	R
California towhee	<i>Melospiza crissalis</i>	R
Red-winged blackbird	<i>Agelaius phoeniceus</i>	R
Yellow warbler	<i>Setophaga petechia</i>	S/F
Western tanager	<i>Piranga ludoviciana</i>	S/F
Mammals		
Botta's pocket gopher	<i>Thomomys bottae</i>	R/burrows
Raccoon	<i>Procyon lotor</i>	R/tracks

Source: Compiled by LSA (2023).

I = Introduced

R = Year-round resident; expected to nest/breed on the project site or vicinity

S = Spring/summer resident; may nest in the project site or vicinity

W = Winter resident; winters on or near site but migrates out of Bay Area to nest/F

S/F = Spring/Fall migrant; does not nest near the project site.

Special-Status Plants. Based on the results of the database search and literature review, 25 special-status plant species were evaluated as potentially occurring in the site vicinity (Table 4.E). Of these species, 8 are not likely to occur on the site due to the lack of suitable habitat (e.g., serpentine, chaparral, rocky outcrops), or because they have not been found within the past 50 years and are therefore considered no longer present in the project vicinity. The proposed trail alignment, however, would be developed within wetlands and grasslands. The following 17 special-status plant species may occur or have a low potential to occur due to the presence of marginal habitat in onsite wetlands and grasslands, but are nevertheless assumed to be potentially present in the project area:

- Alkali milk-vetch (*Astragalus tener* var. *tener*; CRPR List 1B)
- Lyngby sedge (*Carex lyngbyei*; CRPR List 2B)
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*; CRPR List 1B)
- Pappose tarplant (*Centromadia parryi* subsp. *parryi*; CRPR List 1B)
- Point Reyes salty bird's-beak (*Chloropyron maritimum* subsp. *palustre*; CRPR List 1B)
- Soft salty bird's-beak (*Chloropyron molle* subsp. *molle*; federal Endangered; State Rare, CRPR List 1B)
- Bolander's water hemlock (*Cicuta maculata* var. *bolanderi*; CRPR List 2B)
- San Joaquin spearscale (*Extriplex joaquinana*; CRPR List 1B)
- Fragrant fritillary (*Fritillaria liliacea*; CRPR List 1B)
- Santa Cruz tarplant (*Holocarpha macradenia*; federal Threatened; State Endangered; CRPR List 1B)
- Contra Costa goldfields (*Lasthenia conjugens*; federal Endangered; CRPR List 1B)
- Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*; CRPR List 1B)
- Mason's lilaeopsis (*Lilaeopsis masonii*; State Rare; CRPR List 1B)
- Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*; CRPR List 1B)
- California seablite (*Suaeda californica*; federal Endangered; CRPR List 1B)
- Suisun marsh aster (*Symphyotrichum lentum*; CRPR List 1B)
- Saline clover (*Trifolium hydrophilum*; CRPR List 1B)

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
PLANTS			
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland; openings. Elevation: 3–500 meters (m) (10-1,640 feet [ft]). Blooms: March–June.	Low potential to occur. Not likely to occur due to lack of suitable grassland habitat. Valley and foothill grassland habitat type refers to bunchgrass prairie habitat. The closest CNDBB occurrence (#40) is at Sobrante Ridge Regional Preserve, approximately 4.9 air-miles from the site.
Pallid manzanita <i>Arctostaphylos pallida</i>	FT, SE, 1B	Shale or thin chert substrates in deciduous and coniferous forests and woodlands, chaparral, or coastal scrub. Known from fewer than 10 occurrences in the Diablo Range. Elevation: 185–465 m (607-1,525 ft). Blooms: December–March.	No potential to occur. No manzanita plants observed at project site. The closest CNDBB occurrence (#1) is in Sobrante Ridge Regional Preserve, 3.7 air-miles from the site.
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	1B	Playas, vernal-pools, freshwater wetlands, alkali sink, valley grassland, wetland-riparian. Elevation: 0–90 m (0-295 ft). Blooms: March–June.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. The closest CNDBB occurrence (#67) is a possibly extirpated record from 1900, approximately 4.8 miles from the site.
Pink creamsacks <i>Calystegia purpurata</i> subsp. <i>saxicola</i>	1B	North Coast coniferous forest, coastal dunes, and coastal scrub. Elevation: 10–105 m (34-345 ft). Blooms: May–September.	No potential to occur. Not likely to occur due to lack of forest, dune, or coastal scrub habitat. No CNDBB occurrences recorded within 5 miles of the site.
Lyngby sedge <i>Carex lyngbyei</i>	2B	Freshwater or brackish wetlands in coastal prairie, marshes and swamps. Elevation: 0–10 m (0-34 ft). Blooms: April–August.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No CNDBB occurrences recorded within 5 miles of the site.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	1B	Grazed and un-grazed annual grassland. Alkaline or saline soils sometimes described as heavy white clay (saline clay soil). Elevation: 1–230 m (3.3 -755 ft). Blooms: May–October.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No <i>Centromadia parryi</i> were observed during field surveys. No CNDBB occurrences recorded within 5 miles of the site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Pappose tarplant <i>Centromadia parryi</i> subsp. <i>parryi</i>	1B	Vernally mesic areas in valley and foothill grasslands, meadows and seeps, coastal salt marsh; often on alkaline sites in chaparral and coastal prairie. Elevation: 2–420 m (6.6–1,378 ft). Blooms: May–November.	Low potential to occur. Potential suitable habitat present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No <i>Centromadia parryi</i> were observed during field surveys. No CNDDB occurrences recorded within 5 miles of the site.
Point Reyes salty bird's-beak <i>Chloropyron maritimum</i> subsp. <i>palustre</i> [<i>Cordylanthus maritimus</i> subsp. <i>palustris</i>]	1B	Marshes and swamps (coastal salt). Elevation: 0–10 m (0–34 ft). Blooms: June–October.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No CNDDB occurrences recorded within 5 miles of the site.
Soft salty bird's-beak <i>Chloropyron molle</i> subsp. <i>molle</i>	FE, SR, 1B	Coastal salt marshes and brackish marshes from northern San Francisco Bay to Suisun Bay in Napa, Solano, and Contra Costa counties. Elevation: 0–3 m (0–10 ft). Blooms July–September.	Low potential to occur. Potential suitable habitat is present in the onsite tidally influenced wetlands where pickleweed is present, but prior disturbance at the project site likely precludes occurrence. The closest CNDDB occurrence (#1) is from Point Pinole, 0.3 mile northeast of the site.
Bolander's water hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	2B	Freshwater or brackish wetlands in coastal prairie, marshes and swamps. Elevation: 0–200 m (0–656 ft). Blooms: July–September.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No CNDDB occurrences recorded within 5 miles of the site.
Western leatherwood <i>Dirca occidentalis</i>	1B	North coastal coniferous forest, closed-cone pine forest, mixed evergreen forest, foothill woodland, chaparral, wetland-riparian. Elevation: 20–540 m (66–1,772 ft). Blooms: November–March.	No potential to occur. No suitable habitat present. The closest CNDDB occurrence (#95) is from Point Pinole, 4.5 air-miles from the site.
San Joaquin spearscale <i>Extriplex (Atriplex) joaquinana</i>	1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland/alkaline. Elevation: 1–835 m (3.3–2,740 ft). Blooms: April–October.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No CNDDB occurrences recorded within 5 miles of the site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Fragrant fritillary <i>Fritillaria liliacea</i>	1B	Coastal scrub, valley and foothill grassland, and coastal prairie. Often on serpentine soils. Other various soils reported, though usually clay. Elevation: 3–410 m (9.8–1,345 ft). Blooms: February–April.	Low potential to occur. Potential suitable habitat is present in the on-site grasslands, but prior disturbance at the project site likely precludes occurrence. The closest CNDDDB occurrence (#43) is a possibly extirpated 1900 record from Stege, 4.8 air-miles from the site.
Diablo helianthella <i>Helianthella castanea</i>	1B	Rocky soils in chaparral/oak woodland interface. Elevation: 60–300 m (197–984 ft). Blooms: March–June.	No potential to occur. Not likely to occur due to lack of suitable chaparral/oak woodland habitat and elevation (too low). The closest CNDDDB occurrence (#106) is 2.9 air-miles from the site.
Loma Prieta hoita <i>Hoita strobilina</i>	1B	Usually on serpentinite mesic soils in chaparral, and cismontane and riparian woodlands. Perennial herb. Elevation: 80–1,060 m (262–3,478 ft). Blooms: May–July, sometimes August–October.	No potential to occur. No suitable habitat on the site; this species would not be expected occur. The closest CNDDDB occurrence (#15) is 2.9 air-miles from the site.
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT, SE, 1B	Clay and sandy soils in coastal prairie, coastal scrub, and valley and foothill grassland. Elevation: 10–220 m (33–722 ft). Blooms June–October.	Low potential to occur. Potential suitable habitat is present in the onsite grasslands, but prior disturbance at the project site likely precludes occurrence. This species has largely been extirpated from Contra Costa County, extant populations, none of which occurs within 3 miles of the project site, have been introduced ² . Not observed during the field surveys (this species would have been identifiable from vegetative characteristic if it were present). Due to lack of observations, extirpated status in Contra Costa County, and on-site disturbance this plant would not be expected to occur on the site. The closest presumed extant CNDDDB occurrence (#28) is 3.9 air-miles from the site.
Carquinez goldenbush <i>Isocoma arguta</i>	1B	Alkaline sites in valley and foothill grassland and other sub-saline sites. Elevation: 1–20 m (3.3–197 ft). Blooms: August–December.	Low potential to occur. Not likely to occur due to lack of bunchgrass grassland with alkaline soils. Nearest CNDDDB occurrence (#14) from undisclosed location approximately 3.3 air-miles from the site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, 1B	Vernal pools, swales, low depressions, in open grassy areas in mesic, cismontane woodland, valley and foothill grassland. Elevation: 5–210 m (16-689 ft). Blooms: March–June.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. The closest CNDDDB occurrence (#23) is near the headwaters of Rodeo Creek, 4.3 miles from the site.
Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	1B	Freshwater and brackish marsh. Elevation: 0–5 m (0-16 ft). Blooms: May–June.	Low potential to occur. Potential suitable habitat is present in the onsite tidal wetlands and associated upland areas, but prior disturbance at the project site likely precludes occurrence. No CNDDDB occurrences recorded within 5 miles of the site.
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	SR, 1B	Tidal zone of brackish and freshwater marshes and swamps, riparian scrub. Elevation: 0–10 m (0-33 ft). Blooms: April–November.	Low potential to occur. Potential suitable habitat is present in the onsite tidal wetlands, but prior disturbance at the project site likely precludes occurrence. No CNDDDB occurrences recorded within 5 miles of the site.
Chaparral ragwort <i>Senecio aphanactis</i>	2B	Alkaline flats and rocky areas in cismontane woodland and coastal scrub. Elevation: 15–800 m (49-2,624 ft). Blooms: January–April.	Low potential to occur. Not likely to occur due to lack of cismontane woodland and coastal scrub. No CNDDDB occurrences recorded within 5 miles of the site.
Long-styled sand-spurrey <i>Spergularia macrotheca</i> var. <i>longistyla</i>	1B	Alkaline soils in meadows and seeps, marshes, and swamps. Perennial herb. Elevation: 5–170 m (16.4-558 ft). Blooms: February–May, sometime June.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. The closest CNDDDB occurrence (#15) is 2.4 miles from the site.
California seablite <i>Suaeda californica</i>	FE, 1B	Margins of coastal salt marsh. Elevation: 0–15 m (0-49 ft). Blooms: July–October.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. No CNDDDB occurrences recorded within 5 miles of the site.
Suisun marsh aster <i>Symphotrichum lentum</i>	1B	Brackish and freshwater marshes and swamps. Elevation: 0–3 m (0-9.8 ft). Blooms: June–October.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. Species is very rare and was believed extinct until rediscovered in the 1990s. No CNDDDB occurrences recorded within 5 miles of the site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Saline clover <i>Trifolium hydrophilum</i>	1B	Salt marshes, open areas in alkaline soils, alkaline grassland; equally likely to occur in wetlands and non-wetlands. Elevation: 0–45 m (0-148 ft). Blooms: April–June.	Low potential to occur. Potential suitable habitat is present in the onsite wetlands, but prior disturbance at the project site likely precludes occurrence. The closest CNDDDB occurrence (#30) is 4.8 miles from the site.
ANIMALS			
Fish			
Green sturgeon (southern DPS) <i>Acipenser medirostris</i>	FT	Estuaries, lower reaches of large rivers, and salt or brackish water off river mouths. Ascends far up Trinity and Klamath rivers.	No potential to occur. No suitable aquatic habitat present. May occasionally visit San Pablo Bay adjacent to project site. The closest CNDDDB occurrence (#10) is in San Pablo Bay, just north of the site.
Delta smelt <i>Hypomesus transpacificus</i>	FT, SE	Open brackish and fresh water of large channels.	No potential to occur. No suitable aquatic habitat present. Not likely to occur adjacent to site since San Pablo Bay waters are outside known range. The closest CNDDDB occurrence (#8) is approximately 3.8 miles from the site.
Longfin smelt <i>Spirinchus thaleichthys</i>	FC, ST	Bays, estuaries, and nearshore coastal waters from San Francisco Bay north to Lake Earl, near the Oregon state line. Spawn in low-salinity or freshwater reaches of coastal rivers and tributary streams.	No potential to occur. No suitable aquatic habitat present. The closest CNDDDB occurrence (#25) is in San Pablo Bay, just north of the site.
Eulachon <i>Thaleichthys pacificus</i>	FT	Anadromous. Forages in the Pacific Ocean and San Francisco Bay; spawns in the lower portions of coastal rivers fed by snowmelt or glacial runoff.	No potential to occur. No suitable aquatic habitat present. The closest CNDDDB occurrence (#8) is approximately 3.9 miles from the site.
Steelhead (central California coast DPS) <i>Oncorhynchus mykiss</i>	FT	Anadromous. Coastal streams from Russian River south to Aptos Creek (Santa Cruz County), including streams tributary to San Francisco and San Pablo bays.	Low potential to occur. Migratory individuals may occasionally visit open waters of San Pablo Bay adjacent to project site between August and March or briefly swim up Garrity Creek, but species not known to occur, spawn, rear young, or migrate in Garrity Creek ³ . A total barrier to migration is 1.3 miles upstream at the Richmond Parkway ⁴ . Leidy et al. ⁵ did not find any evidence of historical/current use of the Garrity Creek watershed by steelhead or salmon and determined that Garrity Creek does not have potential to support significant steelhead populations.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Steelhead (Central Valley DPS) <i>Oncorhynchus mykiss</i>	FT	Anadromous: adults begin spawning migration to freshwater tributary streams of Sacramento and San Joaquin rivers between August and October.	Low potential to occur. Migratory individuals may occasionally visit open waters of San Pablo Bay adjacent to project site between August and October or briefly forage in Garrity Creek.
Chinook salmon (Sacramento River winter-run ESU ³) <i>Oncorhynchus tshawytscha</i>	FE	Anadromous: adults begin spawning migration to tributary streams of Sacramento River between November and June.	Low potential to occur. No spawning or migration habitat present. Migratory individuals may occasionally visit open waters of San Pablo Bay adjacent to project site between November and June or briefly forage in Garrity Creek.
Chinook salmon (Central Valley spring-run ESU) <i>Oncorhynchus tshawytscha</i>	FT	Anadromous: adults begin spawning migration to tributary streams of Sacramento River in spring and early summer.	Low potential to occur. No spawning or migration habitat present. Migratory individuals may occasionally visit open waters of San Pablo Bay adjacent to project site between spring and early fall or briefly forage in Garrity Creek.
Insects			
Monarch butterfly <i>Danaus plexippus</i>	FC/Sensitive Winter Roosting Sites	Winter roosts along the coast from northern Mendocino County to Baja California, Mexico in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby. Uses milkweed (<i>Asclepias</i> spp.) as host plants.	Moderate potential to occur. No suitable overwintering roost sites are present, but species could forage in grasslands and breed on site if milkweed host plant is present. The closest CNDDDB occurrence (#24) is an overwintering population 0.8 mile from the site in Point Pinole Regional Shoreline.
Western bumble bee <i>Bombus occidentalis</i>	Candidate SE	Variety of habitat types supporting native flowering plants. Species has declined precipitously, perhaps from disease.	Low potential to occur. Low-quality habitat is present at the project site due to limited native flowering plants. The closest CNDDDB occurrence (#205) is a 1951 record 0.5 mile from the site.
Amphibians and Reptiles			
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Ponds, streams, drainages and associated uplands; requires areas of deep, still, and/or slow-moving water for breeding	Low potential to occur. Suitable habitat may be present in Garrity Creek and in brackish marsh wetland (Wetland 2) although salinity levels in these features may preclude this species. The other freshwater wetlands may be suitable for resting and foraging but species unlikely to breed due to limited hydroperiod. Project site is isolated from known occupied habitat in vicinity (i.e., Refugio Creek, Rodeo Creek) by intervening unsuitable

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
			development. The closest CNDDDB occurrence is 2.8 miles from the site in a tributary to Refugio Creek.
Western pond turtle <i>Emys marmorata</i>	PT/SSC	Ponds, streams, drainages, and associated uplands.	Moderate potential to occur. Suitable habitat present in Garrity Creek and in the large brackish water wetland (Wetland 2). The closest CNDDDB occurrence (#147) is 3.9 miles from the site in Rodeo Creek.
Alameda striped racer (=whipsnake) <i>Masticophis lateralis euryxanthus</i>	FT, ST	Chaparral and sage scrub with rock outcrops and an abundance of prey species such as western fence lizard (<i>Sceloporus occidentalis</i>).	Low potential to occur. Not likely to occur due to lack of chaparral and scrub at or adjacent to the project site. No CNDDDB occurrences recorded within 5 miles of the site.
Birds			
Redhead <i>Aythya americana</i>	SSC	Large, deep bodies of water; nests in freshwater emergent wetlands.	No potential to occur. May forage in San Pablo Bay but does not nest in region. Species observed in Point Pinole Regional Shoreline. ⁶ Species not tracked in the CNDDDB.
American white pelican <i>Pelecanus erythrorhynchos</i>	SSC	Shallow inland and coastal marine habitats, marshes, lakes, rivers.	Moderate potential to occur. Suitable foraging habitat present in wetlands, but species does not breed in the area. Species observed at the Garrity Creek mouth and in Point Pinole Regional Shoreline. ⁷ Species not tracked in the CNDDDB.
Long-eared owl <i>Asio otus</i>	SSC	Woodlands and forests that are open or adjacent to grasslands, meadows, or shrublands.	No potential to occur. No suitable habitat present. Species observed in Point Pinole Regional Shoreline. ⁸ No CNDDDB occurrences within 5 miles of the site.
Short-eared owl <i>Asio flammeus</i>	SSC	Open grasslands, meadows, and marshes with few trees. Requires dense ground vegetation for both roosting and nesting.	Low potential to occur. Suitable nesting and foraging habitat is present. Species observed in Point Pinole Regional Shoreline. ⁹ The closest CNDDDB occurrence (#10) is 3.3 miles from the site.
Burrowing owl <i>Athene cunicularia</i>	SSC	Open habitats (e.g., grasslands, agricultural areas) with mammal burrows or other features (e.g., culverts, pipes, debris piles) suitable for nesting and roosting.	Low potential to occur. Migratory individuals may occasionally occur on site for brief periods but lack of suitable burrow surrogates (i.e., ground squirrel burrows, exposed culverts) likely precludes long-term use. However, this species could occur in the future if ground squirrels colonized the site. No

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
			CNDDDB occurrences within 5 miles of the project site.
California Ridgway's (=clapper) rail <i>Rallus obsoletus obsoletus</i>	FE, SE, CFP	Tidal salt marshes with sloughs and substantial cordgrass (<i>Spartina</i> spp.) cover.	Low potential to occur. The project site is near suitable salt marsh habitat along the San Pablo Bay, but this site is 75 feet from the tidal salt marsh. Could briefly forage in the on-site wetlands but lack of cordgrass and the potential limited tidal influence due to the intervening UPRR tracks may preclude the species from occurring. The narrow band of salt marsh vegetation along Garrity Creek does not provide suitable cover to support this species. Species observed in Point Pinole Regional Shoreline. ¹⁰ The closest CNDDDB occurrence (#83) is just north of the site on the opposite side of the UPRR west of Garrity Creek and east of Point Pinole Regional Shoreline.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, CFP	Salt marshes bordering larger bays, also found in brackish and freshwater marshes.	Low potential to occur. The project site is located near suitable salt marsh habitat along the San Pablo Bay, but this site is approximately 75 feet from the tidal salt marsh. Could briefly forage in the onsite wetlands but lack of cordgrass and the potential limited tidal influence may preclude the species from occurring. The narrow band of salt marsh vegetation along Garrity Creek does not provide suitable cover to support this species. The closest CNDDDB occurrence (#192) is just north of the site on the opposite side of the UPRR at the mouth of Garrity Creek.
California least tern <i>Sterna antillarum browni</i>	FE, SE, CFP	Nests on the ground on sandy beaches, alkali flats, hard-pan surfaces (salt ponds).	Low potential to occur. No suitable habitat is present at the project site. Could forage in San Pablo Bay adjacent to site; species not known to nest nearby. Species observed in Point Pinole Regional Shoreline. ¹¹ No CNDDDB occurrences within 5 miles of the project site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Black skimmer <i>Rynchops niger</i>	SSC	Nests on the ground on sandy beaches. Forages in a variety of habitats, including tidal waters of bays and estuaries.	Low potential to occur. No suitable habitat present at the project site, but could forage in San Pablo Bay near the site; species not known to nest nearby. Species observed in Point Pinole Regional Shoreline. ¹² Species not tracked in the CNDDDB.
Western snowy plover <i>Charadrius nivosus nivosus</i>	FT	Nests in upper areas of sandy beaches (above normal high tide line), barren dikes of salt ponds, and edges of alkali or brackish lakes in inland areas; forages along the water's edge and on exposed mud flats.	Low potential to occur. No suitable nesting habitat present within or adjacent to the site, but this species could forage in the wetlands. Species observed in Point Pinole Regional Shoreline. ¹³ No CNDDDB occurrences within 5 miles of the project site.
White-tailed kite <i>Elanus leucurus</i>	CFP	Open grasslands, meadows, or marshes. Requires dense-topped trees or shrubs for nesting and perching.	Moderate potential to occur. Suitable nesting habitat present in large trees and shrubs and suitable foraging habitat present in grasslands and wetlands. No large stick nests observed in these trees during the surveys, but wintering individual observed during survey. Species observed at the Garritty Creek mouth and in Point Pinole Regional Shoreline. ¹⁴ The closest CNDDDB occurrence (#14) is approximately 3.9 miles from the site.
Northern harrier <i>Circus hudsonius</i>	SSC	Nests in wet meadows and marshes, forages over open grasslands and agricultural fields.	Moderate potential to occur. Suitable foraging and nesting habitat present, but small size and proximity of human disturbance may preclude nesting. Species observed in Point Pinole Regional Shoreline. ¹⁵ The closest CNDDDB occurrence (#16) is approximately 3.3 miles from the site.
Golden eagle <i>Aquila chrysaetos</i>	CFP	Forages in rolling foothill or coast-range terrain, with open grassland and scattered large trees. Nests in large trees, on cliffs, and occasionally on power line poles.	Low potential to occur. No suitable nesting habitat present, but species may briefly fly or forage over the site. Species observed in Point Pinole Regional Shoreline. ¹⁶ No CNDDDB occurrences within 5 miles of the project site.
American peregrine falcon <i>Falco peregrinus anatum</i>	CFP	Forages in open country, mountains, and sea coasts. Nests on high cliffs, bridges, and buildings.	Moderate potential to occur. No suitable nesting habitat present, but species may briefly fly or forage over the site. Species observed in Point Pinole Regional Shoreline. ¹⁷ CNDDDB occurrences suppressed by CDFW.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Grasslands and open shrub or woodland communities. Nests in dense shrubs or trees and forages in scrub, open woodlands, grasslands, and croplands. Frequently uses fences, posts, and utility lines as hunting perches.	Low potential to occur. Suitable nesting and foraging habitat present at the project site, but species is a rare breeder in the area. ¹⁸ Species observed in Point Pinole Regional Shoreline. ¹⁹ No CNDDDB occurrences within 5 miles of the project site.
Vaux's swift <i>Chaetura vauxi</i>	SSC	Grasslands and agricultural fields; nests in dense vegetation in large hollow trees near open water; forages in most habitats but prefers rivers and lakes.	Low potential to occur. No suitable roosting or nesting habitat present but could fly or forage over the site during migration. Species observed in Point Pinole Regional Shoreline. ²⁰ Species is not tracked in the CNDDDB.
Olive-sided flycatcher <i>Contopus cooperi</i>	SSC	Coniferous forests with open canopies.	No potential to occur. No suitable nesting habitat present but could forage over the site during migration. Observed in Point Pinole Regional Shoreline. ²¹ Species not tracked in the CNDDDB.
Purple martin <i>Progne subis</i>	SSC	Woodlands; nests in tree snags and abandoned woodpecker cavities and human-made structures.	Low potential to occur. No suitable nesting habitat present but could forage over site; species is rare in Contra Costa County ²² . Species observed in Point Pinole Regional Shoreline. ²³ No CNDDDB occurrences within 5 miles of the project site.
Samuels (=San Pablo) song sparrow <i>Melospiza melodia samuelis</i>	SSC	Tidal and muted salt marshes on the fringes of San Pablo Bay, Tomales Bay, and Richardson Bay. Nests primarily in pickleweed and gumplant.	Moderate potential to occur. Suitable nesting habitat present. The closest CNDDDB occurrence (#30) includes museum specimens collected from an unknown location in Pinole, approximated to just north of the project site.
Grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Grasslands with coyote brush and other shrubs.	Low potential to occur. Suitable nesting and foraging habitat present but limited suitable grassland habitat likely precludes breeding. Observed in Point Pinole Regional Shoreline. ²⁴ Species is not tracked in the CNDDDB.
Tricolored blackbird <i>Agelaius tricolor</i>	ST, SSC	Breeds in large colonies near freshwater, preferably emergent wetland such as cattails and tules but also in thickets of willow and other shrubs. Requires nearby foraging areas with large numbers of insects.	Low potential to occur. Suitable nesting habitat present, but species is no longer known to nest in the area. No CNDDDB occurrences within 5 miles of the project site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
Yellow warbler <i>Dendroica petechia</i>	SSC	Nests in extensive willow riparian woodlands.	No potential to occur. No suitable nesting habitat present; rare nester in the region, but species known to occur during migration. Observed in migration during September 2021 survey. Species observed in Point Pinole Regional Shoreline. ²⁵ No CNDDDB occurrences within 5 miles.
San Francisco (=salt marsh) common yellowthroat <i>Geothlypis trichas sinuosa</i>	SSC	Salt, brackish, and freshwater marshes; and riparian woodlands. Nests on or near ground in low vegetation.	Moderate potential to occur. Suitable nesting habitat present in willow thickets and suitable foraging habitat present (wetlands vegetation and adjacent vegetation). Species observed at the Garrity Creek mouth and in Point Pinole Regional Shoreline. ²⁶ No CNDDDB occurrences within 5 miles.
Mammals			
Townsend's western big-eared bat <i>Corynorhinus townsendii</i>	SSC	Found in wooded areas with caves or old buildings for roost sites.	Low potential to occur. No suitable roosting and hibernating habitat present but could forage over the site. No CNDDDB occurrences within 5 miles of the project site.
Pallid bat <i>Antrozous pallidus</i>	SSC	Roosts in caves, tunnels, buildings, under bridges, and in tree hollows; forages over variety of habitats.	Moderate potential to occur. Suitable roosting habitat may be present in trees or beneath the Garrity Creek bridge crossings; this bat could occasionally occur as a transient while foraging at night. No trees with large hollows observed during the field surveys. The closest CNDDDB occurrence (#139) are museum specimens collected at an unknown location in Pinole, estimated to be near the site.
Western red bat <i>Lasiurus blossevillii</i>	SSC	Often roosts and forages on or near riparian habitat. Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Does not breed in the San Francisco Bay Area.	Moderate potential to occur. Suitable roosting habitat present in trees within and adjacent to site and suitable foraging habitat present, but species does not breed in the area. No CNDDDB occurrences recorded within 5 miles of the project site.

Table 4.E: Special-Status Species Evaluated for the Project

Species	Status ¹	Habitat/Blooming Period	Discussion
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	SSC	Primarily along riparian areas within chaparral and woodlands. Feeds mainly on woody plants but also eats acorns, grasses, and fungi. Builds conspicuous stick houses in trees and on the ground.	Moderate potential to occur. Suitable habitat present in the arroyo willow thickets near the project site, but no woodrat houses observed during the reconnaissance-level surveys. The closest CNDDDB occurrence (#37) is approximately 4.8 miles from the site.
Salt marsh wandering shrew <i>Sorex vagrans halicoetes</i>	SSC	Tidal salt marshes with abundant driftwood and other debris (for shelter and foraging). Requires dense low-lying cover and driftwood or other litter about the high tide line for nesting and foraging.	Moderate potential to occur. The site is located near suitable salt marsh habitat along the San Pablo Bay. During high tides, this species could seek shelter in ruderal grasslands and non-tidal wetland habitats. The closest CNDDDB occurrence (#8) is from Giant Marsh approximately 1.3 miles from the site.
San Pablo vole <i>Microtus californicus sanpabloensis</i>	SSC	Tidal marshes around the mouth of San Pablo Creek and adjacent upland grasslands.	Low potential to occur. The project site is outside the known range for this subspecies. The site is near suitable salt marsh habitat along San Pablo Bay. During high tides, this species, if present, could seek shelter on the site. The closest CNDDDB occurrence (#7) is scattered grasslands adjacent to Giant Marsh and east of UPRR tracks adjacent to the golf club, approximately 0.5 mile from the project site.
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, CFP	Tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed (<i>Salicornia</i> sp.) for cover.	Moderate potential to occur. The site is near suitable salt marsh habitat along the San Pablo Bay. During high tides, mice could seek shelter in grasslands and wetlands at the site. Potential suitable pickleweed marsh habitat at the project site occurs along the margins of Garrity Creek and in the westernmost tidal wetland (Wetland 1). The closest CNDDDB occurrence (#73) is from Giant Marsh, 1.3 miles from the site.
American badger <i>Taxidea taxus</i>	SSC	Grassland, scrub, and woodland with loose-textured soils.	Low potential to occur. Unlikely to occur due to the small size of grassland habitat present and the project site's isolation from larger tracts of open space habitat. No CNDDDB occurrences within 5 miles of the project site.

Source: Compiled by LSA (2024)
Table Notes continued on following page

- ¹ Status Codes: FE = federally endangered; FT = federally threatened; FC = federal candidate; PT = Proposed federally threatened; SE = State endangered; ST = State threatened; 1B = California Rare Plant Rank (CRPR) 1B (plants rare, threatened, or endangered in California and elsewhere); 2B = CRPR 2B (plants rare, threatened, or endangered in California, but more common elsewhere); SSC = California Species of Special Concern; CFP = California Fully Protected Species
- ² California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website: <https://www.rareplants.cnps.org> (accessed November 28, 2023).
- ³ National Oceanic and Atmospheric Administration. 2005. Central California Coast Distinct Population Segment of Steelhead Critical Habitat and Distribution Information. National Marine Fisheries Service. June.
- ⁴ National Marine Fisheries Service. 2005. California Fish Passage Assessment Database.
- ⁵ Leidy, Robert A., G.S. Becker, and B.N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Oakland: Center for Ecosystem Management and Restoration, Oakland, California.
- ⁶ eBird. 2023. eBird: An online database of bird distribution and abundance [web application]. Ithaca, N.Y.: Cornell Lab of Ornithology. Ebird. 2023.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Ibid.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ Glover, S. 2009. The Contra Costa County Breeding Bird Atlas. Walnut Creek, California: Mount Diablo Audubon Society, Walnut Creek, CA.
- ¹⁹ Ebird. 2023. Op cit.
- ²⁰ Ibid.
- ²¹ Ibid.
- ²² Glover. 2009.
- ²³ Ibid.
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ Ibid.
- CNDDDB = California Natural Diversity Database
DPS = distinct population segment
ESU = evolutionarily significant unit
UPRR = Union Pacific Railroad

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Construction of the project would involve grading activities and vegetation disturbance within potential habitat for all the 17 above-identified special-status plant species. If present, individual plants could be damaged by construction activities including excavation and grading. Construction activities could also indirectly impact special-status plants if the plants are immediately adjacent to the project site, through incidental impacts from equipment, altering hydrology, or other indirect effects. Implementation of Mitigation Measure BIO-1 would reduce potential impacts to special status plant species to a less than significant level.

Mitigation Measure BIO-1

The following measures shall be implemented to avoid, minimize, and/or mitigate potential impacts on special-status plants.

- Preconstruction botanical surveys of the project site shall be completed by a qualified botanist according to the CDFW's 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*.²⁴ Surveys shall be floristic in nature, include areas of potential direct impacts and a minimum 50 feet surrounding area, be conducted at the time of year when species are both evident and identifiable, and be replicable. The purpose of these surveys shall be to identify the locations of special-status plants that could be affected during project construction. If special-status plants are not found in the survey area, then no further mitigation is required. If special-status plants are found in the survey area, then the below mitigation measures shall also be implemented.
- Locations of identified special-status plants shall be recorded by the qualified botanist using a Global Positioning System (GPS) unit or equivalent and flagged in the field. The GPS data shall be used to create digital and hard copy maps for distribution to construction inspectors and contractors to inform them of areas where disturbance is prohibited, or where activities are restricted.
- Special-status plant species identified during surveys shall be submitted to the CNDDDB.
- Where possible, identified special-status plants will be avoided. This may include making small adjustments to the construction area (within the 50-foot buffer around the trail alignment

²⁴ California Department of Fish and Wildlife (CDFW). 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. State of California, California Natural Resources Agency. March 20.

evaluated in the Initial Study prepared pursuant to CEQA), as well as the following:

1. The qualified botanist shall establish an adequate buffer area to exclude activities that could harm an identified special-status plant population that is near the construction area.
 2. Access during construction may be restricted around special-status plant populations through appropriate field direction by the qualified botanist. This access restriction may include signage, buffers, seasonal restrictions, and design or no access, depending on the location and special-status species in question.
 3. The East Bay Regional Park District (District) and its construction contractors shall install a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4-feet-tall around any established buffer areas to prevent encroachment by construction equipment and personnel. The qualified botanist shall determine the exact location of the fencing. The fencing shall be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and shall be checked and maintained weekly until all construction is complete in the area where special-status plant species occur.
 4. No grading, clearing, storage of equipment or machinery, or other disturbance or construction activity shall occur until all temporary construction fencing has been installed by the District, and its construction contractor, and inspected and approved by the qualified botanist.
- If avoidance of special-status populations is not possible, then a Rare Plant Mitigation Plan shall be designed and implemented. CDFW approval of the Rare Plant Mitigation Plan is required before implementation of an activity that could directly or indirectly impact a federally or State-listed or CNPS Rare Plant Rank 1A, 1B, 2A, or 2B species, and under no circumstances will State or federally listed plants be impacted without additional consultation with appropriate regulatory agencies. At a minimum, the plan shall include the following elements:
 1. For annual species, seed shall be collected from plants that will be impacted, seed stored in an appropriate seed banking facility, and a portion of the seeds shall be

redistributed in the project vicinity, as directed by the qualified botanist. Individual plants may also be transplanted. For perennial species, seed collection and seed banking may be augmented by transplanting entire plants or cuttings, as directed by the qualified botanist.

2. Suitable sites shall be identified on the project site (or other nearby suitable location) and prepared for redistribution of seeds (or transplants) at mitigation ratios that are appropriate for the species lifeform (e.g., annual or perennial) and success based on performance standards calibrated by established reference populations. The plan shall outline the site preparation activities.
3. Monitoring surveys of the seeded or transplanted areas shall be conducted for a minimum of 3 years. The District shall prepare monitoring reports that document the monitoring results and the success of the rare plant mitigation program.
4. Mitigation will be deemed successful when each of the relocated species establishes at least one stable population of approximately the same size of the impacted population, defined as species presence and population size over a 3-year period, taking into account fluctuations in local reference populations. If this goal is not achieved in 4 years, then contingency measures shall be implemented. Such measures will include evaluating the environmental or other characteristics affecting plant survival and implementing corrective measures, which may include additional seeding and planting, altering or implementing a weed control regime, or introducing or altering other management activities. Efforts shall continue until the mitigation site meets the success criteria for two consecutive years.

With implementation of Mitigation Measure BIO-1, which requires pre-construction surveys for special-status plants and preparation of a Rare Plant Mitigation Plan. If special-status plant species cannot be avoided, impacts to annual special-status plant species would be less than significant with mitigation.

Special-Status Wildlife. Based on the results of the database search, literature review and the reconnaissance-level field surveys, 44 special-status wildlife species were evaluated for the project site (Table 4.E). Of these species, the following were determined to be present or potentially present on the project site due to the presence of suitable habitat. These species are further discussed below.

- Steelhead central California coast Distinct Population Segment (*Oncorhynchus mykiss irideus*; federally Threatened)
- California red-legged frog (*Rana draytonii*; federally Threatened, California Species of Special Concern)
- Western pond turtle (*Emys marmorata*; [proposed federally Threatened; California Species of Special Concern)
- California black rail (*Laterallus jamaicensis coturniculus*; State Threatened, California Fully Protected)
- California Ridgway's rail (*Rallus obsoletus obsoletus*; federally and State Endangered, California Fully Protected)
- Burrowing owl (*Athene cunicularia*; California Species of Special Concern)
- Short-eared owl (*Asio flammeus*; California Species of Special Concern)
- Northern harrier (*Circus hudsonius*; California Species of Special Concern)
- White-tailed kite (*Elanus leucurus*; California Fully Protected Species)
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*; California Species of Special Concern)
- Pallid bat (*Antrozous pallidus*; California Species of Special Concern)
- Western red bat (*Lasiurus blossevillei*; California Species of Special Concern)
- Salt marsh harvest mouse (*Reithrodontomys raviventris*; Federally and State Endangered, California Fully Protected)
- Salt marsh wandering shrew (*Sorex vagrans halicoetes*; California Species of Special Concern)
- Monarch butterfly (*Danaus plexippus*; Candidate Federally Listed)
- Western bumble bee (*Bombus occidentalis*; Candidate State Listed)

The proposed project would result in 2.2 acres of habitat loss/conversion within the project site. The proposed new trail alignment crosses Garrity Creek, seasonal wetland swales, wetland seeps, and two wetland basins. Garrity Creek would be completely spanned with a new bridge that would not include abutments within the creek channel. The project would permanently impact up to 0.356 acre and temporarily impact up to 0.018 acre of the wetlands.

Special-status wildlife species could be impacted both directly and indirectly during construction or during operational activities after construction has been completed. The potential for protected resources to be impacted by construction and operation of the proposed trail are a function of the likelihood the species is present when the project is constructed, as well as the type and duration of construction activities. Another factor is the sensitivity of the species or resource to disturbance.

In addition to the species-specific mitigation measures identified further below, the following mitigation measure, which requires that an environmental education program be conducted prior to project construction and that best management practices (BMPs) be implemented during project construction, would be implemented to reduce potential direct and indirect impacts to special-status species to a less than significant level.

Mitigation Measure BIO-2

The following general avoidance measures shall be implemented to avoid potential direct and indirect impacts to special-status wildlife species during all construction activities:

- A qualified biologist or biological monitor shall be present to observe construction activities and shall have the authority to halt work as necessary if special-status species are in harm's way or permit conditions or mitigation measures are being violated.
- Preconstruction biological surveys appropriate to special-status wildlife species potentially present shall be conducted by the qualified biologist immediately prior to initiation of construction.
- Before any construction activities begin on the project, the qualified biologist shall conduct a training session for construction workers and other personnel present during construction. The training shall include a description of each special-status species that might occur and their respective habitats, the general measures that are being implemented to protect each of the species as they relate to the project, and the physical boundaries within the project shall be accomplished. The training shall also provide instruction in the appropriate protocol to follow in the event that a special-status species is found on site, including contact telephone numbers.
- Before starting ground disturbing activities within construction areas, the East Bay Regional Park District (District) and its construction contractors shall clearly delineate the boundaries of the construction area with fencing, stakes, or flags. Contractors shall be required to restrict construction-related activities to within the fenced, staked, or flagged areas. Contractors shall maintain fencing, stakes, and flags until the

completion of construction-related activities in that area. Fencing stakes and flags shall be removed upon completion of construction work. Sensitive habitat areas, including special-status wildlife species habitat and known populations, and jurisdictional wetlands, shall be clearly indicated on the project construction plans.

- The District or its construction contractors shall install temporary wildlife exclusion fencing along the perimeter of the proposed trail alignment where it would be near sensitive habitat, such as wetlands (fencing does not need to be installed adjacent to the existing residences). Temporary exclusion fencing near sensitive habitats, such as riparian habitat and along Garrity Creek and wetlands, shall be installed at the discretion of the qualified biologist. All construction areas not fenced shall be clearly marked with flagging and monitored during initial ground disturbance, as described above. Final fence design, including appropriate animal escape structures within the fencing and fence location, shall comply with permit conditions as appropriate for each species being protected. Any construction-related disturbance outside of these boundaries, including parking, temporary access, construction staging, or areas used for storage of materials, shall be prohibited without approval of the qualified biologist. The new trail shall not extend beyond the delineated construction work area boundary. Construction vehicles shall pass and turn around only within the delineated construction work area boundary or existing local road network or hardscaped areas. Where new access is required outside of existing roads or the construction work area, the route shall be clearly marked (i.e., flagged and/or staked) prior to being used, subject to review and approval of the qualified biologist.
- Where wildlife exclusion fencing is not installed and ground disturbing activity is taking place, the qualified biologist shall approve the proposed disturbance in advance and clear the area prior to the start of ground disturbing activity.
- A qualified biological monitor shall be on-site during installation of the exclusion fencing. The fencing shall be inspected by the qualified biological monitor on a daily basis during construction activities to ensure fence integrity. Any needed repairs to the fence shall be performed on the day of their discovery. After construction has been completed, the exclusion fencing shall be removed within 72 hours.

- Immediately prior to conducting vegetation removal or grading activities inside fenced exclusion areas, the qualified biologist or a biological monitor working under their direction shall survey within the exclusion area to ensure that no special-status species are present. The qualified biologist or a biological monitor working under their direction shall also monitor vegetation removal or grading activities inside fenced exclusion areas for the presence of special-status species.
- Excavated soils shall be stockpiled in disturbed areas lacking native vegetation, and/or as shown on the construction plans, or approved by the qualified biologist.
- The introduction of exotic plant species shall be avoided first through prevention, followed by physical methods. Construction equipment shall arrive at the project area free of soil, seed, and vegetative debris to reduce the likelihood of introducing new weed species. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. Earth-moving equipment, gravel, fill, or other materials shall be weed free. Mechanical seeding equipment shall be inspected for residual seeds and cleaned prior to use onsite. Construction operators shall ensure that clothing, footwear, and equipment used during construction is free of soil, seeds, vegetative matter or other debris or seed-bearing material before entering the project site or from an area with known infestations of invasive plants and noxious weeds. Weed populations introduced into the site during construction shall be eliminated by mechanical means approved by the qualified biologist.
- If special-status wildlife species are found within or near construction areas during project construction work, construction activities shall cease in the vicinity of the animal until the animal moves on its own outside of the project area (if possible). The wildlife resource agency (or agencies) with jurisdiction over the species shall be contacted if permits issued for the project do not address relocation of the species regarding any additional avoidance, minimization, or mitigation measures that may be necessary if the animal does not move on its own. The daily monitoring report prepared by the qualified biologist shall document the activities of the animal within the site; exclusion fence construction, modification, and repair efforts; and movements of the animal once again outside of the construction area. This report shall be submitted to the District

and the appropriate regulatory agency with jurisdiction over the wildlife species.

- All special-status wildlife species observed during surveys shall be reported to the CNDDDB.
- Whenever possible, steep-walled holes or trenches shall be covered each evening to prevent animal entry. If this is not possible and the steep-walled holes or trenches must be left open overnight, escape ramps or structures shall be installed. Steep-walled holes or trenches shall be inspected for trapped animals on a daily basis until they are backfilled. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If listed or other special-status species are trapped, the USFWS and/or CDFW, as appropriate, shall be contacted immediately to determine the appropriate method for relocation, or the species may be relocated according to the conditions of the permits issued for the project. The qualified biologist may elect to order a stop work requirement if they determine it to be necessary, and upon consultation with the appropriate regulatory agency.
- Construction pipes, culverts, or other structures that are stored at a construction site for one or more overnight periods and with a diameter of 4 inches or more shall be inspected for special-status species before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a special-status species is discovered inside a pipe, and does not move of its own accord, that section of pipe shall not be moved until the appropriate resource agency, with jurisdiction over that species, has been consulted to determine the appropriate method for relocation, or the species may be relocated according to the conditions of the permits issued for the project. If necessary, under the direct supervision of the qualified biologist, the pipe may be moved once to remove it from the path of construction activity until the animal has escaped.
- Vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. Contractor equipment shall be checked for leaks daily prior to operation and repaired when leaks are detected. Fuel containers shall be stored within appropriately sized secondary containment barriers. The qualified biologist shall be immediately informed of any hazardous spills and not more than 24 hours of the incident occurrence. Hazardous spills shall

be immediately cleaned up and the contaminated soil shall be properly disposed of at an appropriate facility. If vehicle or equipment maintenance is necessary, it may be performed in the designated staging areas, as shown on the construction plans or approved by the qualified biologist.

- Temporarily disturbed areas shall be returned to pre-project conditions or better.
- Project-related vehicles shall observe a 15-mile-per-hour speed limit on unpaved access roads within the limits of construction.

With implementation of Mitigation Measure BIO-2, in conjunction with species-specific measures described below, impacts to special-status wildlife species would be reduced to less than significant with mitigation, by ensuring that direct and indirect effects to special-status species are avoided during project construction.

As described above, based on a review of the species' habitat requirements, the existing habitats on the site, and connections or barriers to other populations in open space lands, it was determined that the project could impact 15 special-status animal species. These species are described further below. None of the remaining species are likely to occur due to a lack of habitat (e.g., chaparral) and/or the project site's isolation from undeveloped lands with occupied habitat (e.g., lands northeast and south of Pinole).

Steelhead. The central California coast steelhead and California Central Valley steelhead may occasionally stray into the open waters of San Pablo Bay adjacent to the project site or forage in Garrity Creek. No suitable aquatic or spawning habitat is present within Garrity Creek. Although steelhead can pass through the lower portions of Garrity Creek, a barrier to passage is at a dam at the Richmond Parkway, 0.8 mile south of the project site. Therefore, impacts to steelhead would be less than significant.

California Red-Legged Frog. The California red-legged frog is a federally threatened species and California Species of Special Concern that occurs in and along freshwater marshes, streams, ponds, and other semi-permanent water sources. California red-legged frogs have been recorded 2.9 miles northeast of the project site.²⁵

The wetlands and associated arroyo willow thickets are physically suitable for foraging and resting California red-legged frogs, but the shallow depth and limited hydroperiod of most of the wetlands likely preclude breeding. Therefore, most of the wetlands likely do not provide suitable breeding habitat for California red-legged frogs. Ponds and pools that are suitable for California red-legged frog breeding usually have a minimum depth of 20 inches, but California red-legged

²⁵ California Department of Fish and Wildlife. 2023. California Natural Diversity Database, commercial version dated November 2023. Biogeographic Data Branch, California Department of Fish and Wildlife, Sacramento.

frogs do sometimes breed successfully in pools as shallow as 10 inches.²⁶ Regardless of water depth, suitable breeding habitat must contain water during the entire development period for eggs and tadpoles, which is considered to be around 5 months during the winter and spring. The only wetland that likely holds enough water is the tidally influenced Wetland 2. This wetland basin contains freshwater marsh vegetation dominated by cattails. The brackish wetland conditions, however, may also preclude this species from occurring in this wetland.

Due the presence of marginally suitable aquatic habitat, the proposed project could result in construction-related direct and indirect impacts to California red-legged frog. Grading and other construction activities could result in mortality or harm of individual California red-legged frogs using burrows, soil crevices, or other retreats within the project site. Migrating California red-legged frogs may also seek refuge under construction equipment and in excavations and trenches, exposing them to potential harm from other construction activities. In the absence of avoidance and minimization measures, spills of oil or fuel from construction equipment could impact habitat for these species and food-related trash left on the construction site could attract additional predators, leading to increased predation pressure on these species. Therefore, construction-related direct and indirect impacts are potentially significant.

In total, the proposed project would result in the conversion of 1.868 acres of upland habitat potentially used by this species. The project would likely not permanently impact any expected breeding habitat, though Wetland 2 may provide suitable breeding habitat, though salinity levels in this tidally influenced wetland may preclude its occurrence. The proposed new trail alignment crosses Garrity Creek, two wetland basins, and several seasonal wetlands; the project would permanently impact up to 0.356 acre and temporarily impact up to 0.018 acre of wetlands. Given that this species can still disperse across trails, the large amount of surrounding habitat, and that work along the creek/wetlands is limited, the project would not create a barrier to movement, and the project would not affect expected breeding habitat, impacts associated with habitat loss/conversion would be less than significant.

Mitigation Measure BIO-3, in addition to the general special-status species protection measures identified above (Mitigation Measure BIO-2), would be implemented to further protect California red-legged frog during construction activities:

Mitigation Measure BIO-3

The East Bay Regional Park District (District) shall implement the following measures before, during, and after all ground-disturbing construction activities within the project site to minimize impacts to individual and California red-legged frogs. Additional measures may be required by the USFWS and/or CDFW per their permitting authority. Although USFWS and/or CDFW permits will be obtained by the District, they have not yet been issued, and therefore, at a minimum the following measures shall be implemented:

²⁶ Fellers, G.M. 2005. California red-legged frog. M. Lannoo, ed. In *Amphibian Declines: The Conservation Status of United States Species*. Berkeley: University of California Press.

- The qualified biologist shall survey all work areas within 72 hours before the initiation of construction activities. If California red-legged frog are found, the District biologist shall contact the USFWS and/or the CDFW to determine if moving them is appropriate. If the agencies approve relocation, the qualified biologist shall move them to an approved site in the project area prior to the initiation of construction. The qualified biologist shall maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photos) to assist him or her in determining whether translocated animals are returning to their original point of capture. A final clearance survey shall be conducted immediately before construction commencement.
- A qualified biologist, experienced with California red-legged frog and other locally occurring special-status species, shall be present on site during all ground-disturbing activities to search for individuals that may be unearthed or harmed during excavation/construction. The qualified biologist shall have the authority to halt work if a California red-legged frog or other special-status species is found on site. Individuals of species shall be allowed to move away from the project area on their own or removed from the construction area following the procedures specified in the USFWS or CDFW permits. The District shall report all discoveries of California red-legged frogs in the construction areas to resource agencies according to the procedures specified in the State and federally listed species permits.
- Construction activities shall be limited to periods of low rainfall (less than 0.25 inch per 24-hour period and less than 40 percent chance of rain). The project biologist shall consult the 72-hour weather forecasts from the National Weather Service (NWS) prior to the startup of any ground disturbing activities on the project site. Construction activities shall cease 24 hours prior to a 40 percent or greater forecast of rain from the NWS. Construction may continue 24 hours after the rain ceases provided that there is no precipitation (less than 20 percent chance) in the 24-hour forecast.
- Contractor specifications shall include the following worker restrictions and guidelines, at a minimum:

- Construction personnel and vehicles shall stay within designated work areas. Entry into adjacent lands or established exclusion zones shall be strictly prohibited.
- In the event a California red-legged frog is inadvertently killed, injured or entrapped, the contractor shall immediately notify the onsite monitor/biologist and District's construction inspector, who will stop work and notify the USFWS and/or the CDFW.
- In-stream disturbances shall take place during the dry season when drainage channels have flows that are minimal (e.g., May 15 to October 15).
- As part of the project's Stormwater Pollution Prevention Plan (SWPPP) implementation, the District shall include in the specifications a requirement to use tightly woven fiber of natural materials (e.g., coir rolls or mats) or similar material for erosion control to ensure that special-status species do not get trapped. Plastic mono-filament netting (erosion control matting) or similar material shall be prohibited.
- Upon completion of construction, temporarily impacted areas shall be restored to pre-project grades and contours and stabilized to prevent erosion. If the areas do not naturally revegetate, a seed mix of native and naturalized grass and forb species shall be applied to all of the grassland areas disturbed by the project. The seed shall be from sources that are regionally appropriate for the site.

Implementation of Mitigation Measures BIO-2 and BIO-3 would reduce potential impacts to California red-legged frog to less than significant with mitigation, by ensuring that direct effects to this species are avoided during project construction and operation.

Western Pond Turtle. The western pond turtle is a California Species of Special Concern and a proposed federally threatened species. Pond turtles use permanent or nearly permanent waterbodies in a variety of habitats. They can be found in ponds, marshes, rivers, streams, and irrigation ditches within grasslands, woodlands, and open forests. Basking sites such as logs, rocks, mats of floating vegetation, or open mud banks are necessary for thermoregulation. Upland areas, frequently in grassland, are used for egg laying. Pond turtles could inhabit the wetlands and Garrity Creek and could pass through the trail alignment.

No construction activities are proposed within ponds providing suitable habitat for this species. However, western pond turtle could occur in Garrity Creek, wetlands, and adjacent uplands along the proposed trail alignment and could nest along the banks of the creek and wetlands or

adjacent riparian or grassland habitat (known as communal/traditional nesting areas). Therefore, grading and other construction activities could result in mortality or harm of individual western pond turtles. In the absence of avoidance and minimization measures, spills of oil or fuel from construction equipment could impact habitat for this species and food-related trash left on the construction site could attract additional predators, leading to increased predation pressure on the species. Therefore, construction-related direct and indirect impacts are potentially significant.

Implementation of Mitigation Measure BIO-4, in addition to general avoidance measures discussed in Mitigation Measures BIO-2 and BIO-3, would reduce potential direct impacts to western pond turtle to a less than significant level.

Mitigation Measure BIO-4 The East Bay Regional Park District (District) shall require a qualified biologist to conduct surveys for western pond turtles and nesting areas prior to initiating any ground-disturbing activities within 0.25 mile of potential western pond turtle aquatic habitat. If a western pond turtle is observed in aquatic habitat during the nesting season (May to July), a subsequent survey of the surrounding upland habitats shall be conducted to determine the suitability of the upland habitats for nesting and to examine the area for any evidence of turtle nesting activity. If a nesting area is detected or suspected, the District shall install temporary exclusion fencing around the nesting area, designed to not prevent movement of turtles between the nesting site and nearby aquatic habitat, but to exclude the movement of turtles into the construction area.

Implementation of Mitigation Measure BIO-4 would reduce potential impacts to Western pond turtle to less than significant with mitigation by requiring pre-construction surveys to determine the potential presence of this species and establishment of exclusion fencing around identified nest areas to exclude the movement of turtles into the construction area.

California Ridgway's Rail and California Black Rail. The California Ridgway's rail is federally listed as endangered species and also State-listed as endangered. It occurs primarily in tidal salt and brackish marshes with dense stands of pickleweed and cordgrass. In the North Bay and Suisun Bay, California Ridgway's rail is also associated with bulrush stands. Ridgway's rails have been recorded near the site in the tidal salt marsh between mud flats and the UPRR railroad.²⁷

The California black rail is a State listed-threatened species and a California fully protected species. California black rails occur primarily in tidal salt, brackish, and freshwater marshes. This

²⁷ California Department of Fish and Wildlife. 2023. California Natural Diversity Database, commercial version dated November 2023. Biogeographic Data Branch, California Department of Fish and Wildlife, Sacramento.

species was detected near the site in 1988 within the tidal marshes at the mouth of Garrity Creek.

Marginal habitat for California Ridgway's rail and California black rail is present in the tidal/brackish marsh portions of the project area. The project is not expected to result in mortality of individual Ridgway's rails and California black rails since any occurring in the vicinity at the time of construction would avoid the immediate work area due to equipment noise. In addition, no work would be conducted during the nesting season (February 1 to August 31) within 700 feet of Ridgway's rail call centers if identified during protocol-level breeding season surveys.

Existing light and noise levels within the project area are already high due to adjacent existing development. Construction activities may result in a slight increase in noise levels but would be temporary and would not be conducted within 700 feet of rail call centers if identified during protocol-level breeding season surveys, unless approved by the USFWS and/or CDFW.

Most of the wildlife species known to prey on rails have been observed in or are likely to occur in the project area. Raptor predators known to occur in the action area include northern harrier, red-tailed hawk, great horned owl, barn owl, and short-eared owl. Of these species, only red-tailed hawk, great horned owl, and barn owl forage from perch sites. Existing perch sites are abundant within and adjacent to the project area and include numerous shrubs and trees, utility poles, and light poles. Given the abundance of existing perch sites, the new trail is unlikely to substantially improve foraging conditions for raptor predators. Moreover, the removal of willow and other trees would reduce perch sites for raptors in the vicinity. As such, the proposed project is not expected to significantly increase predation pressure on rails from existing levels and/or result in substantial indirect effects.

Implementation of Mitigation Measure BIO-5, in addition to general avoidance measures discussed in Mitigation Measure BIO-2, would reduce potential direct impacts to California Ridgway's rail and California black rail to a less than significant level by requiring preconstruction surveys to determine the presence of these species and limiting work to daylight hours to minimize disturbance.

Mitigation Measure BIO-5

To ensure that construction activities do not disrupt California Ridgway's rail and California black rail breeding, a USFWS/CDFW-approved biologist shall conduct protocol-level presence-absence surveys to determine if any Ridgway's rails are present in suitable nesting habitat within 700 feet (approximately 220 meters) of the work area(s). No work will take place within 700 feet of Ridgway's rail calling centers (identified via compass bearing and distance estimate during surveys) between February 1 and August 31 in accordance with USFWS requirements unless approved by the USFWS and/or CDFW. Focused surveys for California black rails will coincide with Ridgway rail surveys. Alternatively, construction activities may

be conducted between September 1 and January 31 without conducting rail surveys.

Work shall be scheduled to avoid extreme high tides (2 hours before and after a high tide event of 6.5 feet or higher at Point Pinole) when the rails are most vulnerable to predation and there is potential for rails to move into adjacent wetlands and uplands.

All work shall take place during daylight hours, and no artificial illumination shall be used.

With implementation of Mitigation Measure BIO-5, impacts to California Ridgway's rail and California black rail would be less than significant with mitigation, by ensuring that direct effects to this species are avoided during project construction and operation.

Burrowing Owl. The burrowing owl is a California Species of Special Concern that occurs in open, well-drained grasslands with abundant small mammal burrows, particularly those of California ground squirrels. Burrowing owls also prefer areas with short vegetation, so they can easily scan their surroundings and spot potential predators.²⁸

The presence of piles of rocks/concrete slabs and low grass height in some areas provide suitable habitat conditions for burrowing owl and this owl could occur in or near construction areas as a wintering or nesting species. Therefore, construction-related activities could result in loss or abandonment of an active burrowing nest nesting through direct disturbance on an occupied burrow or through noise, vibration, or visual disturbance. In addition, construction-related activities could result in harm to wintering burrowing owls, should they occur in or near the construction area.

Implementation of Mitigation Measure BIO- 6, in addition to general avoidance measures discussed in Mitigation Measure BIO-2, would reduce potential direct impacts to burrowing owl to a less than significant level by requiring preconstruction surveys and establishment of buffers around occupied burrows.

Mitigation Measure BIO-6

Preconstruction activity surveys for burrowing owls shall be performed by a qualified biologist no more than 15 days before initial ground disturbance activities within a construction area. A survey to determine presence or absence may be performed at any time to facilitate passive relocation efforts (which can only take place outside of the nesting season of February 1 to August 31). In addition, a preconstruction activity survey by a qualified biologist must be conducted no more than 15 days prior to the commencement of grading, to confirm the absence

²⁸ Zarn, M., 1974. Burrowing owl (*Speotyto cunicularia hypugaea*). *Habitat Management Series for Unique or Endangered Species, Technical Report T-N-250*. Denver, Colorado: Bureau of Land Management.

of burrowing owls. This survey shall be conducted in all suitable habitat on and within 500 feet of the impact area (where accessible) and shall be conducted in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation (e.g., the surveys shall be conducted during weather conditions suitable for owl detection as recommended in the staff report. Surveys shall be conducted within 2 hours of dawn or sunset to maximize the detection of owls).

If burrowing owls are present during the breeding season (generally February 1 to August 31), a 250-foot buffer, within which no new activity shall be permissible, will be maintained between project activities and occupied burrows. Owls present on the site after February 1 will be assumed to be nesting unless evidence indicates otherwise as confirmed by a qualified biologist. This protected buffer area shall remain in effect until August 31, or based upon monitoring evidence, until the young owls are foraging independently or a qualified biologist has determined that the nest is no longer active. In some cases (e.g., if an activity is not visible from the nest site), it is possible that a breeding-season buffer less than 250 feet would be adequate to avoid disturbance of nesting burrowing owls, but such a variance would be set by a qualified biologist in consultation with the CDFW. In such a case, the biologist shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist shall look for signs of stress such as repeated alarm calls, agitated behavior, or departure of the birds from the nest. If the birds do not show signs of habituation to the new disturbance by resuming their normal nesting activities, work within the vicinity of the nest shall stop and the CDFW shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFW) for as long as the nest is active and work is ongoing within the reduced buffer to confirm that the birds are tolerant of the construction activities.

If burrowing owls are present during the nonbreeding season (generally September 1 to January 31), a 150-foot buffer zone shall be maintained around the occupied burrow(s) if practicable. If such a buffer is not practicable, then a buffer adequate to avoid injury or mortality of owls (based on the determination of a qualified biologist) shall be maintained. If an adequate buffer (as determined by a qualified biologist) cannot

be maintained, or if destruction of the burrow is required, the non-nesting birds may be passively relocated subject to CDFW approval of a Burrowing Owl Exclusion Plan.

With implementation of Mitigation Measure BIO-6, impacts to burrowing owl would be less than significant with mitigation, by ensuring that direct effects to this species are avoided during project construction.

Other Nesting Birds The proposed project has the potential to impact other special-status birds, such as short-eared owl, northern harrier, white-tailed kite, grasshopper sparrow, loggerhead shrike, and tricolored blackbird, and other nesting birds protected by the Migratory Bird Treaty Act and/or California Fish and Game Code, either directly from removing the nest or indirectly from noise or human presence during construction of the proposed trail. Breeding seasons vary from year to year depending on the species, weather, and other conditions, but nesting birds could be disturbed anytime from February through August. Within the project area, birds may nest in trees, shrubs, grasslands, bare ground, and on manmade structures and equipment. Breeding birds are most likely to abandon nests early in the nest cycle. If the young birds are forced to fledge early, they could be subject to predation or starvation, which could result in reproductive failure. A few trees, including willow trees, will be removed or trimmed.

Implementation of Mitigation Measure BIO-7, in addition to general avoidance measures discussed in Mitigation Measure BIO-2, would reduce potential impacts to nesting birds to a less than significant level, by requiring pre-construction nesting bird surveys to identify nesting birds within the project area and establishment of buffers around identified nests to avoid direct and indirect effects to nesting birds during project construction.

Mitigation Measure BIO-7

Prior to construction activities during the nesting bird season (February 1 through August 31), a preconstruction activity surveys for nesting birds shall be conducted by a qualified biologist to ensure that no nests shall be disturbed during project implementation. Surveys shall be conducted no more than 7 days prior to the initiation of construction activities. During this survey, the biologist shall inspect all trees and other potential nesting habitats (e.g., shrubs, ground and structures) in the impact area plus a surrounding 300-foot buffer for nests (where accessible). If removal of potential nesting substrate or project grading will take place during more than one nesting season, or in different parts of the site in phases over the course of a single season, then additional pre-activity surveys must be performed within 7 days prior to initiation of work in any particular area. If the preconstruction activity survey does not identify the presence of any active nests on or within 300 feet of the site, construction activities may proceed.

If nests known to have eggs or young, or that cannot be confirmed to be inactive or to lack eggs or young, are found, or

adults are demonstrating nesting behavior, a qualified biologist shall establish an appropriate construction-free buffer around each nest. Generally, buffers of 300 feet for raptors and 100 feet for songbirds are adequate to avoid causing nest abandonment. The buffer shall remain in place until the qualified biologist has confirmed that the nest is no longer active.

If less than a 100-foot nest buffer is necessary and determined to be appropriate for a particular nest or nests, a qualified biologist shall monitor the nest(s) before construction to document baseline nesting behavior and monitor the nest during construction to ensure nesting birds are not exhibiting signs of stress and territorial behavior. If signs of stress are observed during the monitoring, construction activities shall cease or buffer shall increase, as determined by a qualified biologist, to a sufficient distance where the nesting birds are longer exhibiting signs of stress.

To prevent encroachment, the buffer shall be clearly marked for avoidance. The established buffer shall remain in effect until the young have fledged or the nest is no longer active, as confirmed by the biologist.

With implementation of Mitigation Measure BIO-7, impacts to nesting birds would be less than significant with mitigation, by ensuring that direct effects to these species are avoided during project construction.

San Francisco Dusky-Footed Woodrat. The San Francisco dusky-footed woodrat is a California Species of Special Concern. This species occurs in riparian woodland, woodland, and scrub habitat. Although not observed during the reconnaissance-level field surveys, San Francisco dusky-footed woodrat nests may be present in the riparian habitat along the trail alignment. Construction activities could result in the direct loss of a woodrat nest(s) and its occupants, or indirectly disturb woodrats should construction activities take place near an occupied nest.

Implementation of Mitigation Measure BIO-8, in addition to general avoidance measures discussed in Mitigation Measure BIO-2, would reduce potential impacts to San Francisco dusky-footed woodrat to a less than significant level by requiring environmental awareness training, preconstruction surveys, establishment of buffers and relocation of woodrat houses, if needed.

Mitigation Measure BIO-8

A qualified biologist shall conduct a preconstruction survey for San Francisco dusky-footed woodrat nests prior to the start of project activities. Surveys shall be conducted in the immediate work area and a 25-foot buffer around those areas. If woodrat nests are present, the nests shall be flagged in the field and delineated on project site maps to avoid potential impacts to

woodrat nests during construction activities. For any woodrat nests that cannot be avoided, a woodrat nest relocation plan shall be prepared and submitted to CDFW for approval. At a minimum, the plan shall include the phased dismantling and relocation of the nest materials to a suitable location, and the installation of artificial shelters at a ratio of 1:1 per dismantled nest to provide readily accessible refugia for dispersing individuals. If breeding woodrats are present, relocation of houses shall be delayed until the breeding season is over or the qualified biologist otherwise determines that young are no longer present.

With implementation of Mitigation Measure BIO-8, impacts to San Francisco dusky-footed woodrat would be less than significant with mitigation, by ensuring that direct effects to these species are avoided during project construction.

Roosting Bats. The pallid bat and western red bat are California Species of Special Concern that could roost and/or forage along the site. Pallid bats roost in caves, tunnels, and occasionally buildings and hollow trees. Western red bat typically roosts in riparian trees and forages in or near riparian habitat.

Bats, including special-status bats, such as the pallid bat and western red bat, could roost in large trees in the project area and forage on the project site. Roosting bats could be disturbed, killed, or injured by tree removal activity, if present in construction areas. Trees may be trimmed or removed.

Implementation of Mitigation Measure BIO-9, in addition to general avoidance measures discussed in Mitigation Measure BIO-2, would reduce potential impacts to roosting bats to a less-than significant level by requiring environmental awareness training, preconstruction surveys, establishment of buffers and appropriate tree removal/trimming procedures.

Mitigation Measure BIO-9

Prior to any tree removal during the maternity roosting period (April 15 to August 31) or hibernation period (October 15 to February 28), a focused tree habitat assessment shall be conducted by a qualified bat biologist of all trees that will be removed or impacted by construction activities. Trees containing suitable potential bat roost habitat features would then be clearly marked. The habitat assessments should be conducted enough in advance to allow preparation of a report with specific recommendations and to ensure tree removal can be scheduled during seasonal periods of bat activity if required. If it is determined that day roosting bats are unlikely to occur, the tree may be removed, as described below. If the absence of roosting bats cannot be confirmed, then the removal of trees providing suitable maternity or hibernation roosting habitat

should only be conducted during seasonal periods of bat activity, including:

1. Between March 1 (or after evening temperatures rise above 45 degrees Fahrenheit (°F) and/or no more than 0.5 inch of rainfall within 24 hours occurs) and April 15; or
2. Between September 1 and about October 15 (or before evening temperatures fall below 45°F and/or more than 0.5 inch of rainfall within 24 hours occurs).

Appropriate methods shall be used to minimize the potential of harm to bats during tree removal. Such methods may include, but are not limited to, using a two-step tree removal process. This method is conducted over two consecutive days and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed on Day 2. A bat biologist qualified in two-step tree removal is required on Day 1 to supervise and instruct the tree-cutters who will be on the site conducting the work, but only for a sufficient length of time to train all tree cutters who will conduct two-step removal of habitat trees. The bat biologist is generally not required on Day 2, unless a very large cavity is present and a large colony is suspected.

With implementation of Mitigation Measure BIO-9, impacts to roosting bats would be less than significant with mitigation, by identifying roosting bats within the project area and implementing appropriate measures to minimize harm to bats during tree removal activities.

Salt Marsh Harvest Mouse, Salt Marsh Wandering Shrew, and San Pablo Vole. The salt marsh harvest mouse is a federal and State listed endangered species; it is also a fully protected species under the California Fish and Game Code. This small mammal is restricted to salt marsh habitats around the San Francisco Estuary and could be present in the wetlands and possibly along the narrow band of wetland vegetation margins of Garrity Creek. In addition, the salt marsh wandering shrew and the San Pablo vole, both California Species of Special Concern, have similar habitat requirements to salt marsh harvest mice and occur in these wetlands and marshes.

The trail alignment is approximately 75 feet from the edge of the salt marsh along the San Pablo Bay shoreline, and the intervening area is occupied by the UPRR railroad corridor and ruderal vegetation. However, the salt marsh harvest mouse and other special-status small mammals could occur in the vegetation in the onsite tidal wetlands and in the upland vegetation,

especially during high tides when they leave the marsh due to rising water. The salt marsh harvest mouse is a federal and State listed endangered species and, due to its fully protected status under the California Endangered Species Act, no take of this species is allowed.

Implementation of Mitigation Measure BIO-10, in addition to general avoidance measures discussed in Mitigation Measure BIO-2, would reduce potential direct impacts to salt marsh harvest mouse, salt marsh wandering shrew, and other special-status mammals to a less than significant level by requiring that vegetation be cleared and work is halted if these species are discovered in the work area.

Mitigation Measure BIO-10

To address potential impacts to the salt marsh harvest mouse, salt marsh wandering shrew, and San Pablo vole, the East Bay Regional Park District (District) shall implement the following measures:

Vegetation Removal

- a. Direction of Clearing. Any areas dominated by ruderal vegetation that must be accessed by construction personnel or equipment shall be cleared of vegetation to eliminate cover for salt marsh harvest mice and/or other special-status rodents.
- b. Hand Operated Tools. Use of weed whackers for herbaceous vegetation will be allowed if the USFWS/CDFW approved monitor walks in front of the operator of the weed whacker, clearing the area of salt marsh harvest mice and/or other special-status small mammals. Use of hand operated chainsaws is allowed for larger woody vegetation (e.g., coyote brush), but only if the USFWS/CDFW approved biologist precedes the operator clearing the area of salt marsh harvest mice and/or other special-status rodents.
- c. Remove Cover. Vegetation clearance shall be conducted to assure that there is no available cover to serve as an attractant to salt marsh harvest mice and/or other special-status small mammals. The ground surface shall be made sufficiently clear of vegetation to allow the USFWS/CDFW approved biological monitor and construction crews to determine with certainty that salt marsh harvest mice are absent. Preservation of root crowns is encouraged to facilitate later revegetation of the treated work sites, so reducing vegetation to a stubble is preferable to full clearance to the ground.

- d. Disposal of Cut Vegetation. As directed by the USFWS/ CDFW approved biological monitor, cut native vegetation shall be stored onsite and re-spread as mulch after project completion. Cut nonnative vegetation listed as moderately to highly invasive by the California Invasive Plant Council (<http://www.cal-ipc.org>) shall be bagged and removed offsite at a suitable disposal site.

Contingency if a Salt Marsh Harvest Mouse or Other Special-Status Rodent is Onsite

- a. If a salt marsh harvest mouse or other special-status rodent is observed within the areas being removed of vegetation or elsewhere within the work site, the biological monitor shall stop work in the immediate area until the salt marsh harvest mouse leaves the work area on its own volition.
- b. If the salt marsh harvest mouse other special-status rodent does not leave the work area, work in the immediate area shall not be reinitiated until the USFWS and/or CDFW are consulted regarding appropriate avoidance measures, and permission is granted by the USFWS and/or CDFW to commence work.
- c. No salt marsh harvest mice or other special-status rodents may be handled or captured at any time during site preparation or other project activities.
- d. The biological monitor shall be available on an on-call basis to come out to the site in the event that the trained representative finds a salt marsh harvest mouse or other special-status rodents in the work area after the vegetation has been cleared and the fence has been installed.

Timing of Work

- a. Hours of Operation. Work shall be confined to daylight hours.
- b. Tides. Work within salt marsh harvest mouse exclusion fenced areas at the two tidal wetland basins (Wetlands 1 and 2) shall be scheduled to avoid extreme high tides (2 hours before and after a high tide event of 6.5 feet or above, as measured at Point Pinole and adjusted to the timing of local high tides) when there is potential for salt marsh harvest mice to move to higher, drier grounds.

Exclusion Fencing

- a. Fence Location. Exclusion fencing for salt marsh harvest mice and other special-status rodents shall be installed between areas of suitable salt marsh harvest mouse habitat and the work site immediately following vegetation removal and before construction activities begin to prevent entry of salt marsh harvest mice into the construction areas. The qualified biological monitor shall have the ability to make field adjustments to the location of the fencing based on site-specific habitat conditions.
- b. Fence Specifications. The fence shall be a minimum of 2 feet in height. If Visqueen is used, the fencing shall be supported by wooden or steel rebar stakes. The fence shall be constructed with 8-millimeter plastic (Visqueen) sheeting that is too smooth for salt marsh harvest mice or other special-status rodents to climb. The toe of the fence shall be buried approximately 4 inches in the ground to prevent salt marsh harvest mice from crawling or burrowing underneath it. To provide strength, durability and wind resistance, the plastic sheeting shall be sandwiched between two stakes at each stake location, with the stakes screwed or wired together firmly.
- c. Tides. In the two wetland basins (Wetlands 1 and 2) that are subject to tidal influence, fencing shall be extended to the high tide line. The District or its contractors shall monitor tidal heights while fencing is being installed. If areas within the exclusion fencing are flooded during extreme high tides (i.e., water overtopping the fence), sections shall be temporarily removed to allow exit of any special-status species from the work area. The area shall then be resurveyed by the USFWS/CDFW approved biological monitor and the exclusion fencing reinstalled.
- d. Fence Monitoring. The USFWS/CDFW approved biological monitor or trained representative shall inspect the fence daily to ensure it maintains a minimum of 2 feet in height, has no holes or rips, and that the base is still buried.
- e. Fence Maintenance and Repairs. Maintenance of fencing shall be conducted as needed throughout the work period. Any necessary repairs to the fencing shall be completed within 24 hours of the initial observance of damage. Work shall not continue within 300 feet of the damaged fencing

until the fence is repaired and the site is surveyed by the USFWS/CDFW approved biological monitor to ensure the salt marsh harvest mice have not entered the work area.

With implementation of Mitigation Measure BIO-10, impacts to salt marsh harvest mouse, salt marsh wandering shrew, and other special-status mammals would be less than significant with mitigation, by ensuring that direct effects to these species are avoided during project construction.

Monarch Butterfly. The monarch butterfly is a federal Candidate listed species that could breed within the project site. Although the project site is 0.8 mile from a known overwintering roost in Point Pinole Regional Shoreline,^{29,30} the trees on or near the site are too small and sparse to provide suitable overwintering habitat for wintering monarch butterflies. Therefore, the project would not impact winter roosts (which are considered sensitive by CDFW). Although it is possible that milkweed plants, if present, could be used by breeding monarchs, related impacts would be less than significant because of the minimal area impacted, and because winter roosts would not be disturbed.

Western Bumble Bee. The western bumble bee is a Candidate State Endangered listed species. This species is known to occur in grassland and scrub habitat where suitable native nectar plants are present. This species historically occurred in the region but is considered rare.³¹ The western bumble bee could occur in grassland habitat within the project site. Disturbance of this habitat due to project construction could impact western bumble bee and other special-status bee species.

Implementation of Mitigation Measure BIO-11 would reduce potential impacts to western bumble bee and other special-status bumble bee species to a less than significant level by requiring preconstruction surveys and development of a plan to protect bee species.

Mitigation Measure BIO-11 To address potential impacts to the western bumble bee and other special-status bumble bee species, the East Bay Regional Park District (District) shall implement the following measures:

- A minimum of two preconstruction surveys shall be conducted within 30 days during appropriate activity periods (i.e., March through September) prior to the start of ground disturbing activities to identify bumble bee activity.

²⁹ California Department of Fish and Wildlife. 2023. California Natural Diversity Database, commercial version dated November 2023. Biogeographic Data Branch, California Department of Fish and Wildlife, Sacramento.

³⁰ Xerces Society Western Monarch Count. 2023. Western Monarch Thanksgiving Count and New Year's Count Data, 1997-2023. Available at: www.westernmonarchcount.org.

³¹ California Department of Fish and Wildlife. 2019. Evaluation of the Petition from the Xerces Society, Defenders of Wildlife, and the Center for Food Safety to List Four Species of Bumble Bees as Endangered Under the California Endangered Species Act. State of California, Natural Resources Agency. Report to the Fish and Game Commission. April 4.

The preconstruction surveys shall occur when temperatures are above 60° F (15.5°Celsius) and not during wet conditions (e.g., foggy, raining, or drizzling). The survey shall be conducted at least 2 hours after sunrise and 3 hours before sunset and shall occur at least 1 hour after rain subsides. Preferably, the survey should be conducted during sunny days with low wind speeds (less than 8 miles per hour), but surveying during partially cloudy days or overcast conditions are permissible if the surveyors can still see their own shadows.

- If western bumble bees, or potential Crotch or western bumble bees (since bumble bees can be difficult to identify in the field) are observed within the project site, a plan to protect Crotch and/or western bumble bee nests and individuals shall be developed and implemented in consultation with CDFW and USFWS. The plan shall include, but not be limited to, the following measures:
 - Specifications for construction timing and sequencing requirements (e.g., avoidance of raking, mowing, tilling, or other ground disturbance until late March to protect overwintering queen bumble bees);
 - Establishment of appropriate no-disturbance buffers for bumble bee nest sites to avoid impacts to the bees and construction monitoring by a qualified biologist to ensure compliance if bumble bee nests are identified;
 - Restrictions associated with construction practices, equipment, or materials that may harm bumble bees (e.g., avoidance of pesticides/herbicides, BMPs to minimize the spread of invasive plant species);
 - Provisions to avoid western bumble bees, or potential western bumble bees if observed away from a bumble bee nest during project activity (e.g., ceasing of project activities until the animal has left the active work area on its own volition); and
 - Prescription of an appropriate restoration seed mix targeted for the western bumble bee, including native plant species known to be visited by native bumble bee species and containing a mix of flowering plant species with continual floral availability through the entire active

season of the western bumble bee (March through September).

With implementation of Mitigation Measure BIO-11, impacts to western bumble bee and other special-status bumble bee species would be less than significant with mitigation, by ensuring that direct effects to these species are avoided during project construction.

- b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (Less Than Significant with Mitigation Incorporated)*

Two sensitive natural communities occur on the site: arroyo willow thickets and creeping rye grass turf. Construction of the trail would involve the removal and trimming of up to 0.07 acre of arroyo willow tree canopy and associated understory riparian vegetation, which would result in the permanent and/or temporary impact of riparian woodland. Up to 0.153 and 0.02 acre of creeping rye grass would be permanently and temporarily impacted (respectively) and 0.055 and 0.015 acre of arroyo willow thickets would be permanently and temporarily impacted (respectively) by construction of the trail. Implementation of Mitigation Measures BIO-12 and BIO-13, which require avoidance of sensitive habitats, reseeding of disturbed areas and replacement planting for impacted riparian areas, would reduce potential impacts to these sensitive natural communities to a less than significant level.

Mitigation Measure BIO-12 If feasible, the proposed trail alignment shall be rerouted to a suitable trail alignment within the 50-foot buffer study area to avoid/minimize impacts to the creeping rye grass turf. The stands of creeping rye grass near the final alignment shall be flagged and avoided during construction to the degree feasible.

If creeping rye grass cannot be avoided, the loss of creeping rye grass turf shall be mitigated by restoring an equivalent amount of creeping rye grass turf onsite. The East Bay Regional Park District (District) shall reseed temporarily disturbed areas of creeping rye grass turf habitat that are disturbed by trail construction with an appropriate weed-free native seed mix that contains creeping rye grass seed and/or plugs. The restored rye grass areas shall be monitored and reported on according to the Habitat Mitigation and Monitoring Plan (HMMP) described in Mitigation Measure BIO-2c.

Mitigation Measure BIO-13 To minimize disturbance to riparian habitat for trail construction occurring adjacent to riparian habitat, a qualified biologist shall clearly delineate riparian areas flagging. Riparian areas shall be separated and protected from the work area through silt fencing, amphibian/reptile-friendly fiber rolls (i.e., no monofilament), or other appropriate erosion control material. Material staging and all other project-related activity shall be located as far as possible from

riparian areas with no driving or parking of vehicles or equipment within the dripline of a riparian tree.

If impacts to riparian habitat within the project area cannot be avoided, the HMMP discussed in Mitigation Measure BIO-14 shall be implemented for all impacted riparian habitat.

With implementation of Mitigation Measures BIO-12 and BIO-13, impacts to sensitive natural communities would be less than significant with mitigation, by ensuring the compensatory mitigation is provided for direct impacts to these communities.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Less Than Significant with Mitigation)

The project site contains seasonal wetland seeps, freshwater marsh wetlands, brackish marsh, and a segment of Garrity Creek. All of these features are likely subject to regulation under Section 404 of the federal Clean Water Act and California Porter-Cologne Water Quality Control Act. Construction activities could adversely affect these features through directly filling, or indirectly through increased erosion or sedimentation. Some of the tributaries have already been impacted through the installation of culverts, roads, and water troughs or cisterns associated with ranching operations in the project area. The proposed project has been designed to avoid and/or minimize direct impacts on wetlands and/or waters under the jurisdiction of the USACE, the RWQCB, and the CDFW to the extent feasible. The trail alignment, however, does cross Garrity Creek, seasonal wetland seeps, freshwater marsh wetlands, and brackish marsh. The project would permanently impact up to 0.366 acre and temporarily impact up to 0.018 acre of these jurisdictional features. Table 4.F lists the impacts to these potentially jurisdictional features.

Table 4.F: Impacts to Potentially Jurisdictional Wetlands and Waters

Potentially Jurisdictional Feature	Permanent Impacts (Acres/Linear Feet)	Temporary Impacts (Acres/Linear Feet)
Garrity Creek	0.005 (shading due to 50-foot long by 12-foot wide bridge)	0.0
Wetland 1	0.02	0.001
Wetland 2	0.128	0.0
Seasonal Wetland Swale 3	0.1	0.012
Brackish Marsh Wetland 4a	0.004	0.0
Brackish Marsh Wetland 4b	0.004	0.0
Seasonal Wetland Swale 5	0.090	0.004
Willow Seep Wetland 6	0.015	0.0
Seep Wetland 7	0.0	0.0
Total	0.366	0.018

Source: Compiled by LSA (2023).

The proposed trail alignment has been designed to avoid impacts to Garrity Creek. A bridge would completely span the approximate 50-foot-wide ordinary high-water mark of the Garrity Creek channel without placing abutments within the banks and bed of channel. The bridge crossing would avoid wetland vegetation along Garrity Creek. The bridge crossing would shade 0.005 acre of the channel. Installation of the crossing would avoid impacts to the adjacent riparian habitat along the creek where possible but could permanently and temporarily impact up to 0.009 acre of the adjacent brackish marsh vegetation. Woody vegetation, such as toyon and marsh gumplant, would be avoided, where possible.

Elevated boardwalks would be installed where the proposed trail alignment crosses the two wetland basins (Wetlands 1 and 2). These boardwalks will partially shade the vegetation below but allow wildlife to inhabit or move beneath the boardwalks. Construction of the boardwalks would permanently impact 0.144 acre and temporarily impact 0.001 acre of wetlands.

The District would obtain required permits for impacts to jurisdictional features from the relevant regulatory agencies, including the USACE, the CDFW, and the RWQCB. These permits would include conditions and BMPs that the District would implement during construction. These permits may also specify mitigation, which the District would provide as specified by the agencies. This proposed project would have an adverse effect on federally protected wetlands/other waters as defined by Section 404 of the Clean Water Act (including, but not limited to seasonal wetlands and creeks) through direct removal, filling, hydrological interruption, or other means. Therefore, related impacts are significant.

Implementation of Mitigation Measure BIO-14, which requires compensatory mitigation and preparation of a Habitat Mitigation and Monitoring Plan, would reduce potential impacts to jurisdictional waters of the United States and of the State to a less than significant level.

Mitigation Measure BIO-14 Permanent and temporary impacts to wetlands and riparian habitat shall be mitigated by restoration/enhancement at on-site tributaries and/or wetlands or other suitable nearby locations. These activities may include, but are not limited to, the removal of invasive plants (enhancement) and/or the planting of native riparian plants (restoration/creation), or other appropriate activities.

To achieve this, the East Bay Regional Park District (District) shall prepare and implement a project-wide Habitat Mitigation and Monitoring Plan (HMMP) to mitigate temporary and permanent impacts to sensitive/jurisdictional habitat. The HMMP shall be subject to approval by the USACE, the RWQCB, and/or the CDFW prior to any disturbance of jurisdictional features. Additionally, all required permits and certifications shall be obtained from the USACE, the RWQCB, and/or the CDFW prior to any disturbance of jurisdictional features and all permit conditions shall be implemented.

At a minimum, the HMMP shall include:

- Permanently impacted wetlands, streams, riparian, and other sensitive habitat shall be compensated at a minimum 1:1 ratio through restoration/creation or a minimum 2:1 ratio through enhancement. The permitting agencies may require higher mitigation ratios.
- Any native riparian trees that are removed shall be replaced at a minimum 3:1 ratio.
- All temporarily disturbed areas, including wetlands, streams, riparian, other sensitive areas, shall be returned to pre-project conditions or better. Methods may include erosion control, seeding, replanting, and weed control.
- Documentation of the preconstruction habitat conditions within jurisdictional area to be impacted, including wetlands, streams, riparian, and other sensitive habitat.
- Location of habitat restoration, creation, and/or enhancement sites.
- Procedures for procuring plants, such as transplanting or collecting cuttings from plants, including storage locations and methods to preserve the plants.
- Quantity and species of plants to be planted or transplanted.
- Planting procedures, including the use of soil preparation and irrigation.
- Schedule and action plan to maintain and monitor the mitigation site(s) for a minimum 3-year period.
- Reporting procedures, including the contents of annual progress reports.
- List of criteria (e.g., growth, plant cover, survivorship) by which to measure success of the plantings and wetland creation/restoration/enhancement.
- Contingency measures to implement if the wetland/stream/riparian creation/restoration/enhancement is not successful (i.e., weed removal, supplemental plantings, etc.).

- Performance standards, monitoring, and reporting for a minimum of three years to ensure success of the mitigation and remedial measures if performance standards are not met.

With implementation of Mitigation Measure BIO-14, impacts to jurisdictional waters of the United States and of the State would be less than significant with mitigation, by ensuring the compensatory mitigation is provided for direct impacts to jurisdictional wetlands.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less Than Significant Impact)

Wildlife movement includes migration (i.e., usually annual roundtrip), inter-population movement (i.e., long-term genetic flow), and small travel pathways (i.e., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations. In the San Francisco Bay Area, landscape elements that facilitate local and/or regional wildlife movement include stream drainages, canyons, ridges, or other prominent natural or man-made landscape features.

The proposed project would not substantially interfere with wildlife movement or corridors. The existing UPRR along the northern/northwestern boundary of the project site between the San Pablo Bay and the project site and the existing urban development and fencing along the majority of southern/southeastern boundary of the project site limits terrestrial or amphibian wildlife movement. Wildlife that currently moves through the site would likely continue to move through the site during and after construction of the proposed trail since most of the species that likely occur in the area are generalists that are adept at moving through urban landscapes. Therefore, impacts to wildlife movement corridors would be less than significant.

The proposed project consists of the construction of a new trail to connect two existing trails, one to the northeast and one to the west. The location of the new trail is not part of a known regional wildlife corridor since it would not be along a major riparian corridor or ridgetop. Although the trail does cross through Garrity Creek and riparian habitat, the trail would not impede movement of wildlife along these corridors due to its narrow width. The trail over Garrity Creek would completely span the creek and, therefore, would allow wildlife to move within the creek below the bridge. The trail over the two wetland basins (Wetlands 1 and 2) would be constructed on boardwalks, which would allow wildlife to move beneath or over the boardwalks. The trail would not significantly affect the movement of wildlife since wildlife would be able to continue to cross over or under the trail. Additionally, the trail would be used during the daylight hours, when many nocturnal wildlife species are less likely to move through the site. Construction of the trail would take place during the dry season when minimal or no water is present in the wetlands. Aquatic species would be able to move below or above the trail after the project is complete.

The project site does not contain native wildlife nursery sites, such as heron rookeries or salmonid spawning areas. Impacts to wildlife that may breed or nest on the site would be mitigated in

accordance with Mitigation Measures BIO-2 through BIO-11 for special-status and sensitive wildlife species.

Given that the proposed project would not 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, related impacts would be less than significant.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less Than Significant Impact)

The project site is near the San Pablo Bay shoreline, which is within the San Francisco Bay Conservation and Development Commission (BCDC) jurisdiction as defined in the San Francisco Bay Plan.³² BCDC jurisdiction extends 100 feet into upland areas from the mean high tide line and therefore, portions of the trail alignment are within BCDC jurisdiction. The tidally influenced Garrity Creek and the two tidally influenced wetlands, and the retaining wall are within 100 feet from the mean high tide line. As required, the District would obtain a permit from BCDC for portions of the proposed trail that occur within BCDC's jurisdiction. Therefore, the proposed project would not conflict with the San Francisco Bay Plan.

Numerous trees are growing on the project site. As described above, the proposed trail would impact willow trees. Mitigation Measure BIO-13 and BIO-14 require replacement of impacted willow trees in accordance with regulatory requirements. Additional trees have the potential to be removed, trimmed, or damaged during project construction. The majority of these existing trees within the limits of unincorporated Contra Costa County are considered protected trees as defined by Contra Costa County's Protected Tree Ordinance (Contra Costa County Code Title 8, Chapter 816-6).³³ If proposed trail construction would impact trees protected by the Contra Costa County's Protected Tree Ordinance, the District shall obtain a tree removal permit from Contra Costa County. Consistent with Contra Costa County's Protected Tree Ordinance, the District shall replace impacted trees at a minimum 1:1 ratio.

The City of Richmond does not have a municipal ordinance that protects heritage trees or other tree policy that would apply to the project. However, removal of publicly owned trees from the public right-of-way would require a tree removal permit,³⁴ but no street trees would be impacted by the project.

³² San Francisco Bay Conservation and Development Commission (2020). *San Francisco Bay Plan*. San Francisco: San Francisco Bay Conservation and Development Commission.

³³ Contra Costa County Code Title 8, Chapter 816-6 defines a protected tree as any native tree measuring 6.5 inches or greater diameter at breast height (DBH), any multi-stemmed tree with the sum of the circumferences measuring 13 inches or greater in diameter at DBH, or any significant grouping of trees, including groves of four or more trees.

³⁴ Richmond Municipal Code Section 10.08.030 requires a permit from the Recreation and Parks Director of the City of Richmond (Superintendent) to cut, trim, prune, plant, remove, injure or interfere with any tree, shrub or plant upon any public place within Richmond. Permits are valid for 30 days from date of issuance.

The proposed project would obtain permits and replace impacted trees in accordance with regulatory requirements, including the Contra Costa County Protected Tree Ordinance. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources. This impact would be less than significant.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

The proposed project site is not within any approved local, regional, or State conservation plan. Therefore, the project would not conflict with any approved local, regional, or State habitat conservation plan.

4.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (Less Than Significant with Mitigation Incorporated)

CEQA defines a “historical resource” as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources (California Register)
- Listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k)
- Identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code
- Determined to be a historical resource by a project's lead agency (PRC Section 21084.1 and *State CEQA Guidelines* Section 15064.5[a])

The California Register defines a “historical resource” as a resource that meets one or more of the following criteria: (1) associated with events that have made a significant contribution to the broad patterns or local or regional history of the cultural heritage of California or the United States; (2) associated with the lives of persons important to local, California, or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation. Under CEQA, historical resources can include precontact (i.e., Native American) archaeological deposits, historic-period archaeological deposits, historic buildings, and historic districts.

LSA conducted a cultural resources study for the proposed project consisting of background research and a field survey. The results of the study are summarized below.

Background Research. A cultural resources record search was conducted on September 3, 2021, by staff at the Northwest Information Center (NWIC) of the California Historical Resources Information System to identify previous archaeological site records and cultural resources studies in the project

site and a 0.25-mile radius. The NWIC, an affiliate of the Office of Historic Preservation, is the official State repository of cultural resources records and reports for Contra Costa County. The project boundary was modified after the records search was completed; almost all the current project site is encapsulated within the project boundary that was submitted to the NWIC. One small (20 to 125 feet wide) portion of the current project site extends approximately 120 feet outside the boundary submitted to the NWIC. This limited additional area extends through the former school property on Cypress Avenue. In addition, the western end of the current project site extends ca. 500 feet further west than originally submitted to the NWIC. This extension of the proposed trail alignment follows the existing trail in that location. Because these localized expansions of the project site are included within the original records search radius, the original records search results remain valid for the current proposed project footprint.

The record search identified six previous cultural resource studies overlapping the project site and three additional studies in the search radius. All the studies involved field investigations, including survey, excavation, and/or monitoring. During one of these previous studies (S-024592), two small “shell outcroppings” (P-07-002569) were discovered southeast of the railroad tracks on the west side of Garrity Creek within the current project boundaries. The shell was found in January 2000 during construction monitoring in a disturbed area near a storm drain, ditch, the railroad grade, and the channelized creek; consequently, it was unknown whether the shell was a primary or secondary deposit.³⁵ The records search identified no other recorded archaeological resources within the project site or search radius.

Sacred Lands File Search. LSA submitted a request to the NAHC to search the Sacred Lands File (SLF) for Native American cultural resources that may be impacted by the proposed project. The NAHC maintains the SLF database and is the official State repository of Native American sacred-site location records in California. Katy Sanchez, NAHC Associate Environmental Planner, responded to the SLF search request on September 15, 2021, stating that the results were positive and that there were known Native American cultural resources in the area. The NAHC provided a list of Native American individuals to contact for information regarding the identified resources. In December 2023, the Park District requested an updated Native American list for Contra Costa County. On March 12, 2024, the Park District transmitted letters (via certified mail and electronic mail) to the individuals on the Native American list for Contra Costa County regarding the proposed project, requesting a response to consult pursuant to AB 52 within 30 days. Additional detail regarding the tribal consultation is provided in Section 4.18, Tribal Cultural Resources.

Field Survey. On September 9, 2021, a pedestrian survey was conducted for all portions of the project site by walking northwest-southeast oriented transects spaced approximately 10 meters (33 feet) apart. Rodent burrow holes and aprons were examined for indications of archaeological deposits and/or human remains. Concentrations of modern refuse were also inspected for archaeological evidence. Debris associated with railroad maintenance and other modern trash was found across the project site. A modern-era large white cross set in brick and concrete with brick steps was observed near the west end of the railroad bridge crossing Garrity Creek, just south of the

³⁵ McKechnie, Iain, and Kim Tremaine. 2000. Department of Parks and Recreation Primary Record for P-07-002569. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

railroad track. A buried fiberoptic line and pipeline extended the length of the project site adjacent to the track, as indicated by surface utility markers.

On November 17, 2023, a supplementary survey was conducted of the areas added to the project site since the original survey. A surficial shell fragment was observed in the off-road area at the west end of the project site, as well as scattered shell fragments on ditch berms southwest of Garrity Creek. The shell fragments southwest of Garrity Creek were found on berms flanking a ditch that extends along the proposed trail alignment between Garrity Creek and Montara Bay Park (the community ballfield), including in the recorded location of archaeological site P-07-002569. The berms appear to consist of spoils generated during ditch excavation. No other evidence of potential archaeological deposits was observed. The shell likely was imported as part of the artificial fill documented in the project site or re-deposited from the underlying bay mud.

Based on the description and sketch map included in the original site record for P-07-002569, the location of the recorded "shell outcropping" was estimated, placing it in/near the railroad right-of-way north of the digitized resource location on file at the NWIC. Upon revisiting the site location vicinity, the area was found to be highly disturbed from past installation of underground utilities, excavation of the ditch, and construction of the adjacent railroad track. One shell fragment was observed, which was found on a ditch berm. No other potential archaeological indicators were observed. As stated earlier, the shell may have been imported in fill, or may be naturally occurring shell re-deposited by ditch excavation from the underlying bay mud.

Summary of Results. The cultural resources study determined that one archaeological resource (P-07-002569) was previously recorded southwest of Garrity Creek within the project site. A field survey of the estimated location of the resource indicated that the area was highly disturbed, as it was at the time the site was originally recorded. One shell fragment was observed at the resource location, which was not conclusively archaeological. Scattered shell fragments were also observed elsewhere in the western portion of the project site. According to surficial geological mapping and geotechnical borehole excavations, the western portion of the project site contains artificial fill overlying bay mud. The observed shell fragments thus may be naturally occurring within the bay mud and were re-deposited during past construction of the railroad, utilities, and ditch (southwest of Garrity Creek), and/or were imported within fill during reclamation efforts, and may not represent *in situ* archaeological deposits. Alternatively, the shell at the recorded location of P-07-002569 could have been brought up during installation of utilities from archaeological deposits buried below the artificial fill and bay mud.

Various parts of the project site have different levels of archaeological sensitivity according to the type, location, and age of landforms comprising the landscape. The western portion of the project site, extending from the western terminus to east of Garrity Creek, contains Holocene-age estuarine deposits (i.e., bay mud) and historically featured bayshore wetlands. This part of the project site has medium sensitivity for buried (below the bay mud) and surface (below the artificial fill) archaeological resources that increases to high sensitivity in proximity to Garrity Creek. The coastal bluff in the eastern portion of the project has low sensitivity for buried and surface archaeological deposits due to the Pleistocene age of the surficial geologic unit in this area.

Given the archaeological sensitivity of the project site, implementation of the project has the potential to impact subsurface cultural resources. Should cultural resource deposits be encountered during project ground disturbance, a substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (*State CEQA Guidelines* Section 15064.5(b)(1)). To mitigate this potential impact, the District would be required to implement Mitigation Measure CULT-1. With implementation of Mitigation Measure CULT-1, potential impacts to historical resources would be reduced to less than significant.

Mitigation Measure CULT-1

Prior to project construction, the District or its Sphere of Influence (SOI)-qualified consultant shall prepare and implement an archaeological testing plan for exploratory subsurface archaeological investigation in the moderate to high sensitivity western portion of the project site. The testing plan would include research questions and data needs, testing/sampling methods, testing locations, archaeological deposits evaluation, and significance thresholds. The subsurface investigation would generally (1) seek to determine whether the proposed project excavations will extend through the bay mud to underlying terrestrial landforms (where archaeological sites may be present), and (2) attempt to identify potential surface archaeological deposits on top of the bay mud (below the overlying artificial fill). Before any subsurface testing occurs, however, the buried utility alignments must be finalized before any subsurface testing occurs in order to identify those archaeologically sensitive areas where subsurface testing would be safe, feasible, and most informative. Following completion of the investigation, a report shall be prepared documenting the methods, findings, and recommendations. The report shall be submitted to the District for review and to the Northwest Information Center (NWIC) once finalized.

Given the documented thickness of the artificial fill and upper portion of the bay mud in the project site (collectively extending 5 feet below ground surface [bgs]), and the depths of proposed impacts (ranging from 8 feet bgs for at-grade excavations to 30–40 feet bgs for wetland piles), a feasible method of subsurface excavation (e.g., mechanical boreholes or backhoe trenching) may need to be employed to achieve depths sufficient for the investigation.

If cultural resources are identified during the subsurface archaeological investigation, it is recommended that project activities avoid impacts to archaeological cultural resources. If such deposits cannot be avoided, the East Bay Regional Park District (District) shall evaluate the significance of the find under CEQA. If the find is determined to qualify as a historical resource (PRC

§21084.1) or a unique archaeological resource (PRC §21083.2), impacts to the deposit will need to be avoided. If the resource cannot be avoided, a treatment plan shall be developed to mitigate, or minimize impacts to cultural resources. Treatments may consist of, but are not necessarily limited to, systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, accessioning recovered archaeological materials at an appropriate curation facility, and community outreach. All reports produced as part of the evaluation and treatment of cultural resources identified during the project shall be submitted to the District for review and comment. All final documents shall be submitted to the NWIC.

Mitigation Measure CULT-2

If deposits of pre-contact or historical archaeological materials are encountered during project activities, the project archaeologist shall assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If an archaeologist is not present at the time of discovery, the contractor shall stop all work within 25 feet of the discovery and contact the project archaeologist to assess the finds. Project personnel should not collect or move any archaeological materials. Archaeological materials can include flaked-stone tools (e.g., projectile points, knives, and choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, bones, and other cultural materials); and stone-milling equipment (e.g., mortars, pestles, and handstones). Pre-contact archaeological sites often contain human remains. Historic-period materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.

It is recommended that project activities avoid impacts to archaeological cultural resources. If such deposits cannot be avoided, the District shall evaluate the significance of the find under CEQA. If the find is determined to qualify as a historical resource (PRC §21084.1) or a unique archaeological resource (PRC §21083.2), impacts to the deposit will need to be avoided. If the resource cannot be avoided, a treatment plan shall be developed to mitigate or minimize impacts to cultural resources. Treatments may consist of, but are not necessarily limited to, systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, accessioning recovered archaeological materials at an appropriate curation facility, and community outreach. All reports produced as part of the evaluation and treatment of cultural resources identified during the project

shall be submitted to the District for review and comment. All final documents shall be submitted to the NWIC.

With implementation of Mitigation Measure CULT-1, which requires subsurface investigation in sensitive areas of the project alignment, and Mitigation Measure CULT-2, which requires monitoring and work stoppage in the event of an archaeological discovery, avoidance of identified resources and implementation of appropriate treatments (e.g., recovery and analysis, documentation, curation) for resources that cannot be avoided, potential impacts to archaeological historical resources would be reduced to less than significant with mitigation.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less Than Significant with Mitigation Incorporated)

According to the *State CEQA Guidelines*, “When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource” (*State CEQA Guidelines* Section 15064.5(c)(1)). Those archaeological sites that do not qualify as historical resources shall be assessed to determine if these qualify as “unique archaeological resources” (California PRC Section 21083.2).

Archaeological deposits identified during subsurface investigation or project construction (if any) shall be treated by the District in accordance with Mitigation Measures CULT-1 and CULT-2. With implementation of Mitigation Measures CULT-1 and CULT-2, identified above, impacts to archaeological resources would be less than significant with mitigation.

c. Would the project disturb any human remains, including those interred outside of formal cemeteries? (Less Than Significant Impact)

Based on previous archaeological investigation and analysis, there is potential for the disturbance of archaeological cultural resources or human remains during ground-disturbing activities associated with project construction. However, if human remains are encountered at the project site, State Health and Safety Code Section 7050.5 and *State CEQA Guidelines* Section 15064.5(e)(1) state that no further disturbance shall occur to the area of the find until the Contra Costa County Coroner has made a determination of origin and disposition of the human bone pursuant to PRC Section 5097.98. The Contra Costa County Coroner must be notified of the find immediately and shall make a determination within two working days of being notified. If the remains are determined to be Native American, the County Coroner shall notify the NAHC by phone within 24 hours, and the NAHC shall then immediately determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection and make recommendations or preferences for treatment of the remains within 48 hours of being granted access to the site. MLD recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment.

Compliance with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98 regarding the treatment of human remains would ensure that potential impacts to human remains would be less than significant.

4.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? (Less Than Significant Impact)

This section discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources. The discussion and analysis provided below is based on the data included in the CalEEMod output, which is included in Appendix A.

Construction-Period Energy Use. The anticipated construction schedule assumes that the proposed project would be built over 12 to 24 months. Project construction activities would include grubbing and land clearing, grading and excavation, drainage, utility, subgrade, and paving activities.

Construction of the proposed project would require energy for the manufacture and transportation of structural materials and for preparation of the site for grading activities and construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. To increase energy efficiency on the site during project construction, the idling times for construction vehicles would be restricted to 5 minutes or less and construction workers would be required to shut off idle equipment, as required by Mitigation Measure AIR-1. In addition, construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would be less than significant.

Operational Energy Use. Operational energy use is typically associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project.

As discussed above, the proposed project would include the construction of approximately 1 mile of the Bay Trail and would connect to existing segments of the Bay Trail in Point Pinole Regional Shoreline and Wilson Point at Pinole Shores Park. As discussed in Section 4.17, Transportation, since the proposed project consists of a low-intensity multi-use trail, the proposed project is unlikely to result in a substantial or measurable increase in VMT; as such, the proposed project is not expected to generate a substantial increase in fuel used for vehicle trips. In addition, the proposed project

would not include lighting; therefore, implementation of the proposed project would not result in additional energy consumption. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be less than significant, and no mitigation measures would be necessary.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Less Than Significant Impact)

As indicated above, energy usage on the project site during construction would be temporary in nature. In addition, once operational, the proposed project would not result in additional energy consumption as it would consist of a trail that does not require any energy for operation or result in a substantial increase in vehicle trips. Further, the proposed project would provide an alternative mode of transportation, which could further reduce vehicle trips. As such, the proposed project would not conflict with California's energy conservation plans as described in the California Energy Commission's 2023 Integrated Energy Policy Report. Thus, as shown above, the proposed project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and would not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

4.7 GEOLOGY AND SOILS

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

A Preliminary Geotechnical Investigation was completed for the proposed project and included site reconnaissance, subsurface investigation, laboratory soils testing, and engineering analysis.³⁶ A report was prepared evaluating existing geologic conditions on the project site, including the locations of the proposed bridge and elevated boardwalks, and is attached in Appendix C. The Geotechnical Investigation concluded that the proposed trail and associated improvements are feasible from a geotechnical standpoint but includes recommendations for project design that are further discussed in the impact analysis below.

³⁶ ENGEO Incorporated. 2022. *Point Pinole to Wilson Point, East Bay Regional Park District (EBRPD) SF Bay Trail, Richmond, California Preliminary Geotechnical Report*. September 30.

- a. *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*
- i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (No Impact)*

Fault rupture occurs when the ground's surface is broken due to fault movement during an earthquake. The location of surface fault rupture generally can be assumed to be along an active or potentially active major fault trace. The State of California enacted the Alquist-Priolo Fault Zoning Act in 1972, requiring the State Geologist to delineate Earthquake Fault Zones along known active faults that have high potential for fault rupture. State regulations prohibit habitable structures from being sited within 50 feet of an active fault.

The project site is in a seismically active area, the San Francisco Bay Area, which is in the vicinity of the San Andreas Fault System at the margin between the Pacific Tectonic Plate and the North American Tectonic Plate.³⁷ The San Andreas Fault System includes major active earthquake faults. The closest Earthquake Fault Zone to the project site is along the Hayward fault, 1.2 miles southwest of the project site.³⁸ No active earthquake faults are known to cross the subject property; therefore, surface fault rupture is considered to have no impact to site use or improvements.

ii. *Strong seismic ground shaking? (Less Than Significant Impact)*

The project site, similar to the entire San Francisco Bay Area, is within a seismically active region subject to strong seismic ground shaking. Ground shaking is a general term referring to all aspects of motion of the Earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The nearest active faults that are capable of producing significant ground shaking at the project site include the Hayward, San Andreas, and Franklin faults.³⁹

An earthquake of moderate to high magnitude within the San Francisco Bay Area could generate significant ground shaking at the project site. The most significant adverse impact associated with strong seismic ground shaking is potential damage to structures and subsequent injury to people inside or nearby those structures. The proposed project includes construction of a bridge and elevated boardwalks, the damage of which could adversely affect people crossing the bridge or boardwalks during an earthquake. To mitigate shaking effects, the proposed project would be

³⁷ Bartow, Alan, and Tor H. Nilsen. 1990. *Review of the Great Valley Sequence, Eastern Diablo Range and Northern San Joaquin Valley, Central California*. Department of the Interior, United States Geological Survey. Open-File Report 90-226.

³⁸ California Department of Conservation. 2021. *California Earthquake Hazards Zone Application ("EQ Zapp")*. Website: <https://maps.conservation.ca.gov/cgs/EQZApp/app/> (accessed October 26, 2022).

³⁹ ENGEO Incorporated. 2022. *Point Pinole to Wilson Point, East Bay Regional Park District (EBRPD) SF Bay Trail, Richmond, California Preliminary Geotechnical Report*. September 30.

designed in compliance with the California Building Code (CBC), which requires that structures be able to resist minor earthquakes without damage, resist moderate earthquakes without structure damage, but with some non-structural damage, and resist major earthquakes without collapse.

Incorporation of seismic construction standards in accordance with the CBC would reduce the potential for catastrophic effects of ground shaking, such as complete structural failure, and would reduce the impact of strong seismic ground shaking. Therefore, the impact of strong seismic ground shaking is considered less than significant.

iii. Seismic-related ground failure, including liquefaction? (Less Than Significant with Mitigation Incorporated)

Liquefaction occurs when loose, fine-grained soil temporarily transforms to a fluid-like state similar to quicksand. This phenomenon occurs due to strong seismic activity and lessens the soil's ability to support a structural foundation. Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. The soil considered most susceptible to liquefaction is clean, loose, saturated, uniformly graded sand below the groundwater table.⁴⁰

The Preliminary Geotechnical Investigation completed for the proposed project determined that the site may contain potentially liquefiable soil and includes preliminary foundation and retaining wall recommendations and preliminary 2022 CBC seismic design parameters. However, the Preliminary Geotechnical Investigation concluded that liquefaction hazards at the project would require further evaluation and recommends the completion of a Design-Level Geotechnical Exploration. Impacts associated with seismic-related ground failure, including liquefaction, would be less than significant with the implementation of Mitigation Measure GEO-1, which requires the preparation and implementation of a Design-Level Geotechnical Exploration to provide design-level recommendations for proposed grading and foundation and retaining wall design to ensure that proposed improvements are designed in accordance with CBC requirements and to mitigate potential geotechnical and geological hazards.

Mitigation Measure GEO-1

Design-Level Geotechnical Exploration. A Design-Level Geotechnical Exploration shall be performed for the proposed trail improvements. Geotechnical recommendations shall be prepared for the project under the direction of a California Registered Geotechnical Engineer, or Registered Civil Engineer experienced in geotechnical engineering. The geotechnical recommendations shall be based on the final project design plans and shall establish the seismic design parameters, as determined by the engineer in accordance with requirements of the California Building Code, for improvements to the project site. The geotechnical exploration shall include detailed evaluations of geotechnical concerns in the project area including slope stability, expansive potential, and liquefaction potential. The geotechnical exploration shall provide data for the

⁴⁰ ENGEO Incorporated. 2022. *Point Pinole to Wilson Point, East Bay Regional Park District (EBRPD) SF Bay Trail, Richmond, California*. September 30.

preparation of design-level recommendations regarding grading, foundation, and retaining wall design for the proposed development and provide recommendations regarding techniques and procedures to be implemented during construction to mitigate potential geotechnical and geological hazards.

Implementation of Mitigation Measure GEO-1 would reduce the level of the potential impact through the identification of specific recommendations related to slope stability, expansive soils, and liquefaction potential, and implementation of supplemental recommendations, if needed. Therefore, with implementation of Mitigation Measure GEO-1, this impact would be less than significant with mitigation.

iv. Landslides? (Less Than Significant with Mitigation Incorporated)

According to the Preliminary Geotechnical Report completed for the proposed project, there is no evidence of past landslide activity within the proposed trail alignment and available landslide mapping of the site does not show any landslide deposits. However, because the proposed project includes trail development adjacent to existing cut slopes and includes maximum cuts of 4 feet for the partially elevated boardwalk area, the Preliminary Geotechnical Report recommends the completion of design-level review of grading and retaining wall plans to evaluate the slope stability of the final configuration of the partially elevated boardwalk areas. Implementation of Mitigation Measure GEO-1, which requires the preparation and implementation of a Design-Level Geotechnical Exploration, would ensure that potential impacts associated with landslides would be less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil? (Less Than Significant Impact)

Proposed improvements to the project site include vegetation removal, grading, slope cuts and engineered fill placement, and paving. Grading and earthmoving during project construction has the potential to result in erosion and loss of topsoil. The potential for soil erosion exists during the period of earthwork activities and between the time when earthwork is completed and new vegetation is established or hardscape is installed. Exposed soils could be entrained in stormwater runoff and transported off the project site. Because the proposed project would involve over 1 acre of land disturbance, it would be required to comply with the Construction General Permit (CGP),⁴¹ which requires preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) prior to any ground-disturbance activities. Although designed primarily to protect stormwater quality, the SWPPP would provide the details of the erosion control measures to be applied on the project site during the construction period, including best management practices (BMPs) for erosion control that are recognized by the RWQCB. Compliance with the requirements of

⁴¹ State Water Resources Control Board (SWRCB). 2009. Division of Water Quality. *Construction General Permit Fact Sheet*. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ. Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_factsheet.pdf (accessed August 2022).

the CGP would ensure that the proposed project would result in less than significant impacts related to soil erosion or the loss of topsoil.

- c. *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (Less Than Significant with Mitigation Incorporated)*

The Preliminary Geotechnical Report completed for the proposed project identified various potential geotechnical concerns in the project area including slope stability, expansive potential, and liquefaction potential. Additionally, the Preliminary Geotechnical Report concluded that a portion of the project site is underlain by potentially compressible young bay mud (YBM) deposits. YBM is a marine deposit generally consisting of soft, normally consolidated, high plasticity clay. The normally consolidated clay is highly compressible and experiences settlement when subjected to additional loading, such as foundation loads or placement of new fill. According to the Preliminary Geotechnical Report, the new fill associated with the proposed project may induce long-term settlement if mitigation is not performed and boardwalk and bridge pile foundations should be extended below the YBM and founded in competent soil. As previously discussed, the Preliminary Geotechnical Report recommended the completion of a Design-Level Geotechnical Exploration, as detailed in Mitigation Measure GEO-1, to provide recommendations regarding techniques and procedures to be implemented during construction to mitigate potential geotechnical and geological hazards. With implementation of Mitigation Measure GEO-1, impacts associated with an unstable soil or geologic unit would be less than significant.

- d. *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? (Less Than Significant with Mitigation Incorporated)*

Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percentage of change in the soil volume. According to the Preliminary Geotechnical Report completed for the proposed project, some near-surface soil at the project site shows evidence of shrinkage cracking indicating that it likely has a moderate to high expansion potential. Laboratory testing completed as part of the Preliminary Geotechnical Report indicated plasticity indices between 5 and 34, which indicates a low to high expansion potential within the project site. The Preliminary Geotechnical Report recommends the following measures to prevent impacts to paved areas associated with the proposed project: lime treatment of the subgrade, increasing the aggregate base section, and/or adding cutoff curbs or edge drains to limit moisture transmission from the edges of the pavement. Additionally, implementation of Mitigation Measure GEO-1, which entails the preparation and implementation of a Design-Level Geotechnical Exploration, would be required which would ensure that potential impacts associated with expansive soils would be less than significant.

- e. *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (No Impact)*

There are no planned on-site wastewater disposal systems at the project site. Therefore, the project would have no impact related to soils incapable of supporting septic tanks or alternative wastewater disposal systems.

- f. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less Than Significant with Mitigation Incorporated)*

As described in the Preliminary Geotechnical Investigation, the proposed trail is located on the southern margin of the San Pablo Bay and mapped as historic artificial fill (af), Bay mud deposits (Qhbm), alluvial fan deposits (Qpf), and conglomerate (Tcgl), each of which are present within various segments of the alignment. Bay mud deposits (Qhbm) are also commonly referred to as YBM. An approximately 2,000-foot-long section of the northeastern portion of the alignment is mapped as late Pleistocene-aged alluvial fan deposits (Qpf). The southwestern portion of the alignment consists primarily of Qhbm and historic af. There are also fingers of Miocene-aged Tcgl.

The fill materials underlying the project site would not be expected to contain paleontological resources, because fossils are not generally preserved in fill materials due to the highly disturbed nature of fill materials. However, the native soils and Bay mud underlying the project site could contain paleontological resources.

The maximum depth of excavation for the retaining walls on the cut slope below the existing residences would be between 10 and 15 feet deep. Piles in the wetland area would extend 30 to 40 feet bgs and the bridge abutment at the creek crossing would extend approximately 10 feet bgs. Excavation for the at-grade trail segments would extend approximately 8 feet bgs. The majority of the proposed project would not require deep excavation that would likely encounter paleontological resources. However, in the event that fossil remains are encountered, impacts to paleontological resources could occur. To control the risk of damaging or destroying a unique paleontological resource or site, the project shall implement Mitigation Measure GEO-2.

Mitigation Measure GEO-2

Paleontological Resource Protection. Before the start of any excavation activities, the East Bay Regional Park District (District) shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology (SVP), who is experienced in training construction personnel regarding paleontological resources. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that could be seen during construction, and proper notification procedures should fossils be encountered. Should any paleontological resources be encountered during construction activities, all ground-disturbing activities within 50 feet of the find shall cease and the District shall be notified

immediately. The District shall immediately notify the qualified paleontologist and request that they assess the situation per SVP standards, consult with agencies as appropriate, and make recommendations for the treatment of the discovery if found to be significant. If construction activities cannot avoid the paleontological resources, adverse effects to paleontological resources shall be mitigated. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, preparation of a technical report, and providing the fossil material and technical report to a paleontological repository, such as the University of California Museum of Paleontology. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the District for review.

Implementation of Mitigation Measure GEO-2 would reduce the level of the potential impact through the identification of paleontological resources during construction, the evaluation of unanticipated discoveries, and the recovery of significant paleontological data from those resources that warrant such investigation. This process would recover scientifically consequential information from at-risk resources to offset their potential loss. Therefore, with implementation of Mitigation Measure GEO-2, this impact would be less than significant with mitigation.

4.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less Than Significant Impact)

Greenhouse gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or form from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF₆)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While manmade GHGs include naturally occurring GHGs such as CO₂, methane, and N₂O, some gases, like HFCs, PFCs, and SF₆ are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of global warming potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO₂, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO₂ equivalents" (CO₂e).

The Air District's 2022 CEQA Guidelines identifies applicable GHG significance thresholds. The Air District recommends these thresholds of significance for use in determining whether a proposed project will have a significant impact related to climate change. These thresholds are applied in the evaluation of a project based on the potential effect on California's efforts to meet the State's long-term climate goals. Applying this approach, the Air District identifies and provides supporting documentation, outlining the requirements for new land use development projects necessary to achieve California's long-term climate goal of carbon neutrality by 2045. Based on its analysis, the Air District found that new land use development projects need to incorporate design elements to contribute the "fair share" towards implementing the goal of carbon neutrality by 2045. If a project is designed and built to incorporate the identified design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change. The Air District determined that if a project does not incorporate these design elements, then it should be found to make a significant climate impact because it will hinder California's efforts to address climate change.

According to the Air District, a project would have a less than significant impact related to GHG emissions if it would:

- a. Include, at a minimum, the following project design elements:
 1. Buildings
 - a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
 - b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
 2. Transportation
 - a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
 1. Residential projects: 15 percent below the existing VMT per capita
 2. Office projects: 15 percent below the existing VMT per employee
 3. Retail projects: no net increase in existing VMT
 - b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

- b. Or be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Therefore, this section evaluates the proposed project's consistency with the Air District's project design elements.

Natural Gas Usage. According to the Air District, a less than significant GHG impact would occur if the project does not include natural gas appliances or natural gas plumbing. The proposed project would not include natural gas. Therefore, the proposed project would be consistent with this design element.

Energy Usage. The project must not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines*. Energy use consumed by the proposed project would be associated with electricity consumption and fuel used for vehicle trips associated with project construction and operation. As discussed in Section 4.6, Energy, the proposed project would not result in a substantial or measurable increase in VMT; as such, the proposed project is not expected to generate a substantial increase in fuel used for vehicle trips. In addition, the proposed project would not include lighting or building structures; therefore, implementation of the proposed project would not result in additional energy consumption.

As such, based on this analysis, as required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines*, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy and energy efficiency measures into the building design, equipment use, and transportation. As such, the proposed project would be consistent with this design element.

Vehicle Miles Traveled. To meet the Air District's VMT threshold, the project must achieve a reduction in project generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted the Senate Bill (SB) 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's *2018 Technical Advisory on Evaluating Transportation Impacts in CEQA*. As discussed above, the proposed project would not result in a substantial or measurable increase in VMT; therefore, the proposed project would have a less than significant VMT impact. As such, the proposed project would be consistent with this design element.

Electric Vehicle Requirements. This criterion requires that the project achieve compliance with off-street electric vehicle requirements in the most recently adopted version of the California Green Building Standards Code (CALGreen Code) Tier 2 measures. The proposed project consists of 1 mile of the Bay Trail and would connect to existing segments of the Bay Trail in Point Pinole Regional Shoreline and Wilson Point at Pinole Shores Park. As such, this design element is not applicable to the project.

As demonstrated above, the proposed project would be consistent with the Air District's project design elements related to natural gas, energy, VMT, and electric vehicle requirements. Therefore, the proposed project would be consistent with the Air District's GHG emission thresholds. As such,

the proposed project would not generate significant GHG emissions that would have a significant effect on the environment, and this impact would be less than significant.

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less Than Significant Impact)

The proposed project was analyzed for consistency with the goals of Contra Costa County's Climate Action Plan (CAP),⁴² City of Richmond CAP,⁴³ Plan Bay Area 2050,⁴⁴ and the California Air Resources Board (CARB) 2022 Scoping Plan.⁴⁵

Contra Costa County Climate Action Plan. Contra Costa County adopted the 2015 CAP on December 15, 2015. The CAP demonstrates Contra Costa County's commitment to addressing the challenges of climate change by reducing local GHG emissions while improving community health. Additionally, the Contra Costa County CAP identifies how the County will achieve the Assembly Bill (AB) 32 GHG emissions reduction target of 15 percent below baseline levels by 2020, in addition to supporting other public health, energy efficiency, water conservation, and air quality goals identified in the County's General Plan and other policy documents. The Contra Costa County CAP contains GHG reduction measures; however, these measures are intended for commercial, residential, and mixed-use projects and most of the measures would not be applicable to the proposed project. The only applicable measure includes Measure LUT 4, Vehicle Miles Traveled Reduction, which expresses the intention to reduce vehicle miles traveled.

The proposed project includes approximately 1 mile of the Bay Trail and would connect to existing segments of the Bay Trail in the Point Pinole Regional Shoreline and Wilson Point at Pinole Shores Park. As discussed in Section 4.17, Transportation, since the proposed project consists of a low-intensity multi-use trail, the proposed project would not result in a substantial or measurable increase in VMT. As such, the proposed project would be consistent with the applicable Contra Costa County CAP measures.

City of Richmond Climate Action Plan. The City of Richmond CAP is a roadmap for how the City will reduce GHG emissions and prepare for the impacts of climate change on public health, infrastructure, ecosystems, and public spaces in our community.

⁴² County of Contra Costa. 2015. Contra Costa County *Climate Action Plan*. December 15. Website: <https://www.contracosta.ca.gov/DocumentCenter/View/39791/Contra-Costa-County-Climate-Action-Plan?bidId=> (accessed October 2023).

⁴³ City of Richmond. 2016. *City of Richmond Climate Action Plan*. October. Website: <https://www.ci.richmond.ca.us/DocumentCenter/View/40636/CAP-combined> (accessed October 2023).

⁴⁴ Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2021. *Plan Bay Area 2050*. October. Website: https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf (accessed September 2024).

⁴⁵ California Air Resources Board (CARB). 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Website: <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf> (accessed October 2023).

The City of Richmond CAP includes objectives and strategies that support the CAP goals, and the goals, policies, and actions of the City's General Plan 2030 and other adopted City plans and ordinances. The Richmond CAP's objectives include emission reductions from the following sectors:

- Energy Efficient Buildings and Facilities
- Increase Use and Generation of Renewable Energy
- Sustainable Transportation and Land Use
- Zero Waste
- Water Conservation
- Green Infrastructure, Urban Forestry and Local Agriculture
- Green Business and Industry

Similar to the Contra Costa County CAP, most of the City of Richmond CAP's objectives are intended for commercial, residential, and mixed-use projects and most of the measures would not apply to the proposed project. However, the proposed project would be consistent with objectives and strategies related to sustainable transportation and land use as the proposed project includes approximately 1 mile of the Bay Trail and would connect to existing segments of the Bay Trail in Point Pinole Regional Shoreline and Wilson Point at Pinole Shores Park. Additionally, the proposed project is unlikely to result in a substantial or measurable increase in VMT. As such, the proposed project would be consistent with the applicable City of Richmond CAP objectives.

Plan Bay Area 2050. Plan Bay Area 2050 is a State-mandated, integrated, long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan (RTP). In the Bay Area, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2050 includes 11 goals and 35 performance targets covering four broad areas: housing, economic, transportation, and environmental. These targets enable the plan to be evaluated by its performance in areas identified as key regional concerns, including equitable access, economic vitality, and transportation system effectiveness. The following performance targets are applicable to the proposed project:

- **T8. Build a complete streets network.** Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multi-use paths.
- **EN6. Modernize and expand parks, trails and recreation facilities.** Invest in quality parks, trails and open spaces that provide inclusive recreation opportunities for people of all backgrounds, abilities and ages to enjoy.
- **EN9. Expand transportation demand management initiatives.** Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving.

The proposed project includes approximately 1 mile of the Bay Trail along the San Pablo Bay shoreline and UPRR right-of-way. The Bay Trail is a planned and partially completed 500-mile multi-

use trail connecting the shorelines of all nine San Francisco Bay Area counties and encircling San Pablo and San Francisco bays. More than 350 miles of the trail are currently completed and open for public use. The proposed project would close a gap between existing segments of the Bay Trail in Point Pinole Regional Shoreline and Wilson Point at the Pinole Shores Park. Therefore, the proposed project would support the ability to use alternative modes of transportation, would promote initiatives to reduce vehicle trips and VMT, and would increase the use of alternate means of transportation consistent with the intent of Plan Bay Area 2050.

2022 Scoping Plan. Executive Order (EO) B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and continues to work toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

In addition, the 2022 Scoping Plan assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The measures include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below. The proposed project would not substantially increase energy or water use therefore, the proposed project would comply with applicable energy efficiency measures or water conservation and efficiency measures. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. However, vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

Therefore, the proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in the 2022 Scoping Plan, EO B-30-15, AB 1279, SB 32, and AB 197 and would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, the proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Impacts would be less than significant.

4.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

The following section is based on the *Phase I Environmental Site Assessment*⁴⁶ (Phase I ESA) prepared for the proposed project, which is provided in Appendix D.

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less Than Significant Impact)

Hazardous materials are chemicals that have the potential to cause harm during an accidental release and are defined as being toxic, corrosive, flammable, reactive, an irritant, or a strong sensitizer. Hazardous substances include all chemicals regulated under the United States Department of Transportation “hazardous materials” regulations and the United States Environmental Protection Agency “hazardous waste” regulations. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment. The severity of any such exposure is dependent upon the type, amount, and characteristics of the

⁴⁶ ENGEO Incorporated, 2022. *EBRPD SF Bay Trail Point Pinole to Wilson Point, Pinole, California Phase I Environmental Site Assessment*. September 28.

hazardous material involved; the time, location, and nature of the event; and the sensitivity of the individual or environment affected.

The proposed recreational trail would be constructed adjacent to and within the UPRR right-of-way. The project site is surrounded by a variety of land uses and neighborhoods. Surrounding land uses include industrial, residential, railroad, resource lands, and recreational parklands belonging to a variety of landowners, including private and public entities. According to the Phase I ESA, there is no indication of current or historical hazardous materials use, storage, disposal, or release at the project site.

During construction, small quantities of commercially available hazardous materials could be used by construction vehicles (e.g., oil, gasoline), and drips and small spills of solvents, lubricants, and adhesives could occur. Any release of these hazardous materials that occurs near a sensitive habitat (e.g., a wetland) could have a significant impact on the environment, if not properly controlled. As previously discussed, compliance with the CGP and preparation and implementation of SWPPP would be required for the proposed project, which would include the implementation BMPs for hazardous material use and storage during the construction period. Adherence with regulatory requirements would reduce the potential for hazardous material releases during construction and would reduce the potential for spills to impact sensitive habitat or human health, to less than significant levels.

Operation of the proposed project (i.e., use of the proposed trail by cyclists and pedestrians) would not require the routine transport, use, or disposal of significant quantities of hazardous materials. Operation of the proposed project would therefore result in a less than significant impact on the public and the environment related to the routine transport, use, and handling of hazardous materials.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less Than Significant with Mitigation Incorporated)

Construction activities may involve the use of commercially available hazardous materials. Use of such materials would comply with all applicable local, State, and federal regulations. Operation of the proposed project (i.e., use of the proposed trail by cyclists and pedestrians) would not involve the routine transport, use, or disposal of hazardous materials. As previously discussed, the Phase I ESA determined that there is no indication of current or historical hazardous materials use, storage, disposal, or release at the project site. However, the Phase I ESA determined that there is an existing oil pipeline within the project site and recommends the development and implementation of a Site Management Plan for any future soil disturbing activities. With implementation of Mitigation Measure HAZ-1, which requires the preparation and implementation of a Site Management Plan, the proposed project would not 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 and impacts would be less than significant.

Mitigation Measure HAZ-1

Prior to any ground breaking activities, a Site Management Plan (SMP) shall be prepared by a qualified hazardous materials consultant to establish management practices for handling contaminated soil or other materials encountered during construction activities. Appropriate soil testing, characterization, storage, transportation, and disposal procedures shall be specified in the SMP. The sampling results shall be compared to appropriate risk based screening levels in the SMP. The SMP shall identify potential health, safety, and environmental exposure considerations associated with redevelopment activities and shall identify appropriate mitigation measures.

The SMP shall be submitted to the County for review and approval. The SMP shall include, but is not limited to, the following:

- A detailed discussion of the site background
- Management of stockpiles, including sampling, disposal, and dust and runoff control including implementation of a Storm Water Pollution Prevention Plan
- Procedures to follow if evidence of an unknown historic release of hazardous materials (underground storage tanks, polychlorinated biphenyls [PCBs], asbestos-containing materials, lead-based paint, etc.) is discovered during excavation or demolition activities
- A health and safety plan (HSP) for each contractor working at the site that addresses the safety and health hazards of each site operation phase, including the requirements and procedures for employee protection. The HSP shall outline proper soil handling procedures and health and safety requirements to minimize work and public exposure to hazardous materials during construction.

Implementation of Mitigation Measure HAZ-1 would reduce the level of the potential impact through the preparation and implementation of an SMP would ensure impacts to construction and maintenance workers during any disturbance of contaminated on-site soils would be less than significant.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less Than Significant Impact)

The closest schools to the project site are Montalvin Elementary School and the Spectrum Center School Tara Hills Campus, both of which are 0.35 mile from the project site. The proposed project

would not routinely emit hazardous emissions, and handling of hazardous or acutely hazardous materials, substances, or waste on the project site (if any) would be temporary and cease upon the completion of project construction. Additionally, implementation of Mitigation Measure HAZ-1 would be required, which entails the preparation and implementation of an SMP prior to soil-disturbing activities, which establishes management practices for handling contaminated soil or other materials encountered during construction activities. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Less Than Significant Impact)

The project site is not listed on any list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.⁴⁷ According to the Phase I ESA completed for the proposed project, 29 facilities are listed within the appropriate American Society for Testing and Materials search distances of the project site on Environmental Record sources. However, the Phase I ESA determined that it is unlikely that any of the database sites pose an environmental risk to the project site based on the distances to the identified database sites, regional topographic gradient, and findings from Environmental Data Resources. Nevertheless, the preparation and implementation of an SMP that establishes management practices for handling contaminated soil or other materials encountered during construction activities would be required as detailed in Mitigation Measure HAZ-1. Therefore, the proposed project would not create a significant hazard to the public or the environment and impacts would be less than significant.

e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)

The project site is not within an airport land use plan or within 2 miles of a public airport or public use airport. The closest airport to the project site is the San Rafael airport, approximately 10 miles west of the project site. Additionally, the proposed project consists of a low intensity multi-use path. Therefore, implementation of the proposed project would not result in an airport-related safety hazard for people working in the project area, and no impacts related to this topic would occur.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

The proposed recreational trail would be constructed adjacent to and within the UPRR right-of-way. The project site is surrounded by a variety of land uses and neighborhoods. Surrounding land uses include industrial, residential, railroad, resource lands, and recreational parklands owned by a variety of landowners, including private and public entities. The proposed project would have no impact on nearby roadways or evacuation routes. Therefore, the proposed project would not impair

⁴⁷ California Environmental Protection Agency. 2020. Cortese List Data Resources. Website: calepa.ca.gov/sitecleanup/corteselist (accessed November 18, 2022).

implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Therefore, no impact related to this topic would occur as a result of implementation of the proposed project, and no mitigation is required.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less Than Significant Impact)

A wildland fire is a fire in a suburban or rural area that contains uncultivated land, timber, range, brush, or grasslands. Wildland fires are primarily a concern in areas where there is a mix of developed and undeveloped lands. The project site is not within a California Department of Forestry and Fire Protection (CAL FIRE) State Responsibility Area and the Contra Costa General Plan does not identify the project site as being within a High or Very High Fire Hazard Severity Zone.^{48,49} The project site is relatively flat and in an urban area primarily surrounded by development and San Pablo Bay. The proposed project does not involve the construction of residential or commercial structures or any other structures for human occupation, and people would use the trail for a limited duration of time. Therefore, implementation of the proposed project would not expose people or structures to significant loss, injury, or death from wildfires beyond the existing condition and impacts related to this topic would be less than significant.

⁴⁸ California Department of Forestry and Fire Protection (CAL FIRE). n.d. *Fire Hazard Severity Zone Viewer*. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed November 20, 2022).

⁴⁹ County of Contra Costa. 2005c. *Contra Costa County General Plan, Safety Element*. January 18.

4.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☒	☐	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☐

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (Less Than Significant Impact)

The State Water Resources Control Board and nine Regional Water Quality Control Boards regulate water quality of surface water and groundwater bodies throughout California. In the Bay Area, including the project site, the San Francisco Bay Regional Water Quality Control Board (Water Board) is responsible for implementation of the Water Quality Control Plan (Basin Plan). The Basin Plan establishes beneficial water uses for waterways and waterbodies within the region. Section 303(d) of the federal Clean Water Act (CWA) requires that states identify waterbodies including bays, rivers, streams, creeks, and coastal areas that do not meet water quality standards and the pollutants that are causing the impairment. Total maximum daily loads (TMDLs) describe the maximum amount of a pollutant that a waterbody can receive while still meeting established water quality standards. A TMDL requires that all sources of pollution and all aspects of a watershed's drainage system be reviewed and that action plans are implemented that examine factors and sources adversely affecting water quality and identify specific plans to improve overall water quality and reduce pollutant discharges into impaired waterbodies. The Lower San Francisco Bay is listed as

an impaired waterbody for pollutants including DDT, dioxin compounds, furan compounds, PCBs (dioxin-like), dieldrin, trash, PCBs, mercury, and chlordane.⁵⁰

Runoff water quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program (established through the federal CWA). The NPDES program's objective is to control and reduce pollutant discharges to surface waterbodies. Compliance with NPDES permits is mandated by State and federal statutes and regulations. Locally, the NPDES Program is administered by the Water Board. According to the water quality control plans of the Water Board, any construction activities, including grading, that would result in the disturbance of 1 acre or more would require compliance with SWRCB's NPDES permit Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit). The Construction General Permit (CGP) requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) and implementation of construction best management practices (BMPs) during construction activities. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

The proposed project would result in the construction of approximately 1 mile of paved trail within a 50-foot-wide trail easement. Approximately 3.55 acres of land would be disturbed by clearing and grading activities during trail construction. Because the proposed project would result in greater than 1 acre of disturbed soil area, the project would be required to comply with the CGP, including but not limited to, preparation of a SWPPP and implementation of construction site BMPs to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate risk level identified for the project. All work would conform to the Construction Site BMP requirements specified in the latest edition of the California Department of Transportation Storm Water Quality Handbooks: Construction Site Best Management Practices Manual to control and minimize the impacts of construction and construction-related activities, materials, and pollutants on the watershed.

Grading and construction of the proposed trail, parking area, and other features could cause short-term, potentially significant impacts to water quality if soil erosion and consequent sediment-laden runoff, fuel or other construction chemicals are not adequately controlled and are accidentally or unintentionally released into area waterways. Unless disturbed areas and stormwater runoff are adequately controlled during construction, and disturbed areas are stabilized and revegetated following construction, the proposed project would violate Water Board standards and NPDES Waste Discharge Requirements and could potentially degrade surface water quality. Groundwater quality impacts could also occur if construction chemicals spill or leak and infiltrate into areas of shallow groundwater.

⁵⁰ State Water Resources Control Board. 2021. *2018 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report)*. Website: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html (accessed December 2, 2022).

Construction of the proposed bridge and elevated boardwalks would be subject to CWA Section 401 Water Quality Certification for discharges of dredged and fill materials through the Water Board. This certification would ensure that project activities are consistent with the State's water quality standards and criteria. As part of this certification, the Water Board would require erosion controls in all areas disturbed by project activities and the completion of monitoring. Additionally, as previously discussed, the project would be subject to the CGP and preparation and implementation of a SWPPP would be required. Due to existing regulatory requirements, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and impacts would be less than significant.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No Impact)

The proposed project is not within a California Department of Water Resources-recognized Groundwater Basin and does not contain a recognized groundwater aquifer of any size or depth.⁵¹ According to the Geotechnical Investigation completed for the proposed project,⁵² groundwater was encountered at a depth of 3.5 feet below ground. Therefore, groundwater may be encountered during excavation and construction of the trail and dewatering may be required. Groundwater dewatering activities would be temporary in nature and would cease following the completion of construction. It is not anticipated that the volume of groundwater extracted during dewatering activities, if needed, would be substantial.

The proposed project would not result in the construction of large areas of impervious surfaces that would prevent groundwater from infiltrating into the ground, nor would it result in direct additions or withdrawals to existing groundwater. All runoff from the paved trail would be dispersed to adjacent undeveloped areas for infiltration and would not be collected within a storm drain system. Therefore, the proposed project would not substantially interfere with groundwater recharge and would not impede sustainable groundwater management. No impact on groundwater would occur.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site; (Less Than Significant Impact)

During construction activities, 3.55 acres of soil would be disturbed. Soil would be exposed and drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate.

⁵¹ California Department of Water Resources. *Groundwater Basin Boundary Assessment Tool*. Website: <https://gis.water.ca.gov/app/bbat/> (accessed November 20, 2022).

⁵² ENGEO Incorporated. 2022. Point Pinole to Wilson Point, East Bay Regional Park District (EBRPD) SF Bay Trail, Richmond, California. September 30.

A CDFW Lake and Streambed Alteration Agreement would be required for the proposed bridge and elevated boardwalks that would forbid leaving bare ground and would require revegetation of exposed soils, as well as soil stabilization until new vegetation becomes established. Project activities would also be subject to CWA Section 401 Water Quality Certification for discharges of dredged and fill materials through the Water Board. As part of this certification, the Water Board would require erosion controls in all areas disturbed by project activities. Furthermore, compliance with the CGP and preparation of a SWPPP, which would identify construction BMPs to prevent erosion and siltation, would ensure construction related impacts related to erosion or siltation would be less than significant.

After the completion of construction, the proposed project would increase impervious surface area along the project alignment due to the construction of a paved trail. However, the trail would be out sloped at 2 percent and would include 2-foot-wide unpaved shoulders on either side of the trail. Runoff from the trail would be locally dispersed and would not result in a substantial increase in the rate or amount of runoff that would result in erosion or siltation.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (Less Than Significant Impact)

Construction would disturb and compact soil and drainage patterns would be temporarily altered, which can increase the volume and velocity of stormwater runoff and increase the potential for localized flooding compared to existing conditions. As previously discussed, compliance with the CGP and preparation and implementation of a SWPPP that includes BMPs to control and direct surface runoff on-site, would reduce impacts associated with on- or off-site flooding. Construction activities would be short-term and would be limited to the dry season. Therefore, adherence to the CGP would ensure that construction of the project would not substantially increase the rate or amount of surface runoff in a manner which would result flooding on- or off-site. No mitigation is required.

Implementation of the proposed project would increase impervious surface area along the proposed alignment by placing a paved trail in an area that currently consists of pervious surfaces. The trail would include 2-foot-wide pervious shoulders on both sides and the surrounding vegetation would remain, allowing stormwater to continue to infiltrate into the ground and maintaining the existing drainage patterns. Because the existing drainage pattern would be maintained and runoff from the trail would be locally dispersed, operation of the proposed project would result in a less than significant impact related to on- or offsite flooding. No mitigation is required.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; (Less Than Significant Impact)

As discussed above, construction activities could alter drainage patterns during grading and other construction activities, and spill, leak, or transport construction-related pollutants such as liquid and petroleum products and concrete waste via stormwater runoff into adjacent drainages and downstream receiving waters. The proposed project would be required to comply with the requirements set forth in the CGP, which requires the preparation of a SWPPP and implementation of construction

BMPs to control stormwater runoff and prevent discharge of polluted runoff. With adherence to the CGP, impacts related to the creation or contribution of runoff that would exceed the capacity of the storm water drainage system or provide substantial additional sources of polluted runoff would be less than significant.

As previously discussed, the increase in the amount of impervious surface area that will result from the proposed project is relatively low, and all runoff from the paved trail would be dispersed to adjacent undeveloped areas for infiltration and would not be collected within a storm drain system. Therefore, impacts related to the creation or contribution of runoff, which would exceed the capacity of the existing stormwater drainage system or provide substantial additional sources of polluted runoff would be less than significant.

iv. Impede or redirect flood flows? (Less Than Significant with Mitigation Incorporated)

The majority of the proposed trail alignment is not within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain; however, portions of the project site adjacent to Garrity Creek and at the northeastern end of the proposed trail alignment are in FEMA designated flood zones. According to the FEMA Flood Insurance Rate Map (FIRM) No. 06013C0039G, effective September 30, 2015, the majority of the proposed trail alignment is in an area of minimal flood hazard. Portions of the project site adjacent to Garrity Creek are within Zone AE, Zone AO, and the regulatory floodway associated with Garrity Creek. Zone AE is defined by FEMA as a Special Flood Hazard Area subject to inundation by the 1 percent annual chance flood event determined by detailed methods with base flood elevations shown. The base flood elevation shown is a depth of 1 foot. Zone AO is defined by FEMA as a flood hazard area and areas with a 1 percent or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. FEMA defines a Regulatory Floodway as the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. A portion of the project site at the northeastern end of the proposed trail alignment is within Zone X. Zone X is defined as 0.2 percent Annual Chance Flood Hazard, or areas of 1 percent annual chance flood with average depth less than 1 foot or with drainage areas of less than 1 square mile.

The project site would remain relatively flat and the proposed project would not substantially alter drainage patterns. The proposed trail alignment has been located and designed to minimize alteration of existing site drainage patterns and impacts to existing flow conditions. Minor alteration would occur to the banks of Garrity Creek for construction of bridge abutments, including placement of bridge support piers. Although streamflow patterns, including flood flows, would not be significantly changed or altered, proposed construction activities could result in local bank erosion and if not well engineered, construction of the proposed pedestrian bridge and paved trail in this area could potentially impede or re-direct Garrity Creek flood flows. Therefore, Mitigation Measure HYD-1 would be required to reduce potential impacts to less than significant.

Mitigation Measure HYD-1

The East Bay Regional Park District (District) shall prepare and submit final bridge plans for the proposed pedestrian bridge that crosses Garrity Creek. The final bridge plans are subject to review and approval by the Contra Costa County Flood Control and Water

Conservation District and the Department of Conservation and Community Development (Engineering and Flood Plain manager). The bridge plans shall include structural engineering, geotechnical engineering, and hydraulic engineering information. The responsible bridge designer shall be a State of California licensed Civil Engineer and shall be experienced in hydraulic analysis, bridge design, and flood channel and bank protection design. The Engineering Plans shall demonstrate conformity to Contra Costa County, and any applicable Federal Emergency Management Agency floodplain management regulations and include design elevations of the bridge, conformity with 50-year and 100-year flood elevation freeboard requirements, the locations and structural design of the bridge abutments with respect to flood flows, bridge loading, and channel bank protection requirements. The technical studies shall confirm that there is no impact of trail bridges or trail structures on Garrity Creek flood elevations and embankment stability.

Implementation of Mitigation Measure HYD-1, which requires the preparation, review and approval of final bridge plans that demonstrate that the proposed trail bridge would not affect Garrity Creek flood elevations and embankment stability, would ensure potential impacts related to Garrity Creek flood flows would be less than significant.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation? (Less Than Significant Impact)

Flood Hazard. As previously discussed in Response 4.10.1.c.iv, the majority of the project area is not within a 100-year regulatory floodplain as recognized by FEMA, other than a small portion of the project site adjacent to Garrity Creek and at the northeastern end of the proposed trail alignment. Possible pollutant use in these areas include temporary use of construction chemicals such as concrete, asphalt, equipment fuel and lubricants, hydraulic fluids, and paint. Storage and use of these construction chemicals during the winter flood-prone period and within identified flood hazard areas could potentially result in the release of these pollutants during periods of inundation. However, compliance with the CGP requires implementation of construction BMPs, including proper storage of chemicals and hazardous materials, which would reduce potential impacts related to construction activities to less than significant levels. Although portions of the proposed trail are within a flood hazard area, no structures are proposed for these areas that would store chemical pollutants that could be released during periods of flooding after the completion of project construction.

Tsunami. A tsunami is an ocean wave generated by earthquakes or volcanic activity resulting in sudden displacements in the sea floor. Tsunami waves vary in frequency and height and are influenced by the magnitude of the earthquake or eruption. The project site is not within a tsunami inundation area mapped by the California Department of Conservation.⁵³ Nevertheless, no

⁵³ California Department of Conservation. 2019. *Contra Costa County Tsunami Hazard Areas*. Website: <https://www.conservation.ca.gov/cgs/tsunami/maps/contra-costa> (accessed December 2, 2022).

structures are proposed that would store chemical pollutants that could be released during periods of flooding. Therefore, the proposed project would not result in the release of pollutants due to project inundation by tsunami.

Seiches. Seiches are waves that are created in an enclosed body of water such as a bay, lake, or harbor and go up and down or oscillate and do not progress forward like standard ocean waves. Seiches are also referred to as standing waves and are triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis or tidal influence. The height and frequency of seiches are determined by the strength of the triggering factor(s) and the size of the basin. Seiches are not considered a hazard in the San Francisco Bay based on the basin geometry and dimensions of the Bay.⁵⁴ There are no other nearby enclosed bodies of water that would subject the project site to inundation due to a seiche. Therefore, the proposed project would not result in the release of pollutants due to project inundation by seiche.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (Less Than Significant Impact)

In the Bay Area, including the project site, the Water Board is responsible for implementation the Basin Plan. The Basin Plan establishes beneficial water uses for waterways and waterbodies within the region. As previously discussed, the proposed project would comply with existing NPDES permit requirements and requirements set forth by the CDFW Lake and Streambed Alteration Agreement, CWA Section 401 Water Quality Certification, and would implement construction and operational BMPs to reduce pollutants of concern in stormwater runoff. Compliance with these regulatory requirements would ensure that the proposed project would not degrade or alter water quality, causing the receiving waters to exceed the water quality objectives, or impair the beneficial use of receiving waters. As such, the proposed project would not result in water quality impacts that would conflict with the Water Board Water Quality Control Plan Basin Plan. Construction and operational impacts related to a conflict with the Basin Plan would be less than significant.

The Sustainable Groundwater Management Act (SGMA) was enacted in September 2014. The SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft of groundwater basins. The SGMA requires the formation of local groundwater sustainability agencies in high- and medium-priority basins. These agencies are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. The project site is not within a delineated groundwater basin subject to the SGMA.⁵⁵ Additionally, the proposed project would not require the use or consumption of groundwater resources. Therefore, the proposed project would not result in impacts related to a conflict with or obstruction of a sustainable groundwater management plan.

⁵⁴ Borrero et. al., 2006. Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay. Report prepared for Marine Facilities Division of the California State Lands Commission. June 8.

⁵⁵ California Department of Water Resources. n.d. *SGMA Basin Prioritization Dashboard*. Website: <https://gis.water.ca.gov/app/bp-dashboard/final/> (accessed October 14, 2022).

4.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

a. Would the project physically divide an established community? (No Impact)

The physical division of an established community typically refers to the construction of a physical feature (such as an Interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and an outlying area.

The proposed project would construct an extension of the Bay Trail along the San Pablo Bay shoreline and UPRR right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at Pinole Shores Park. The majority of the proposed alignment is adjacent to or just outside of the gravel area next to the UPRR tracks within disturbed grassland habitat. The proposed project would not result in the removal of any means of access or the closure of any trails, nor would it result in the realignment or closure of any existing roads. The proposed project would not introduce a new physical barrier that would divide an established community or adversely affect the continuity of land uses in the vicinity. There would be no impact relating to this topic.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (Less Than Significant Impact)

As described below, the proposed project would not conflict with the following applicable land use plans and regulations that govern the site: the City of Richmond General Plan, the City of Richmond Municipal Code, the Contra Costa County General Plan, the Contra Costa County Zoning Ordinance, and the East Bay Regional Park District 2013 Master Plan (District Master Plan).

City of Richmond General Plan. The western portion of the proposed trail alignment is within Richmond and is designated as Open Space (OS) on the City of Richmond General Plan Land Use Map. This designation includes wetlands, mudflats, creek corridors and other natural preservation areas, as well as private lands used for recreational purposes or deed-restricted for open space preservation, and utilities. The proposed use consists of a recreational multi-use trail, which would be consistent with the City of Richmond General Plan land use designation for the project site.

City of Richmond Zoning. The western portion of the proposed trail alignment is within Richmond and is zoned as Planned Area (PA). The purpose of the PA district is to promote development of large areas in substantial compliance with the principles and standards of the Richmond General

Plan. As previously discussed, the project site is designated as OS on the City of Richmond General Plan Land Use Map, which allows recreational uses. The proposed use consists of a recreational multi-use trail, which would be consistent with the allowable uses for PA zoning as specified the City of Richmond Zoning Ordinance.

Contra Costa County General Plan. The eastern portion of the proposed trail alignment is within unincorporated Contra Costa County and is designated as Public and Semi-Public (PS) and Parks and Recreation (PR) on the Contra Costa County General Plan Land Use Map. The PS designation includes properties owned by public governmental agencies and public and private transportation corridors and allows a wide variety of public and private uses including recreational uses but excluding the construction of private residential or commercial uses or subdivision of land. The OS designation includes publicly-owned open space lands and allows resource management uses and low-intensity recreation. The proposed use consists of a recreational multi-use trail, which would be consistent with the Contra Costa County General Plan land use designation for the project site.

Contra Costa County Zoning. The eastern portion of the proposed trail alignment is within unincorporated Contra Costa County and is zoned as Planned Unit (P-1), Heavy Industrial (H-I), Railroad Corridor Combining District (X), and Single-Family Residential (R-6). The P-1 district is intended to allow diversification in the relationship of various uses, buildings, structures, lot sizes and open space while ensuring substantial compliance with the general plan and the intent of the county code in requiring adequate standards necessary to satisfy the requirements of the public health, safety, and general welfare. The H-I district allows heavy industrial manufacturing uses of all kinds, including, but not limited to, the manufacturing or processing of petroleum, lumber, steel, chemicals, explosive, fertilizers, gas, rubber, paper, cement, sugar, and all other industrial or manufacturing products. The R-6 district allows single-family dwellings, crop and tree farming, publicly owned parks and playgrounds, residential care facilities, family day care homes, bird enclosures, accessory dwelling units, urban farm animal raising, and urban housing developments. The proposed use consists of a recreational multiuse trail, which would be consistent with the allowable uses for P-1, H-I, X, and R-6 zoning as specified in the Contra Costa County Zoning Ordinance.

District Master Plan. The District Master Plan contains policies and goals pertaining to parks and trails within the District. This Plan establishes policies to provide a diverse system of non-motorized trails to accommodate a variety of recreational users, and to expand the District's paved multi-use regional trails connecting parklands and major population centers. Completion of the proposed project would implement both of these policies.⁵⁶

Conclusion. Generally, the proposed project is in direct support of many applicable plans and policies. These plans contain goals and policies, which support working with the District to ensure recreational opportunities by expanding District parklands. Additional relevant policies relate to the protection of natural resources, water quality, and provision of public services. Many project impacts related to these topics are less than significant or limited to the short-term construction phase of the project described in relevant sections of this IS/MND. With mitigation measures

⁵⁶ East Bay Regional Park District. 2013. *2013 Master Plan*. Website: https://www.ebparks.org/sites/default/files/master_plan_2013_final.pdf (accessed December 2, 2022).

contained in this IS/MND, the proposed project is consistent with all the relevant regulations and policies contained in these documents. Therefore, implementation of the proposed project would result in less than significant impacts related to this topic.

4.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (No Impact)

The State Mining Reclamation Act of 1975 identifies and protects California's mineral resources. Numerous State-designated mineral resources sectors are within Contra Costa County, containing regionally significant mineral resources.⁵⁷ However, none of these State-designated resources is within the project area.

The Conservation Element of the Contra Costa County General Plan includes policies for conserving and using the County's mineral resources for current and future development while ensuring that adverse environmental effects resulting from surface mining operations are minimized. The most important mineral resources that are currently mined in the County include crushed rock near Mt. Zion, on the north side of Mt. Diablo, in the Concord area; shale in the Port Costa area; and sand and sandstone deposits, mined from several locations, but focused in the Byron area of southeast County. According to Figure 8-4, *Mineral Resource Areas*, in the Contra Costa County General Plan, no mineral resources are within the project area. Therefore, the proposed 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 state.

b. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

Refer to Response 4.12.a. The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. The proposed project would have no impact related to this topic.

⁵⁷ California Department of Conservation. 1996. *Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region*. Division of Mines and Geology. Website: http://ab900balboa.com/EIR_References/1996_cdc%20dmg_OFR_96-03_Text.pdf (accessed November 20, 2022).

4.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?	☐	☐	☐	☒

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} , the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

A project would have a significant noise effect if it were to substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, Contra Costa County and the City of Richmond, as follows:

- **Contra Costa County.** Contra Costa County addresses noise in the General Plan. The General Plan contains noise policies that aim to improve the overall environment in the County by reducing annoying and physically harmful levels of noise for existing and future residents and for all land uses. The following policies from the Contra Costa County General Plan are applicable to the proposed project.
 - **Policy 11-8:** Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.
 - **Contra Costa County Ordinance Code.** Pursuant to Title 7 of the Contra Costa County Ordinance Code, grader operations are limited to weekdays between the hours of 7:30 a.m. and 5:30 p.m. This is required for all grading activities within 500 feet of residential and commercial occupancies. Exceptions are allowed through conditions of approval for a project.
 - **City of Richmond Municipal Code.** A significant impact regarding construction noise levels would occur if operations were to generate noise levels that exceed the standards contained in the Richmond Code of Ordinances. Section 9.52.110 provides noise level limits for temporary construction activity. For temporary construction noise, in residential zoning districts noise shall not exceed 75 dBA for mobile equipment and 60 dBA for stationary equipment during the weekday daytime hours of 7:00 a.m. and 10:00 p.m. and 60 dBA for mobile equipment and 55 dBA for stationary equipment on weekends (including holidays) between the hours of 9:00 a.m. and 8:00 p.m.
- a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less Than Significant with Mitigation Incorporated)*

The following section addresses the short-term construction and long-term operational noise impacts of the proposed project.

Short-Term (Construction) Noise Impacts. Project construction would result in short-term noise impacts on nearby sensitive receptors, the closest of which include the residences approximately 15 feet from the southern border of the proposed trail alignment on Cypress Avenue.

Maximum construction noise would be short-term, generally intermittent, depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the

phase of construction. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. Table 4.G lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the project is completed.

Table 4.G: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level (L_{max}) at 50 Feet ¹
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

¹ Maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel program to be consistent with the City of Boston Noise Code for the "Big Dig" project.

L_{max} = maximum instantaneous sound level

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site, which would incrementally increase noise levels on roads leading to the site. As shown in Table 4.G, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during demolition, construction, grading, and paving on the project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Once the composite reference maximum noise level is calculated for each phase, the usage factor provided in Table 4.G is used to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10 \log(U.F.) - 20 \log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period

E.L. = Noise emission level of the particular piece of equipment at a reference distance of 50 feet

U.F. = Usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time

D = Distance from the receiver to the piece of equipment

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq (composite) = 10 * \log_{10} \left(\sum_1^n 10^{\frac{Ln}{10}} \right)$$

Using the equations from the methodology above and the reference information in Tables 4.G and 4.H, the composite noise level would be 87 dBA L_{eq} at a distance of 50 feet from the construction area during the paving and paint phase. This noise level would be the same for the loudest phase at each project location. Table 4.H provides a summary of the reference noise levels during construction by phase.

The nearest sensitive receptor would be the residential uses within approximately 15 feet of the proposed trail alignment, particularly residences along Cypress Avenue. It is expected that noise levels during construction at the nearest sensitive receptors could exceed those presented in Table 4.H if equipment were to be within 50 feet of the residence and multiple pieces of equipment operated simultaneously. All other sensitive receptors are farther from areas of construction and would therefore experience lower noise levels.

Table 4.H: Noise Levels by Construction Phase

Phase	Composite Reference Level at 50 feet	
	dBA L _{max}	dBA L _{eq}
Mobilize and Prepare Wetland Fencing, and Demolition	87	83
Finish Grading and Hydroseed	86	82
Cleanup and Demobilization	86	82
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	90	86
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure Retaining Walls	88	84
Paving and Paint	90	87

Source: Compiled by LSA (2023).

dBA = A-weighted decibels

L_{eq} = equivalent continuous noise level

L_{max} = maximum instantaneous noise level

While construction-related, short-term noise levels have the potential to be higher than existing ambient noise levels in the vicinity of the proposed project, the noise impacts would no longer occur once project construction is completed. Construction-related noise impacts at the nearest sensitive receptors could exceed 75 dBA for mobile equipment and 60 dBA for stationary equipment during the weekday daytime hours of 7:00 a.m. and 10:00 p.m. and 60 dBA for mobile equipment and 55 dBA for stationary equipment on weekends (including holidays) between the hours of 9:00 a.m. and 8:00 p.m.; however, this exceedance is expected to be of short duration.

Compliance with the County's General Plan policies and the City of Richmond Municipal Code would ensure that construction noise would not disturb the sensitive receptors during hours when ambient noise levels are likely to be lower (i.e., at night). Implementation of Mitigation Measure NOI-1 would reduce noise impacts associated with project construction to a less than significant level.

Mitigation Measure NOI-1

Prior to commencement of construction activities, the East Bay Regional Park District (District) shall verify that grading and construction plans include the following requirements to ensure that the greatest distance between noise sources and sensitive receptors during construction activities has been achieved:

- Construction activities occurring as part of the project shall be subject to the limitations and requirements of the Contra Costa County Ordinance Code and City of Richmond Municipal Code.
- During all project area excavation and on-site grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

- To the best extent possible, the project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project area.
- Construction staging areas shall be located as far away from sensitive receptors as possible during all phases of construction.

Implementation of Mitigation Measure NOI-1, which would limit construction hours and require the implementation of noise-reducing measures during construction, would ensure that noise impacts associated with project construction would be reduced to less than significant.

Operation of the project would involve pedestrian and cyclist use of the trail and related amenities; neither hiking nor cycling generate substantial noise, and the closest sensitive receptors already experience noise from vehicles traveling on Cypress Avenue and other local roadways. Consequently, trail users are expected to generate an incremental increase in the noise levels adjacent to nearby residences, resulting in permanent noise level increases that are less than significant.

As described above, with the incorporation of Mitigation Measure NOI-1, the project would not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance, or any other applicable standards. Therefore, this impact would be less than significant with mitigation incorporated.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels? (Less Than Significant with Mitigation Incorporated)

Construction of the proposed project could result in the generation of ground-borne vibration. The construction vibration impact analysis assessed the potential for building damages using vibration levels in inches per second peak particle velocity (in/sec PPV). The Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual*⁵⁸ guidelines indicate that a vibration level up to 0.2 in/sec PPV is considered safe for non-engineered timber and masonry buildings.

Table 4.I shows the PPV values at 25 feet from a construction vibration source. As shown in Table 4.I, bulldozers and other heavy-tracked construction equipment (except for vibratory rollers) generate approximately 0.089 in/sec PPV of ground-borne vibration when measured at 25 feet.

⁵⁸ Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*, FTA Report No. 0123. September.

Table 4.I: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV (in/sec) at 25 feet
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Sources: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

in/sec = inches per second

PPV = peak particle velocity

Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of residential buildings in the project vicinity). The proposed project is expected to include the use of heavy equipment similar to a large bulldozer. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project disturbance areas because vibration impacts occur normally within the buildings. The formula for vibration transmission is provided below.

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$$

As identified above, sensitive receptor structures are approximately 15 feet from the proposed construction activities and would experience vibration levels approaching 0.191 in/sec PPV. Construction vibration levels at these structures could exceed the FTA threshold of 0.2 in/sec PPV for non-engineered timber and masonry building damage if heavy equipment were to operate within 15 feet of the structures. For example, vibration levels at a distance of 14 feet would be 0.212 in/sec PPV. Therefore, construction that would take place within 15 feet of existing structures would exceed the FTA vibration damage thresholds. Implementation of Mitigation Measure NOI-2 would reduce potential vibration impacts to less than significant.

Mitigation Measure NOI-2 The use of heavy construction equipment, such as large bulldozers or excavators, within 15 feet of existing structures shall be prohibited.

Implementation of Mitigation Measure NOI-2, which requires the construction contractor to maintain a minimum distance of 15 feet between the heavy construction equipment and the adjacent structures, would ensure that construction vibration levels would be below the FTA threshold of 0.2 in/sec PPV for building damage, thereby reducing potential vibration impacts to less than significant. In addition, due to the linear nature of the project, construction activities at any one receptor location would occur for a limited duration.

Construction vibration associated with the project would be less than significant with implementation of Mitigation Measure NOI-2. Therefore, construction of the proposed project

would not result in generation of excessive ground-borne vibration or ground-borne noise levels. Ground-borne vibration would not be associated with the proposed project following construction activities. This impact would be less than significant with mitigation incorporated.

- c. *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)*

The proposed project is not within 2 miles of a public or public use airport. Aircraft noise is occasionally audible at the project site; however, no portion of the project site lies within the 60 dBA CNEL noise contours of any public airport nor does any portion of the project site lie within 2 miles of any private airfield or heliport. Therefore, the proposed project would not result in the exposure of people residing or working in the project area to excessive noise levels, and there would be no impact.

4.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (No Impact)*

The proposed project is a multi-use recreational trail and would not induce substantial growth in the area either directly or indirectly. The proposed project would not provide additional vehicle access or additional major infrastructure to the project site. Additionally, the proposed project would not facilitate development of any dwelling units or employment uses. No impact related to this topic would occur as a result of implementation of the proposed project.

- b. *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)*

No housing currently exists within the proposed trail alignment, and no residential property would be acquired for the implementation of the proposed project. No existing housing would be removed or displaced as a result of the project, and construction of replacement housing would not be required. No impact related to housing would occur.

4.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☐	☒

- a. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

i. *Fire protection? (Less Than Significant Impact)*

Fire protection services are provided to the project site by the Richmond Fire Department and Contra Costa County Fire Protection District. Additionally, the District Public Safety Division provides fire and police services for its parks and trails (see discussion below). The closest fire station to the project site is Richmond Fire Department Station 68, located at 2904 Hilltop Drive in Richmond, approximately 1.5 miles south of the project site. The proposed project would construct an extension of the Bay Trail along the San Pablo Bay shoreline and Union Pacific Railroad right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at Pinole Shores Park. The proposed project would not result in a substantial increase in usage of the Bay Trail or other nearby trails and would not include housing units or other structures. Therefore, the demand for fire protection services would not substantially increase with development of the proposed project. In addition, the new trail would be clearly marked to aid in access and timely response for medical emergencies. Therefore, the proposed project would result in a less than significant impact on fire services in the area and would not result in the need for additional or altered fire protection services.

ii. *Police protection? (Less Than Significant Impact)*

The Richmond Police Department provides law enforcement and police protection services throughout Richmond, while the Contra Costa County Office of the Sheriff provides law enforcement for the unincorporated County. Additionally, the District Public Safety Division provides fire and

police services for its parks and trails. During the peak summer season, the Public Safety Division is staffed with approximately 500 personnel including 40 industrial firefighters, 71 sworn police officers providing law enforcement through policing contracts, and approximately 200 members in the Volunteer Trail Safety Patrol. Emergency services including fire suppression, search and rescue, and pre-hospital emergency medical care are provided by the District's Fire Department. The District's Police Department headquarters are in Lake Chabot in Castro Valley, and law enforcement services are provided 24 hours per day. Public use of the proposed 1-mile section of the Bay Trail is not expected to generate a significant increase in calls for police services and would not generate the need for additional officers or equipment. Therefore, the proposed project would result in a less than significant impact on police services in the area and would not result in the need for additional or altered police protection facilities.

iii. Schools? (No Impact)

The project site and surrounding areas are served by the West Contra Costa Unified School District. The proposed project would not include the construction of housing or employment-generating facilities. Therefore, it would not increase demand for school services, and the proposed project would have no impact on schools.

iv. Parks? (Less Than Significant Impact)

The proposed project would construct an extension of the Bay Trail along the San Pablo Bay shoreline and Union Pacific Railroad right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at Pinole Shores Park. The proposed project could result in a minor increase in the usage of this portion of the Bay Trail or other nearby trails but not to a magnitude that would require the construction of new facilities. Please refer to Section 4.16, Recreation, for a description of the proposed project's impact on surrounding parks and open space areas. This impact would be less than significant.

v. Other public facilities? (No Impact)

Other public facilities would include facilities such as libraries, post offices, meeting rooms, or hospitals. The proposed project would not result in an increase in population or facilities that would require other public facilities or result in the need for physically altered facilities. Therefore, the proposed project would have no impact on other public facilities.

4.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (Less Than Significant Impact)

The Bay Trail is a planned and partially completed 500-mile multi-use trail connecting the shorelines of all nine San Francisco Bay Area counties and encircling San Pablo and San Francisco bays. More than 350 miles of the trail are currently completed and open for public use. The project proposes to open approximately 1 mile of the Bay Trail along the San Pablo Bay shoreline and UPRR right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at Pinole Shores Park. The Point Pinole Regional Shoreline is a 2,432-acre parkland that includes paved and unpaved multi-use trails, open space, playgrounds, picnic areas, campsites, fishing areas, and a volleyball area.⁵⁹ Pinole Shores Park includes a connection to the multi-use San Pablo Bay Trail, which will eventually connect Richmond, San Pablo, Pinole, Hercules, and Rodeo, totaling a distance of 10 miles.⁶⁰

The proposed trail would be managed by the East Bay Regional Park District, a special district operating a system of parks in Alameda and Contra Costa Counties in the East Bay area of the San Francisco Bay Area. The District manages 73 parks spanning across 125,000 acres with 1,330 miles of trail and 55 miles of shoreline.⁶¹

The proposed project is a recreational trail alignment that is partially developed but has many incomplete segments. Completion of the project would provide an additional segment of the Bay Trail. Due to the size of the Point Pinole Regional Shoreline, the length of the Bay Trail and San Pablo Bay Trail, linkages to other trails, the proximity of other open space area, and the daily hours of operation, it is likely that the arrival of visitors would be dispersed over time on any given day, and the visitors themselves would be dispersed throughout the project area and adjacent areas. In addition, the proposed project would increase pedestrian connectivity and could result in a minor

⁵⁹ East Bay Regional Park District, 2022a. *Point Pinole Regional Shoreline*. Website: <https://www.ebparks.org/parks/point-pinole> (accessed November 20, 2022).

⁶⁰ East Bay Regional Park District, 2022b. *San Pablo Bay Regional Shoreline Trail*. Website: <https://www.ebparks.org/trails/interpark/san-pablo-bay> (accessed November 20, 2022).

⁶¹ East Bay Regional Park District, 2022c. *About Us*. Website: <https://www.ebparks.org/about-us> (accessed November 20, 2022).

increase in the use of this portion of the Bay Trail, other nearby trails, the adjacent baseball field, and the Montara Bay Community Center. However, this increase would not be substantial enough to cause or accelerate the physical deterioration of these facilities. This impact would be less than significant.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (Less Than Significant Impact)

The proposed project would construct an extension of the existing Bay Trail, which is a recreational facility. Potential impacts associated with the implementation of the proposed project are discussed throughout this IS/MND. As noted in Sections 4.14 and 4.15, the proposed project would not substantially increase the use of local facilities or require the construction of new, or the expansion of existing, recreational facilities, and this impact would be less than significant.

4.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☒	☐

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No Impact)

The proposed project would include the construction of approximately 1 mile of the Bay Trail along the San Pablo Bay shoreline and UPRR right-of-way between the eastern boundary of Point Pinole Regional Shoreline to Wilson Point at Pinole Shores Park. The proposed project would include a pedestrian bridge over Garrity Creek and concrete boardwalks over wetland areas and along a bluff area. The Point Pinole Regional Park would be the primary staging area and access point for the proposed trail segment. The proposed project would not include the construction of a new staging or parking areas or any new vehicular roadways.

The project would be consistent with the East Bay Regional Park District's Master Plan, the Contra Costa County General Plan, and the Countywide Bike Master Plan policies that promote alternative transportation modes. Therefore, the proposed project would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, and there would be no impact.

b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)? (Less Than Significant Impact)

On September 27, 2013, Senate Bill (SB) 743 was signed into law which started a process that changed the way transportation impact analysis is conducted as part of CEQA compliance. These changes include elimination of automobile delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA. According to SB 743, these changes are intended to "more appropriately balance the needs of congestion management with Statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

In December 2018, the California Governor's Office of Planning and Research (OPR) completed an update to the CEQA Guidelines to implement the requirements of SB 743. The *State CEQA*

Guidelines state that vehicle miles traveled (VMT) must be the metric used to determine significant transportation impacts. The *State CEQA Guidelines* require all Lead Agencies in California to use VMT-based thresholds of significance in CEQA documents published after July 1, 2020. *State CEQA Guidelines* Section 15064.3, subdivision (b), states that “Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact.”

The Contra Costa County Transportation Analysis Guidelines provide screening criteria to determine if a proposed project should be expected to prepare a detailed VMT analysis.⁶² The guidelines include a list of types of projects that would be expected to cause a less than significant impact under CEQA and would not require further VMT analysis absent substantial evidence indicating that a project would generate a potentially significant level of VMT. Among the examples provided is the following:

- Public facilities (e.g., emergency services, passive parks (low-intensity recreation, open space), libraries, community centers, public utilities) and government buildings.

The proposed project consists of a low-intensity multi-use trail and therefore is consistent with the category identified above. Therefore, consistent with the County’s Guidelines, the proposed project would not result in a substantial or measurable increase in VMT, and the transportation impact for the purposes of CEQA would be less than significant.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The proposed project involves the construction of a multi-use paved trail. The proposed project would not include the construction of a new staging or parking areas or any new vehicular roadways and would not change the existing roadway design. During construction, construction vehicles would be staged within the off-roadway construction site. Additional heavy vehicles may travel along major arterials during construction. Any lane closures or traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual,⁶³ but no lane closures are anticipated for project construction. Implementing measures contained within the California Joint Utility Traffic Control Manual would facilitate safe passage of both construction vehicles and private vehicles. As a result, the proposed project would not substantially increase hazards for vehicles due to a design feature or incompatible uses.

⁶² Contra Costa County Conservation and Development Department and Public Works Department. 2020. *Contra Costa County Transportation Analysis Guidelines*. Adopted June 23. Website: <https://www.contra costa.ca.gov/DocumentCenter/View/70739/FINAL-CCC-Transportation-Analysis-Guidelines-v3-5-10-21?bidId=> (accessed December 5, 2022).

⁶³ California Inter-Utility Coordinating Committee. 2010. *California Joint Utility Traffic Control Manual*. April.

d. Would the project result in inadequate emergency access? (Less Than Significant Impact)

The proposed trail would be designed in accordance with the District's standard for multi-use trails and would provide maintenance and emergency access. Additionally, emergency access would still be possible along all nearby roadways during and after construction of the proposed project. Additional traffic due to the operations or construction of the project is not expected to significantly impact any of the surrounding roadways or intersections. Therefore, the proposed project would not result in inadequate emergency access.

4.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☐	☒	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or (Less Than Significant with Mitigation Incorporated)*

AB 52, which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA environmental review process and equates significant impacts to “tribal cultural resources” with significant environmental impacts. PRC Section 21074 states that “tribal cultural resources” are:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:
 - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
 - Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.

- 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

A “historical resource” (PRC Section 21084.1), a “unique archaeological resource” (PRC Section 21083.2(g)), or a “nonunique archaeological resource” (PRC Section 21083.2 (h)) may also be a tribal cultural resource if it is included or determined to be eligible for inclusion in the California Register.

The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency’s notification list for CEQA projects. Within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project, should a tribe have previously requested to be on the agency’s notification list. California Native American tribes must be recognized by the California Native American Heritage Commission as traditionally and culturally affiliated with the project site and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. If a project is determined to result in a significant impact on an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration or Mitigated Negative Declaration, or certification of an Environmental Impact Report (PRC Sections 21080.3.1, 21080.3.2, and 21082.3).

The Native American Heritage Commission (NAHC) was contacted on September 15, 2021, for a search of its Sacred Lands File (SLF). Ms. Katy Sanchez, NAHC Associate Environmental Planner, responded to the SLF search request on September 15, 2021, stating that the results were positive and to contact the tribes on the list provided. In December 2023, the Park District requested an updated Native American list for Contra Costa County.

On March 12, 2024, the Park District transmitted letters (via certified mail and electronic mail) to the individuals on the Native American list for Contra Costa County regarding the proposed project, requesting a response to consult pursuant to AB 52 within 30 days. For the tribes that had not responded by March 27, 2024, Park District cultural resources staff placed follow-up phone calls.

Three tribes requested consultation under AB 52: the Ohlone Indian Tribe, the Confederated Villages of Lisjan Nation, and the Indian Canyon Mutsun Band of Costanoan. Table 4.J summarizes correspondence efforts and AB 52 consultation efforts. The outcomes of the AB 52 consultation with the Ohlone Indian Tribe, the Confederated Villages of Lisjan Nation, and the Indian Canyon Mutsun Band of Costanoan resulted in Mitigation Measures TCR-1 through TCR-4. All NAHC correspondence and consultation notes/records are on file with the Park District.

Table 4.J: Summary of AB 52 Consultation

Tribal Contact	Tribe	Response(s)
Irene Zwierlein, Chairperson	Amah Mutsun Tribal Band of Mission San Juan Bautista	The tribe replied on Tuesday March 19, 2024, via email with an attachment for their tribal monitoring rates. They did not request formal AB 52 consultation for this project. The Park District responded on the same day, thanking and confirming receipt of their email and response.
Corrina Gould, Chairperson	Confederated Villages of Lisjan Nation	The tribe responded on April 13, 2024, via email, requesting additional information for the project. The Park District provided the information on March 28, 2024. After receipt of the information, the tribe requested AB 52 consultation on March 28, 2024. The Park District cultural resources staff met with the Chairperson and tribal representatives for the Confederated Villages of Lisjan Nation on May 1, 2024, and May 15, 2024. The tribe requested that the Park District provide the 65 percent drawings once they become available. The results of this consultation are reflected in the Tribal Cultural Resources Mitigation Measures TCR-1, TCR-3, and TCR-4.
Deja Gould, Language Program Manager	Confederated Villages of Lisjan Nation	See response for Chairperson Corrina Gould.
Cheyenne Gould, Tribal Cultural Resource Manager	Confederated Villages of Lisjan Nation	See response for Chairperson Corrina Gould.
Bunny Tarin, Tribal Administrator	Guidiville Rancheria of California	The Tribal Administrator indicated they would speak with Mr. Derry regarding this project, and he would respond to the Park District if they wished to consult.
Michael Derry, Historian	Guidiville Rancheria of California	Park District cultural resources staff called Mr. Derry on Wednesday, March 27, 2024, and re-sent via email the initial letter for the tribe's review. Mr. Derry said that he would review the letter on behalf of the tribe and would follow up with the Park District. Mr. Derry did not follow up with the Park District.
Ann Marie Sayers, Chairperson	Indian Canyon Mutsun Band of Costanoan	Park District cultural resources staff spoke with Chairperson Sayers on March 27, 2024. The chairperson did not request consultation but recommended that there be a Native American monitor on site when there is earth movement.
Kanyon Sayers-Roods, MLD Contact	Indian Canyon Mutsun Band of Costanoan	Ms. Sayers-Roods responded via email on March 27, 2024, indicated she would like to consult. Park District cultural resources staff responded on March 28, 2024, and requested the days/times Ms. Sayers-Roods would be available for consultation. Park District cultural resources staff and Ms. Sayers-Roods consulted via a virtual event platform on April 10 and May 1, 2024. The results of this consultation are reflected in the Tribal Cultural Resources Mitigation Measures TCR-1 through TCR-4.
Monica Arellano, Vice Chairwoman	Muwekma Ohlone Indian Tribe of the San Francisco Bay Area	Park District cultural resources staff called Ms. Arellano on March 27, 2024, and left a message.
Andrew Galvan, Chairperson	The Ohlone Indian Tribe	Mr. Galvan responded on March 12, 2024, requesting consultation. The Park District's Cultural Services Coordinator met virtually with Mr. Galvan on March 15, 2024, for consultation. The results of this consultation are reflected in the Tribal Cultural Resources Mitigation Measures TCR-2, TCR-3, and TCR-4.
Desiree Vigil, THPO	The Ohlone Indian Tribe	See notes for Chairperson Andrew Galvan.

Table 4.J: Summary of AB 52 Consultation

Tribal Contact	Tribe	Response(s)
Vincent Medina, Cultural Leader	The Ohlone Indian Tribe	See notes for Chairperson Andrew Galvan.
Kenneth Woodrow, Chairperson	Wuksachi Indian Tribe/ Eshom Valley Band	Park District cultural resources staff called Mr. Woodrow on March 27, 2024. The phone rang with no answer.

Source: East Bay Regional Park District (2024).

AB = Assembly Bill

MLD = Most Likely Descendant

THPO = Tribal Historic Preservation Officer

As discussed in Section 4.5, Cultural Resources, the NWIC records search and the archaeological survey completed for the project did not identify evidence of any known significant archaeological or tribal cultural resources within the project site that are listed or eligible for listing in the California Register or in a local register of historical resources as defined in PRC Section 5020.1(k).

As part of the consultation, tribal representatives did not provide evidence of any known tribal cultural resources occurring on the project site. However, the results of the cultural resources assessment indicate that the project site should be considered sensitive for Native American resources. Therefore, there is a possibility that the proposed project could impact as-yet-unrecorded subsurface resources on the project site that could be eligible for listing in the California Register or in a local register of historical resources as defined in PRC Section 5020.1(k).

Implementation of Mitigation Measures TCR-1 through TCR-4 would satisfy the agreement between the Park District and tribal representatives under AB 52 and reduce potential impacts from the proposed project to a less than significant level.

Mitigation Measure TCR-1 **Habitat Mitigation Measure Plan.** To avoid impacts to culturally important plants/animal habitat, the Confederated Villages of Lisjan Nation shall be provided with and requested to review and provide comment for the Habitat Mitigation Measure Plan for this project.

Mitigation Measure TCR-2 **Archaeological Testing.** Prior to project implementation, the Park District or its Sphere of Influence (SOI)-qualified consultant shall develop an archaeological testing plan, in consultation with an East Bay Ohlone tribe, for the areas that were identified as highly sensitive. The archaeological testing plan shall include research questions and data needs, testing/sampling methods, testing locations, archaeological deposits evaluation, and significance thresholds. The testing plan shall include alternatives if a resource is identified at the bridge crossing. The Park District and its contractors shall implement the recommendations of the testing plan. A tribal monitor shall be present during the implementation of the archaeological testing plan. Following completion of archaeological testing, a report shall be prepared documenting the

methods, findings, and recommendations. The report shall be submitted to the District for review and to the Northwest Information Center (NWIC) once finalized.

Mitigation Measure TCR-3

Tribal Monitoring. Prior to project implementation, the Park District and/or its consultant shall develop an Archaeological Monitoring Plan (AMP) in consultation with an East Bay Ohlone tribe. The AMP shall include an archaeological/tribal cultural resources sensitivity analysis to identify areas of heightened archaeological/tribal cultural resource potential; construction worker training and archaeological/tribal monitoring protocols; archaeological/tribal cultural resource deposits evaluation and significance thresholds; and provisions for mitigation planning (e.g., data recovery protocol), curation, and tribal coordination. A tribal monitor shall be present during project implementation in the event that any previously unidentified Tribal Cultural Resources are identified. Upon completion of the monitoring, a report shall be prepared documenting the methods, findings, and recommendations. The report shall be submitted to the Park District and to the NWIC. The Park District and its contractor shall implement recommendations in the AMP.

Mitigation Measure TCR-4

Education Materials. Educational materials, either in the form of panels, signage, or pamphlets shall be developed in consultation with one, or more, East Bay Ohlone tribe. The educational material shall specify that it was developed in consultation with the tribe(s). This educational material would highlight and/or identify culturally important plants, animals, habitat, and/or topographic landscape features important to the tribe(s).

In the event that previously unidentified archaeological resources are discovered by the tribal monitor, implementation of Mitigation Measure TCR-2 and Mitigation Measure CULT-1, as detailed in Section 4.5, Cultural Resources, and compliance with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98 would reduce the potential construction-period discovery of previously unidentified subsurface deposits and human remains that may be of tribal origin to a less than significant level. With implementation of Mitigation Measures CULT-1, and TCR-1 through TCR-4, impacts to tribal cultural resources would be less than significant with mitigation incorporated.

- ii. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (Less Than Significant with Mitigation Incorporated)*

Please refer to Response 4.18.a.i. There is a possibility that the proposed project could impact as-yet-unrecorded subsurface resources on the project site that could be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. Implementation of Mitigation Measures TCR-1

through TCR-4 and Mitigation Measure CULT-1, as detailed in Section 4.5, Cultural Resources, and compliance with Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98 would reduce the potential construction-period discovery of previously unidentified subsurface deposits and human remains that may be of tribal origin to a less than significant level. With implementation of Mitigation Measures CULT-1, and TCR-1 through TCR-4, impacts to tribal cultural resources would be less than significant with mitigation incorporated.

4.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less Than Significant Impact)*

The proposed project is a multi-use recreational trail for use by cyclists and pedestrians. The proposed project would not include the construction of any new buildings and therefore would not require any new utility lines or connections. The UPRR right-of-way in the project area contains many underground utilities. Identified utilities in the project area include a portion of an abandoned fuel transmission pipeline, a Kinder-Morgan petrochemical line, an MCI and Qwest telephone line, and a West County Wastewater District sewer line. Because of the numerous utilities, the trail would be designed to overlie the majority of them but would still allow for continued easy access and trail restoration following utility maintenance and repair. No utility relocations are anticipated; however, removal of a portion of the abandoned fuel transmission pipeline would be required. Removal of a portion of the abandoned fuel transmission pipeline would be completed in accordance with all County standards and requirements and its removal/relocation would not cause significant environmental effects. Therefore, impacts related to existing utility infrastructure would be less than significant.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (Less Than Significant Impact)

Construction of the proposed project would temporarily require small amounts of water for cleanup activities. During trail construction, water would be provided via a water truck. Use of water would cease when construction is complete. Sufficient water supplies are available to provide for the project's minimal water needs during the construction phase of the project. Water would not be required for long-term operation of the project, as no potable or non-potable water facilities are proposed. The proposed project would not include any new structures or facilities that would generate water demand, and there would be no impact to existing or future water supplies.

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact)

As noted above, the proposed project would not include the construction of any new facilities that would generate demand for wastewater services. Therefore, there would be no impact to wastewater treatment services.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (Less Than Significant Impact)

Construction of the proposed project could generate a small amount of solid waste. The majority of the construction waste would be organic materials such as cleared vegetation and dirt, as well as waste generated by construction workers. The generation of such solid waste would be temporary, and non-hazardous waste would be hauled to the Golden Bear Transfer Station in Richmond before it is disposed in the Potrero Hills Landfill in Solano County. The Potrero Hills Landfill has a maximum daily permitted throughput of 4,330 tons and an anticipated closure date of February 14, 2048.⁶⁴ This facility has the capacity to handle the small amount of waste that would be generated by construction of the proposed project.

Operation of the proposed project would not generate solid waste. The amount of construction waste would not be substantial and would not result in substantial reduction in the capacity of the landfill. Therefore, the proposed project would not affect landfill capacity and would comply with all statutes and regulations related to solid waste, and this impact would be less than significant.

⁶⁴ California Department of Resources Recycling and Recovery (CalRecycle). 2019. *SWIS Facility/Site Activity Details, Potrero Hills Landfill (48-AA-0075)*. Website: <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1194?siteID=3591> (accessed December 2, 2022).

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Less Than Significant Impact)

The proposed project would be required to comply with all federal, State, and local solid waste statutes and/or regulations related to solid waste and as noted above, the Potrero Hills Landfill has adequate capacity to serve the proposed project. Therefore, the proposed project would result in a less than significant impact related to solid waste regulations.

4.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? (Less Than Significant Impact)

The project site is in a Local Responsibility Area and has not been designated a High or Very High Fire Hazard Severity Zone (VHFHSZ).^{65,66} The project site is 1.75 miles northwest the nearest VHFHSZ. As noted in Section 4.9, Hazards and Hazardous Materials, due to the nature of the proposed project, no impairment or interference with emergency response or emergency evacuation plans would occur (see Response 4.9.f). Therefore, this impact would be less than significant.

b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (Less Than Significant Impact)

The proposed project would consist of construction of a multi-use trail that would primarily be within and adjacent to UPRR right-of-way. As previously discussed, the proposed project does not involve construction of residential or commercial structures or any other structures for human occupation and people would use the trail for a limited duration of time. Construction of the trail would follow the District's best management practices to minimize fire danger in fire-prone wildlands (e.g., prohibiting work on red flag days, warning the public of fire danger on high fire days,

⁶⁵ CAL FIRE. *Fire Hazard Severity Zone Viewer*. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed November 20, 2022).

⁶⁶ Contra Costa County. 2005c. *Contra Costa County General Plan, Safety Element*. January 18.

establishing pump truck requirements). Therefore, the proposed project would not exacerbate wildfire risks, and this impact would be less than significant.

- c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (Less Than Significant Impact)*

As noted above, the proposed project would include construction of a multi-use trail, consisting of a 10-foot-wide trail with asphalt concrete surfacing and 2-foot-wide unpaved shoulders. The proposed project would not include any buildings and therefore would not require fuel breaks, emergency water sources, power lines, or other utilities to be installed that may exacerbate fire risk or result in impacts to the environment. Therefore, this impact would be less than significant.

- d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

As noted in Section 4.10, Hydrology and Water Quality, all trail runoff would be locally dispersed to minimize the rate or amount of runoff associated with construction and operation of the proposed trail. As required by Mitigation Measure HYD-1, additional hydraulic modeling would be integrated with the final design for the pedestrian bridge over Garrity Creek to ensure that impacts associated with flood flows would be less than significant. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability or drainage changes. This impact would be less than significant.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

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

Implementation of the mitigation measures recommended in this IS/MND would ensure that the construction and operation of the proposed project would not substantially degrade the quality of the environment; reduce the habitat, population, or range of a plant or animal species; or eliminate important examples of California history or prehistory. Section 4.4, Biological Resources, includes mitigation measures to minimize impacts to special-status species, sensitive natural communities and jurisdictional waters. Mitigation is provided in Section 4.5, Cultural Resources, in the event that unanticipated archaeological resources are identified in the project area during construction. With implementation of these mitigation measures, the proposed project would result in less than significant impacts to the quality of the environment.

- b. *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? (Less Than Significant with Mitigation Incorporated)*

The *State CEQA Guidelines* require a discussion of significant environmental impacts that would result from project-related actions in combination with "closely related past, present, and probably

future projects: located in the immediate vicinity” (*State CEQA Guidelines* Section 15130[b][1][A]). Cumulative environmental impacts are those impacts that, by themselves, are not significant, but when considered with impacts occurring from other projects in the vicinity would result in a cumulative impact. Related projects considered to have the potential of creating cumulative impacts in association with the proposed project consist of projects that are reasonably foreseeable and that would be constructed or operated during the life of the proposed project.

The proposed project’s impacts would be individually limited and not cumulatively considerable. The potentially significant impacts that can be reduced to a less than significant level with implementation of recommended mitigation measures include the topics of air quality, biological resources, cultural resources, geology and soils, hazardous materials, hydrology and water quality, and noise. These impacts would primarily be related to construction-period activities, would be temporary in nature, and would not substantially contribute to any potential cumulative impacts associated with these topics. For the topic of air quality, potentially significant impacts to air quality standards associated with project construction would be reduced to less than significant levels with implementation of Mitigation Measure AIR-1. For the topic of biological resources, implementation of Mitigation Measures BIO-1 through BIO-11 would ensure that impacts to special-status species, including California red-legged frog, Western pond turtle, burrowing owl, San Francisco dusky-footed woodrat, salt marsh harvest mouse, salt marsh wandering shrew, nesting birds and roosting bats, are reduced to a less than significant level. Implementation of Mitigation Measures BIO-12 through BIO-14 would ensure that impacts to sensitive natural communities, including riparian and arroyo willow thickets and ryegrass, and jurisdictional waters are reduced to a less than significant level. For the topic of cultural resources, potentially significant impacts to archaeological and cultural resources would be reduced to less than significant levels with implementation of Mitigation Measure CULT-1. For the topic of geology and soils, implementation of Mitigation Measures GEO-1 and GEO-2 would ensure that impacts related to seismic activity and paleontological resources are reduced to less than significant levels. For the topic of hazards and hazardous materials, implementation of Mitigation Measure HAZ-1 would ensure that impacts associated with handling of contaminated soil or other hazardous materials as part of project construction are reduced to less than significant. For the topic of hydrology and water quality, Mitigation Measure HYD-1 would ensure that potential impacts related to flooding associated with the proposed bridge would be less than significant. For the topic of construction noise, implementation of Mitigation Measure NOI-1 would ensure that sensitive noise receptors are not impacted during project construction activities.

For the topics of aesthetics, agricultural and forestry resources, energy, GHG emissions, land use and planning, mineral resources, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire, the project would have no impacts or less than significant impacts and, therefore, would not substantially contribute to any potential cumulative impacts for these topics. All environmental impacts that could occur as a result of the proposed project would be reduced to a less than significant level through the implementation of the mitigation measures recommended in this document.

Implementation of these measures would ensure that the impacts of the project would be below established thresholds of significance and that these impacts would not combine with the impacts of

other cumulative projects to result in a cumulatively considerable impact on the environment as a result of project development. Therefore, this impact would be less than significant with mitigation incorporated.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (No Impact)

The proposed project would not result in environmental effects that would cause substantial direct or indirect adverse effects to human beings. No impacts would occur.

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APPENDIX A

CALEEMOD OUTPUTS



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San Francisco Bay Trail Point Pinole to Wilson Point Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	San Francisco Bay Trail Point Pinole to Wilson Point
Construction Start Date	4/7/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	18.0
Location	38.00070485378984, -122.33347316275933
County	Contra Costa
City	Richmond
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1584
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	—
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	1.00	Mile	3.55	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.81	24.8	18.9	0.03	0.80	33.6	34.4	0.73	3.38	4.11	—	3,710	3,710	0.16	0.09	3,741
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.12	30.8	24.9	0.04	1.13	33.6	34.4	1.05	3.38	4.11	—	4,290	4,290	0.18	0.09	4,319
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.40	12.4	9.40	0.02	0.40	14.5	14.9	0.36	1.59	1.96	—	1,847	1,847	0.08	0.04	1,863
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	2.26	1.72	< 0.005	0.07	2.65	2.72	0.07	0.29	0.36	—	306	306	0.01	0.01	308

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	0.81	24.8	18.9	0.03	0.80	33.6	34.4	0.73	3.38	4.11	—	3,710	3,710	0.16	0.09	3,741
2026	0.35	12.7	9.10	0.02	0.34	21.2	21.5	0.31	3.18	3.49	—	1,918	1,918	0.09	0.05	1,935
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.80	24.8	18.8	0.03	0.80	33.6	34.4	0.73	3.38	4.11	—	3,695	3,695	0.16	0.09	3,725
2026	1.12	30.8	24.9	0.04	1.13	33.6	34.4	1.05	3.38	4.11	—	4,290	4,290	0.18	0.08	4,319
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.40	12.4	9.40	0.02	0.40	14.5	14.9	0.36	1.59	1.96	—	1,847	1,847	0.08	0.04	1,863
2026	0.13	3.97	3.05	0.01	0.13	4.83	4.97	0.12	0.54	0.67	—	582	582	0.03	0.01	587
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.07	2.26	1.72	< 0.005	0.07	2.65	2.72	0.07	0.29	0.36	—	306	306	0.01	0.01	308
2026	0.02	0.73	0.56	< 0.005	0.02	0.88	0.91	0.02	0.10	0.12	—	96.4	96.4	< 0.005	< 0.005	97.1

3. Construction Emissions Details

3.1. Mobilize and Prepare, Wetland Fencing, and Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	13.5	9.75	0.02	0.40	—	0.40	0.37	—	0.37	—	1,810	1,810	0.07	0.01	1,816
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—

Onsite truck	0.01	0.26	0.13	< 0.005	< 0.005	18.6	18.6	< 0.005	1.85	1.86	—	183	183	0.02	0.03	192
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.56	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	74.4	74.4	< 0.005	< 0.005	74.6
Dust From Material Movement	—	—	—	—	—	0.11	0.11	—	0.05	0.05	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	0.01	< 0.005	< 0.005	0.73	0.73	< 0.005	0.07	0.07	—	7.52	7.52	< 0.005	< 0.005	7.90
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.10	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3	12.3	< 0.005	< 0.005	12.4
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	1.25	1.25	< 0.005	< 0.005	1.31
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.31	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	66.1	66.1	< 0.005	< 0.005	67.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.51	2.51	< 0.005	< 0.005	2.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.42	0.42	< 0.005	< 0.005	0.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.3. Finish Grading and Hydroseed (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	12.4	8.76	0.02	0.34	—	0.34	0.31	—	0.31	—	1,669	1,669	0.07	0.01	1,675
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—
Onsite truck	< 0.005	0.15	0.08	< 0.005	< 0.005	11.1	11.1	< 0.005	1.11	1.11	—	108	108	0.01	0.02	113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	12.4	8.76	0.02	0.34	—	0.34	0.31	—	0.31	—	1,669	1,669	0.07	0.01	1,675
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—
Onsite truck	< 0.005	0.16	0.08	< 0.005	< 0.005	11.1	11.1	< 0.005	1.11	1.11	—	108	108	0.01	0.02	113

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.34	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	45.9
Dust From Material Movement	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	2.95	2.95	< 0.005	< 0.005	3.10
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	7.60
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.49	0.49	< 0.005	< 0.005	0.51
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.2	43.2	< 0.005	< 0.005	43.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	39.5	39.5	< 0.005	< 0.005	40.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	1.11

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.5. Cleanup and Demobilization (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	12.4	8.76	0.02	0.34	—	0.34	0.31	—	0.31	—	1,669	1,669	0.07	0.01	1,675
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—
Onsite truck	0.01	0.25	0.13	< 0.005	< 0.005	18.6	18.6	< 0.005	1.85	1.86	—	179	179	0.02	0.03	189
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.34	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	45.9
Dust From Material Movement	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.48	0.48	< 0.005	0.05	0.05	—	4.92	4.92	< 0.005	< 0.005	5.17
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	7.60
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	0.81	0.81	< 0.005	< 0.005	0.86
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.2	43.2	< 0.005	< 0.005	43.9
Vendor	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.5	26.5	< 0.005	< 0.005	27.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	1.11
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	0.76
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	0.18
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	0.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.7. Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	21.3	16.4	0.03	0.70	—	0.70	0.64	—	0.64	—	2,765	2,765	0.11	0.02	2,774
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.05	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	73.2	73.2	0.01	0.01	77.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	1.75	1.35	< 0.005	0.06	—	0.06	0.05	—	0.05	—	227	227	0.01	< 0.005	228
Dust From Material Movement	—	—	—	—	—	0.23	0.23	—	0.11	0.11	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.58	0.58	< 0.005	0.06	0.06	—	6.02	6.02	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.32	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.6	37.6	< 0.005	< 0.005	37.8
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.00	1.00	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.63	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	132	132	< 0.005	< 0.005	134
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.0	27.0	< 0.005	< 0.005	28.2
Hauling	0.01	0.42	0.20	< 0.005	0.01	0.09	0.09	< 0.005	0.02	0.03	—	329	329	0.03	0.05	346
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.0	10.0	< 0.005	< 0.005	10.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	2.32
Hauling	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.66	1.66	< 0.005	< 0.005	1.69
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	0.38
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.48	4.48	< 0.005	< 0.005	4.70

3.9. Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	24.2	17.8	0.03	0.79	—	0.79	0.73	—	0.73	—	3,204	3,204	0.13	0.03	3,215

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	0.01	0.47	0.24	< 0.005	0.01	33.4	33.4	< 0.005	3.34	3.34	—	329	329	0.03	0.05	346
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	24.2	17.8	0.03	0.79	—	0.79	0.73	—	0.73	—	3,204	3,204	0.13	0.03	3,215
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	0.01	0.50	0.25	< 0.005	0.01	33.4	33.4	< 0.005	3.34	3.34	—	330	330	0.03	0.05	346
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	9.77	7.19	0.01	0.32	—	0.32	0.29	—	0.29	—	1,292	1,292	0.05	0.01	1,296
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	< 0.005	0.20	0.10	< 0.005	< 0.005	12.8	12.8	< 0.005	1.28	1.28	—	133	133	0.01	0.02	140
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.78	1.31	< 0.005	0.06	—	0.06	0.05	—	0.05	—	214	214	0.01	< 0.005	215
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	< 0.005	0.04	0.02	< 0.005	< 0.005	2.34	2.34	< 0.005	0.23	0.23	—	22.0	22.0	< 0.005	< 0.005	23.1
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.84	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	176	176	< 0.005	0.01	179
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.71	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	161	161	< 0.005	0.01	163
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	65.7	65.7	< 0.005	< 0.005	66.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	11.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.11. Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	24.2	17.8	0.03	0.79	—	0.79	0.73	—	0.73	—	3,205	3,205	0.13	0.03	3,216
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	0.01	0.48	0.24	< 0.005	0.01	33.4	33.4	< 0.005	3.34	3.34	—	323	323	0.03	0.05	340
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.75	1.29	< 0.005	0.06	—	0.06	0.05	—	0.05	—	232	232	0.01	< 0.005	233
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	< 0.005	0.03	0.02	< 0.005	< 0.005	2.30	2.30	< 0.005	0.23	0.23	—	23.4	23.4	< 0.005	< 0.005	24.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.32	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.4	38.4	< 0.005	< 0.005	38.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.42	0.42	< 0.005	0.04	0.04	—	3.87	3.87	< 0.005	< 0.005	4.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	158	158	< 0.005	0.01	160

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	11.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.92	1.92	< 0.005	< 0.005	1.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.13. Pavement and Paint (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	30.3	23.8	0.04	1.13	—	1.13	1.05	—	1.05	—	3,821	3,821	0.16	0.03	3,834
Onsite truck	0.01	0.37	0.19	< 0.005	< 0.005	26.0	26.0	< 0.005	2.60	2.60	—	251	251	0.02	0.04	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	1.25	0.98	< 0.005	0.05	—	0.05	0.04	—	0.04	—	157	157	0.01	< 0.005	158

Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	1.02	1.02	< 0.005	0.10	0.10	—	10.3	10.3	< 0.005	< 0.005	10.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.23	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.0	26.0	< 0.005	< 0.005	26.1
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	1.71	1.71	< 0.005	< 0.005	1.80
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.91	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	217	217	0.01	0.01	221
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.04	9.04	< 0.005	< 0.005	9.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.50	1.50	< 0.005	< 0.005	1.52
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.15. Permanent Fencing (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
----------	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	------

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	5.21	4.06	0.01	0.21	—	0.21	0.20	—	0.20	—	685	685	0.03	0.01	687
Onsite truck	< 0.005	0.21	0.11	< 0.005	< 0.005	14.8	14.8	< 0.005	1.48	1.49	—	144	144	0.01	0.02	151
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.21	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	28.1	28.1	< 0.005	< 0.005	28.2
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.58	0.58	< 0.005	0.06	0.06	—	5.90	5.90	< 0.005	< 0.005	6.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.66	4.66	< 0.005	< 0.005	4.67
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.98	0.98	< 0.005	< 0.005	1.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.3	59.3	< 0.005	< 0.005	60.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.46	2.46	< 0.005	< 0.005	2.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Mobilize and Prepare, Wetland Fencing, and Demolition	Linear, Grubbing & Land Clearing	4/7/2025	4/25/2025	5.00	15.0	—
Finish Grading and Hydroseed	Linear, Grubbing & Land Clearing	3/23/2026	4/3/2026	5.00	10.0	—
Cleanup and Demobilization	Linear, Grading & Excavation	4/6/2026	4/17/2026	5.00	10.0	—

Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Linear, Grading & Excavation	4/28/2025	6/6/2025	5.00	30.0	—
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Linear, Drainage, Utilities, & Sub-Grade	6/9/2025	2/6/2026	5.00	175	—
Pavement and Paint	Linear, Paving	3/2/2026	3/20/2026	5.00	15.0	—
Permanent Fencing	Linear, Trenching	2/9/2026	2/27/2026	5.00	15.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Mobilize and Prepare, Wetland Fencing, and Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	8.00	84.0	0.37
Mobilize and Prepare, Wetland Fencing, and Demolition	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Mobilize and Prepare, Wetland Fencing, and Demolition	Excavators	Diesel	Tier 2	1.00	8.00	36.0	0.38
Finish Grading and Hydroseed	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	8.00	84.0	0.37
Finish Grading and Hydroseed	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Cleanup and Demobilization	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	8.00	84.0	0.37
Cleanup and Demobilization	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40

Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Excavators	Diesel	Tier 2	2.00	8.00	36.0	0.38
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Skid Steer Loaders	Diesel	Tier 2	1.00	8.00	71.0	0.37
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	8.00	84.0	0.37
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Cranes	Diesel	Tier 2	2.00	8.00	367	0.29
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Bore/Drill Rigs	Diesel	Tier 2	1.00	8.00	96.0	0.40

Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Forklifts	Diesel	Tier 2	1.00	8.00	82.0	0.20
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Excavators	Diesel	Tier 2	1.00	8.00	36.0	0.38
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Air Compressors	Diesel	Tier 2	1.00	8.00	37.0	0.48
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Pavers	Diesel	Tier 2	1.00	8.00	81.0	0.42
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Pumps	Diesel	Tier 2	1.00	8.00	11.0	0.74
Pavement and Paint	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Pavement and Paint	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	8.00	84.0	0.37
Pavement and Paint	Graders	Diesel	Tier 2	1.00	8.00	148	0.41

Pavement and Paint	Pavers	Diesel	Tier 2	2.00	8.00	81.0	0.42
Pavement and Paint	Rollers	Diesel	Tier 2	5.00	8.00	36.0	0.38
Pavement and Paint	Skid Steer Loaders	Diesel	Tier 2	1.00	8.00	71.0	0.37
Permanent Fencing	Tractors/Loaders/Backhoes	Diesel	Tier 2	2.00	8.00	84.0	0.37
Permanent Fencing	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilize and Prepare, Wetland Fencing, and Demolition	—	—	—	—
Mobilize and Prepare, Wetland Fencing, and Demolition	Worker	7.50	11.7	LDA,LDT1,LDT2
Mobilize and Prepare, Wetland Fencing, and Demolition	Vendor	0.00	8.40	HHDT,MHDT
Mobilize and Prepare, Wetland Fencing, and Demolition	Hauling	0.00	20.0	HHDT
Mobilize and Prepare, Wetland Fencing, and Demolition	Onsite truck	5.00	10.0	HHDT
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	—	—	—	—
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Worker	15.0	11.7	LDA,LDT1,LDT2
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Vendor	1.00	8.40	HHDT,MHDT
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Hauling	4.60	20.0	HHDT

Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	Onsite truck	2.00	10.0	HHDT
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	—	—	—	—
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Worker	20.0	11.7	LDA,LDT1,LDT2
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Vendor	0.00	8.40	HHDT,MHDT
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Hauling	0.00	20.0	HHDT
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pout Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	Onsite truck	9.00	10.0	HHDT
Permanent Fencing	—	—	—	—
Permanent Fencing	Worker	7.50	11.7	LDA,LDT1,LDT2
Permanent Fencing	Vendor	0.00	8.40	HHDT,MHDT
Permanent Fencing	Hauling	0.00	20.0	HHDT
Permanent Fencing	Onsite truck	4.00	10.0	HHDT
Cleanup and Demobilization	—	—	—	—
Cleanup and Demobilization	Worker	5.00	11.7	LDA,LDT1,LDT2
Cleanup and Demobilization	Vendor	1.00	8.40	HHDT,MHDT

Cleanup and Demobilization	Hauling	0.00	20.0	HHDT
Cleanup and Demobilization	Onsite truck	5.00	10.0	HHDT
Pavement and Paint	—	—	—	—
Pavement and Paint	Worker	27.5	11.7	LDA,LDT1,LDT2
Pavement and Paint	Vendor	0.00	8.40	HHDT,MHDT
Pavement and Paint	Hauling	0.00	20.0	HHDT
Pavement and Paint	Onsite truck	7.00	10.0	HHDT
Finish Grading and Hydroseed	—	—	—	—
Finish Grading and Hydroseed	Worker	5.00	11.7	LDA,LDT1,LDT2
Finish Grading and Hydroseed	Vendor	0.00	8.40	HHDT,MHDT
Finish Grading and Hydroseed	Hauling	0.00	20.0	HHDT
Finish Grading and Hydroseed	Onsite truck	3.00	10.0	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
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5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Mobilize and Prepare, Wetland Fencing, and Demolition	—	—	3.55	0.00	—
Finish Grading and Hydroseed	—	—	3.55	0.00	—
Cleanup and Demobilization	—	—	3.55	0.00	—
Stripping Organics, Tree Removals, Rough Grade, Installation of Culverts, Subgrade Prep	1,100	—	3.55	0.00	—
Boardwalks and Walls, Drill Shafts, Pour Footings, Form and Pour Abutments, Bents, Falsework, Rebar and Pour Superstructure, Retaining Walls	—	—	3.55	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Construction	3.55	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

2026	0.00	204	0.03	< 0.005
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5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Project construction phases and schedule provided by the District.
Construction: Off-Road Equipment	Equipment list provided by the District. All on-site trucks identified by the District are included under the Trips and VMT tab.

APPENDIX B

JURISDICTIONAL DELINEATION



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CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

December 21, 2023

Katerina Galacatos
South Branch Chief
U.S. Army Corps of Engineers
450 Golden Gate Avenue, 4th Floor
San Francisco, California 94102

Subject: Request for Verification of a Preliminary Jurisdictional Delineation, San Francisco Bay Trail Point Pinole to Wilson Point Project Study Site, City of Richmond and unincorporated Contra Costa County, California

Dear Ms. Galacatos:

On behalf of East Bay Regional Park District., LSA is requesting verification of a preliminary jurisdictional delineation regarding the extent of U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the Clean Water Act on the San Francisco Bay Trail Point Pinole to Wilson Point Project Study Site, City of Richmond and unincorporated Contra Costa County, California. This letter presents the results of a delineation performed by LSA of the potential extent of waters of the United States conducted on September 7, 2021 and August 19, 2022, including wetlands, on the Study Site.

A previous delineation of a majority of the Study Site was conducted by AECOM in 2005 but was not verified by the Corps. Using the AECOM delineation mapping as guidance, LSA flagged the observed wetland boundaries on September 7, 2021, which were subsequently surveyed by BKF Engineers to document the current wetland boundaries.

SITE DESCRIPTION

The approximately 12.07-acre Study Site is a narrow, approximately 1-mile-long trail right-of-way within unincorporated Contra Costa County lands and the City of Richmond. The Study Site is located along the southern side of the Union Pacific railroad tracks near the shoreline of San Pablo Bay, approximately 1.3 miles northwest of the intersection of the Richmond Parkway and Interstate 80.

The Study Site comprises portions of Contra Costa County Assessor's Parcels UPRR right of way, 405-030-061-7, 405-030-060-9, 405-030-049-2, 403-020-012-7, 403-020-014-3, 403-020-009-3, 403-482-043-3, 403-482-019-3, and 403-010-006-1. The site is situated within Township 2 North, Range 4 West, Section 20 on the Mare Island, California 7.5-minute USGS quadrangle. The Study Site extends from approximately 38.0006° North Latitude and 122.3371° West Longitude at its western end to 38.0066° North Latitude and 122.3216° West Longitude at its eastern end. Figures 1 and 2 (attached) depict the regional location and Study Site location, respectively.

Much of the Study Site appears to be imported fill. Study Site elevations range between 5 (at Garrity Creek) and 35 feet (at the northeastern end) above mean sea level.

Land uses surrounding the Study Site include single family residences, a former school site, a baseball field to the south, the San Francisco Bay Trail to the east, Union Pacific railroad tracks and San Pablo Bay shoreline to the north, and an Amazon warehouse and San Francisco Bay Trail to the west.

The Study Site is accessed from I-80 at the Appian Way exit, by driving northward on Appian Way to San Pablo Avenue, westward on San Pablo Avenue to Pinole Shores Drive, northward on Pinole Shores Drive to the Pinole Shores Bay Trail parking lot. Proceed westward along the San Francisco Bay Trail for approximately 0.6 miles to the Study Site.

Vegetation

The majority of the Study Site is vegetated with ruderal annual grassland, with common species comprising wild oats (*Avena* spp.), rip-gut (*Bromus diandrus*), Italian rye (*Festuca perennis*), soft chess (*Bromus hordeaceus*), velvet grass (*Holcus lanatus*), creeping wild rye (*Elymus triticoides*), vetch (*Vicia* spp.), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Heerminthotheca echioides*), wild radish (*Raphanus sativa*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), hedge parsley (*Torilis arvensis*), fennel (*Foeniculum vulgare*), and Himalayan blackberry (*Rubus armeniacus*). Trees and shrubs include arroyo willow (*Salix lasiolepis*), coast live oak (*Quercus agrifolia*), coyote brush (*Baccharis pilularis*), toyon (*Heteromeles arbutifolia*), and non-native landscape trees mostly adjacent to residential yards. Vegetation in wetland areas includes saltgrass (*Distichlis spicata*), meadow barley (*Hordeum brachyantherum*), cattail (*Typha* spp.), bulrush (*Schoenoplectus* spp.), alkali bulrush (*Bolboschoenus maritima*), alkali heath (*Frankenia salina*), and brass buttons (*Cotula coronopifolia*). Salt marsh vegetation bordering tidal Garrity Creek includes pickleweed (*Salicornia pacifica*), cordgrass (*Spartina* sp.), marsh jaumea (*Jaumea carnosa*), fat hen (*Atriplex prostrata*), and marsh gumplant (*Grindelia stricta*).

Soil

Soils on the Study Site are mapped as Tierra loam, 9 to 15 percent slopes, MLRA 14 (TaD) in the southeastern portion of the site; Omni silty clay (Ob) surrounding the ballfield; Cropley clay, 2 to 5 percent slopes (CkB) at the former school site; and potentially Novato silty clay (Map Unit Symbol Ra) along the shoreline and near the railroad tracks (Web Soil Survey, <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>, accessed August 18, 2022). Each soil is formed from relatively fine-grained toe slope alluvium. The Tierra soil is rated as non-hydric. The Omni soil is rated as 95 percent hydric. The Cropley soil itself is rated non-hydric but has a 10 percent hydric rating because of potential inclusions of Pescadero and Clear Lake soils. The Novato soil is rated 95 percent hydric. Much of the soils observed on the Study Site appear to be imported fill and may not match the mapped soils.

Hydrology

The Study Site drains northward toward San Pablo Bay, but drainage is blocked from the bay by the elevated embankment supporting the railroad tracks, so drainage to the bay is concentrated into Garrity Creek and two culverts which pass under the tracks. The culverts and Garrity Creek drain into San Pablo Bay, a tidal and traditional navigable water of the United States. Garrity Creek is fully tidal within the Study Site.

METHODS

The field investigations of potential jurisdictional wetlands were conducted using the routine determination method provided in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the revised procedures in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Arid West Supplement; U.S. Army Corps of Engineers 2008).

FIELD METHODS

LSA senior soil scientist Chip Bouril and senior biologist Dan Sidle investigated the Study Site on September 7, 2021 and August 19, 2022. Potential jurisdictional wetland boundaries were mapped using a global positioning system (GPS) receiver with potential sub-meter accuracy. Wetland boundaries were determined by following a combination of the limits of hydrophytic vegetation, relative elevation, and topographic breaks. LSA established twelve sample points on the Study Site; their locations are shown on Figure 3.

The Study Site had received no significant rainfall during the four months prior to the site investigation.

The 2022 site investigation established sample points along the potential jurisdictional features mapped in 2021 and also confirmed the 2021 mapping.

RESULTS

Potential jurisdictional features and sample point locations are shown on Figure 3.

CWA Section 404 Jurisdiction

The western end of site is an existing portion of the Bay Trail and is constructed on imported fill with no wetland characteristics.

Sample Points 1 and 2 were established along the northeastern edge of a flat-bottomed basin that is predominantly vegetated with bulrush and mosquito fern (*Azolla filiculoides*) and appears to be a former tidal brackish marsh, now diked off from the bay by the railroad fill embankment and experiencing only muted tidal influence. The basin has a small internal drainage ditch leading to a partially plugged culvert that connects under the railroad to a narrow slough that drains into San Pablo Bay. The basin contained shallow surface water during both field investigations. The sample points straddle a slope break and the limit of hydrophytic vegetation associated with the edge of the

basin. All the vegetation species observed at Sample Point 1 within the basin are hydrophytic, including the obligate wetland indicator species brass buttons, pickleweed, and cattail. Sample Point 1 had abundant redoximorphic soil mottling and multiple indicators of wetland hydrology, easily meeting jurisdictional wetland criteria. Sample Point 2 on the side slope of the basin was vegetated with a mix of hydrophytic and non-hydrophytic ruderal vegetation that fails to meet hydrophytic vegetation criteria. The soil displayed minimal redoximorphic mottling that does not meet hydric soil criteria and contained no surface indicators of wetland hydrology, thus failing to meet jurisdictional wetland criteria. This feature is mapped to the limit of its hydrophytic vegetation as Wetland 1, with a potential jurisdictional area of 6,490 square feet (0.149 acre).

Sample Points 3 through 6 were established along opposite edges of another flat-bottomed basin similar to Wetland 1, but dominated by freshwater vegetation, primarily cattail. This basin is drained by a partially plugged culvert located near Sample Points 5 and 6 that connects under the railroad to a narrow channel that connecting to San Pablo Bay. This basin was completely dry during both field investigations. Sample Points 3 and 4 straddle the western fill slope edge of the basin. Sample Point 3 within the basin was vegetated with plant species that meet hydrophytic plant criteria and include the obligate species pickleweed, alkali bulrush, and cattail. The soil has redoximorphic mottling that meets hydric soil criteria and displayed oxidized rhizospheres along living roots, as well as signs of a seasonally high water table as evidence of wetland hydrology. Sample Point 4 on the side slope of the basin was vegetated with a mix of hydrophytic and non-hydrophytic ruderal vegetation species that fail to meet hydrophytic vegetation criteria. Sample Point 4 displayed no indicators of hydric soil or of wetland hydrology, thus failing to meet jurisdictional wetland criteria. Sample Points 5 and 6 straddle the eastern fill slope edge of the basin. Sample Point 5 near the toe of the basin side slope was vegetated entirely with facultative plant species that meet hydrophytic plant criteria. The soil contained redoximorphic mottling that meets hydric soil criteria. No specific indicators of wetland hydrology were observed except indications that the basin seasonally inundates to near the elevation of Sample Point 5. Sample Point 5 is therefore determined to meet jurisdictional wetland criteria. Sample Point 6 on the steeper side slope of the basin was vegetated with a mix of hydrophytic and non-hydrophytic ruderal vegetation that does not meet hydrophytic vegetation criteria. Sample Point 6 displayed no hydric soil or wetland hydrology indicators, thus failing to meet jurisdictional wetland criteria. This feature is mapped to the limit of its hydrophytic vegetation as Wetland 2, with a potential jurisdictional area of 49,136 square feet (1.128 acre).

Sample Points 7 and 8 were placed along a swale, which was completely dry during both field investigations, that drains eastward into Garrity Creek. Sample point 7 within the swale was vegetated entirely with hydrophytic plant species. The soil contained common redoximorphic mottling and several wetland hydrology indicators were observed. Sample Point 7 is therefore determined to meet jurisdictional wetland criteria. Sample Point 8, located on an elevated area between arms of the swale, was vegetated with a mix of hydrophytic and non-hydrophytic ruderal vegetation that does not meet hydrophytic vegetation criteria. Sample Point 8 displayed no hydric soil or wetland hydrology indicators, thus failing to meet jurisdictional wetland criteria. This feature is mapped to the limit of its hydrophytic vegetation as Seasonal Wetland Swale 3, with a potential jurisdictional area of 10,498 square feet (0.241 acre).

Garrity Creek is a blue-line creek that has a fully tidal channel within the Study Site. The channel of Garrity Creek is unvegetated and is delineated as an Other Water of the United States. The channel is also likely subject to Section 10 Rivers and Harbors Act jurisdiction. The unvegetated channel of Garrity Creek has a potential jurisdictional area of 1,742 square feet (0.040 acre).

Both sides of Garrity Creek have tidal marsh plains vegetated with pickleweed, cordgrass, marsh jaumea, and fat hen, with marsh gumplant along their upslope edges. These marsh plains terminate abruptly at the steep fill banks along the creek. The jurisdictional limit of this marsh plain wetland is documented by Sample Point 9, which was placed on the steep bank approximately one foot above the elevation of the edge of its hydrophytic vegetation. Sample Point 9 was vegetated with a mix of hydrophytic and non-hydrophytic ruderal vegetation that does not meet hydrophytic vegetation criteria. Sample Point 9 displayed no hydric soil or wetland hydrology indicators, thus failing to meet jurisdictional wetland criteria. This feature located on both banks of the creek is mapped as Brackish Marsh Wetland 4, with a potential jurisdictional area of 2,134 square feet (0.049 acre).

Sample Points 10 and 11 were placed along a swale, which was completely dry during both field investigations, that drains westward into Garrity Creek. Sample Point 10 within the swale was vegetated entirely with saltgrass, a facultative wetland indicator species that meets hydrophytic vegetation criteria and is typical of the vegetation cover within the swale. Matted vegetation at Sample Point 10 indicates seasonal inundation in the swale and meets wetland hydrology criteria. The soil at Sample Point 10 was a dark gray clay that displayed only one percent redoximorphic mottling. Although this amount of redoximorphic mottling technically does not meet the numbered hydric soil indicators, this soil mapped as Cropley clay by the NRCS is similar to Clear Lake clay which often does not display robust redoximorphic mottling even when seasonally inundated and under anaerobic soil conditions. Because of this, the soil is determined to have sufficient hydric soil indicators and the sample point is determined to meet jurisdictional wetland criteria. Sample Point 11 placed on the bank of the swale was vegetated with a mix of hydrophytic and non-hydrophytic ruderal vegetation that fails to meet hydrophytic vegetation criteria. Sample Point 9 displayed no hydric soil or wetland hydrology indicators, thus failing to meet jurisdictional wetland criteria. Sample Point 12 was placed in eastern portion of the swale where the hydrophytic vegetation cover abruptly terminates; in a short distance, the predominantly salt grass vegetation in the swale changes to wild radish, hedge parsley, and wild oats. The soil does contain redoximorphic mottling sufficient to meet hydric soil criteria, but there were no surface indicators of wetland hydrology. Sample Point 12 therefore fails to meet jurisdictional wetland criteria. This feature is mapped as Seasonal Wetland Swale 5, with a potential jurisdictional area of 4,312 square feet (0.099 acre).

A large patch of willows with an understory of Himalayan blackberry is located on a steep slope down toward the railroad tracks near the eastern end of the Study Site. This area is relatively inaccessible and was not investigated by LSA during either field investigation. The AECOM delineation from 2005 stated that in this area “The willows occur within a small spring fed drainage way and along the hillside seeps of the lower portion of the bluff site. Most of the willow areas are considered jurisdictional wetlands under Section 404 of the Clean Water Act as administered by the U.S. Army Corp of Engineers.” Conditions are presumed to have remained the same, and this feature is mapped as Willow Seep Wetland 6, with a potential jurisdictional area of 21,693 square feet (0.498 acre).

A patch of impenetrable Himalayan blackberry is located immediately to the southeast of Willow Seep Wetland 6. The center of this patch contains bulrush mixed in with the blackberry, which are presumably growing out of a deep topographic basin containing relatively perennial water, possibly related to the adjacent seep in Willow Seep Wetland 6 that supports this obligate wetland indicator species. The remainder of the blackberry patch does not contain any other hydrophytic plant species and appears to be on level ground outside of the topographic basin. The area containing the bulrush is determined to meet jurisdictional wetland criteria, while the remainder of the blackberry patch does not. This feature is mapped as Seep Wetland 7, with a potential jurisdictional area of 174 square feet (0.004 acre).

Rivers and Harbors Act Section 10 Jurisdiction

The Garrity Creek channel appears to fall under Section 10 since it is fully tidal within the Study Site. The unvegetated channel of Garrity Creek is interpreted as being below the mean high-water elevation and is therefore jurisdictional under Section 10. The adjacent tidal marsh plains are interpreted as being above the mean high-water elevation and are therefore not jurisdictional under Section 10. The unvegetated channel of Garrity Creek within the Study Site has a Section 10 potential jurisdictional area of 1,742 square feet (0.040 acre).

Other Observations

No other evidence of potential waters of the United State was observed on the Study Site.

Porter-Cologne Water Quality Control Act (RWQCB) Jurisdiction

RWQCB jurisdiction for the potential jurisdictional features identified on the San Francisco Bay Trail Point Pinole to Wilson Point Project Study Site is expected to be identical to Corps jurisdiction.

CONCLUSIONS

Potential Clean Water Act Section 404 jurisdictional features identified on the San Francisco Bay Trail Point Pinole to Wilson Point Project Study Site comprise seven seasonal wetlands with a total potential jurisdictional area of 2.168 acres and a tidal Other Water with a potential jurisdictional area of 0.040 acre, for a total of 2.208 acres.

Potential Rivers and Harbors Act Section 10 jurisdiction identified on the San Francisco Bay Trail Point Pinole to Wilson Point Project Study Site is the unvegetated Garrity Creek channel, with a potential jurisdictional area of 0.040 acre.

These potential jurisdictional features and Study Site boundaries are mapped on Figure 3, Sheets 1 through 4, which are attached.

The findings and conclusions presented in this report, including the location and extent of other waters subject to regulatory jurisdiction, represent the professional opinion of LSA.

Please contact Dan Sidle at (510) 376-5704 or at dan.sidle@lsa.net to schedule a verification visit.

Sincerely,

LSA Associates, Inc.



Chip Bouril
Senior Soil Scientist

Attachments: Figure 1: Regional Location Map
Figure 2: Site Location Map
Figure 3: Potential Waters of the United States Map (Sheets 1 through 4)
Data Sheets 1 through 12

cc: Suzanne Wilson, East Bay Regional Park District
Norm Dyer, BKF Engineers
Dan Sidle, LSA



LSA

LEGEND

Study Area



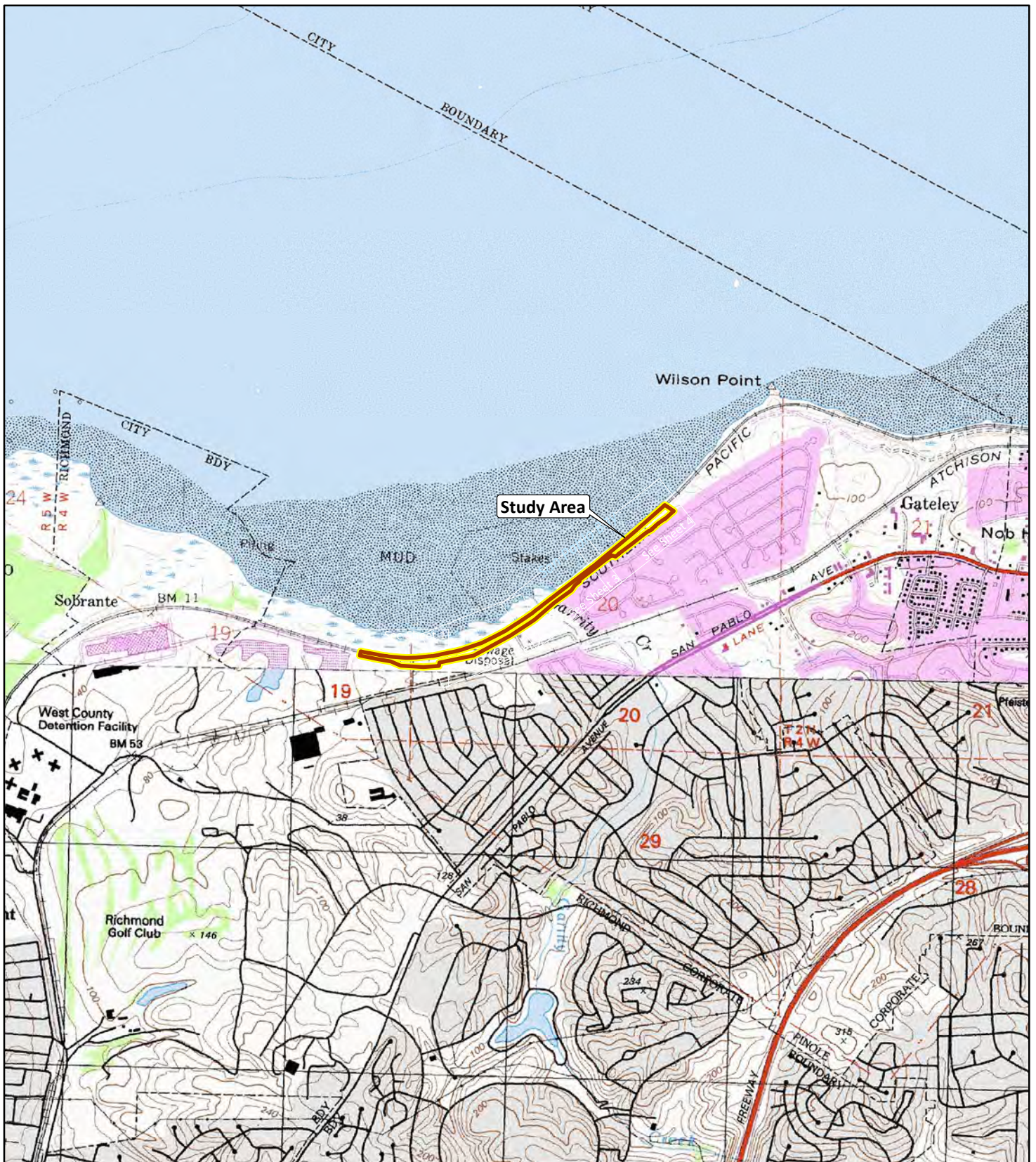
0 0.25 0.5
MILES

SOURCE: Esri World Street Map (2022).

I:\BKF2102\GIS\Maps\Delineation\Figure 1_Regional Location Map.mxd (11/4/2022)

FIGURE 1

*San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Regional Location Map*



LSA

LEGEND

Study Area



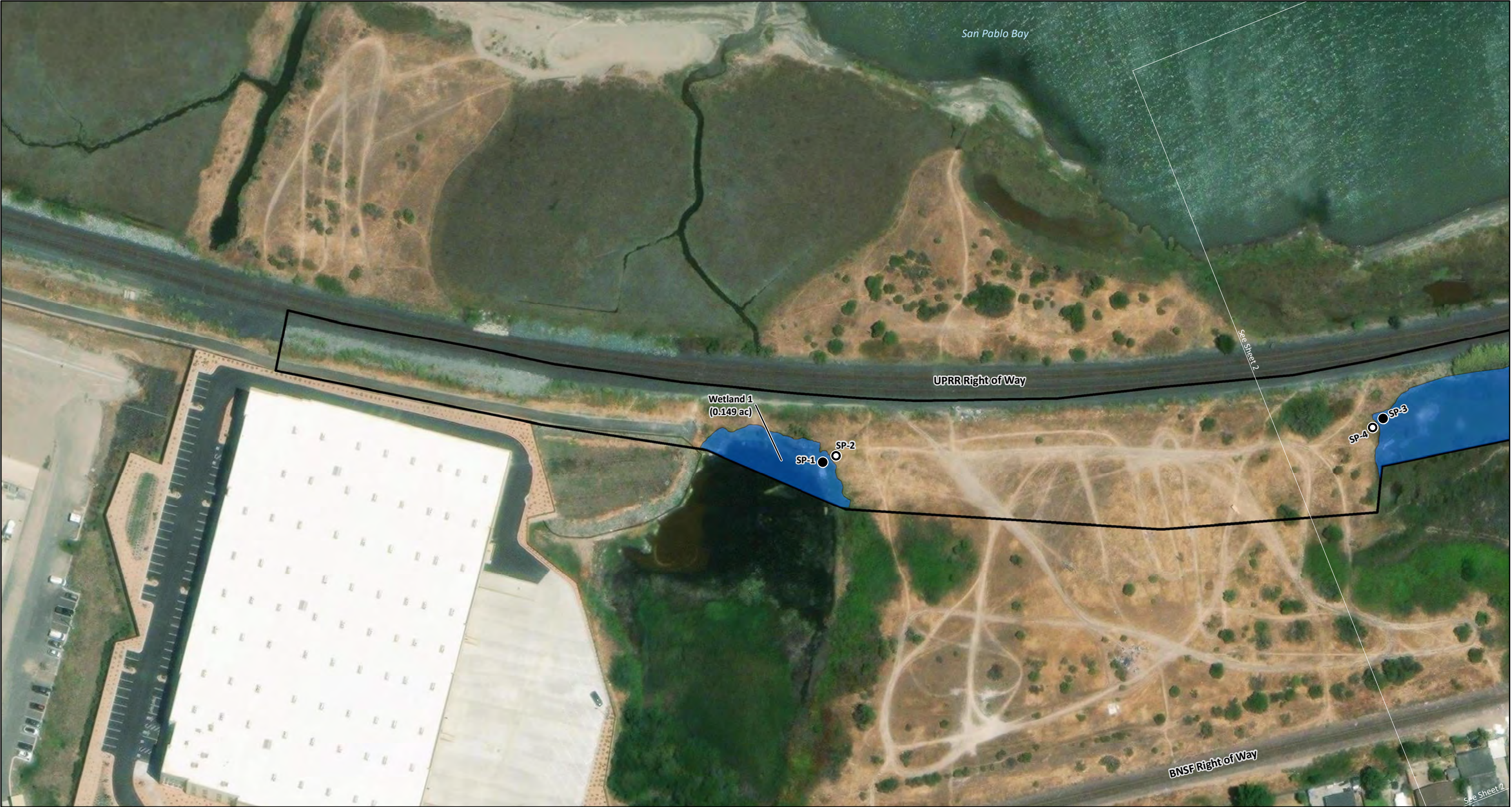
0 1000 2000
FEET

SOURCE: USGS 7.5-minute Topo Quads - Mare Island, Calif. (1980) and Richmond, Calif. (1993).

I:\BKF2102\GIS\Maps\Delineation\Figure 2_Site Location Map.mxd (11/4/2022)

FIGURE 2

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Site Location Map



LSA



0 50 100
FEET

SOURCE: BKF (08/2022); LSA (2022); Google (2022).

I:\BKF2102\GIS\Maps\Delineation\Figure 3_Potential Waters of the US.mxd (12/21/2023)

LEGEND

- Study Area
- Wetland Sample Point
- Non-wetland Sample Point

Potential Waters of the United States

- Wetlands (2.168 ac.)
- Other Waters (0.040 ac.)

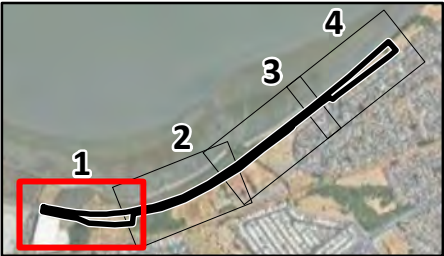


FIGURE 3
SHEET 1 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Potential Waters of the United States



LSA

LEGEND

Study Area

Wetland Sample Point

Non-wetland Sample Point

Potential Waters of the United States

Wetlands (2.168 ac.)

Other Waters (0.040 ac.)



0 50 100
FEET

SOURCE: BKF (08/2022); LSA (2022); Google (2022).

I:\BKF2102\GIS\Maps\Delineation\Figure 3_Potential Waters of the US.mxd (12/21/2023)

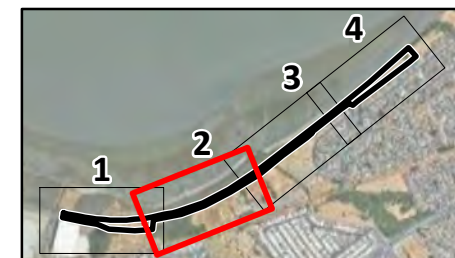


FIGURE 3
SHEET 2 of 4

San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California
Potential Waters of the United States



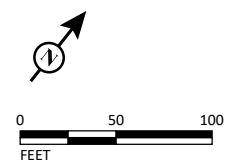
LSA

LEGEND

- Study Area
- Wetland Sample Point
- Non-wetland Sample Point

Potential Waters of the United States

- Wetlands (2.168 ac.)
- Other Waters (0.040 ac.)



SOURCE: BKF (08/2022); LSA (2022); Google (2022).

I:\BKF2102\GIS\Maps\Delineation\Figure 3_Potential Waters of the US.mxd (12/21/2023)

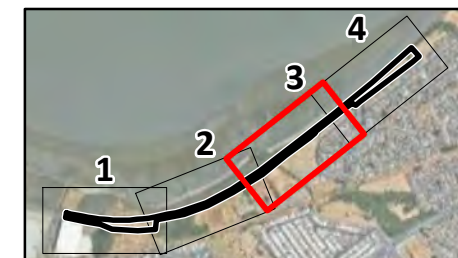


FIGURE 3
SHEET 3 of 4

*San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California*
Potential Waters of the United States



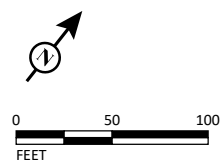
LSA

LEGEND

- Study Area
- Wetland Sample Point
- Non-wetland Sample Point

Potential Waters of the United States

- Wetlands (2.168 ac.)
- Other Waters (0.040 ac.)



SOURCE: BKF (08/2022); LSA (2022); Google (2022).

I:\BKF2102\GIS\Maps\Delineation\Figure 3_Potential Waters of the US.mxd (12/21/2023)

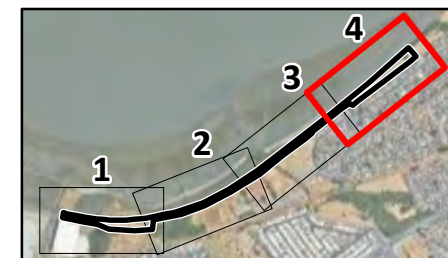


FIGURE 3
SHEET 4 of 4

*San Francisco Bay Trail:
Point Pinole to Wilson Point Project
Contra Costa County, California*
Potential Waters of the United States

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SFDA TRAIL WILSON PT. City/County: PINOLE/CONTRA COSTA Sampling Date: 19 JUL 22
 Applicant/Owner: _____ State: CA Sampling Point: 1
 Investigator(s): C. BOURL, D. SIOLE Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): TLDL BASIN Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____
 Hydric Soil Present? Yes X No _____
 Wetland Hydrology Present? Yes X No _____
 Is the Sampled Area within a Wetland? Yes X No _____

Remarks: W
PROCKSA
SP-1
SP-2
~2'
~10'

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				

1.	2.	3.	4.	5.	Total % Cover of:	Multiply by:
					OBL species	x 1 =
					FACW species	x 2 =
					FAC species	x 3 =
					FACU species	x 4 =
					UPL species	x 5 =
					Column Totals	(A) (B)
Total Cover: _____					Prevalence Index = B/A =	

Herb Stratum (Plot size: <u>12' x 12'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>COTULA CORONOPIFOLIA</u>	<u>20</u>	<u>X</u>	<u>OBL</u>	✓ Dominance Test is >50%
2. <u>PISTIACUS SPIGATA</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	— Prevalence Index is ≤3.0 ¹
3. <u>ATRIplex PROSTRATA</u>	<u>5</u>		<u>FACW</u>	— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>SALICORNIA PACIFICA</u>	<u>10</u>		<u>OBL</u>	— Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>TYPHA SP.</u>	<u>5</u>		<u>OBL</u>	
6. <u>ELTHEROSTRITICOIDES</u>	<u>5</u>		<u>FAC</u>	
7. <u>ALUMINOTHORICA ECHINOIDEA</u>	<u>1</u>		<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. <u>FRANKENIA SALICINA</u>	<u>1</u>		<u>FACW</u>	
Total Cover: <u>67</u>				

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1.				Yes <u>X</u> No _____
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum	% Cover of Biotic Crust			

Remarks: WETLAND IN NEARBY WATER. TULE VEG. COVER IN BASIN.

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SE BAYTPILL SWILSON City/County: PINOLE/CONTRA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: CA Sampling Point: 2
 Investigator(s): C. BOURL, D. SIOLE Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 25
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: _____

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
Total Cover: _____				

Herb Stratum (Plot size: <u>10' x 10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>AVENA SP</u>	<u>55</u>	<u>X</u>	<u>UPL</u>	Total % Cover of: _____ Multiply by: _____
2. <u>ELYMUS TRITICOIDES</u>	<u>25</u>	<u>X</u>	<u>FAC</u>	OBL species _____ x 1 = _____
3. <u>VICIA SP</u>	<u>10</u>		<u>FACW</u>	FACW species _____ x 2 = _____
4. <u>HELMINTHOTERPA ECHINOIDES</u>	<u>5</u>		<u>FAC</u>	FAC species <u>30</u> x 3 = _____
5. <u>LACTUCA SCARIOLA</u>	<u>5</u>		<u>FACU</u>	FACU species <u>15</u> x 4 = _____
6. _____				UPL species <u>55</u> x 5 = _____
7. _____				Column Totals _____ (A) _____ (B)
8. _____				Prevalence Index = B/A = <u>> 3</u>
Total Cover: <u>100</u>				

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____				— Dominance Test is >50%
2. _____				— Prevalence Index is ≤3.0 ¹
Total Cover: _____				— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				— Problematic Hydrophytic Vegetation ¹ (Explain)
Remarks: _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>
---------------------------------	-----------	-------------

Remarks: _____

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SF BAY TRAIL - WILSON City/County: PINOLE/COASTAL COSTA Sampling Date: 19 JUL 22
 Applicant/Owner: _____ State: CA Sampling Point: 3
 Investigator(s): C. BOURIL, D. SIDIE Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): SEASONAL BASIN Local relief (concave, convex, none): _____ Slope (%): 5
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	

Remarks: NE SALICORNIA, TYPHAX SP-4 = 2' SP-3 SW

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				Prevalence Index worksheet: Total % Cover of: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
4.				
5.				
Total Cover: _____				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>14</u>)				
1. <u>SALICORNIA PACIFICA</u>	<u>40</u>	<u>X</u>	<u>OBL</u>	
2. <u>BOERHAAVIA MARITIMA</u>	<u>10</u>		<u>OBL</u>	
3. <u>ELYMUS TRITICOIDES</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
4. <u>POLYPOGON MONSPALIENSIS</u>	<u>15</u>		<u>FACW</u>	
5. <u>TYPHAX SP.</u>	<u>10</u>		<u>OBL</u>	
6. <u>FOENICULUM VULGARE</u>	<u>1</u>		<u>UPL</u>	
7. <u>ATRIplex PROSTRATA</u>	<u>4</u>		<u>FACW</u>	
8.				
Total Cover: _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot size: _____)				
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks: TYPHAX VEG. COVER IN BASIN

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SFBAY TRAIL WILSON City/County: PINOLE/CONTRA COSTA Sampling Date: 17 AUG 22
 Applicant/Owner: _____ State: CA Sampling Point: 4
 Investigator(s): C. BOURIL, D. SIDLE Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 30
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: _____

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
5.				
Total Cover: _____				

Herb Stratum (Plot size: <u>10' x 10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>ELYNUS TRITICOIDES</u>	<u>40</u>	<u>X</u>	<u>FAC</u>	Total % Cover of: _____ Multiply by: _____
2. <u>HELMINTHOLEA FALLOIDES</u>	<u>5</u>		<u>FAC</u>	OBL species _____ x 1 = _____
3. <u>LACTUCA SERRIOLOA</u>	<u>5</u>		<u>FACW</u>	FACW species _____ x 2 = _____
4. <u>FOENICULUM VULGARE</u>	<u>20</u>	<u>X</u>	<u>UPL</u>	FAC species <u>55</u> x 3 = _____
5. <u>BROMUS DIANDRUS</u>	<u>20</u>	<u>X</u>	<u>UPL</u>	FACU species <u>5</u> x 4 = _____
6. <u>HOLCUS LANATUS</u>	<u>10</u>		<u>FAC</u>	UPL species <u>40</u> x 5 = _____
7.				Column Totals _____ (A) _____ (B)
8.				Prevalence Index = B/A = <u>23</u>
Total Cover: _____				

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1.				— Dominance Test is >50%
2.				— Prevalence Index is ≤3.0 ¹
Total Cover: _____				— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Total Cover: _____				— Problematic Hydrophytic Vegetation ¹ (Explain)
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Remarks: _____				

Hydrophytic Vegetation Present? Yes _____ No X

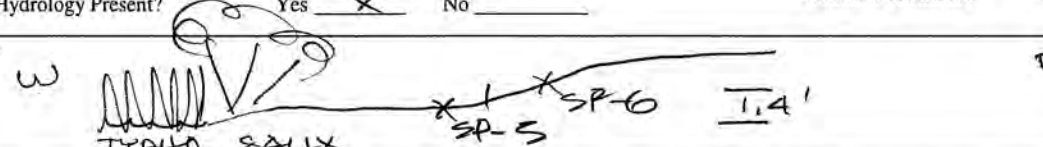
WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SPRAYTRAIL-WILSON City/County: PINOLE/CONTRA COSTA Sampling Date: 19 Aug 22
 Applicant/Owner: _____ State: CA Sampling Point: 5
 Investigator(s): C. BOURN Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): ~10
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒	No _____	
Wetland Hydrology Present?	Yes ☒	No _____	

Remarks: 

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				Prevalence Index worksheet: Total % Cover of: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
4.				
5.				
Total Cover: _____				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>4 φ</u>)				
1. <u>HORDEUM MARINUM</u>	<u>25</u>	<u>X</u>	<u>FAC</u>	
2. <u>FESTUCA PERENNIS</u>	<u>25</u>	<u>X</u>	<u>FAC</u>	
3. <u>DISTICHUS SPICATA</u>	<u>45</u>	<u>X</u>	<u>FAC</u>	
4. <u>ELYMUS TRITICOIDES</u>	<u>5</u>		<u>FAC</u>	
5.				
6.				
7.				
8.				
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks: SP IS ON TOESLOPE OF BASIN

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SFBAY TRAIL - WILSON City/County: PINOLE/CONTRA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: CA Sampling Point: 6
 Investigator(s): C. BOURL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 25
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: _____

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
Total Cover: _____				

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>30</u> x 3 = _____ FACU species <u>10</u> x 4 = _____ UPL species <u>60</u> x 5 = _____ Column Totals _____ (A) _____ (B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
Total Cover: _____				

Herb Stratum (Plot size: <u>8' φ</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>AVENA SP</u>	<u>50</u>	<u>X</u>	<u>UPL</u>	
2. <u>ELYMOSTRITICOIDES</u>	<u>10</u>		<u>FAC</u>	
3. <u>FESTUCA PERENNIS</u>	<u>15</u>		<u>FAC</u>	
4. <u>LACTUCA SERPIOLIA</u>	<u>10</u>		<u>FAC</u>	
5. <u>RAPHANUS SATIVA</u>	<u>10</u>		<u>UPL</u>	
6. <u>DISTICHLIS SPICATA</u>	<u>5</u>		<u>FAC</u>	
7. _____				
Total Cover: <u>100</u>				

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____				
2. _____				
Total Cover: _____				

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____
 Remarks: _____

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SFBAYTRAIL - WILSON City/County: PIEDMONT/CONTRA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: CA Sampling Point: 7
 Investigator(s): C. BOURL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): SURFACE Local relief (concave, convex, none): _____ Slope (%): < 5
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____
 Hydric Soil Present? Yes X No _____
 Wetland Hydrology Present? Yes X No _____
 Is the Sampled Area within a Wetland? Yes X No _____

Remarks: R R
N' SP-8 BASEBALL FIELD SP-7

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.				Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				

1.					
2.					
3.					
4.					
5.					
Total Cover: _____					
Herb Stratum (Plot size: _____)					

1.	POLYPOGON MONSPELLENSIS	25	X	FACW	
2.	FESTUCA PERENNIS	20	X	FAC	
3.	HORDEUM BRACHYANTHERUM	35	X	FACW	
4.	DISTICHUS SPICATA	20	X	FAC	
5.					
6.					
7.					
8.					
Total Cover: <u>100</u>					

1.					
2.					
Total Cover: _____					
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____					

Remarks: A PORTION OF THE BASEBALL OUTFIELD CONTAINS MOWED TYPEA.

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: SE BAY TRAIL WILSON City/County: PINOLE/CONTRA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: CA Sampling Point: 8
 Investigator(s): C. BOORIL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 15
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: ELEVATED AREA BETWEEN TWO WETLAND AREAS

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				
1.				Prevalence Index worksheet: Total % Cover of: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>50</u> x 3 = _____ FACU species <u>25</u> x 4 = _____ UPL species <u>25</u> x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index = B/A = <u>7.3</u>
2.				
3.				
4.				
5.				
Total Cover: _____				

Herb Stratum (Plot size: <u>5' x 5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>DISTICHIS SPICATA</u>	<u>25</u>	<u>X</u>	<u>FAC</u>	
2. <u>ARIZONA SP.</u>	<u>25</u>	<u>X</u>	<u>UPL</u>	
3. <u>VILCA SP.</u>	<u>25</u>	<u>X</u>	<u>FACU</u>	
4. <u>FESTUCA PERENNIS</u>	<u>25</u>	<u>X</u>	<u>FAC</u>	
5.				
6.				
7.				
8.				
Total Cover: _____				

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Remarks: _____

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SEBASTIAN TRAIL - WILSON PT. City/County: PIÑON/CONTRACOSTA Sampling Date: 19 Aug 22
 Applicant/Owner: _____ State: _____ Sampling Point: 9
 Investigator(s): C. BOURN Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 35
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>(a) PW, GRIND, SPARTINA, PICKLEWEED, SP-9 ~ 1' ABOVE HYDRO. VEG.</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>31</u> x 3 = _____ FACU species <u>10</u> x 4 = _____ UPL species <u>60</u> x 5 = _____ Column Totals: <u>101</u> (A) _____ (B) Prevalence Index = B/A = <u>> 3</u>
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' φ</u>)				
1. <u>AVENIA SP.</u>	<u>30</u>	<u>X</u>	<u>UPL</u>	
2. <u>DISTICHUS SPICATA</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
3. <u>PLANTAGO LONGICOLATA</u>	<u>1</u>		<u>FAC</u>	
4. <u>FOENICULUM VULGARE</u>	<u>15</u>		<u>UPL</u>	
5. <u>BROMUS DIANDRUS</u>	<u>15</u>		<u>UPL</u>	
6. <u>BROMUS HORDEACEUS</u>	<u>10</u>		<u>FACU</u>	
7. _____				
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Remarks:

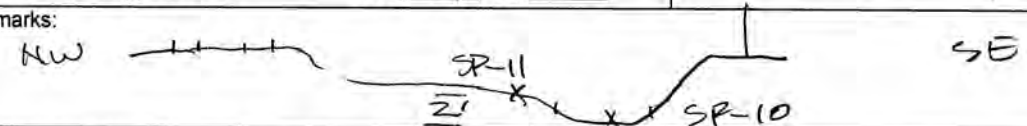
FEATURE 1 STILL OPEN WATER CHANNEL WITH VEGETATED WETLAND MARCKIS. SP-9 IS UPSLOPE OF WETLAND CHARACTERISTICS.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SFBAY TRAIL - WILSON POINT City/County: PINOLE/CONTRA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: _____ Sampling Point: 10
 Investigator(s): C. BOUFFE Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: 	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>3' φ</u>)				
1. <u>DISTICHIS SPICATA</u>	<u>100</u>	<u>X</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____				
3. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
4. _____				
5. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
6. _____				
7. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
8. _____				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot size: _____)				
1. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SFPAYTRAIL-WILSON PT. City/County: PINOLE/CALIFORNIA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: CA Sampling Point: 11
 Investigator(s): C. BOURL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

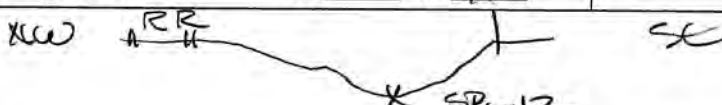
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
_____ = Total Cover				
Herb Stratum (Plot size: <u>5' φ</u>)	_____	_____	_____	
1. <u>FESTUCA PERENNIS</u>	<u>10</u>	_____	<u>FAC</u>	
2. <u>DISTICHUS SPICATA</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
3. <u>LACTUCA SERRIOLA</u>	<u>20</u>	<u>X</u>	<u>FACU</u>	
4. <u>VICIA SP</u>	<u>25</u>	<u>X</u>	<u>FACU</u>	
5. <u>RAPHANUS SATIVA</u>	<u>5</u>	_____	<u>UPL</u>	
6. <u>BROMUS HORDEACEUS</u>	<u>10</u>	_____	<u>FACU</u>	
7. <u>AVENA SP.</u>	<u>5</u>	_____	<u>UPL</u>	
8. <u>ELYMUS TRITICOIDES</u>	<u>5</u>	_____	<u>FAC</u>	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks:				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EFB4TRAIL WILSON POINT City/County: PLUM/CONTRA COSTA Sampling Date: 19 AUG 22
 Applicant/Owner: _____ State: _____ Sampling Point: 12
 Investigator(s): C. BOUZIL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): SUBLE Local relief (concave, convex, none): SUBLE Slope (%): 25
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>SW RR</u> 	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>5</u> x 3 = _____ FACU species _____ x 4 = _____ UPL species <u>95</u> x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5' φ</u>)				
1. <u>RAPHANUS SATIVA</u>	<u>50</u>	<u>X</u>	<u>UPL</u>	
2. <u>TORILIS ARVENSIS</u>	<u>30</u>	<u>X</u>	<u>UPL?</u>	
3. <u>CARPOBROTUS EDULIS</u>	<u>5</u>		<u>UPL?</u>	
4. <u>AVENIA SP</u>	<u>10</u>		<u>UPL</u>	
5. <u>DISTICHUS SPICATA</u>	<u>5</u>		<u>FAC</u>	
6. _____				
7. _____				
8. _____				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks: VEGETATIVE COVER IN DITCH TO THE SOUTHWEST IS DOMINATED BY DISTICHUS & OTHER FAC PLANT SPECIES,

Sampling Point: 12

HYDROLOGY			
Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)	
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)	
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)	
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)	
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)	
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)	
Field Observations:		Wetland Hydrology Present? Yes ☐ No ☒	
Surface Water Present?	Yes ☐ No ☒ Depth (inches): _____		
Water Table Present?	Yes ☐ No ☒ Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒ Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: NO SPEC. INDICATORS			

Sampling Point: 11

[illegible]

Indicators for Problematic Hydric Soils³

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes _____ No ☒

NO INDICATORS

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Wetland Hydrology Present? Yes _____ No ☒

NO INDICATORS

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) | ☐ 1 cm Muck (A9) (LRR C) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) | ☐ 2 cm Muck (A10) (LRR B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) | ☐ Reduced Vertic (F18) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) | ☐ Red Parent Material (TF2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) | ☐ Other (Explain in Remarks) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) | |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) | |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) | |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) | |
| ☐ Sandy Gleyed Matrix (S4) | | |
- ³Indicators of hydrophytic vegetation: wetland hydrology must be present unless disturbed or problem

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

LOCATION IS WRAPPED BY MDCS AS CROPLET CLAY, SIMILAR TO CLEAR LAKE CLAY WHICH OFTEN DOES NOT SHOW REBOX IN WETLAND CONDITIONS. SOIL DETERMINED HYDRIC BY HYDROLOGY EVIDENCE.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) | ☐ Water Marks (B1) (Riverine) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) | ☐ Sediment Deposits (B2) (Riverine) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Drift Deposits (B3) (Riverine) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Drainage Patterns (B10) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Dry-Season Water Table (C2) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) | ☐ Crayfish Burrows (C8) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) | ☐ Shallow Aquitard (D3) |
| ☐ Water-Stained Leaves (B9) | ☒ Other (Explain in Remarks) <i>WATER STAINED</i> | ☐ FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WEATHER THATCH INDICATES SEASONAL INUNDATION

Sampling Point: 9

HYDROLOGY

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) (Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

NO INDICATORS

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/2	80	—	—	—	—	cl	
	10YR 3/2	10	—	—	—	—		
	10YR 3/2	10	—	—	—	—		

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____

No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☐ High Water Table (A2)	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes _____

No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

NO INDICATORS

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- _____ 1 cm Muck (A9) (LRR C)
 _____ 2 cm Muck (A10) (LRR B)
 _____ Reduced Vertic (F18)
 _____ Red Parent Material (TF2)
 _____ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type:

Depth (inches):

Hydric Soil Present?

Yes X No

* PROBABLY REYES OR NOVATO SERIES - NATIVETO WARSH
* * HIGH VALUE MAY BE RELICT, BUT REDOX IS CURRENT

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

- Field Observations:**

Surface Water Present? Yes _____ No ~~X~~ Depth (inches):
 Water Table Present? Yes _____ No ~~X~~ Depth (inches):
 Saturation Present? Yes _____ No ~~X~~ Depth (inches):
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Remarks:

Sampling Point: 6

[illegible]

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

No

Remarks:

- _____ Water Marks (B1) **(Riverine)**
- _____ Sediment Deposits (B2) **(Riverine)**
- _____ Drift Deposits (B3) **(Riverine)**
- _____ Drainage Patterns (B10)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)

No

NO INDICATORS

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-4	10YR2/2						C	
4-12	7.5YR3/2 70		7.5YR3/4	5	C	PL	C	
	10YR5/1	25						
	10YR3/1	5						

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☒ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes

☒

No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☐ High Water Table (A2)	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes

☒

No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

BASIN FLOODS IN WINTER TO NEAR ELEVATION OF SP.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-6	10YR 4/3	—	—	—	—	h	
6-9	~10YR 4/3	—	—	—	—	SL	

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (All)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____

No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☐ High Water Table (A2)	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes _____

No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

NO INDICATORS

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-12	10YR 7/2	70	5YR 7/4	6	C	PL	SIC	
	10YR 5/2	20						
	10YR 4/3	20						
	10YR 3/1	5						

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes X

No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☒ High Water Table (A2) <u>SEASONAL</u>	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☒ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes X

No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

P&S IN FLOODS IN WINTER, NEAR TO SP-3 ELEVATION

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type:

Depth (inches):

Hydric Soil Present?

Yes

No

Remarks:

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

Secondary Indicators (2 or more required)

- | | |
|-------|--|
| _____ | Water Marks (B1) (Riverine) |
| _____ | Sediment Deposits (B2) (Riverine) |
| _____ | Drift Deposits (B3) (Riverine) |
| _____ | Drainage Patterns (B10) |
| _____ | Dry-Season Water Table (C2) |
| _____ | Crayfish Burrows (C8) |
| _____ | Saturation Visible on Aerial Imagery (C9) |
| _____ | Shallow Aquitard (D3) |
| _____ | FAC-Neutral Test (D5) |

Surface Water Present?

Surface Water Present? Yes No

Water Table Present?	Yes	No
----------------------	-----	----

Saturation Present?	Yes	No
---------------------	-----	----

(includes capillary fringe)

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

NO SURFACE INDICATOR

Sampling Point:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type:

Depth (inches):

Hydric Soil Present?

Yes X No

Remarks:

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

☐	Water Marks (B1) (Riverine)
☐	Sediment Deposits (B2) (Riverine)
☐	Drift Deposits (B3) (Riverine)
☐	Drainage Patterns (B10)
☐	Dry-Season Water Table (C2)
☐	Crayfish Burrows (C8)
☐	Saturation Visible on Aerial Imagery (C9)
☐	Shallow Aquitard (D3)
☐	FAC-Neutral Test (D5)

Surface Water Present? Yes _____ No _____
 Water Table Present? Yes _____ No _____
 Saturation Present? Yes _____ No _____
 (includes capillary fringe)

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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APPENDIX C

GEOTECHNICAL INVESTIGATION



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**POINT PINOLE TO WILSON POINT
EAST BAY REGIONAL PARK DISTRICT (EBRPD) SF BAY TRAIL
RICHMOND, CALIFORNIA**

PRELIMINARY GEOTECHNICAL REPORT

SUBMITTED TO:

Mr. Daniel Schaefer, PE
Principal/Vice President
BKF Engineers
4670 Willow Road, Suite 250
Pleasanton, California 94588

PREPARED BY:

ENGEO Incorporated

September 30, 2022

PROJECT NO:

19256.000.001

Project No.
19256.000.001

September 30, 2022

Mr. Daniel Schaefer, PE
Principal/Vice President
BKF Engineers
4670 Willow Road, Suite 250
Pleasanton, California 94588

Subject: Point Pinole to Wilson Point
EBRPD San Francisco Bay Trail
Richmond, California

PRELIMINARY GEOTECHNICAL REPORT

Dear Mr. Schaefer:

With your authorization, we completed this preliminary geotechnical exploration report for the proposed Point Pinole to Wilson Point segment of the East Bay Regional Park District (EBRPD) San Francisco Bay Trail in Richmond, California. The accompanying report presents our findings together with our preliminary conclusions and recommendations for the proposed trail.

Our preliminary findings indicate that the project site is suitable for the proposed trail project provided the preliminary recommendations provided in this report are incorporated into the project planning. Additional design-level exploration services will be needed to develop recommendations for grading, pavement design, retaining walls, and design of foundations for the proposed bridge and boardwalk areas. We are pleased to have been of service to you on this project and are prepared to consult further with you and your design team as the project progresses.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated


Eleni Korogianos


Nick Serra, PE
ek/ns/jf/dt




Jeff Fippin, GE



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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

We prepared this preliminary geotechnical report for the proposed Point Pinole to Wilson Point segment of the EBRPD San Francisco Bay Trail in Richmond, California. We prepared this report as outlined in our agreement dated June 22, 2021. BKF Engineers authorized us to conduct the proposed scope of services, which included the following.

- Available geologic and geotechnical information review
- Preliminary subsurface field exploration
- Soil laboratory testing
- Data analysis and preliminary conclusions and recommendations development
- Preliminary report preparation

We prepared this report for the exclusive use of BKF Engineers and their consultants for the preliminary design of this project. At the time of this report writing, information related to the planned development is limited to the “35% Construction Documents for the proposed SF Bay Trail segment from Point Pinole to Point Wilson” prepared by BKF Engineers (BKF), dated July 25, 2022. In the event that any changes are made in the character, design, or layout of the development, we must be contacted to review the preliminary conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent or allowed by contract.

1.2 PROJECT LOCATION AND DESCRIPTION

Based on our review of the previously referenced BKF drawings, we understand that the proposed trail segment starts at Station 10+00 (about 700 feet northeast of the steel plant) and extends northeast to Station 58+93.69 (about 250 feet north of Broadmore Avenue), as shown in Figure 1. The proposed trail will cross an area of generally rolling topography on several undeveloped parcels adjacent to the Southern Pacific Railway right-of-way. The proposed trail runs adjacent to the San Pablo Bay shoreline between Point Pinole and Wilson Point and is approximately 100 to 400 feet inland. The approximate boundary of the project site and the trail stationing are shown in the site plan, Figure 2.

1.3 PROPOSED IMPROVEMENTS

Based on the BKF drawings previously referenced, the proposed improvements will consist of a new segment of the San Francisco Bay Trail between Point Pinole and Wilson Point which is approximately 4,900 feet long. The San Francisco Bay Trail is a bicycle and pedestrian trail. The proposed improvements will include a 10-foot-wide asphalt paved trail, boardwalk crossings through wetland areas from Stations 10+42 to 11+00, 17+50 to 23+50, and 29+75 to 33+50, a bridge for a creek crossing from Station 34+70 to 35+40, and a partially elevated boardwalk and retaining wall traversing an existing slope from Stations 42+86 to 48+53. The plans indicate minor grading consisting of cut and fill on the order of 1 to 3 feet for the majority of the trail. The proposed retaining wall will be in cut and up to approximately 4 feet high.

2.0 PRELIMINARY FINDINGS

2.1 DOCUMENT REVIEW

2.1.1 Existing Geotechnical Data

We reviewed the following preliminary design and biological assessment report previously prepared for the site.

- Alta Planning and Design in association with Questa Engineering Corporation; Point Wilson San Francisco Bay Trail, Preliminary Engineering Study and Biological Assessment, San Francisco, California; May 26, 2005.

In 2005, Alta Planning and Design and Questa Engineering Corporation prepared a report that summarized the plans for a new trail segment at the project site and provided a description of the existing geologic conditions. The report included a discussion of geology along the proposed trail alignment which was primarily based on published geologic mapping. The study did not include site-specific geotechnical data.

2.1.2 Regional Geology

As shown on the Geologic Map prepared by Graymer (2002), the proposed trail is located on the southern margin of the San Pablo Bay and mapped as historic artificial fill (af), Bay mud deposits (Qhbm), alluvial fan deposits (Qpf), and conglomerate (Tcgl), each of which are present within various segments of the alignment. Bay mud deposits (Qhbm) are also commonly referred to as Young Bay Mud (YBM).

An approximately 2,000-foot-long section of the northeastern portion of the alignment is mapped as late Pleistocene-aged alluvial fan deposits (Qpf). Graymer describes these alluvial fan deposits as consisting of poorly sorted and moderately to poorly bedded sand, gravel, silt, and clay deposited in gently sloping alluvial fans.

The southwestern portion of the alignment consists primarily of Bay Mud deposits (Qhbm) and historic artificial fill (af). There are also fingers of Miocene-aged conglomerate (Tcgl). Graymer describes the historic artificial fill as undifferentiated man-made deposit of various materials and ages, including fill over Bay Mud and also railroad grades. Graymer describes the Bay Mud deposits as water-saturated estuarine mud consisting predominately of gray, green, blue, and black clay and silty clay underlying marshlands and tidal mud flats of the San Francisco Bay.

2.1.3 Seismicity

The San Francisco Bay area contains numerous active earthquake faults. The nearest active fault is the Hayward fault which is located approximately 1½ miles from the site, respectively. A Holocene-active fault is defined by the California Geologic Survey as one that has had surface displacement within Holocene time (about the last 11,700 years) (CGS, 2018).

As shown in Figure 5, the site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to exist within the site. Fault rupture through the site, therefore, is unlikely.

Numerous small earthquakes occur every year in the San Francisco Bay Region, and larger earthquakes have been recorded and can be expected to occur in the future. Figure 4 shows the approximate locations of these faults and significant historic earthquakes recorded within the San Francisco Bay Region.

To evaluate nearby active faults that are capable of generating strong seismic ground shaking at the site, we utilized the USGS Unified Hazard Tool* and disaggregated the hazard at the peak ground acceleration (PGA) for 2475-year return period, with the resulting faults listed below in the table below.

TABLE 2.1.3-1: Active Faults Capable of Producing Significant Ground Shaking at the Site
(Latitude: 38.000917 Longitude: -122.331197)

SOURCE	R _{RUP}		MOMENT MAGNITUDE M _w
	(KM)	(MILES)	
Hayward (No) [5]	2.91	1.81	7.20
Hayward (No) [4]	3.08	1.91	6.75
San Andreas (Peninsula) [15]	31.28	19.44	7.99
Hayward (No) [3]	6.96	4.32	6.76
Franklin [4]	10.29	6.39	6.71

*USGS Unified Hazard Tool - Edition: Dynamic Conterminous U.S. 2014 (update) (v4.2.0)

The faults listed above represent sources contributing at least one percent to the seismic hazard at the site at the peak ground acceleration and a 2,475-year return period. Gridded or areal sources are not included.

2.2 FIELD EXPLORATION

We performed our preliminary field exploration on October 6 and October 7, 2021. Our field exploration included a site reconnaissance along the proposed trail alignment and drilling of ten borings using hand auger methods at various locations shown on the Site Plan (Figure 2). The locations of our explorations are approximate and we estimated them by utilizing handheld consumer-grade GPS and their proximity to site features; they should be considered accurate only to the degree implied by the method used.

A geologist from our firm drilled each boring using a 4-inch-diameter hand auger and logged the subsurface conditions at each location. We advanced the explorations to a maximum depth of approximately 5 feet below existing grade. Boring 1-B07 was terminated at 1 foot below the ground surface due to refusal on hard material.

We collected soil samples at frequent depth intervals for laboratory testing. The logs, in Appendix A, depict subsurface conditions at the exploration locations at the time of our exploration.

2.3 SUBSURFACE CONDITIONS

The subsurface conditions encountered within the explorations at the site are generally consistent with the geologic mapping previously discussed. We encountered artificial fill (af) in each of our borings that is likely associated with the residential development along the northeastern portion of the alignment and the development of the South Pacific Railroad adjacent to the southern boundary of the alignment. The fill thickness encountered within Borings 1-B01 to 1-B06 generally

varies between 2½ and 4¼ feet. The fill encountered in these borings is primarily composed of medium to high plasticity clay with varying amounts of sand and gravel. The fill thickness encountered within Borings 1-B07 to 1-B10 generally varies between 1 and 3½ feet. We terminated Boring 1-B07 due to refusal in the artificial fill material. The fill we encountered in these borings is primarily composed of generally comprised gravel, silty sand, and silt.

Below the artificial fill, we generally encountered Young Bay Mud (YBM) in the southwestern portion of the alignment and alluvium in the northeastern portion of the alignment which is generally consistent with the geologic mapping previously discussed. Beneath the fill, Borings 1-B01 through 1-B06 encountered YBM deposits to their terminal depths of approximately 5 feet. The YBM encountered in our explorations generally consisted of greenish gray to bluish black high plasticity clay with varying amounts of gravel and sand. Beneath the fill, Borings 1-B08 through 1-B10 encountered alluvium deposits to their terminal depths of approximately 5 feet. The alluvium encountered in our explorations generally consisted of brown to gray lean clay and silt with varying amounts of gravel and sand.

We consider the YBM to be potentially compressible under new loading; our preliminary exploration provides limited information related to the thickness and compressibility of the YBM. Further exploration should be performed during our design-level geotechnical exploration as discussed in Section 4.0 to further evaluate the thickness and compressibility of the YBM.

2.4 GROUNDWATER CONDITIONS

We encountered groundwater in three of our explorations. We present a summary of the groundwater depths encountered at the time of exploration in the following table.

TABLE 2.4-1: Groundwater Observations

EXPLORATION LOCATION	APPROXIMATE GROUNDWATER DEPTH (FEET)	APPROXIMATE GROUNDWATER ELEVATION (FEET, NAVD88)
1-B03	3½	6½
1-B05	3½	4½
1-B06	3½	5

We expect groundwater levels will vary depending on factors such as weather conditions, irrigation practices, tidal influence, and other factors not in evidence at the time of our explorations.

3.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Based on our preliminary findings, we consider the proposed trail improvements feasible from a geotechnical standpoint. A design-level geotechnical exploration should be conducted prior to development of final design plans and site development.

On a preliminary basis, the primary geotechnical considerations for the proposed site development are as follows.

1. Soft, compressible soil
2. High seismic shaking and potentially liquefiable soil
3. Presence of shallow groundwater

4. Existing fill
5. Slope stability

In the following sections of this report, we discuss the above preliminary geotechnical considerations and the risks associated with these, as well as other hazards, with respect to the planned development. We also present preliminary recommendations for planning purposes.

3.1 SOFT, COMPRESSIBLE SOIL

As discussed in Section 2.3, a portion of the site is underlain by potentially compressible YBM deposits. While the lateral extent and depth of the YBM is not known, we observed YBM the maximum depth explored of 5 feet in some of our borings as previously discussed. Based on our review of the Geologic and Engineering Aspects of San Francisco Bay Fill Special Report, we estimate the YBM will be less than 20 feet thick within the project site (Goldman, 1969). Based on our exploration observations and review of geologic mapping, YBM deposits are likely present within the southwestern portion of the segment that extends from approximately Station 10+00 to Station 40+50.

YBM is a marine deposit generally consisting of soft, normally consolidated, high plasticity clay. The normally consolidated clay is highly compressible and will experience settlement when subjected to additional loading, such as foundation loads or placement of new fill. The proposed new fill may induce long-term settlement if mitigation is not performed. Boardwalk and bridge pile foundations should be extended below the YBM and founded in competent soil as further discussed in Section 3.13.

For planning purposes, we provide preliminary estimates for total consolidation settlements that may occur due to various thicknesses of fill placement for use in planning purposed in the table below. We used the existing limited geotechnical data related to this layer and assumed the YBM deposits were normally consolidated to perform our preliminary settlement analysis. As previously discussed, the maximum thickness of the YBM at the site is not currently known based on our limited field exploration.

TABLE 3.1-1: Total Settlement Estimates – Without Mitigation

FILL THICKNESS (feet)	CONSOLIDATION SETTLEMENT (inches)			
	ASSUMED YBM THICKNESS (feet)			
	5	10	15	20
1	3	4	4½	4½
2	5	7	7½	8
3	7	9½	10½	11

To further evaluate the potential compressibility and thickness of the YBM deposits, we recommend additional subsurface exploration and laboratory testing as discussed in Section 4.0.

The design of surface grades, underground utilities, and improvements supported on shallow foundations should accommodate or resist potential total and differential settlement. If the settlements listed in the table above are excessive, we can provide mitigation options in our design-level report. Mitigation may include surcharging or compensation with lightweight fill.

3.2 EXPANSIVE SOIL

Some near-surface soil exposed at the site shows evidence of shrinkage cracking indicating that it likely has a moderate to high expansion potential. The laboratory testing resulted in Plasticity Indices between 5 and 34, indicating a low to high expansion potential within the site. Expansive soil shrinks and swells as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.

Successful construction on expansive soil requires special attention during grading. It is imperative to keep exposed soil moist by occasional sprinkling. If the soil dries, it is extremely difficult to remoisturize the soil (because of the clayey nature) without excavation, moisture conditioning, and recompaction. Mitigation for pavement may include lime treatment of the subgrade, increasing the aggregate base section, and/or adding cutoff curbs or edge drains to limit moisture transmission from the edges of the pavement.

3.3 LANDSLIDES AND SLOPE STABILITY

We did not observe evidence of past landslide activity within the proposed trail alignment during our site reconnaissance. We also reviewed available landslide mapping of the site which does not show any landslide deposits (Nilsen, 1974). The mapping does show areas of colluvial and/or alluvial fan deposits in the northeastern portion of the alignment. The northeastern portion of the alignment, extending from approximately Station 42+86 to Station 48+53, is adjacent to existing cut slopes in colluvium and alluvium deposits. Maximum cuts of approximately four feet are planned between 42+86 to 48+53 for the partially elevated boardwalk area. We should review project grading and retaining wall plans when they become available to evaluate the slope stability of the final configuration of the partially elevated boardwalk area. Additional laboratory testing and engineering analysis may be necessary during our design-level exploration to confirm that these slopes will have acceptable long-term stability under both static and seismic conditions.

3.4 SHALLOW GROUNDWATER

Based on the groundwater levels previously discussed, as well as the existing wetland areas within the alignment, shallow groundwater could affect construction within portions of the proposed trail alignment.

3.5 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, ground lurching, soil liquefaction, lateral spreading, and densification. Based on topographic and lithologic data, risk from regional subsidence/uplift is considered negligible at the site. The following sections present a discussion of these hazards as they apply to the site.

3.5.1 Ground Surface Rupture

Since there are no known active faults crossing the property and the site is not located within an Earthquake Fault Special Study Zone as shown on Figure 5, it is our opinion that ground rupture at the site is unlikely.

3.5.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, all structures should be designed using sound engineering judgment and the current California Building Code (CBC) requirements, as a minimum.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

3.5.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. The soil considered most susceptible to liquefaction is clean, loose, saturated, uniformly graded sand below the groundwater table. Empirical evidence indicates that low plasticity silt and clay are also potentially liquefiable, though this phenomenon is commonly referred to as cyclic softening. When seismic ground shaking occurs, the soil is subjected to cyclic shear stresses that can cause excess pore pressures to develop.

The project area has not been evaluated for liquefaction hazard potential by the State of California Geological Survey (Figure 4). We anticipate the YBM deposits at the site may contain potentially liquefiable soil if there are sand deposits at the bottom of the layer, which is common in some areas where YBM occurs. We encountered saturated sand within Boring 1-B06 which may be potentially liquefiable. We will further evaluate the liquefaction hazards at the site as part of our design-level geotechnical exploration.

3.6 GENERAL SITE CLEARING

Areas to be developed should be cleared of surface and subsurface deleterious materials, including debris, and designated trees, shrubs, and associated roots.

3.7 EXISTING FILL

As stated previously, some of our explorations encountered existing fill to depths of up to 4¼ feet below existing grade. The existing fill was likely placed during construction of the adjacent railroad and residential development. Non-engineered fill can experience excessive settlement, especially under new fill or loads. In our opinion, portions of the existing fill may not be suitable for supporting the planned improvements and may need to be either fully or partially removed and replaced with engineered fill in conjunction with site grading operations.

The condition of the existing fill to receive either improvements or new fill should be observed by our field representative prior to subgrade preparation and backfilling. Overexcavation may be

required if unstable conditions such as large voids or debris/organics are observed by our representative at the time of grading. The overexcavated areas should be backfilled with engineered fill prepared in accordance with the requirements in Section 3.8. The excavated existing fill may be suitable for use as engineered fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension and meets the requirements in Section 3.8 below. For planning purposes, we recommend assuming 1 foot of fill removal across the trail alignment.

Consult the exploration logs in Appendix A for fill depths at specific locations.

3.8 ACCEPTABLE FILL

On-site existing fill material at the site may be suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension.

Imported fill material should meet the above requirements, have a PI of less than 20, and at least 20 percent passing the No. 200 sieve. The contractor should allow us to sample and test proposed imported fill materials at least 72 hours prior to delivery to the site.

3.9 OVER-OPTIMUM SOIL MOISTURE CONDITIONS

The contractor should anticipate encountering excessively over-optimum (wet) soil moisture conditions during winter or spring grading, or during or following periods of rain. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

1. Frequent spreading and mixing during warm dry weather,
2. Mixing with drier materials,
3. Mixing with a lime, lime-flyash, or cement product, or
4. Stabilizing with aggregate or geotextile stabilization fabric, or both.

We should evaluate Options 3 and 4 prior to implementation.

3.10 FILL COMPACTION

All fill should be placed in thin lifts, where the loose lift thickness should not exceed 12 inches or the depth of penetration of the compaction equipment used, whichever is less.

It is important that all site preparations for site grading be performed under the observation of a field representative from our firm. Our field representative should observe all graded area preparation, including demolition and stripping, following the recommendations contained in this report. The final grading plans should be submitted to us for review.

3.10.1 Subgrade Preparation

The contractor should perform subgrade preparation and compaction prior to fill placement, following site clearing, cutting operations, and in areas left at grade following the compaction control requirements presented below in Section 3.10.2.

Subgrade soil should be in a stable, non-pumping condition before fill materials are placed and compacted. Yielding soil should be appropriately mitigated, with suitable mitigation measures developed in coordination with the client, contractor, and our firm.

3.10.2 Grading in Structural Fill Areas

The following compaction control requirements should be applied to expansive (PI greater than or equal to 20) site soil materials.

Test Procedures:	ASTM D-1557.
Required Moisture Content:	Not less than 4 percentage points above optimum moisture content.
Required Relative Compaction:	Not less than 88 and not more than 92 percent.

The following compaction control requirements should be applied to non-expansive site soil (PI less than 20), imported sand, or quarry fines (non-expansive) for utilities.

Test Procedures:	ASTM D-1557.
Required Moisture Content:	Not less than optimum moisture content.
Required Relative Compaction:	Not less than 90 percent.

The contractor should compact the pavement Caltrans Class 2 aggregate base section to at least 95 percent relative compaction at a moisture content slightly above the optimum moisture content prior to compaction.

3.11 GRADED SLOPES

The contractor is responsible to construct temporary construction slopes in accordance with Cal/OSHA requirements.

For planning purposes, we recommend that permanent graded slopes should be planned at gradients that are no steeper than 2:1 (horizontal:vertical).

3.12 PRELIMINARY RETAINING WALL RECOMMENDATIONS

We understand cantilevered retaining walls are proposed on the upslope side of the boardwalk area extending from Station 42+86 to Station 48+53. Considering the property line constraints adjacent to the proposed upslope side of the boardwalk, we recommend a soldier pile wall with shotcrete lagging be considered as the retaining wall type in this area. A cast-in-place retaining wall founded on drilled piers connected with grade beams may also be considered. Alternatively, the cast-in-place retaining wall may be supported on shallow continuous footings provided the bottom of the footings are deepened so there is a minimum of 10 feet of lateral distance from the bottom of the footing to daylight of the slope. This option may be cost prohibitive in some areas if the deepened footing results in deeper excavations requiring temporary shoring. We also consider a soil nail wall to be a potential option, however, this option may not be feasible considering encroachment would be required for the soil nails extending below the neighboring

properties. We anticipate abutment walls may also be included in design of the proposed bridge for the creek crossing from Station 34+70 to 35+40.

For preliminary design purposes, we provide the preliminary lateral earth pressures for both walls restrained (at-rest) and unrestrained (active) at the top in the table below.

TABLE 3.12-1: Preliminary Lateral Earth Pressures

Backslope Condition	Active Pressure (pcf)	At-Rest Pressures (pcf)
Level	40	65
2:1	75	95

If a sidewalk or traffic is planned above the wall, a minimum surcharge load of 50 psf or 100 psf, respectively (rectangular distribution), should be added to the top 10 feet of the wall. Design retaining walls to resist an additional uniform pressure equivalent to one-half of any surcharge loads applied at the surface. Appropriate safety factors against overturning and sliding should be incorporated into the design calculations.

Seismic conditions need to be considered in the design of any walls greater than 6 feet in height. Once final grading plans are determined, we can provide the active incremental seismic force to be applied if this condition exists.

We recommend the walls be designed and constructed with a back drain to reduce the pressures on the walls. If adequate drainage is not provided, we recommend that an additional equivalent fluid pressure of 40 pcf be added to the values recommended above for both restrained and unrestrained walls. Damp-proofing of the walls should be included in areas where wall moisture would be problematic.

Once the final grading configuration is known and we perform additional subsurface exploration, we can provide lateral earth pressures and supplemental recommendations for design of the selected retaining wall types in our design-level report.

3.13 PRELIMINARY FOUNDATION RECOMMENDATIONS

As previously discussed, the seasonal creek at the location of the proposed bridge crossing is likely to be underlain by potentially compressible and liquefiable soil. Additionally, an elevated boardwalk is planned in each location that the proposed trail crosses wetland areas containing YBM deposits. Considering the compressible and potentially liquefiable soil in the vicinity of proposed wetlands and creek crossing, the proposed bridge and elevated boardwalks in those areas will likely need to be founded on deep foundations. Drilled piers or driven piles may be considered to support the bridge abutments and elevated boardwalks in these areas. If there are limitations on vibrations in the wetlands areas, driven piles may not be a suitable option. Construction of drilled piers in these areas will likely require casing given the relatively shallow groundwater and potentially caving soil present. For planning purposes, we recommend piles constructed within wetland areas and for the creek crossing extend a minimum of 10 feet into competent soil below the YBM deposits. As previously discussed, we anticipate the thickness of the YBM will be less than 20 feet. Based on our limited knowledge of the subsurface conditions, we estimate the piles in these areas will be on the order of 30 to 40 feet long for planning purposes.

As previously discussed, a partially elevated boardwalk is proposed between Station 42+86 to Station 48+53. The downslope side of the partially elevated boardwalk may be founded on drilled piers. For planning purposes, the drilled piers should have a minimum depth of 10 feet and extend to at least the elevation of the toe of the slope below. The upslope side of the boardwalk area may be supported on either a shallow strip footing or grade beam. The shallow footings should extend to a minimum depth such that there is a minimum of 10 feet of lateral distance from the bottom of the footing to daylight of the slope below. Once the final configuration of the partially elevated boardwalk is known, we can evaluate the slope stability as part of our design-level report.

The properties of and depth to competent soil will impact our foundation recommendations; we will provide design-level foundation recommendations following further subsurface exploration as part of our design-level geotechnical report.

3.14 PRELIMINARY 2022 CBC SEISMIC DESIGN PARAMETERS

We provide the 2022 California Building Code (CBC) seismic design parameters in the table below for planned structural areas, including design spectral response acceleration parameters based on the mapped Risk-Targeted Maximum Considered Earthquake (MCE_R) spectral response acceleration parameters.

Based on the geotechnical data and existing geologic and soil deposit maps, we preliminarily classified the portion of the alignment where there are proposed wetlands and creek crossings between Station 10+42 to Station 35+40 as Site Class E. We preliminarily classify the proposed partially elevated boardwalk area between Station 42+86 to Station 48+53 as Site Class D. We provide the 2019 CBC seismic design parameters for Site Class D and E in the table below based on the aforementioned range of subsurface conditions along the alignment. The provided parameters assume the structural engineer will use the exceptions presented in Section 11.4.8 of ASCE 7-16 and Supplement No. 3.

TABLE 3.14-1: Preliminary 2022 CBC Seismic Design Parameters between Station 10+42 to Station 35+40

Lat: 38.000917; Long: -122.331197

PARAMETER	DESIGN VALUE
Site Class	E
Mapped MCE _R Spectral Response Acceleration at Short Periods, S_s (g)	2.407
Mapped MCE _R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.917
Site Coefficient, F_A	1.2 ¹
Site Coefficient, F_V	2.0 ¹
MCE _R Spectral Response Acceleration at Short Periods, S_{MS} (g)	2.888 ¹
MCE _R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	1.834 ¹
Design Spectral Response Acceleration at Short Period, S_{DS} (g)	1.926 ¹
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	1.223 ¹
MCE _R Site Modified Peak Ground Acceleration	1.107

MCE_R = Risk-Targeted Maximum Considered Earthquake

¹ The parameters above should only be used for calculation of T_s , determination of Seismic Design Category, and, when taking the exceptions under Items 1 and 2 of ASCE 7-16 Section 11.4.8. (Supplement Number 3 <https://ascelibrary.org/doi/epdf/10.1061/9780784414248.sup3>).

TABLE 3.14-2: Preliminary 2022 CBC Seismic Design Parameters Between Station 42+86 to Station 48+53

Lat: 38.00526; Long: -122.323459

PARAMETER	DESIGN VALUE
Site Class	D
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	2.298
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.874
Site Coefficient, F_A	1.0
Site Coefficient, F_V	1.7 ¹
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	2.298
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	1.489 ¹
Design Spectral Response Acceleration at Short Period, S_{DS} (g)	1.532
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.991 ¹
MCE_R Site Modified Peak Ground Acceleration	1.057

 MCE_R = Risk-Targeted Maximum Considered Earthquake

¹ The parameters above should only be used for calculation of T_s , determination of Seismic Design Category, and, when taking the exceptions under Items 1 and 2 of ASCE 7-16 Section 11.4.8. (Supplement Number 3 <https://ascelibrary.org/doi/epdf/10.1061/9780784414248.sup3>).

We recommend that we collaborate with the structural engineer of record to further evaluate the effects of taking the exception on the structural design and identify the need for performing a site-specific ground-motion hazard analysis. We can prepare a proposal for a site-specific ground-motion hazard analysis, if requested.

4.0 FUTURE DESIGN-LEVEL GEOTECHNICAL EXPLORATION

As previously discussed, a site-specific design-level geotechnical exploration should be performed as part of the design process. The exploration would likely include cone penetration tests (CPTs), deeper borings, and laboratory soil testing focused near the bridge abutments of the proposed creek crossing, wetlands crossings to characterize the thickness of the YBM layer, and the existing slope between Station 42+86 to Station 48+53. The laboratory testing would likely include index testing such as Atterberg Limits, moisture content, gradation, consolidation, and shear strength testing.

The exploration will also allow for more detailed evaluations of the primary geotechnical considerations discussed in Section 3.0 including the consistency, depth, and expansive potential of the existing fill, the thickness, compressibility, and shear strength characteristics of the YBM, liquefaction potential of soil in the vicinity of the wetlands and creek crossings, and evaluation of slope stability for the partially elevated boardwalk area. The additional exploration would provide data for preparation of design-level recommendations regarding grading, foundation, and retaining wall design for the proposed trail development and afford the opportunity to provide recommendations regarding techniques and procedures to be implemented during construction to mitigate potential geotechnical and geological hazards.

5.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents preliminary geotechnical recommendations for design of the improvements discussed in Section 1.3 for the EBRPD SF Bay Trail Point Pinole to Wilson Point project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The preliminary conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

This report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this report to developers, contractors, buyers, architects, engineers, and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The preliminary conclusions and recommendations contained in this report are solely professional opinions.

We strived to perform our professional services in accordance with generally accepted principles and practices currently employed in the area; no warranty is provided, either express or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of preparation of our work. This document must not be subject to unauthorized reuse, that is, reuse without our written authorization. Such authorization is essential because it requires us to evaluate the document's applicability given new circumstances, not the least of which is passage of time. Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to our work. Therefore, we must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If our scope of services does not include onsite construction observation, or if other persons or entities are retained to provide such services, we cannot be held responsible for any or all claims, including, but not limited to claims arising from or resulting from the performance of such services by other persons or entities, and any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

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FIGURES

FIGURE 1: Vicinity Map

FIGURE 2: Site Plan

FIGURE 3: Regional Geologic Map

FIGURE 4: Seismic Hazard Zones Map

FIGURE 5: Regional Faulting and Seismicity

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0 1,000 2,000
FEET

BASEMAP SOURCE: NEARMAP MAPPING SERVICE 2021



VICINITY MAP
POINT PINOLE TO WILSON POINT, EBRPD SF BAY TRAIL
SAN FRANCISCO, CALIFORNIA

PROJECT NO. : 19256.000.001

SCALE: AS SHOWN

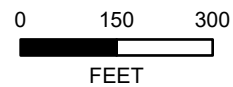
DRAWN BY: QRL

CHECKED BY: JAF

FIGURE NO.

1

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- TRAIL CENTER LINE
- BORING (ENGEO, 2021)

BASEMAP SOURCE: NEARMAP MAPPING SERVICE 2021



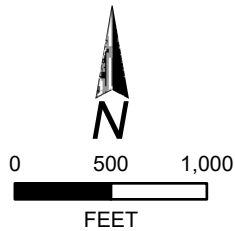
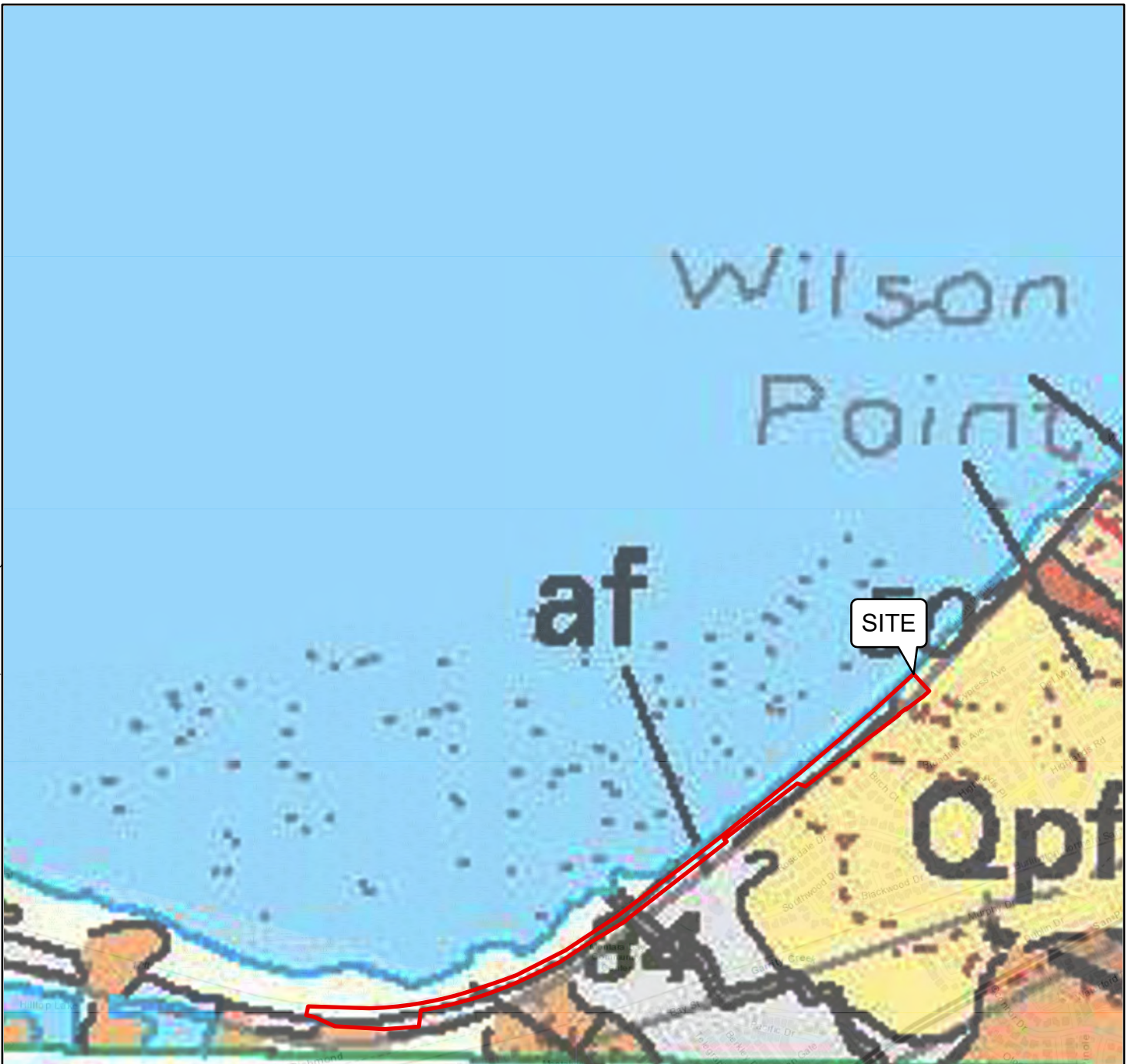
SITE PLAN
POINT PINOLE TO WILSON POINT, EBRPD SF BAY TRAIL
SAN FRANCISCO, CALIFORNIA

PROJECT NO. : 19256.000.001	
SCALE: AS SHOWN	
DRAWN BY: QRL	CHECKED BY: JAF

FIGURE NO.
2

PATH: G:\DRAFTING\PROJECTS\18000 TO 19999\19256\19256000001\GEOTECH\GEX\SAN FRANCISCO BAY TRAIL POINT PINOLE TO WILSON POINT.APRX
LAYOUT: SITE PLAN USER: QLIANG
ORIGINAL FIGURE PRINTED IN COLOR

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

af	ARTIFICIAL FILL (HOLOCENE, HISTORIC)
Qhbm	BAY MUD DEPOSITS (HOLOCENE)
Qpf	ALLUVIAL FAN DEPOSITS (LATE PLEISTOCENE)
Tcgl	CONGLOMERATE (LATE MIOCENE)
Tut	TUFFACEOUS SANDSTONE (LATE MIOCENE)
Tdi	DIATOMITE (MIDDLE TO EARLY MIOCENE)

BASEMAP SOURCE: GRAYMER, 2002



REGIONAL GEOLOGIC MAP

POINT PINOLE TO WILSON POINT, EBRPD SF BAY TRAIL
SAN FRANCISCO, CALIFORNIA

PROJECT NO. : 19256.000.001

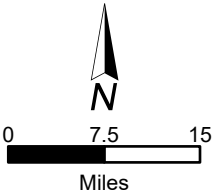
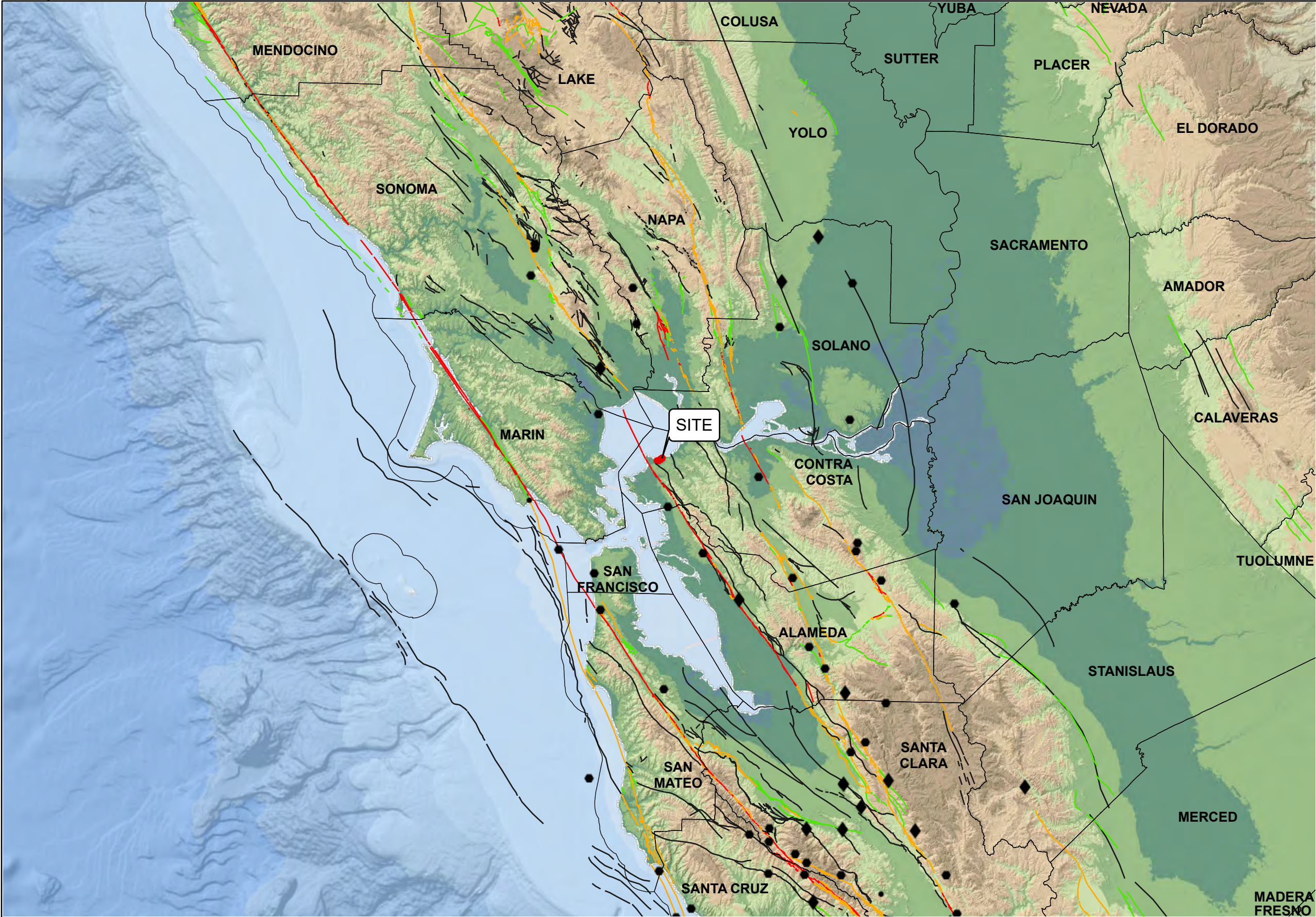
SCALE: AS SHOWN

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FIGURE NO.

3



EXPLANATION
ALL LOCATIONS ARE APPROXIMATE

- EARTHQUAKE**
- ◆ MAGNITUDE 7+
 - MAGNITUDE 6-7
 - MAGNITUDE 5-6
- USGS QUATERNARY FAULTS**
- HISTORICAL (<150 YEARS)
 - LATEST QUATERNARY (<15,000 YEARS)
 - LATE QUATERNARY (<130,000 YEARS)
 - UNDIFFERENTIATED QUATERNARY (<1.6 MILLION YEARS)
 - /// HISTORIC BLIND THRUST FAULT ZONE

BASE MAP SOURCE
ESRI, GEBCO, DELORME, NATURALVUE
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2018
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)

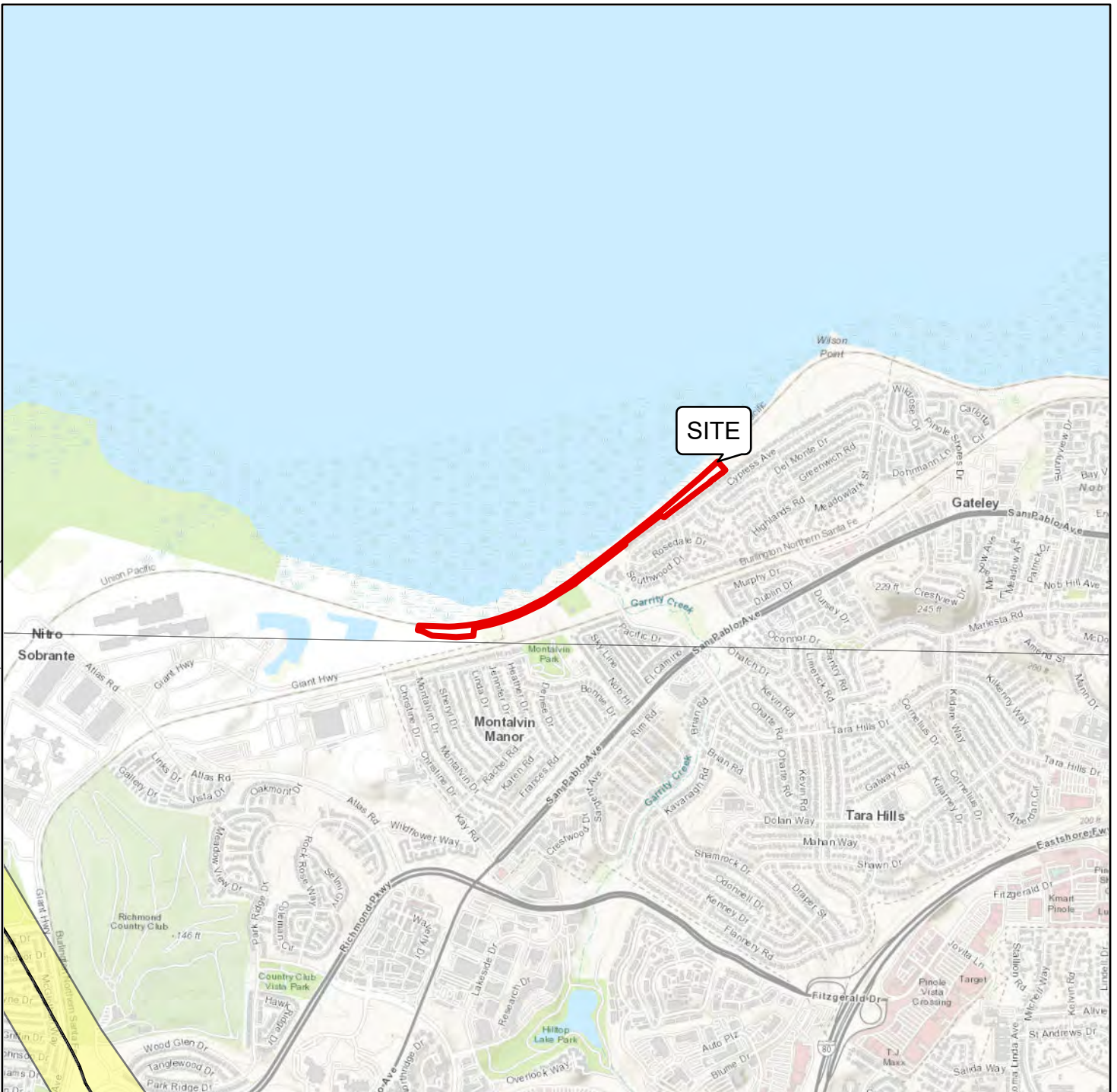


REGIONAL FAULTING AND SEISMICITY
POINT PINOLE TO WILSON POINT, EBRPD SF BAY TRAIL
SAN FRANCISCO, CALIFORNIA

PROJECT NO. : 19256.000.001	
SCALE: AS SHOWN	
DRAWN BY: JV	CHECKED BY: JAF

FIGURE NO.
4

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EXPLANATION

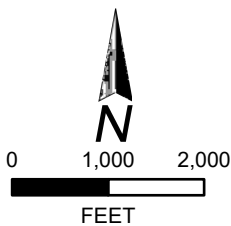
ALL LOCATIONS ARE APPROXIMATE

FAULT TRACES

— ACCURATELY LOCATED

EARTHQUAKE FAULT ZONE

ZONE BOUNDARIES ARE DELINEATED BY STRAIGHT-LINE SEGMENTS;
THE BOUNDARIES DEFINE THE ZONE ENCOMPASSING ACTIVE FAULTS
THAT CONSTITUTE A POTENTIAL HAZARD TO STRUCTURES FROM
SURFACE FAULTING OR CREEP SUCH THAT AVOIDANCE AS DESCRIBED
IN PUBLIC RESOURCES CODE SECTION 2621.5(A) WOULD BE REQUIRED



BASEMAP SOURCE: ESRI MAPPING SERVICE
CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY



SEISMIC HAZARDS ZONE MAP POINT PINOLE TO WILSON POINT, EBRPD SF BAY TRAIL SAN FRANCISCO, CALIFORNIA

PROJECT NO. : 19256.000.001

SCALE: AS SHOWN

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FIGURE NO.

5