MITIGATIED NEGATIVE DECLARATION

Marin County Environmental Review Environmental Coordination and Review

Pursuant to Section 21000 et. seq. of the Public Resources Code and Marin County Environmental Impact Review Guidelines and Procedures, a Negative Declaration is hereby granted for the following project.

1. Project Name: Cardinal Road Levee Upgrade Project

2. Location and Description: Coyote Creek along Cardinal Road, east of Flamingo Road, Tamalpais Valley, Marin County, CA

   The Project aims to address chronic seepage issues associated with Coyote Creek and tidal water coming from Richardson Bay by constructing a new steel sheet pile floodwall with a height extending 3 feet above the existing floodwall along an approximately 1,100-foot segment of the Cardinal Road levee. The project also includes installing a new storm drain system, removing concrete drain boxes, and replacing a culvert.

3. Project Sponsor: Marin County Flood Control & Water Conservation District

4. Finding:

   Based on the attached Initial Study and without a public hearing, it is my judgment that:

   ☐ The project will not have a significant effect on the environment.

   ☒ The significant effects of the project noted in the Initial Study attached have been mitigated by modifications to the project so that the potential adverse effects are reduced to a point where no significant effects would occur.

Rachel Reid _____ Date: October 24, 2025

Rachel Reid
Environmental Planning Manager

Based on the attached Initial Study, a Mitigated Negative Declaration is granted.

_____ Date: _____

Flood Control and Water Conservation Board

1. Mitigation Measures:

   ☐ No potential adverse impacts were identified, therefore, no mitigation measures are required.

   ☒ Please refer to mitigation measures in the attached Initial Study.

   All of the mitigation measures for the impacts listed above have been incorporated into the project and are required as conditions of approval.

2. Preparation:

   This Negative Declaration was prepared by Kyra Purvis of the Marin County Flood Control & Water Conservation District. Copies may be obtained at the address listed below.

   Marin County Flood Control and Water Conservation District
   3501 Civic Center Drive, Suite 304
   San Rafael, CA 94903
   (415) 473-6269

   Check with the District for information about business hours and/or reviewing copies of the document at the front counter.

   An electronic version is also available for review on the County of Marin Environmental Planning website.

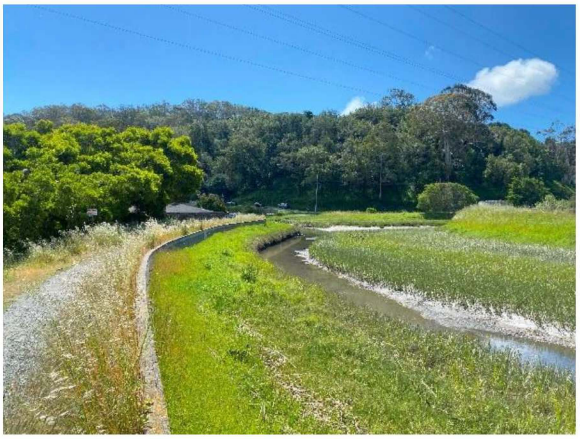
Cardinal Road Levee Upgrade Project

Draft Initial Study/Proposed Mitigated Negative Declaration

Project Number: Z3-23-03

Marin County, California





Prepared for:

Marin County Flood Control & Water Conservation District
3501 Civic Center Drive, Suite 304
San Rafael, CA 94903

Attn: Jeanine Jackson
Jeanine.Jackson@marincounty.gov

October 2025

Prepared by:

WRA, Inc.
2169 G East Francisco Boulevard
San Rafael, CA 94901

Attn: Renata Robles
Renata.robles@wra-ca.com

WRA#23015-3

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Appendix A. Biological Resources Technical Report
Appendix B. Cultural Resources Study

List of Acronyms and Abbreviations

AB	Assembly Bill
BAAQMD	Bay Area Air Quality Management District
Basin Plan	San Francisco Bay Water Quality Control Plan
BMPs	best management practices
C&D	construction and demolition
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
Cal/OSHA	California Division of Occupational Safety and Health
CALGreen	Title 24 California Green Building Standards
CAP	Clean Air Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CCH	Consortium of California Herbaria
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CDP	census-designated place
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CMU	Concrete Masonry Unit
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
County	County of Marin
CRR	California Ridgway's (clapper) rail
dB	decibel
dBA	A-weighted sound level
District	Marin County Flood Control and Water Conservation District
DPM	diesel particulate matter
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
EBA	Eileen Barrow & Associates
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FTA	Federal Transit Administration
GEI	GEI Consultants, Inc.
GHG	greenhouse gas
HA	Hydrologic Area

HDR	HDR, Inc.
HSA	hydrologic sub area
HTL	high tide line
Hz	hertz
Inventory	Rare Plant Inventory
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level
L_{max}	maximum noise level
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MCE	Marin Clean Energy
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MMTCO2e	million metric tons of carbon dioxide equivalent
MMWD	Marin Municipal Water District
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_x	nitrogen oxides
OA	Open Area
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
OS	Open Space
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	fine particulate matter
PM_{10}	respirable particulate matter
PRC	Public Resources Code
PPV	peak particle velocity
PVC	polyvinyl chloride
Rank	California Rare Plant Rank
RCH	RCH Group
RCRA	Resource Conservation and Recovery Act
RMS	root mean square
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCA	Stream Conservation Areas
SFBAAB	San Francisco Bay Area Air Basin
SMFPD	Southern Marin Fire Protection District
SSC	Species of Special Concern
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCSD	Tamalpais Community Services District
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibel

VMT	Vehicle Miles Traveled
WBWG	Western Bat Working Group
WCA	Wetland Conservation Areas
WRA	WRA, Inc.

1.0 INTRODUCTION AND PURPOSE

This Initial Study of environmental impacts is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the State CEQA Guidelines (California Code of Regulations 15000 et. seq.), the Marin County Environmental Impact Review Guidelines, and the regulations and policies of the Marin County Flood Control and Water Conservation District (District). This Initial Study evaluates the potential environmental impacts which might reasonably be anticipated to result from implementation of the Cardinal Road Levee Upgrade Project (Project).

The District is the Lead Agency under CEQA and has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to address the impacts of implementing the Project. The purpose of the Project is to address chronic seepage issues and flood risk associated with Coyote Creek and tidal backwater from Richardson Bay, which will provide long-term adaptation capacity for projected mid-century sea level rise.

2.0 PROJECT INFORMATION

2.1 Project Title

Cardinal Road Levee Upgrade Project

2.2 Lead Agency Name and Address

Marin County Flood Control and Water Conservation District
3501 Civic Center Drive, Room 304
San Rafael, CA 94903

2.3 Contact Person and Phone Number

Jeanine Jackson, Engineer II
Jeanine.jackson@marincounty.gov
(415) 473-6215

2.4 Project Location

The 5.9-acre Project site is located in the unincorporated community of Tamalpais Valley in Marin County, California (Figure 1). The site extends along an approximately 1,100-linear-foot stretch of Coyote Creek east of Flamingo Road to a point just upstream of the Shoreline Pump Station, adjacent to and south of California State Route 1. The Project site includes portions of the following Assessor's Parcel Numbers:

- 5202319
- 5202324
- 5202325
- 5202326
- 5202327
- 5204209
- 5204210
- 5204211
- 5204212
- 5204213
- 5204240
- 5204241
- 5204242
- 5204243
- 5204244
- 5204245
- 5204258
- 5204259
- 5204261
- 5204266
- 5204267
- 5204268
- 5204270
- 5204271

- 5204272
- 5204273
- 5206103
- 5206108
- 5206110
- 5206111
- 5206114
- 5206117
- 5206118
- 5206119

The Project site includes a portion of Coyote Creek and surrounding tidal marsh habitat; ornamental, native, and ruderal vegetation; and developed areas (Figure 2). Built structures within the Project site include the Cardinal Road levee, situated along the northern bank of Coyote Creek, the Shoreline Pump Station and a gym facility, located in the northern corner of the Project site, and a pedestrian bridge over Coyote Creek that parallels State Route 1 east of the Shoreline Pump Station. The site also includes a parking lot that borders the gym and the Shoreline Pump Station, a walking path that runs along the northern and southern banks of Coyote Creek, and an earthen ditch that conveys stormwater flows to Coyote Creek and runs parallel to residences along the western site border. The site extends across 21 parcels that include residential properties, open space areas, and public infrastructure uses.

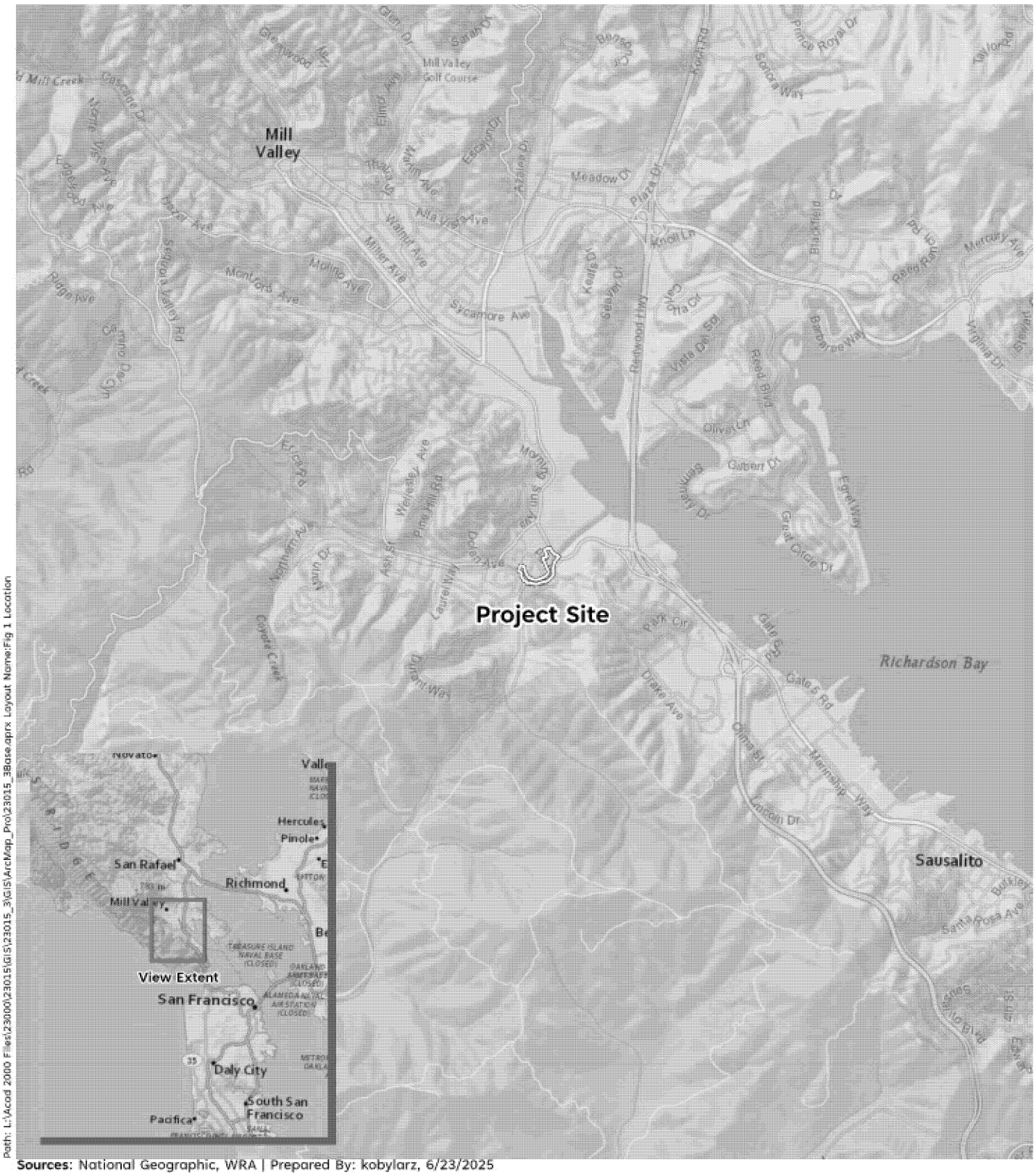
2.5 Existing General Plan Designation and Zoning District

General Plan Designation: Open Space (OS), Single Family Residential (SF6), and Neighborhood Commercial/Mixed Use (NC) (County of Marin 2022a)

Zoning District: Open Area (OA), Residential Single Family (R1-B1), and Residential Commercial Multiple Planned (RMPC-6) (County of Marin 2022a)

2.6 Surrounding Land Uses and Setting

Land use in the surrounding parcels includes open space, residential use, and mixed commercial use. The Project site is bounded primarily by residential properties to the north and open space areas to the east and south. A commercial shopping center is located adjacent to the northwestern border of the Project site, and State Route 1 is adjacent to the northeastern border of the site. While not included in the Project site, the Cardinal Pump Station is located adjacent to the site between residential properties along the northern side of the Cardinal levee, as shown in Figure 2.



Path: L:\Acad 2000 Files\23000\23015\GIS\23015_3\GIS\ArcMap_Pro\23015_3Base.aprx Layout Name:Fig 1 Location

Sources: National Geographic, WRA | Prepared By: kobylarz, 6/23/2025

Figure 1. Project Site Regional Location

Cardinal Road Levee Upgrade Project
Marin County, California

0 0.5 1 Miles

N

wra Environmental Consultants



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Sources: USDA NAIP Imagery 2022, WRA | Prepared By: kobylarz, 6/10/2025

Figure 2. Aerial Photograph of the Project Site

Cardinal Road Levee Upgrade Project
Marin County, California

0 125 250 Feet

N

wra Environmental Consultants

3.0 PROJECT DESCRIPTION

3.1 Background Information and Project Purpose

3.1.1 History of the Coyote Creek Levee System

The Coyote Creek levee system was constructed by the U.S. Army Corps of Engineers (Corps) in the mid-1960s for the purpose of protecting a portion of the Tamalpais Valley community from high flows in Coyote Creek and Nyhan Creek as well as from high tides from Richardson Bay. After the project was constructed, ownership of the system was transferred to the District, which has been responsible for operation and maintenance of the system ever since. The original system consisted of a concrete channel and arrangement of earthen levees situated along an approximately 7,800-linear-foot section of Coyote Creek extending from just upstream of Ample Street downstream to the Sausalito Pathway at Richardson Bay in Mill Valley.

Several alterations and additions to the original system have been made since its construction, including, but not limited to the construction of a concrete masonry unit (CMU) flood wall built in 1976–1977, the Tennessee Valley Trail built in 2013, and the installation of the Crest Marin, Cardinal, and Shoreline Pump Stations, built in 1977, 1983, and 1985, respectively. In addition, several studies have been conducted since the original system and the improvements were constructed with the purpose of providing alternatives to improving flood performance against 100-year floods, addressing potential sea level rise, and bringing levees into compliance with current design standards needed for accreditation by the Federal Emergency Management Agency (FEMA).

3.1.2 Recent Studies and Current Conditions

In 2016, GEI Consultants, Inc. (GEI) and HDR, Inc. (HDR) prepared an *Existing Conditions Levee Evaluation and Recommendations for Improvements* report that assessed the current conditions of the Coyote Creek levee system and provided recommendations for short-term and long-term improvements to the system (GEI 2016). The study included an assessment of geotechnical stability issues, including seepage (the slow leak of water through porous material), slope stability, and settlement potential. For the purposes of the study, the levee system was divided into analysis reaches (creek sections) based on several factors that influence levee performance, including the arrangement of layers of underlying rock and material properties, existing improvements and structures, cross-sectional levee geometry, and historic performance of the levee. The Project site was identified as Reach 3 of the Coyote Creek levee system, which includes the northern bank of the Coyote Creek Middle Reach with the existing flood wall.

Seepage occurring during high tides at and near the Cardinal Pump Station was identified by the District and evaluated in a technical memorandum prepared by GEI in 2023 (GEI 2023). The 2023 study discussed the observed changes since the 2016 levee evaluation and provided conceptual alternatives to improve levee performance. The 2023 study identified that the levees at Cardinal Road are located between two specific points measured by the Corps. These points are marked as station 49+50 and station 28+5, which are technical ways of indicating distances along a project line. Reach 3 consists of earthen channel with portions of the northern bank downstream of Flamingo Road that include a CMU flood wall that was built on top of the original earthen channel in 1977. In 2003, a clay barrier was installed through the center of the flood walls which extends from about one foot below the top of the wall to a few feet into the underlying bay mud.

The CMU flood wall consists of two parallel CMU walls connected with subsurface tie-rods. Fill material within the walls is generally poorly graded gravel, silt, and sand. The floodwall and fill material range from 1 to 3.5 feet tall. The clay barrier installed in 2003 is understood to be composed of fine-grained soils; however, its exact composition is uncertain. The CMU wall foundations include approximately 5 feet of fill composed of clay and sand underlain by around 20 feet of soft, compressible bay mud.

PERFORMANCE ISSUES

The 2023 technical memorandum identifies that the main challenges for the Cardinal Road levee are related to rodent activity and seepage. Although recent inspections have not documented significant rodent activity, a Corps inspection conducted in 2012 observed gopher holes near the Cardinal Road pump station, prompting the District to implement annual—and later semi-annual—grouting of burrows after discontinuing ineffective trapping efforts. Additionally, saturated conditions on the land side of the levee during high tides indicate potential seepage issues, likely caused by through-seepage or high groundwater. Even after the clay barrier was installed in 2003 to help mitigate seepage, seepage at the base of CMU floodwalls has continued to be observed.

3.1.3 Project Overview

The Project aims to address chronic seepage issues associated with Coyote Creek and tidal water coming from Richardson Bay by constructing a new steel sheet pile floodwall along an approximately 1,100-foot segment of the Cardinal Road levee. Sheet piles are steel sheets with interlocking edges that create a continuous wall and can more effectively exclude unwanted water when compared to porous soils. The primary objective of the Project is to address chronic seepage issues and flood risk associated with Coyote Creek and tidal backwater from Richardson Bay, which will provide long-term adaptation capacity for projected mid-century sea level rise. Key components of the Project are shown in Figure 3 and include:

- Installation of a steel sheet pile floodwall with a height extending 3 feet above the existing floodwall (finished top elevation of +13 feet NAVD88), designed to allow future extension to +16 feet NAVD88 to accommodate sea level rise. The new sheet pile floodwall would increase the elevation of the levee by approximately three feet.
- Embedding the wall to a depth of approximately 15 feet below ground surface to minimize groundwater seepage and ensure structural stability.
- Improvement of a 10-foot-wide service path along the levee crown for access, inspection, and maintenance.
- Installation of a new storm drain system to convey flows from an earthen swale located behind the properties at 262 to 270 Cardinal Road to the Shoreline Pump Station. This includes the placement of storm drain inlet within the swale and a storm drainpipe routed to the pump station, and removal of an existing culvert that outfalls to Coyote Creek.
- Removal of two concrete drain boxes and associated culverts along the levee.
- Replacement of the existing 30-inch culvert that discharges from the Cardinal Road Pump Station with a new polyvinyl chloride (PVC) culvert, installed with a pipe seal to prevent leakage through the floodwall.

Figure 4 provides a photo simulation of the Project.



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Sources: USDA NAIP Imagery 2022, WRA | Prepared By: njander, 7/15/2025

Figure 3. Project Components

Cardinal Road Levee Upgrade Project
Marin County, California

0 125 250 Feet

N

wra Environmental Consultants



Figure 4. Photo Simulation of the Proposed Sheet Pile Floodwall

Cardinal Road Levee Upgrade Project
Marin County, California

wra Environmental Consultants

3.2 Project Construction

3.2.1 Site Work

During construction, sheet piles would be installed on the creek side of the existing concrete masonry unit wall, offset approximately 6 to 12 inches. The selected pile section is approximately 14 inches wide, meaning the wall would extend about 30 inches into the tidal marsh habitat along Coyote Creek. To control sediment during construction, a barrier fence would be installed approximately 2 feet from the floodwall. The project would require 400 cubic yards of soil to be imported to the site and would result in an addition of 2,000 square feet of impervious surface area within the project site.

Sheet piles would be installed using a 20-ton hydraulic excavator (e.g., CAT 317 or similar) equipped with a vibratory hammer attachment, which uses vibrations to drive piles into the ground. The hammer uses vibration, combined with the excavator's hydraulic pressure and weight, to drive the sheets into the ground. For locations beyond the reach of this equipment, the contractor may utilize a larger machine, boom extension, or side-grip hammer. Minor grading or use of steel plates atop the levee may be required to accommodate equipment access.

Once installed, the floodwall would be topped with a concrete cap, and either painted or treated with an anti-graffiti coating. All disturbed areas would be sprayed with a slurry of native seeds and mulch as an erosion control measure, also called hydroseeding, upon the completion of work. No trees would be impacted by the proposed construction work.

3.2.2 Construction Phasing and Schedule

Project construction is anticipated to begin in May 2027 and be completed within a single construction season, ideally by October 2027. A shorter construction window may be required depending on the final permit conditions issued by regulatory agencies. Construction is anticipated to take approximately 60 working days.

Construction work would occur for a minimum of eight hours per day, five days per week. According to Marin County municipal code, construction activities shall only take place between 7 a.m. and 6 p.m., Mondays through Fridays and 9 a.m. to 5 p.m. on Saturdays (MCMC § 6.70.030). Approximately 300 linear feet of sheet pile would be installed per workday, with installation expected to take approximately 20 days in total. Other construction activities, such as demolition and underground utility installation, would occur simultaneously. The general schedule for construction activities will follow the sequential order below:

1. Mobilization of Equipment and Materials: Two days
2. Installation of Exclusion and Sediment Fencing: Two days
3. Demolition and Clearing: Two days
4. Sheet Pile Installation: 20 days
5. Minor Grading and Underground Utility Work: 10 days
6. Hydroseeding: One day
7. Cleanup and Demobilization: 10 days

3.2.3 Staging, Access, and Equipment

Regional access to the Project site is provided via U.S. Highway 101. Vehicles approaching from both the north and south would exit U.S. Highway 101, proceed west on Shoreline Highway, continue west on State Route 1, and then head south on Flamingo Road to access the site.

The following equipment would be required for Project construction:

- Two 20-ton hydraulic excavators with vibratory hammers,
- One hydraulic excavator,
- One compact truck loader,
- One flatbed truck and crane for delivery and placement of sheet piles, culverts, and precast structures.

Heavy truck trips would be required for bringing materials to and from the Project site. Approximately 40 truck trips would be generated during Project construction, along with vehicle trips from workers traveling to and from the Project site. The estimated maximum construction crew size per workday would be eight individuals; therefore, the maximum number of commute trips that would be generated daily would be 16.

Specific staging areas for construction materials and equipment would be determined at the outset of construction activity by the construction contractor. Staging of materials and equipment would occur on developed or disturbed areas and would not be located in any sensitive habitat areas.

3.3 Project-Related Approvals, Agreements, and Permits

The information contained in this Initial Study will be used by the District (the CEQA Lead Agency) as it considers whether to approve the Project. If the Project is approved, the Initial Study would be used by the District and responsible and trustee agencies in conjunction with various approvals and permits. These actions may include, but may not be limited to, the following approvals by the agencies indicated:

MARIN COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

- Project approval by the District's Board of Supervisors

U.S. ARMY CORPS OF ENGINEERS (CORPS)

- Clean Water Act Section 404 Nationwide Permit

U.S. FISH AND WILDLIFE SERVICE (USFWS)

- Section 7 Endangered Species Act Consultation

STATE HISTORIC PRESERVATION OFFICER AND NATIVE AMERICAN TRIBAL GOVERNMENTS

- Section 106 National Historic Preservation Act Consultation

SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

- Clean Water Act Section 401 Water Quality Certification

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW)

- Section 1600 Lake or Streambed Alteration Agreement

4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

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

4.1 Determination

On the basis of this initial evaluation:

☐ I find that the project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the 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 project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the 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 project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Rachel Reid

Signature

October 24, 2025

Date

Name and Title: Rachel Reid, Environmental Coordinator

4.2 Initial Study Checklist

This section describes the existing environmental conditions in and near the Project site and evaluates environmental impacts associated with the proposed Project. The environmental checklist, as recommended in the State CEQA Guidelines (Appendix G), was used to identify environmental impacts that could occur if the Project is implemented. The right-hand column in the checklist lists the source(s) for the answer to each question. The cited sources are identified at the end of this section.

Each of the environmental categories was fully evaluated, and one of the following four determinations was made for each checklist question:

> **"No Impact"** means that no impact to the resource would occur as a result of implementing the project.
>
> **"Less-than-Significant Impact"** means that implementation of the project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
>
> **"Less-than-Significant Impact with Mitigation Incorporated"** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
>
> **"Potentially Significant Impact"** means that there is either substantial evidence that a project-related effect may be significant, or, due to a lack of existing information, could have the potential to be significant.

4.2.1 Aesthetics

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

ENVIRONMENTAL SETTING

The Project site is situated between residential neighborhoods to the north and open space to the south. The Project site consists of the Cardinal Road levee, a portion of Coyote Creek, walking paths, a pedestrian bridge, and a developed parking lot.

REGULATORY SETTING

Marin Countywide Plan

Section 3.5, Community Design, of the Marin Countywide Plan (County of Marin 2023a) contains goals and policies intended to maintain the County's pedestrian-scale heritage and apply it in new and redeveloping areas in the County. The following policy is applicable to the Project.

> **DES-4.1 Preserve Visual Quality**. Protect scenic quality and views of the natural environment — including ridgelines and upland greenbelts, hillsides, water, and trees — from adverse impacts related to development.

DISCUSSION OF IMPACTS

a) Have a substantial adverse effect on a scenic vista?

Less-than-Significant Impact

The Project site is bordered by residences to the north and open space to the south. The Project site includes the Cardinal Road Levee and a portion of Coyote Creek with surrounding tidal salt marsh and woodland habitat. Upland areas consist of graveled walking paths and a parking lot as well as ruderal, annual grassland vegetation, and non-native ornamental trees.

The Project site is visible from residential and commercial properties north of the Project site and walking trails throughout and adjacent to the Project site. Scenic vistas in the vicinity of the Project site include Coyote Creek and associated tidal salt marsh and woodland habitat.

Activities associated with Project implementation may temporarily alter views of Coyote Creek and surrounding habitat; however, Project implementation would not change the existing land use of the Project site or create any new structures which would permanently alter existing views of the site or Coyote Creek. During construction, the use of equipment on the Project site may temporarily obstruct views of Coyote Creek; however, this impact would only be temporary while equipment is being used. Therefore, the Project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

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

Less-than-Significant Impact

There is one eligible state scenic highway within the vicinity of the Project site, State Route 1, which borders the northeast edge of the Project site (Caltrans 2019). The nearest officially designated state scenic highway is California State Route 24, located approximately 18 miles east of the Project site (Caltrans 2019).

Views of the Project site from State Route 1 are almost entirely obstructed by a pedestrian bridge that runs parallel to the highway. In addition, Project implementation would not create any new structures that would permanently alter views of the Project site, Coyote Creek or surrounding habitat from State Route 1. Therefore, the Project would not substantially damage scenic resources within a state scenic highway. The impact would be less than significant.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? 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

The Project site is situated between urbanized and non-urbanized areas. A portion of the Project site and areas to the north are within Residential Single Family and Residential Commercial Multiple Planned zoning districts, while the area surrounding Coyote Creek is designated as Open Space. The Project would install a new steel sheet pile wall along the existing concrete wall surrounding the Cardinal Road levee. Installation of this wall would not substantially alter or degrade the existing visual character of public views or existing use of the site and its surroundings.

During construction, the presence of construction equipment and materials on the Project site would temporarily degrade the existing views of the site; however, these impacts would be temporary and would not be substantial. The Project would temporarily install construction

fencing and remove some vegetation, which would temporarily alter the site's appearance. The Project would not remove scenic vegetation such as large mature trees or unique or rare plant species. Therefore, the Project would not degrade the existing visual character or quality of public views of the site, or conflict with applicable zoning and other regulations governing scenic quality. The impact would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less-than-Significant Impact

The Project would not create any new permanent sources of lighting on the Project site. In accordance with Marin County Code, construction activities would only take place during daytime construction hours (MCMC § 6.70.030); as such, no nighttime lighting would be required. During construction, the presence of construction equipment and materials on the Project site may cause temporary sources of glare which may be observed by people within the immediate site vicinity. Once construction has finished, all equipment and materials would be removed, and no new sources of glare would be present. Therefore, the Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. The impact would be less than significant.

4.2.2 Agricultural and Forestry Resources

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

ENVIRONMENTAL SETTING

The Project site is within Open Area, Residential Single Family, and Residential Commercial Multiple Planned zoning districts. The Project site is mapped as "Urban and Built-Up Land" by the California Department of Conservation (CDOC) California Important Farmland Finder online mapping tool (CDOC 2025). Urban and Built-Up Land is occupied by structures and includes residential, industrial, commercial, institutional facilities, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.

DISCUSSION OF IMPACTS

a, b) 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? Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact

No portion of the Project site is mapped as Grazing Land, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDOC 2025). Therefore, the Project would not impact any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Project site is zoned for Residential Single Family, Residential Commercial Multiple Planned, and Open Space and is not under a Williamson Act contract. No impact would occur.

c, d) 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))? Result in a loss of forest land or conversion of forest land to non-forest use?

No Impact

The Project site is mapped as "Urban and Built-Up Land" by the CDOC. The Project site is zoned for residential use and does not include any forestland or timberland. Therefore, the Project would not conflict with an existing zoning for forestland or timberland. The Project would not convert any forest land to non-forest use. No impact would occur.

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?

No Impact

The Project would not change the existing land use of the Project site. Additionally, there is no Farmland or forest land on or within the vicinity of the Project site. Therefore, the Project would not cause any changes in the existing environment which would result in the conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur.

4.2.3 Air Quality

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

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in 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) affecting a substantial number of people?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

Environmental Setting

The Project site is located in Marin County, which is in the San Francisco Bay Area Air Basin (SFBAAB). The Bay Area Air Quality Management District (BAAQMD) is the regional agency tasked with managing air quality in the region. The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (EPA), oversees regional air district activities and regulates air quality at the State level. BAAQMD has published the CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of the Project (BAAQMD 2022). The 2017 Clean Air Plan (CAP) is the most current air quality management plan developed and adopted by BAAQMD.

Ambient Air Quality and Climate

The Bay Area has a Mediterranean climate characterized by wet winters and dry summers. During most summers, a high-pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly wind flow that generally keeps storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens, resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.

Air Pollutants of Concern

The CARB and U.S. EPA focus on the following air pollutants as regional indicators of ambient air quality:

- Ozone
- Coarse particulate matter (PM_{10})
- Fine particulate matter ($PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide
- Sulfur dioxide
- Lead

Because these are the most prevalent air pollutants known to be harmful to human health based on extensive criteria documents, they are referred to as "criteria air pollutants." In the SFBAAB, the primary criteria air pollutants of concern are ground-level ozone formed through reactions of oxides of nitrogen oxides (NO_x) and reactive organic gases (ROG), PM_{10}, and $PM_{2.5}$. Regional air pollutants, such as ozone, PM_{10}, and $PM_{2.5}$, can be formed and/or transported over long distances and affect ambient air quality far from the emissions source. The magnitude and location of specific health effects from exposure to increased ozone, PM_{10}, and $PM_{2.5}$ concentrations are the result of emissions generated by numerous sources throughout the SFBAAB, as opposed to a single project.

Localized air pollutants generally dissipate with distance from the emission source and can pose a health risk to nearby populations. Toxic air contaminants (TACs), such as diesel particulate matter (DPM), are considered localized pollutants. $PM_{2.5}$ is also considered a localized air pollutant, in addition to being considered a regional air pollutant. Air dispersion models can be used to reliably quantify the health risks to nearby receptors associated with emissions of localized air pollutants from an individual project.

REGULATORY SETTING

Federal and State Regulations

The U.S. EPA is responsible for implementing the programs established under the Federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans to attain the NAAQS. A State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. If a state fails to enforce its implementation of approved regulations, or if the EPA determines that a State Implementation Plan is inadequate, the EPA is required to prepare and enforce a Federal Implementation Plan to promulgate comprehensive control measures for a given State Implementation Plan.

CARB is responsible for establishing and reviewing the California Ambient Air Quality Standards (CAAQS), developing and managing the California State Implementation Plans, identifying TACs, and overseeing the activities of regional air quality management districts. In California, mobile emissions sources (e.g., construction equipment, trucks, and automobiles) are regulated by CARB and stationary emissions sources (e.g., industrial facilities) are regulated by the regional air quality management districts.

In accordance with the Federal Clean Air Act and California Clean Air Act, areas in California are classified as either in attainment, maintenance (i.e., former nonattainment), or nonattainment of the NAAQS and CAAQS for each criteria air pollutant, where attainment means the area is meeting state or federal standards for a specific pollutant. To assess the regional attainment status, BAAQMD collects ambient air quality data from over 30 monitoring sites within the SFBAAB (BAAQMD 2017a). Based on current monitoring data, the SFBAAB is designated as a nonattainment area for ozone, PM_{10} (CAAQS only), and $PM_{2.5}$, and is designated an attainment or unclassified area for all other pollutants. BAAQMD is primarily responsible for ensuring that the NAAQS and CAAQS are attained and maintained in the SFBAAB. BAAQMD fulfills this responsibility by adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions.

BAAQMD Screening Criteria

BAAQMD has established screening criteria to determine whether individual projects could result in potentially significant criteria air pollutant and precursor emissions, which are described in Section 4 of the BAAQMD 2022 CEQA Guidelines (BAAQMD 2022). Preliminary screening for construction and operational criteria provides lead agencies with a conservative indication of whether a project would result in the generation of criteria air pollutants or precursors that exceed BAAQMD thresholds of significance. If all screening criteria for criteria air pollutants and precursors are met by a proposed project, then the lead agency need not perform a detailed assessment of the project's criteria air pollutant and precursor emissions.

Table 4-1 of the BAAQMD CEQA Guidelines contains single land use construction and operational criteria air pollutant and precursor screening levels for various land use categories. For operational emissions, it is assumed that projects would result in a less-than-significant impact related to criteria air pollutants and precursor emissions if: 1) the project size is at or below the operational screening level size for the applicable land use category (contained in Table 4-1 of the BAAQMD CEQA Guidelines); 2) operational activities would not include stationary engines and industrial sources subject to BAAQMD rules and regulations; and 3) operational activities would not overlap with construction activities. For construction emissions, it is assumed that projects would result in a less-than-significant impact related to criteria air pollutants and precursors if: 1) the project size is below the applicable screening level shown in Table 4-1; 2) all BAAQMD-recommended BMPs are included in the project design and implemented during construction; 3) construction-related activities would not overlap with operational activities; and 4) construction-related activities would not include demolition, simultaneous occurrence of two or more construction phases, extensive site preparation, extensive material transport, or stationary sources subject to BAAQMD rules and regulations.

DISCUSSION OF IMPACTS

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less-than-Significant Impact

BAAQMD's 2017 CAP is the applicable air quality plan for projects located in the SFBAAB (BAAQMD 2017b). Consistency may be determined by evaluating whether the Project supports the primary goals of the 2017 CAP, including applicable control measures contained within the plan, and would not conflict with or obstruct implementation of any of the control measures.

The primary goals of the 2017 CAP are the attainment of ambient air quality standards and reduction of population exposure to air pollutants for the protection of public health in the Bay Area. Because the Project would not result in any significant and unavoidable air quality impacts related to emissions, ambient concentrations, or public exposures (see discussions below), the Project would support the primary goals of the 2017 CAP.

The control measures from the 2017 CAP, which aim to reduce air pollution and greenhouse gases (GHGs) from stationary, area, and mobile sources, are organized into nine categories. As described in Table 1, the Project would be consistent with the applicable control measures from the 2017 CAP. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and the impact would be less than significant.

Table 1. Project Consistency with BAAQMD 2017 Clean Air Plan

CONTROL MEASURES	PROJECT CONSISTENCY
Stationary Sources	**Not applicable**. The stationary source measures, which are designed to reduce emissions from stationary sources, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD's Permit and Inspection programs. Because the Project would not include new stationary sources, the stationary source control measures are not applicable to the Project.
Transportation	**Not applicable**. The transportation control measures are designed to reduce vehicle trips, use, miles traveled, idling, or traffic congestion for the purpose of reducing vehicle emissions. Operation of the Project would not generate any additional vehicle trips compared to the existing conditions. Therefore, the transportation control measures of the 2017 CAP are not applicable to the Project.
Energy	**Not applicable**. The energy control measures 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 2017 CAP are not applicable to the Project.
Buildings	**Not applicable**. BAAQMD 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 building control measures focus on working with local governments that have authority over local building codes to facilitate adoption of best GHG control practices and policies. Since the Project does not include any building construction, the building control measures of the 2017 CAP are not applicable to the Project.
Agriculture	**Not applicable**. The agriculture control measures are designed primarily to reduce emissions of methane. Since the Project does not include any agricultural activities, the agriculture control measures of the 2017 CAP are not applicable to the Project.

CONTROL MEASURES	PROJECT CONSISTENCY
Natural and Working Lands	**Not applicable**. The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt 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 2017 CAP are not applicable to the Project.
Waste Management	**Consistent.** 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. Therefore, the Project would be consistent with the waste management control measures of the 2017 CAP.
Water	**Consistent**. The water control measures to reduce emissions from the water sector will reduce 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. The primary objective of the Project is to reduce seepage and flood risk for adjacent residential properties and provide long-term adaptation capacity for project mid-century sea level rise. Because the Project would improve water quality and improve community climate resilience, the Project would be consistent with the water control measures of the 2017 CAP.
Super GHGs	**Not applicable**. The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through BAAQMD and local government agencies. Since these measures do not apply to individual projects, the super-GHG control measures of the 2017 CAP are not applicable to the Project.

Source: BAAQMD, 2017b

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?

Less-than-Significant Impact with Mitigation Incorporated

The Project site is located within the SFBAAB under the jurisdiction of BAAQMD. The SFBAAB is designated as a nonattainment area for ozone and $PM_{2.5}$ under both NAAQS and CAAQS (BAAQMD 2017a). The SFBAAB is also designated as nonattainment for PM_{10} under CAAQS, but not NAAQS (BAAQMD 2017b). BAAQMD's 2022 CEQA Air Quality Guidelines provide screening criteria for determining if an individual project could result in significant construction-related impact relative to criteria pollutants and precursor emissions. Criteria air pollutants and precursors include reactive organic gases, nitrogen oxides, PM_{10}, $PM_{2.5}$, and carbon monoxide. In accordance with BAAQMD's 2022 CEQA Air Quality Guidelines (BAAQMD 2022), construction activities would have a less-than-significant impact on air quality if the following screening criteria are met:

1. The project site is below the applicable screening level size shown in Table 4-1 of the BAAQMD 2022 CEQA Air Quality Guidelines;

2. All best management practices are included in the project design and implementation during construction; and
3. Construction-related activities would not include any of the following:
    - Demolition;
    - Simultaneous occurrence of more than two construction phases;
    - Extensive site preparation; or
    - Extensive material transport (e.g., soil import and export requiring a considerable amount of haul truck activity); or
    - Stationary resources (e.g., backup generators) subject to Air District rules and regulations.

Relative to screening criteria, the BAAQMD CEQA Air Quality Guidelines do not include specific screening level size for infrastructure and habitat enhancement projects; however, a general comparison can be made to other similar land uses. For example, detailed air quality assessments are not required for construction of projects such as single-family residential developments comprised of less than 254 dwelling units, city parks that are less than 10 acres in size, industrial facilities that are less than 452,000 square feet, and construction of office and commercial buildings that are less than 452,000 square feet (BAAQMD 2022). In comparison, Project construction activities would not involve a larger fleet of earthmoving equipment or substantial off-hauling than traditional land use projects would, would not include the construction of buildings, and would have a total construction disturbance area of approximately 8,000 square feet (0.18 acres) acres, well below the screening criteria for other types of land use projects. In addition, Project construction would be short in duration, lasting approximately two months.

Project-related construction activities would not involve the simultaneous occurrence of more than two construction phases or require construction of more than one land-use type. Construction would not involve extensive site preparation or material transport. The Project would result in a short-term increase in fugitive dust emissions from vehicles accessing the sites during construction which would include PM_{10} and $PM_{2.5}$. BAAQMD does not have a quantitative threshold of significance for fugitive dust PM_{10} and $PM_{2.5}$ emissions; however, BAAQMD considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level. Mitigation Measure AIR-1 would be implemented, which includes BAAQMD-recommended measures for fugitive dust control, in order to avoid significant impacts associated with fugitive dust. Measures would include covering exposed soils, limiting vehicle speeds on unpaved roadways, and watering exposed surfaces daily. Implementation of these measures would ensure that construction activities would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. The impact of Project construction would be less than significant with mitigation incorporated.

Operation of the Project would not result in any increase in emissions. No impact would occur from Project operation.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact with Mitigation Incorporated

Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential land uses are also considered

sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants, if present. The closest sensitive receptors to the project are single-family residences located adjacent to the northern side of the Project site.

The main pollutant of concern for this threshold is diesel particulate matter (DPM), which is emitted from construction equipment and heavy-duty truck traffic. Construction activities at the Project site would take approximately 60 working days and no prolonged or intense construction activity would occur. Construction equipment and heavy-duty truck operation associated with construction activities generate toxic air contaminants (TACs) in the form of diesel exhaust and fugitive dust. There are sensitive receptors (i.e., residences) located immediately adjacent to the Project site. However, due to the short-term nature of construction activities, any increase in DPM and TAC emissions within the Project site would be temporary. California's Office of Environmental Health Hazard Assessment (OEHHA) does not recommend assessing cancer risk for projects lasting less than two months at the maximally exposed individual resident (OEHHA 2015). Therefore, a detailed Health Risk Assessment was not prepared for this Project. Mitigation Measure AIR-2 would be implemented to reduce potential impacts of TAC emissions to sensitive receptors during construction. Mitigation Measure AIR-2 requires using electric or hybrid powered equipment or cleaner fuel equipment whenever feasible, limiting heavy-duty equipment idling time to five minutes, and posting a visible sign for registering complaints. Implementation of this measure would ensure that Project impacts related to TAC emissions would be less than significant. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant with mitigation incorporated.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less-than-Significant Impact

Construction activities would involve the use of gasoline- or diesel-powered equipment that emit exhaust fumes. These activities would take place intermittently throughout the workday and the associated odors are expected to dissipate within the immediate vicinity of the work area. Persons near the construction work area may find these odors objectionable; however, the project would not include uses that have been identified as potential sources of objectionable odors, such as restaurants, manufacturing plants, landfills, and agricultural and industrial operations.

Project operation would be similar to existing conditions and would not result in an increase in other emissions, such as those leading to odors, that would affect a substantial number of people. The impact would be less than significant.

MITIGATION MEASURES

Mitigation Measure AIR-1. Fugitive Dust Control Measures

The project shall implement BMPs as recommended by the BAAQMD 2022 CEQA Air Quality Guidelines, which include the following measures:

- 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 track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. 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 [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Mitigation Measure AIR-2: Construction-related emissions

The project shall implement the following measures to reduce potential impacts of DPM and TAC emissions at the Project site:

- Utilize electric or hybrid powered equipment and cleaner-fuel equipment wherever feasible.
- Limit heavy-duty diesel vehicle idling time to five minutes or less.
- Post a clear, visible enforcement and complaint sign.

4.2.4 Biological Resources

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game 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?	☐	☐	☐	☒

A Biological Resources Technical Report (Biological Report) was prepared for the Project by WRA, Inc. (WRA) in August 2025 (Appendix A). The findings and recommendations included in the Biological Report were based on database searches, a literature review and a field survey of the

Project site. The information in this section of the IS/MND is based on and adapted from the Biological Report.

REGULATORY SETTING – FEDERAL AND STATE

Endangered and Threatened Plants, Fish, and Wildlife

Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the Federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by USFWS and the National Marine Fisheries Service (NMFS). USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" and "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from USFWS or NMFS prior to take of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federal-listed plant species are only protected when removal or destruction occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must ensure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (California Fish and Game Code [CFGC] 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants and animals on private lands, as well as extending this protection to candidate species during consideration for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan, as long as the plan covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit.

Fully Protected Species and Designated Rare Plant Species

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully Protected Species may not be taken or possessed at any time. No licenses or permits may be issued by CDFW for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under CFGC and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act, CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take,” with few exceptions, of these species.

Special Protections for Nesting Birds and Bats

The Federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species (bald eagle [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act (MBTA) of 1918 and CFGC sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass [*Zostera* spp.]), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA

A Species of Special Concern (SSC) is a species formally designated by the CDFW which meets one or more criteria related to a Federal ESA status (if it is not listed under CESA), including extirpation from California, documented population declines, or small population size within California and risk of declines. In addition, CDFW has developed a special animals list as “a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status.” This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Conservation Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2025a) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally

rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

REGULATORY SETTING – LOCAL

Marin Countywide Plan

The Marin Countywide Plan (CWP) defines a sensitive resource as "jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, wildlife nurseries and nesting areas, and wildlife movement corridors." The County development review process typically requires a site assessment by qualified professionals to confirm whether any sensitive resources could be affected. CWP-specific sensitive resources also include Stream Conservation Areas (SCA) and Wetland Conservation Areas (WCA).

The Marin Countywide Plan contains the following relevant policies related to biological resources:

> **BIO 1.1 Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors.** Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.
>
> **BIO 1.3 Protect Woodlands, Forests, and Tree Resources.** Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservation ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.
>
> **BIO 2.1 Include Resource Preservation in Environmental Review.** Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors. Require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving "no net loss" of sensitive habitat acreage, values, and function.
>
> **BIO 2.2 Limit Development Impacts.** Restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, baylands and coastal habitat, and riparian habitats, as necessary to ensure the continued health and survival of these species and sensitive areas. Development projects should preferably be modified to avoid impacts on sensitive resources, or to adequately

mitigate impacts by providing on-site or (as a lowest priority) off-site replacement at a higher ratio.

BIO 2.3 Preserve Ecotones. Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.

BIO 2.4 Protect Wildlife Nursery Areas and Movement Corridors. Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas such as woodlands, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts.

BIO 2.5 Restrict Disturbance in Sensitive Habitat During Nesting Season. Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.

BIO 2.7 Protect Sensitive Coastal Habitat. Protect coastal dunes, streams, and wetlands, and sensitive wildlife habitat from development in accordance with coastal resource management standards in the development code.

BIO 2.8 Coordinate with Trustee Agencies. Consult with trustee agencies (the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Army Corps of Engineers, Environmental Protection Agency, Regional Water Quality Control Board, and Bay Conservation and Development Commission) during environmental review when special-status species, sensitive natural communities, or wetlands may be adversely affected.

BIO 2.9 Promote Early Consultation with Other Agencies. Require applicants to consult with all agencies with review authority for projects in areas supporting wetlands and special-status species at the outset of project planning.

Marin County Stream Conservation Areas

The Marin Countywide plan designates an SCA along all natural watercourses supporting riparian vegetation for a length of 100 feet or more. The SCA consists of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks. In inland rural corridors, the SCA setback must be greater than either 50 feet landward from the outer edge of woody riparian vegetation, or 100 feet landward from the top-of-bank. An additional setback distance may be required based on the result of a site assessment. For those ephemeral streams that do not meet these criteria, a minimum 20-foot

development setback is required. Development activities that may occur within an SCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

Marin County Wetland Conservation Areas

The Marin Countywide plan defines a WCA around all Corps jurisdictional wetlands. The WCA consists of the wetland itself, and a strip of land extending laterally outward from the wetland for a distance of 100 feet (for inland rural corridors), or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. Larger setback standards may apply to wetlands supporting special-status species or associated with riparian systems and baylands under tidal influence. Development activities that may occur within a WCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

ASSESSMENT METHODOLOGY

WRA biologists visited the Project site to map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Web Soil Survey (USDA 2025)
- San Rafael 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2025)
- Contemporary aerial photographs (Google Earth 2025)
- Historical aerial photographs (NETR 2025)
- National Wetlands Inventory (USFWS 2025a)
- California Aquatic Resources Inventory (SFEI 2025)
- California Natural Diversity Database (CNDDB) (CDFW 2025a)
- CNPS Inventory (CNPS 2025a)
- Consortium of California Herbaria (CCH1 2025, CCH2 2025)
- USFWS Information for Planning and Consultation (USFWS 2025b)
- eBird Online Database (Cornell Lab of Ornithology 2025)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2025b)
- Preliminary Descriptions of the Terrestrial Natural Communities (Holland 1986)
- California Natural Community List (CDFW 2025b)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Novato, San Geronimo, Petaluma Point, San Francisco North, Point Bonita, San Quentin, San Rafael, and Bolinas USGS 7.5-minute quadrangles.

Following the remote assessment, WRA biologists completed a field review over the course of two days to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine suitable habitat for any special-status plant or wildlife species is present, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.

ENVIRONMENTAL SETTING

Vegetation Communities and Other Land Cover

WRA observed six land cover types within the Project site: developed, ruderal vegetation, coast live oak woodland, tidal salt marsh, tidal open water, and non-tidal open water. Sensitive aquatic land cover types include tidal salt marsh, tidal open water, and non-tidal open water, with the remaining land cover types being non-sensitive. Descriptions of land cover types are included below.

Developed (no vegetation alliance). CDFW Rank: None. Developed areas are common throughout California, particularly within urban and residential areas. Developed areas within the Project site consist of bare, graded, sometimes gravel-covered ground and paved asphalt and include a mixture of built structures (e.g., buildings, docks), hardscape (e.g., roads, asphalt parking lots, trails), and ruderal landscaped areas (e.g., lawns, planters, ornamental shrubs). This land cover type does not have an associated vegetation community, alliance, or association as it is devoid of vegetation. It is not considered sensitive by CDFW or any other regulatory entity.

Ruderal and Ornamental Vegetation (multiple vegetation alliances). CDFW Rank: None. Although not described in the literature, ruderal upland includes areas that have been partially developed or have been used in the past; however, these areas are not currently in use and have been allowed to revert to a semi-natural condition. Ruderal upland is common throughout California in both rural and urban settings. The levee top and upland portions of the Project site are dominated by ruderal upland vegetation. The majority of ruderal upland within the Project site is dominated by dense stands of oat grass (*Avena fatua*), rattlesnake grass (*Briza maxima*), little quaking grass (*Briza minor*), ripgut brome (*Bromus diandrus*), velvet grass (*Holcus lanatus*), and wild radish (*Raphanus sativus*). This land cover type includes elements of several vegetation alliances that are too limited in extent to map separately, such as the *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance.

Ornamental areas are predominantly composed of an herbaceous layer of non-native and annual grasses with scattered shrubs and trees. Ornamental Plants observed include blue lily of the Nile (*Agapanthus* sp.), and soap aloe (*Aloe saponaria*). Scattered trees and shrubs include blue gum eucalyptus (*Eucalyptus globulus*), toyon (*Heteromeles arbutifolia*), oleander (*Nerium oleander*), Monterey pine (*Pinus radiata*), Japanese pagoda tree (*Styphnolobium japonicum*), and California bay (*Umbellularia californica*). Vegetation in this land cover type is primarily ornamental and does not meet the membership requirements of any vegetation alliance. It is not considered sensitive by CDFW or any other regulatory agency.

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance). CDFW Rank: G5/S4. Coast live oak woodlands are known from the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County. This vegetation community is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). Dominant species in the tree layer include coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*). This vegetation alliance is not considered sensitive by CDFW or any other regulatory agency.

Tidal Salt Marsh (*Sarcocornia pacifica* [*Salicornia depressa*] Herbaceous Alliance). CDFW Rank: S3/G4. Within the Project site, tidal salt marsh borders the edges of Coyote Creek. Tidal salt

marsh occupies the intertidal zone, which is influenced daily by tidal action. The landward edge of coastal salt marsh is dominated by native plants such as alkali heath (*Frankenia salina*), and salt grass (*Distichlis spicata*) along with ruderal, non-native species such as Russian thistle (*Salsola tragus*). As the elevation decreases, pickleweed (*Salicornia pacifica*) becomes more dominant, co-occurring with marsh jaumea (*Jaumea carnosa*) and coast gumweed (*Grindelia stricta*). The water's edge adjacent to the creek channel is dominated by Pacific cordgrass (*Sporobolus foliosus*). Tidal salt marsh vegetation within the Project site is dominated by dense pickleweed mats, which meet the membership requirements for the *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance (CNPS 2025a). This alliance has a CDFW rank of S3 and is therefore a sensitive natural community. It is also considered sensitive as an aquatic land cover type.

Tidal Open Water (no vegetation alliance). CDFW Rank: None. Tidal open water occurs in tidally influenced areas along the California coast where inundation is perennial or nearly so. The open waters of Coyote Creek within the Project site were classified as tidal open water due to the presence of unmuted open waters. As an aquatic habitat, tidal open water is considered sensitive. This land cover type does not have an associated vegetation community, alliance, or association, as it is devoid of vegetation.

Non-tidal Open Water (no vegetation alliance). CDFW Rank: None. Non-tidal open water occurs away from tidal areas and is not subject to the regular rise and fall of ocean tides. Non-tidal open waters receive water from sources like rain, snow, or groundwater. A drainage ditch along residential properties within the Project site was classified as non-tidal open waters as this ditch did not have unmuted connection to Coyote Creek. As an aquatic habitat, non-tidal open water is considered sensitive. This land cover type does not have an associated vegetation community, alliance, or association, as it is devoid of vegetation.

Special-status Plant Species

Based upon a review of the resource databases listed under *Assessment Methodology* above, 112 special-status plant species have been documented in the vicinity of the Project site. Of these species, three have the potential to occur in the Project site, including:

- Point Reyes salty bird's beak (*Chloropyron maritima* ssp. *palustre),* Rank 1B.2
- Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), Rank 4.2
- Marin knotweed (*Polygonum marinense*) Rank 3.1

Point Reyes salty bird's-beak has a high potential to occur in the Project site due to the presence of coastal salt marsh, the approximate vicinity of the nearest occurrence, and the presence of associated species. Southwestern spiny rush has a moderate potential to occur in the Project site due to the presence of coastal salt marsh habitat. Marin knotweed has a moderate potential to occur in the Project site, due to the presence of potentially suitable marsh, proximity to a documented occurrence, and presence of associated species. No special-status plant species were observed on the Project site during the field survey.

Special-status Wildlife Species

Based on a review of literature and resource databases, 30 special-status wildlife species have been documented in the vicinity of the Project site. Most of these species have no potential to occur on-site due to a lack of suitable habitat features. Seven special-status species have

moderate potential to occur in the immediate vicinity of or in portions of the Project site, including the following:

- White-tailed kite (*Elanus leucurus*), CDFW Fully Protected Species
- California Ridgway's (clapper) rail ([CRR] *Rallus obsoletus obsoletus*), Federal Endangered, State Endangered, CDFW Fully Protected Species.
- Green Sturgeon (*Acipenser medirostris*) – southern Distinct Population Segment (DPS), Federal Threatened
- White Sturgeon (*Acipenser transmontanus*), State Candidate Threatened, CDFW Species of Special Concern
- Steelhead - Central California Coast (CCC) DPS (*Oncorhynchus mykiss irideus*), Federal Threatened
- Longfin smelt (*Spirinchus thaleichthys*), Federal Candidate, State Threatened, CDFW Species of Special Concern
- Western red bat (*Lasiurus blossevillii*), CDFW Species of Special Concern, WBWG High Priority

Essential Fish Habitat

A review of the background literature revealed that the Project site is located within Essential Fish Habitat (EFH) as designated in the Pacific Salmon fisheries management plan. EFH for salmonids includes all estuarine and marine areas extending from the extreme high tide line (HTL) out to the full extent of the exclusive economic zone (CFR §660.412).

Critical Habitat

A review of the background literature showed that the Project site is located within or adjacent to critical habitat for the southern DPS Green Sturgeon and CCC DPS steelhead. Similar to EFH discussed above, waters of the Project site would be considered critical habitat up to the HTL.

DISCUSSION OF IMPACTS

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 (CDFW) or United States Fish and Wildlife Service (USFWS)?

Less-than-Significant Impact with Mitigation Incorporated

Special-status Plant Species

Special-status plants including Point Reyes salty bird's-beak, southwestern spiny rush, and Marin knotweed, have moderate to high potential to occur within the Project site. Construction activities, including ground disturbance or vegetation removal, could result in destruction of individual special-status plants, which is a potentially significant impact. Mitigation Measure BIO-1a would be implemented, which requires rare plant surveys to be conducted prior to any vegetation removal or ground-disturbing activities on the Project site. If special-status species are found on-site, Mitigation Measure BIO-1b shall be implemented, which requires activity exclusion zones to be established around special-status plants where no ground-disturbing activities may take place. If special-status plants are found on-site and cannot be avoided, Mitigation Measure BIO-1c shall be implemented. BIO-1c requires that compensatory mitigation

actions for the loss of special-status plant species be taken by replacing lost plants (e.g., planting seeds of the same species removed in or near the work area, relocating individuals out of the area of impact, or planting from local nursery stock, depending on the species) following Project construction. The plants must be monitored to ensure continued survival. Implementation of these measures would reduce potential impacts to special-status plants to a less-than-significant level.

Special-Status Wildlife Species

Special-status birds and Native Nesting Birds

White-tailed kites were determined to have potential to nest within and immediately adjacent to the Project site. In addition, non-special-status native birds (e.g., passerines, raptors) may nest on the ground, in trees, and in vegetation within and immediately surrounding the Project site. The active nests of such birds are protected under the Federal MBTA as well as by the CFGC. If construction begins during the avian nesting season, generally February 1 to August 31, nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment. Due to the protected status of these species under both the MBTA and CDFW, impacts to special-status and common native nesting birds is a potentially significant impact under CEQA.

Mitigation Measure BIO-2 would be implemented, which requires that Project construction activities be avoided during the nesting bird season, to the extent feasible. If Project work must occur during the nesting season, a pre-construction nesting bird survey shall be conducted within seven days of ground disturbance or tree or vegetation removal. If an active nest is located, a no disturbance buffer shall be established around the nest, and no Project-related activities or personnel may enter the buffer until the nest becomes inactive. Implementation of this measure would reduce potential impacts to special-status and nesting birds to a less-than-significant level.

California Ridgway's Rail

CRR has moderate potential to occur within the tidal marsh habitat of the Project site. There is limited potential for direct impacts to occur to CRR individuals within the Project site; however, CRR individuals have the potential to wander into the Project site from adjacent tidal marsh during construction. As such, direct impacts may occur due to interactions with construction equipment, or materials, which is a potentially significant impact under CEQA.

To reduce potential impacts to CRR, Mitigation Measure BIO-3 would be implemented, which requires that noise-generating activities within 700 feet of suitable salt marsh habitat be conducted outside of the rail breeding season, to the extent feasible. If activities must occur within 700 feet of suitable habitat during the breeding season, protocol-level surveys shall be conducted adjacent to suitable salt marsh habitat for CRR prior to construction in each year of proposed construction activity. If CRR are found during surveys, a 700-foot buffer around occupied habitat should be maintained for noise-generating Project activities between February 1 and August 31.

Fish Species

Green Sturgeon, White Sturgeon, CCC steelhead, and longfin smelt have moderate potential to occur within the tidal open waters of the Project site. No in-water work is proposed within the tidal open water of the Project site. While upland activities are unlikely to have negative effects on fish species that may be present in tidally influenced waters, work adjacent to tidal open water areas has some potential to result in temporary reductions in water quality which is a potentially significant impact to fish habitat under CEQA.

To reduce potential impacts to special-status fish species, Mitigation Measure BIO-4a and BIO-4b would be implemented. Mitigation Measure BIO-4a requires that all activities associated with Project construction that occur below the HTL shall be conducted between July 1 and October 31 to avoid periods when sensitive life stages of fish species (e.g., steelhead smolts) may be present in the vicinity. Mitigation Measure BIO-4b requires that any activities which occur below the HTL including placement or removal of materials shall be conducted during low tide events to minimize or avoid impacts to water quality and avoid the presence of special-status fish species. In addition, as described below under Threshold b), the Project would implement Mitigation Measure BIO-5c which requires that BMPs for water quality protection be implemented during Project construction.

In addition, as described in Section *4.2.7 Geology and Soils* and *Section 4.2.10 Hydrology and Water Quality*, the Project would be required to implement an Erosion and Sediment Control Plan, which must address erosion and sediment control and pollution prevention during the construction phase, as well as final stabilization control measures. Implementation of Mitigation Measures BIO-4a, BIO-4b, BIO-5C, and an ESCP would reduce potential impacts to fish habitat to a less-than-significant level.

Western Red Bat

The Project site contains trees that may provide suitable roosting habitat for western red bat. In addition, trees within the Project site may support non-status bat roosts protected under the CFGC. The Project would largely avoid impacts to woodland habitat; therefore, the Project would not result in an impact to special-status bats and no mitigation measures are required.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?

Less-than-Significant Impact with Mitigation Incorporated

Sensitive natural communities within the Project site include tidal salt marsh, tidal open water, and non-tidal open water.

The Project site includes 0.02 acre (678 square feet) of non-tidal open water habitat, 0.98 acre (42,730 square feet) of tidal salt marsh habitat, and 1.5 acres (66,647 square feet) of tidal open water habitat. The Project would re-grade a 409-square-foot portion of the non-tidal open water ditch that parallels adjacent residential properties, resulting in temporary impacts to non-tidal open water. In addition, the Project would result in approximately 150 square feet of temporary impacts to tidal salt marsh during removal of a concrete drain box and replacement of a culvert located along the existing levee. No in-water work within tidal open water habitat is proposed; however, work adjacent to tidal open water areas has some potential to result in temporary reductions in water quality.

Temporary impacts to tidal salt marsh, tidal open water, and non-tidal open water habitat are potentially significant impacts under CEQA, as these communities are either considered sensitive by CDFW or are considered aquatic habitats, which are sensitive communities. To reduce potential impacts to sensitive natural communities, Mitigation Measures BIO-5a, BIO-5b, and BIO-5c would be implemented. Mitigation Measure BIO-5a requires that relevant permits from agencies such as the Corps and RWQCB shall be acquired prior to the placement of fill in jurisdictional aquatic resources. The Project would be required to implement mitigation measures prescribed by permitting agencies to minimize or compensate for impacts to these features. Mitigation Measure BIO-5b requires that mitigation for permanent loss of waters of the U.S. and waters of the State shall be required by either purchasing appropriate mitigation credits from an approved mitigation bank or via permittee responsible mitigation which would involve creating, restoring, or enhancing analogous habitat types. Mitigation Measure BIO-5c requires that BMPs shall be implemented to prevent discharge of any Project-related pollutants such as fuels, engine lubricants or sediment into potentially jurisdictional wetlands and water features.

Implementation of these measures would ensure that the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community. The impact would be less than significant with mitigation incorporated.

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?

Less-than-Significant Impact with Mitigation Incorporated

All anticipated direct and potential indirect impacts and mitigation to potential jurisdictional areas are discussed above in Thresholds a) and b). Implementation of Mitigation Measures BIO-4a, BIO-4b, BIO-5a, BIO-5b, and BIO-5c, as discussed above, would reduce potential impacts to aquatic resources to a less-than-significant level.

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?

No Impact

The Project would not include construction of any structures which would change or impact local terrestrial wildlife movement. Migratory birds may forage during low tides when Coyote Creek becomes an exposed mudflat. The Project would not alter the habitat function provided within the Project site. Based on these factors, implementation of the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or interfere with migratory wildlife corridors. There are no native wildlife nursery sites within the Project site. No impact would occur.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less-than-Significant with Mitigation Incorporated

Local plans and policies related to biological resources examined are listed under *Regulatory Setting – Local*, above. The Marin Countywide Plan contains policies protecting biological resources including special-status species and their habitats, sensitive natural communities,

wetlands, wildlife movement corridors, forests, woodlands, and trees. Compliance with applicable policies is discussed below.

Policies BIO 1.1, BIO 1.3, BIO 2.1, BIO 2.2, BIO 2.3, BIO 2.4, BIO 2.5, and BIO 2.7 of the Marin Countywide Plan protect wetlands, habitat for special-status species, sensitive natural communities, wildlife nursery areas and movement corridors, woodlands and tree resources, and ecotones. As described above in Thresholds a-c), the Project would have potentially significant impacts on special-status species, aquatic resources, and sensitive natural communities. However, with the implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-2, BIO-3, BIO-4a, BIO-4b, BIO-5a, BIO-5b, and BIO-5c, these impacts would be reduced to a less-than-significant level.

Policies BIO 2.8 and BIO 2.9 pertain to consultation with trustee agencies during environmental review when special-status species, sensitive natural communities, or wetlands may be adversely affected by a project. As stated in Mitigation Measure BIO-5a, the District will obtain relevant permits from agencies such as the Corps and RWQCB prior to the placement of fill in jurisdictional aquatic resources. Therefore, the Project would not conflict with any applicable policies of the Marin Countywide Plan pertaining to biological resources.

The Project site is located in a WCA as defined by the Marin Countywide Plan. The Project would not develop new structures to which the setback standards would apply. As described above, the Project would obtain applicable permits from all regulatory agencies prior to impacting any jurisdictional resources. Therefore, the Project would not conflict with the WCA requirements set by the Marin Countywide Plan.

With implementation of mitigation measures described throughout this section, the Project would not conflict with any of the local plans or policies related to biological resources examined in this analysis; therefore, the impact would be less than significant with mitigation incorporated.

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?

No Impact

The Project site is not located within an area that is subject to any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

MITIGATION MEASURES

Mitigation Measure BIO-1a. Special-status Plants

Prior to any vegetation removal or ground-disturbing activities, surveys shall be conducted within the Project site to determine the presence of Point Reyes bird's-beak, southwestern spiny rush, and Marin knotweed. Surveys shall be conducted following regulatory agency and CNPS survey protocols. These guidelines require special-status plant surveys to be conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys shall be scheduled to coincide with known blooming periods, and/or during periods of

physiological development that are necessary to identify the plant species of concern. If no special-status plant species are found, then no additional mitigation measures are necessary.

Mitigation Measure BIO-1b. Special-status Plants

If the survey determines that special-status plant species are present within or adjacent to the Project site, direct and indirect impacts on the species shall be avoided where feasible through the establishment of activity exclusion zones, where no ground-disturbing activities shall take place, including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species shall be established prior to construction activities around each occupied habitat site, the boundaries of which shall be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones shall not be required if no construction-related disturbances would occur within 250 feet of the areas supporting special-status plant species populations.

Mitigation Measure BIO 1c. Special-status Plants

If exclusion zones and avoidance of impacts on special-status plant species within the Project site are not feasible, then the loss of individuals or occupied habitat of special-status plants shall be compensated for through one of the following measures:

- Seeds of the special-status plant shall be collected from the existing on-site populations and/or from the same watershed (to maintain local genetic stock) and distributed in suitable habitat in and/or near the work area following completion of work and/or another suitable location. Alternatively, a nursery with experience growing special-status plants can be employed to grow seedlings of the species (from seeds collected locally in the same watershed) that shall be planted in suitable habitat in and/or near the work area following completion of work and/or another suitable location. Seeds derived from plants in the same watershed as the impact area may be available from local nurseries, and local nurseries may also be able to propagate seeds from adults grown from collected seeds. Additionally, the entirety of the plants shall be transplanted. A monitoring plan that requires a qualified biologist to conduct annual monitoring of the area seeded or replanted with the special-status plant shall be developed. Monitoring shall occur for a minimum of three years. The number of individuals in replanted/seeded areas shall match the number of individuals present in the Project site prior to impact.
- Before the implementation of compensation measures, the lead agency shall record detailed information on the quality of preserved habitat, location of the preserved occurrences, provisions for protecting and managing the areas, the responsible parties involved, and other pertinent information that demonstrates that the compensation population shall be properly preserved and managed. A mitigation plan identifying appropriate mitigation ratios at a minimum ratio of 1:1 (1 preserved acre for each impacted acre) to ensure no net loss of acreage shall be developed in consultation with relevant agencies prior to the commencement of any activities that would impact special-status plant species which occur within the Project site.

Mitigation Measure BIO-2. Pre-Construction Nesting Bird Survey

To the extent feasible, Project-related activities shall be avoided during the nesting bird season, generally defined as February 1 – August 31. If Project work must occur during the nesting bird

season, a pre-construction nesting bird survey shall be conducted by a qualified biologist within seven days of ground disturbance or tree/vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. Surveys shall be conducted in all potential nesting habitat located within the Project footprint and encompass a sufficient buffer zone to detect nesting raptors that may be impacted by the Project activities, to the extent feasible.

If an active nest is located, a no disturbance buffer shall be established around the nest. Active nest sites and protective buffer zones shall be designated as "Environmentally Sensitive Areas" where no Project-related activities or personnel may enter until a qualified biologist determines that the young have fully fledged, or the nest otherwise becomes inactive (e.g., due to predation), and will no longer be adversely affected by the Project. Suggested buffer zone distances will differ depending on species, existing conditions, and nest placement and shall be determined and implemented in the field by a qualified biologist.

Mitigation Measure BIO-3. CRR Surveys

To the extent feasible, noise-generating Project activities located within 700 feet of suitable salt marsh habitat shall be conducted outside of the rail breeding season, which is generally considered to be February 1 to August 31. The regulatory agencies (CDFW and USFWS) typically consider 700 feet to be the disturbance zone for CRR breeding activity. For Project activities that must occur within 700 feet of suitable salt marsh habitat during the rail breeding season, protocol-level surveys shall be conducted adjacent to suitable salt marsh habitat for CRR prior to construction in each year of proposed construction activity. Protocol surveys are conducted around dawn or dusk between mid-January and mid-April when rails are most likely to vocalize during their breeding season. Surveys begin as passive listening surveys and, if no vocalizing CRR are detected, proceed to active call-playback surveys. If CRR are detected, a 700-foot buffer around occupied habitat shall be maintained for noise-generating Project activities between February 1 and August 31.

Mitigation Measure BIO-4a. Special-status Fish

All activities associated with the Project construction that occur below the HTL shall be conducted between July 1 and October 31 to avoid periods when sensitive life stages of fish species (e.g., steelhead smolts) may be present the vicinity.

Mitigation Measure BIO-4b. Special-status Fish

Any activities which occur below the HTL including placement or removal of materials shall be conducted during low tide events to minimize or avoid impacts to water quality and avoid the presence of special-status fish species.

Mitigation Measure BIO-5a: Aquatic Habitats

Relevant permits from agencies such as the Corps and RWQCB shall be acquired prior to the placement of fill within jurisdictional aquatic resources. Additional mitigation measures may be required by permitting agencies to minimize or compensate for impacts to these features.

Mitigation Measure BIO-5b: Aquatic Habitats

Mitigation for permanent loss of waters of the U.S. and waters of the State shall be required by either purchasing appropriate mitigation credits from an approved mitigation bank or via permittee responsible mitigation which would involve creating, restoring, or enhancing analogous

habitat types. The ratio for acres of mitigation to acres impacted shall be no less than 1:1. Mitigation shall be agreed upon in coordination with the appropriate regulatory agencies during the permitting process.

Mitigation Measure BIO-5c: Aquatic Habitats

The District's standard Best Management Practices (BMPs) shall be implemented to prevent discharge of any Project-related materials such as fuel, engine lubricants or sediment into potentially jurisdictional wetlands and water features. If wattles are used, only natural fiber or biodegradable wattles shall be installed. Silt fencing shall be installed with oversight from a qualified biologist in the areas adjacent to wetlands or non-wetland waters. All erosion control products shall be removed at the completion of construction activities.

4.2.5 Cultural Resources

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

Eileen Barrow & Associates (EBA) prepared a Cultural Resources Study for the Project in August 2025 (Barrow 2025, Appendix B[1]). The study was conducted to identify potential historic and archaeological resources that could be considered significant under CEQA in the vicinity of the Project site. The study included archival research at the Northwest Information Center at Sonoma State University, a search of the Sacred Lands File from the California Native American Heritage Commission (NAHC), Native American tribal outreach, and a field survey of the Project site. Information in this section of the IS/MND is adapted from the Cultural Resources Study.

ENVIRONMENTAL SETTING

Prehistory

The concept of prehistory refers to the period of time before events were recorded in writing and varied worldwide. Because there is no written record, the understanding of California prehistory relies on archaeological materials and oral histories provided by decedents of the indigenous communities passed down through generations. In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifacts from sites in the lower Sacramento Valley (Lillard, Heizer, and Fenenga 1939). Their cultural sequence became known as the Central California Taxonomic System, which identified three culture periods termed the Early, Middle, and Late Horizons, but without offering date ranges. Refinement of the Central California Taxonomic System became a chief concern of archaeologists as the century progressed.

It is estimated that native peoples have occupied the region for over 11,000 years, and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval

[1] The Cultural Resources Study is available for review at the County by qualified individuals only.

with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

These horizons or periods are marked by a transition from large projectile points and milling slabs, indicating a focus on hunting and gathering during the Early Period, to a marine focus during the Middle Period evidenced by the number of shellmounds in the Bay Area. The Middle Period also saw more reliance on acorns and the use of bowl-shaped mortars and pestles. Acorn exploitation increased during the Late Period and the bow and arrow were introduced.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones.

History

In 1938, the Project site was part of a 19,752-acre Mexican land grant made to William A. Richardson. After the United States took control of California, the grant was patented to Richardson's heirs after a 23-year land case. The Tamalpais Land & Water Company acquired much of the property containing the Project site around 1888, including lands from the south slopes of Mount Tamalpais down the peninsula to a point parallel with present-day Marin City. The property was divided into large ranches and, in time, would include the communities of Mill Valley, Tamalpais Valley, and Marin City.

When the town of Mill Valley was incorporated in 1900, it primarily consisted of a developed downtown area and simple cabins located throughout the canyon hillsides. Situated at the base of Mount Tamalpais, the town was a convenient area for those hiking its slopes. With the arrival of a North Pacific Coast Railroad spur linking Mill Valley with San Francisco in the late 19th century, the town became a popular destination for those seeking outdoor adventures.

In 1908, a real estate group out of San Francisco acquired land along Coyote Creek, part of the Tamalpais Land & Water company's Ranch E, and began selling lots from a half-acre to over two acres. Development along Coyote Creek eventually led to flooding problems. Historically, the mouth of Coyote Creek at Richardson Bay was part of an extensive marsh/mudflat environment that reached inland as far as present-day Pine Street. Much of the Coyote Creek marsh was drained to make way for residential development, especially after World War I (One Tam 2024). Residential development led to flooding, and in the 1950s, local leaders sought help from the federal government. It took over ten years before relief came in the form of the Coyote Creek levee system constructed by the Corps in 1964 A 1964 newspaper article revealed that at least eight homes along Coyote Creek would be removed in order to build the earthen levee and concrete channel. The 1-1/4-mile-long project was anticipated to cost a million dollars, with more than half of the cost going toward right-of-way acquisition (Daily Independent Journal 1964).

REGULATORY SETTING

Cultural Resources

As set forth in Section 5024.1(c) of the Public Resource Code (PRC), for a cultural resource to be deemed "important" under CEQA and thus eligible for listing on the California Register of Historical Resources (California Register), it must meet at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
2. Is associated with the lives of persons important in our past; or
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or
4. Has yielded or is likely to yield, information important to prehistory or history.

Historic-era structures older than 50 years are most commonly evaluated in reference to Criterion 1 (important events), Criterion 2 (important persons) or Criterion 3 (architectural value). To be considered eligible under these criteria, the property must retain sufficient integrity to convey its important qualities. Integrity is judged in relation to seven aspects including: location, design, setting, materials, workmanship, feeling, and association. Prehistoric and historic-era archaeological resources are commonly evaluated with regard to Criterion 4 (research potential).

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Section 15064.5(b) prescribes that project effects that would "cause a substantial adverse change in the significance of an historical resource" are significant effects on the environment. Substantial adverse changes include both physical changes to the historical resource, or to its immediate surroundings.

Historic properties are also protected under federal law under the National Historic Preservation Act (NHPA). The working of the criteria for inclusion on the National Register of Historic Places (National Register) is similar to the working of the California Register criteria. Under PRC Section 5024.1(d)(1), a property that is listed on the National Register is automatically listed in the California Register as well.

Archaeological Resources

Section 21083.2 of the CEQA guidelines also defines "unique archaeological resources" as "any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and shows that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

This definition is equally applicable to recognizing "a unique paleontological resource or site." CEQA Section 15064.5 (a)(3)(D), which indicates "generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history," provides additional guidance.

Tribal Cultural Resources Assembly Bill 52

Assembly Bill (AB) 52 (Chapter 532, Statutes 2014) required an update of the CEQA Guidelines to include questions related to impacts to tribal cultural resources. AB 52 establishes a consultation process with all California Native American Tribes on the NAHC List, Federal and Non-Federal Recognized Tribes. AB 52 also establishes a new class of resources: Tribal Cultural Resources. Key components of AB 52 include consideration of Tribal Cultural Values in determination of project impacts and mitigation and required Tribal notice and meaningful consultation.

PRC Section 21080.3.2(b) states that consultation ends when either 1) parties agree to mitigation measures or avoid a significant effect on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort concludes that mutual agreement cannot be reached.

Tribal consultation conducted for this Project is described in detail in Section 4.2.18, Tribal Cultural Resources.

Human Remains Procedures for the treatment of discovered human remains are outlined in California Health and Safety Code §§ 7050.5 and 7052 and PRC § 5097. In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps shall be taken.

1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    a. The County coroner has been contacted and has determined that no investigation of the cause of death is required, and
    b. If the Coroner determines the remains to be Native American:
        i. The coroner shall contact the NAHC within 24 hours of discovery.
        ii. The NAHC shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
        iii. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of the human remains and associated grave goods with appropriate dignity.

CULTURAL RESOURCES STUDY FINDINGS

Archival Research

Results of the records search indicated that the Project site has been previously subjected to cultural resource surveys. Twenty-three studies have been conducted within a half mile of the Project site. There are eight cultural resources recorded within a half mile of the site, including both historical and archaeological resources. There are no archaeological resources, buildings, or structures documented within the Project site; however, the site does lie within the landscape feature of Mount Tamalpais, which was documented by California State Parks in consultation

with the Federated Indians of Graton Rancheria, due to its significance to the Coast Miwok people. There are no reported ethnographic sites within one mile of the Project site.

Buried Site Sensitivity Assessment

EBA estimated the sensitivity of the Project site for buried archaeological sites using a method which considers the age of the landform, slope, and proximity to water (Byrd et al. 2017). A location is considered to have highest sensitivity if the landform dates to the Holocene[2], has a slope of five percent or less, is within 150 meters of fresh water, and 150 meters of a confluence. A basic premise of the model is that archaeological deposits will not be buried within landforms that predate human colonization of the area. Calculating these factors using the buried site model, a location's sensitivity is classed as follows: very low; low; moderate; high; very high.

Based on the landform age and the analysis of the environmental setting, the Project site has a very low potential for buried archaeological site indicators, as it is primarily artificial fill on top of a former marshland. Although there are several archaeological sites in the vicinity of the Project site, these sites are located in places with a stable land surface that is high enough in elevation that they were rarely or not flooded by creeks or high tides.

Field Survey

A field survey of the Project site was completed by EBA and a representative from the Federated Indians of Graton Rancheria on August 21, 2025. Areas of the Project site not covered with water or marsh were examined to see if any archaeological specimens were present at the surface in the fill materials. Several areas of the Project site offered good visibility of the fill soils, which was aided by the presence of several burrowing animal back-dirt piles.

No archaeological site soils or specimens were found during the field survey. One building, the Shoreline Pump Station, and a portion of the Coyote Creek levee system were the only built environment structures identified within the Project site. These structures were evaluated for eligibility for listing on the California Register, but did not meet the significance criteria. Therefore, there are no historic structures within the Project site.

DISCUSSION OF IMPACTS

a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Less-than-Significant Impact

The results of the records search found no previously documented historical resources within the Project site. There are two built environment structures within the Project site: the Shoreline Pump Station and a portion of the Coyote Creek levee system. The Shoreline Pump Station, constructed in 1985, is too recently constructed to be considered a potential historical resource. EBA evaluated the Coyote Creek levee system for historical significance and determined that it did not meet the criteria outlined for inclusion on the National or California Register. Since there

[2] The Holocene Epoch is the current period of geologic time, which began about 11,700 years ago, and coincides with the emergence of human occupation of the area.

are no historical resources within the Project site, the Project would not cause a substantial adverse change in the significance of a historical resource. No impact would occur.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Less-than-Significant Impact with Mitigation Incorporated

The results of the records search found no previously documented archaeological resources within the Project site. The site was determined to have a very low potential for buried archaeological resources because it was formerly marshland and therefore was not habitable by humans. No archaeological site soils or specimens were found during the field survey of the Project site.

However, although unlikely, ground-disturbing activities during construction could result in the discovery of unknown archaeological resources within the Project site, which is a potentially significant impact. Mitigation Measure CUL-1 would be implemented, which requires an archaeological and cultural resource awareness training to be given to all construction personnel participating in ground-disturbing activities. Mitigation Measure CUL-2 requires that, if buried materials are encountered, all soil disturbing work shall be halted at the location of the discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the National Historic Preservation Act (NHPA). With the implementation of this measure, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. The impact would be less than significant with mitigation incorporated.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less-than-Significant Impact with Mitigation Incorporated

There are no known human remains located within the Project site. It is unlikely that human remains are present within the Project site as the site is former marshland area and was thus generally not inhabitable by humans. However, to comply with California Health and Safety Code §§ 7050.5 and 7052 and PRC § 5097, Mitigation Measure CUL-3 would be implemented, which outlines the procedures for the treatment of accidentally discovered human remains. With implementation of this measure, the Project would not disturb any human remains, including those interred outside of dedicated cemeteries. The impact would be less than significant with mitigation incorporated.

MITIGATION MEASURES

Mitigation Measure CUL-1: Archaeological and Cultural Resource Awareness Training

Prior to the commencement of any ground-disturbing activities on the Project site (grading, excavation, pile driving), the Project applicant shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, to provide archaeological and cultural resources awareness training to all construction personnel participating in ground-disturbing activities. The training shall describe the types of archaeological and tribal cultural resources that could be encountered, explain the legal protections for cultural resources under CEQA and other laws, and outline appropriate procedures for identifying and responding to unanticipated discoveries. Documentation of the

training, including a sign-in sheet and copy of training materials, shall be provided to the Lead Agency prior to the start of ground-disturbing activities. The construction contractor shall ensure that any new workers who begin work after the initial training also receive the awareness training prior to participating in ground-disturbing activities.

Mitigation Measure CUL-2: Accidental Discovery of Archaeological Resources

If an accidental find is made during ground-disturbing activities, all soil disturbance shall stop within 100 feet of the find until an archaeologist who meets the Secretary of the Interior's Standards can complete a significance evaluation of the find(s) pursuant to Section 106 of the National Historic Preservation Act. If the resource is determined to be a potential tribal cultural resource, the Federated Indians of Graton Rancheria shall be contacted and invited on-site to provide treatment recommendations, though avoidance shall be the preferred treatment method. If the qualified archeologist determines that the find is eligible for inclusion on the National or California Register, the archaeologist shall make recommendations for appropriate methods of treatment for the find, which shall be implemented by the Project proponent. Potential treatment methods for resources may include, but would not be limited to, avoidance of the resource through changes in construction methods or Project design or implementation of a program of testing and data recovery, in accordance with all applicable federal and state requirements. Any efforts shall be documented in a cultural resources report to be filed with the Northwest Information Center.

Mitigation Measure CUL-3: Human Remains

California law recognizes the need to protect interred human remains, particularly Native American burials and items of cultural patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §§ 7050.5 and 7052 and PRC § 5097. If remains are uncovered, ground-disturbing work shall halt within 100 feet of the find and the Lead Agency and County coroner shall be notified immediately. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code § 7050.5[b]). If the coroner determines that the remains are those of a Native American, the coroner must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code § 7050[c]). The Lead Agency and the professional archaeologist shall contact the Most Likely Descendent, as determined by the NAHC, regarding the remains. The Most Likely Descendant, in cooperation with the County, shall determine the ultimate disposition of the remains and any associated artifacts.

4.2.6 Energy

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

ENVIRONMENTAL SETTING

Electricity in Marin County is provided by Marin Clean Energy (MCE) and the Pacific Gas & Electric Company (PG&E). MCE is a public, not-for-profit electricity provider that serves as the default electricity provider for homes and businesses starting new electric service in the County and offers various renewable energy options (California Community Choice Association 2022). Customers may opt out of MCE services and elect PG&E as their electricity provider if they choose.

REGULATORY SETTING

Marin County Unincorporated Area Climate Action Plan 2030

The *Marin County Unincorporated Area Climate Action Plan 2030* (Climate Action Plan) outlines a path towards reducing local greenhouse gas (GHG) emissions through the year 2030. The Plan includes a GHG emissions inventory, forecast, and reduction targets, and describes strategies to reduce GHG emissions and adapt to climate change. The Plan emphasizes the importance of transitioning to renewable energy and electrification and reducing reliance on fossil fuels and also highlights the need to increase energy efficiency of buildings (County of Marin 2020).

DISCUSSION OF IMPACTS

a) 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

The use of equipment and vehicles during Project construction would require the use of energy resources. The construction process would be designed to be efficient to avoid excess monetary costs. Specifically, equipment and fuel would not be used wastefully during construction due to the added expense associated with renting, maintaining, and fueling equipment. As such, energy and fuel would not be wasted or used inefficiently by construction equipment and vehicles.

Project operation would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The purpose of the Project is to address chronic seepage issues along Coyote Creek and reduce flooding to nearby properties. While the installation of a new storm drain system from the existing earthen swale to the Shoreline Pump Station would require the use of energy, the Project would also reduce energy use associated with repairs and maintenance for issues that arise from flooding and seepage. Therefore, the Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. The impact would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-than-Significant Impact

The Marin County Climate Action Plan is the local plan for renewable energy and energy efficiency (County of Marin 2020). The Plan contains strategies centered around increasing energy efficiency and electrification and reducing reliance on fossil fuels and transitioning to renewable energy sources. Relevant strategies of the Plan are described below in Table 2.

Table 2. Marin County Climate Action Plan Strategies

STRATEGY NO.	
RE-C1: Renewable Energy Generation and Storage	Accelerate installation of solar and other renewable energy systems and energy storage systems.
RE-C2: GHG-Free Electricity	Encourage residents and businesses to switch to 100% renewable electricity (MCE Deep Green, MCE Local Sol, and PG&E Solar Choice) through engagement campaigns and partner agency incentives and work with MCE Clean Energy to assure that it reaches its goal to provide electricity that is 100% GHG-free by 2022.
RE-C3: Building and Appliance Electrification	Accelerate electrification of building systems and appliances that currently use natural gas, including heating systems, hot water heaters, stoves, ranges, and clothes dryers.
EE-C1: Energy Efficiency	Promote and expand participation in residential and commercial energy efficiency programs.
EE-C3: Cool Pavements and Roofs	Use reflective, high albedo material for roadways, parking lots, and sidewalks and cool roofs to reduce the urban heat island effect and save energy.

The Project would not conflict with or obstruct any strategies of the Climate Action Plan. The Project would not create any new demand for natural gas and would not directly increase energy consumption. The impact would be less than significant.

4.2.7 Geology and Soils

Would the project:		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☒
	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, creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

Regional Geology

The Project site is located in Marin County which lies in the central portion of the Coast Range geomorphic province, which extends along the western edge of the state. The Coast Range geomorphic province is bounded by the Transverse Ranges in the south, the Klamath Mountains in the north, and the Great Valley in the east. The Coast Range province is primarily composed of marine sedimentary deposits and volcanic rocks that form northwest trending mountain ridges and valleys, with bedrock geology consisting of graywacke, shale, greenstone, basalt, chert, and sandstone (County of Marin 2022b). This geomorphic province roughly parallels the San Andreas Fault, which extends for over 600 miles from Point Arena in Mendocino County to the Gulf of California (California Geological Survey [CGS] 2002).

The surficial geology of the County features young alluvial fan deposits commonly found near creeks, streams, lakes, and other water bodies. In the eastern parts of the County, these young alluvial deposits are accompanied by Holocene-age San Francisco Bay mud, which includes areas that are currently or were historically tidal marshes, mud flats, or bay bottom. Some smaller regions also contain artificial fill placed over estuarine mud. Elsewhere in the County, surface materials consist of Quaternary-age and older deposits, along with bedrock formations dating from the Jurassic to Pliocene periods, including sedimentary, metamorphic, volcanic, and plutonic rocks, as well as some loosely consolidated Tertiary sediments. The primary underlying bedrock is part of the Franciscan Complex.

Geologic and Soil Units

The topography of the Project site is relatively flat and is at an elevation of approximately 10 feet above mean sea level (County of Marin 2022a). Surficial deposits within the Project site include artificial fill over Holocene-age San Francisco Bay mud (County of Marin 2022a).

Soils underlying the Project site include the Xerorthents Urban land complex, zero to nine percent slopes. This soil unit includes fills and reworked soils of the Xerorthents complex that have been altered to the extent that their original characteristics are generally not present. The soils are well drained, have varying water capacities, are prone to very rapid runoff, and have a high hazard of water erosion. This unit is typically found in tidal flats and valley floors (Natural Resource Conservation Service [NRCS] 2019).

Faults

The Project site is within the San Francisco Bay Area, which is a known seismically active region. Seismic activity can lead to various geological and seismic hazards, including fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides, and avalanches. Marin County has numerous faults, and both local and external faults could impact the Project site.

The nearest major fault zone to the Project site is the San Andreas Fault, located approximately 7.5 miles to the west (CGS 2025). The San Andreas Fault is designated as an Alquist-Priolo Earthquake Zone of Required Investigation. The Environmental Impact Report (EIR) prepared for the County's Housing Element and Safety Element update (2022b) also notes that the Burdell Mountain Fault is located in the eastern part of the County, although this is not an Alquist-Priolo

Fault Zone. Other regional faults that could affect the Project site include the Hayward, San Gregorio, and Rodgers Creek Faults.

REGULATORY SETTING

Marin County Municipal Code

As stated in Marin County Code chapter 19.04 (Building Regulations), the County has adopted the 2019 edition of the California Building code, CCR, Part 2 of Title 24, which addresses design and construction in seismically active areas as well as site soils conditions, including expansive soil conditions and other soil problems. Compliance with the California Building code is enforced by the County's Building and Safety Division. Chapter 23.08 of the County Code also addresses grading permit requirements, and Section 22.20.040 E addresses requirements for outdoor construction activities that encounter paleontological resources.

DISCUSSION OF IMPACTS

a-i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

No Impact

As described in the *Environmental Setting* section above, the Project site is not located in an Alquist-Priolo Earthquake Fault Zone. The nearest Alquist-Priolo Fault Zone is the San Andreas Fault, located approximately 7.5 miles to the west of the Project site. There are no other mapped fault traces within the Project site (County of Marin 2022a). The Project would not include the construction of any habitable structures which could pose risks of loss, injury, or death involving rupture of a known earthquake fault. Therefore, the Project would not cause potential adverse effects associated with rupture of a known earthquake fault. No impact would occur.

a-ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

Less-than-Significant Impact

The Project site has the potential to endure strong seismic ground shaking from earthquakes that could occur on active and potentially active faults in the region. The Project contractor would comply with all federal Occupational Safety and Health Administration (OSHA) and California OSHA (Cal/OSHA) requirements related to construction worker safety, which would reduce risks associated with strong seismic ground shaking during construction to a less-than-significant level. Operation of the Project would not cause substantial effects associated with strong seismic ground shaking. The Project would not create any new inhabitable structures or any structures which could result in the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, the Project would not directly or indirectly cause potential substantial adverse effects associated with strong ground shaking. The impact would be less than significant.

a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

Less-than-Significant Impact

Liquefaction primarily occurs in relatively loose, saturated, cohesionless soils that lose their strength and become incapable of supporting the weight of overlying soils or structures when subject to earthquake stresses. The Project site is in an area mapped as having very high liquefaction potential (County of Marin 2022a). The Project consists of improvements to address seepage issues along Coyote Creek by installing a steel sheet pile floodwall and improving stormwater infrastructure, which would not exacerbate the potential for soils at the site to liquefy during seismic events and would not create any new inhabitable structures or otherwise present risks to life. The impact would be less than significant.

a-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?

No Impact

The Project site is underlain by surficial deposits; there are no landslides mapped within the Project site (County of Marin 2022a). The Project site is relatively flat and is not surrounded by steep slopes that could pose risk of landslides due to seismic activity. Therefore, the project would not cause potential substantial adverse effects involving landslides. No impact would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-Significant Impact

During construction, Project activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project site. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. As stated in Section 3.0, Project Description, a barrier fence would be installed approximately two feet from the floodwall to control sediment during construction. Grading work during construction would be required to comply with the requirements of the Marin County Code Chapter 23.08, which requires that an Erosion and Sediment Control Plan (ESCP) be prepared for any project where grading will occur within 50 feet from the top of bank of any watercourse at locations within the "city-centered corridor" or within 100 feet from the top of bank of any watercourse at locations within the "inland rural corridor." The Project would involve grading within 50 feet of the top-of-bank of Coyote Creek; therefore, an ESCP would be required. The ESCP must address erosion and sediment control and pollution prevention during the construction phase, as well as final stabilization control measures (MCMC § 24.04.625). Therefore, with compliance with the Marin County Code, the Project would not result in substantial erosion or loss of topsoil. The impact would be less than significant.

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?

Less-than-Significant Impact

As described above in Threshold a), the Project site is in an area mapped as having very high liquefaction potential. The Project would install a steel sheet pile floodwall along an existing CMU floodwall, improve a service path for maintenance and access purposes, install a new storm drain system, remove two concrete drain boxes, and replace a culvert. The improvements would not cause the underlying soil or geologic units to become unstable and would not result in

significant hazards should liquefaction of underlying soils occur. The impact would be less than significant.

d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?

No Impact

The area of the Project site is mapped as having no soil expansion potential (County of Marin 2022a). The Project would include installation of a floodwall and improvements to stormwater infrastructure on the Project site. The Project would not create any new habitable structures. Therefore, the Project would not introduce any conditions which would result in risks to life or property due to the expansive soils on the Project site. No impact would occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

The Project would not include any septic tanks or alternative wastewater disposal systems. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant Impact

As described in the *Environmental Setting* section above, geologic units underlying the Project site include artificial fill over Holocene-age bay mud. Holocene-age rocks are typically not considered paleontologically sensitive because they are too young to be fossilized; however, these deposits may contain remains that are lifted from older deposits by the movement of the geologic units (County of Marin 2022b). The Project would involve excavation work, primarily the embedding of a steel sheet pile wall, in areas that have been previously disturbed and are underlain by artificial fill. As described in *Section 3.0, Project Description,* the Project site is located in the area of the Coyote Creek levee system, which has been altered several times since the earthen levees were first constructed in the mid-1960s. Therefore, it is highly unlikely that fossilized remains would be encountered by Project work, due to the underlying artificial fill and history of ground disturbance in the area.

Although not required for the Project due to the fact that the Project is County initiated and therefore not subject to the Marin County Development Code, pursuant to 22.06.050 Exemptions from Land Use Permit Requirements, the Project will nonetheless adopt the provisions and be in compliance with the Marin County Code Section 22.20.040 E. This Section states that in the event that archaeological, historic, or paleontological resources are discovered during construction, construction activities shall cease, and the lead agency shall be notified so that the extent and location of discovered materials may be evaluated and recorded by a qualified archaeologist, and disposition of artifacts may occur in compliance with State and Federal law. With compliance with the Marin County Code, the Project would not directly or indirectly destroy a unique paleontological resource or unique geologic feature. The impact would be less than significant.

4.2.8 Greenhouse Gas Emissions

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

ENVIRONMENTAL SETTING

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The most common GHGs released from human activity are carbon dioxide, methane, and nitrous oxide (Governor's Office of Planning and Research 2008). The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (e.g., dairies and hog farms).

In the United States, the major sources of GHG emissions are transportation, electricity generation, and industrial activities (U.S. EPA 2022). These three sources are also the top contributors of GHG emissions in California (CARB 2022).

REGULATORY SETTING

Global Warming Solutions Act

Assembly Bill (AB) 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce GHG emissions to 1990 levels by 2020. In 2016, Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solution Action. SB 32 and Executive Order B-30-15 require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 MMTCO2e.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. Marin County and other jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

Marin County Unincorporated Area Climate Action Plan 2030

The *Marin County Unincorporated Area Climate Action Plan 2030* (Climate Action Plan) outlines a path towards reducing local greenhouse gas (GHG) emissions through the year 2030. The Plan includes a GHG emissions inventory, forecast, and reduction targets, and describes strategies to reduce GHG emissions and adapt to climate change. The Plan emphasizes the importance of transitioning to renewable energy and electrification and reducing reliance on fossil fuels, and also highlights the need to increase energy efficiency of buildings.

DISCUSSION OF IMPACTS

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-than-Significant Impact

BAAQMD has adopted thresholds of significance that were designed to establish the level at which GHG emissions would cause significant environmental impacts under CEQA. The thresholds are included in the 2022 CEQA Air Quality Guidelines (BAAQMD 2022). The Marin Countywide Plan discusses GHGs but does not contain specific policies pertaining to GHG emissions.

The Project would result in GHG emissions from temporary construction-related activities, including operation of heavy equipment, use of trucks, and worker trips. Direct long-term operational emissions would be limited to vehicular trips and equipment emissions during occasional maintenance activities.

BAAQMD does not have an adopted threshold of significance for GHG emissions. BAAQMD's approach to developing thresholds of significance for GHG impacts is to use a "fair share" approach to determine whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve Statewide long-term GHG reduction goals, the impact of the project's GHG emissions would be less than significant. BAAQMD has identified required design elements that development and transportation projects must incorporate into project plans in order for their impact to be considered less than significant. There are no design elements required for infrastructure projects; therefore, the Project must only be consistent with the local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b) (BAAQMD 2022). The Marin County Climate Action Plan is the local GHG reduction plan. As described below in Thresholdb), the Project would be consistent with GHG reduction strategies identified in the Climate Action Plan and therefore would not constitute a significant impact regarding GHG emissions. The impact from GHG emissions would be less than significant.

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Less-than-Significant Impact

The Project site falls within the planning jurisdiction of the BAAQMD CAP and the Marin County Climate Action Plan. As discussed in *Section 4.2.3, Air Quality,* Project construction and operation would not conflict with the BAAQMD CAP. The Marin County Climate Action Plan contains strategies to reduce GHG emissions, including promoting low carbon transportation, renewable energy and electrification, and energy efficiency, increasing water conservation, and reducing

waste. No specific actions outlined in the Climate Action Plan are directly applicable to the Project. Many of the actions direct the County of Marin to implement certain strategies to promote low-carbon transportation, energy efficiency, and renewable energy and electrification. The Project would include installing a flood wall, improving stormwater infrastructure, and improving a maintenance path. The Project would not include the construction or installation of any new source of GHG emissions. Therefore, the Project would not conflict with the Marin County Climate Action Plan or the BAAQMD CAP. The impact would be less than significant.

4.2.9 Hazards and Hazardous Materials

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

ENVIRONMENTAL SETTING

A review of the State Water Resources Control Board's (SWRCB) GeoTracker database and the Department of Toxic Substances Control's (DTSC) EnviroStor database indicated that there are no listed hazardous materials sites within the Project site (DTSC 2025, SWRCB 2025). The nearest listed site is at 234 Shoreline Highway, located approximately 450 feet north of the

Project site. The listing indicates a cleanup site that has been open since 1990. The potential contaminants of concern on the site are fuel oxygenates and total petroleum hydrocarbons (SWRCB 2025).

REGULATORY SETTING

Marin County Operational Area Multi-Jurisdictional Hazard Mitigation Plan 2023

The Marin County Operational Area and the sixteen jurisdictions and special districts within the Operational Area prepared the Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) update in 2023. The purpose of the MJHMP is to protect people and property within the County from the effects of natural disasters and hazard events. The MJHMP analyzes the likelihood of future hazard events and sets mitigation goals applicable to each identified hazard (County of Marin 2023b).

Marin County Municipal Code

Chapter 23.18 of the Marin County Code contains the County of Marin Stormwater Runoff Pollution Prevention Ordinance. The purpose of this ordinance is to minimize discharges other than stormwater runoff to storm drains and watercourses, respond to the discharge of spills, prevent and control the discharge of spills, and reduce pollutants in stormwater discharges. The ordinance requires construction site operators in the County to implement appropriate BMPs to minimize sediment and pollutants from entering storm drains and waterways.

DISCUSSION OF IMPACTS

a-b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? 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 Impact

Project construction would involve the use and transport of typical construction-related hazardous materials such as fuels, lubricants, adhesives, and solvents. Heavy equipment would be staged and refueled within the Project staging areas. Construction activities would be required to comply with numerous hazardous materials regulations and implement BMPs to ensure that hazardous materials are handled properly and do not pose a threat to worker safety or the environment. Workers who are handling hazardous materials are required to adhere to all OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported to and from the Project site in accordance with the Resource Conservation and Recovery Act (RCRA) and United States Department of Transportation regulations and disposed of in accordance with RCRA at a facility that is permitted to accept the waste. With compliance with existing regulations, the Project would not create a significant hazard to the public or the environment through the routing use, transport, or disposal of hazardous materials.

As described in *Section 4.2.7, Geology and Soils,* the Project would be required to implement an ESCP during construction, which must address erosion and sediment control, pollution prevention, and final stabilization control measures for disturbed areas. Therefore, with compliance with existing regulations, the Project would not create a significant hazard to the public or

environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. The impact would be less than significant.

c) 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

Tamalpais Valley Elementary School is located approximately 0.2 mile southwest of the Project site. As described above in Thresholds a) and b), the Project would use typical construction-related hazardous materials such as fuels, lubricants, adhesives, and solvents during construction. The Project would be required to comply with all applicable regulations pertaining to the handling, transport, use, and storage of hazardous materials, such as OSHA, Cal/OSHA, and RCRA regulations. The Project would not require the use of any acutely hazardous materials that would pose a risk to schools located within one quarter mile of the Project site. The Project would not release any hazardous emissions. Emissions associated with construction are described in *Section 4.2.3, Air Quality*. The impact would be less than significant.

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?

No Impact

As described in the *Environmental Setting* section above, the Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the Project site?

No Impact

The Project site is not located in an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is the San Rafael Airport, located approximately 9.5 miles north of the Project site. There is one heliport, the commodore Center Heliport, located approximately 0.6 mile east of the Project site. The Project would not construct any new habitable structures which would put people at risk of hazards associated with the heliport. Therefore, no impact related to airport hazards would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact

The Project site includes portions of Coyote Creek, an unpaved maintenance path, and the Shoreline Pump Station and adjacent parking lot. The Project does not include any portions of roadways and would not obstruct any driveways. Therefore, the Project would not impair implementation of any adopted emergency response plan or emergency evacuation plan. No impact would occur.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less-than-Significant Impact

The Project site is within a Local Responsibility Area (LRA) for fire hazard severity (CalFire 2025). As discussed further in *Section 4.2.20, Wildfire*, portions of the Project site are within a Moderate Fire Hazard Severity Zone (FHSZ), and the woodland habitat immediately south of the Project site is within a High FHSZ. However, the surrounding open spaces have rarely been subject to wildfire; the most recently recorded wildfire within the vicinity of the Project site was documented approximately 0.5 mile northwest of the Project site in 1968 (Marin Maps 2019). The Project would not create any new habitable structures that would increase wildfire risk or expose people or structures either directly or indirectly to wildfire risk. The Project would consist of flood control and stormwater management improvements on the Project site. The impact would be less than significant.

4.2.10 Hydrology and Water Quality

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
	iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water 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?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The Project site includes a portion of Coyote Creek. Coyote Creek is located within the San Rafael Hydrologic Area (HA) and the Corte Madera Creek-Frontal San Francisco Bay Estuaries watershed, hydrologic sub area (HSA) 203.30. Coyote Creek discharges into Richardson Bay and is identified as having beneficial uses in the San Francisco Regional Water Quality Control Board's (RWQCB) 2017 Basin Plan.

REGULATORY BACKGROUND

Marin County Municipal Code

Marin County Code Chapter 23.08 requires any project where grading will occur within 50 feet from the top of bank of any watercourse at locations within the "city-centered corridor" or within 100 feet from the top of bank of any watercourse at locations within the "inland rural corridor" to prepare an Erosion and Sediment Control Plan (ESCP). The ESCP must address erosion and sediment control and pollution prevention during the construction phase, as well as final stabilization control measures (MCMC § 24.04.625).

Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin

The Basin Plan sets narrative and numerical water quality objectives for the San Francisco Bay Region. Numerical objectives typically describe pollutant concentration, physical and chemical conditions of water, and the toxicity of water to aquatic organisms. The Basin Plan establishes beneficial uses for select water bodies within the planning area. Beneficial uses for Coyote Creek include:

- Cold freshwater habitat,
- Wildlife habitat,
- Warm freshwater habitat,
- Water contact recreation, and
- Noncontact water recreation (San Francisco Bay RWQCB 2017).

DISCUSSION OF IMPACTS

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-than-Significant Impact

During construction, the Project would include ground-disturbing activities which could release sediment into waterways if not controlled properly. As described in *Section 4.2.7, Geology and Soils*, the Project would be required to prepare an ESCP in order to comply with the requirements of the Marin County Code Chapter 23.08. The purpose of this plan is to implement measures to prevent pollutant release and minimize erosion during construction. With implementation of measures contained in the ESCP, the Project would not violate any water quality standards or waste discharge requirements or substantially degrade surface or groundwater quality during construction. The impact of Project construction would be less than significant.

There are two waterways within the Project site: Coyote Creek and an earthen ditch that runs behind the residences at 262 to 270 Cardinal Road and conveys stormwater flows to Coyote Creek. The Project would install a new storm drain system to convey flows from the earthen ditch to the Shoreline Pump Station by placing a storm drain inlet within the ditch, routing a storm drainpipe to the pump station, and removing an existing culvert that outfalls to Coyote Creek. Improving stormwater infrastructure within the Project site would help reduce flooding risk in the surrounding area and thereby improve water quality by limiting the introduction of pollutants in waterways. Therefore, the Project would have a long-term beneficial impact on water quality. No operational impact would occur.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less-than-Significant Impact

The Project would not use groundwater during construction or operation. Water in Marin County is supplied by the Marin Municipal Water District (MMWD), which does not use groundwater as part of its water supply (MMWD 2017). The Project would result in an approximately 2,000 square foot increase in impervious surface area on the Project site. However, the Project site is not located in an open space area that contributes substantially to groundwater recharge. The Project site is located in a tidally influenced area that is prone to flooding; therefore, this small increase in impervious surface area to manage stormwater runoff would not impede groundwater recharge. Furthermore, as discussed below in Threshold e), the Project site is not located within a groundwater basin. Therefore, the Project would not substantially decrease groundwater supplies or interfere with groundwater recharge. The impact would be less than significant.

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;

Less-than-Significant Impact

The Project would include ground disturbing activities and vegetation removal within the Project site, which could result in minor erosion of soils. However, as stated in *Section 4.2.8, Geology and Soils,* the Project would implement an ESCP during construction which would contain measures to control erosion. In addition, as stated in *Section 3.0, Project Description*, a barrier fence would be installed approximately two feet from the floodwall to control sediment during construction. Once vegetation removal is complete, all disturbed areas would be sprayed with a slurry of seeds and mulch, also called hydroseeding, which would provide more stability to the surface soils and prevent excessive erosion. Therefore, the Project would not result in substantial erosion or siltation on-or-off site. The impact would be less than significant.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?

No Impact

The Project would make improvements to stormwater drainage and flood flow management within and around the Project site. The Project would install a new storm drain system to convey stormwater flows from the surrounding area to the Shoreline Pump Station. Therefore, the Project would not substantially increase the rate or amount of surface runoff, create runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or impede flood flows. No impact would occur.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less-than-Significant Impact

Low lying areas within Tamalpais Valley, including the Project site are within a tsunami inundation zone (County of Marin 2023b). In addition, a portion of the Project site is within a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event (FEMA 2025). Project construction work would occur during the dry season; therefore, flooding at the site during construction, which could risk release of pollutants into nearby waterways, is not anticipated to occur. Furthermore, as described in Threshold a) above, the Project would be required to implement an ESCP which would contain measures to reduce the risk of pollutant release. As such, the Project would not risk release of pollutants due to project inundation during construction. Following construction, the Project site would remain similar to existing conditions. The Project would not change the land use of the site or install any new structures which would risk release of pollutants due to Project site inundation. The impact would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-than-Significant Impact

The applicable water quality control plan for the Project site is the Basin Plan, which identifies specific beneficial uses and water quality objectives for each of the surface waters and groundwater management zones in the planning area, including Coyote Creek. As described above in Threshold a), the Project would implement an ESCP, which would ensure that construction activities on the Project site would not violate any water quality objectives. As described above in Threshold a), Project implementation would improve stormwater conveyance through the site and therefore, would have a long-term beneficial impact on water quality. As such, the Project would support objectives of the Basin Plan. The impact would be less than significant.

The Project site is not within a groundwater basin; therefore, there is no applicable sustainable groundwater management plan for the Project site (DWR 2025). Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The impact would be less than significant.

4.2.11 Land Use and Planning

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

ENVIRONMENTAL SETTING

The Project site is situated between residential neighborhoods to the north and open space to the south. The Project site is within Open Area, Residential Single Family, and Residential Commercial Multiple Planned zoning districts. The Marin Countywide Plan designated the Project site as Open Space, Single Family Residential, and Neighborhood Commercial/Mixed Use (County of Marin 2022a).

DISCUSSION OF IMPACTS

a) Physically divide an established community?

No Impact

The Project would install a new sheet pile wall and storm drain system along the Cardinal Road levee, remove two concrete drain boxes and one culvert, and replace one culvert to address chronic seepage issues under the levee. The operational use of the Project site would remain the same after Project construction is complete. The Project would not result in a change to the existing land use of the site or introduce any new physical barriers. Therefore, the Project would not physically divide an established community. No impact would occur.

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?

No Impact

The Project would not change the existing land use of the site; therefore, the Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As described in *Section 4.2.4, Biological Resources*, the Project would comply with all applicable policies of the Marin Countywide Plan pertaining to biological resources. After construction is finished, the Project site would appear similar to existing conditions. No impact would occur.

4.2.12 Mineral Resources

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

ENVIRONMENTAL SETTING

Eight sites in Marin County have been designated by the State as having significant mineral resources for the North Bay region (County of Marin 2023a). The Project site does not overlap with any of the areas designated as having significant mineral resources.

DISCUSSION OF IMPACTS

a, b) 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? 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

There are no known mineral resources that are of value to the region or state within the vicinity of the Project site. The County's general plan does not identify any mineral resources within the vicinity of the Project site. Therefore, the Project would not impact any mineral resources that are of local or regional value. No impact would occur.

4.2.13 Noise

Would the project result in:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project site to excessive noise levels?	☐	☐	☐	☒

BACKGROUND INFORMATION

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure but cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used, and monitoring results are reported in A-weighted decibels (dBA). Decibels and other acoustical terms are defined in Table 3.

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people:

- A 3-dBA increase is considered barely noticeable.
- A 5-dBA increase is considered clearly noticeable, but not dramatic.
- A 10-dBA increase is perceived as a doubling in loudness.

Table 3. Definition of Acoustical Terms

TERM	DEFINITION
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency response of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Maximum Sound Levels (Lmax)	The maximum sound level measured during a given measurement period.
Equivalent Noise Level (Leq)	The average A-weighted noise level during the measurement period. For this CEQA evaluation, Leq refers to a 1-hour period unless otherwise stated.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The existing level of environmental noise at a given location from all sources near and far.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources: Charles M. Salter Associates, Inc. 1998, Federal Transit Administration 2018

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. The RMS of a signal is the average of the squared amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV is

normally described in inches per second (in/sec) and RMS is often described in vibration decibels (VdB).

ENVIRONMENTAL SETTING

Existing Ambient Noise Conditions

The primary sources of noise in the Project site vicinity consist of traffic along State Route 1 and noise from nearby residences and businesses. According to the Marin Countywide Plan, the noise level associated with the State Route 1 corridor is 60 Ldn. Therefore, ambient noise levels at the Project site would be 60 Ldn or less.

Sensitive Receptors

Noise-sensitive receptors are locations where people are more susceptible to elevated noise levels than others due to the amount of noise exposure and the types of activities typically involved. Sensitive receptors include, but are not limited to residences, schools, places of worship, hospitals, convalescent homes, hotels, and libraries. Vibration-sensitive receptors are locations where people are more susceptible to the adverse effects of vibration. These include residences and other buildings where people normally sleep, as well as buildings that have the potential for activity interference (e.g., schools and places of worship). In certain situations, vibration also can cause structural damage. The residences adjacent to the Project site along Cardinal Road and Flamingo Road are noise and vibration-sensitive receptors.

REGULATORY SETTING

Marin Countywide Plan

Section 3.10, Noise, of the Built Environment of the Marin Countywide Plan contains policies and programs intended to maintain appropriate noise levels and protect noise-sensitive land uses in the County. The following program is applicable to the Project.

> **NOI-1.i Regulate Noise Sources:** Sections 6.70.030(5) and 6.70.040 of the Marin County Code establish allowable hours of operation for construction-related activities. As a condition of permit approval for projects generating significant construction noise impacts during the construction phase, construction management for any project shall develop a construction noise reduction plan and designate a disturbance coordinator at the construction site to implement the provisions of the plan.

Marin County Code

The Marin County Code Section 6.70.030(5) establishes allowable hours of operation for construction-related activities.

a. Hours for construction activities and other work undertaken in connection with building, plumbing, electrical, and other permits issued by the Community Development Agency shall be limited to the following:
    i. Monday through Friday: 7 a.m. to 6 p.m.
    ii. Saturday: 9 a.m. to 5 p.m.
    iii. Prohibited on Sundays and Holidays (New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day).

b. Loud noise-generating construction-related equipment (e.g. backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the Community Development Agency from 8 a.m. to 5 p.m. Monday through Friday only.
c. Special exceptions to these limitations may occur for:
    i. Emergency work as defined in Section 22.130.030 of the Municipal Code provided written notice is given to the Community Development Director within forty-eight hours of commencing work;
    ii. Construction projects of city, county, state, or other public agency, or other public utility;
    iii. When written permission of the Community Development Director has been obtained, for showing of sufficient cause;
    iv. Minor jobs (e.g., painting, hand sanding, sweeping) with minimal/no noise impacts on surrounding properties;
    v. Modifications required by the review authority as a discretionary permit condition of approval.

ASSESSMENT METHODOLOGY

A detailed noise assessment was not conducted for this Project; however, a noise study was prepared for a similar District project in 2022 by RCH Group (RCH). This Santa Venetia Floodwall project involved the installation of a sheet pile floodwall along an existing Timber-Reinforced Berm, in close proximity to residences. To estimate the maximum noise and vibration levels resulting from the Santa Venetia Floodwall project, RCH conducted noise and vibration monitoring of a sheet pile installation test using a vibratory hammer mounted to the end of an excavator arm. The noise from vibratory hammer pounding the sheet pile was up to 80 dB, Lmax at 50 feet from the test site, and 90 dB, Lmax at 25 feet of the test site. The maximum vibration level was 86 VdB at 50 feet of the test site (RCH Group 2022).

DISCUSSION OF IMPACTS

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?

Less-than-Significant Impact

Potential noise impacts associated with the Project would be related to noise from construction. The use of on-site equipment and heavy trucks during construction of the Project would result in increases in ambient noise levels in the Project vicinity. Construction noise from the Project would last for approximately 60 days, with the loudest noise-generating activities, demolition and clearing and sheet pile installation, lasting for approximately 22 days.

The noisiest piece of equipment needed for Project construction would be a vibratory pile driver, which would be used to drive the sheet wall piles into the ground. Vibratory pile drivers can generate noise levels of up to 95 dB, Lmax at 50 feet (Federal Transit Administration [FTA] 2018). Based on the noise and vibration testing conducted by RCH Group for the Santa Venetia

Floodwall project in 2022, the use of a vibratory hammer would generate noise levels of up to 90 dB, Lmax at 25 feet of the work site (RCH Group 2022).

It is expected that construction activities could occur as close as approximately 30 feet from the nearest residence along Cardinal Road. Based on the field measurements from the Santa Venetia Floodwall project sheet pile installation test, noise from the use of a vibratory hammer would likely exceed 90 dB, Lmax at 30 feet. Other project activities, such as pipe installation and culvert removal, would utilize standard construction equipment and practices and would not be expected to generate more noise than typical construction equipment.

Though construction of the Project would temporarily increase ambient noise levels and can be expected to be a source of annoyance to nearby residents, Project construction activities would be limited to Monday to Friday, 7 a.m. to 6 p.m., and Saturday from 9 a.m. to 5 p.m., in compliance with the Marin County Code. The Code also indicates that loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced by the construction crew at a construction site from 8 a.m. to 5 p.m. Monday through Friday only. However, the Code provides an exception to these limitations for construction projects of cities, the county, the State, other public agencies, and other public utilities. Because the Project would operate in compliance with the County Code approved construction hours, the Project would not exceed noise standards in the Marin Countywide Plan or the County Code. Therefore, the Project would not generate a substantial increase in ambient noise levels in the vicinity of the Project site in excess of local standards. The impact would be less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less-than-Significant Impact

The Project would include installing a sheet pile wall with a vibratory hammer, which can generate groundborne vibration. Some sheet pile installations would come as close as approximately 30 feet from residences along Cardinal Road.

Typical sonic pile-drivers (i.e., vibratory pile drivers) can generate vibration levels of up to 93 VdB at 25 feet (typical range) and vibration levels of up to 105 VdB at 25 feet (upper range) (FTA 2018). During the 2022 testing done by RCH for the Santa Venetia Floodwall project, a maximum vibration level of 86 VdB at 50 feet was recorded at a site with soil conditions representative of a typical backyard along the levee (RCH Group 2022). The 2018 FTA Guidelines indicate that a vibration level of 85 VdB or more in a residence can result in annoyance. The FTA Guidelines also show that a vibration level of up to 102 VdB is considered safe for buildings consisting of reinforced concrete, steel, or timber, and would not result in any construction vibration damage.

It is expected that Project activities could occur as close as approximately 30 feet from the nearest residence. Vibration levels would be approximately 93 VdB at 30 feet. The sheet pile installation along the levee would result in temporary annoyance to residents but is not expected to result in any structural damage to nearby residences since this vibration level would be well below the 102 VdB threshold for structural damage. Therefore, construction of the Project would not generate excessive groundborne vibration or groundborne noise levels. No operational impact related to vibration would occur. The impact would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project site to excessive noise levels?

No Impact

The Project is not located within the vicinity of a private or an airport land use plan, or within two miles of a public airport or a public use airport. The nearest public airport is the San Rafael Airport, located approximately 9.5 miles north of the Project site. Therefore, no impact related to airport hazards would occur. Therefore, the Project would have no impact related to the exposure of people to excessive noise levels from aircrafts.

4.2.14 Population and Housing

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

ENVIRONMENTAL SETTING

As of 2020, the population of the census-designated place (CDP) of Tamalpais-Homestead Valley was approximately 11,492, which is approximately a seven percent increase from the 2010 population number of 10,735 (U.S. Census Bureau 2020). The most recent census data shows the CDP to have 4,678 total housing units. The Project site is within Open Area, Residential Single Family, and Residential Commercial Multiple Planned zoning districts.

DISCUSSION OF IMPACTS

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)?

No Impact

The purpose of the Project is to update the existing Cardinal Road levee and stormwater infrastructure to reduce seepage and flood risk for adjacent residential properties and provide long-term adaptation capacity for projected sea level rise. The proposed improvements to the levee and stormwater infrastructure are not intended to serve population growth, but rather to address ongoing seepage and protect existing properties from flooding which may result from sea level rise. The Project would not construct any homes or construct infrastructure which would induce substantial unplanned population growth. No impact would occur.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact

The Project would not displace any people or housing or necessitate the construction of replacement housing. Access to existing properties would be maintained throughout Project construction and operation.

4.2.15 Public Services

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

ENVIRONMENTAL SETTING

Fire protection services within the Project vicinity are provided by Southern Marin Fire Protection District (SMFPD), an independent special district established by the Marin County Board of Supervisors. The SMFPD includes five fire stations; the nearest station to the Project site is located approximately 0.4 mile west at 309 Poplar Street in Mill Valley.

As an unincorporated community, police protection services within the Project vicinity are provided by Marin County Sheriff's Department. The Sheriff's Department has 202 sworn deputies and 112 other law enforcement professionals (Marin County Sheriff's Office 2025). The Sheriff's Department has a substation that serves the Tamalpais Valley community located approximately 0.7 mile southeast of the Project site at 850 Drake Avenue in Sausalito.

The nearest school to the Project site is Tamalpais Valley Elementary School, located approximately 0.2 mile southwest. Various other schools are located within 2 miles of the Project site including Mount Tamalpais School, Park Elementary School, Mill Valley Middle School, Dr. Martin Luther King Jr. Academy, Strawberry Point School, and Tamalpais High School.

The nearest park to the Project site is Kay Park, approximately 0.2 mile west. The nearest library to the Project site is Marin City library approximately 0.7 mile southeast.

DISCUSSION OF IMPACTS

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

- Fire Protection?
- Police Protection?
- Schools?
- Parks?
- Other Public Facilities?

No Impact

The Project would be served by existing police, fire, school, parks, and other public facilities. The Project would not construct any new governmental facilities or alter any existing governmental facilities. As described in Section *4.2.14, Population and Housing*, the Project would not result in population growth which would result in the need for new or physically altered governmental facilities. No impact would occur.

4.2.16 Recreation

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

ENVIRONMENTAL SETTING

The nearest park to the Project site is Kay Park, approximately 0.2 mile west. The San Francisco Bay Trail is approximately 0.3 mile east of the Project site. There are two recreational walking trails within the Project site that run parallel to Coyote Creek.

DISCUSSION OF IMPACTS

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less-than-Significant Impact

The Cardinal Road levee top is used by the public as a walking trail. During Project construction there would be brief disruptions to recreational use of the Project site which may lead to increased use of nearby trails; however, this impact would only be temporary during construction. Project implementation would not substantially alter or degrade the existing recreational use of the Project site and its surroundings. The Project would not increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The impact would be less than significant.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact

The Project would not include or require the construction or expansion of recreational facilities. No impact would occur.

4.2.17 Transportation

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

ENVIRONMENTAL SETTING

The Project site is located in a residential area in unincorporated Marin County adjacent to State Route 1. The Project site includes a portion of a public parking lot adjacent to the Shoreline Pump Station, and a pedestrian path north of Coyote Creek, along the proposed floodwall alignment. No other transportation facilities, such as roadways or public transit stops, are located within the Project site.

REGULATORY SETTING

Marin Countywide Plan

The Marin Countywide Plan contains the following relevant policies related to transportation:

> **TR-1.2 Maintain Service Standards.** Establish level of service standards for vehicles on streets and highways and performance standards for transit (see Map 3-8, Roadway Network of Marin County), bicycles, pedestrians, and other modes of transportation.
>
> **TR-1.8 Reduce Vehicle Miles Traveled (VMT).** Reduce the rate of increase for total vehicle miles traveled by single-occupant automobile to not exceed the population growth rate.
>
> **TR-2.1 Improve the Bicycle and Pedestrian Network.** Promote adequate bicycle and pedestrian links, to the extent feasible, throughout the county, including streetscape improvements and standards that are safe and pedestrian and bicycle friendly.

Marin Countywide Transportation Plan 2050

The Marin Countywide Transportation Plan 2050 (CTP 2050; Transportation Authority of Marin 2024) brings together two comprehensive planning efforts for Marin County – the Marin Countywide Transportation Plan and the Countywide Community Based Transportation Plan. The

purpose of CTP 2050 is to define a strategic, long-term vision for the County's transportation systems in alignment with broader social, economic, and environmental goals in the locality and at the state level (Transportation Authority of Marin 2024).

DISCUSSION OF IMPACTS

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact

The Project site includes a portion of a public parking lot and a pedestrian path. The Project would include improvements to the pedestrian path along Coyote Creek but would not impact any other transportation facilities. The Project would result in a small incremental increase in vehicle traffic associated with construction worker commute trips and transportation of materials and equipment to and from the Project site. As described in *Section 3.0 Project Description*, approximately 40 truck trips would be required for the Project, which would be spread over the entire construction period. As described in *Section 3.0, Project Description*, approximately eight workers would be required per day for construction. If all workers were to commute to and from the Project site in their own vehicles, this could add up to 16 one-way vehicle trips per day (eight a.m. trips and eight p.m. trips). While this would add incrementally to traffic on local and regional roadways, the small number of trips and the short duration of the construction period would not conflict with Countywide Plan or CTP 2050 policies regarding traffic flow, vehicle trips, and level of service standards. The Project would not result in a long-term increase in traffic and would not interfere with or alter existing circulation systems, including transit, roadway, pedestrian, or bicycle facilities. Therefore, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. The impact would be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less-than-Significant Impact

CEQA Guidelines section 15064.3(b) describes criteria for analyzing transportation impacts based on vehicle miles traveled (VMT). For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Section 21099 of the PRC states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. Section 21099 subdivision (b)(1) further directed the Office of Planning and Research (OPR) to prepare and develop criteria for determining significance. The OPR identifies a screening threshold for small, land use projects as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer trips than this threshold may be assumed to cause a less-than-significant transportation impact (OPR 2018).

During construction, the Project would generate some temporary vehicle trips from workers commuting to the Project site and heavy trucks bringing materials to and from the site. The number of vehicle trips would not exceed 110 trips per day, which is OPR's screening threshold for conducting a VMT analysis. Project operation would not cause an increase in vehicle trips, aside from occasional vehicles needed for maintenance activities. As such, the Project would not

conflict with State CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

c) 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 Project would not result in construction of new roads or intersections or alter the geometric design of existing roads or intersections. Neither would the Project introduce incompatible uses to the road system. Large construction vehicles would be used infrequently during construction and would not be a substantial incompatible use. No impact would occur.

d) Result in inadequate emergency access?

No Impact

The Project would not block or impede any existing roadway or intersection during construction or operation. Therefore, the Project would not result in inadequate emergency access. No impact would occur.

4.2.18 Tribal Cultural Resources

Would the project:		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of 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)?*	☐	☐	☒	☐
ii)	*A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*	☐	☒	☐	☐

ENVIRONMENTAL SETTING

The Native American people occupying the vicinity of the Project site at the time Europeans arrived in the region were the Coast Miwok (Kroeber 1925, Kelly 1978). The Coast Miwok's ethnographic territory falls largely within present-day southern Sonoma County and all of Marin County. This group was distinct from other Miwok groups, with the Lake Miwok people located near Clear Lake, and the Eastern or Plains Miwok people occupying a large part of the Sacramento-San Joaquin River Delta Region and east of that region into the Sierra Foothills (Callaghan 1978, Kelly 1978, Levey 1978).

The San Francisco Presidio and Mission Dolores were constructed in AD 1776, and Coast Miwok did not enter Mission Dolores in significant numbers until AD 1800. Mission conditions were often harsh and Native American neophytes (new religious converts) often suffered illness and starvation. Following high mortality rates at Mission Dolores, the suggestion was raised to send Native Americans across the bay, as it was thought that perhaps it was a healthier climate. After testing this hypothesis on a trail run, it was decided that the trial was successful, and a support settlement to Mission Dolores was founded on December 14, 1817. It later became established as a mission, and San Rafael Arcangel was founded (Hoover et. Al 2002). Despite the impacts from Europeans, Mexicans, and Americans, the Coast Miwok have been able to rebuild their population and their culture. In 1992, Coast Miwok and Southern Pomo groups established the Federated Indians of Graton Rancheria. This federation was federally recognized in 2000.

REGULATORY SETTING

State of California Public Resources Code

Section 21074 of the PRC defines historical resources related to tribal cultural resources.

a) "Tribal cultural resources" are either of the following:
    a. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
        A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
        B. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

TRIBAL CONSULTATION

The District sent letters to appropriate representatives of each tribal ground associated with the Project site area on June 27, 2025. The District met with representatives of the Federated Indians of Graton Rancheria (FIGR) on August 11, 2025, a FIGR tribal representative participated in the archaeological pedestrian survey on August 21, 2025, and the District provided a draft copy of the resulting Cultural Resources Study to FIGR for their review on August 27, 2025. The District also provided FIGR with a copy of the mitigation measures that would be proposed in the Draft IS/MND for their review on October 2, 2025. No additional response has been received but consultation remains ongoing.

DISCUSSION OF IMPACTS

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 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)? A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section

5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less-than-Significant Impact with Mitigation Incorporated

The Project site is within the Mount Tamalpais landscape, which is a documented tribal cultural resource that holds significance to the Coast Miwok people. The District had an initial consultation meeting with FIGR on August 11, 2025, pursuant to AB 52. Mitigation measures to protect archaeological, cultural, and tribal cultural resources have been incorporated into this IS/MND and are discussed in *Section 4.2.5, Cultural Resources*. Mitigation measure CUL-1 requires that an archaeological and cultural resources awareness training shall be given to construction personnel prior to ground-disturbing activities on-site. Mitigation Measure CUL-2 requires that, if buried materials are encountered during construction, that a qualified archaeologist shall make a significance evaluation of the find before ground-disturbing work resumes. Mitigation Measure CUL-3 includes measures for the appropriate treatment of human remains should they be uncovered during Project construction. With these measures and any additional measures that are agreed upon by FIGR and the District during tribal consultation, the Project would not result in a significant impact to tribal cultural resources. The impact would be less than significant with mitigation incorporated.

4.2.19 Utilities and Service Systems

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

ENVIRONMENTAL SETTING

Water

The main supplier of water in Tamalpais Valley is the Marin Municipal Water District (MMWD). Approximately 75 percent of the MMWD's supply comes from rainfall in the Mt. Tamalpais Watershed and hills of west Marin County. The MMWD maintains seven reservoirs and an extensive distribution system featuring 908 miles of pipes, 130 storage tanks, and 97 pump stations (MMWD 2023). The MMWD's water supply is supplemented by the Sonoma County Water Agency, whose supply comes from the Russian River System in Sonoma County.

Wastewater

Sewer service in Tamalpais Valley is provided by the Tamalpais Community Services District (TCSD). The TCSD manages and maintains approximately 30 miles of sewer pipeline and pump

stations, with most of the collected wastewater being sent to the Sausalito-Marin City Sanitary District's treatment facility (TCSD, n.d.).

Stormwater

Stormwater infrastructure in Tamalpais Valley is primarily managed by the District, the TCSD, and the Marin County Department of Public Works. Stormwater infrastructure within the Project site includes the Shoreline Pump Station, the Cardinal Road levee, and culverts and pipelines. Culverts on-site drain to Coyote Creek, which conveys flows into Richardson Bay. The Cardinal Pump Station is also located adjacent to the Project site. The Cardinal and Shoreline Pump Stations are owned and operated by the District.

Electricity and Natural Gas

Electricity in Marin County is provided by MCE and PG&E. MCE is a public, not-for-profit electricity provider that serves as the default electricity provider for homes and businesses starting new electric service in the County and offers various renewable energy options (California Community Choice Association 2022). Customers may opt out of MCE services and elect PG&E as their electricity provider if they choose.

DISCUSSION OF IMPACTS

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less-than-Significant Impact with Mitigation Incorporated

The Project would include the installation of a steel sheet pile floodwall along the Cardinal Road levee, the installation of new stormwater infrastructure, and the removal of concrete drain boxes and culverts. Potential environmental effects of constructing the proposed stormwater infrastructure facilities are discussed throughout this IS/MND. *Section 4.2.21, Mandatory Findings of Significance,* describes the cumulative impacts of the Project. As described throughout this IS/MND, the Project would not result in any significant environmental impacts; all impacts would be mitigated to a less-than-significant level with implementation of mitigation measures described throughout this document. Therefore, the environmental effects of the proposed new and rehabilitated stormwater facilities included in the Project would be less than significant with mitigation incorporated.

b) 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

During construction, the Project would require the use of water for construction activities such as watering soil stockpiles and exposed areas. The water needed for construction activities would be comparable to the water demand for similar types of construction projects and would not substantially increase existing demand for water within the County. As described in *Section 4.2.14, Population and Housing,* the Project would not construct new housing or provide services which would encourage or support growth within the Project site. Therefore, the Project would not result in any increase of potable water demand. The Project would rehabilitate and construct

new stormwater infrastructure, which would not increase the demand for water during future normal, dry, and multiple dry years. The Project would have no operational impact on water supply. The impact would be less than significant.

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?

No Impact

As discussed in *Section 4.2.14, Population and Housing,* the Project would not construct new housing or provide services which would encourage or support growth within the Project site. As such, the Project would not impact demand for wastewater treatment during construction or operation. No impact would occur.

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?

Less-than-Significant Impact

The Project would generate limited construction and demolition (C&D) waste during construction, primarily including concrete from the removed drain boxes and the removed culvert. As described below in Threshold e), the Project would be required to divert 65 percent of all C&D waste generated. All remaining C&D waste would be disposed of properly at a facility that accepts such waste. Project operation would not cause an increase in solid waste generation. The impact would be less than significant.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-than-Significant Impact

Project construction would generate limited C&D waste from the removal of concrete drain boxes and a culvert. Marin County Ordinance 3389, enacted in 2003, requires that construction and demolition projects achieve a minimum 65 percent diversion rate for C&D waste, meaning that 65 percent of C&D waste generated must be reused or recycled instead of going to a landfill. The Project would be required to comply with this requirement, which also satisfies compliance with CALGreen, the State's green building standards code. Therefore, the Project would comply with all federal, State, and local management and reduction statutes and regulations related to solid waste. The impact of the Project related to solid waste requirements would be less than significant.

4.2.20 Wildfire

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

ENVIRONMENTAL SETTING

The Project site is located in an LRA for wildfire prevention (CAL FIRE 2025). Much of the Tamalpais-Homestead Valley Community is within the Moderate to High FHSZ (CAL FIRE 2022). Portions of the Project site are within a Moderate FHSZ, and the woodland habitat immediately south of the Project site is within a High FHSZ. However, the surrounding open spaces have rarely been subject to wildlife; the most recently recorded wildfire within the vicinity of the Project site was documented approximately 0.5 mile northwest of the Project site in 1968 (Marin Maps 2019).

REGULATORY SETTING

Marin County Operational Area Multi-Jurisdictional Hazard Mitigation Plan 2023

The MJHMP analyzes the likelihood of future hazard events and sets mitigation goals applicable to each identified hazard. The future likelihood of wildfires within Marin County was deemed "high likely" in the MJHMP (County of Marin 2023b).

DISCUSSION OF IMPACTS

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact

As described in *Section 4.2.9, Hazards and Hazardous Materials,* the Project would not impair implementation of any adopted emergency response plan or emergency evacuation plan. The Project would not conflict with any mitigation activities included in the County's MJHMP. Therefore, no impact would occur.

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?

Less-than-Significant Impact

The Project site is located in a relatively flat area along the outskirts of a residential neighborhood bordering Coyote Creek. The Project site is within a Moderate FHSZ in the LRA and is adjacent to a High FHSZ. The surrounding vicinity has not been subject to wildfires in over 40 years. Project implementation would not change the existing land use of the Project site or create any new structures which would exacerbate wildfire risk. Therefore, the Project would not exacerbate wildfire risks. The impact would be less than significant.

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?

No Impact

The Project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk. The Project would include improvements to an existing pathway along the northern side of Coyote Creek. This component of the Project would not exacerbate fire risk or result in impacts to the environment. No other associated infrastructure would be altered as part of the Project. Therefore, no impact would occur.

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?

Less-than-Significant Impact

As discussed in *Section 4.2.7, Geology and Soils*, the Project site is located in a flat area and is not near any landslide hazard areas. As discussed in *Section 4.2.9, Hydrology and Water Quality*, the Project would not increase flooding or runoff. Part of the Project purpose is to reduce flood risk for neighboring properties by upgrading to the existing levee and stormwater infrastructure. These improvements would not expose people or structures to significant risks as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

4.2.21 Mandatory Findings of Significance

		Potentially Significant Impact	*Less-than-Significant Impact 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 that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION OF IMPACTS

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 Impact with Mitigation Incorporated

Implementation of the Project would not substantially degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the range of a rare or endangered plant or animal. Implementation of mitigation measures presented in *Section 4.2.4, Biological Resources*, would mitigate potential significant impacts that could substantially degrade the quality of the environment or impact biological resources. As discussed in *Section 4.2.5, Cultural Resources*, and *Section 4.2.18, Tribal Cultural Resources*, impacts to potentially unknown resources within the Project site would be mitigated to a less-than-significant level by Mitigation Measures CUL-1, CUL-2 and CUL-3. Given the fact that potential impacts to biological and cultural resources would primarily occur during active construction (not long term) and that measures have been identified to reduce these temporary impacts, impacts

would not be considered significant. Impacts would be less than significant with mitigation incorporated.

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 Impact

Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The Project is being implemented to reduce flooding and improve stormwater infrastructure in the Project site. Therefore, the only impacts of the Project that could contribute to a cumulatively significant impact are from construction. There are no other projects within the immediate vicinity of the Project site that are planned to undergo construction concurrently with the Project. Therefore, the Project would create a less-than-significant cumulative impact with respect to all environmental issues analyzed in this IS/MND.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-Significant Impact

Potential impacts to human beings have been addressed in this IS/MND, including impacts related to air quality, noise, and transportation. Project construction activities would cause potential temporary impacts to humans due to the generation of fugitive dust emissions. However, the BAAQMD considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level, which the Project would implement as Mitigation Measure AIR-1.

Noise and transportation impacts resulting from the Project were found to be less than significant, and no mitigation measures are required. As such, the Project would not have environmental effects that would cause substantial adverse effects on human beings. The impact would be less than significant.

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APPENDIX A. BIOLOGICAL RESOURCES TECHNICAL REPORT

Cardinal Road Levee Upgrade Project

Biological Resources Technical Report

Marin County, California









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List of Acronyms

ACE	Areas of Conservation Emphasis
BGEPA	Bald and Golden Eagle Protection Act
BRTR	Biological Resources Technical Report
CARI	California Aquatic Resources Inventory
CBR	California black rail
CCC	Central California Coast
CCH	Consortium of California Herbarium
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CPRC	California Public Resources Code
CRR	California Ridgway's rail
CSRL	California Soils Resource Lab
CWA	Clean Water Act
CWP	Countywide Plan
District	Marin County Flood Control and Water Conservation District
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
HTL	high tide line
Inventory	California Native Plant Society Rare Plant Inventory
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation & Management Act
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NETR	National Environmental Title Research
NMFS	National Marine Fisheries Service
NPPA	California Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory

OHWM	Ordinary High Water Mark
Project	Cardinal Road Levee Upgrade Project
PVC	polyvinyl chloride
Rank	California Rare Plant Ranks
RHA	Rivers and Harbors Act
RMP	Restoration Management Permit
RWQCB	Regional Water Quality Control Board
SC	State Candidate
SCA	Stream Conservation Areas
SFEI	San Francisco Estuary Institute
SMHM	salt marsh harvest mouse
SR-1	State Route 1
SSC	Species of Special Concern
SWRCB	State Water Resource Control Board
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WCA	Wetland Conservation Areas
WRA	WRA, Inc.

1.0 INTRODUCTION

WRA, Inc. (WRA) has prepared this Biological Resources Technical Report (BRTR) which evaluates existing biological resources, potential impacts, and mitigation measures (if required) for the Cardinal Road Levee Upgrade Project (Project) located in the unincorporated community of Tamalpais Valley in Marin County, California (Study Area; Appendix A – Figure 1). The proposed Project aims to address chronic seepage issues associated with Coyote Creek and tidal water coming from Richardson Bay by constructing a new steel sheet pile floodwall along an approximately 1,100-foot segment of the Cardinal Road levee.

1.1 Overview and Purpose

The purpose of the assessment is to develop and gather information on sensitive land cover types and special-status plant and wildlife species to support an evaluation of the Project under the California Environmental Quality Act (CEQA). The 5.9-acre Study Area assessed by this report includes all areas where Project work will occur, plus all potential staging and access routes and any area that could be directly or indirectly impacted by Project activities (Appendix A – Figure 2).

This report describes the results of the site visit, which assessed the Study Area for (1) the presence of sensitive land cover types, special-status plant species, and special-status wildlife species, and (2) the potential for the site to support special-status plant and wildlife species. Based on the results of the site assessment, potential impacts to sensitive land cover types and special-status species resulting from the proposed Project were evaluated. If the Project has the potential to result in significant impacts to these biological resources, measures to avoid, minimize, or mitigate for those significant impacts are described.

This assessment provides general information on the presence, or potential presence, of sensitive species and habitats and is based on information available at the time of the study and on-site conditions that were observed on the dates the site was visited. Conclusions are based on currently available information used in combination with the professional judgement of the biologists completing this study.

1.2 Project Description

The Marin County Flood Control and Water Conservation District (District) proposes to address chronic seepage issues associated with Coyote Creek and tidal backwater coming from Richardson Bay by constructing a new steel sheet pile floodwall along an approximately 1,100-foot segment of the Cardinal Road levee. Additional information on the Project's purpose is described below.

1.2.1 Project Location and Setting

The Project is located in the unincorporated community of Tamalpais Valley in Marin County, California (Appendix A – Figure 1). Land use in the surrounding parcels includes open space, residential use, and mixed commercial use.

The 5.9-acre Study Area extends along an approximately 1,100-linear-foot stretch of Coyote Creek east of Flamingo Road to a point just upstream of the Shoreline Pump Station, adjacent to and south of California State Route 1 (SR-1). The Study Area includes a portion of Coyote Creek

and surrounding tidal marsh habitat; ornamental, native, and ruderal vegetation; and developed areas (Appendix A – Figure 2). Built structures within the Study Area include the Cardinal Road levee, situated along the northern bank of Coyote Creek; the Shoreline Pump Station and a gym facility, located in the northern corner of the Study Area; and a pedestrian bridge over Coyote Creek that parallels SR-1 east of the Shoreline Pump Station. The Study Area also includes a parking lot that borders the gym and the Shoreline Pump Station, a walking path that runs along the northern and southern banks of Coyote Creek, and an earthen ditch that conveys stormwater flows to Coyote Creek and runs parallel to residences along the western site border. The Study Area extends across 21 parcels that include residential properties, open space areas, and public infrastructure uses.

1.2.2 Purpose and Need

Presently, the Cardinal Road levee is experiencing seepage due to an abundance of rodent burrows in the levee. The proposed Project aims to address chronic seepage issues associated with Coyote Creek and tidal backwater water coming from Richardson Bay by constructing a new steel sheet pile floodwall along approximately 1,100 feet of the Cardinal Road levee. Sheet piles are steel sheets with interlocking edges that create a continuous wall and can more effectively exclude unwanted water when compared to porous soils. The primary objective of the proposed Project is to reduce seepage and flood risk for adjacent residential properties and provide long-term adaptation capacity for projected mid-century sea level rise. Key components of the proposed Project are shown in Figure 2 (Appendix A) and include:

- Installation of a steel sheet pile floodwall with a finished top elevation of +13 feet NAVD88, designed to allow future extension to +16 feet to accommodate sea level rise. The new sheet pile floodwall would increase the elevation of the levee by approximately 3 feet.
- Embedding the wall to a depth of at least -7 feet NAVD88 to minimize groundwater seepage and ensure structural stability.
- Improving a 10-foot-wide service path along the levee crown for access, inspection, and maintenance.
- Installation of a new storm drain system to convey flows from an earthen swale located behind 262 to 270 Cardinal Road to the Shoreline Pump Station. This includes the placement of a storm drain inlet within the swale and a storm drain pipe routed to the pump station, and removal of an existing culvert that outfalls to Coyote Creek.
- Removal of two concrete drain boxes and associated culverts along the levee.
- Replacement of the existing 30-inch culvert that discharges from the Cardinal Road Pump Station with a new polyvinyl chloride (PVC) culvert, installed with a pipe seal to prevent leakage through the floodwall.

Portions of the existing levee include a clay barrier wall constructed in 2003; however, rodent activity has increased levee permeability, causing seepage during high tides and storm events. The new sheet pile wall would limit seepage, improve flood protection, and reduce ongoing maintenance costs.

1.2.1 Site Work

During construction, sheet piles would be installed on the creek side of the existing concrete masonry unit wall, offset approximately 6 to 12 inches. The selected pile section is approximately 14 inches wide, meaning the wall would extend about 30 inches into the tidal marsh habitat along Coyote Creek. To control sediment during construction, a barrier fence would be installed approximately 2 feet from the floodwall. The Project would require 400 cubic yards of import material and would result in an addition of 2,000 square feet of impervious surface area within the Project site.

Sheet piles would be installed using a 20-ton hydraulic excavator (e.g., CAT 317 or similar) equipped with a vibratory hammer attachment, which uses vibrations to drive piles into the ground. The hammer uses vibration, combined with the excavator's hydraulic pressure and weight, to drive the sheets into the ground. For locations beyond the reach of this equipment, the contractor may utilize a larger machine, boom extension, or side-grip hammer. Minor grading or use of steel plates atop the levee may be required to accommodate equipment access.

Once installed, the floodwall would be topped with a concrete cap, and either painted or treated with an anti-graffiti coating. All disturbed areas would be hydroseeded upon the completion of work. No trees would be impacted by the proposed construction work.

1.2.2 Construction Phasing and Schedule

Project construction is anticipated to begin in May 2027 and be completed within a single construction season, ideally by October. A shorter construction window may be required depending on the final permit conditions issued by regulatory agencies. Construction is anticipated to take approximately 60 working days.

Construction work would occur for a minimum of eight hours per day, five days per week. According to Marin County municipal code, construction activities shall only take place between 7 AM and 6 PM, Mondays through Fridays, and 9 AM to 5 PM on Saturdays (MCMC § 6.70.030). Approximately 300 linear feet of sheet pile would be installed per workday, with installation expected to take approximately 20 days in total. Other construction activities, such as demolition and underground utility installation, would occur simultaneously. The general schedule for construction activities will follow the sequential order below:

1. **Mobilization of Equipment and Materials:** Two days
2. **Installation of Exclusion and Sediment Fencing:** Two days
3. **Demolition and Clearing:** Two days
4. **Sheet Pile Installation:** 20 days
5. **Minor Grading and Underground Utility Work:** 10 days
6. **Hydroseeding:** One day
7. **Cleanup and Demobilization:** 10 days

1.2.3 Construction, Access, and Staging

Regional access to the Project site is provided via U.S. Highway 101. Vehicles approaching from both the north and south would exit U.S. Highway 101, proceed west on Shoreline Highway, continue west on SR-1, and then head south on Flamingo Road to access the site.

The following equipment would be required for Project construction:

- Two 20-ton hydraulic excavators with vibratory hammers,
- One hydraulic excavator,
- One compact truck loader,
- One flatbed truck and crane for delivery and placement of sheet piles, culverts, and precast structures.

Staging areas for construction materials and equipment would be determined at a later time by the construction contractor. Staging of materials and equipment would occur on developed or disturbed areas and would not be located in any sensitive habitat areas.

Table 1. Summary of Biological Resources Evaluation

CEQA Assessment Category[1] IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section[2]
Question A. **Special-status Species**	Special-status Plants Special-status Wildlife Designated Critical Habitat	Federal Endangered Species Act CA Endangered Species Act CA Native Plant Protection Act Migratory Bird Treaty Act Bald & Golden Eagle Protection Act	U.S. Fish & Wildlife Service National Marine Fisheries Service CA Department of Fish & Wildlife	Potentially significant impacts were identified and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 5.2 for more information.**
Question B. **Sensitive natural communities & riparian habitat**	Sensitive Natural Communities Streams, Lakes & Riparian Habitat	CA Fish & Game Code Oak Woodland Conservation Act Porter-Cologne Act Clean Water Act	CA Department of Fish & Wildlife U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 5.1 for more information.**
Question C. **State and federally protected wetlands**	Wetlands Unvegetated surface waters	Clean Water Act: Sections 404/401 Rivers & Harbors Act: Section 10 Porter-Cologne Act	U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 5.1 for more information**

[1] *CEQA Questions have been summarized here, see Section 6.2 for details.*
[2] *As given in this report, see Section 5.0 subheadings.*

Table 1. Summary of Biological Resources Evaluation

CEQA Assessment Category[1] IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section[2]
Question D. **Fish & Wildlife corridors**	Essential Fish Habitat Wildlife Corridors	CA Fish & Game Code Magnuson-Stevens Fishery Conservation & Management Act	CA Department of Fish and Wildlife National Marine Fisheries Service	Potentially significant impacts were not identified. **See Section 5.1 for more information**
Question E. **Local policies**	Protected Trees Coastal zone resources Other biological protections	Local Tree Ordinance General Plan (e.g. Stream & Wetland Setbacks) Local ordinances	Local and regional agencies CA Coastal Commission San Francisco Bay Conservation and Development Commission	Potentially significant impacts were not identified. **See Section 5.2 for more information**
Question F. **Local, state, federal conservation plans**	Habitat Conservation Plans Natural Community Conservation Plans	Federal Endangered Species Act Natural Community Conservation Planning Act	U.S. Fish and Wildlife Service CA Department of Fish and Wildlife	Potentially significant impacts were not identified. **See Section 5.2 for more information**

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential Project impacts. Table 1 shows the correlation between these regulations and each Biological Resources question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines.

2.1 Federal and State Regulatory Setting

2.1.1 Vegetation and Aquatic Communities

CEQA provides protections for vegetation types defined as sensitive by the California Department of Fish and Wildlife (CDFW) and aquatic features protected by laws and regulations administered by the U.S. Army Corps of Engineers (Corps), State Water Resources Control Board (SWRCB), and Regional Water Quality Control Boards (RWQCB). The laws and regulations that provide protection for these resources are summarized below.

SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2025a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2025b). Natural communities are ranked 1 through 5 in the CNDDB based on NatureServe's (2025) methodology, with those communities ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code (CPRC).

WATERS OF THE UNITED STATES, INCLUDING WETLANDS

The Corps regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.

The Corps also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA requires Corps approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

WATERS OF THE STATE, INCLUDING WETLANDS

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB and nine RWQCB protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

SECTIONS 1600-1616 OF CALIFORNIA FISH AND GAME CODE

Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream," which includes creeks and rivers, is defined in the CCR as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). The term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.1.2 Special-status Species

ENDANGERED AND THREATENED PLANTS, FISH, AND WILDLIFE

Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the Federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by USFWS and the National Marine Fisheries Service (NMFS). USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" and "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from USFWS or NMFS prior to take of any listed species. “Take” under the ESA is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federal-listed plant species are only protected when removal or destruction occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must ensure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features “essential to the conservation of the species.” Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGC 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants and animals on private lands, as well as extending this protection to candidate species during consideration for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit (RMP).

FULLY PROTECTED SPECIES AND DESIGNATED RARE PLANT SPECIES

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully Protected Species may not be taken or possessed at any time. No licenses or permits may be issued by CDFW for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under CFGC and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take,” with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP. CDFW may also authorize take for voluntary restoration projects through the RMP.

SPECIAL PROTECTIONS FOR NESTING BIRDS AND BATS

The Federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald eagle [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass [*Zostera* spp.]), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

SPECIES OF SPECIAL CONCERN, MOVEMENT CORRIDORS, AND OTHER SPECIAL-STATUS SPECIES UNDER CEQA

A Species of Special Concern (SSC) is a species formally designated by the CDFW which meets one or more criteria related to a Federal ESA status (if it is not listed under CESA), including extirpation from California, documented population declines, or small population size within California and risk of declines. In addition, CDFW has developed a special animals list as "a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Conservation Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2025a) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

2.2 Local Plans and Policies

2.2.1 Marin Countywide Plan

The Marin Countywide Plan (CWP; revised January 24, 2023) defines a sensitive resource as "jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, wildlife nurseries and nesting areas, and wildlife movement corridors." The County

development review process typically requires a site assessment by qualified professionals to confirm whether any sensitive resources could be affected. CWP-specific sensitive resources also include Stream Conservation Areas (SCA) and Wetland Conservation Areas (WCA).

MARIN COUNTY STREAM CONSERVATION AREAS

In Marin County, a SCA is designated along all natural watercourses supporting riparian vegetation for a length of 100 feet or more. The SCA consists of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks. In inland rural corridors, the SCA setback must be greater than either 50 feet landward from the outer edge of woody riparian vegetation, or 100 feet landward from the top-of-bank. An additional setback distance may be required based on the result of a site assessment. For those ephemeral streams that do not meet these criteria, a minimum 20-foot development setback is required. Development activities that may occur within a SCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

MARIN COUNTY WETLAND CONSERVATION AREAS

In Marin County, a WCA is designated around all Corps jurisdictional wetlands. The WCA consists of the wetland itself, and a strip of land extending laterally outward from the wetland for a distance of 100 feet (for inland rural corridors), or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. Larger setback standards may apply to wetlands supporting special-status species or associated with riparian systems and baylands under tidal influence. Development activities that may occur within a WCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

3.0 ASSESSMENT METHODOLOGY

On December 11, 2024, and January 8, 2025, WRA biologists, Bailey McCann and Dr. Katie Smith, visited the Study Area to map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Web Soil Survey (USDA 2025)
- San Rafael 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2025)
- Contemporary aerial photographs (Google Earth 2025)
- Historical aerial photographs (NETR 2025)
- National Wetlands Inventory (USFWS 2025a)
- California Aquatic Resources Inventory (SFEI 2025)
- CNDDB (CDFW 2025a)
- CNPS Inventory (CNPS 2025a)
- Consortium of California Herbaria (CCH1 2025, CCH2 2025)

- USFWS Information for Planning and Consultation (USFWS 2025b)
- eBird Online Database (Cornell Lab of Ornithology 2025)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2025b)
- Preliminary Descriptions of the Terrestrial Natural Communities (Holland 1986)
- California Natural Community List (CDFW 2025b)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Novato, San Geronimo, Petaluma Point, San Francisco North, Point Bonita, San Quentin, San Rafael, and Bolinas USGS 7.5-minute quadrangles.

Following the remote assessment, WRA biologists completed a field review over the course of two days to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.[3]

3.1 Vegetation Communities and Other Land Cover Types

During the site visit, WRA evaluated the species composition and area occupied by distinct vegetation communities, aquatic communities, and other land cover types. Mapping of these classifications utilized a combination of aerial imagery and ground surveys. In most instances, communities are characterized and mapped based on distinct shifts in plant assemblage (vegetation) and follow the California Natural Community List (CDFW 2025b) and A Manual of California Vegetation, Online Edition (CNPS 2025b). These resources cannot anticipate every component of every potential vegetation assemblage in California, and so in some cases, it is necessary to identify other appropriate vegetative classifications based on best professional judgment of WRA biologists. When undescribed variants are used, it is noted in the description. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled [S1/G1], imperiled [S2/G2], or vulnerable [S3/G3]) (CDFW 2025b), were evaluated as sensitive as part of this evaluation.

The site was reviewed for the presence of wetlands and other aquatic resources on December 11, 2024, according to the methods described in the Corps Manual (Environmental Laboratory 1987). Areas meeting these indicators were mapped as aquatic resources and categorized using the vegetation community classification methods described above. Aquatic communities which are mapped in the NMFS EFH Mapper (NMFS 2025) or otherwise meet criteria for designation as EFH are indicated as such in the community description below in Section 5.1. The presence of riparian habitat was evaluated based on woody plant species meeting the definition of riparian provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607,*

[3] Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Sections 3.2.2 and 3.2.3 if the site assessment would constitute a formal or protocol-level species survey.

California Fish and Game Code (CDFG 1994) and based on best professional judgement of biologists completing the field surveys.

3.2 Special-status Species

3.2.1 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the site visit(s) based on physical and biological conditions of the site as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDB, other reports) on the site in the recent past.

If a more thorough assessment was deemed necessary, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2. If designated critical habitat is present for a species, the extent of critical habitat present, and an evaluation of critical habitat elements is provided as part of the species discussions below.

3.2.2 Targeted Surveys

No protocol-level surveys or focused surveys for special-status plant or wildlife species have been completed within the Study Area.

3.3 Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (Spencer et. al. 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2025c). Additionally, aerial imagery (Google Earth 2025) for the local area was referenced to assess if local core habitat areas were present within, or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological

conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

The potential presence of native wildlife nursery sites is evaluated as part of the site visit and discussion of individual wildlife species below. Examples of native wildlife nursery sites include nesting sites for native bird species (particularly colonial nesting sites), marine mammal pupping sites, and colonial roosting sites for other species (such as for monarch butterfly [*Danaus plexippus*]).

4.0 ECOLOGICAL SETTING

The 5.9-acre Study Area is located in the unincorporated community of Tamalpais Valley, Marin County. A description of soils and topography, climate and hydrology, and land use is provided in the sections below.

4.1 Soils and Topography

The overall topography of the Study Area is flat with elevations ranging from approximately 4 to 8 feet NAVD88. According to Web Soil Survey (USDA 2025) and SoilWeb (CSRL 2025), the Study Area is underlain by three soil mapping units: water, *Tocaloma-Saurin association, very steep* and *Xerorthents-Urban land complex, 0 to 9 percent slopes*. Descriptions of the soil mapping units are provided below. The distribution of soil mapping units within the Study Area is depicted in Appendix A – Figure 3. The parent soil series of all the Study Area's mapping units are summarized below.

Tocaloma Series

This series consists of moderately deep, well drained and formed materials derived from strongly weathered, highly fractured sandstone and shale (CSRL 2025). These soils occur on hills and slopes, which can range from 2 to 75 percent. Tocaloma soils are not considered hydric (USDA 2024b). These soils are medium or slightly acid and commonly become slightly more acid with increasing depth (CSRL 2025).

Saurin Series

This series consists of moderately deep, well drained soils formed from weathered sandstone and shale. These soils occur on hills and slopes, which can range from 2 to 75 percent. Saurin soils are not considered hydric (USDA 2025b). These soils are moderately acid or slightly acid (CSRL 2025).

Xerorthents and Xerorthents-Urban Land Complex

Xerorthents and urban land consists of cut or fill areas that vary greatly in depth and drainage. Fill consists of soil, gravel, broken cement, asphalt, rock, bay mud, and other material from urban construction (USDA 1985). In some places, the original soils have been graded and the layers mixed (USDA 1985). Xerorthents have highly variable properties, depending on the kinds and amount of fill material in the soil profile and/or the amount of cutting and grading of soils (USDA 1985). Urban land consists of areas covered by roads, driveways, houses, parking lots, and other structures (USDA 1985). Beneath these structures are rock fragments and soil material that is like that of the Xerorthents (USDA 1985). Runoff is rapid over urban land (USDA 1985). There is no typical soil profile for this complex. This soil series is not considered a hydric soil.

4.2 Climate and Hydrology

The Study Area is located on the bayside of Marin County near Richardson Bay, a shallow embayment on the western side of the San Francisco Bay. The average monthly maximum temperature in the area is 65 degrees Fahrenheit, while the average monthly minimum temperature is 50 degrees Fahrenheit. Predominantly, precipitation falls as rainfall between November and March with an annual average precipitation of 27 inches.

The local watershed is the San Pablo Bay watershed (HUC 8: 18050002) and the regional watershed is (HUC 12: 180500021805) (NRCS 2025). Coyote Creek is mapped as a blue line stream (USGS 2025) and the National Wetlands Inventory (NWI) database maps Coyote Creek as an estuarine and marine wetland (USFWS 2025a).

4.3 Land Use

The majority of the Study Area is developed consisting of buildings and gravel surfaces or undeveloped consisting of tidal marsh and open tidal water habitat. Detailed land cover type descriptions are included in Section 5.1 below. Surrounding land uses include residential housing, commercial businesses, and recreational open space. The surrounding neighborhood was built between 1952 and 1956 (NETR 2025). Prior to its development, the surrounding area consisted of natural tidal marsh habitat (NETR 2025)

5.0 ASSESSMENT RESULTS

5.1 Vegetation Communities and Other Land Cover

WRA observed eight land cover types within the Study Area: developed, ruderal vegetation, Himalayan blackberry scrub, coast live oak woodland, mixed non-native and ornamental woodland, tidal salt marsh, tidal open water, and non-tidal open water. Land cover types within the Study Area are illustrated in Appendix A – Figure 4. Non-sensitive land cover types in the Study Area include developed, ruderal vegetation, Himalayan blackberry scrub, coast live oak woodland, mixed non-native and ornamental woodland areas. Sensitive aquatic land cover types include tidal salt marsh, tidal open water, and non-tidal open water. Table 2 below describes the status, rarity ranking, and acreage of each land cover type mapped by WRA within the Project Area. Descriptions of land cover types are included in Sections 5.1.1 and 5.2.2 below. Representative photos of each land cover type are included in Appendix C.

Table 2. Vegetation Communities and Other Land Cover Types

COMMUNITY / LAND COVERS	SENSITIVE STATUS	RARITY RANKING	ACRES WITHIN STUDY AREA
TERRESTRIAL / COMMUNITY LAND COVER			
Developed	Non-sensitive	None	1.60
Ruderal Vegetation	Non-sensitive	None	1.75
Coast Live Oak Woodland	Non-sensitive	G5/S4	0.02
AQUATIC RESOURCES			
Tidal Salt Marsh	Sensitive	S3/G4	0.98
Tidal Open Water	Sensitive	None	1.53
Non-tidal Open Water	Sensitive	None	0.02

5.1.1 Terrestrial Land Cover

Developed (no vegetation alliance). CDFW Rank: None. Developed areas are common throughout California, particularly within urban and residential areas. Developed areas within the Study Area consist of bare, graded, sometimes gravel-covered ground and paved asphalt and include a mixture of built structures (e.g., buildings, docks), hardscape (e.g., roads, asphalt parking lots, trails), and ruderal landscaped areas (e.g., lawns, planters, ornamental shrubs). This land cover type does not have an associated vegetation community, alliance, or association as it is devoid of vegetation. It is not considered sensitive by CDFW or any other regulatory entity.

Ruderal and Ornamental Vegetation (multiple vegetation alliances). CDFW Rank: None. Although not described in the literature, ruderal upland includes areas that have been partially developed or have been used in the past; however, these areas are not currently in use and have been allowed to revert to a semi-natural condition. Ruderal upland is common throughout California in both rural and urban settings. The levee top and upland portions of the Study Area are dominated by ruderal upland vegetation. The majority of ruderal upland within the Study Area is dominated by dense stands of oat grass (*Avena fatua*), rattlesnake grass (*Briza maxima*), little quaking grass (*Briza minor*), ripgut brome (*Bromus diandrus*), velvet grass (*Holcus lanatus*), and wild radish (*Raphanus sativus*). This land cover type includes elements of several vegetation alliances that are too limited in extent to map separately, such as the *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance.

Ornamental areas are predominantly composed of an herbaceous layer of non-native and annual grasses with scattered shrubs and trees. Ornamental Plants observed include blue lily of the Nile (*Agapanthus* sp.), and soap aloe (*Aloe saponaria*). Scattered trees and shrubs include blue gum eucalyptus (*Eucalyptus globulus*), toyon (*Heteromeles arbutifolia*), oleander (*Nerium oleander*), Monterey pine (*Pinus radiata*), Japanese pagoda tree (*Styphnolobium japonicum*), and California bay (*Umbellularia californica*). Vegetation in this land cover type is primarily ornamental and does not meet the membership requirements of any vegetation alliance. It is not considered sensitive by CDFW or any other regulatory agency.

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance). CDFW Rank: G5/S4. Coast live oak woodlands are known from the outer and inner Coast Ranges, Transverse Ranges, and southern coast from northern Mendocino County south to San Diego County. This vegetation community is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al. 2009). Dominant species in the tree layer include coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*). This vegetation alliance is not considered sensitive by CDFW or any other regulatory agency.

5.1.2 Aquatic Resources

Tidal Salt Marsh (*Sarcoconia pacifica* [*Salicornia depressa*] Herbaceous Alliance). CDFW Rank: S3/G4. Within the Study Area, tidal salt marsh borders the edges of Coyote Creek. Tidal salt marsh occupies the intertidal zone, which is influenced daily by tidal action. The landward edge of coastal salt marsh is dominated by native plants such as alkali heath (*Frankenia salina*), and salt grass (*Distichlis spicata*) along with ruderal, non-native species such as Russian thistle (*Salsola tragus*). As the elevation decreases, pickleweed (*Salicornia pacifica*) becomes more dominant, co-occurring with marsh jaumea (*Jaumea carnosa*) and coast gumweed (*Grindelia stricta*). The water's edge adjacent to the creek channel is dominated by Pacific cordgrass (*Sporobolus foliosus*). Tidal salt marsh vegetation within the Study Area is dominated by dense pickleweed mats, which meet the membership requirements for the *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance (CNPS 2025a). This alliance has a CDFW rank of S3 and is therefore a sensitive natural community. It is also considered sensitive as an aquatic land cover type.

Tidal Open Water (no vegetation alliance). CDFW Rank: None. Tidal open water occurs in tidally influenced areas along the California coast where inundation is perennial or nearly so. The open waters of Coyote Creek within the Study Area were classified as tidal open water due to the presence of unmuted open waters. Tidal open water was classified as aquatic habitat due to the presence of surface water and is therefore considered sensitive. This land cover type does not have an associated vegetation community, alliance, or association, as it is devoid of vegetation.

Non-tidal Open Water (no vegetation alliance). CDFW Rank: None. Non-tidal open water occurs away from tidal areas and is not subject to the regular rise and fall of ocean tides. Non-tidal open waters receive water from sources like rain, snow, or groundwater. A drainage ditch along residential properties within the Study Area was classified as non-tidal open waters as this ditch did not have unmuted connection to Coyote Creek. Non-tidal open water was classified as aquatic habitat due to the presence of surface water and is therefore considered sensitive. This land cover type does not have an associated vegetation community, alliance, or association, as it is devoid of vegetation.

5.2 Special-status Species

5.2.1 Special-status Plants

Based upon a review of the resource databases listed in Section 3.0, 112 special-status plant species have been documented in the vicinity of the Study Area. Of these species, three have the potential to occur in the Study Area (Table 3). The remaining species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., riverine) necessary to support the special-status plant species are not present in the Study Area;
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Study Area;
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area;
- Associated natural communities (e.g., interior chaparral, freshwater marsh) necessary to support the special-status plant species are not present in the Study Area;
- The Study Area is geographically isolated (e.g., below elevation, coastal environ) from the documented range of the special-status plant species;
- Land use history and contemporary management (e.g., grading) has degraded the localized habitat necessary to support the special-status plant species; and
- Occurrences of the special-status plant species in the vicinity of the Study Area are historic, and it is presumed to be currently extirpated from the region.

Table 3. Potential Special-status Plants

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE STUDY AREA
Chloropyron maritimum* ssp. *palustre	Point Reyes salty bird's-beak	Rank 1B.2	The Study Area contains suitable salt marsh habitat. The nearest documented occurrences are less than 1 mile from the Study Area, with limited barriers to dispersal (CDFW 2025a).
Juncus acutus* ssp. *leopoldii	southwestern spiny rush	Rank 4.2	The Study Area contains suitable salt marsh habitat for this species, which is presumed extant in the San Rafael region (CNPS 2025a).
Polygonum marinense	Marin knotweed	Rank 3.1	The Study Area provides suitable salt marsh habitat. This species has been documented approximately 4.5 miles north of the Study Area in the salt marsh habitat surrounding Corte Madera Creek (CDFW 2025a; iNaturalist 2025).

Point Reyes salty bird's-beak (*Chloropyron maritima* ssp. *palustre*) Rank 1B.2. Point Reyes salty bird's-beak is an annual herb in the broomrape family (Orobanchaceae) that blooms from June to October. It typically occurs in coastal salt marsh habitat at elevations ranging 0 to 10 feet (CDFW 2025a, CNPS 2025a). Observed associated species include salt grass, pickleweed, cord grass (*Spartina* spp.), marsh jaumea, bulrushes (*Schoenoplectus* spp.), and Baltic rush (*Juncus balticus*) (CDFW 2025a).

This species is known from 23 USGS 7.5-minute quadrangles in Alameda, Humboldt, Marin, Santa Clara, San Francisco, San Mateo, and Sonoma Counties, and is also known from the state of Oregon (CNPS 2025a). There are four CNDDB (CDFW 2025a) records in the greater vicinity of the Study Area, and 60 CCH (2025) records from Marin County. The nearest known occurrence is

from 1998, less than 1 mile east of the Study Area, within the salt marsh along Richardson Bay (CDFW 2025a). Point Reyes salty bird's-beak has a high potential to occur in the Study Area due to the presence of coastal salt marsh, the approximate vicinity of the nearest occurrence, and the presence of associated species.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) Rank 4.2. Southwestern spiny rush is a perennial rhizomatous herb in the rush family (Juncaceae) that blooms from May to June. It typically occurs within coastal dunes, marshes, and swamps at elevations from 10 to 2955 feet (CNPS 2025a). Observed associated species include willows (*Salix* spp.) and *Baccharis* spp.

This species is known to occur in the San Rafael USGS 7.5-minute quadrangle in Marin County (CNPS 2025a). There is one CCH2 (2025) record from Marin County and no CNDDB (CDFW 2025a) records in the greater vicinity of the Study Area. The nearest known occurrence is from August 2005, approximately 5 miles north of the Study Area in the Greenbrae area, Marin County (CCH2 2025). Southwestern spiny rush has a moderate potential to occur in the Study Area due the presence of coastal salt marsh habitat.

Marin knotweed (*Polygonum marinense*) Rank 3.1. Marin knotweed is an annual herb in the buckwheat family (Polygonaceae) that blooms from May (sometimes April) to August, and sometimes October. It typically occurs within coastal salt or brackish marshes at elevations ranging from 0 to 35 feet (CDFW 2025a, CNPS 2025a). This species is an obligate wetland (OBL) plant (Lichvar et al. 2016). Observed associated species include coast gumweed, pickleweed, salt grass, and spear orach (*Atriplex patula*) (CDFW 2025a).

Marin knotweed is known from 10 USGS 7.5-minute quadrangles in Alameda, Humboldt, Marin, Napa, Solano, and Sonoma counties (CNPS 2025). There are three CNDDB (CDFW 2025a) records in the greater vicinity of Study Area and 27 CCH2 (2025) records from Marin County. The nearest documented occurrence is from 1987, in Corte Madera Marsh, approximately 5 miles north of the Study Area (CDFW 2025a). Marin knotweed has a moderate potential to occur in the Study Area, due to the presence of potentially suitable marsh, proximity to a documented occurrence, and presence of associated species.

5.2.2 Special-status Wildlife

Of the 30 special-status wildlife species documented in the vicinity of the Study Area, most are excluded from the Study Area based on a lack of habitat features. Features not found within the Study Area that are required to support special-status wildlife species include:

- Vernal pools
- Old growth redwood or fir forest
- Serpentine soils to support host plants
- Sandy beaches or alkaline flats
- Presence of specific host plants
- Caves, mine shafts, or abandoned buildings

The absence of such habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. For instance, California red-legged frog (*Rana draytonii*) is known to occur in the open spaces in the vicinity of the Study Area; however,

suitable aquatic habitat and movement corridors connecting the Study Area to source populations are absent, precluding this species from existing on the Study Area.

Nine special-status species or otherwise protected species have moderate potential to occur in the immediate vicinity of or in portions of the Study Area. In addition, two special-status species are considered unlikely to occur within the Study Area; however, a detailed discussion of each is included with this report due to their sensitive and cryptic nature. These species are presented in Table 4 and discussed in greater detail below.

Table 4. Potential Special-status Wildlife

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE STUDY AREA
		BIRDS	
Elanus leucurus	White-tailed kite	CDFW FP	**Moderate potential**. The Study Area may provide suitable foraging habitat for this species and this species has been observed foraging in the vicinity of the Study Area (eBird 2025, iNaturalist 2025); however, there are no documented occurrences of nesting by this species in the vicinity of the Study Area.
Laterallus jamaicensis coturniculus	California black rail	ST, CDFW FP	**Unlikely**. This species is considered possibly extirpated from Bothin Marsh approximately 0.6 mile east of the Study Area. In addition, the limited tidal marsh vegetation present within the Study Area is not sufficient to provide nesting habitat for this species. The lack of dense vegetation cover and frequent disturbance by pedestrians also deters this secretive species from using habitat within the Study Area.
Rallus obsoletus obsoletus	California Ridgway's rail	FE, SE, CDFW FP	**Moderate potential**. This species is known to occur in nearby Bothin Marsh approximately 0.6 mile northeast of the Study Area; however, the limited tidal marsh vegetation present within the Study Area is not sufficient to provide nesting habitat for this species.
		FISH	
***Acipenser medirostris* pop. 1**	green sturgeon - southern DPS	FT, CDFW SSC	**Moderate potential**. The Study Area is outside the spawning range, but the species is presumed present in San Francisco Bay year-round. While the species may occasionally be found in Richardson Bay, there are no documented occurrences of this species in Coyote Creek (CDFW 2025a). The Study Area may offer foraging habitat during tidal inundation; however, the Study Area dewaters and becomes mudflat at low tide precluding the species from the Study Area when work occurs.
Acipenser transmontanus	white sturgeon	SCT, CDFW SSC	**Moderate potential**. The Study Area is outside the spawning range, but the species is presumed present in San Francisco Bay year-round. The Study Area may support subtidal foraging habitat only during tidal inundation; however, the Study Area naturally dewaters and becomes mudflat at low tide. This precludes the species from the Study Area when work would occur and limits the value of potential habitat for foraging.

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE STUDY AREA
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	FT	**Moderate potential**. In 2003, the CDFW determined that "Coyote Creek is largely seasonal in nature and does not provide any spawning or rearing habitat for Chinook or steelhead (CDFG 2003)." While spawning habitat is not present in the Study Area, this species may occasionally traverse waters within the Study Area while foraging; however, the Study Area becomes mudflat at low tide and precludes the availability of the Study Area for foraging.
Spirinchus thaleichthys pop. 2	longfin smelt - San Francisco Bay-Delta DPS	FE, ST, CDFW SSC	**Moderate potential**. The Study Area lacks the deep, open water habitat where this species typically resides and is typically a mudflat at lower tide conditions. In addition, there is no suitable breeding or spawning habitat within the Study Area. This species may traverse waters within the Study Area while foraging at high tide, but would be absent during low tide, precluding the species from the Study Area when work occurs.
MAMMALS			
Lasiurus frantzii	western red bat	CDFW SSC, WBWG Medium	**Moderate potential**. Trees overhanging and adjacent to the Study Area may provide suitable riparian roosting habitat for the species. This species is quite tolerant of human activity and is sometimes found in urban areas.
Reithrodontomys raviventris	salt marsh harvest mouse	FE, SE, CDFW FP	**Unlikely**. Patches of pickleweed were observed in the Study Area; however, the patches were scattered, had low density, and are insufficient to support nesting for the species. The highly developed zones around the Study Area may serve as barriers of dispersal from extant source populations which are approximately 10 miles north of the Study Area in San Pablo Bay. The species is regarded by experts to be extirpated from Bothin Marsh.

Key to Conservation Status Acronyms:

FE:	Federal Endangered	**FP:**	Fully Protected Animal
FT:	Federal Threatened	**SR:**	State Rare
SCT:	State Candidate for Listing (Threatened)	**SSC:**	Species of Special Concern
SE:	State Endangered	**ST:**	State Threatened
		WBWG:	Western Bat Working Group

BIRDS

White-tailed kite (Elanus leucurus). CDFW Fully Protected Species. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

White-tailed kite is known to frequent bay front marshes such as those in the vicinity of the Study Area. White-tailed kite has been observed resting in trees in the vicinity of the Study Area (eBird 2025, iNaturalist 2025). Potential nesting habitat is present within the woodland habitat

along the southern edge of the Study Area. Foraging habitat is also present in ruderal uplands as well as in vegetated tidal marsh areas. Due to the presence of foraging habitat within the Study Area, as well as nearby documented occurrences, this species has moderate potential to occur within the Study Area.

California black rail (*Laterallus jamaicensis coturniculus*). State Threatened, CDFW Fully Protected Species. The California black rail (CBR) is the resident black rail subspecies that occurs in coastal salt and brackish marshes from Bodega Bay to Morro Bay, with additional populations known from freshwater marshes near or in the northern Sierra Nevada foothills (Eddleman et al. 1994, Richmond et al. 2008). According to an analysis by Spautz et al. (2005), important habitat elements for this species within the San Francisco Bay estuary are: 1) emergent marsh dominated by pickleweed (*Salicornia pacifica*), marsh gumplant (*Grindelia stricta*), alkali bulrush (*Bolboschoenus maritimus*), rushes (*Juncus* spp.), and/or cattails (*Typha* spp.); 2) high density of vegetation below four inches in height; 3) high marsh elevation with transitional upland vegetation; 4) large total area of contiguous marsh; 5) proximity to a major water source; and, 6) isolation from disturbance. This species feeds primarily on invertebrates. Black rails are extremely secretive and very difficult to glimpse or flush; identification typically relies on voice. Nests are placed on the ground in dense wetland vegetation.

CBR was once considered to occur within Bothin Marsh, approximately one mile northeast of the Study Area (CDFW 2025a); however, no individuals were detected during more recent surveys of the area conducted from 2008 to 2011 and the species is now considered possibly extirpated from the area (CDFW 2025a). In addition, no incidental observation of CBR were made during rail surveys conducted at Bothin Marsh from 2010 to 2015 (Olofson 2015). The limited tidal marsh vegetation present within the Study Area is not sufficient to provide nesting habitat for this species. Additionally, the lack of dense vegetation cover and frequent disturbance by pedestrians likely deters this secretive species from using habitat within the Study Area; therefore, CBR is unlikely to occur within the Study Area.

California Ridgway's (clapper) rail (*Rallus obsoletus obsoletus*). Federal Endangered, State Endangered, CDFW Fully Protected Species. The California Ridgway's rail (CRR), formerly known as California clapper rail (*R. longirostris obsoletus*), is the resident Ridgway's/clapper rail subspecies of northern and central California. Although more widespread in the past, it is currently restricted to the San Francisco Bay estuary. The CRR occurs only within salt and brackish marshes. According to Harvey (1988), Shuford (1993) and Eddleman and Conway (1998), important CRR habitat components are: 1) well-developed tidal sloughs and secondary channels; 2) beds of cordgrass (*Spartina* spp.) in the lower marsh zone; 3) dense salt marsh vegetation for cover, nest sites, and brooding areas; 4) intertidal mudflats, gradually sloping banks of tidal channels, and cordgrass beds for foraging; 5) abundant invertebrate food resources; and 6) transitional vegetation at the marsh edge to serve as a refuge during high tides. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, CRR typically inhabits salt marshes dominated by pickleweed and cordgrass. Brackish marshes supporting CRR occur along major sloughs and rivers of San Pablo Bay and along tidal sloughs of Suisun Marsh. Nesting occurs from March through July, with peak activity in late April to late May (DeGroot 1927, Harvey 1980, Harvey 1988). CRR nests, constructed of wetland vegetation and platform-shaped, are placed near the ground in clumps of dense vegetation, usually in the lower marsh zone near small tidal channels (DeGroot 1927, Evens and Page 1983, Harvey 1988).

CRR is known to occur in the salt marsh habitats in the vicinity of the Study Area. CRR are documented to occur within Bothin Marsh, less than 1 mile northeast of the Study Area (Olofson 2015). There is habitat connectivity between the tidal marsh habitat within the Study Area and Bothin Marsh. Based on the presence of tidal marsh habitat and the lack of barriers to dispersal, CRR has moderate potential to occur within Study Area; however, given the lack of dense vegetation cover and highly disturbed nature of the Study Area, CRR are unlikely to nest within the Study Area.

FISH

Green Sturgeon (*Acipenser medirostris*) – southern Distinct Population Segment (DPS); Federal Threatened. The southernmost spawning population of Green Sturgeon is in the Sacramento River, with the principal spawning area located in the lower Feather River (Moyle 2002). Spawning populations of Green Sturgeon in the San Joaquin River are presumed to have been lost in the past 25-30 years. Green Sturgeon are primarily marine species, entering into fresh water rivers mainly to spawn, although early life stages may reside in freshwater for up to two years (Moyle 2002). Adults typically migrate into fresh water from late February through late July. The spawning period occurs from March to July, with peak spawning occurring from mid-April to mid-June (Emmett et al. 1991). Green sturgeon prefer deep pools in large, turbulent, freshwater river mainstreams to spawn (Moyle et al. 1992). Juvenile Green Sturgeon emigrate out to sea primarily during the summer and fall before the end of their second year (Emmett et al. 1991). Green Sturgeon adults, subadults, and juveniles are widely distributed throughout the Delta and estuary. Adults typically migrate upstream on the western edge of the Delta, returning to the ocean when river temperatures decrease and flows increase during the fall and early winter. They may hold in low gradient or off-channel sloughs or coves where temperatures are within acceptable thresholds. Larvae prefer open aquatic habitats for foraging but utilize structure habitat during the day. Juvenile rearing habitats for green sturgeon include spawning areas and migration corridors. Rearing habitat utilization varies dependent on seasonal flows and temperatures. Juvenile Green Sturgeon are found year-round in the Delta and use the region as a migration corridor, feeding area, and juvenile rearing area. Juvenile Green Sturgeon are strong swimmers and thus have the ability to select or avoid habitats. Green sturgeon are salvaged at the Central Valley Project (CVP) and State Water Project (SWP) pumping plants on an irregular basis throughout the year, verifying their presence in the south Delta (EPIC et al. 2001).

The Study Area is not within the documented spawning grounds of this species as spawning grounds of this species occur within the Sacramento River Delta; however, the entire San Francisco Bay is utilized as feeding grounds for Green Sturgeon and Coyote Creek is considered critical habitat for this species up to the high tide line (HTL). The presence of subtidal mud flats in the Study Area during higher tide conditions could provide foraging grounds for this species; therefore, there is moderate potential for Green Sturgeon to occur within the Study Area.

White Sturgeon (*Acipenser transmontanus*), State Candidate Threatened, CDFW Species of Special Concern. This sturgeon is found in most estuaries along the Pacific coast and is known to occur in the San Francsico Bay Estuary and Sacramento-San Joaquin river systems. Adults in the San Francisco Bay Estuary system spawn in the lower reaches of the Sacramento and San Jaquin Rivers and are not known to enter freshwater or non-tidal reaches of Estuary streams. White Sturgeon predominantly spawn in Sacramento and Feather Rivers and may spawn in the San Joaquin River when conditions permit. This species typically spawns in May through June; White Sturgeon are highly episodic spawners, with a small portion of the population spawning in any given year (Moyle 2002). White Sturgeon have been documented spawning during wet and dry

years, with successful recruitment correlated with elevated river flows during the larval dispersal and juvenile outmigration period (April – July, SWRCB 2017). Their diet consists of crustaceans, mollusks, and some fish (Moyle 2002).

This species has experienced a persistent decline across its range in California since the 1980s (Blackburn et al. 2019). Population decline is attributed to increased water diversion, altered natural hydrographs, overharvest in the recreational fishery, decreased water quality, and harmful algal blooms in San Francisco Bay and San Pablo Bay (CDFW 2023, California Fish and Game Commission 2023).

The Study Area is not within the documented spawning grounds of this species as spawning grounds of this species occur within the lower reaches of the Sacramento and San Joaquin Rivers; however, the entire San Francisco Bay is utilized as feeding grounds by white sturgeon and the presence of subtidal mud flats in the Study Area during higher tide conditions could provide foraging grounds for this species; therefore, there is moderate potential for white sturgeon to occur within the Study Area.

Steelhead - Central California Coast DPS (*Oncorhynchus mykiss irideus*), Federal Threatened. The Central California Coast (CCC) DPS includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin. Steelhead typically migrate to marine waters after spending two years in freshwater, though they may stay up to seven. They then reside in marine waters for 2 or 3 years prior to returning to their natal stream to spawn as 4- or 5-year-olds. Steelhead adults typically spawn between December and June. In California, females typically spawn two times before they die. Preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high dissolved oxygen levels and fast flowing water. Abundant riffle areas (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.

CCC DPS steelhead are known to spawn in streams within the Arroyo Corte Madera del Presidio Watershed, approximately 5 miles north of the Study Area (Leidy 2005). While Coyote Creek is considered critical habitat for CCC DPS steelhead up to the HTL, there are no documented occurrences of CCC DPS steelhead within the creek. In 2003, the CDFW determined that “Coyote Creek is largely seasonal in nature and does not provide any spawning or rearing habitat for Chinook or steelhead (CDFG 2003). Although spawning habitat is not present in the Study Area, this species may occasionally traverse waters within the Study Area when making seasonal migrations to and from the Pacific Ocean; therefore, there is moderate potential for CCC DPS steelhead to occur within the Study Area.

Longfin smelt (*Spirinchus thaleichthys*), Federal Candidate, State Threatened, CDFW Species of Special Concern. Longfin Smelt (LFS) is a pelagic, estuarine fish that ranges from Monterey Bay northward to Hinchinbrook Island, Prince William Sound Alaska. As this species matures in the fall, adults found throughout the San Francisco Bay migrate to brackish or freshwater in Suisun Bay, Montezuma Slough, and the lower reaches of the Sacramento and San Joaquin Rivers. Spawning is believed to take place in freshwater. In April and May, juveniles are believed to migrate downstream to San Pablo Bay. Juveniles tend to inhabit the middle and lower portions of the water column. This species tends to be abundant near freshwater outflow, where higher-quality nursery habitat occurs and potential feeding opportunities are greater.

LFS have been documented in the open water of San Francisco Bay adjacent to the Study Area (Robinson & Greenfield 2011). LFS have been documented spawning in the tidal freshwater habitats of the Sacramento-San Joaquin Delta and tidal wetland habitat of South San Francisco Bay (Moyle 2002, Lewis et al. 2019). The Study Area is outside of documented LFS spawning areas; however, LFS may use tidal waters for feeding and rearing throughout San Francisco Bay and San Pablo Bay; therefore, LFS has moderate potential to occur within the Study Area.

MAMMALS

Western red bat (*Lasiurus blossevillii*), CDFW Species of Special Concern, WBWG High Priority. This species is highly migratory and broadly distributed, ranging from southern Canada through much of the western United States. Western red bats are believed to make seasonal shifts in their distribution, although there is no evidence of mass migrations (Pierson et al. 2006). They are typically solitary, roosting primarily in the foliage of broad-leafed trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly, and in association with riparian trees (particularly willows, cottonwoods, and sycamores; Pierson et al. 2006). It is believed that males and females maintain different distributions during pupping, where females take advantage of warmer inland areas and males occur in cooler areas along the coast.

A targeted bat habitat assessment was not performed under this assessment. Trees overhanging and adjacent to the Study Area may provide suitable riparian roosting habitat for the species. In addition, this species is quite tolerant of human activity and is sometimes found in urban areas. As such, western red bat has moderate potential to occur within the Study Area.

Salt marsh harvest mouse, (*Reithrodontomys raviventris)* Federal Endangered, State Endangered and CDFW Fully Protected. The salt marsh harvest mouse (SMHM) is a relatively small rodent found only in suitable salt- and brackish-marsh habitat in the greater San Francisco Bay, San Pablo Bay, and Suisun Bay areas. The habitat associated with SMHM has been described as pickleweed-dominated vegetation (Fisler 1965), though more recent studies have shown that SMHM is supported equally in pickleweed-dominated and mixed vegetation (including native and non-native salt- and brackish-marsh species) (Sustaita et al. 2005, Sustaita et al. 2011). SMHM prefers deep, dense vegetative cover between 1 to 2 feet in height (USFWS 1984), though there are indications that shorter stands (5.9 inches is the shortest commonly used) of pickleweed may also support an abundance of this species (Fisler 1965; Shellhammer et al. 1982; USFWS 2013). Another key habitat requirement for this species is upland or tidal refuge habitat, which is used to escape high tides and storm events. Persistent, low numbers of SMHM are also found in grasslands at least 330 feet (100 meters) from the edge of marsh habitat, though their presence in grasslands may be seasonal and opportunistic (USFWS 2013).

SMHM is considered extirpated from southern Marin County. While not geographically specific, CNDDB shows an occurrence of this species in Bothin Marsh, approximately 0.5 mile northeast of the Study Area, dating back to collections made in 1938 (CDFW 2025a). In addition, SMHM habitat is limited within the Study Area as pickleweed is short and sparse throughout; therefore, this species is unlikely to occur within the Study Area.

5.2.3 Wildlife Corridors and Native Wildlife Nursery Sites

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms “landscape linkage” and “wildlife corridor” are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas (Beier and Loe 1992; Soulé and Terbough 1999). It is useful to think of a “landscape linkage” as being valuable in a regional planning context, a broad scale mapping of natural habitat that functions to join two larger habitat blocks. The term “wildlife corridor” is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat (Hilty et al. 2019).

The Study Area is considered a Category 1 - Limited Connectivity Opportunity Terrestrial Connectivity, Areas of Conservation Emphasis (ACE) by CDFW; however, the Study Area is not within a designated wildlife corridor based on the Essential Connectivity Areas dataset (Spencer et al. 2010). The aquatic portions of the Study Area may function as movement corridors for fish, including for the various special-status species discussed above. Despite habitat fragmentation resulting from historical development in the vicinity, the exposed tidal mudflats and woodland habitat within the Study Area likely function as an important stopover location for migrating or otherwise dispersing species, chiefly birds.

5.2.4 Essential Fish Habitat

A review of the background literature revealed that the Study Area is located within EFH for Pacific Salmon fisheries management plan. EFH for salmonids includes all estuarine and marine areas extending from the extreme high tide line out to the full extent of the exclusive economic zone (CFR §660.412).

The Pacific Salmon Fisheries Management Plan (PFMC 2022) is designed to protect habitat for commercially important salmonid species specifically Chinook and coho salmon occur within the Study Area. While coho salmon are extirpated from San Francisco Bay and its tributaries (NMFS 2012), Chinook salmon would be seasonally present within tidal waters in the vicinity of the Study Area.

Because the Study Area includes tidal open water, the extent of EFH is defined up to the HTL. The HTL in relation to the proposed Project and the extent of critical habitat are shown in Figure 4 (Appendix A).

5.2.5 Critical Habitat

A review of the background literature showed that the Study Area is located within or adjacent to critical habitat for the southern DPS Green Sturgeon and CCC DPS steelhead. Similar to EFH discussed above, waters of the Study Area would be considered critical habitat up to the HTL shown in Figure 4 (Appendix A).

6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service;
3. 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;
4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of potential project impacts for CEQA purposes. For the purposes of this analysis, a "substantial adverse effect" is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may be considered less than significant if those impacts are speculative, beneficial, de minimis, and/or would not affect the resiliency of a local population.

7.0 IMPACTS AND MITIGATION EVALUATION

Using the CEQA analysis methodology outlined in Section 6.2 above, the following section describes potential significant impacts to sensitive resources within the Study Area as well as suggested mitigation measures which are expected to reduce impacts to less than significant.

7.1 Special-status Species

This section analyzes the Project's potential impacts and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

> *Does the project have the potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate,*

sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service?

Potential impacts and mitigation for potentially significant impacts are discussed below.

7.1.1 Plant Species

Special-status plants including Point Reyes salty bird's-beak, southwestern spiny rush, and Marin knotweed, have moderate or high potential to occur within the Study Area.

> **Potential Impact BIO-1**: Construction activities, including ground disturbance or vegetation removal, may result in significant effects to special-status plant species if they are present within the Study Area.

To reduce potential impacts to special-status plant species to a less-than-significant level, the following measure shall be implemented as part of the proposed Project:

> **Mitigation Measure BIO-1a**: Prior to any vegetation removal or ground-disturbing activities, surveys shall be conducted within the Study Area to determine the presence of Point Reyes bird's-beak, southwestern spiny rush, and Marin knotweed. Surveys shall be conducted following regulatory agency and CNPS survey protocols. These guidelines require special-status plant surveys to be conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys shall be scheduled to coincide with known blooming periods, and/or during periods of physiological development that are necessary to identify the plant species of concern. If no special-status plant species are found, then no additional mitigation measures are necessary.
>
> **Mitigation Measure BIO-1b**: If the survey determines that special-status plant species are present within or adjacent to the Study Area, direct and indirect impacts on the species shall be avoided where feasible through the establishment of activity exclusion zones, where no ground-disturbing activities shall take place, including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species shall be established prior to construction activities around each occupied habitat site, the boundaries of which shall be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones shall not be required if no construction-related disturbances would occur within 250 feet of the areas supporting special-status plant species populations.

Implementation of this mitigation measure will reduce potential impacts to special-status plant species to a **less-than-significant level**.

7.1.2 Special-status and Native Nesting Birds

White-tailed kites were determined to have potential to nest within and immediately adjacent to the Study Area. In addition, non-special-status native birds (e.g., passerines, raptors) may nest on the ground, in trees, and in vegetation within and immediately surrounding the Study Area. The active nests of such birds are protected under the Federal Migratory Bird Treaty Act (MBTA) as well as by the CFGC. If construction begins during the avian nesting season, generally February 1 to August 31, nesting birds may be impacted through the removal of nest structures or through localized disturbance sufficient to cause nest abandonment. Due to the protected

status of these species under both the MBTA and CDFW, impacts to special-status and common native nesting birds would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BIO-2:** Construction activities, including any ground disturbance or noise generation beyond ambient noise levels may result in significant effects to nesting bird species.

To reduce potential impacts to nesting birds to a less-than-significant level, the following measure shall be implemented as part of the proposed Project:

> **Mitigation Measure BIO-2a:** To the extent feasible, Project-related activities should be avoided during the nesting bird season, generally defined as February 1 – August 31. If Project work must occur during the nesting bird season, a pre-construction nesting bird survey shall be conducted by a qualified biologist within 7 days of ground disturbance or tree/vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. Surveys shall be conducted in all potential nesting habitat located within the Project footprint and encompass a sufficient buffer zone to detect nesting raptors that may be impacted by the Project activities, to the extent feasible.
>
> If an active nest is located, a no disturbance buffer shall be established around the nest. Active nest sites and protective buffer zones shall be designated as "Environmentally Sensitive Areas" where no Project-related activities or personnel may enter until a qualified biologist determines that the young have fully fledged, or the nest otherwise becomes inactive (e.g., due to predation), and will no longer be adversely affected by the Project. Suggested buffer zone distances will differ depending on species, existing conditions, and nest placement and shall be determined and implemented in the field by a qualified biologist.

Implementation of this mitigation measure will reduce potential impacts to white-tailed kites and nesting birds to a **less-than-significant level**.

CALIFORNIA RIDGWAY'S RAIL

CRR has moderate potential to occur within the tidal marsh habitat of the Study Area. There is limited potential for direct impacts to occur to CRR individuals within the Project site; however, CRR individuals have the potential to wander into the Project site from adjacent tidal marsh during construction. As such, direct impacts may occur due to interactions with construction equipment, or materials. Direct impacts to these species would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BIO-3**: The proposed Project's construction activities along tidal marsh habitat could result in direct mortality and/or harassment of CRR individuals and/or their nests, which would be considered a significant impact.

To reduce potential impacts to CRR to a less-than-significant level, the following measures shall be implemented:

> **Mitigation Measure BIO-3a**: To the extent feasible, noise-generating Project activities located within 700 feet of suitable salt marsh habitat should be conducted outside of the rail breeding season, which is generally considered to be February 1 to August 31. The regulatory agencies (CDFW and USFWS) typically consider 700 feet to be the disturbance zone for CRR breeding activity. For Project activities that must occur within 700 feet of

suitable salt marsh habitat during the rail breeding season, protocol-level surveys shall be conducted adjacent to suitable salt marsh habitat for CRR prior to construction in each year of proposed construction activity. Protocol surveys are conducted around dawn or dusk between mid-January and mid-April when rails are most likely to vocalize during their breeding season. Surveys begin as passive listening surveys and, if no vocalizing CRR are detected, proceed to active call-playback surveys.

Implementation of this mitigation measures will reduce potential impacts to CRR to a level that is **less than significant**.

7.1.3 Fish Species

Green Sturgeon, White Sturgeon, CCC steelhead, and LFS have moderate potential to occur within the tidal open waters of the Study Area. No in-water work is proposed within the tidal open water of the Study Area. While upland activities are unlikely to have negative effects on fish species that may be present in tidally influenced waters, work adjacent to tidal open water areas has some potential to result in temporary reductions in water quality.

> **Potential Impact BIO-4**: The proposed Project's construction activities along tidal open water habitat could result in a reduction in water quality, which would be considered a significant impact.

To reduce potential impacts to special-status fish to a less-than-significant level, the following measures shall be implemented:

> **Mitigation Measure BIO-4a**: All activities associated with the Project construction that occur below the HTL should be conducted between July 1 and October 31 to avoid periods when sensitive life stages of fish species (e.g., steelhead smolts) may be present the vicinity.
>
> **Mitigation Measure BIO-4b**: Any activities which occur below the HTL including placement or removal of materials should be conducted during low tide events to minimize or avoid impacts to water quality and avoid the presence of special-status fish species.

Implementation of these mitigation measures along with Mitigation Measure BIO-6 a-c (below) will reduce potential impacts to special-status fish, and waters to a level that is **less-than-significant**.

7.1.4 Mammals

WESTERN RED BAT

This assessment determined that woodland habitat within and adjacent to the Study Area may contain trees that provide roosting suitable habitat for western red bat. In addition, trees within the Study Area may support non-status bat roosts protected under the CFGC. The Project will largely avoid impacts to woodland habitat; therefore, the Project will result in **no impacts** to special-status bats and no mitigation measures are required.

7.2 Sensitive Natural Communities and Land Cover Types

This section addresses the question:

b) Does 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 CDFW or U.S. Fish and Wildlife Service;

Sensitive natural communities within the Study Area include: tidal salt marsh, tidal open water, and non-tidal open water.

7.2.1 Non-tidal Open Water

The Study Area includes 0.02 acre (678 square feet) of non-tidal open water habitat. The proposed Project would re-grade a 409-square-foot portion of the non-tidal open water ditch that parallels adjacent residential properties, resulting in temporary impacts to non-tidal open water.

> **Impact BIO-6:** The Project will result in unavoidable temporary impacts to non-tidal open water.

7.2.2 Tidal Salt Marsh

The Study Area includes 0.98 acre (42,730 square feet) of tidal salt marsh habitat. The proposed Project would result in approximately 150 square feet of temporary impacts to tidal salt marsh during removal of a concrete drain box and replacement of a culvert located along the existing levee.

> **Impact BIO-7:** The Project will result in unavoidable temporary impacts to tidal salt marsh habitat.

7.2.3 Tidal Open Water

The Study Area includes 1.53 acres (66,647 square feet) of tidal open water. As described in Section 7.1.3, no in-water work within tidal open water habitat is proposed; however, work adjacent to tidal open water areas has some potential to result in temporary reductions in water quality.

> **Potential Impact BIO-8:** Construction activities adjacent to sensitive natural communities such as aquatic resources, could result in erosion or incidental sediment discharge into adjacent habitats.

To reduce potential impacts to sensitive natural communities to a less than significant level, the following measures shall be implemented:

> **Mitigation Measure BIO-6a:** Relevant permits from agencies such as the Corps and RWQCB shall be acquired prior to the placement of fill in jurisdictional aquatic resources. Additional mitigation measures may be required by permitting agencies to minimize or compensate for impacts to these features.
>
> **Mitigation Measure BIO-6b**: Mitigation for permanent loss of waters of the U.S. and waters of the State shall be required by either purchasing appropriate mitigation credits from an approved mitigation bank or via permittee responsible mitigation which would involve creating, restoring, or enhancing analogous habitat types. The ratio for acres of

mitigation to acres impacted shall be no less than 1:1. Mitigation shall be agreed upon in coordination with the appropriate regulatory agencies during the permitting process.

Mitigation Measure BIO-6c: Best Management Practices (BMPs) shall be devised and implemented to prevent discharge of any Project-related materials such as fuel, engine lubricants or sediment into potentially jurisdictional wetlands and water features. If wattles are used, only natural fiber or biodegradable wattles shall be installed. Silt fencing shall be installed with oversight from a qualified biologist in the areas adjacent to wetlands or non-wetland waters. It should be noted that this fencing can be the same as the wildlife exclusion fencing described in Mitigation Measure BIO-7 above. All erosion control products shall be removed at the completion of construction activities

Implementation of Mitigation Measures BIO-4a, BIO-4b, BIO-6a, BIO-6b, and BIO-6c, will reduce potential impacts to sensitive natural communities to a level that is **less than significant**.

7.3 Aquatic Resources

This section analyzes the Project's potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the Corps or BCDC in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

> *c) Does the Project have the potential to have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;*

All anticipated direct and potential indirect impacts and mitigation to potential jurisdictional areas are discussed above in Section 7.2. Implementation of Mitigation Measures BIO-4a, BIO-4b, BIO-6a, BIO-6b, and BIO-6c, as discussed above in Section 7.2, will reduce potential impacts to aquatic resources to a level that is **less than significant**.

7.4 Wildlife Corridors and Native Wildlife Nursery Sites

This section analyzes the Project's potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

> *d) Does the Project have the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;*

The proposed Project does not include construction of any structures which would change or impact local terrestrial wildlife movement. Migratory birds may forage during low tides when Coyote Creek becomes an exposed mudflat. The proposed Project would not alter the habitat function provided within the Study Area. Based on these factors, implementation of the proposed Project will result in **no impact** to migratory corridors and habitat linkages.

7.5 Local Policies and Ordinances

This section analyzes the Project's potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

> *e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*

Local plans and policies related to biological resources examined in this analysis are:

- **Marin Countywide Plan (CWP; County of Marin 2023).**
    - **BIO 1.1 Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors.** Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.
    - **BIO 1.3 Protect Woodlands, Forests, and Tree Resources.** Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservation ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.
    - **BIO 2.1 Include Resource Preservation in Environmental Review.** Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors. Require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving "no net loss" of sensitive habitat acreage, values, and function.
    - **BIO 2.2 Limit Development Impacts.** Restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, baylands and coastal habitat, and riparian habitats, as necessary to ensure the continued health and survival of these species and sensitive areas. Development projects should preferably be modified to avoid impacts on sensitive resources, or to adequately mitigate impacts by providing on-site or (as a lowest priority) off-site replacement at a higher ratio.
    - **BIO 2.3 Preserve Ecotones.** Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern

include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.

- **BIO 2.4 Protect Wildlife Nursery Areas and Movement Corridors.** Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas such as woodlands, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts.
- **BIO 2.5 Restrict Disturbance in Sensitive Habitat During Nesting Season.** Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.
- **BIO 2.7 Protect Sensitive Coastal Habitat.** Protect coastal dunes, streams, and wetlands, and sensitive wildlife habitat from development in accordance with coastal resource management standards in the development code.
- **BIO 2.8 Coordinate with Trustee Agencies.** Consult with trustee agencies (the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Army Corps of Engineers, Environmental Protection Agency, Regional Water Quality Control Board, and Bay Conservation and Development Commission) during environmental review when special-status species, sensitive natural communities, or wetlands may be adversely affected.
- **BIO 2.9 Promote Early Consultation with Other Agencies.** Require applicants to consult with all agencies with review authority for projects in areas supporting wetlands and special-status species at the outset of project planning.

- **Marin County Tree Ordinance.** The proposed Project would not remove any trees; therefore, the Project would not conflict with Marin County's Tree Ordinance.

The Project would not conflict with any of the local plans or policies related to biological resources examined in this analysis; therefore, there is **no conflict** with local policies and ordinances.

7.6 Habitat Conservation Plans

This section analyzes the Project's potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Study Area is located in a Marin County Wetland Conservation Area. The Project would not conflict with the Marin Countywide plan as described in Section 7.5, above. The Study Area is not located within an area that is subject to any other Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan; therefore, there is **no conflict** with any habitat conservation plans.

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APPENDIX A. FIGURES



Path: L:\Acad 2000 Files\23000\23015\GIS\23015_3\GIS\ArcMap_Pro\23015_3Base.aprx Layout Name:Figure 1. Study Area Vicinity

Sources: National Geographic, WRA | Prepared By: rhona.mcchesney, 6/30/2025

Figure 1. Study Area Vicinity

Cardinal Road Levee Upgrade Project
Marin County, California

0 0.5 1 Miles

N

wra Environmental Consultants



Path: L:\Acad 2000 Files\23000\23015\GIS\23015_3\GIS\ArcMap_Pro\23015_3Base.aprx Layout Name: Fig 2 Project Components

Sources: USDA NAIP Imagery 2022, WRA | Prepared By: njander, 7/15/2025

Figure 2. Project Components

Cardinal Road Levee Upgrade Project
Marin County, California

0 125 250 Feet

N

wra Environmental Consultants



Path: L:\Acad 2000 Files\23000\23015\GIS\23015_3\GIS\ArcMap_Pro\23015_3Base.aprx Layout Name: Figure 3. Soil Mapping Units within Study Area

Sources: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: rhona.mcchesney, 6/30/2025

Figure 3. Soil Mapping Units within Study Area

Cardinal Road Levee Upgrade Project
Marin County, California

wra Environmental Consultants



Figure 4. Land Cover Types within Study Area

Cardinal Road Levee Improvements
Mill Valley, Marin County, California

- Study Area (5.90 ac.)
- HTL (7.22 ft. NAVD88)*
- Flow Direction

Non-Sensitive

- Developed (1.60 ac.)
- Ruderal and Ornamental Vegetation (1.75 ac.)
- Coast Live Oak Woodland (0.02 ac.)

Sensitive

- Tidal Salt Marsh (0.98 ac.)
- Tidal Open Waters (1.53 ac. | 1,625 ln. ft.)
- Non-tidal Open Waters (0.02 ac. | 265 ln. ft.)

*Modeled High Tide Line is displayed for reference. Tidal habitat was mapped primarily based on field observations.

N

0 50 100
Feet

wra
Environmental Consultants

Sources: NRCS NAIP 2022 Aerial, WRA | Prepared By: njander, 7/15/2025

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APPENDIX B. SPECIES OBSERVED WITHIN THE STUDY AREA

Appendix D. Plant Species Observed within the Study Area on December 11, 2024

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Aesculus californica	Buckeye	native	tree	-	-	-
Agapanthus	Blue lily of the Nile	non-Native	herb	-	-	-
Aloe maculata	Aloe maculata	non-native	perennial herb	-	-	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Briza maxima	Rattlesnake grass	non-native (invasive)	annual grass	-	Limited	-
Briza minor	Little rattlesnake grass	non-native	annual grass	-	-	FAC
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Calystegia subacaulis	Hill morning glory	native	perennial herb	-	-	-
Cirsium vulgare	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Claytonia perfoliata	Miner's lettuce	native	annual herb	-	-	FAC
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Distichlis spicata	Salt grass	native	perennial grass	-	-	FAC
Eucalyptus globulus	Blue gum	non-native (invasive)	tree	-	Limited	-
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Frankenia salina	Alkali heath	native	perennial herb	-	-	FACW
Genista monspessulana	French broom	non-native (invasive)	shrub	-	High	-
Geranium sp.	Geranium	non-native	herb	-	-	-
Grindelia stricta	Gumweed	native	perennial herb	-	-	FACW
Hedera helix	English ivy	non-native (invasive)	vine, shrub	-	High	FACU

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Heteromeles arbutifolia	Toyon	native	shrub	-	-	-
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Holcus lanatus	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Hordeum murinum	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Jaumea carnosa	Marsh jaumea	native	perennial herb	-	-	OBL
Juncus bufonius	Common toad rush	native	annual grasslike herb	-	-	FACW
Lepidium latifolium	Perennial pepperweed	non-native (invasive)	perennial herb	-	High	FAC
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Nerium oleander	Oleander	non-native	tree	-	-	-
Pinus radiata	Monterey pine	native	tree	Rank 1B.1*	-	-
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Quercus lobata	Valley oak	native	tree	-	-	FACU
Raphanus sativus	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Salicornia pacifica	Pickleweed	native	perennial herb	-	-	OBL
Salsola tragus	Russian thistle	non-native (invasive)	annual herb	-	Limited	FACU
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Sporobolus foliosus	Pacific cordgrass	native	perennial grass	-	-	OBL
Styphnolobium japonicum	Japanese pagoda tree	non-native	tree	-	-	-
Torilis arvensis	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
Umbellularia californica	California bay	native	tree	-	-	FAC

Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2025]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2025] or Rare Plant Inventory (CNPS 2025). Sp.: "species," intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

*Special status only at native occurrences. The Study/Project Area does not contain a native occurrence of this species.

[1] **California Native Plant Society. 2025. Rare Plant Inventory (online edition, v9.5.1). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: MAY 2025.**

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
Rank 1A:	Plants presumed extinct in California
Rank 1B:	Plants rare, threatened, or endangered in California and elsewhere
Rank 2:	Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3:	Plants about which we need more information – a review list
Rank 4:	Plants of limited distribution – a watch list

[2] **California Invasive Plant Council. 2025. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: MAY 2025.**

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

[3] **U.S. Army Corps of Engineers. 2022. National Wetland Plant List, version 3.6. Online at: http://wetland-plants.sec.usace.army.mil/**

OBL:	Almost always found in wetlands
FACW:	Usually found in wetlands
FAC:	Equally found in wetlands and uplands
FACU:	Usually not found in wetlands
UPL:	Almost never found in wetlands
NL:	Not Listed, assumed almost never found in wetlands
NI:	No information; not factored during wetland delineation

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APPENDIX C. PHOTO APPENDIX



Photo 1. Developed levee within the Study Area. Photo taken on January 8, 2025, facing northeast.

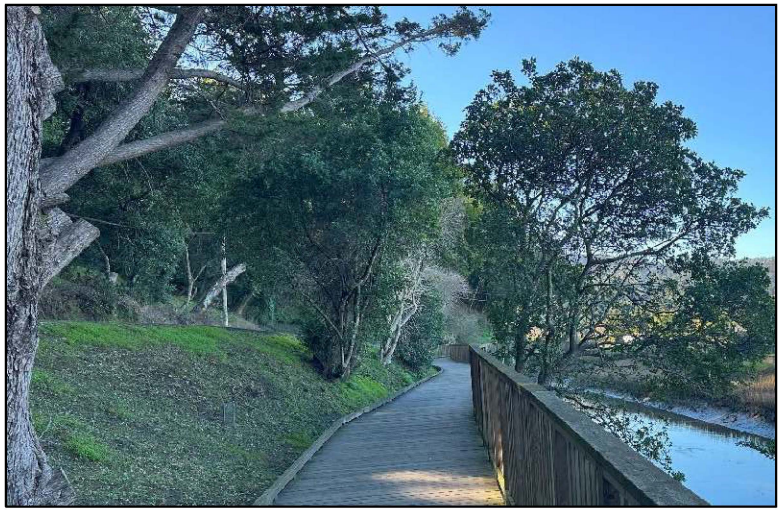

Photo 2. Ruderal and ornamental vegetation within the Study Area. Photo taken on January 8, 2025, facing southwest.

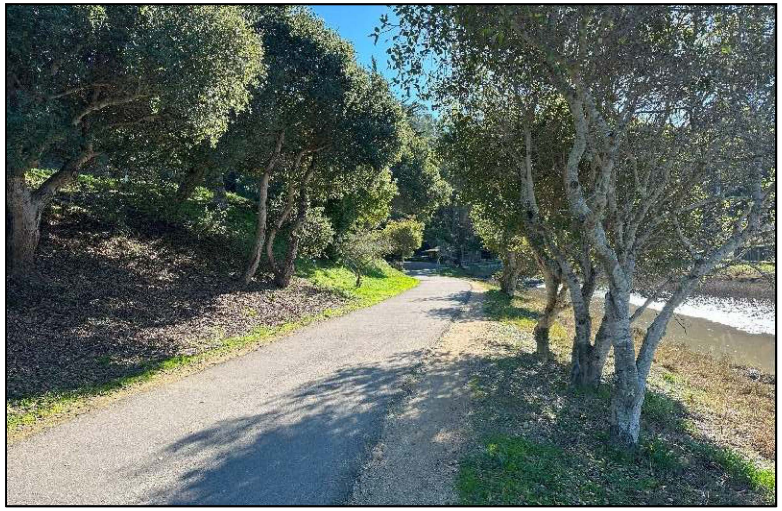

Photo 3. Coast live oak woodland habitat within the Study Area. Photo take on January 8, 2025, facing southwest.



Photo 4. Typical tidal marsh habitat within the Study Area. Photo taken on January 8, 2025, facing southwest.



Photo 5. Tidal open water within Coyote Creek. Photo taken on January 8, 2025, facing west.



Photo 6. Non-tidal open water and ruderal vegetation within the Study Area. Photo taken on December 11, 2024, facing northwest.

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APPENDIX D. SPECIAL-STATUS SPECIES POTENTIAL TABLE

Appendix D. Potential for Special-status Plant and Wildlife Species to Occur within the Study Area

List compiled from the California Department of Fish and Wildlife BIOS Database (CDFW 2025), U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) Report (USFWS 2025), and California Native Plant Society Rare Plant Inventory (CNPS 2025) search of the San Rafael and Novato, San Geronimo, Petaluma Point, San Francisco North, Point Bonita, San Quentin, Bolinas USGS 7.5' quadrangles.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
PLANTS					
Alopecurus aequalis* var. *sonomensis	Sonoma alopecurus	Rank 1B.1	Freshwater marshes and swamps, riparian scrub. 5-365 meters. Blooms from May to July.	**No potential.** The Study Area does not contain suitable freshwater marsh habitat for this species.	No further recommendations for this species.
Amorpha californica* var. *napensis	Napa false indigo	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 165 to 6560 feet (50 to 2000 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area does not contain suitable broadleaf forest or chapparal habitat for this species. Woodland habitat Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Amsinckia lunaris	bent-flowered fiddleneck	Rank 1B.2	Cismontane woodland, coastal bluff scrub, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain suitable scrub or woodland habitat for this species. Non-native annual grassland communities within the Study Area consist of man-made areas of fill, and therefore do not have potential to support this species.	No further recommendations for this species.
Aphyllon robbinsii	Robbins' broomrape	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	**No potential.** The Study Area does not contain suitable coastal bluff scrub habitat for this species.	No further recommendations for this species.
Arabis blepharophylla	coast rockcress	Rank 4.3	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 10 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	**No potential.** The Study Area does not contain suitable broadleafed upland forest, coastal bluff scrub, coastal prairie, or coastal scrub habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Arctostaphylos franciscana	Franciscan manzanita	FE, Rank 1B.1	Coastal scrub (serpentine). Elevation ranges from 195 to 985 feet (60 to 300 meters). Blooms Feb-Apr.	**No potential.** The Study Area does not contain suitable coastal scrub habitat for this species.	No further recommendations for this species.
Arctostaphylos montana* ssp. *montana	Mt. Tamalpais manzanita	Rank 1B.3	Chaparral, valley and foothill grassland. Elevation ranges from 525 to 2495 feet (160 to 760 meters). Blooms Feb-Apr.	**No potential.** The Study Area does not contain suitable chaparral, valley or foothill grassland habitat for this species.	No further recommendations for this species.
Arctostaphylos montana* ssp. *ravenii	Presidio manzanita	FE, SE, Rank 1B.1	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 150 to 705 feet (45 to 215 meters). Blooms Feb-Mar.	**No potential.** The Study Area does not contain suitable chaparral, coastal prairie, or coastal scrub habitat for this species.	No further recommendations for this species.
Arctostaphylos virgata	Marin manzanita	Rank 1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, north coast coniferous forest. Elevation ranges from 195 to 2295 feet (60 to 700 meters). Blooms Jan-Mar.	**No potential.** The Study Area does not contain suitable broadleafed upland forest, chaparral, closed-cone coniferous forest, or north coast coniferous forest habitat for this species.	No further recommendations for this species.
Arenaria paludicola	marsh sandwort	FE, SE, Rank 1B.1	Marshes and swamps (brackish, freshwater). Elevation ranges from 10 to 560 feet (3 to 170 meters). Blooms May-Aug.	**Unlikely.** The Study Area lacks associated plant species. The nearest CNDDB occurrence of this species is approximately 3 miles from the Study Area at Rodeo Lagoon (CDFW 2025a).	No further recommendations for this species.
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	Rank 4.2	Chaparral, cismontane woodland. Elevation ranges from 330 to 4595 feet (100 to 1400 meters). Blooms Jan-Dec.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Astragalus breweri	Brewer's milk-vetch	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (openings, often gravelly). Elevation ranges from 295 to 2395 feet (90 to 730 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Astragalus nuttallii* var. *nuttallii	ocean bluff milk-vetch	Rank 4.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 10 to 395 feet (3 to 120 meters). Blooms Jan-Nov.	**No potential.** The Study Area does not contain suitable coastal bluff scrub or coastal dune habitat for this species.	No further recommendations for this species.
Astragalus pycnostachyus* var. *pycnostachyus	coastal marsh milk-vetch	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Elevation ranges from 0 to 180 feet (0 to 55 meters). Blooms (Apr-May)Jun-Oct.	**Unlikely.** Documented occurrences of this species in the region are presumed to be extirpated (CDFW 2025a).	No further recommendations for this species.
Astragalus tener* var. *tener	alkali milk-vetch	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 5 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	**No potential.** The Study Area does not contain adobe clay soil required by this species.	No further recommendations for this species.
Calamagrostis crassiglumis	Thurber's reed grass	Rank 2B.1	Coastal scrub (mesic), marshes and swamps (freshwater). Elevation ranges from 35 to 195 feet (10 to 60 meters). Blooms May-Aug.	**No potential.** The Study Area does not contain suitable coastal scrub or freshwater marsh or swamp habitat for this species.	No further recommendations for this species.
Calamagrostis ophitidis	serpentine reed grass	Rank 4.3	Chaparral (openings, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland. Elevation ranges from 295 to 3495 feet (90 to 1065 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area does not contain suitable Chaparral, lower montane coniferous forest, meadows and seeps habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Calandrinia breweri	Brewer's calandrinia	Rank 4.2	Chaparral, coastal scrub. Elevation ranges from 35 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar-Jun.	**No potential.** The Study Area does not contain suitable chaparral or coastal scrub habitat for this species.	No further recommendations for this species.
Calochortus tiburonensis	Tiburon mariposa-lily	FT, ST, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 165 to 490 feet (50 to 150 meters). Blooms Mar-Jun.	**No potential.** The Study Area does not contain suitable serpentine soils required by this species.	No further recommendations for this species.
Calochortus umbellatus	Oakland star-tulip	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 330 to 2295 feet (100 to 700 meters). Blooms Mar-May.	**Unlikely.** The Study Area does not contain suitable broadleaf upland forest or chaparral habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Calochortus uniflorus	pink star-tulip	Rank 4.2	Coastal prairie, coastal scrub, meadows and seeps, north coast coniferous forest. Elevation ranges from 35 to 3510 feet (10 to 1070 meters). Blooms Apr-Jun.	**No potential.** The Study Area does not contain suitable coastal prairie, coastal scrub, meadow or seep, or north coast coniferous habitat for this species.	No further recommendations for this species.
Calystegia collina* ssp. *oxyphylla	Mt. Saint Helena morning-glory	Rank 4.2	Chaparral, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 915 to 3315 feet (279 to 1010 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain suitable chaparral or lower montane coniferous forest habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Calystegia purpurata* ssp. *saxicola	coastal bluff morning-glory	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, north coast coniferous forest. Elevation ranges from 0 to 345 feet (0 to 105 meters). Blooms (Mar)Apr-Sep.	**No potential.** The Study Area does not contain suitable Coastal bluff scrub, coastal dunes, coastal scrub, or north coast coniferous forest habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Cardamine angulata	seaside bittercress	Rank 2B.2	Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 50 to 3000 feet (15 to 915 meters). Blooms (Jan)Mar-Jul.	**No potential.** The Study Area does not contain suitable lower montane coniferous forest, or north coast coniferous forest habitat for this species.	No further recommendations for this species.
Carex comosa	bristly sedge	Rank 2B.1	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. Elevation ranges from 0 to 2050 feet (0 to 625 meters). Blooms May-Sep.	**Unlikely.** The Study Area does not contain suitable coastal prairie or freshwater marsh habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Carex lyngbyei	Lyngbye's sedge	Rank 2B.2	Marshes and swamps (brackish, freshwater). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Aug.	**Unlikely.** The nearest occurrence was documented approximately 7 miles away near Stinson Beach in west Marin County (CDFW 2025a). This species is unlikely to have recolonized the Study Area following historic alterations, due to the lack of documented occurrences in the vicinity.	No further recommendations for this species.
Carex praticola	northern meadow sedge	Rank 2B.2	Meadows and seeps (mesic). Elevation ranges from 0 to 10500 feet (0 to 3200 meters). Blooms May-Jul.	**No potential.** The Study Area does not contain suitable mesic habitat for this species.	No further recommendations for this species.
Castilleja affinis* var. *neglecta	Tiburon paintbrush	FE, ST, Rank 1B.2	Valley and foothill grassland (serpentine). Elevation ranges from 195 to 1310 feet (60 to 400 meters). Blooms Apr-Jun.	**No potential.** The Study Area does not contain suitable serpentine soil required by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Castilleja ambigua* var. *ambigua	johnny-nip	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools (margins). Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	**Unlikely.** The Study Area does not provide suitable coastal bluff scrub, coastal prairie, coastal scrub, marshes or swamp habitat. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Ceanothus decornutus	Nicasio ceanothus	Rank 1B.2	Chaparral (maritime). Elevation ranges from 770 to 950 feet (235 to 290 meters). Blooms Mar-May.	**No potential.** The Study Area does not contain suitable chaparral habitat for this species.	No further recommendations for this species.
Ceanothus gloriosus* var. *exaltatus	glory brush	Rank 4.3	Chaparral. Elevation ranges from 100 to 2000 feet (30 to 610 meters). Blooms Mar-Jun(Aug).	**No potential.** The Study Area does not contain suitable chaparral habitat for this species.	No further recommendations for this species.
Ceanothus gloriosus* var. *gloriosus	Point Reyes ceanothus	Rank 4.3	Closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Mar-May.	**No potential.** The Study Area does not contain suitable closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal scrub habitat for this species.	No further recommendations for this species.
Ceanothus masonii	Mason's ceanothus	SR, Rank 1B.2	Chaparral (openings, rocky, serpentine). Elevation ranges from 755 to 1640 feet (230 to 500 meters). Blooms Mar-Apr.	**No potential.** The Study Area does not contain suitable habitat for this species.	No further recommendations for this species.
Ceanothus pinetorum	Kern ceanothus	Rank 4.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Elevation ranges from 3410 to 9005 feet (1040 to 2745 meters). Blooms May-Jul.	**No potential.** The Study Area does not contain suitable lower montane coniferous forest, subalpine coniferous forest, or upper montane coniferous forest habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Chloropyron maritimum* ssp. *palustre	Point Reyes salty bird's-beak	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	**High Potential.** The Study Area contains suitable salt marsh habitat and there are 3 documented occurrences within 1 mile of the Study Area, with limited barriers to dispersal (CDFW 2025a).	Appropriately timed surveys as described in Section 7.1 should document the current location and extent of this species within the Study Area. Avoidance and minimization measures are discussed in Section 7.1.
Chorizanthe cuspidata* var. *cuspidata	San Francisco Bay spineflower	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 10 to 705 feet (3 to 215 meters). Blooms Apr-Jul(Aug).	**No potential.** The Study Area does not contain suitable coastal bluff scrub, coastal dunes, coastal prairie, or coastal scrub habitat for this species.	No further recommendations for this species.
Cirsium andrewsii	Franciscan thistle	Rank 1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	**No potential.** The Study Area does not contain suitable broadleafed upland forest, coastal bluff scrub, coastal prairie, or coastal scrub habitat for this species.	No further recommendations for this species.
Cirsium hydrophilum* var. *vaseyi	Mt. Tamalpais thistle	Rank 1B.2	Broadleafed upland forest, chaparral, meadows and seeps. Elevation ranges from 785 to 2035 feet (240 to 620 meters). Blooms May-Aug.	**No potential.** The Study Area does not contain suitable broadleafed upland forest, chaparral, meadow or seep habitat for this species.	No further recommendations for this species.
Cistanthe maritima	seaside cistanthe	Rank 4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 985 feet (5 to 300 meters). Blooms (Feb)Mar-Jun(Aug).	**Unlikely.** The Study Area does not contain suitable coastal bluff scrub, coastal scrub habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Clarkia franciscana	Presidio clarkia	FE, SE, Rank 1B.1	Coastal scrub, valley and foothill grassland (serpentine). Elevation ranges from 80 to 1100 feet (25 to 335 meters). Blooms May-Jul.	**No potential.** The Study Area does not contain serpentine soils required by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Collinsia corymbosa	round-headed collinsia	Rank 1B.2	Coastal dunes. Elevation ranges from 0 to 65 feet (0 to 20 meters). Blooms Apr-Jun.	**No potential.** The Study Area does not contain suitable coastal dune habitat for this species.	No further recommendations for this species.
Collinsia multicolor	San Francisco collinsia	Rank 1B.2	Closed-cone coniferous forest, coastal scrub. Elevation ranges from 100 to 900 feet (30 to 275 meters). Blooms (Feb)Mar-May.	**No potential.** The Study Area does not contain suitable coniferous forest or coastal scrub habitat for this species.	No further recommendations for this species.
Collomia diversifolia	serpentine collomia	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 1970 feet (200 to 600 meters). Blooms May-Jun.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Cypripedium californicum	California lady's-slipper	Rank 4.2	Bogs and fens, lower montane coniferous forest. Elevation ranges from 100 to 9025 feet (30 to 2750 meters). Blooms Apr-Aug(Sep).	**No potential.** The Study Area does not contain suitable bog, fen, or lower montane coniferous forest habitat for this species.	No further recommendations for this species.
Dermatocarpon meiophyllizum	silverskin lichen	Rank 2B.3	Coastal prairie, lower montane coniferous forest, north coast coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Elevation ranges from 970 to 11465 feet (295 to 3495 meters).	**No potential.** The Study Area does not contain suitable coastal prairie or coniferous forest habitat for this species.	No further recommendations for this species.
Dichondra occidentalis	western dichondra	Rank 4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 165 to 1640 feet (50 to 500 meters). Blooms (Jan)Mar-Jul.	**Unlikely.** The Study Area does not contain suitable chaparral or coastal scrub habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Dirca occidentalis	western leatherwood	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr).	**Unlikely.** The Study Area does not contain suitable upland forest, chaparral, closed-cone coniferous forest, north coast coniferous forest, riparian forest, riparian woodland habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Elymus californicus	California bottle-brush grass	Rank 4.3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug(Nov).	**Unlikely.** The Study Area does not contain suitable broadleafed upland forest, north coast coniferous forest, or riparian woodland habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Entosthodon kochii	Koch's cord moss	Rank 1B.3	Cismontane woodland (soil). Elevation ranges from 590 to 3280 feet (180 to 1000 meters).	**No potential.** The Study Area does not contain suitable river bank habitat for this species.	No further recommendations for this species.
Equisetum palustre	marsh horsetail	Rank 3	Marshes and swamps. Elevation ranges from 150 to 3280 feet (45 to 1000 meters). Blooms Unk.	**No potential.** The Study Area does not contain suitable freshwater marsh or swamp habitat for this species.	No further recommendations for this species.
Eriogonum luteolum* var. *caninum	Tiburon buckwheat	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms May-Sep.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Erysimum franciscanum	San Francisco wallflower	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland. Elevation ranges from 0 to 1805 feet (0 to 550 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain suitable chaparral or coastal dune habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Erythranthe nudata	bare monkeyflower	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 2295 feet (200 to 700 meters). Blooms May-Jun.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Fissidens pauperculus	minute pocket moss	Rank 1B.2	North coast coniferous forest (damp coastal soil). Elevation ranges from 35 to 3360 feet (10 to 1024 meters).	**No potential.** The Study Area lacks damp coastal soil required by this species.	No further recommendations for this species.
Fritillaria lanceolata* var. *tristulis	Marin checker lily	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 50 to 490 feet (15 to 150 meters). Blooms Feb-May.	**No potential.** The Study Area does not contain suitable coastal bluff scrub or prairie habitat for this species.	No further recommendations for this species.
Fritillaria liliacea	fragrant fritillary	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 10 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	**Unlikely.** The Study Area does not contain suitable coastal prairie or scrub habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Gilia capitata* ssp. *chamissonis	blue coast gilia	Rank 1B.1	Coastal dunes, coastal scrub. Elevation ranges from 5 to 655 feet (2 to 200 meters). Blooms Apr-Jul.	**No potential.** The Study Area does not contain suitable coastal dune or scrub habitat for this species.	No further recommendations for this species.
Gilia capitata* ssp. *tomentosa	woolly-headed gilia	Rank 1B.1	Coastal bluff scrub, valley and foothill grassland. Elevation ranges from 35 to 720 feet (10 to 220 meters). Blooms May-Jul.	**Unlikely.** The Study Area does not contain suitable coastal scrub habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Gilia millefoliata	dark-eyed gilia	Rank 1B.2	Coastal dunes. Elevation ranges from 5 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	**No potential.** The Study Area does not contain suitable coastal dune habitat for this species.	No further recommendations for this species.
Grindelia hirsutula* var. *maritima	San Francisco gumplant	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Elevation ranges from 50 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	**Unlikely.** The Study Area does not contain suitable coastal scrub habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Helianthella castanea	Diablo helianthella	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 195 to 4265 feet (60 to 1300 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain suitable broadleaf forest or coastal scrub habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Hemizonia congesta* ssp. *congesta	congested-headed hayfield tarplant	Rank 1B.2	Valley and foothill grassland. Elevation ranges from 65 to 1835 feet (20 to 560 meters). Blooms Apr-Nov.	**Unlikely.** Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Hesperolinon congestum	Marin western flax	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland. Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Heteranthera dubia	water star-grass	Rank 2B.2	Marshes and swamps (alkaline, still, slow-moving water). Elevation ranges from 100 to 4905 feet (30 to 1495 meters). Blooms Jul-Oct.	**No potential.** The Study Area does not contain suitable alkaline marsh or swamp habitat for this species.	No further recommendations for this species.
Holocarpha macradenia	Santa Cruz tarplant	FT, SE, Rank 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 720 feet (10 to 220 meters). Blooms Jun-Oct.	**No potential.** The Study Area lacks suitable light, sandy soil required by this species.	No further recommendations for this species.
Horkelia cuneata* var. *sericea	Kellogg's horkelia	Rank 1B.1	Chaparral (maritime), closed-cone coniferous forest, coastal dunes, coastal scrub. Elevation ranges from 35 to 655 feet (10 to 200 meters). Blooms Apr-Sep.	**No potential.** The Study Area does not contain suitable coniferous forest, coastal dune or scrub habitat for this species.	No further recommendations for this species.
Horkelia marinensis	Point Reyes horkelia	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 15 to 2475 feet (5 to 755 meters). Blooms May-Sep.	**No potential.** The Study Area does not contain suitable coastal dune, prairie, or scrub habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Horkelia tenuiloba	thin-lobed horkelia	Rank 1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland. Elevation ranges from 165 to 1640 feet (50 to 500 meters). Blooms May-Jul(Aug).	**Unlikely.** The Study Area does not contain suitable upland forest or chaparral habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Hosackia gracilis	harlequin lotus	Rank 4.2	Broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	**Unlikely.** The Study Area does not contain suitable upland forest, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marsh or swamp, or north coast coniferous forest habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Hypogymnia schizidiata	island tube lichen	Rank 1B.3	Chaparral, closed-cone coniferous forest. Elevation ranges from 1180 to 1330 feet (360 to 405 meters). Blooms .	**No potential.** The Study Area does not contain suitable chaparral or closed-cone coniferous habitat for this species.	No further recommendations for this species.
Iris longipetala	coast iris	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May(Jun).	**No Potential.** The Study Area does not contain suitable coastal prairie, lower montane coniferous forest, or meadow and seep habitat for this species.	No further recommendations for this species.
Juncus acutus* ssp. *leopoldii	southwestern spiny rush	Rank 4.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt), meadows and seeps (alkaline seeps). Elevation ranges from 10 to 2955 feet (3 to 900 meters). Blooms (Mar)May-Jun.	**Moderate Potential.** The Study Area contains suitable salt marsh habitat for this species, which is presumed extant in the San Rafael region (CNPS 2025).	Appropriately timed surveys as described in Section 7.1 should document the current location and extent of this species within the Study Area. Avoidance and minimization measures are discussed in Section 7.1.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Kopsiopsis hookeri	small groundcone	Rank 2B.3	Lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Elevation ranges from 295 to 2905 feet (90 to 885 meters). Blooms Apr-Aug.	**No potential.** The Study Area does not contain suitable montane or north coast coniferous habitat for this species.	No further recommendations for this species.
Layia carnosa	beach layia	FT, SE, Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 195 feet (0 to 60 meters). Blooms Mar-Jul.	**No potential.** The Study Area does not contain suitable coastal dune or scrub habitat for this species.	No further recommendations for this species.
Leptosiphon aureus	bristly leptosiphon	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area does not contain suitable chaparral or coastal prairie habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Leptosiphon grandiflorus	large-flowered leptosiphon	Rank 4.2	Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug.	**Unlikely.** The Study Area does not contain suitable closed-cone coniferous forest, coastal scrub, dune, or prairie habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Leptosiphon latisectus	broad-lobed leptosiphon	Rank 4.3	Broadleafed upland forest, cismontane woodland. Elevation ranges from 560 to 4920 feet (170 to 1500 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain suitable broadleaf upland forest habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Leptosiphon rosaceus	rose leptosiphon	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	**No potential.** The Study Area does not contain suitable coastal bluff scrub habitat for this species.	No further recommendations for this species.
Lessingia germanorum	San Francisco lessingia	FE, SE, Rank 1B.1	Coastal scrub (remnant dunes). Elevation ranges from 80 to 360 feet (25 to 110 meters). Blooms (Jun)Jul-Nov.	**No potential.** The Study Area does not contain suitable coastal scrub habitat for this species.	No further recommendations for this species.
Lessingia hololeuca	woolly-headed lessingia	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**Unlikely.** The Study Area does not contain suitable broadleafed upland forest, coastal scrub, lower montane coniferous forest habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Lessingia micradenia* var. *micradenia	Tamalpais lessingia	Rank 1B.2	Chaparral, valley and foothill grassland. Elevation ranges from 330 to 1640 feet (100 to 500 meters). Blooms (Jun)Jul-Oct.	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Micropus amphibolus	Mt. Diablo cottonweed	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 150 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**Unlikely.** The Study Area does not contain suitable broadleaf upland forest or chaparral habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Microseris paludosa	marsh microseris	Rank 1B.2	Cismontane woodland, closed-cone coniferous forest, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul).	**Unlikely.** The Study Area does not contain suitable closed-cone coniferous forest or coastal scrub habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Mielichhoferia elongata	elongate copper moss	Rank 4.3	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest. Elevation ranges from 0 to 6430 feet (0 to 1960 meters). Blooms .	**No potential.** The Study Area does not contain suitable acidic, metamorphic rock require by this species.	No further recommendations for this species.
Navarretia rosulata	Marin County navarretia	Rank 1B.2	Chaparral, closed-cone coniferous forest. Elevation ranges from 655 to 2085 feet (200 to 635 meters). Blooms May-Jul.	**No potential.** The Study Area does not contain suitable chaparral or closed-cone coniferous forest habitat for this species.	No further recommendations for this species.
Pentachaeta bellidiflora	white-rayed pentachaeta	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 115 to 2035 feet (35 to 620 meters). Blooms Mar-May.	**No potential.** The Study Area does not contain suitable habitat for this species. This species typically occurs in serpentine soils with low vegetative cover.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Perideridia gairdneri* ssp. *gairdneri	Gairdner's yampah	Rank 4.2	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 2000 feet (0 to 610 meters). Blooms Jun-Oct.	**Unlikely.** The Study Area does not contain suitable broadleaf upland forest, chaparral, coastal prairie or vernal pool habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Piperia michaelii	Michael's rein orchid	Rank 4.2	Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Elevation ranges from 10 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	**Unlikely.** The Study Area does not contain suitable coniferous forest or coastal scrub habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Plagiobothrys chorisianus* var. *chorisianus	Choris' popcornflower	Rank 1B.2	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 10 to 525 feet (3 to 160 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain suitable chaparral, coastal prairie, coastal scrub habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Plagiobothrys diffusus	San Francisco popcornflower	SE, Rank 1B.1	Coastal prairie, valley and foothill grassland. Elevation ranges from 195 to 1180 feet (60 to 360 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain suitable coastal prairie habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Plagiobothrys glaber	hairless popcornflower	Rank 1A	Marshes and swamps (coastal salt), meadows and seeps (alkaline). Elevation ranges from 50 to 590 feet (15 to 180 meters). Blooms Mar-May.	**No potential.** This species is presumed to be extirpated from the region.	No further recommendations for this species.
Pleuropogon hooverianus	North Coast semaphore grass	ST, Rank 1B.1	Broadleafed upland forest, meadows and seeps, north coast coniferous forest. Elevation ranges from 35 to 2200 feet (10 to 671 meters). Blooms Apr-Jun.	**No potential.** The Study Area does not contain suitable broadleaf or coniferous forest habitat for this species.	No further recommendations for this species.
Pleuropogon refractus	nodding semaphore grass	Rank 4.2	Lower montane coniferous forest, meadows and seeps, north coast coniferous forest, riparian forest. Elevation ranges from 0 to 5250 feet (0 to 1600 meters). Blooms (Feb-Mar)Apr-Aug.	**No potential.** The Study Area does not contain suitable habitat for this species. This species in not considered extant in the San Rafael region (CNPS 2025).	No further recommendations for this species.
Polemonium carneum	Oregon polemonium	Rank 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6005 feet (0 to 1830 meters). Blooms Apr-Sep.	**No potential.** The Study Area does not contain suitable coniferous or coastal prairie or scrub habitat for this species.	No further recommendations for this species.
Polygonum marinense	Marin knotweed	Rank 3.1	Marshes and swamps (brackish, coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug(Oct).	**Moderate Potential.** The Study Area may provide suitable salt marsh habitat. This species has been documented approximately 4.5 miles north of the Study Area in the salt marsh habitat surrounding Corte Madera Creek (CDFW 2025a; iNaturalist 2019).	Appropriately timed surveys as described in Section 7.1 should document the current location and extent of this species within the Study Area. Avoidance and minimization measures are discussed in Section 7.1.
Quercus parvula* var. *tamalpaisensis	Tamalpais oak	Rank 1B.3	Lower montane coniferous forest. Elevation ranges from 330 to 2460 feet (100 to 750 meters). Blooms Mar-Apr.	**No potential.** The Study Area does not contain suitable coniferous habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Ranunculus lobbii	Lobb's aquatic buttercup	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**Unlikely.** The Study Area does not contain suitable coniferous or vernal pool habitat for this species. Woodland and grassland habitats within the Study Area are highly disturbed and has colonized areas converted from historic tidal marsh, and therefore are unlikely to have been colonized by this species.	No further recommendations for this species.
Sanicula maritima	adobe sanicle	SR, Rank 1B.1	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland. Elevation ranges from 100 to 785 feet (30 to 240 meters). Blooms Feb-May.	**Unlikely.** The Study Area does not contain suitable chaparral, coastal prairie, meadow or seep habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Sidalcea calycosa* ssp. *rhizomata	Point Reyes checkerbloom	Rank 1B.2	Marshes and swamps (freshwater, near coast). Elevation ranges from 10 to 245 feet (3 to 75 meters). Blooms Apr-Sep.	**No potential.** The Study Area does not contain suitable freshwater marsh or swamp habitat for this species.	No further recommendations for this species.
Sidalcea hickmanii* ssp. *viridis	Marin checkerbloom	Rank 1B.1	Chaparral (serpentine). Elevation ranges from 165 to 1410 feet (50 to 430 meters). Blooms May-Jun.	**No potential.** The Study Area lacks serpentine soils required by this species.	No further recommendations for this species.
Silene scouleri* ssp. *scouleri	Scouler's catchfly	Rank 2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms (Mar-May)Jun-Aug(Sep).	**Unlikely.** The Study Area does not contain suitable coastal bluff or scrub habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Silene verecunda* ssp. *verecunda	San Francisco campion	Rank 1B.2	Chaparral, coastal bluff scrub, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 100 to 2115 feet (30 to 645 meters). Blooms (Feb)Mar-Jul(Aug).	**Unlikely.** The Study Area does not contain suitable chaparral, coastal scrub or prairie habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Spergularia macrotheca* var. *longistyla	long-styled sand-spurrey	Rank 1B.2	Marshes and swamps, meadows and seeps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May.	**Unlikely.** The Study Area may contain suitable marsh habitat; however, the nearest CNDDB occurrence is approximately 10 miles east of the Study Area near San Pablo Marsh, across SF Bay (CDFW 2025a). This species in not considered extant in the San Rafael region (CNPS 2025).	No further recommendations for this species.
Stebbinsoseris decipiens	Santa Cruz microseris	Rank 1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 1640 feet (10 to 500 meters). Blooms Apr-May.	**Unlikely.** The Study Area does not contain suitable broadleaf forest or coniferous habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Streptanthus batrachopus	Tamalpais jewelflower	Rank 1B.3	Chaparral, closed-cone coniferous forest. Elevation ranges from 1000 to 2135 feet (305 to 650 meters). Blooms Apr-Jul.	**No potential.** The Study Area does not contain suitable chaparral or coniferous habitat for this species.	No further recommendations for this species.
Streptanthus glandulosus* ssp. *niger	Tiburon jewelflower	FE, SE, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 100 to 490 feet (30 to 150 meters). Blooms May-Jun.	**No potential.** The Study Area does not contain suitable serpentine habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Streptanthus glandulosus* ssp. *pulchellus	Mt. Tamalpais bristly jewelflower	Rank 1B.2	Chaparral, valley and foothill grassland. Elevation ranges from 490 to 2625 feet (150 to 800 meters). Blooms May-Jul(Aug).	**Unlikely.** The Study Area does not contain suitable chaparral habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Symphyotrichum lentum	Suisun Marsh aster	Rank 1B.2	Marshes and swamps (brackish, freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms (Apr)May-Nov.	**Unlikely.** The nearest CNDDB occurrence is approximately 7.5 miles east of the Study Area near Point San Pablo, across SF Bay (CDFW 2025a). This species in not considered extant in the San Rafael region (CNPS 2025).	No further recommendations for this species.
Toxicoscordion fontanum	marsh zigadenus	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, marshes and swamps, meadows and seeps. Elevation ranges from 50 to 3280 feet (15 to 1000 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area does not contain suitable chaparral or freshwater marsh or swamp habitat for this species. Woodland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Trifolium amoenum	two-fork clover	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain suitable coastal bluff scrub or serpentine habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species.	No further recommendations for this species.
Trifolium hydrophilum	saline clover	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**No potential.** The Study Area does not contain suitable freshwater marsh or swamp or alkaline grassland habitat for this species.	No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Triphysaria floribunda	San Francisco owl's-clover	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 525 feet (10 to 160 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain suitable coastal prairie or scrub habitat for this species. Grassland habitat within the Study Area is highly disturbed and has colonized areas converted from historic tidal marsh, and therefore is unlikely to have been colonized by this species	No further recommendations for this species.
Triquetrella californica	coastal triquetrella	Rank 1B.2	Coastal bluff scrub, coastal scrub. Elevation ranges from 35 to 330 feet (10 to 100 meters). Blooms .	**No potential.** The Study Area does not contain suitable coastal scrub habitat for this species.	No further recommendations for this species.
WILDLIFE					
AMPHIBIANS					
Dicamptodon ensatus	California giant salamander	CDFW SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**No potential.** Although some recent observations have been made in the mountainous region surrounding the Study Area, there is no suitable freshwater forest habitat within the Study Area (iNaturalist 2024).	Presumed Absent. No further recommendations for this species.
***Rana boylii* pop. 1**	foothill yellow-legged frog - north coast DPS	SE, CDFW SSC	Found in or adjacent to rocky streams in a variety of habitats. Prefers partly shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**No potential.** The proposed Study Area does not contain freshwater streams to support this species.	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Rana draytonii	California red-legged frog	FT, CDFW SSC, RP	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	**No potential.** Although recent observations have been made in the mountainous region surrounding the Study Area, there is no suitable freshwater habitat with riparian vegetation within the Study Area (iNaturalist 2022).	Presumed Absent. No further recommendations for this species.
			BIRDS		
Asio flammeus	short-eared owl	CDFW SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	**Unlikely.** While the Area does contain suitable foraging habitat; no individuals have been observed in the vicinity of the Study Area and the nearest documented observation was made over 20 years ago, approximately 9 miles away, near Castro Cove, Richmond, CA (CNDDB 2025).	Presumed Absent. No further recommendations for this species.
Athene cunicularia	burrowing owl	State Candidate, CDFW SSC, BCC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Unlikely.** Mammal burrows within the Study Area are found in highly disturbed, high traffic areas. The nearest CNDDB observation was made near Stinson Beach approximately 7 miles from the Study Area (CDFW 2025a).	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Charadrius nivosus nivosus	western snowy plover	FT, CDFW SSC, BCC, RP	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**Unlikely.** The Study Area does not contain suitable sandy or gravelly beach habitat required by this species.	Presumed Absent. No further recommendations for this species.
Circus hudsonius	northern harrier	CDFW SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Unlikely.** There is limited suitable foraging habitat within the Study Area and limited observations of this species in the vicinity of the Study Area. Northern harrier is an uncommon breeder in Marin County with a very small breeding population occurring in northwest Marin County, approximately 20 miles from the Study Area (Shuford 1993).	Presumed Absent. No further recommendations for this species.
Cypseloides niger	black swift	CDFW SSC, BCC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas.	**Unlikely.** There is no suitable cliff or bluff habitat for this species within the vicinity of the Study Area.	Presumed Absent. No further recommendations for this species.
Elanus leucurus	white-tailed kite	CDFW FP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Moderate potential.** The Study Area may provide suitable foraging habitat for this species and this species has been observed foraging in the vicinity of the Study Area (eBird 2025, iNaturalist 2025); however, there are no documented occurrences of nesting by this species in the vicinity of the Study Area.	Avoidance and minimization measures are discussed in Section 7.2.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Falco peregrinus anatum	American peregrine falcon	Delisted, CDFW FP, BCC	Year-round resident and winter visitor. Occurs in a wide variety of habitats, though often associated with coasts, bays, marshes and other bodies of water. Nests on protected cliffs and also on man-made structures including buildings and bridges. Preys on birds, especially waterbirds. Forages widely.	**Unlikely.** The Study Area does not contain cliffs or man-made structures suitable for nesting. This species may forage within or adjacent to the Study Area.	Presumed Absent. No further recommendations for this species.
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	CDFW SSC, BCC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Unlikely.** The Study Area lacks suitable habitat for this species. Additionally, the nearest observation was made in 1985 at Tennessee Cove, approximately 3 miles from the Study Area.	Presumed Absent. No further recommendations for this species.
Laterallus jamaicensis coturniculus	California black rail	ST, CDFW FP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**Unlikely.** This species is considered possibly extirpated from Bothin Marsh approximately 0.6 mile east of the Study Area. In addition, the limited tidal marsh vegetation present within the Study Area is not sufficient to provide nesting habitat for this species. The lack of dense vegetation cover and frequent disturbance by pedestrians also deters this secretive species from using habitat within the Study Area.	Presumed Absent. No further recommendations for this species.
Melospiza melodia pusillula	Alameda song sparrow	CDFW SSC, BCC	Year-round resident of salt marshes bordering the south arm of San Francisco Bay. Inhabits primarily pickleweed marshes; nests placed in marsh vegetation, typically shrubs such as gumplant.	**Unlikely.** The limited tidal marsh habitat within the Study Area is unlikely to be sufficient to support nesting for this species. The only documented occurrence of this species is in Alameda, approximately 8 miles from the Study Area, across the SF Bay (CDFW 2025a).	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Melospiza melodia samuelis	San Pablo song sparrow	CDFW SSC, BCC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.	**Unlikely.** The limited tidal marsh habitat within the Study Area is unlikely to be sufficient to support nesting for this species. The nearest documented occurrences of this species were made from 1926 to 1946 in Richardson Bay and Corte Madre Marshes approximately 1 mile north of the Study Area (CDFW 2025a).	Presumed Absent. No further recommendations for this species.
Rallus obsoletus obsoletus	California Ridgway's rail	FE, SE, CDFW FP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on molluscs and crustaceans.	**Moderate potential.** This species is known to occur in nearby Bothin Marsh approximately 0.6 mile north of the Study Area; however, the limited tidal marsh vegetation present within the Study Area is not sufficient to provide nesting habitat for this species.	Avoidance and minimization measures are discussed in Section 7.2.
			FISH		
***Acipenser medirostris* pop. 1**	green sturgeon - southern DPS	FT, CDFW SSC	Anadromous; spawns in the Sacramento and Feather Rivers. Preferred spawning substrate is large cobble but ranges from clean sand to bedrock. Adults occur throughout the San Francisco Bay estuary and coastal marine waters.	**Moderate potential.** The Study Area is outside the spawning range, but the species is presumed present in San Francisco Bay year-round. While the species may occasionally be found in Richardson Bay, there are no documented occurrences of this species in Coyote Creek (CDFW 2025a). The Study Area may offer foraging habitat during tidal inundation; however, the Study Area dewaters and becomes mudflat at low tide precluding the species from the Study Area when work occurs.	No further actions are recommended for this species, as the project measures address any impacts.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Acipenser transmontanus	White sturgeon	SCT, CDFW SSC	Anadromous; lives in estuaries of large rivers, moving into freshwater to spawn. Most abundant in brackish portions of estuaries. In estuaries adults concentrate in deep areas with soft bottoms. Adults in the San Francisco Bay Estuary system spawn in the Sacramento River and are not known to enter freshwater or non-tidal reaches of Estuary streams. Spawns May through June.	**Moderate potential.** The Study Area is outside the spawning range, but the species is presumed present in San Francisco Bay year-round. The Study Area may support subtidal foraging habitat only during tidal inundation; however, the Study Area naturally dewaters and becomes mudflat at low tide. This precludes the species from the Study Area when work would occur and limits the value of potential **habitat for foraging.**	No further actions are recommended for this species, as the project measures address any impacts.
Eucyclogobius newberryi	tidewater goby	FE, CDFW SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches; requires fairly still but not stagnant water and high oxygen levels.	**No potential.** This species is typically found on the Pacific coastline in lagoons or protected stream reaches, and not within San Francisco Bay. Suitable lagoon habitat is not present within the Study Area.	Presumed Absent. No further recommendations for this species.
***Oncorhynchus kisutch* pop. 4**	coho salmon - central California coast ESU	FE, SE	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	**No potential.** This species is believed to be extirpated from the region.	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
***Oncorhynchus mykiss irideus* pop. 8**	steelhead - central California coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**Moderate potential.** In 2003, the CDFW determined that "Coyote Creek is largely seasonal in nature and does not provide any spawning or rearing habitat for Chinook or steelhead (CDFG 2003)." While spawning habitat is not present in the Study Area, this species may occasionally traverse waters within the Study Area while foraging; however, the Study Area becomes mudflat at low tide and precludes the availability of the Study Area for foraging.	No further actions are recommended for this species, as the project measures address any impacts.
Pogonichthys macrolepidotus	Sacramento splittail	CDFW SSC, RP	Formerly endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. A freshwater species, but tolerant of moderate salinity (10-18 parts per thousand).	**Unlikely.** Distribution of this species is limited to San Pablo Bay.	Presumed Absent. No further recommendations for this species.
***Spirinchus thaleichthys* pop. 2**	longfin smelt - San Francisco Bay-Delta DPS	FE, ST, CDFW SSC, RP	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**Moderate potential.** The Study Area lacks the deep, open water habitat where this species typically resides and is typically a mudflat at lower tide conditions. In addition, there is no suitable breeding or spawning habitat within the Study Area. This species may traverse waters within the Study Area while foraging at high tide, but would be absent during low tide, precluding the species from the Study Area when work occurs.	No further actions are recommended for this species, as the project measures address any impacts.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Thaleichthys pacificus	eulachon	FT, CDFW SSC	Found in Klamath River, Mad River, Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.	**No potential.** The Study Area is outside of the range of this species.	Presumed Absent. No further recommendations for this species.
			INVERTEBRATES		
Bombus occidentalis	western bumble bee	State Candidate	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2015). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	**No potential.** The Study Area occurs outside of this species current known distribution. No suitable habitat is present within the Study Area, the highly industrialized land-use surrounding the Study Area limits dispersal of this species.	Presumed Absent. No further recommendations for this species.
***Danaus plexippus plexippus* pop. 1**	monarch - California overwintering population	Federal Proposed, winter roosts protected by CDFW	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Unlikely.** Nearest documented overwintering population was documented in 1985 in Tennessee Valley approximately 1.7 miles from the Study Area (CDFW 2025a); however, the Study Area does not provide suitable roosting or foraging habitat for this species.	Presumed Absent. No further recommendations for this species.
Euphydryas editha bayensis	Bay checkerspot butterfly	FT, RP	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**No potential.** Host plants for this species were not identified during the site assessment. The Study Area is primarily landscaped lacks the serpentine soils necessary for this species' host plants.	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Icaricia icarioides missionensis	Mission blue butterfly	FE, RP	Inhabits grasslands and coastal chaparral of the San Francisco peninsula and southern Marin County, but mostly found on San Bruno Mountain. Three larval host plants: *Lupinus albifrons*, *L. variicolor*, and *L. formosus*, of which *L. albifrons* is favored.	**No potential.** Host plants for this species were not identified during the site assessment. The Study Area is comprised of tidal salt marsh habitat or developed land and would not support the host plants.	Presumed Absent. No further recommendations for this species.
Speyeria callippe callippe	callippe silverspot butterfly	FE	Two populations in San Bruno mountain and the Cordelia Hills are recognized. Hostplant is Viola pedunculata, which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**No potential.** Host plants for this species were not identified during the site assessment, and serpentine soils are not present. The Study Area is comprised of tidal salt marsh habitat or developed land and would not support the host plants.	Presumed Absent. No further recommendations for this species.
			MAMMALS		
Antrozous pallidus	pallid bat	CDFW SSC, WBWG High	Found in a variety of habitats ranging from grasslands to mixed forests, favoring open and dry, rocky areas. Roost sites include crevices in rock outcrops and cliffs, caves, mines, and also hollow trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Unlikely.** This species is very sensitive to human disturbance; therefore, it is unlikely individuals are utilizing overhanging trees in the Study Area for roosting. The nearest documented occurrence is approximately 6 miles north of the Study Area (CDFW 2025a). Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presumed Absent. No further recommendations for this species.
Aplodontia rufa phaea	Point Reyes mountain beaver	CDFW SSC	Occurs only in western Marin County, almost entirely within Point Reyes National Seashore. Found on moist slopes within areas of coastal scrub and other habitats with herbaceous vegetation. Lives in extensive burrow systems and forages on a variety of herbaceous plants.	**No potential.** This species is believed to be extirpated from the region (CDFW 2025a).	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Corynorhinus townsendii	Townsend's big-eared bat	CDFW SSC, WBWG	Lives in a wide variety of habitats but most common in mesic sites. Need appropriate roosting, maternity, and hibernacula sites free from human disturbance.	**Unlikely.** Buildings within the Study Area are occupied or otherwise maintained, reducing roost potential.	Presumed Absent. No further recommendations for this species.
Enhydra lutris nereis	southern sea otter	FT, CDFW FP, MMC SSC	Nearshore marine environments from about Año Nuevo, San Mateo County. To Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	**No potential.** The Study Area does not contain suitable habitat for this species.	Presumed Absent. No further recommendations for this species.
Eumetopias jubatus	Steller sea lion	MMC SSC	Breeds on Año Nuevo, San Miguel and Farallon islands, Point Saint George, and Sugarloaf. Hauls-out on islands and rocks. Needs haul-out and breeding sites with unrestricted access to water, near aquatic food supply and with no human disturbance.	**No potential.** The Study Area does not contain suitable habitat for this species.	Presumed Absent. No further recommendations for this species.
Lasiurus cinereus	hoary bat	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	**Unlikely.** Woodland habitat within the Study Area provides trees suitable for roosting; however, there are no CNDDB occurrences within 5 miles of the Study Area (CDFW 2025a). Targeted bat assessment (i.e., close inspection of trees) was not performed.	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Lasiurus frantzii	western red bat	CDFW SSC, WBWG Medium	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. Roosts are usually in broad-leaved trees including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**Moderate potential.** Trees overhanging and adjacent to the Study Area may provide suitable riparian roosting habitat for the species. This species is quite tolerant of human activity and is sometimes found in urban areas.	No further actions are recommended for this species, as the project measures address any impacts.
Microtus californicus sanpabloensis	San Pablo vole	CDFS SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	**No potential.** Distribution of this species is limited to San Pablo Bay. Nearest CNDDB occurrences were documented at San Pablo Creek, approximately 10 miles from the Study Area (CDFW 2025a).	Presumed Absent. No further recommendations for this species.
Reithrodontomys raviventris	salt-marsh harvest mouse	FE, SE, CDFW FP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**Unlikely.** Patches of pickleweed were observed in the Study Area; however, the patches were scattered, had low density, and are insufficient to support nesting for the species. The highly developed zones around the Study Area may serve as barriers of dispersal from extant source populations which are approximately 10 miles north of the Study Area in San Pablo Bay. The species is regarded by experts to be extirpated from Bothin Marsh.	Presumed Absent. No further recommendations for this species.
Sorex ornatus sinuosus	Suisun shrew	CDFWS SSC	Tidal marshes of the northern shores of San Pablo and Suisun Bays. Require dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging.	**No potential.** Distribution of this species is limited to marshes approximately 10 miles from the Study Area near San Pablo and Suisun Bay.	Presumed Absent. No further recommendations for this species.

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Sorex vagrans halicoetes	salt-marsh wandering shrew	CDFWS SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among Salicornia.	**No Potential.** Distribution of this species is limited to San Pablo Creek Salt Marsh approximately 10 miles from the Study Area.	Presumed Absent. No further recommendations for this species.
Taxidea taxus	American badger	CDFWS SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**No Potential.** No suitably sized mammal burrows were observed within the Study Area or immediate vicinity. The Study Area is subject to a high degree of anthropogenic disturbance and does not have connectivity to large areas of open space. The nearest documented occurrence was recorded in 1944 in Golden Gate Recreation Area approximately 3.5 miles southwest (CDFW 2025a).	Presumed Absent. No further recommendations for this species.
Zapus trinotatus orarius	Point Reyes jumping mouse	CDFWS SSC	Restricted to Point Reyes Peninsula in western Marin County. Occurs in wet, marshy coastal meadows and humus-filled dark soils of coast redwood forests, also thickets of woody vegetation along streams and seeps. Eats mainly grass seeds with some insects and fruit taken. Builds grassy nests on ground under vegetation, burrows in winter.	**No potential.** Distribution of this species is limited the western Marin County. The nearest documented occurrence was recorded in 1944 near Tennessee Beach approximately 2.8 miles from the Study Area (CDFW 2025a).	Presumed Absent. No further recommendations for this species.
			REPTILES		
Actinemys marmorata	northwestern pond turtle	Federal Proposed, CDFW SSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites. Nests sites may be found up to 0.5 kilometers from water.	**No Potential.** No suitable freshwater aquatic habitat is present within the Study Area.	Presumed Absent. No further recommendations for this species.

Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2025]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2022] or Inventory of Rare and Endangered Plants (CNPS 2025). Sp.: "species," intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

[1] **California Native Plant Society. 2025. Inventory of Rare and Endangered Plants (online edition, v9-01 1.5). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: July 2025.**

FC:	Federal Candidate for Listing
FE:	Federal Endangered
BGEPA:	Bald and Golden Eagle Protection Act Species
FT:	Federal Threatened
SC (E/T):	State Candidate for Listing (Endangered/Threatened)
SE:	State Endangered
SFP:	State Fully Protected Animal
SR:	State Rare
SSC:	Species of Special Concern
ST:	State Threatened
Rank 1A:	CNPS Rank 1A—Plants presumed extinct in California
Rank 1B:	CNPS Rank 1B—Plants rare, threatened, or endangered in California and elsewhere
Rank 2A:	CNPS Rank 2A—Plants presumed extirpated in California, but more common elsewhere
Rank 2B:	CNPS Rank 2B—Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3:	Plants about which CNPS need more information (a review list)
Rank 4:	Plants of limited distribution (a watch list)
WBWG:	Western Bat Working Group High or Medium-high Priority Species

[2] **California Invasive Plant Council. 2025. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: July 2025.**

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

APPENDIX B. CULTURAL RESOURCES STUDY

Under separate cover and available for review at the County.