BIOLOGICAL SITE ASSESSMENT REPORT

U.S. COAST GUARD HOUSING FACILITY REDEVELOPMENT PROJECT

POINT REYES STATION, MARIN COUNTY, CALIFORNIA

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EXECUTIVE SUMMARY

This report details the regulatory background, methods, results, and recommendations of a Biological Site Assessment (BSA) for the proposed redevelopment of the former U.S. Coast Guard (USCG) housing site property located at 101 Commodore Webster Drive, Point Reyes Station, Marin County, California (Study Area; APNs #119-240-73, 119-236-10) (Figure A-1, Appendix A). The assessment and survey are required by the County of Marin for a proposed affordable housing project, which will rehabilitate facilities and features that currently exist on the property, some of which were formerly used by the USCG. WRA, Inc. performed the assessment and surveys on behalf of the Applicant, the Community Land Trust Association of West Marin (CLAM) and Eden Housing, Inc. (Eden), on several site visits throughout 2021. Following the surveys, WRA helped the client to develop a Project that avoids and/or minimizes potential impacts to sensitive natural resources to the maximum extent feasible.

During the site visits, WRA identified several Environmentally Sensitive Habitat Areas (ESHA), including aquatic and terrestrial within the Study Area. The Project Area (Project Area is defined on Page iii, below) itself does not contain ESHAs. The Project Area does contains existing nonconforming structures/uses that are located within aquatic and terrestrial ESHA buffers. Therefore, avoidance of ESHA buffers is not feasible to complete the project. The development of the project will variably repair existing nonconforming structures, replace structures within the ESHA buffers with water quality enhancement features, or remove existing nonconforming structures/uses where possible, and restore those areas with native vegetation. A reduced buffer analysis was performed in this report where necessary development is proposed within ESHA buffers. Best management practices and avoidance measures are included as part of the project and provided herein to ensure that wetlands, streams, and riparian habitats (aquatic resources collectively), and sensitive terrestrial resources (e.g., upland native grassland) within the Project are protected. The work which will occur within ESHA buffers is expected to result in a net environmental improvement over existing conditions, by reducing improving water quality, eliminating on-site invasive species, and increasing native vegetation cover. A complete listing of sensitive natural resources or potential ESHA within the Project Area is included in Section 5.0 below. The report was updated in December 2022 to address the County of Marin Community Development Agency and California Coastal Commission (CCC) comments on the BSA report and Coastal Permit and Use Permit. Updated text is shown in bold.

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DEFINITIONS

Study Area: The area throughout which the assessment was performed; the area composing the former USCG property at 101 Commodore Webster Drive (APN 119-240-73 and 119-236-10), totaling 33.59 acres.

Project Area: The area encompassing the proposed residential redevelopment project (grading limit); the area evaluated for potential impacts to sensitive biological resources, totaling 8.15 acres.

LIST OF ABBREVIATIONS & ACRONYMS

BIOS	Biogeographic Information and Observation System
BSA	Biological Site Assessment
CCA	California Coastal Act
CCC	California Coastal Commission
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFG	California Department of Fish and Game (now CDFW)
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CLAM	Community Land Trust Association of West Marin
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
County	County of Marin
Corps	U.S. Army Corps of Engineers
CRLF	California Red-legged Frog
CSRL	California Soils Resources Lab
CWA	Clean Water Act
Eden	Eden Housing, Inc.
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	(Federal) Endangered Species Act
ESHA	Environmentally Sensitive Habitat Area
LCP	Marin County Amended Local Coastal Program
LCP-IP	Marin County Amended Local Coastal Program Implementation Plan
LUP	Land Use Plan
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SCA	Stream Conservation Area
SSC	Species of Special Concern
SFP	State Fully Protected Species
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USCG	U.S. Coast Guard
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 Area
WRA	WRA, Inc.
WUI	Wildland Urban Interface

1.0 INTRODUCTION

On January 20, April 4, and June 4, 2021 WRA, Inc. (WRA) performed an assessment of biological resources at the site of the former U.S. Coast Guard (USCG) housing facility at 101 Commodore Webster Drive, Point Reyes Station, Marin County, California (APNs #119-240-73, and 119-236-10; hereafter Study Area) (Figure A-1, Appendix A).

1.1 Overview and Purpose

The purpose of this study was to gather the information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) and the requirements of the Marin County Community Development Agency, Planning Division.

A biological site assessment (BSA) provides general information on the presence, or potential presence, of sensitive species and habitats. These survey(s) contain the results of a focused protocol-level survey for listed plant species in the Study Area; however, protocol-level surveys for wildlife may or may not be included as part of the survey. This survey is not a formal wetland delineation; in instances where such a delineation may be required for project approval by local, state, or federal agencies, results would be reported herein, but may be presented elsewhere in separate reports. This survey is based on information available at the time of the study and on-site conditions that were observed on the date(s) the site was visited.

This report describes the results of the site visit, which assessed the Study Area for (1) the presence of sensitive land cover types, (2) the potential for land cover types on the site to support special-status plant and wildlife species, and (3) the presence of any other sensitive natural resources protected by local, state, or federal laws and regulations. Special-status species observed during the site assessment were documented and their presence is discussed herein. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys or other studies be conducted; recommendations for additional studies are provided, if necessary. WRA completed a draft BSA report associated with the initial Coastal Permit and Use Permit application submitted by the Project Applicant (defined below) in August 2022. This revised report addresses comments received from the County of Marin Community Development Agency, Planning Division, in a letter dated September 16, 2022, and comments received from the CCC in a letter dated September 14, 2022.

1.2 Project Description

The Community Land Trust Association of West Marin (CLAM), its partner, Eden Housing (Eden) ('Applicant', collectively) are seeking approval of the USCG Housing Facility Redevelopment Project (Project) which proposes to rehabilitate 36 existing townhomes to affordable housing, redevelop a former barracks building into 15 additional units of affordable housing, and convert an office and maintenance building into 3 units of affordable housing.

During the site visits, WRA identified several Environmentally Sensitive Habitat Areas (ESHA), including aquatic and terrestrial ESHAs. The Project Area contains existing nonconforming structures/uses that are located within aquatic and terrestrial ESHA buffers, and the development of the project will variably repair

existing nonconforming structures, repair structures within the reduced ESHA buffers, or remove existing nonconforming structures/uses where possible. A reduced buffer analysis was performed in this report where development is proposed within ESHA buffers. Best management practices and avoidance measures are included as part of the project and provided herein to ensure that wetlands, streams, and riparian habitats (aquatic resources collectively), and sensitive terrestrial resources (e.g. upland native grassland) within the Project are protected. The work which will occur within ESHA buffers is expected to create a net environmental improvement over existing conditions, by improving water quality, elimination of on-site invasive species, and increasing native vegetation cover. A complete listing of sensitive natural resources or potential ESHA within the Project Area is included in Section 5.0 below.

The affordable housing project includes the rehabilitation of 36 townhomes and adaptive reuse of Building 50 into 15 affordable housing units; the rehab of Building 100A into 3 affordable housing units, and the conversion and expansion of Building 1 into property management and resident services office space; the construction of a new playground at the center of the site; and the development of an on-site wastewater treatment system. Building 100C will be minimally updated, with no change in use as a mechanical shop and storage. The Project also proposes the removal of certain features such as a playground, and habitat restoration in those areas which would improve site drainage.

The existing hardscape areas around Building 1, including the small parking area, tennis court and other paved surfaces, will be removed and replaced with pervious surface or improved and repurposed to allow for better pedestrian flow, use and drainage.

The Project will remove 36 mature trees, all of which are non-native ornamental species, and none of which are on the Marin County Local Coastal Program-Implementation Plan (LCP-IP) list of Heritage or Protected Trees. Trees that will be removed are predominantly eucalyptus (*Eucalyptus grandis, E. globulus, E. g. 'compacta', E. nicholii, E. viminalis,* etc.), dead trees, and other ornamental trees which will be in the direct line of construction. Ten (10) of the aforementioned non-native eucalyptus trees to be removed, and one Leyland cypress (*Cupressus x leylandii*) to be removed are located within aquatic ESHA buffers, and are therefore subject to coastal development permitting requirements.

Based on section 24.04.625 (d) of the Marin County Municipal Code, grading is prohibited during the rainy season defined as October 15 through April 15 without an exception requested and granted. All grading and excavation will be conducted between April 16 and October 14.

As all major grading and excavation work will occur between April 16 and October 14, it is expected that initial grubbing and grading (including tree removal and initial grading) may occur during the nesting bird season, defined as: February 1 through August 31. To avoid impacts to nesting birds, WRA recommends that all vegetation removal (including tree trimming, if relevant) be performed from September 1 to January 31, outside of the general nesting bird season. If such timing is not feasible, a pre-construction nesting bird survey by a qualified biologist will be performed no more than 14 days prior to the initiation of tree removal. The survey should cover the tree removal areas and surrounding areas (as accessible) within 250 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer will be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer. This will result in no impact to nesting birds in the Project Area.

2.0 REGULATORY BACKGROUND

This report is intended to facilitate conformance of the proposed Project with the standards outlined in the Marin County Code and General Plan. In addition to the requirements of Marin County, the proposed Project may also be subject to several federal and state regulations designed to protect sensitive natural resources. Full analysis of these requirements in the context of the Project are addressed herein.

2.1 Federal and State Regulatory Setting

2.1.1 Sensitive Land Cover Types

Land cover types are herein defined as those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomenon. Typically, land cover types have identifiable boundaries that can be delineated based on changes in plant assemblages, soil or rock types, soil surface or near-surface hydroperiod, anthropogenic or natural disturbance, topography, elevation, etc. Many land cover types are not considered sensitive or otherwise protected under the environmental regulations discussed here. However, these land cover types typically provide essential ecological and biological functions for plants and wildlife, including, frequently, special-status species. Those land cover types that are considered or protected under one or more environmental regulations are discussed below.

Waters of the United States: The United States Army Corps of Engineers (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 waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the United States generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

Waters of the State: 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 Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat: Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction 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 California Code of Regulations (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). In addition, 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" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is 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.

Sensitive Natural Communities: Sensitive natural communities not discussed above 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 the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFG 2010, CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2022a). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2018) methodology, with those alliances 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 (CCR Title 14, Div. 6, Chap. 3, Appendix G).

2.1.2 Special-status Species

Plants: Special-status plants include taxa that have been listed as endangered or threatened, or are formal candidates for such listing, under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA). The California Native Plant Protection Act (CNPPA) lists 64 "rare" or "endangered" and prevents "take", with few exceptions, of these species. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under CEQA. 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. A description of the CNPS Ranks is provided in Appendices B and C.

Wildlife: As with plants, special-status wildlife includes species/taxa that have been listed or are formal candidates for such under ESA and/or CESA. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*)] that in some regards are similar to those provided by ESA. The CFGC designates some species as Fully Protected (SFP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration under CEQA, and are therefore considered special-status species. 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 (MBTA) and CFGC, i.e., 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.

Critical Habitat, Essential Fish Habitat, and Wildlife Corridors: Critical habitat is a term defined in the ESA as a specific and formally-designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. Note that designated critical habitat areas that are currently unoccupied by the species but which are deemed necessary for the species' recovery are also protected by the prohibition against adverse modification.

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provides for conservation and management of fishery resources in the U.S. 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.

Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

2.2 Marin County Regulatory Setting

In Marin County, a sensitive resource includes "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 . . ." Furthermore, The California Coastal Act (CCA) defines environmentally sensitive habitat area (ESHA) under Section 30107.5 and protected under section 30240 and include wetlands, rivers, streams and lakes, and riparian areas. For the purposes of this report, WRA has taken into consideration any areas that may meet the definition of any ESHA defined by the CCA, listed in the *Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas* ("California Coastal Commission guidelines", CCC 1981), or the Marin County Amended Local Coastal Program (LCP) Land Use Plan (LUP) (Marin County 2016).

The CCA defines an ESHA as follows:

> *"Environmentally sensitive habitat area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an*

ecosystem and which could be easily disturbed or degraded by human activities and developments. "

The CCC Guidelines discuss the various definitions for specific types of ESHAs, including wetlands, streams and riparian areas. Many of these definitions are synonymous with the definitions described above. Additional definitions are provided below.

Coastal Act Wetlands

The Coastal Act defines wetlands as:

"*Wetland means land within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens".*

(Public Resources Code § 30121)

CCC Administrative Regulations (Section 13577 (b)) provide a more explicit definition:

"Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats."

The Coastal Act defines the upland limit of wetlands as:

(1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; (2) the boundary between soil that is predominantly hydric and soil that is predominantly non-hydric; or (3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not."

Coastal Act Streams and Rivers: The Marin County LCP provides special protections for USGS blue-line streams, and establishes buffers to protect streams from the impacts of adjacent uses including development impacts from construction and post-construction activities within the LCP Unit II Area. Stream buffers are defined by the LCP as: "the area covered by riparian vegetation on both sides of the stream and the area 50 feet landward from the edge of the riparian vegetation." The LCP states that the buffer shall be the wider of the following on both sides of the stream: (a) the area 50 feet landward from the other edge of the riparian vegetation; or (b) the area 100 feet landward from the top of the stream banks; or (c) as recommended by the biological assessment."

Coastal Act Riparian Habitats: While riparian vegetation is not defined specifically in the California Coastal Act, it is defined by the LCP as the stream itself and the riparian vegetation growing adjacent to it. Common plant genera associated with this vegetation type in Unit II of the Coastal Zone within Marin

County include maple (*Acer* spp.), alder (*Alnus* spp.), ash (*Fraxinus* ssp.), and willow (*Salix* spp.). For the purposes of determination of status under the Coastal Act, we define riparian habitat as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). This definition is synonymous with the CDFW definition described above.

Coastal Act Terrestrial ESHA: The Marin County LCP/LUP defines terrestrial (non-aquatic) ESHA as habitats of plant and animal species listed under the Federal or California Endangered Species Act and existing populations of the plants listed as 1B or 2 by the California Native Plant Society; coastal dunes; groves of trees that provide colonial nesting and roosting habitat for butterflies or other wildlife; and riparian vegetation that is not associated with watercourse. Buffers for terrestrial ESHA shall be 50 feet Buffers for terrestrial ESHA shall be 50 feet, a width that may be adjusted by the County as appropriate to protect the habitat value of the resource, but in no case shall be less than 25 feet.

Marin County Stream Conservation Areas: In Marin County, a Stream Conservation Area (SCA) is designated along perennial, intermittent, and some ephemeral streams. 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 equaling 100 feet from TOB or 50 feet from edge of riparian, whichever is greater. With regard to ephemeral streams, such streams are subject to the SCA policies if it (a) supports riparian vegetation for a length of 100 feet or more, and/or (b) supports special status species and/or a sensitive natural community type, such as native grasslands, regardless of the extent of riparian vegetation associated with the stream. For those ephemeral streams that do not meet these criteria, a minimum 20-foot development setback shall be 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 Wetland Conservation Area (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 or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. 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.

Marin County Protected and Heritage Trees : The Marin County Local Coastal Plan – Implementation Plan defines "protected" and "heritage" which are comprised of native tree species including but not limited to: native oaks (*Quercus* spp.), willows (*Salix* spp.), Sargent cypress (*Hesperocyparis sargentii* [*Cupressus* s.]), and madrone (*Arbutus menziesii*) with a minimum diameter at breast height (DBH; measured 4.5 feet above grade) of six inches, and most other native tree species, including but not limited to Douglas fir (*Pseudotsuga menziesii*) and California bay (*Umbellularia californica*) with a minimum DBH of 10 inches. Heritage trees are defined as native oaks, willows, Sargent cypress, and madrone with a minimum DBH of 18 inches, and most other native tree species with a minimum DBH of 30 inches[1]. Removal of protected and/or heritage trees as defined above are subject to coastal development permitting requirements.

[1] Marin LCP Protected and Heritage Tree list treats the same species and sizes of trees as Protected and Heritage Trees.

3.0 ENVIRONMENTAL SETTING

The approximately 33.59-acre Study Area is set across two parcels including the former USCG housing facility and one additional parcel. It is located in western Marin County, on the southeastern edge of the unincorporated community of Point Reyes Station. Detailed descriptions of the local setting are below.

3.1 Topography and Soils

The overall topography of the Study Area is flat in previously developed areas, transitioning to a moderately-steep hill slope in the northwest portion of the Study Area, and undulating to flat topography associated with the Lagunitas Creek stream terrace. Elevations within the Study Area range from approximately 6 to 81 feet above sea level.

According to the *Soil Survey of Marin County* (USDA 1985), the Study Area is underlain by five soil mapping units: Blucher-Cole complex, 2 to 5 percent slopes; Cortina gravelly sandy loam, 0 to 5 percent slopes; Olompali loam, 2 to 9 percent slopes; Saurin-Bonnydoon complex, 2 to 15 percent slopes; and Xerothents, fill. The Study Area's soil mapping units are described below.

Blucher-Cole complex, 2 to 5 percent slopes. This soil mapping unit is very deep, and somewhat poorly drained silt loam to clay loam formed in alluvium from various types of rock. It consists of approximately 40 percent Blucher silt loam, and 30 percent Cole clay loam (USDA 1985). This map unit is located in basins and on alluvial fans at elevations between 0 and 500 feet above sea level. The native vegetation is typically dominated by annual grasses and forbs (USDA 1985).

Cortina gravelly sandy loam, 0 to 5 percent slopes. This soil mapping unit is very deep, and somewhat excessively drained gravelly sandy loam formed in alluvium derived from various kinds of rock. The mapping unit is located on valley floors and along streams at elevations between 25 and 300 feet above sea level. It consists of approximately 40 percent Blucher silt loam, and 30 percent Cole clay loam (USDA 1985). The native vegetation is typically dominated by annual grasses and forbs (USDA 1985).

Olompali loam, 2 to 9 percent slopes. This soil mapping unit is deep, and somewhat poorly drained loam formed in alluvium derived from various kinds of rock. The mapping unit is located on coastal terraces at elevations between 50 and 800 feet above sea level. This soil mapping unit consists predominantly of Olompali loam with limited inclusions of various other soils at upper ends of slopes, and along drainageways (USDA 1985). The native vegetation is typically dominated by annual grasses, forbs, and rushes (USDA 1985).

Saurin-Bonnydoon complex, 2 to 15 percent slopes. This soil mapping unit is moderately deep, and well drained clay loam to gravelly loam formed in material derived from sandstone and shale. The mapping unit is located on rolling uplands with complex slopes at elevations between 50 and 1,500 feet above sea level. This soil mapping unit consists of 50 percent Saurin clay loam, and 30 percent gravelly loam with inclusions of various other soil types (USDA 1985). The native vegetation is mainly annual grasses, forbs, and scattered brush (USDA 1985).

Xerothents, fill. This mapping unit consists of soil material that has been moved mechanically and mixed. Most of this unit is in urban areas that have been developed previously. Varying amounts of rock, concrete, asphalt and other material are typically present within this mapping unit (USDA 1985).

3.2 Climate and Hydrology

The Study Area is located within the coastal fog belt of Marin County where summer temperatures are buffeted by fog and fog drip contributes to annual rainfall totals. Winter "tule" fog is common in the Study Area, and summer "coastal" fog emerges with increased interior temperatures. The average annual maximum temperature at the Point Reyes Lighthouse Station (CA047027), located approximately 13 miles west-southwest (WSW) of the Study Area, is 56.7 degrees Fahrenheit, while the average monthly minimum temperature is 48.1 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with a monthly average of 17.05 inches. Precipitation bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March (WRCC 2022).

The local watershed is Tomales Bay (HUC 12: 180500050304). Lagunitas Creek, a perennial stream, is located along the eastern border of the Study Area and is the prominent aquatic feature in the Study Area vicinity. Precipitation, overland sheet flow, rare flooding from Lagunitas Creek, and a rising-lowering shallow water table are the primary hydrologic sources. Local hydrology drains to the south into Lagunitas Creek and on towards Tomales Bay to the west.

3.3 Land Cover and Land Use

The Study Area consists of a former USCG housing facility, and undeveloped areas consisting of a perennial stream, Lagunitas Creek, adjacent floodplain/riparian habitat, and ungrazed grasslands. Historic aerial imagery (NETR 2022) indicates that the site was developed by the USCG some time between 1971 and 1983. The site, which has been vacant for several years, has recently been used by local fire departments for training and wildfire emergency staging.

This re-development project is located on the southeastern edge of the unincorporated town of Point Reyes Station. Regional land uses include rural residential, livestock grazing, and protected open space (Google Earth 2022).

4.0 ASSESSMENT METHODS

Prior to the site visit, WRA biologists reviewed the following literature and performed database searches to assess the potential for sensitive natural communities (e.g., wetlands) and special-status species (e.g., endangered plants):

- *Soil Survey of Marin County, California* (USDA 1985)
- Inverness 7.5-minute quadrangle (USGS 2022)
- Contemporary aerial photographs (Google Earth 2022)
- Historical aerial photographs (NETR 2022)
- National Wetlands Inventory (NWI, USFWS 2022a)
- California Natural Diversity Database (CNDDB, CDFW 2022a)
- CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2022b)
- California Native Plant Society Electronic Inventory (CNPS 2022a)
- Consortium of California Herbaria (CCH 2021)

- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- *The Marin County Breeding Bird Atlas* (Shuford 1993)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)
- *eBird* Online Database (eBird 2022)
- *Marin Flora* (Howell et al. 2007)
- *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009)
- *A Manual of California Vegetation Online* (CNPS 2022b)
- *Preliminary Descriptions of the Terrestrial Natural Communities* (Holland 1986)
- *California Natural Community List* (CDFW 2018a)

Database searches for special-status species (i.e., CNDDB, CNPS) focused on the Inverness, Drakes Bay, Tomales, Point Reyes NE, Petaluma, San Geronimo, Bolinas, and Double Point USGS 7.5-minute quadrangles for special-status plants. Appendix A contains observations of special-status species documented within a five-mile radius of the Study Area.

Following the remote assessment, a botanist with 40-hour Corps wetland delineation and wildlife biologist training traversed the entire Study Area on foot to document: (1) land cover types (e.g., terrestrial communities, aquatic resources), (2) if and what type of aquatic natural communities (e.g., wetlands) are present, (3) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, and (4) if special-status species are present[2]. Site visits were conducted on several dates throughout 2021, including January 20, April 4, and June 4.

4.1 Land Cover Types

4.1.1 Terrestrial Land Cover Types

Terrestrial land cover types were mapped across the Study Area and evaluated to determine if such areas have the potential to support special-status plants or wildlife. In most instances, communities are delineated based on distinct shifts in plant assemblage (vegetation), and follow the *California Natural Community List* (CDFW 2018a), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *A Manual of California Vegetation, Online Edition* (CNPS 2022b). In some cases, it may be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature; should an undescribed variant be used, it will be 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), were evaluated as sensitive as part of this evaluation.[3]

4.1.2 Aquatic Resources

Aquatic resources include Waters of the U.S., Waters of the State, and Streams, Lakes, and Riparian Habitat as defined in the CWA, Porter-Cologne Act, and CFGC, respectively. Marin County mandates

[2] Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Section 4.2 if the site assessment would constitute a formal or protocol-level species survey.

[3] Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2018)

setbacks from these aquatic resources, and therefore requires mapping of the outward extent of such features.

This site assessment does not constitute a formal wetland delineation; however, the surveys looked for superficial indicators of wetlands such as hydrophytic vegetation (i.e., plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales. If sample points were taken, WRA followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008).

If streams potentially jurisdictional under the CWA and/or the CFGC are noted on a site, they are delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high water mark would be used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank would be used to determine the extent of CFGC Section 1602 and 401. Streams with associated woody vegetation were assessed to determine if these areas would be considered riparian habitat by the CDFW following *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994). Finally, all streams were assessed to determine if they meet the criteria of an SCA per the Marin CWP.

4.2 Special-status Species

4.2.1 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the greater vicinity through a literature and database review. Database searches for known occurrences of special-status species focused on the 7.5-minute USGS quadrangles mentioned above for special-status species.

A preliminary site visit was made on January 20, 2021 to evaluate the presence of suitable habitat for special-status species. Suitable habitat conditions are 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 warranted, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. Additional targeted protocol-level surveys for special-status plants were conducted on April 4, and June 4, 2021. Methods for the assessments are described below. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2.

4.2.2 Special-status Plants

A general botanical assessment was performed on January 20, 2021, and a follow up protocol-level rare plant survey was conducted on April 4, and June 4. The assessments consisted of traversing the entirety of the Study Area on foot and identifying all observed plant species to the taxonomic level necessary to determine whether or not they were sensitive. Habitat elements required or associated with certain species or species groups were searched for and noted. Such habitat elements include, but are not limited to: plant assemblages and vegetation structure; soil texture, parent material, and hydroperiod; surface and subsurface hydroperiods; topography, aspect, slope, and elevation; site management, including vegetation management; distance to documented occurrences of special-status plants; etc.

To determine the presence or absence of special-status plant species, focused surveys were conducted within the Study Area on April 4, and June 4, 2021. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. The field surveys were conducted by a WRA botanist familiar with the flora of Marin and surrounding counties. The surveys were performed in accordance with guidance described by resource experts and agencies (CNPS 2001, CDFW 2018c, USFWS 1996). Plants were identified using *The Jepson Manual, 2nd Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora 2022), to the taxonomic level necessary to determine whether or not they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2021), unless otherwise noted.

4.2.3 Special-status Wildlife

A general wildlife assessment was performed on January 20, 2021. This assessment consisted of traversing the entirety of the Study Area as well as substantial portions of the Subject Property. Habitat elements required or associated with certain species (e.g., northern spotted owl) or species groups (e.g., bats, anadromous fish) were searched for and noted. Such habitat elements include, but are not limited to: plant assemblages and vegetation structure; stream depth, width, hydro-period, slope, and bed-and-bank structure; rock outcrops, caves, cliffs, overhangs, and substrate texture and rock content; history of site alteration and contemporary disturbances; etc.

4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2022b) and the NMFS Essential Fish Habitat Mapper (NMFS 2022) were queried to determine if critical habitat for any species or EFH, respectively, occurs within the Study Area. To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), habitat connectivity data available through the CDFW Biogeographic Information

and Observation System (BIOS) (CDFW 2022b). Additionally, aerial imagery (Google 2022) 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.

5.0 ASSESSMENT RESULTS

5.1 Land Cover Types

WRA observed nine land cover types and aquatic resources within the Study Area with only developed/landscaped, and non-native annual grassland occurring in the Project Area (Appendix A, Figure 4). The Project Area has been intentionally sited to avoid direct impacts to all sensitive terrestrial land cover types, and aquatic resources. All terrestrial land cover types and aquatic resources observed in the Study Area are described in detail below.

5.1.1 Terrestrial Land Cover Types

The Study Area contains four terrestrial land cover types, including: developed/landscaped areas, non-native annual grassland, purple needlegrass grassland, and California bay forest. Of these terrestrial land cover types, only purple needlegrass grassland classifies as a terrestrial ESHA. Terrestrial land cover types in the Study Area are described in detail below.

Developed/Landscaped Area (no vegetation alliance). No Rank. The Study Area contains approximately 9.66 acres of previously developed/landscaped areas. Within the Study Area, developed/landscaped portions are composed of the former USCG barracks, buildings, associated infrastructure (e.g. roads, parking lots, and sidewalks), and ornamental trees and shrubs. The topography of the developed/landscaped area has been altered from its original form, graded to accommodate development. The vegetation is highly altered, consisting of non-native ornamental trees and shrubs, and disturbance tolerant herbs. Species include Deodar cedar (*Cedrus deodara*), Monterey pine (*Pinus radiata*), Mexican fan palm (*Washingtonia robusta*), slim oat (*Avena barbata*), English lawn daisy (*Bellis perennis*), and bristly ox-tongue (*Helminthotheca echioides*). This community is not considered sensitive by Marin County, CDFW, or any other regulatory entity.

Non-native annual grassland (various vegetation alliances; xeric, non-wetland). No Rank. The Study Area contains approximately 7.77 acres of xeric (non-wetland) non-native annual grassland composed of several alliances of annual and perennial non-native grasses. Vegetative cover within this community is typically dominated by dense non-native invasive grasses and forbs including slim oat (*Avana barbata*), ripgut brome (*Bromus diandrus*), reed fescue (*Festuca arundinacea*), and purple false brome (*Brachypodium distachyon*). This community borders and intergrades with adjacent stands of native purple needlegrass grassland on slopes, and it borders mesic grassland, and seasonal wetlands on low-lying flats and depressions. Commonly observed forbs within non-native annual grassland included coastal heron's bill (*Erodium cicutarium*), sheep sorrel (*Rumex acetosella*), lupine (*Lupinus bicolor*), and hairy cat's ear (*Hypochaeris radicata*). This community is not considered sensitive by Marin County, CDFW, or any other regulatory entity.

Purple needlegrass grassland (Needlegrass – melic grass grassland (*Stipa* [*Nassella*] spp. – *Melica* spp. Herbaceous Alliance) G4, S4. The Study Area contains approximately 0.61 acre of purple needlegrass grassland. This vegetation community occupies portions of the uppermost slope in the northern portion of the Study Area, as well as a small area in the southern portion of the Study Area. This community within the Study Area occurs in upland (xeric) areas on slopes. This alliance was mapped following CNPS (2022b) in areas containing purple needlegrass (*Stipa pulchra*) with greater than 10 percent relative cover. Within the Study Area, this community contains 10 to 40 percent relative cover of purple needlegrass. Other species observed include slim oat, purple false brome, California oatgrass (*Danthonia californica*), lupine, blue eyed grass (*Sisyrinchium bellum*), and flax (*Linum bienne*). Although purple needlegrass grassland was recently lumped by CDFW into the needlegrass – melic grassland alliance which is considered apparently secure globally, and in California (i.e. G4, S4), purple needlegrass grassland within the Study Area fits within the membership rules of the *Stipa* [*Nassella*] *pulchra* – *Bromus* spp. Association, which is considered sensitive by CDFW (CDFW 2018a). Therefore, this community is considered a terrestrial ESHA subject to a 50-foot, or minimum (reduced) 25-foot development setback. A reduced buffer analysis would be required when adjusting the buffer to less than 50 feet. However, the Project avoids all terrestrial ESHA by more than 50 feet. Thus, no reduced buffer analysis is required or provided for terrestrial ESHAs.

California bay forest (*Umbellularia californica* Forest Alliance) G4, S3. The Study Area contains approximately 1.13 acres of California bay forest in the northern portion of the Study Area. California bay is a native, evergreen broadleaf tree which is common and widespread throughout Marin County (Howell et al. 2007). This alliance was mapped following CNPS (2019b) as containing California bay greater than 50 percent relative cover in the tree canopy. Within the Study Area, this community borders the arroyo willow thicket riparian community, on upland slopes above the riparian zone. The canopy is dominated California bay, with inclusions of non-native invasive blue gum eucalyptus (*Eucalyptus globulus*), and coast live oak (*Quercus agrifolia*). The understory is sparsely dominated by forget me not (*Myosotis latifolia*), lady fern (*Athyrium filix-femina* var. *cyclosorum*), and poison oak (*Toxicodendron diversilobum*). California bay forest is reported by the CDFW with a rarity ranking of G4, S3 (CNPS 2022b), indicating that it is globally secure but vulnerable within California. However, this community is widespread and abundant in Marin County. Due to its locally common distribution, presence of non-native invasive blue gum eucalyptus (*Eucalyptus globulus*), and likely presence of sudden oak death (*Phytophthora ramorum*), as evidenced by dead and dying coast live oak within this community, this community is not considered sensitive locally, nor does it classify as a terrestrial ESHA.

5.1.2 Aquatic Resources

The Study Area contains five aquatic land cover types described in detail below, including: arroyo willow thicket (riparian), perennial stream, ephemeral ditch, CCC seasonal wetland (one or more parameter), and Corps seasonal wetland (three parameter). All aquatic land cover types, besides ephemeral ditch, are considered aquatic ESHAs.

Arroyo willow thicket (riparian) (*Salix lasiolepis* Shrubland Alliance), G4, S4, CDFW Jurisdiction, Aquatic ESHA, SCA. The Study Area contains approximately 11.44 acres of arroyo willow (*Salix lasiolepis*) thicket associated with the stream and floodplain of Lagunitas Creek, a perennial stream located along the eastern border of the Study Area. This alliance was mapped following CNPS (2022b) as containing arroyo willow greater than 50 percent relative cover in the tree canopy. The canopy is dominated arroyo willow

with inclusions of red willow (*Salix laevigata*), red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*). The understory is typically dominated by dense cover of California blackberry (*Rubus ursinus*). Arroyo willow thicket is reported by the CDFW with a rarity ranking of G4, S4 (CNPS 2022b), indicating that it is globally secure and secure within California. However, this community is considered riparian vegetation under the jurisdiction of CDFW per Section Sections 1600-1616 of the CFGC. Arroyo willow thicket classifies as an aquatic ESHA subject to a minimum 50-foot development setback.

Perennial stream, Corps, RWQCB, CDFW Jurisdiction, Aquatic ESHA, SCA. The Study Area contains approximately 1.61 acre of perennial stream (Lagunitas Creek). Lagunitas Creek is located mostly outside of the Study Area, but small portions of its western side enter the eastern boundary of the Study Area. Lagunitas Creek in the vicinity of the Study Area is approximately 30 to 60 feet wide between OHWMs, and the stream contained flowing water during the site visits. Lagunitas Creek is bordered by a riparian arroyo willow thicket, and non-native annual grassland described above. Areas mapped as perennial stream are considered jurisdictional under Section 404 of the CWA, the Porter-Cologne Act, and Section 1600-1616 of the CFGC. Areas mapped as perennial stream classify as an aquatic ESHA subject to a buffer which is the wider of the following: (a) 50 feet landward from the outer edge of the riparian vegetation; or (b) the area 100 feet landward from the top of the stream banks; or (c) as recommended by the biological assessment. Since the riparian vegetation extends beyond 50 feet from the top of the stream banks on the Project side, the applicable ESHA buffer is 50 feet landward of the outer edge of riparian vegetation.

Ephemeral ditch, Corps, RWQCB Jurisdiction, non-ESHA. The Study Area contains approximately 0.01 acre of potentially Corps, and RWQCB jurisdictional ephemeral ditch. One ditch is located within the riparian woodland in the north of the site along an historic dirt road. The other ephemeral ditch which is closer to the Project Area originates from a culvert, located in the southern portion of the Study Area, south of the entry road. The ephemeral ditch is approximately 30 feet in length and approximately 2 to 4 feet wide between top of bank (TOB). The ephemeral ditch likely flows only during periods of above average precipitation. This feature flows into an adjacent CCC seasonal wetland (one parameter). Although this feature appears to be manmade, it may be considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act. However, ephemeral drainages do not meet the definition of 'stream' per the LCP-IP, which only includes intermittent and perennial streams. Therefore, the ephemeral ditch is not considered an ESHA, nor does it qualify as an SCA as it is an ephemeral drainage feature, lacking riparian vegetation. Therefore, ephemeral ditch features are subject to a 20 -foot ephemeral drainage setback per development standards.

CCC seasonal wetland (one parameter, mesic grassland), CCC Jurisdiction, Aquatic ESHA. The Study Area contains approximately 0.67 acre of grassland areas dominated by hydrophytic (facultative) grasses, meeting one wetland parameter (hydrophytic vegetation dominance test). CCC seasonal wetlands are located in low lying concave areas in the Lagunitas Creek floodplain, and in one location on the hillslope in the northwest portion of the Study Area, where a slightly mesic area is located. The two CCC seasonal wetlands located in the low-lying concave areas are bordered by more mesic seasonal wetland areas which met three wetland parameters. Areas mapped as CCC seasonal wetland are dominated by facultative grasses including common velvetgrass (*Holcus lanatus*), Italian ryegrass (*Festuca perennis*), and beardless wild rye (*Elymus triticoides*). These areas were investigated for indicators of hydrology and hydric soils, and hydric soils were characteristically absent; indicators of hydrology were occasionally

present. Areas mapped as CCC seasonal wetland are not jurisdictional to the Corps or RWQCB, but are considered jurisdictional to the CCC, and are considered aquatic ESHA requiring a 100 foot buffer, or minimum 50-foot development setback. Reduction of the wetland buffer to less than 100 feet requires a buffer adjustment analysis (provided in section 6.1.2, below) and cannot be reduced to a width of less than 50 feet from the edge of wetland vegetation. CCC seasonal wetlands do not qualify as WCAs as they lack more than two wetland parameters.

Seasonal wetland, Corps, RWQCB Jurisdiction, Aquatic ESHA, WCA. The Study Area contains approximately 0.69 acre of seasonal wetland, meeting three wetland parameters (hydrophytic vegetation, hydric soils, and hydrology). Seasonal wetlands within the Study Area are located in low-lying flat to concave areas in the Lagunitas Creek floodplain, and along the hillslope in the northwest portion of the site in a seep location. Dominant vegetation within seasonal wetlands included Mexican rush (*Juncus mexicanus*), Italian ryegrass, common velvetgrass, and barley (*Hordeum marinum* ssp. *gussoneanum*), with subdominance by brown headed rush (*Juncus phaeocephalus*), waxy mannagrass (*Glyceria declinata*), and tall cyperus (*Cyperus eragrostis*). Areas mapped as seasonal wetland, also contained indicators of wetland hydrology (including saturation, high water table) and hydric soils (including redox dark surface, or depleted matrix). Areas mapped as seasonal wetland are likely considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act, and would therefore classify as an aquatic ESHA, requiring a 100 foot buffer, or minimum 50-foot development setback. Reduction of the wetland buffer to less than 100 feet requires a buffer adjustment analysis (provided in section 6.1.2, below) and cannot be reduced to a width of less than 50 feet from the edge of wetland vegetation.

5.2 Special-status Species

5.2.1 Special-status Plant Species

Based upon a review of the resource databases listed in Section 4.0, 112 special-status plant species have been documented in the vicinity of the Study Area. Twenty-five of these plants have the potential to occur in the Study Area; however only one of these plants, congested-headed hayfield tarplant is considered to have potential to occur in the Project Area. The remaining 87 special-status plants documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal) 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, tidal 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., previous development of Coast Guard housing site) has degraded the localized habitat necessary to support the special-status plant species

Focused surveys for special-status plants determined to have a potential to occur in the Study Area were conducted on January 20, April 9, and June 4, 2021, and no special-status plants were identified in the Study Area or Project Area. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. Therefore, special-status plants are considered absent from the Study Area and Project Area. The following species were initially determined to have potential to occur in the Study Area:

- Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), FE, Rank 1B.1
- Bent-flowered fiddleneck (*Amsinckia lunaris*), Rank 1B.2
- Swamp harebell (*Campanula californica*), Rank 1B.2
- Buxbaum's sedge (*Carex buxbaumii*), Rank 4.2
- Bristle-stalked sedge (*Carex leptalea*), Rank 2B.2
- Johnny-nip (*Castilleja ambigua* var. *ambigua*), Rank 4.2
- Western leatherwood (*Dirca occidentalis*), Rank 1B.2
- California bottle-brush grass (*Elymus californicus*), Rank 4.3
- Supple daisy (*Erigeron supplex*), Rank 1B.2
- Marin checker lily (*Fritillaria lanceolata* var. *tristulis*), Rank 1B.1
- Fragrant fritillary (*Fritillaria liliacea*), Rank 1B.2
- Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), Rank 1B.2
- Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), Rank 1B.2
- Point Reyes horkelia (*Horkelia marinensis*), Rank 1B.2
- Thin-lobed horkelia (*Horkelia tenuiloba*), Rank 1B.2
- Harlequin lotus (*Hosackia gracilis*), Rank 4.2
- Coast iris (*Iris longipetala*), Rank 4.2
- Bristly leptosiphon (*Leptosiphon acicularis*), Rank 4.2
- Coast lily (*Lilium maritimum*), Rank 1B.1
- Point Reyes meadowfoam (*Limnanthes douglasii* ssp. *sulphurea*), SE, Rank 1B.2
- Marsh microseris (*Microseris paludosa*), Rank 1B.2
- Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), Rank 4.2
- North Coast semaphore grass (*Pleuropogon hooverianus*), ST, Rank 1B.2
- Nodding semaphore grass (*Pleuropogon refractus*), Rank 4.2
- Two-fork clover (*Trifolium amoenum*), FE, Rank 1B

5.2.2 Special-status Wildlife Species

A total of 47 special-status wildlife species have been documented in the vicinity of the Study Area (CDFW 2022a, other sources). Fifteen of these species are considered present or have the potential to occur in the Study Area. The remaining 32 species are unlikely or have no potential to occur due to one or more of the following reasons:

- Aquatic habitats (e.g., marine waters, estuaries, vernal pools) necessary to support the special-status wildlife species are not present in the Study Area
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Study Area
- Physical structures and vegetation (e.g., mines, old-growth native coniferous trees) necessary to provide nesting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area
- Host plants (e.g., violets [*Viola*]) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife species documented nesting range.

The following special-status wildlife species are considered present or have the potential to occur in the Study Area.

Listed species

California red-legged frog (*Rana draytonii*). Federal Threatened, CDFW Species of Special Concern. Moderate Potential (Presence Unknown). The California red-legged frog (CRLF is the only native "pond frog" with a historic range throughout much of California. It is primarily aquatic; suitable breeding habitat is characterized by deep and still or slow-moving water associated with emergent marsh and/or overhanging/flooded riparian vegetation (USFWS 2010). Such habitats must typically hold water for a minimum of 20 weeks for successful reproduction to occur, and include ponds (perennial and temporary), backwaters in streams/creeks, marshes, lagoons, and dune ponds. Breeding typically occurs from November through April. Dependent upon local conditions, individuals may complete the entire life cycle in a particular habitat patch (e.g., a perennial pond suitable for all life stages), or utilize multiple habitat types. In aquatic features that dry down seasonally, CRLFs often undergo aestivation (a period of inactivity) during the dry months, over-summering in small mammal burrows, moist leaf litter, incised stream channels, or large cracks in the bottom of dried ponds (Thomson et al. 2016). During terrestrial dispersals and movements, frogs can travel greater than 1 mile over a variety of topographic and habitat types (Bulger et al. 2003). Upland movements habitats are variable and typically include riparian corridors, grasslands, and oak savannas.

As per documented occurrences in CNDDB (CDFW 2022a), CRLF is present in the vicinity of the Study Area. The nearest documented aquatic breeding occurrence is located approximately 0.2 mile to the south, and there are six additional occurrence locations within 1 mile (CDFW 2022a). CRLF breeding within the Study Area is unlikely overall, given the lack of ponds or isolated, deeper stream channels. However, there is potential for the species to occur in non-breeding aquatic habitat (e.g., inundated riparian side channels and backwaters) within and adjacent to the Study Area, and also to use uplands and other portions of the Study Area for movement and dispersal. Aestivation in suitable refugia (e.g., burrows) also has some potential to occur there.

Listed salmonids. Present (Lagunitas Creek only). As per Leidy et al. (2005) and CDFW (2022a), the following listed salmonid species are considered present in waters of Lagunitas Creek, including the limited portions of the stream within the Study Area:

- Steelhead (*Oncorhynchus mykiss irideus*) - Central California Coast DPS. Federal Threatened
- Coho salmon (*O. kisutch*) - Central California Coast ESU. Federal Endangered, State Endangered

Though natural history details differ between the two species, both spend the majority of their life cycle in the ocean but spawn and rear perennial to near-perennial freshwater streams with cool to clear water, high dissolved oxygen levels and strong flows. The reach of the creek within (and adjacent to) the Study Area provides in- and out-migration habitat and may also provide some degree of rearing support (e.g., within pools) depending on hydrological conditions in a given year. Lagunitas Creek is also designated as critical habitat for both species (see below).

California freshwater shrimp (*Syncaris pacifica*). Federal Endangered, State Endangered. Present (Laugnitas Creek only). The California freshwater shrimp is endemic to Marin, Sonoma, and Napa Counties. This species occurs in perennial streams, namely low-elevation and low-gradient stream reaches where the banks are structurally diverse, containing undercuts, exposed roots, overhanging woody debris, and/or overhanging vegetation. Lagunitas Creek is known to be occupied, and as per CDFW (2022a), surveys in 1998-1999 found the species "to Point Reyes Station" from an upstream location. Presence and abundance within the focal reach of the stream presumably varies dependent on current hydrological and other habitat conditions.

Other species

American badger (*Taxidea taxus*). CDFW Species of Special Concern. Moderate Potential (Remnant burrows observed). The American badger is a large, semi-fossorial member of the Mustelidae (weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species to be large, depending on the habitat available; population density averages one badger per square mile in prime open country (Long 1973).

Several remnant burrow entrances appearing to have been made by badgers were observed on the June 4, 2021 site visit. All of these were located in the open grassland area in the northern portion of the Study Area, and exhibited large holes and an elliptical shape, often with claw marks on the lateral sides of the entrances. None of the burrows examined appeared recently constructed or in active use by badgers. When present, soil throw piles were desiccated (not fresh), and the burrows featured cobwebs across the entrances, collapsed tunnels, or were in an otherwise clear state of degraded integrity. Though development is in close proximity, the area remains suitable for use by badgers under existing conditions (including the non-occupied status of buildings). Badger use of the area likely varies across years, and individuals have the potential to be present in the future.

Special-status bats. Moderate Potential. The following special-status bat species have CNDDB occurrences in the vicinity (CDFW 2021a) and the potential to be present within the Study Area:

- Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority

- Townsend's big-eared bat (*Corynorhinus townsendii*). CDFW Species of Special Concern, WBWG High Priority

Within the Study Area both species are most likely to use building interiors for roosting, including maternity (breeding) roosting if conditions are favorable. Suitable substrates would include false ceilings, attics, or simply undisturbed/secluded spaces that retain warmth and have ingress/egress points accessible to bats. Other non-special-status bat species also have the potential to roost within these areas.

Grasshopper sparrow (*Ammodramus savannarum*). CDFW Species of Special Concern. Moderate Potential. The grasshopper sparrow is a summer resident in California, breeding in open grassland and prairie-like habitats with short- to moderate-height vegetation, and often scattered shrubs (Shuford and Gardali 2008). Both perennial and annual (non-native) grasslands are used. Nests are placed on the ground and well concealed, often adjacent to grass clumps (Shuford and Gardali 2008). Grasshopper sparrows are secretive and generally detected by voice. Insects comprise the majority of the diet. Though limited in contiguous size, areas of grassland within the Study Area may support breeding by this species, which is known from the vicinity (eBird 2022, Shuford 1993). The likelihood of presence may depend on the current condition (height, density) of on-site herbaceous vegetation.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential. 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). Nesting occurs in trees, which 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. Although not observed during site visits, the Study Area and surrounds provide suitable year-round habitat for this species and it may be present in the future.

San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuos*). CDFW Species of Special Concern. Moderate Potential. This local subspecies of the common yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, brackish marshes, and saltwater marshes. The breeding range extends from Tomales Bay in the north, Carquinez Strait to the east, and Santa Cruz County to the south. This species requires thick, continuous cover such as tall grasses, tule patches, or riparian vegetation down to the water surface for foraging and prefers willows for nesting (Shuford and Gardali 2008). Riparian vegetation with a dense understory may support year-round use by this species, including nesting.

Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*). CDFW Species of Special Concern. Moderate Potential. This subspecies of the common and widespread savannah sparrow is a year-round resident of the coastal California fog belt. It typically occupies upper tidally-influenced habitats, often found where wetland communities merge into grassland. Nesting occurs in vegetation on or near the ground, including along roads, levees, and canals (Shuford and Gardali 2008). Like most sparrows, Bryant's consumes primarily invertebrates and vegetable matter (e.g., seeds). Though limited in contiguous size, areas of grassland within the Study Area may support breeding by this species, which is known from the

vicinity (eBird 2022, Shuford 1993). Similar to grasshopper sparrow (above), the likelihood of presence may depend on the current condition (height, density) of on-site herbaceous vegetation.

(Brewster's) Yellow warbler (*Setophaga petechia brewsteri*). CDFW Species of Special Concern. Moderate Potential. The yellow warbler is a neotropical migrant bird that is widespread in North America, but has declined throughout much of its California breeding range. The Brewster's (*brewsteri*) subspecies is a summer resident and represents the vast majority of yellow warblers that breed in California. West of the Central Valley, typical yellow warbler breeding habitat consists of dense riparian vegetation along watercourses, including wet meadows, with willow growth especially being favored (Shuford and Gardali 2008). Insects comprise the majority of the diet. This species has the potential to nest in riparian woodland along Lagunitas Creek.

Western pond turtle (*Emys marmarota*). CDFW Species of Special Concern. High Potential (Lagunitas Creek). The western pond turtle is the only freshwater turtle native to most of California. This species is highly aquatic, typically inhabiting perennial waters including lakes, ponds/reservoirs, rivers, streams, and canals that provide submerged cover and suitable exposed basking structures such as rocks, logs and mats of emergent vegetation. Nesting usually occurs in spring to early summer, with eggs hatching in the fall; nests are excavated in upland areas with friable soil, usually on unshaded slopes within approximately 300 feet of water (Thomson et al. 2016). Hatchlings require shallow water with relatively dense emergent and aquatic vegetation to provide forage, usually aquatic invertebrates (Thomson et al. 2016). Lagunitas Creek provides perennial aquatic habitat for western pond turtle, and this species is presumably present there at least intermittently. Upland nesting within the Project Area is unlikely given its distance from the stream (approximately 220 feet at the nearest location and mostly greater), the presence of dense herbaceous vegetation between the stream and the Project Area, and the developed/disturbed nature of the portion of the Project Area facing the stream.

Tomales roach (*Lavinia symmetricus* ssp. "2"). CDFW Species of Special Concern. High Potential (Lagunitas Creek only). This local subspecies of the more widespread California roach (*L. symmetricus*), a native minnow, occurs in tributary streams of Tomales Bay. Occupied habitats are varied and include small, intermittent reaches, isolated pools (including those with low oxygen levels), cold, well-aerated streams, and even modified (e.g., channelized) stream environments. This species is likely present in the reach of Lagunitas Creek within the Study Area; abundance presumably varies based on current hydrological and other habitat conditions.

Monarch butterfly (*Danaus plexippus*). Federal Candidate, winter roosts protected by CDFW. Moderate Potential (winter roosting). Monarch butterfly winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind-protected tree groves, with nectar and water sources nearby, and are often on south-, southwest-, or west-facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015). There is no record of monarch roosting within or near the Study Area; the nearest such site in CNDDB is located greater than 8 miles to the west on the Point Reyes peninsula (CDFW 2022a), and the Western Monarch Thanksgiving Count does not include the Study Area or adjacent areas (Xerces Society 2022). However, mature eucalyptus trees (commonly used by wintering monarchs) are

present within the Study Area, including some trees in stands and rough rows, which have some potential to be used by wintering monarchs.

Non-status nesting birds. Present/High Potential. Native birds with baseline protections under the MBTA and CFGC may use a variety of on-site habitats and substrates for nesting; the diversity of such species is presumably highest within the riparian woodland. However, other on-site vegetation (trees, shrubs, landscaping) is also likely used to some degree, as are the exteriors of buildings (under eaves, in crevice-like substrates, etc.). Though netting was installed under the eaves of most buildings during WRA's site visits, presumably to preclude bird nesting in the covered areas, active nests belonging to cliff swallows (*Petrochelidon pyrrhonota*) were observed on one building lacking the exclusion netting, and apparent barn swallow (*Hirundo rustica*) nests were also observed on light fixtures.

5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

The Study Area does not contain any designated critical habitat for USFWS-listed species, but the reach of Lagunitas Creek within and adjacent to the Study Area is designated critical habitat for steelhead and coho salmon (USFWS 2022a, NMFS 2022a). This portion of Lagunitas Creek is also mapped as Essential Fish Habitat for salmonids (NMFS 2022b).

As per CalTrans (2010) and CDFW (2022b), the Study Area is not within a mapped wildlife corridor, but is a very small component of a substantially larger "natural landscape block" which includes most of western Marin County. At a more local scale, Lagunitas Creek and associated riparian woodland provide noteworthy aquatic and terrestrial movement corridors, connecting southern Tomales Bay (and ultimately for some species, the ocean) with interior areas to the east. The remainder of the Study Area is already developed or otherwise bounded by development to the west and north, limiting any corridor functions.

5.2.4 Marin County Protected and Heritage Trees

Per the client's arborist survey (Urban Forestry Associates 2022), the project will remove 36 mature trees, all of which are non-native ornamental species. Trees that will be removed are include several eucalyptus species, dead trees, and other ornamental trees, which will be in the direct line of construction. None of the trees slated for removal are on the LCP-IP protected and heritage tree list. However, trees to be removed regardless of species within ESHA buffers are considered 'major vegetation' removal and are therefore subject to coastal development permitting requirements.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Land Cover Types

6.1.1 Terrestrial Land Cover Types

The Study Area contains four terrestrial land cover types, developed/landscaped, non-native annual grassland, California bay forest, and purple needlegrass grassland. Of the four terrestrial land cover types, only purple needlegrass grassland, a native grassland vegetation community, is considered a terrestrial

ESHA. The Proposed Project has been intentionally designed to avoid direct impacts to all ESHAs, including terrestrial and aquatic resources, and purple needlegrass grassland will be avoided by the maximum 50 foot terrestrial ESHA buffer. Therefore, no impacts to terrestrial ESHA are anticipated, and no avoidance and minimization measures are recommended.

6.1.2 Aquatic Resources

The Study Area contains five sensitive aquatic resources including perennial stream, ephemeral ditch, riparian arroyo willow thicket, Corps seasonal wetland (three parameter), and CCC seasonal wetland (one parameter); all but ephemeral ditch are considered aquatic ESHAs. The perennial stream and associated riparian arroyo willow thicket also qualify as an SCA, and Corps seasonal wetlands qualify as WCA per the Marin Countywide Plan. The applicable setback from the perennial stream and associated riparian vegetation is 50 feet from the edge of the riparian vegetation, equaling the reduced ESHA buffer. The appropriate setback applicable to Corps seasonal wetlands is 100 feet or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. Analysis provided below describes how a reduced ESHA buffer of 50 feet from aquatic ESHAs will sufficiently protect stream, riparian, and wetlands within the Study Area. Therefore, the reduced 50-foot buffer is deemed appropriate as the WCA buffer.

The Project has been designed to avoid direct impacts to aquatic ESHAs, and to avoid impacts within ESHA buffers to the maximum extent feasible. However, due to the previously developed nature of the Project Area, which includes existing non-conforming structures and uses within minimum ESHA buffers, work can not be avoided within the minimum ESHA buffers. Work on existing non-conforming structures includes upgrades to the building envelope and compliance with Wildland Urban Interface (WUI) codes.

Areas where the Project Area overlap aquatic ESHA boundaries are shown on Figure 4. The perennial stream, Lagunitas Creek, is located far from the Project Area on the eastern and southern border of the Study Area, and perennial stream will be avoided by much greater than the maximum aquatic ESHA buffer. All seasonal wetlands, including Corps, and CCC seasonal wetlands will be avoided by at least the minimum 50-foot aquatic ESHA buffer. The only areas where work will occur within minimum aquatic ESHA buffers include within the riparian ESHA buffer. The work which will occur within the minimum riparian and ephemeral ditch buffers is expected to create a net environmental improvement over existing conditions, by reducing impervious surfaces, and installation of new stormwater treatment facilities, elimination of on-site invasive species (e.g. *Eucalyptus* spp.), and increasing native vegetation cover. Work within ESHA buffers include the following categories:

- Work to remove existing hardscape (e.g. tennis court) to pervious soil, grading and new native vegetation, creating a water quality improvement by reducing impervious surface runoff, and increasing native vegetation cover compared to existing conditions.
- Work to replace existing hardscape (e.g. parking lot) with stormwater basins creating a water quality improvement compared to existing conditions.
- Work to repair existing hardscape (e.g. parking lot).
- Renovation of Building 206, and 100C, removal of concrete pad for landscaping, and new gravel around perimeter of building for fire safety, creating a water quality improvement by reducing impervious surface runoff.
- Removal of non-native trees (classified as ‘major vegetation’ removal).

Within the wetland buffers, a minor additional 23 square feet of paving is proposed, while 4,849 square feet of stormwater management features are proposed, which are anticipated to improve water quality within the surrounding ESHA areas. Within the coastal stream riparian buffer, a large area of 8,823 square feet of existing paving will be removed, and 1,707 square feet of stormwater management features are proposed, which are anticipated to improve water quality within the surrounding ESHA areas. Tables 1 and 2, below provide square footage estimates for the amount of lot coverage removed, converted, and new lot coverage proposed within the wetland ESHA buffer, and coastal stream riparian buffer areas, respectively.

Table 1. Lot Coverage Estimates within Minimum 50' Wetland ESHA Buffer

Type	Area (square feet)				
	Existing to Remain	Removed	Proposed	New Total	Change
Building	1,863	0	0	1,863	0
Paving	1,280	0	23	1,303	23
Total Lot Coverage	3,143	0	23	3,166	23
Stormwater Management	0	0	4,849	4,849	4,849

Table 2. Lot Coverage Estimates within Minimum 50' Coastal Stream and Riparian ESHA Buffer

Type	Area (square feet)				
	Existing to Remain	Removed	Proposed	New Total	Change
Building	1,866	0	0	1,866	0
Paving	5,343	8,823	0	5,343	-8,823
Total Lot Coverage	7,209	8,823	0	7,209	-8,823
Stormwater Management	0	0	1,707	1,707	1,707

Per the LCP guidelines, aquatic ESHAs may be adjusted according to Measures C-BIO-19, "Wetland Buffer Adjustments and Exceptions", and C-BIO-25, "Stream Buffer Adjustments and Exceptions".

A buffer adjustment to less than 100 feet may be considered only if it conforms with zoning and:

a. It is proposed on a legal lot of record located entirely within the buffer; or
b. It is demonstrated that permitted development cannot be feasibly accommodated entirely outside the required buffer; or
c. It is demonstrated that the permitted development outside the buffer would have greater impact on the wetland and the continuance of its habitat than development within the buffer; or
d. The wetland was constructed out of dry land for the treatment, conveyance or storage of water, its construction was authorized by a coastal permit (or pre-dated coastal permit requirements), it has no habitat value, and it does not affect natural wetlands.

Per the aforementioned guidelines, due to the previously developed nature of the site, with existing non-conforming uses and/or structures within ESHA buffers, project activities within ESHA buffers are unavoidable. However, the Project will avoid direct impacts to any ESHA itself, and within ESHA buffers, Project work will result in a net environmental benefit by reducing impervious hardscape, improving water quality, and increasing native vegetation.

In addition, a reduced aquatic ESHA buffer shall require measures that create a net environmental improvement over existing conditions. Appropriate measures may include but are not limited to:

a. Retrofitting existing improvements or implementing new measures to reduce the rate or volume of stormwater run-off and improve the quality of stormwater run-off (e.g., use of permeable "hardscape" materials and landscape or site features designed to capture, absorb and filter stormwater; etc.);
b. Elimination of on-site invasive species;
c. Increasing native vegetation cover (e.g., expand continuous vegetation cover, reduce turf areas, provide native groundcover, shrubs and trees; etc.);
d. Reduction in water consumption for irrigation (e.g., use of drought-tolerant landscaping or high efficiency irrigation systems, etc.); and
e. Other measures that reduce overall similar site-related environmental impacts.

Projects that propose construction with a buffer of less than 100 feet from an aquatic ESHA must provide information that indicates a lesser buffer distance will not have a significant adverse impact on the habitat, and incorporate appropriate measures a through e described above. Table 3 below describes how each of the recommended appropriate measures to reduce aquatic ESHA buffers are met.

Table 3. Aquatic ESHA Reduced Buffer Zone Justification

Measures Considered to Reduce Aquatic ESHA Buffer Areas	
Zoning Code	Assessment
a. Retrofitting existing improvements or implementing new	As described above, the project improvements within the minimum ESHA buffers are expected to provide a net

measures to reduce the rate or volume of stormwater run-off and improve the quality of stormwater run-off (e.g., use of permeable "hardscape" materials and landscape or site features designed to capture, absorb and filter stormwater; etc.);	environmental benefit, by reducing impervious hardscape, and improving water quality. Based on the estimated lot coverage totals provided in the above tables, 8,800 square feet of paving within aquatic ESHA buffers will be removed, and a total of 6,556 square feet of stormwater management features are proposed. The net decrease in paved lot coverage, and increase in stormwater management features represents a net environmental improvement over existing conditions with regards to water quality.
b. Elimination of on-site invasive species;	The Project will remove 36 mature trees, all of which are non-native ornamental species, and none of which are on the Marin County Local Coastal Program-Implementation Plan (LCP-IP) list of Heritage or Protected Trees. Trees that will be removed are predominantly eucalyptus, dead trees, and other non-native trees. Ten (10) of the aforementioned non-native eucalyptus trees to be removed, and one Leyland cypress (*Cupressus x leylandii*) to be removed are located within aquatic ESHA buffers. Removal of these non-native, and in the case of blue gum eucalyptus, invasive trees within the ESHA buffer will provide an environmental benefit.
c. Increasing native vegetation cover (e.g., expand continuous vegetation cover, reduce turf areas, provide native groundcover, shrubs and trees; etc.);	Landscape Plans provided by Bay Tree Design (2022), provide for a significant increase in native vegetation cover including approximately 8,999 square feet of irrigated wildflower and grass seed mix, native erosion control mix, and ground cover comprising all California native species within the minimum 50-foot Coastal Stream and Riparian ESHA buffer an. An additional approximately 2,224 square feet of irrigated wildflower and grass seed mix will be utilized in the minimum 50-foot wetland ESHA buffer. Part of the aforementioned vegetation cover will replace areas of hardscape including: removing the existing tennis court and regrading in this area to make the landforms appear more natural; removing the concrete drive behind Building 100C and replacing that with native erosion control; removing the playground in the ESHA and relocating it to another area of the site outside of the ESHA zones.

	The current playground includes - concrete curbs, mulch, stairs, retaining walls, play structures and benches. This is all proposed to be replaced with planting. The project will also remove a concrete pad near building 206 to replace with planting.
d. Reduction in water consumption for irrigation (e.g., use of drought-tolerant landscaping or high efficiency irrigation systems, etc.); and	Per Bay Tree Design (Lisa Howard, pers. comm.) the site plans require tertiary waste water treatment, where all plants are watered daily in order to consume the dispersed water, therefore, water clean water irrigation and reduction was not determined to be a concern.
e. Other measures that reduce overall similar site-related environmental impacts.	Additional measures will be employed to reduce overall site related impacts, including the use of erosion control measures and other BMPs and through supervision of construction activities by a biological monitor during initial ground disturbance work within minimum ESHA buffers. To minimize potential increased human activity in the riparian corridor of Lagunitas Creek, signage shall be installed along the edge of the riparian arroyo willow thicket that identifies the riparian habitat as an ESHA and reads "Environmentally Sensitive Habitat: Do Not Enter".

To avoid and minimize potential impacts to ESHAs, grading should occur during the dry season (defined in the Marin County Municipal Code as April 16 through October 14) and should be suspended during unseasonable rainfalls of greater than one-half inch over a 24-hour period. If rainfall is in the forecast, standard erosion control measures (e.g., straw waddles, bales, silt fencing) should be deployed on the development's edge paralleling downslope ESHAs. Construction personnel should be informed of the location of the site's sensitive resources with high-visibility flagging or staking prior to construction, supervision of construction activities by a biological monitor during initial ground disturbance work within reduced ESHA buffers is recommended. No materials or equipment shall be lain down in or near the aquatic resources, and spill prevention materials shall be deployed for all construction equipment. "Environmentally Sensitive Habitat do not enter" along the riparian corridor of the Lagunitas Creek.

Based on the information provided above in Table 1, and the Project proposed BMPs which include erosion control measures in areas of vegetation removal and soil disturbance, and supervision of construction activities by a biological monitor during initial ground disturbance work within reduced ESHA buffers, the Project is not likely to significantly impact terrestrial or aquatic ESHAs, compared to existing conditions.

6.2 Special-status Species

6.2.1 Special-status Plants

Based upon a review of the resource databases listed in Section 4.0, 112 special-status plant species have been documented in the vicinity of the Study Area. Twenty-five of these plants have the potential to occur in the Study Area; however only one of these plants, congested-headed hayfield tarplant is considered to have potential to occur in the Project Area.

Focused surveys for special-status plants determined to have a potential to occur in the Study Area were conducted on January 20, April 9, and June 4, 2021, and no special-status plants were identified in the Study Area or Project Area. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. Therefore, special-status plants are considered absent from the Study Area and Project Area. Descriptions of special-status plant species initially assessed to have potential to occur in the Study Area are provided in Appendix C.

6.2.2 Special-status Wildlife

The Study Area has the potential to support 15 special-status wildlife species, as well as non-status birds protected under the MBTA and CFGC. The following measures are recommended to avoid or otherwise minimize potential impacts to these species; refinement of these measures may be warranted dependent on specifics of the proposed project.

Listed Species

California red-legged frog. Any injury or mortality to CRLFs, including eggs and larvae (if such are present) would constitute "take" under the ESA and also presumably be considered a significant impact under CEQA. The Project Area is largely restricted to already-developed or otherwise disturbed areas, and avoids all aquatic features within the Study Area including the ephemeral ditch (potential non-breeding aquatic habitat for CRLF). As such, the potential for take of CRLF is limited to incidental harm of individuals that may be present within the Study Area, e.g., during dispersal or movement periods. Avoidance and minimization measures would depend on final project specifics; typical measures for this species in the present circumstances include:

- Limiting initial ground disturbance to the dry season, approximately April 16 through October 14, and potentially precluding work (dependent on site conditions) during or immediately following rain events (0.25 inch of rain falling within a 24-hour period);
- Installing an exclusion fence around project activity areas (e.g., building sites, laydown areas);
- A biological sensitivity training for construction staff, including the potential presence of CRLF, identification of the species under field conditions, legal status of the species and the ramifications for take, and the need to stop-work if CRLF is observed in or around the project activity areas;
- And, potentially, the presence of a biological monitor (with stop-work authority) during initial ground-disturbing activities to avoid take.

If there is reasonable concern that these measures will not preclude the potential for take of CRLF during project implementation, consultation with the USFWS may be required.

Listed salmonids, California freshwater shrimp: Steelhead, coho salmon, and California freshwater shrimp all are all considered present in Lagunitas Creek. The Project Area entirely avoids the creek (including perennial to intermittent side channels/features) and directly adjacent riparian woodland/vegetation, effectively precluding any potential for direct impacts or harm to these species. Additional BMPs described above will avoid ground disturbance and reduce/eliminate potential sediment inputs. Note however that the ESA includes protections to habitat elements of listed species, and as such incidental impacts to the waters of the stream (e.g., sediment releases during construction) could constitute ESA violations. If this avoidance of such impacts is somehow not feasible, consultation with NMFS/USFWS and CDFW would presumably be required.

Other species

Bat species: Two special-status bats have the potential to occur within the Study Area (pallid bat, Townsend's big-eared bat), including roosting within buildings. Building demolition during the bat maternity season (generally, April through August) could impact bat breeding and potentially result in the take of bats. To avoid impacts to special-status bats, a bat habitat assessment and survey effort (the latter if needed) should be performed by a qualified biologist prior to building demolition to determine if bats are present in the buildings. If no suitable roosting habitat for bats is found, then no further study is warranted. If special-status bat species or bat maternity roosts are detected, then demolition of occupied buildings should be avoided until the end of the maternity roosting season. If this avoidance is not feasible, appropriate species- and roost-specific mitigation measures should be developed in consultation with CDFW. Depending on specifics (bat species, roost size, and others), removal of an occupied bat roost may also warrant additional review under CEQA.

American badger: Remnant badger burrows were observed within the Study Area's open grassland, outside of the Project Area. Although all such burrows appeared degraded or otherwise unoccupied, badgers have some potential to be present within the Study Area in the future. Prior to ground-breaking activities, a qualified biologist should review the Study Area to determine if new badger burrows have been constructed and/or older (remnant) burrows appear to be re-occupied. If such burrows are present, the biologist will determine if young are present in the burrows, and if so, ground-breaking activities will only be allowed within 150 feet until young have are independent (spring through summer). The Project Area is largely restricted to already-developed or otherwise disturbed areas, and therefore is not anticipated to result in any potentially significant impacts to local badger habitat.

Western pond turtle and Tomales roach: While both of these species have the potential to be present within Lagunitas Creek, western pond turtle is unlikely to occur in the Project Area, and Tomales roach is entirely aquatic with no potential for occurrence there. As such, no impacts to these species are anticipated as a result of project implementation and no associated measures are warranted.

Monarch butterfly: Although monarch winter roosting is not known from the Study Area or its immediate vicinity, mature eucalyptus trees with some favorable characteristics for roosting are present within the Study Area, and proposed for removal. As such, WRA recommends that a survey effort for roosting monarchs within the Study Area be performed; this effort should occur during the focal portion of the winter roosting period in November or December when the likelihood of roosting is highest. If a communal winter roost is identified during the assessment/survey, CDFW should be consulted regarding measures to avoid or otherwise minimize impacts to the roost.

All bird species (including non-special-status): In addition to the two special-status bird species discussed above (white-tailed kite, yellow warbler), non-status bird species with baseline protections under the MBTA and CFGC may use vegetation within the Study Area for nesting. WRA recommends that tree/vegetation removal and initial ground disturbance occur from August 16 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey should be performed by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. The survey should cover the Project Area (including tree removal areas) and surrounding areas within 500 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer.

6.2.3 Wildlife Movement

As stated in Section 5.2.3, the Study Area is not within a mapped wildlife corridor. At a local level, Lagunitas Creek and associated riparian woodland provide noteworthy corridor functions, but these land covers will be avoided by the proposed project. The Project Area is largely restricted to already-developed or otherwise disturbed areas, and project implementation is not anticipated to result in any potentially significant impacts to wildlife movement. As such, no measures related to wildlife movement are warranted.

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Appendix A

Figures

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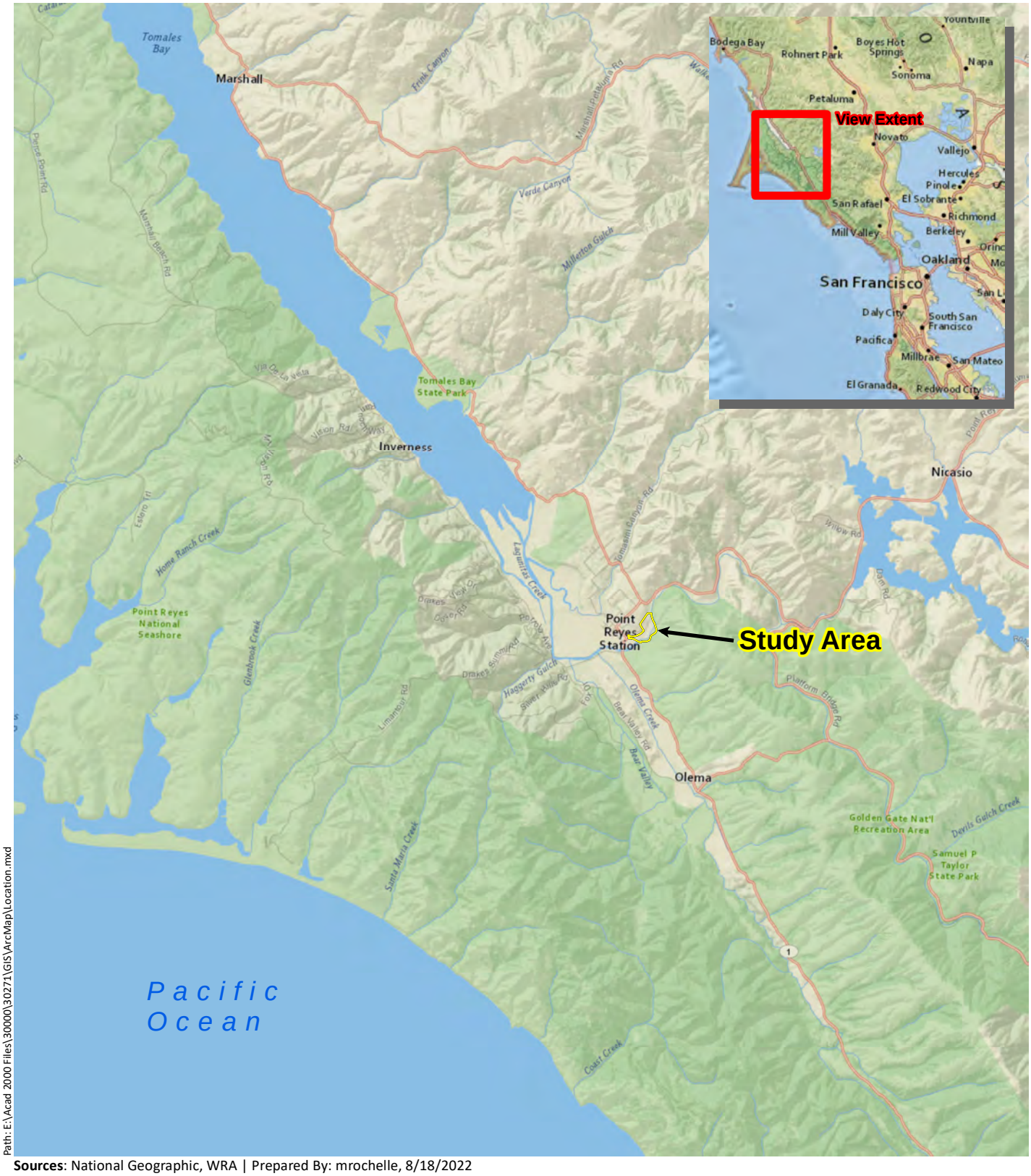

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Sources: National Geographic, WRA | Prepared By: mrochelle, 8/18/2022

Figure 1. Study Area Regional Location Map

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

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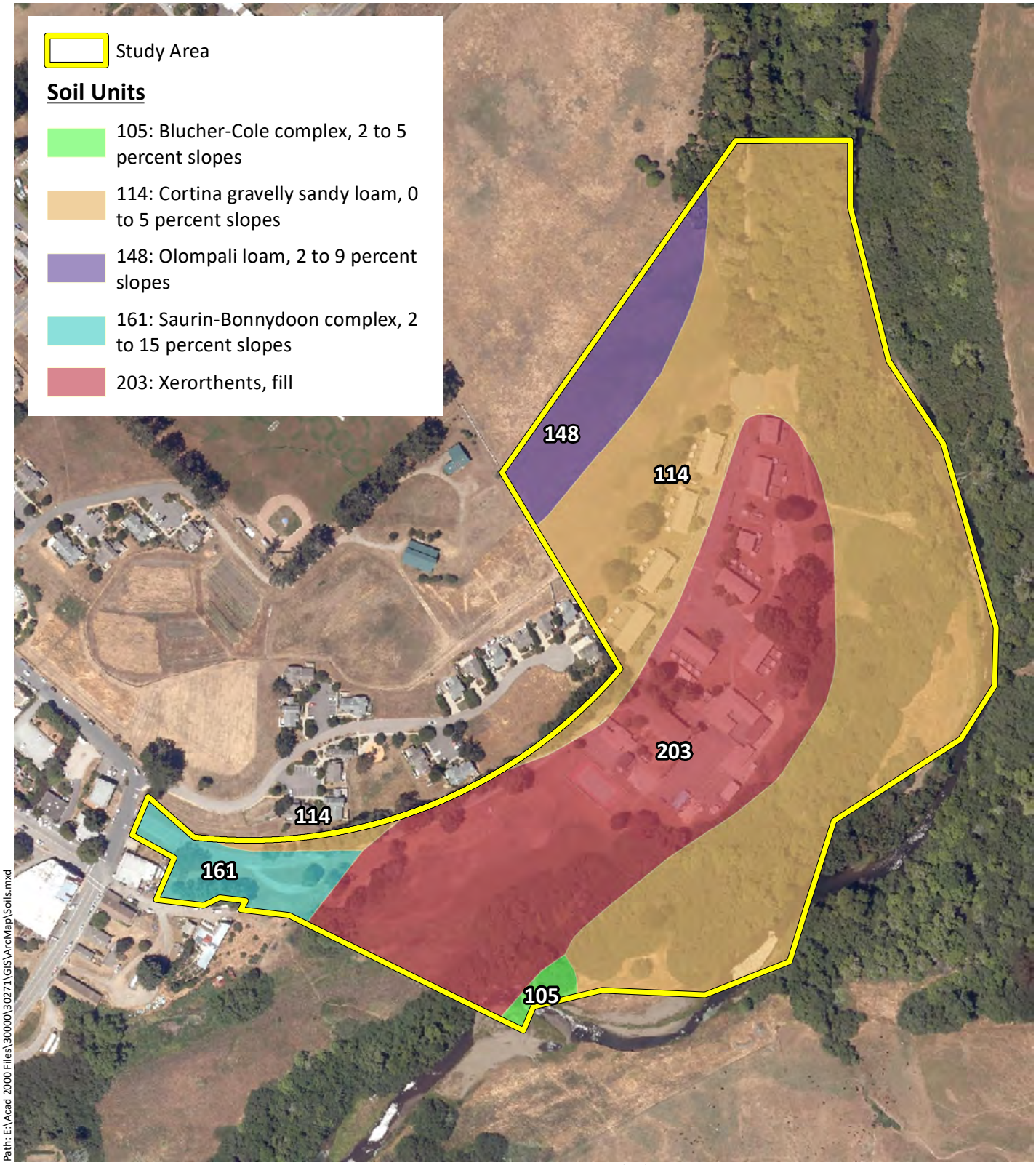

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Sources: USDA NRCS SURGGO Soils, 2018 Marin County Aerial, WRA | Prepared By: mrochelle, 8/18/2022

Figure 2. Soils Map

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

0 250 500 Feet

N

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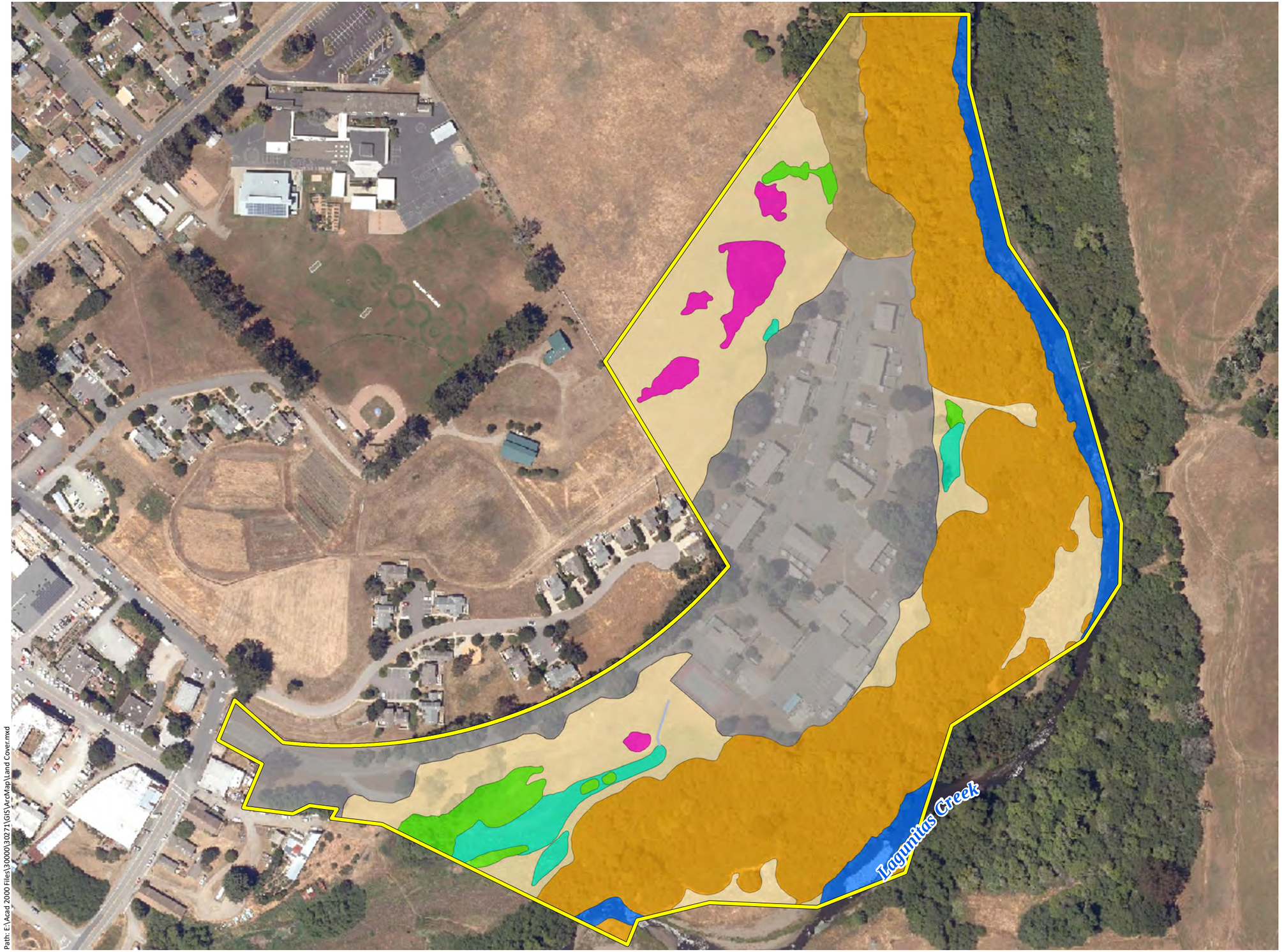
Figure 3.
Land Cover Types

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California



Study Area - 33.59

Sensitive Land Cover

- CCC Seasonal Wetland - 0.67 ac.
- Corps Seasonal Wetland - 0.69 ac.
- Ephemeral Ditch - 0.01 ac.
- Perennial Stream - 1.61 ac.
- Purple Needlegrass Grassland - 0.61 ac.
- Arroyo Willow Thicket - 11.44 ac.

Non-Sensitive Land Cover

- California Bay Forest - 1.13 ac.
- Developed/Landscaped - 9.66 ac.
- Non-Native Annual Grassland - 7.77 ac.

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Feet

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Sources: Marin County 2018 Aerial, WRA | Prepared By: mrochelle, 8/18/2022

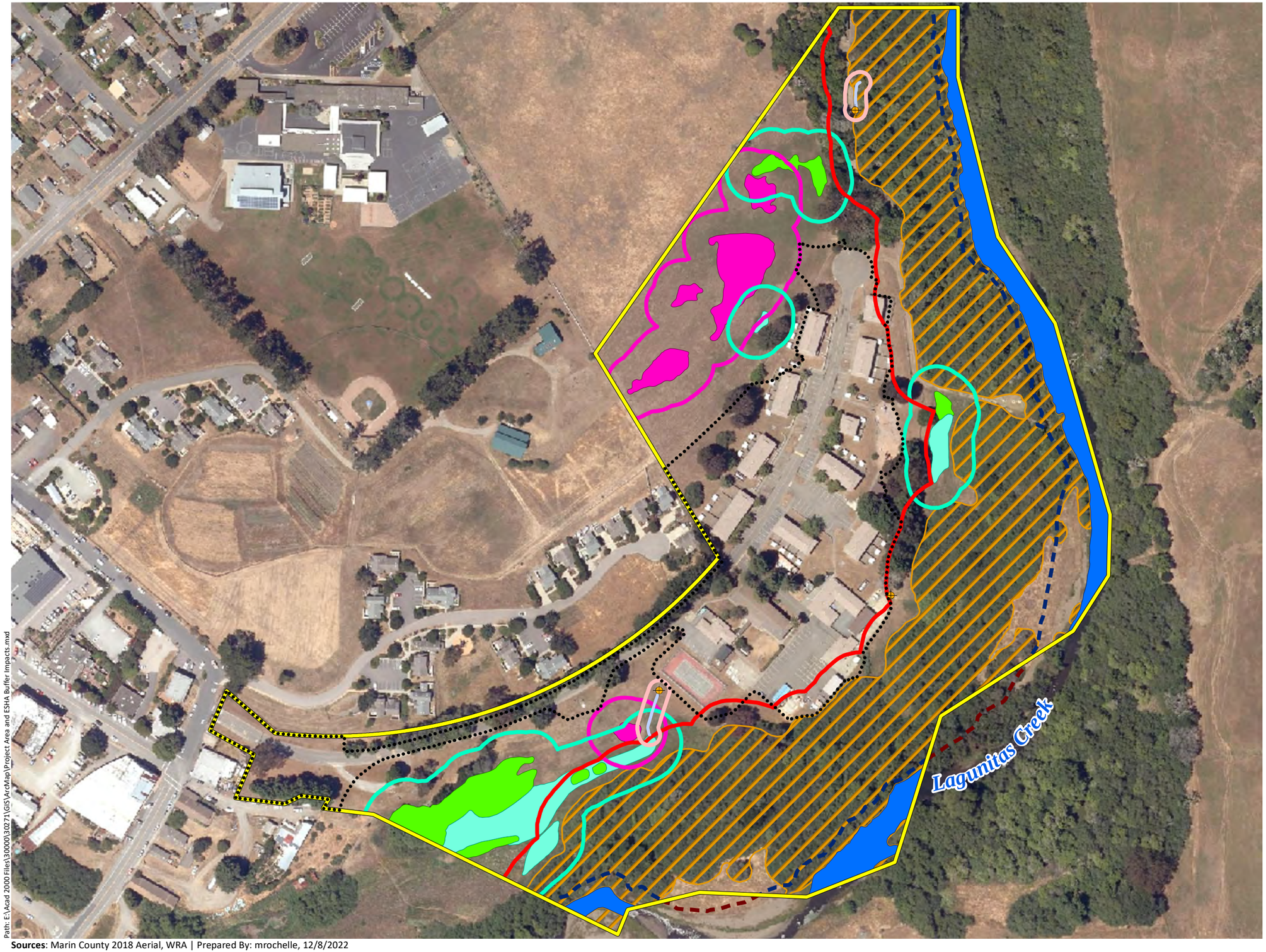

Figure 4.
Project Area and ESHA Buffer Impacts

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

Study Area - 33.59 ac.

Project Area - 8.15 ac.

Culverts

Non-Environmentally Sensitive Habitat Area, Aquatic

Ephemeral Ditch - 0.01 ac.

Environmentally Sensitive Habitat Area, Aquatic

Non-Wetland Waters:

Perennial Stream - OHWM - 1.61 ac.

Perennial Stream - TOB - 3.05 ac.

Wetlands:

CCC Seasonal Wetland - 0.67 ac.

Corps Seasonal Wetland - 0.69 ac.

Off-Site Top of Bank

Riparian:

Riparian Woodland - 11.27 ac.

Environmentally Sensitive Habitat Area, Terrestrial

Purple Nedlegrass Grassland - 0.61 ac.

Setbacks

20' Ephemeral Stream Buffer

Reduced Coastal Stream and Riparian ESHA Buffer (50')

Wetland ESHA Buffer (50')

Maximum Terrestrial ESHA Buffer (50')

N

0 200 400

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ENVIRONMENTAL CONSULTANTS

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Sources: Marin County 2018 Aerial, WRA | Prepared By: mrochelle, 12/8/2022

Appendix B

Species Observed in the Study Area

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Appendix B – Plant and wildlife species observed in Study Area, January 20, April 9, and June 4, 2021.

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Plants						
Acacia decurrens	Green wattle	non-native	tree	-	-	-
Acacia melanoxylon	Blackwood acacia	non-native (invasive)	tree	-	Limited	-
Acer macrophyllum	Bigleaf maple	native	tree	-	-	FAC
Acer negundo	Boxelder	native	tree	-	-	FACW
Aesculus californica	Buckeye	native	tree	-	-	-
Agrostis stolonifera	Redtop	non-native (invasive)	perennial grass	-	Limited	FACW
Aira caryophyllea	Silvery hairgrass	non-native (invasive)	annual grass	-	-	FACU
Alnus rubra	Red alder	native	tree, shrub	-	-	FACW
Anthemis cotula	Dog fennel	non-native (invasive)	annual herb	-	-	FACU
Artemisia douglasiana	California mugwort	native	perennial herb	-	-	FAC
Athyrium filix-femina var. *cyclosorum*	Western lady fern	native	fern	-	-	FAC
Baccharis pilularis ssp. *consanguinea*	Coyote brush	native	shrub	-	-	-
Bellis perennis	English lawn daisy	non-native (invasive)	perennial herb	-	-	-
Briza minor	Little rattlesnake grass	non-native	annual grass	-	-	FAC

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Bromus catharticus	Rescue grass	non-native	annual, perennial grass	-	-	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Calocedrus decurrens	Incense cedar	native	tree	-	-	-
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	non-native	annual herb	-	-	-
Carex densa	Sedge	native	perennial grasslike herb	-	-	OBL
Cichorium intybus	Chicory	non-native	perennial herb	-	-	FACU
Cirsium vulgare	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Claytonia perfoliata	Miner's lettuce	native	annual herb	-	-	FAC
Conium maculatum	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
Convolvulus arvensis	Field bindweed	non-native (invasive)	perennial herb, vine	-	-	-
Cortaderia jubata	Andean pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Cynodon dactylon	Bermuda grass	non-native (invasive)	perennial grass	-	Moderate	FACU
Cynosurus echinatus	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Danthonia californica	California oatgrass	native	perennial grass	-	-	FAC
Datura stramonium	Jimson weed	non-native	annual herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Dittrichia graveolens	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Elymus glaucus	Blue wildrye	native	perennial grass	-	-	FACU
Elymus triticoides	Beardless wild rye	native	perennial grass	-	-	FAC
Equisetum hyemale ssp. *affine*	Giant scouring rush	native	fern	-	-	FACW
Erigeron canadensis	Canada horseweed	native	annual herb	-	-	FACU
Erodium botrys	Big heron bill	non-native (invasive)	annual herb	-	-	FACU
Erodium cicutarium	Coastal heron's bill	non-native (invasive)	annual herb	-	Limited	-
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-
Eucalyptus globulus	Blue gum	non-native (invasive)	tree	-	Limited	-
Eucalyptus polyanthemos	Silver dollar gum	non-native	tree	-	-	-
Eucalyptus spp.	Eucalyptus	non-native	Tree	-	-	-
Eucalyptus viminalis	Manna gum	non-native	tree	-	-	-
Festuca arundinacea	Reed fescue	non-native (invasive)	perennial grass	-	Moderate	FACU
Festuca bromoides	Brome fescue	non-native	annual grass	-	-	FACU
Festuca myuros	Rattail sixweeks grass	non-native (invasive)	annual grass	-	-	FACU
Festuca perennis	Italian rye grass	non-native	annual, perennial grass	-	-	FAC

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Fraxinus latifolia	Oregon ash	native	tree	-	-	FACW
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Geranium dissectum	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Geranium molle	Crane's bill geranium	non-native (invasive)	annual, perennial herb	-	-	-
Glyceria declinata	Waxy mannagrass	non-native (invasive)	perennial grass	-	Moderate	FACW
Hedera helix	English ivy	non-native (invasive)	vine, shrub	-	-	FACU
Helenium puberulum	Sneezeweed	native	perennial herb	-	-	FACW
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	-	FAC
Hesperocyparis macrocarpa	Monterey cypress	native	tree	Rank 1B.2*	-	-
Heteromeles arbutifolia	Toyon	native	shrub	-	-	-
Hirschfeldia incana	Mustard	non-native (invasive)	perennial herb	-	Moderate	-
Holcus lanatus	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Hordeum marinum ssp. *gussoneanum*	Barley	non-native	annual grass	-	-	FAC
Hypochaeris radicata	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Ilex aquifolium	Holly	non-native (invasive)	tree, shrub	-	Moderate	FACU

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Iris douglasiana	Douglas iris	native	perennial herb	-	-	-
Juncus effusus	Common bog rush	native	perennial grasslike herb	-	-	FACW
Juncus mexicanus	Mexican rush	native	perennial grasslike herb	-	-	FACW
Juncus occidentalis	Slender juncus	native	perennial grasslike herb	-	-	FACW
Juncus patens	Rush	native	perennial grasslike herb	-	-	FACW
Juncus phaeocephalus	Brown headed rush	native	perennial grasslike herb	-	-	FACW
Lathyrus vestitus	Common pacific pea	native	perennial herb	-	-	-
Lepidium nitidum	Shining pepper grass	native	annual herb	-	-	FAC
Limnanthes douglasii	Common meadow foam	native	annual herb	-	-	OBL
Linum bienne	Flax	non-native	annual herb	-	-	-
Lonicera hispidula	Pink honeysuckle	native	vine, shrub	-	-	FACU
Ludwigia sp.	-	-	-	-	-	-
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Matricaria discoidea	Pineapple weed	native	annual herb	-	-	FACU
Maytenus boaria	Mayten	non-native (invasive)	tree, shrub	-	-	-
Medicago polymorpha	California burclover	non-native (invasive)	annual herb	-	Limited	FACU

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Mentha pulegium	Pennyroyal	non-native (invasive)	perennial herb	-	Moderate	OBL
Myosotis latifolia	Wide leaved forget me not	non-native (invasive)	perennial herb	-	Limited	-
Nasturtium officinale	Watercress	native	perennial herb (aquatic)	-	-	OBL
Oenanthe sarmentosa	Water parsley	native	perennial herb	-	-	OBL
Phyla nodiflora	Common lippia	native	perennial herb	-	-	FACW
Pinus radiata	Monterey pine	native	tree	Rank 1B.1*	-	-
Pittosporum undulatum	Victorian box	non-native (invasive)	tree, shrub	-	-	-
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Poa annua	Annual blue grass	non-native	annual grass	-	-	FAC
Polygonum aviculare	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
Polypodium sp.	-	-	-	-	-	-
Polystichum munitum	Western sword fern	native	fern	-	-	FACU
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC
Pteridium aquilinum var. *pubescens*	Western bracken fern	native	fern	-	-	FACU
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Ranunculus californicus	Common buttercup	native	perennial herb	-	-	FACU

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Ranunculus muricatus	Buttercup	non-native	annual, perennial herb	-	-	FACW
Raphanus sativus	Jointed charlock	non-native (invasive)	annual, biennial herb	-	Limited	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rubus ursinus	California blackberry	native	vine, shrub	-	-	FAC
Rumex acetosella	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Rumex pulcher	Fiddleleaf dock	non-native	perennial herb	-	-	FAC
Salix laevigata	Polished willow	native	tree	-	-	FACW
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW
Sanicula bipinnatifida	Purple sanicle	native	perennial herb	-	-	-
Sanicula crassicaulis	Pacific sanicle	native	perennial herb	-	-	-
Senecio vulgaris	Common groundsel	non-native	annual herb	-	-	FACU
Sequoia sempervirens	Coast redwood	native	tree	-	-	-
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW
Sonchus oleraceus	Sow thistle	non-native	annual herb	-	-	UPL

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3] (AW 2016)
Stipa pulchra	Purple needle grass	native	perennial grass	-	-	-
Taraxia ovata	Sun cup	native	perennial herb	-	-	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU
Trifolium dubium	Shamrock	non-native	annual herb	-	-	UPL
Trifolium hirtum	Rose clover	non-native (invasive)	annual herb	-	Limited	-
Trifolium subterraneum	Subterranean clover	non-native	annual herb	-	-	-
Umbellularia californica	California bay	native	tree	-	-	FAC
Veronica anagallis-aquatica	Water speedwell	non-native	perennial herb	-	-	OBL
Vicia sp.	Vetch	non-native	annual herb	-	-	-
Washingtonia robusta	Washington fan palm	non-native (invasive)	tree	-	Moderate	FACW
Xanthium strumarium	Cocklebur	native	annual herb	-	-	FAC

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012) and *A Flora of Sonoma County* (Best et al. 1996); nomenclature follows *The Jepson Flora Project* (eFlora 2020) unless otherwise noted. Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species
Cf.: intended to indicate a species appeared to the observer to be specific, but was not identified based on diagnostic characters

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2020)

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare

Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B: 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]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2020)
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]Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Lichvar et al. 2016)
OBL: Almost always a hydrophyte, rarely in uplands
FACW: Usually a hydrophyte, but occasionally found in uplands
FAC: Commonly either a hydrophyte or non-hydrophyte
FACU: Occasionally a hydrophyte, but usually found in uplands
UPL: Rarely a hydrophyte, almost always in uplands
NL: Rarely a hydrophyte, almost always in uplands
NI: No information; not factored during wetland delineation

*Rarity status only applies to native stands not present in the Study Area. Monterey pine and Monterey cypress within the Study Area are planted ornamentals outside of their native range.

Appendix B cont. Wildlife species observed in the Study Area on June 4, 2021

Scientific Name	Common Name
Birds	
Aphelocoma californica	California scrub-jay
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Cardellina pusilla	Wilson's warbler
Catharus ustulatus	Swainson's thrush
Ceryle alcyon	belted kingfisher
Chamaea fasciata	wrentit
Corvus brachyrhynchos	American crow
Empidonax difficilis	Pacific-slope flycatcher
Haemorhous mexicanus	house finch
Hirundo rustica	barn swallow
Molothrus ater	Brown-headed Cowbird
Passer domesticus	house sparrow (*non-native*)
Petrochelidon pyrrhonota	cliff swallow
Picoides nuttallii	Nuttall's woodpecker
Picoides villosus	hairy woodpecker
Pipilo maculatus	spotted towhee
Poecile rufescens	chestnut-backed chickadee
Psaltriparus minimus	bushtit
Sayornis nigricans	black phoebe
Streptopelia decaocto	Eurasian collared-dove (*non-native*)
Tachycineta thalassina	violet-green swallow

Appendix C

Potential for Special-status Species to Occur in the Study Area

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Appendix C Potential for Special-Status Plant and Wildlife Species to Occur in the Study Area. Special-status plant and wildlife species table with the potential to occur within the vicinity of the Study Area (Inverness, Drakes Bay, Tomales, Point Reyes NE, Petaluma, San Geronimo, Bolinas, Double Point USGS 7.5' topographic quadrangles) Results include database searches of California Native Plant Society (CNPS) Rare and Endangered Plant Inventory, California Natural Diversity Database (CNDDB, CDFW), Information Planning and Conservation (IPaC) as well as U.S. Fish and Wildlife Service Threatened and Endangered Species Lists.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
pink sand-verbena *Abronia umbellata* var. *breviflora*	Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	**No Potential.** The Study Area lacks coastal dunes necessary to support this species.	No further actions are recommended.
Blasdale's bent grass *Agrostis blasdalei*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms May-Jul.	**Unlikely.** The Study Area lacks coastal dunes, coastal bluff scrub, and coastal prairie necessary to support this species.	No further actions are recommended.
Franciscan onion *Allium peninsulare* var. *franciscanum*	Rank 1B.2	Cismontane woodland, valley and foothill grassland (clay soils; serpentine). Elevation ranges from 170 to 1000 feet (52 to 305 meters). Blooms (Apr) May-Jun.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Sonoma alopecurus *Alopecurus aequalis* var. *sonomensis*	FE, Rank 1B.1	Marshes and swamps (freshwater), riparian scrub. Elevation ranges from 15 to 1200 feet (5 to 365 meters). Blooms May-Jul.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains riparian habitat that could support this species. However, this species was not observed in the Study Area during the site visits.	No further actions are recommended.
Napa false indigo *Amorpha californica* var. *napensis*	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks upland forest and chaparral and is well below the documented elevation range of the species.	No further actions are recommended.
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 5 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur within grasslands present in the Study Area. However this species was not observed during the site visits.	No further actions are recommended.
coast rockcress *Arabis blepharophylla*	Rank 4.3	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 5 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	**No Potential.** The Study Area lacks rock outcrop habitat within coastal scrub associated with this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Mt. Tamalpais manzanita *Arctostaphylos montana* ssp. *montana*	Rank 1B.3	Chaparral, valley and foothill grassland; serpentine. Elevation ranges from 520 to 2495 feet (160 to 760 meters). Blooms Feb-Apr.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	No further actions are recommended.
Marin manzanita *Arctostaphylos virgata*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest. Elevation ranges from 195 to 2295 feet (60 to 700 meters). Blooms Jan-Mar.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	No further actions are recommended.
Brewer's milk-vetch *Astragalus breweri*	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly, usually on serpentine). Elevation ranges from 295 to 2395 feet (90 to 730 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area lacks serpentine substrates most often associated with this species.	No further actions are recommended.
coastal marsh milk-vetch *Astragalus pycnostachyus* var. *pycnostachyus*	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt). Elevation ranges from 0 to 100 feet (0 to 30 meters). Blooms (Apr)Jun-Oct.	**No Potential.** The Study Area lacks salt marsh, and mesic coastal scrub habitat known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Point Reyes Blennosperma *Blennosperma nanum* var. *robustum*	SR, Rank 1B.2	Coastal prairie, coastal scrub. Elevation ranges from 30 to 475 feet (10 to 145 meters). Blooms Feb-Apr.	**No Potential.** The Study Area lacks coastal prairie and coastal scrub. This species is only known from the Point Reyes Peninsula, west of the San Andreas Fault.	No further actions are recommended.
Thurber's reed grass *Calamagrostis crassiglumis*	Rank 2B.1	Coastal scrub (mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 195 feet (10 to 60 meters). Blooms May-Aug.	**Unlikely.** The Study Area lacks freshwater marsh habitat surrounded by coastal scrub associated with this species.	No further actions are recommended.
serpentine reed grass *Calamagrostis ophiditis*	Rank 4.3	Chaparral (open, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland; serpentine. Elevation ranges from 295 to 3495 feet (90 to 1065 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks serpentine habitat known to support this species.	No further actions are recommended.
Oakland star-tulip *Calochortus umbellatus*	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 325 to 2295 feet (100 to 700 meters). Blooms Mar-May.	**Unlikely.** Despite potentially suitable grassland habitat present within the Study Area, this species is not known from west of Bolinas Ridge.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
coastal bluff morning-glory *Calystegia purpurata* ssp. *saxicola*	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.	**Unlikely.** The Study Area lacks the associated vegetation communities.	No further actions are recommended.
swamp harebell *Campanula californica*	Rank 1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (freshwater), north coast coniferous forest. Elevation ranges from 0 to 1330 feet (1 to 405 meters). Blooms Jun-Oct.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable freshwater wetland habitat associated with this species. However, the species was not observed during the June site visit conducted during the species' bloom period.	No further actions are recommended.
seaside bittercress *Cardamine angulata*	Rank 2B.2	Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 80 to 3000 feet (25 to 915 meters). Blooms (Jan)Mar-Jul.	**No Potential.** The Study Area lacks the associated vegetation communities.	No further actions are recommended.
Buxbaum's sedge *Carex buxbaumii*	Rank 4.2	Bogs and fens, meadows and seeps (mesic), marshes and swamps. Elevation ranges from 5 to 10825 feet (3 to 3300 meters). Blooms Mar-Aug.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable freshwater wetland habitat associated with this species. However, the species was not observed during the site visits.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
bristle-stalked sedge *Carex leptalea*	Rank 2B.2	Bogs and fens, meadows and seeps (mesic), marshes and swamps. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable freshwater wetland habitat associated with this species. However, the species was not observed during the site visits.	No further actions are recommended.
Lyngbye's sedge *Carex lyngbyei*	Rank 2B.2	Marshes and swamps (brackish or freshwater). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Aug.	**Unlikely.** The Study Area lacks marshes and swamps necessary to support this species.	No further actions are recommended.
Tiburon paintbrush *Castilleja affinis* var. *neglecta*	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 lacks serpentine substrates necessary to support this species.	No further actions are recommended.
johnny-nip *Castilleja ambigua* var. *ambigua*	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins (mesic). Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable mesic grassland habitat associated with this species. However, the species was not observed during the site visits.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Humboldt Bay owl's-clover *Castilleja ambigua* var. *humboldtensis*	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Apr-Aug.	**No Potential.** The Study Area lacks coastal salt marsh habitat necessary to support this species.	No further actions are recommended.
Point Reyes paintbrush *Castilleja leschkeana*	Rank 1A	Marshes and swamps (coastal). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun.	**No Potential.** The Study Area lacks marshes and swamps. This species is considered extinct.	No further actions are recommended.
Nicasio Ceanothus *Ceanothus decornutus*	Rank 1B.2	Chaparral (maritime; serpentine). Elevation ranges from 770 to 950 feet (235 to 290 meters). Blooms Mar-May.	**No Potential.** The Study Area lacks serpentine chaparral necessary to support this species.	No further actions are recommended.
glory brush *Ceanothus gloriosus* var. *exaltatus*	Rank 4.3	Chaparral. Elevation ranges from 95 to 2000 feet (30 to 610 meters). Blooms Mar-Jun(Aug).	**No Potential.** The Study Area lacks chaparral habitat known to support this species.	No further actions are recommended.
Point Reyes Ceanothus *Ceanothus gloriosus* var. *gloriosus*	Rank 4.3	Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Mar-May.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Mt. Vision Ceanothus *Ceanothus gloriosus* var. *porrectus*	Rank 1B.3	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 80 to 1000 feet (25 to 305 meters). Blooms Feb-May.	**Unlikely.** The Study Area lacks the majority of vegetation communities associated with this species.	No further actions are recommended.
Mason's Ceanothus *Ceanothus masonii*	SR, Rank 1B.2	Chaparral (openings, rocky, serpentine). Elevation ranges from 750 to 1640 feet (230 to 500 meters). Blooms Mar-Apr.	**No Potential.** The Study Area lacks chaparral and serpentine substrates known to support this species.	No further actions are recommended.
Point Reyes bird's-beak *Chloropyron maritimum* ssp. *palustre*	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	**No Potential.** The Study Area lacks salt marsh habitat necessary to support this species.	No further actions are recommended.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub (sandy). Elevation ranges from 5 to 705 feet (3 to 215 meters). Blooms Apr-Jul(Aug).	**No Potential.** The Study Area lacks sandy soils and coastal dunes known to support this species.	No further actions are recommended.
woolly-headed spineflower *Chorizanthe cuspidata* var. *villosa*	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub (sandy). Elevation ranges from 5 to 195 feet (3 to 60 meters). Blooms May-Jul(Aug).	**No Potential.** The Study Area lacks sandy soils and coastal dunes known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
robust spineflower *Chorizanthe robusta* var. *robusta*	FE, Rank 1B.1	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Sep.	**No Potential.** The Study Area lacks sandy soils and within the vegetation communities associated with this species.	No further actions are recommended.
Sonoma spineflower *Chorizanthe valida*	FE, SE, Rank 1B.1	Coastal prairie (sandy). Elevation ranges from 30 to 1000 feet (10 to 305 meters). Blooms Jun-Aug.	**No Potential.** The Study Area lacks coastal prairie underlain by sandy soils necessary to support this species.	No further actions are recommended.
Bolander's water-hemlock *Cicuta maculata* var. *bolanderi*.	Rank 2B.1	Marshes and swamps coastal, fresh or brackish water. Elevation ranges from 0 to 655 feet (0 to 200 meters). Blooms Jul-Sep.	**No Potential.** The Study Area lacks salt marsh habitat necessary to support this species.	No further actions are recommended.
Franciscan thistle *Cirsium andrewsii*	Rank 1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; bluffs, ravines, seeps (sometimes serpentine). Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	**Unlikely.** The Study Area lacks seeps, ravines, and serpentine substrates most often associated with this species.	No further actions are recommended.
Mt. Tamalpais thistle *Cirsium hydrophilum* var. *vaseyi*	Rank 1B.2	Broadleafed upland forest, chaparral, meadows and seeps (serpentine). Elevation ranges from 785 to 2035 feet (240 to 620 meters). Blooms May-Aug.	**No Potential.** The Study Area lacks serpentines seeps and streams necessary to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Raiche's red ribbons *Clarkia concinna* ssp. *rachei*	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-May.	**No Potential.** The Study Area lacks coastal bluff scrub necessary to support this species.	No further actions are recommended.
round-headed Chinese-houses *Collinsia corymbosa*	Rank 1B.2	Coastal dunes. Elevation ranges from 0 to 65 feet (0 to 20 meters). Blooms Apr-Jun.	**No Potential.** The Study Area lacks coastal dunes necessary to support this species.	No further actions are recommended.
Baker's larkspur *Delphinium bakeri*	FE, SE, Rank 1B.1	Broadleafed upland forest, coastal scrub,. Elevation ranges from 260 to 1000 feet (80 to 305 meters). Blooms Mar-May.	**No Potential.** The Study Area lacks the associated vegetation communities.	No further actions are recommended.
golden larkspur *Delphinium luteum*	FE, SR, Rank 1B.1	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Mar-May.	**No Potential.** The Study Area lacks the associated vegetation communities.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
western leatherwood *Dirca occidentalis*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr).	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur in riparian habitat within the Study Area. However, However, this species was not observed in the Study Area during the January site visit conducted during the species' bloom period.	No further actions are recommended.
California bottle-brush grass *Elymus californicus*	Rank 4.3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms May-Aug(Nov).	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having moderate potential to in riparian habitat within the Study Area However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
Koch's cord moss *Entosthodon kochii*	Rank 1B.3	Cismontane woodland (soil). Elevation ranges from 590 to 3280 feet (180 to 1000 meters).	**No Potential.** The Study Area lacks upland cismontane woodland and is much lower than the documented elevation range of the species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
supple daisy *Erigeron supplex*	Rank 1B.2	Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 165 feet (10 to 50 meters). Blooms May-Jul.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains native grassland habitat with coastal influence that could support this species. However, the species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland (serpentine). Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms May-Sep.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	No further actions are recommended.
bluff wallflower *Erysimum concinnum*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 605 feet (0 to 185 meters). Blooms Feb-Jul.	**Unlikely.** The Study Area lacks coastal dunes, coastal bluff scrub, and sandy coastal prairie habitats known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Marin checker lily *Fritillaria lanceolata* var. *tristulis*	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 45 to 490 feet (15 to 150 meters). Blooms Feb-May.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains native grassland habitat with coastal influence that could support this species. However, the species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
fragrant fritillary *Fritillaria liliacea*	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	**Not Observed (originally assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur due to the presence of potentially suitable grassland habitat. However, this species was not observed in the Study Area during the surveys conducted during the species' documented bloom period.	No further actions are recommended.
blue coast gilia *Gilia capitata* ssp. *chamissonis*	Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 5 to 655 feet (2 to 200 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks coastal dunes, and sandy coastal scrub known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
woolly-headed gilia *Gilia capitata* ssp. *tomentosa*	Rank 1B.1	Coastal bluff scrub, valley and foothill grassland, rocky outrcops on the coast (often serpentine). Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms May-Jul.	**No Potential.** The Study Area lacks rocky outcrops and serpentine substrate necessary to support this species.	No further actions are recommended.
dark-eyed gilia *Gilia millefoliata*	Rank 1B.2	Coastal dunes. Elevation ranges from 5 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	**No Potential.** The Study Area coastal dunes necessary to support this species.	No further actions are recommended.
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland (serpentine). Elevation ranges from 45 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	**No Potential.** The Study Area lacks serpentine substrate necessary to support this species.	No further actions are recommended.
congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta*	Rank 1B.2	Valley and foothill grassland. Elevation ranges from 65 to 1835 feet (20 to 560 meters). Blooms Apr-Nov.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable grassland habitat that could support this species. This species was observed at a documented reference site near Petaluma on the date of the June site visit. However, this species was not observed in the Study Area.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
short-leaved evax *Hesperevax sparsiflora* var. *brevifolia*	Rank 1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 705 feet (0 to 215 meters). Blooms Mar-Jun.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains native grassland habitat with coastal influence that could support this species. However, the species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
Marin western flax *Hesperolinon congestum*	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland (serpentine). Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks serpentine substrate necessary to support this species.	No further actions are recommended.
water star-grass *Heteranthera dubia*	Rank 2B.2	Marshes and swamps (alkaline, still or slow-moving water). Elevation ranges from 95 to 4905 feet (30 to 1495 meters). Blooms Jul-Oct.	**No Potential.** The Study Area lacks marshes and swamps with alkaline, eutrophic water necessary to support this species.	No further actions are recommended.
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 30 to 655 feet (10 to 200 meters). Blooms Apr-Sep.	**No Potential.** The Study Area lacks closed-cone coniferous forest, maritime chaparral, and coastal dunes. CNPS (2021) considers this species 'presumed extirpated' from Marin County.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Point Reyes horkelia *Horkelia marinensis*	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 15 to 2475 feet (5 to 755 meters). Blooms May-Sep.	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having high potential to occur due to the presence of potentially suitable grassland, and proximity to documented occurrences. However, this species was not observed in the Study Area during the June survey conducted during the species' documented bloom period.	No further actions are recommended.
thin-lobed horkelia *Horkelia tenuiloba*	Rank 1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland. Elevation ranges from 160 to 1640 feet (50 to 500 meters). Blooms May-Jul(Aug).	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having moderate potential to occur due to the presence of potentially suitable grassland habitat. However, this species was not observed in the Study Area during the June survey conducted during the species' documented bloom period.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
harlequin lotus *Hosackia gracilis*	Rank 4.2	Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
island rock lichen *Hypogymnia schizidiata*	Rank 1B.3	Closed-cone coniferous forest, chaparral. Elevation ranges from 1180 to 1330 feet (360 to 405 meters).	**No Potential.** The Study Area lacks the vegetation communities associated with this species and is well below the documented elevation range.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
coast iris *Iris longipetala*	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.	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having moderate potential to occur due to the presence of potentially suitable grassland habitat with coastal influence. However, this species was not observed in the Study Area during the April survey conducted during the species' documented bloom period.	
small groundcone *Kopsiopsis hookeri*	Rank 2B.3	North coast coniferous forest. Elevation ranges from 295 to 2905 feet (90 to 885 meters). Blooms Apr-Aug.	**No Potential.** The Study Area lacks north coast coniferous forest known to support this species.	No further actions are recommended.
Baker's goldfields *Lasthenia californica* ssp. *bakeri*	Rank 1B.2	Closed-cone coniferous forest (openings), coastal scrub, meadows and seeps, marshes and swamps. Elevation ranges from 195 to 1705 feet (60 to 520 meters). Blooms Apr-Oct.	**Unlikely.** The Study Area lacks the vegetation communities associated with this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
perennial goldfields *Lasthenia californica* ssp. *macrantha*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Jan-Nov.	**Unlikely.** The Study Area lacks the vegetation communities associated with this species.	No further actions are recommended.
beach layia *Layia carnosa*	FE, 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 lacks coastal dunes and sandy coastal scrub necessary to support this species.	No further actions are recommended.
bristly leptosiphon *Leptosiphon acicularis*	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.	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur due to the presence of potentially suitable grassland habitat. However, this species was not observed in the Study Area during the April and June surveys conducted during the species' documented bloom period.	No further actions are recommended.
coast yellow leptosiphon *Leptosiphon croceus*	SS, Rank 1B.1	Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 490 feet (10 to 150 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area lacks coastal bluff scrub, and coastal prairie habitat associated with this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
large-flowered leptosiphon *Leptosiphon grandiflorus*	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland (sandy soil). Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug.	**Unlikely.** Despite the presence of potentially suitable grassland habitat, the Study Area lacks sandy soils associated with this species.	No further actions are recommended.
rose leptosiphon *Leptosiphon rosaceus*	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area lacks coastal bluff scrub habitat known to support this species.	No further actions are recommended.
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland (serpentine). Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**No Potential.** The Study Area lacks serpentine substrate necessary to support this species.	No further actions are recommended.
Tamalpais lessingia *Lessingia micradenia* var. *micradenia*	Rank 1B.2	Chaparral, valley and foothill grassland (serpentine). Elevation ranges from 325 to 1640 feet (100 to 500 meters). Blooms (Jun)Jul-Oct.	**No Potential.** The Study Area lacks serpentine substrate necessary to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Mason's Lilaeopsis *Lilaeopsis masonii*	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Nov.	**No Potential.** The Study Area lacks marshes and swamps known to support this species.	No further actions are recommended.
coast lily *Lilium maritimum*	Rank 1B.1	Broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps (freshwater), north coast coniferous forest. Elevation ranges from 15 to 1560 feet (5 to 475 meters). Blooms May-Aug.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
Pitkin Marsh lily *Lilium pardalinum* ssp. *pitkense*	FE, SE, Rank 1B.1	Cismontane woodland, meadows and seeps, marshes and swamps (freshwater). Elevation ranges from 110 to 215 feet (35 to 65 meters). Blooms Jun-Jul.	**No Potential.** Despite potentially suitable wetland habitat, this species is only known from one location in Sonoma County, and is not known from Marin County (CNPS 2021).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Point Reyes meadowfoam *Limnanthes douglasii* ssp. *sulphurea*	SE, Rank 1B.2	Coastal prairie, meadows and seeps (mesic), marshes and swamps (freshwater), vernal pools. Elevation ranges from 0 to 460 feet (0 to 140 meters). Blooms Mar-May.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.
Tidestrom's lupine Lupinus tidestromii	FE, SE, Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jun.	**No Potential.** The Study Area lacks coastal dunes necessary to support this species.	No further actions are recommended.
Mt. Diablo cottonweed *Micropus amphilobus*	Rank 3.2	On slopes, or ridges, underlain by shallow soils, of sedimentary or volcanic origin in broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland (thin soils). Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**Unlikely.** The Study Area lacks thin, rocky soils necessary to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
marsh microseris *Microseris paludosa*	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul).	**Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur due to the presence of potentially suitable grassland habitat, and proximity to documented occurrences. However, this species was not observed in the Study Area during the April and June surveys conducted during the species' documented bloom period.	No further actions are recommended.
elongate copper moss *Mielichhoferia elongata*	Rank 4.3	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest; growing on very acidic, metamorphic rock. Elevation ranges from 0 to 6430 feet (0 to 1960 meters).	**No Potential.** The Study Area lacks acidic, metamorphic rock necessary to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
northern curly-leaved Monardella *Monardella sinuata* ssp. *nigrescens*	Rank 1B.2	Chaparral (scr co.), coastal dunes, coastal scrub, lower montane coniferous forest (scr co., ponderosa pine sandhills). Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms (Apr)May-Jul(Aug-Sep).	**No Potential.** The Study Area lacks coastal dunes and sandy substrates within chaparral, coastal scrub, and ponderosa pine forest habitats known to support this species.	No further actions are recommended.
Marin County navarretia *Navarretia rosulata*	Rank 1B.2	Closed-cone coniferous forest, chaparral (serpentine). Elevation ranges from 655 to 2085 feet (200 to 635 meters). Blooms May-Jul.	**No Potential.** The Study Area lacks serpentine habitat necessary to support this species.	No further actions are recommended.
Gairdner's yampah *Perideridia gairdneri* ssp. *gairdneri*	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.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this specsei was not observed during the June site visit conducted during the species' documented bloom period.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
North Coast phacelia *Phacelia insularis* var. *continentalis*	Rank 1B.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 30 to 560 feet (10 to 170 meters). Blooms Mar-May.	**No Potential.** The Study Area lacks coastal dunes and sandy substrates within coastal bluff scrub known to support this species.	No further actions are recommended.
Point Reyes rein orchid *Piperia elegans* ssp. *decurtata*	Rank 1B.1	Coastal bluff scrub, coastal prairie. Elevation ranges from 45 to 605 feet (15 to 185 meters). Blooms Jul-Oct.	**No Potential.** The Study Area lacks the vegetation communities associated with this species. This species is only known from two locations on the Point Reyes' peninsula on the immediate coastline.	No further actions are recommended.
Michael's rein orchid *Piperia michaelii*	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevation ranges from 5 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	No further actions are recommended.
Petaluma popcornflower *Plagiobothrys mollis* ssp. *vestitus*	Rank 1A	Marshes and swamps (coastal salt), valley and foothill grassland (mesic). Elevation ranges from 30 to 165 feet (10 to 50 meters). Blooms Jun-Jul.	**Unlikely.** The Study Area lacks coastal salt marsh habitat, and despite potentially suitable mesic grassland, this species has not been observed since 1880 and is considered likely extinct (CNPS 2021).	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
North Coast semaphore grass *Pleuropogon hooverianus*	ST, Rank 1B.1	Broadleafed upland forest, meadows and seeps, north coast coniferous forest. Elevation ranges from 30 to 2200 feet (10 to 671 meters). Blooms Apr-Jun.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable mesic grassland habitat which could support this species. However, this species was not observed during the April and June site visits conducted during the species' documented bloom period.	No further actions are recommended.
nodding semaphore grass *Pleuropogon refractus*	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 (Mar)Apr-Aug.	**Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable mesic riparian habitat which could support this species. However, this species was not observed during the April and June site visits conducted during the species' documented bloom period.	No further actions are recommended.
Marin knotweed *Polygonum marinense*	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug(Oct).	**No Potential.** The Study Area lacks coastal salt marshes known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Tamalpais oak *Quercus parvula* var. *tamalpaisensis*	Rank 1B.3	Lower montane coniferous forest. Elevation ranges from 325 to 2460 feet (100 to 750 meters). Blooms Mar-Apr.	**No Potential.** This Study Area lacks lower montane coniferous forest and is below the documented elevation range of the species.	No further actions are recommended.
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**No Potential.** The Study Area lacks seasonally ponded water of 6 inches or deeper necessary to support this species.	No further actions are recommended.
California beaked-rush *Rhynchospora californica*	Rank 1B.1	Bogs and fens, lower montane coniferous forest, meadows and seeps (seeps), marshes and swamps (freshwater). Elevation ranges from 145 to 3315 feet (45 to 1010 meters). Blooms May-Jul.	**Unlikely.** The Study Area lacks freshwater marshes and swamps known to support this species.	No further actions are recommended.
Victor's gooseberry *Ribes victoris*	Rank 4.3	Broadleafed upland forest, chaparral. Elevation ranges from 325 to 2460 feet (100 to 750 meters). Blooms Mar-Apr.	**No Potential.** The Study Area lacks broadleafed upland forest and chaparral known to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Sanford's arrowhead *Sagittaria sanfordii*	Rank 1B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	**No Potential.** The Study Area lacks perennially ponded water necessary to support this species.	No further actions are recommended.
Point Reyes checkerbloom *Sidalcea calycosa* ssp. *rhizomata*	Rank 1B.2	Marshes and swamps (freshwater, near coast). Elevation ranges from 5 to 245 feet (3 to 75 meters). Blooms Apr-Sep.	**No Potential.** The Study Area lacks freshwater marshes known to support this species.	No further actions are recommended.
Marin checkerbloom *Sidalcea hickmanii* ssp. *viridis*	Rank 1B.1	Chaparral (serpentine). Elevation ranges from 160 to 1410 feet (50 to 430 meters). Blooms May-Jun.	**No Potential.** The Study Area lacks serpentine chaparral habitat known to support this species.	No further actions are recommended.
purple-stemmed checkerbloom *Sidalcea malviflora* ssp. *purpurea*	Rank 1B.2	Broadleafed upland forest, coastal prairie. Elevation ranges from 45 to 280 feet (15 to 85 meters). Blooms May-Jun.	**Unlikely.** The Study Area lacks broadleaf upland forest and coastal prairie habitat associated with this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Scouler's catchfly *Silene scouleri* ssp. *scouleri*	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 lacks shallow sandy soil and exposed marine headlands known to support this species (Howell et al. 2007).	No further actions are recommended.
Santa Cruz microseris *Stebbinsoseris decipiens*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland (usually on serpentine). Elevation ranges from 30 to 1640 feet (10 to 500 meters). Blooms Apr-May.	**Unlikely.** The Study Area lacks serpentine substrates most often associated with this species.	No further actions are recommended.
beach starwort *Stellaria littoralis*	Rank 4.2	Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps. Elevation ranges from 15 to 130 feet (5 to 40 meters). Blooms Mar,May,Jun,Jul.	**Unlikely.** The Study Area lacks the associated vegetation communities.	No further actions are recommended.
Tamalpais jewelflower *Streptanthus batrochopus*	Rank 1B.3	Closed-cone coniferous forest, chaparral. Elevation ranges from 1000 to 2135 feet (305 to 650 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Mt. Tamalpais bristly jewelflower *Streptanthus glandulosus* ssp. *pulchellus*	Rank 1B.2	Chaparral, valley and foothill grassland. Elevation ranges from 490 to 2625 feet (150 to 800 meters). Blooms May-Jul(Aug).	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	No further actions are recommended.
whiteworm lichen *Thamnolia vermicularis*	Rank 2B.1	On rocks derived from sandstone in chaparral, valley and foothill grassland. Elevation ranges from 295 to 295 feet (90 to 90 meters).	**No Potential.** The Study Area lacks rocky outcrops of sandstone rock known to support this species.	No further actions are recommended.
two-fork clover *Trifolium amoenum*	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.	**Moderate Potential (Not Observed).** This species was initially assessed as having moderate potential to occur due to the presence of potentially suitable grassland habitat and proximity to the only documented extant occurrence near Dillon Beach (CDFW 2021). However, this species was not observed during protocol-level rare plant surveys conducted during the species' documented bloom period.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Plants				
Pacific Grove clover *Trifolium polypodon`*	SR, Rank 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland. Elevation ranges from 15 to 1395 feet (5 to 425 meters). Blooms Apr-Jun(Jul).	**Unlikely.** Despite potentially suitable grassland habitat, this species is not documented from Marin County (Howell et al. 2007, CCH 2021).	No further actions are recommended.
San Francisco owl's-clover *Triphysaria floribunda*	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 30 to 525 feet (10 to 160 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area lacks shallow soil and exposed marine headlands known to support this species.	No further actions are recommended.
coastal Triquetrella *Triquetrella californica*	Rank 1B.2	Coastal bluff scrub, coastal scrub. Elevation ranges from 30 to 330 feet (10 to 100 meters).	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
MAMMALS				

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
pallid bat *Antrozous pallidus*	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, 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.	**Moderate Potential.** Unoccupied buildings within the Study Area may be used for roosting; there are CNDDB occurrences in the vicinity (CDFW 2022a).	A pre-construction habitat assessment and survey effort should be performed prior to the initiation of building demolition; see report section 6.2.2.
Point Reyes mountain beaver *Aplodontia rufa phaea*	SSC	Occurs only in western Marin County, almost entirely within Point Reyes National Seashore. Found on moist, north-facing slopes within areas of coastal scrub. Lives in burrow systems and forages on a variety of herbaceous plants.	**No Potentia**l. The Study Area is outside of this species' known local range; the nearest occurrence in CNDDB is located greater than 4.5 miles to the northwest (CDFW 2022a).	No further actions are recommended.
Sonoma tree vole *Arborimus pomo*	SCC	North coastal fog belt from Oregon border to Sonoma County. Occurs In Douglas fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	**No Potential.** The Study Area lacks coniferous forest, and outside of this species' known range.	No further actions are recommended.
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	**Moderate Potential.** Unoccupied buildings within the Study Area may be used for roosting; there are CNDDB occurrences in the vicinity (CDFW 2022a).	A pre-construction habitat assessment and survey effort should be performed prior to the initiation of building demolition; see report section 6.2.2.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western red bat *Lasiurus blossevillii*	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species 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.	**Unlikely.** The Study Area lacks large broad-leaved trees and other typical roosting substrates.	No further actions are recommended.
fringed myotis *Myotis thysanodes*	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts.	**Unlikely.** The Study Area lacks trees, caves/mines and other typical roost substrates for this species.	No further actions are recommended.
salt-marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, SFP	Found only in the saline emergent wetlands of the San Francisco Bay Estuary and its tributaries. Pickleweed is primary habitat, but may use other thick wetland vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**No Potential.** The Study Area does not provide any tidal or otherwise saline marsh.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**High Potential.** The Study Area provides grassland areas with friable soils. Unused/remnant badger burrows were observed within grassland in the northern portion of the ; this site, and this species may occur there again in the future.	Pre-construction surveys prior to ground disturbance; any burrows not within the project footprint should be left undisturbed. See report section 6.2.2.
Point Reyes jumping mouse *Zapus trinotatus orarius*	SSC	Inhabits bunch grass marshes on the uplands of Point Reyes in areas safe from continuous inundation. Eats mainly grass seeds with some insects and fruit taken. Builds grassy nests on ground under vegetation, burrows in winter.	**No Potential**. The Study Area lacks suitable habitat and is outside of this species' range.	No further actions are recommended.
BIRDS				
tricolored blackbird *Agelaius tricolor*	ST, SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**Unlikely.** This species' local distribution includes the Point Reyes Peninsula and adjacent areas (CDFW 2022a, Shuford 1993). However, the Study Area lacks tall, dense emergent vegetation or similar herbaceous vegetation for nesting. May occur with other blackbirds during the non-breeding season.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
grasshopper sparrow *Ammodramus savannarum*	SSC	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**Moderate Potential.** Areas of open grassland within the Study Area are limited in contiguous extent, but may be large enough to support this species.	Perform pre-construction surveys if vegetation removal and/or ground disturbance is initiated during the nesting season; see report section 6.2.2.
great egret *Ardea alba*	none; breeding sites protected by CDFW	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** Suitable nest trees are present within the Study Area, but no indication of nesting (or presence of the species) was observed during site visits. May occasionally forage there.	No further actions are recommended.
great blue heron *Ardea herodias*	none; breeding sites protected by CDFW	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** Suitable nest trees are present within the Study Area, but no indication of nesting (or presence of the species) was observed during site visits. May occasionally forage there.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
burrowing owl *Athene cunicularia*	SSC	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.** The Study Area provides some open grassland. However, this species is extirpated from Marin County as a breeder (Shuford and Gardali 2008); recent, local wintering observations are concentrated on the Point Reyes Peninsula or areas with large expanses of grassland/pastureland, the nearest located approximately 1.5 miles to the north (eBird 2022).	No further actions are recommended.
marbled murrelet *Brachyramphus marmoratus*	FT, SE	Predominantly coastal marine. Nests in old-growth coniferous forests up to 30 miles inland along the Pacific coast, from Eureka to Oregon border, and in Santa Cruz/San Mateo Counties. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes.	**No Potential.** The Study Area does not contain coniferous forest and provides no habitat for this species.	No further actions are recommended.
western snowy plover *Charadrius nivosus (alexandrines) nivosus*	FT, SSC	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.	**No Potential.** The Study Area lacks suitable beach or shoreline habitat, and does not provide any suitable nesting substrates.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
northern harrier *Circus cyaneus*	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 (nesting).** The Study Area provides suitable foraging habitat and is within this species' local nesting range (Shuford 1993). However, areas of grassland area relatively small in area and disturbed by surrounding development, rendering nesting unlikely.	No further actions are recommended.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT, SE	Summer resident, breeding in dense riparian forests and jungles, typically with early successional vegetation present. Utilizes densely-foliaged deciduous trees and shrubs. Eats mostly caterpillars. Current breeding distribution within California very restricted.	**Unlikely.** Riparian woodland is present within the Study Area, but there are no modern breeding records in Marin County (Shuford 1993).	No further actions are recommended.
black swift *Cypseloides niger*	SSC	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.	**No Potential.** Study Area lacks any suitable nesting habitat (waterfalls, cliffs).	No further actions are recommended.
white-tailed kite *Elanus leucurus*	SFP	Year-long resident of coastal and valley lowlands, including agricultural areas. Nests in a variety of tree types. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	**Moderate Potential.** The Study Area provides suitable nest trees and adjacent open areas for foraging.	Perform pre-construction surveys if tree removal and/or ground disturbance is initiated during the nesting season; see report section 6.2.2.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
tufted puffin *Fratercula cirrhata*	SSC	Pelagic and coastal marine. Nests near or along the coast on islands, islets, and (rarely) isolated mainland cliffs. Requires sod or earth into which the birds can burrow, or rocky crevices where friable soil is absent. Forages at sea, primarily for fish.	**No Potential.** The Study Area does not contain marine waters or coastal islets/islands for nesting.	No further actions are recommended.
San Francisco (saltmarsh) common yellowthroat *Geothlypis trichas sinuosa*	SSC	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.	**Moderate Potential.** While the Study Area lacks dense and well-developed marsh habitat, moist riparian areas with a dense understory may support this species.	Perform pre-construction surveys if vegetation removal and/or ground disturbance in or adjacent to riparian woodland is initiated during the nesting season; see report section 6.2.2.
bald eagle *Haliaeetus leucocephalus*	SE, SFP	Occurs year-round in California, but primarily a winter visitor. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** Nests locally on Inverness Ridge. No typical nest trees are present in the Study Area nor was any indication of presence observed during site visits.	No further actions are recommended.
California black rail *Laterallus jamaicensis coturniculus*	ST, SFP	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.	**No Potential.** The Study Area lacks extensive tidal or brackish marsh.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
ashy storm-petrel *Oceanodroma homochroa*	SSC	Marine species; nests in rocky crevices on offshore islands and rocks from southern Mendocino County to northern Baja California. Forages over open ocean for invertebrates and larval fishes.	**No Potential.** The Study Area does not contain marine waters or coastal islets/islands for nesting.	No further actions are recommended.
Bryant's savannah sparrow *Passerculus sandwichensis alaudinus*	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas; often found where wetland communities merge into grassland. May also occur in drier grasslands. Nests near the ground in taller vegetation, including along roads, levees, and canals.	**Moderate Potential.** Areas of open grassland within the Study Area are limited in contiguous extent, but may be large enough to support this species.	Perform pre-construction surveys if vegetation removal and/or ground disturbance is initiated during the nesting season; see report section 6.2.2.
California Ridgway's (clapper) rail *Rallus obsoletus obsoletus*	FE, SE, SFP	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.	**No Potential.** The Study Area does not feature any tidal marsh.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
bank swallow *Riparia riparia*	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area lacks suitable cliff and riparian habitat; no local modern breeding records.	No further actions are recommended.
yellow warbler *Setophaga petechia brewsteri*	SSC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration.	**Moderate Potential.** Riparian woodland and thickets within the Study Area provides suitable nesting habitat.	Perform pre-construction surveys if tree removal and/or ground disturbance in or adjacent to riparian woodland is initiated during the nesting season; see report section 6.2.2.
northern spotted owl *Strix occidentalis caurina*	FT,ST, SSC	Year-round resident in dense, structurally complex forests, generally with old-growth or otherwise mature conifers. In Marin County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys mostly on mammals.	**Unlikely.** The Study Area lacks mature coniferous or mixed forest of the type this species requires.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
REPTILES AND AMPHIBIANS				
western pond turtle *Actinemys marmorata*	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	**High Potential (Lagunitas Creek).** This species is presumably present at least intermittently in Lagunitas Creek, but is unlikely overall to be present within the Project Area.	No further actions are recommended; see report section 6.2.2.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California tiger salamander *Ambystoma californiense*	FE/FT, ST, SSC	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland and savannah. Spends most of life underground in mammal burrows and similar refugia. Vernal pools and other seasonal water features used for breeding.	**No Potential.** The Study Area is outside of this species' local range.	No further actions are recommended.
California giant salamander *Dicamptodon ensatus*	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.	**Unlikely.** The reach of Lagunitas Creek within the Study Area is presumably too saline and has unfavorable hydrology (very strong flows during the wet season) to support breeding; typical forested freshwater streams are absent.	No further actions are recommended.
California red-legged frog *Rana draytonii*	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, stream pools and wetlands. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	**Moderate Potential.** Aquatic breeding within the Study Area is unlikely, but may occur in non-breeding aquatic habitat (e.g., inundated stream side channels), and also in upland areas during movement or dispersal. There are several CNDDB occurrences within 1 mile (CDFW 2022a).	Pre-construction surveys, avoidance measures during construction, and possibly consultation with the USFWS; see report section 6.2.2.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
foothill yellow-legged frog *Rana boylii*	SSC	Found in or near 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. Highly aquatic.	**No Potential.** The Study Area lacks typical rocky stream habitat; this species appears to be extirpated in the vicinity (CDFW 2022a).	No further actions are recommended.
FISHES				
Coho salmon - central CA coast ESU *Oncorhynchus kisutch*	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.	**Present (Lagunitas Creek only).** Lagunitas Creek and several tributary streams support spawning populations of this species (CDFW 2022a); individuals likely present primarily during in- and out-migrations.	Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.2.2.
steelhead - central CA coast DPS *Oncorhynchus mykiss irideus*	FT, NMFS	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.	**Present (Lagunitas Creek only).** Lagunitas Creek and portions of its watershed support spawning populations of this species (CDFW 2022a); individuals likely present primarily during in- and out-migrations.	Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.2.2.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Tomales roach *Lavinia symmetricus* ssp. 2	SSC	Occurs in tributaries to Tomales Bay. Habitat generalist, tolerant of relatively high temperatures and low oxygen levels in a variety of freshwater stream reaches. Intolerant of highly saline conditions.	**High Potential (Lagunitas Creek only).** The reach of Lagunitas Creek within the Study Area may support this species, presumably dependent on when low-salinity conditions exist.	Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.2.2.
tidewater goby *Eucyclogobius newberryi*	FE, 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, they need fairly still but not stagnant water and high oxygen levels.	**Unlikely.** Although there are historic occurrences in lower Lagunitas Creek, as per CDFW (2022a) the species is now likely extirpated there.	No further actions are recommended.
longfin smelt *Spirinchus thaleichthys*	FC, ST	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.	**Unlikely.** This species is known from Tomales Bay, though apparently spawning in Lagunitas Creek has not been documented; reach of the creek within the Study Area may be too fresh.	No further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
INVERTEBRATES				
western bumblebee *Bombus occidentalis*	SC	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually those on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	**Unlikely.** Although there are documented occurrences in CNDDB within 5 miles, this species is considered extirpated from the greater San Francisco Bay Area.	No further actions are recommended.
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE	Restricted to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, *Sedum spathulifolium*.	**No Potential.** Species is currerntly confined to San Mateo County.	No further actions are recommended.
monarch butterfly *Danaus plexippus*	FC; 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 (usually eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Moderate Potential (winter roosting).** While there is no record of monarch roosting within or in proximity to the Study Area, the site provides mature eucalyptus trees that could be support roosting by this species.	A winter roost survey should be performed prior to tree removal; see report section 6.2.2.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Mission blue butterfly *Icaricia icarioides missionensis*	FE	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.** The Study Area does not support the host plants and is outside of this species' known range.	No further actions are recommended.
Myrtle's silverspot butterfly *Speyeria zerene myrtleae*	FE	Restricted to the fog belt of northern Marin and southernmost Sonoma County, including the Point Reyes Peninsula; extirpated from coastal San Mateo County. Occurs in coastal prairie, dunes, and grassland. Larval foodplant is typically *Viola adunca*. Adult flight season may range from late June to early September.	**Unlikely.** While the Study Area provides grassland areas, *Viola* (host plant) was not observed there during appropriamtely-timed botanical surveys. The nearest occurrence in CNDDB is located greater than 5 miles to the west on the Point Reyes Peninsula (CDFW 2022a).	No further actions are recommended.
California freshwater shrimp *Syncaris pacifica*	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Favors shallow pools away from the main stream flow. Winter: undercut banks with exposed roots; summer: leafy branches touching water.	**Present (Lagunitas Creek only).** This species is known from Lagunitas Creek and as per CDFW (2022a), was observed "to Point Reyes Station" in 1988-1989; presence is thus assumed. Local presence may vary seasonally depenent on aquatic conditions.	Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.0.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
SD	State Delisted
ST	State Threatened
SSC	Species of Special Concern
SSI	Special Status Invertebrate
CFP	CDFW Fully Protected
BCC	Bird of Conservation Concern
WBWG	Western Bat Working Group Medium or High Priority
California Rare Plant Rank (CRPR)	
Rank 1A	CRPR 1A: Plants presumed extinct in California
Rank 1B	CRPR 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CRPR 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CRPR 3: Plants about which CNPS needs more information (a review list)
Rank 4	CRPR 4: Plants of limited distribution (a watch list)
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

****Potential to Occur:**

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (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.

*****Results and Recommendations:**

Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

Assumed Present. Species has a high likelihood of occurring and actions to avoid/mitigate impacts are recommended; surveys not conducted.

Assumed Absent. Species is assumed to not be present or utilize the site due to a lack of key habitat components.
Not Observed. Species was not observed during protocol-level surveys.

Appendix D

Representative Photographs

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Photograph 1. Photograph depicting developed/landscaped area including the entry road at left and existing gravel parking area in the Project Area. Photograph taken April 9, 2021.

Photograph 2. Photograph depicting developed/landscaped area consisting of the previously developed USCG housing site. Photograph taken April 9, 2021.

Photograph 3. Photograph depicting low-lying CCC seasonal wetland and Corps seasonal wetland area (aquatic ESHAs) in foreground in southwest portion of Study Area, outside of Project Area. Riparian arroyo willow thicket (aquatic ESHA) seen in the background. Photograph taken January 20, 2021.

Photograph 4. Photograph a representative portion of Lagunitas Creek, an aquatic ESHA, within the Study Area (left bank and riparian are in the Study Area; area across creek outside of Study Area). Photograph taken January 20, 2021.

Photograph 5. Photograph depicting a Corps seasonal wetland, an aquatic ESHA, in the southwestern portion of the Study Area. Photograph taken April 9, 2021.

Photograph 6. Photograph depicting purple needlegrass grassland, a terrestrial ESHA in the northeast portion of the Study Area on a slope above the developed/landscaped area. Photograph taken April 9, 2021.