Zanker Material Processing Facility Stormwater Basins Biological Resources Assessment

San Jose, Santa Clara County, California

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ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS

BCC	USFWS Birds of Conservation Concern
BCDC	SF Bay Conservation and Development Commission
BIOS	Biogeographic Information and Observation System
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
City	City of San Jose
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
County	Santa Clara County
Corps	U.S. Army Corps of Engineers
CRPR	CNPS Rare Plant Rank
CSRL	California Soils Resources Lab
CWA	Clean Water Act
CY	cubic yards
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
HCP	Habitat Conservation Plan
NCCP	Natural Community Conservation Plan
MBTA	Migratory Bird Treaty Act
NAVD 88	North American Vertical Datum of 1988
PD	Planned Development
Rank	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SSI	Special-status Invertebrates
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WMU	waste management unit
WRA	WRA, Inc.
ZMPF	Zanker Materials Processing Facility
ZRRML	Zanker Road Resource Management, Ltd

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1.0 INTRODUCTION

1.1 Purpose of Assessment

On November 20 and 21, 2019, WRA, Inc. (WRA) performed an assessment of biological resources at the Zanker Materials Processing Facility (ZMPF; Project Area) in San Jose, Santa Clara County, California (Appendix A, Figure 1). The Project Area consists of approximately 75 acres (APNs 015-30-071, 015-30-105, and 015-30-106) owned by Zanker Road Resource Management, Ltd (ZRRML). The ZMPF is located at 675 Los Esteros Road, which is accessed from the Zanker Road exit off Highway 237. The ZMPF has operated as a recyclable materials processing facility and disposal site at the Los Esteros Road location since 1999. Surrounding land uses include the Don Edwards San Francisco Bay National Wildlife Refuge to the north, the San Jose/Santa Clara Water Pollution Control Plant to the east, and the town of Alviso to the southwest.

The purpose of the assessment was to develop and gather information on sensitive natural communities and special-status plant and wildlife species to support an evaluation of the future proposed project under the California Environmental Quality Act (CEQA). This report describes the results of the site visits, which assessed the Project Area for (1) the presence of sensitive natural communities, (2) the potential for natural communities 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.

A biological resources assessment provides general information on the presence, or potential presence, of sensitive species and habitats. This biological resources assessment does contain the results of a focused survey for listed plant or animal species previously documented on or near the Project Area. This assessment is not an official wetland delineation that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the dates the site was visited.

1.2 Project Summary

Current federal, state and local regulations restrict storm water discharges from the ZMPF from adversely impacting surface and groundwater quality. It has been determined that retaining storm water runoff is the best (and preferred) alternative for complying with the stringent requirements of current storm water regulations. Therefore, ZRRML proposes to use its adjacent property for the development of large storm water retention basins to accommodate, manage, and control the runoff from the ZMPF. The location of the two proposed basins is shown on Figure 6 (see Appendix A).

The proposed storm water retention basins are located on adjacent property owned by ZRRML which is outside of the waste management unit (WMU) previously zoned and permitted for use by the City and various regulatory agencies. Therefore, before the proposed basins can be constructed and incorporated into the storm water management plans for the ZMPF, appropriate planned development (PD) zoning and permits must be obtained from the City of San Jose (City), and then the necessary operating

permits/approvals must be obtained from the appropriate local and state regulatory agencies .

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts. Table 1 provides a regulatory crosswalk between sensitive resources and applicable agencies and regulations which protect them, as well as which specific question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines relates to the sensitive resource.

Table 1. Regulatory Crosswalk

Feature	Laws and Regulations	Regulatory Agency	CEQA Assessment Category[1] IV. Biological Resources	Examples
Natural Communities				
Sensitive Terrestrial Communities	California Fish and Game Code (CFGC) Section 1802 Local plans and ordinances	California Department of Fish and Wildlife (CDFW) Local agencies	Question B. Sensitive Natural Communities Question F. Conservation Plans	Vegetation Alliances Ranked G1-G3, S1-S3
Waters of the U.S.	Clean Water Act (CWA) Section 404 Rivers and Harbors Act Section 10	US Army Corps of Engineers (Corps) / Environmental Protection Agency (EPA)	Question C. Section 404 of CWA	Wetlands Open Waters[2]
Waters of the State	Porter-Cologne Act CWA Section 401	Regional Water Quality Control Board (RWQCB)	Not directly addressed under CEQA	Wetlands Open Waters Riparian Areas
Streams, Lakes, and Riparian Habitat	(CFGC) Section 1602	CDFW / RWQCB	Question B. Riparian Habitat	Open Waters Riparian Areas
San Francisco Bay	McAteer-Petris Act	San Francisco Bay Conservation and Development Commission (BCDC)	Not directly addressed under CEQA	San Francisco Bay Shoreline Band Salt Ponds

[1] Descriptions have been summarized; see Section 6.2 for details.
[2] Includes, but not limited to: streams, creeks, rivers, ponds, lakes

Feature	Laws and Regulations	Regulatory Agency	CEQA Assessment Category[1] IV. Biological Resources	Examples
				Managed Wetlands Certain Tidal Waterways
Special-Status Species				
Special-Status Plants	Endangered Species Act (ESA) California Endangered Species Act (CESA) California Native Plant Protection Act (CNPPA) Local plans and ordinances	U.S. Fish and Wildlife Service (USFWS) CDFW Local agencies	Question A. Special-status Species Question E. Local Policies	ESA Listed Plants CESA Listed Plants CNPPA Listed Plants California Native Plant Society (CNPS) Rank 1 & 2 Plants CNPS Rank 3 &4 Plants (sometimes, analysis required) Locally listed Plants (sometimes, analysis required) Locally Listed Trees (local ordinance)
Special-status Wildlife	ESA CESA CFGC Migratory Bird Treaty Act (MBTA) Bald and Golden Eagle Protection Act Local plans and ordinances	USFWS National Marine Fisheries (NMFS) CDFW Local agencies	Question A. Special-status Species Question E. Local Policies	ESA Listed Wildlife CESA Listed Wildlife CDFW Fully Protected Species CDFW Species of Special Concern Native Nesting Birds Bald and Golden Eagles Western Bat Working Group medium and high priority species

Feature	Laws and Regulations	Regulatory Agency	CEQA Assessment Category[1] IV. Biological Resources	Examples
Critical Habitat	ESA	USFWS	Question A. Special-status Species Question F. Conservation Plans	Critical Habitat is only designated for some ESA listed species such as: California red-legged frog, marbled murrelet, etc.

2.1 Sensitive Natural Communities

Sensitive natural communities include vegetation alliances and associations on the California Department of Fish and Wildlife (CDFW) Natural Communities List with a rarity ranking of S1, S2 or S3. Sensitive natural communities include habitats that fulfill special functions, have limited distribution or are dominated by special-status plant species (Special Stands). Special Stands are protected under federal regulations such as the Endangered Species Act (ESA); state regulations such as the California Endangered Species Act (CESA), the California Fish and Game Code (CFGC), and CEQA; or local ordinances or policies such as the county General Plan and Zoning Ordinances.

Non-sensitive natural communities include vegetation alliances and associations on the CDFW Natural Communities List with a rarity ranking of S4 or S5, as well as other Semi-natural (non-native species dominated) Stands and non-sensitive land use designations such as agriculture, developed areas, etc. These communities and land uses are not protected by federal, state, or local laws and are not considered sensitive under CEQA.

Impacts to natural communities considered sensitive by the CDFW must be evaluated for significance under CEQA. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G).

2.1.1 Sensitive Aquatic Resources

<u>Waters of U.S.</u>

The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act. Waters of the U.S. 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 of Engineers 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. Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S 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 proposed 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.

Lakes, Streams, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of CFGC. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the CCR as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). 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.

San Francisco Bay and Shoreline

The San Francisco Bay Conservation and Development Commission (BCDC) has regulatory jurisdiction, as defined by the McAteer-Petris Act, over the Bay and its shoreline, which generally consists of the area between the Bay shoreline and a line 100 feet landward of and parallel to the shoreline. BCDC has two areas of jurisdiction: San Francisco Bay and the Shoreline Band. These areas are defined in the McAteer-Petris Act (PRC Section 66610). San Francisco Bay comprises areas that are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita-Point Lobos) and to the Sacramento River line (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut), including all sloughs, tidelands (land lying between mean high tide and mean low tide); submerged lands (land lying below mean low

tide), and marshlands. Specifically, it extends to the mean high tide line where tidal marsh is absent and up to 5 feet above mean sea level (MSL) where tidal marsh is present. The shoreline band consists of all territory located between the shoreline of San Francisco Bay as defined above and a line 100 feet landward of and parallel with that line, but excluding any portions of such territory which are included in other areas of BCDC jurisdiction; provided that the Commission may, by resolution, exclude from its area of jurisdiction any area within the shoreline band that it finds and declares is of no regional importance to the Bay.

2.2 Special-status Species

2.2.1 Special-status Plants

Special-status species include those plant species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory with California Rare Plant Ranks (Rank) of 1, 2, and sometimes Rank 3 are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and all 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 below in Table 2.

Table 2. CNPS Ranking List

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 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

<u>CNPPA</u>

The California Native Plant Protection Act (CNPPA) affords protection to plant species designated rare or endangered by the Fish and Game Commission through prohibition of “take,” with some exceptions. Plants designated as rare or endangered through CNPPA are subject to review through CEQA.

2.2.2 Special-status Wildlife

Special-status wildlife species include those species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the ESA or CESA. These acts afford protection to both listed species and those that are formal candidates for listing. The federal Bald and Golden Eagle Protection Act also provides broad protections to both eagle species that in some regards are similar to those provided by ESA. Additionally, CDFW Species of Special Concern (SSC) and California Fully Protected Species (CFP) are all considered special-status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. Bat species are evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity. Bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special-status under CEQA.

In addition to regulations for species that carry a special designation, most native birds in the United States (including non-status species) are protected under the CFGC, specifically sections 3503, 3503.5 and 3513. Under these laws, deliberately destroying active bird nests, eggs, and/or young is illegal.

Critical Habitat

Critical habitat is a term defined in the ESA as a specific and 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. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

Wildlife Corridors

Wildlife movement between suitable habitat areas typically occurs via wildlife movement corridors. The primary function of wildlife corridors is to connect two larger habitat blocks, also referred to as core habitat areas (Beier and Loe 1992; Soulé and Terbough 1999). Core habitat areas are important for wildlife that may travel between different types of habitat in order to complete various stages of their lifecycle. Wildlife corridors must be considered under CEQA.

2.3 Local Ordinances

2.3.1. City of San Jose Ordinances and Policies

Within the City of San Jose Municipal Code, Chapter 13.32 "Tree Removal Controls," it is written that removal of any tree 56 inches or more in circumference at a height of 24 inches above natural grade slope requires one of the following:

- removal of the tree is required pursuant to the provisions of Chapter 13.28; or

- a development permit that allows the removal of the tree has been issued and accepted by the permit applicant pursuant to the provisions of Title 20 of this Municipal Code; or
- an amendment to a development permit that allows the removal of the tree has been issued and accepted pursuant to the provisions of Title 20 of this Municipal Code; or
- a tree removal permit that allows the removal of that tree has been issued and accepted pursuant to the provisions of Chapter 13.32.

The City's Envision San Jose 2040 General Plan (General Plan; City of San Jose 2011) was written to serve as a guide for future development and growth in the City of San Jose. Included in the General Plan is guidance pertaining to environmental resources and encourages the restoration of diked historic wetlands to their natural state by opening them to tidal action.

New development projects that create 10,000 square feet or more of impervious surface area must comply with the City of San Jose Post-Construction Urban Runoff Management Policy (Policy, City of San Jose 2006). The Policy requires all these development and redevelopment projects to implement post-construction best management practices and treatment control measures to the maximum extent practicable.

2.3.2. Habitat Conservation Plans or Natural Community Conservation Plans

The Santa Clara Valley Habitat Plan (Habitat Plan; ICFI 2012) is a regional planning document that allows covered projects to use a streamlined process for permitting and mitigation. The Habitat Plan is both a Habitat Conservation Plan (HCP) and a Natural Community Conservation Plan (NCCP) that provides a higher level of environmental protection and conservation for 18 species of plants and wildlife including eight that are listed as threatened or endangered, under either the federal ESA, the CESA or both. The Habitat Plan also protects wetland, streams, and riparian habitats that are subject to the federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act, and Section 1600-1616 of the CFGC, and other sensitive biological communities as defined by the NCCP. The Habitat Plan also includes an agreement between state/federal wildlife and wetland regulators and local jurisdictions, which allow public and private entities to engage in the "incidental take" of listed species (i.e., to destroy or degrade habitat) in exchange for the implementation of Habitat Plan-prescribed measures to avoid, minimize or compensate for adverse effects on endangered species and natural communities.

The geographic scope of the Habitat Plan extends from the Santa Clara/Alameda County border south to the Santa Clara/San Benito County border and from the western edge of San Jose east to the eastern edge of the Coyote Creek watershed or the County boundary. The Habitat Plan covers approximately 510,000 acres, primarily within south Santa Clara County. The entire Project Area is located outside the Habitat Plan area, which does not cross north of Los Esteros Road. Because the Project Area is outside the HCP Plan Area, our analysis does not include assessment for species, habitats, conditions, or other requirements that may be required through the Habitat Plan.

3.0 ENVIRONMENTAL SETTING

3.1 Soils and Topography

3.1.2 Topography

Outside the WMU, the Project Area consists of low-lying muted tidal wetlands and tidal open water, above which lies a relatively flat plain punctuated by upland berms. The majority of these areas lie at or below MSL, which at this location is at an elevation of 3.42 feet North American Vertical Datum of 1988 (NAVD 88, AECOM 2016). An elevated portion of the Project Area outside of the WMU, between the northwest border of the WMU and Grand Boulevard reaches a height of roughly 8 feet above MSL. The WMU has been heavily graded and consists of a combination of steep slopes plateauing into relatively flat areas, with elevations ranging from MSL to 52 feet above MSL. Three additional wastewater ponds have been created within the WMU: one in southeast corner and two in the northeast corner.

3.2 Climate and Hydrology

3.1.1 Soils

The U.S. Department of Agriculture (USDA) *Soil Survey of Eastern Santa Clara County* (USDA 1974), *Supplement to the Soil Survey of Santa Clara Area, California, Western Part* (USDA 2015) and California Soils Resources Lab (CSRL) SoilWeb (CSRL 2019) indicates the Project Area is composed of five mapping units composed of five soil series: *Campbell silt loam, 0 to 2 percent slopes, protected; Embarcadero silty clay loam, drained, 0 to 2 percent slopes; Novato clay, 0 to 1 percent slopes, tidally flooded; Urbanland-Embarcadero complex, 0 to 2 percent slopes, drained;* and *Xerorthents, trash substratum 15 to 30 percent slopes*. The soil series are described below and depicted in Appendix A, Figure 2.

Campbell Series: The Campbell series consists of very deep, moderately well drained soils on floodplains and alluvial fans. These soils formed in alluvium derived from mixed rock sources. Slopes range from 0 to 2 percent. Originally these soils were somewhat poorly drained under natural conditions. Pumping and general lowering of water tables and levees have made most areas the equivalent of moderately well drained, based on depth to water. Runoff is slow. Permeability is moderately slow to slow. Large areas of this soil series have been urbanized and/or are used for row crops, truck crops, fruit orchards, pasture and hay. Native vegetation historically consisted of grasses and oaks (*Quercus* spp.). Campbell silt loam, 0 to 2 percent slopes, protected is considered a hydric soil (NRCS 2019). The top soil horizon from 0 to 10 inches depth has a neutral pH, and soil horizons below that depth are slightly alkaline.

Embarcadero Series:

The Embarcadero series consists of very deep, naturally poorly drained soils, now artificially drained that formed in alluvium from mixed rock sources. Embarcadero soils are in basins near the edge of marshes. Slopes range from 0 to 2 percent. Embarcadero soils are poorly drained in their natural condition and frequently flooded. Most areas have been drained by historic agricultural ground water over drafting. Subsidence has occurred in the Santa Clara Valley from the groundwater over drafting, and has lowered these soils several feet requiring the use of levees to keep out bay waters. These soils are used for

wildlife habitat, recreation and urban uses. Embarcadero silty clay loam, drained, 0 to 2 percent slopes, is considered a hydric soil (NRCS 2019). The top soil horizon from 0 to 7 inches depth is strongly alkaline, and soil horizons below that are very strongly alkaline.

Novato Series:

The Novato series consists of deep, very poorly drained soils that formed in alluvium deposited along the margin of bays. Novato soils are in tidal marshes and have slopes of 0 to 2 percent. Sediments of this soil series are deposited as bay mud. These soils are very poorly drained with very slow runoff and slow permeability. The water table fluctuates with the tides from 2 feet above the surface during very high tides to a depth of 2 feet during low tides. These soils are used for wildlife habitat. The principal native plants are pickleweed (*Salicornia* spp.), saltgrass (*Distichlis spicata*), and cordgrass (*Spartina* spp.). Novato clay, 0 to 1 percent slopes, tidally flooded, is considered a hydric soil (NRCS 2019). Soil horizons from 0 to 60 inches depth are moderately alkaline.

Urbanland-Embarcadero Complex:

The Urbanland-Embarcadero complex consists of a mix of the Embarcadero series, described above, and urban fill. Urban fill can consist of gravel, sand, clay, and other non-native soils. Soils in this complex are very poorly drained. Urbanland-Embarcadero complex, 0 to 2 percent slopes, is considered a hydric soil (NRCS 2019).

Xerorthents:

This soil map unit occurs mostly in urban areas and consists of human-transported material that has been moved mechanically and mixed. The fill consists of varying amounts of soil material, gravel, and other solid material. Soils are poorly developed and well drained with high runoff. Within the Project Area, the top two inches of soil are very acidic (pH 5.0), but soils at greater depths are more or less uniformly moderately alkaline (pH 8.0). Within the Project Area, Xerorthents are underlain by a trash substratum. Xerorthents, trash substratum 15 to 30 percent slopes, is not considered a hydric soil (NRCS 2019).

3.3 Land-use

The Project Area consists of historically diked baylands that have had limited to no tidal connectivity since at least 1948 (NETR 2019). The Project Area is bordered to the north by Grand Boulevard, across from which the Don Edwards San Francisco Bay National Wildlife Refuge is located. To the east, the Project Area is bordered by an unculverted, channelized tributary to Coyote Creek. On the other side of the channel lies the San Jose/Santa Clara Water Pollution Control Plant. The Project Area is bordered to the south by Los Esteros Road and to the southwest by railroad tracks, beyond both of which more undeveloped diked baylands occur. The town of Alviso is located southwest of the Project Area.

The WMU has been utilized as a recyclable materials processing facility and disposal site since 1999. Based on historic aerials, the WMU footprint has been graded since at least 1987, and several wastewater ponds have been created and/or moved over the lifetime of the ZMPF (NETR 2019, Google Earth 2019). Tidal wetlands occurring within a tidal

channel in the northern corner of the Project Area appears to have been present since at least 1948, although the feature was channelized sometime between 1948 and 1956.

Since 1948, the remainder of the Project Area has received some level of muted tidal influence through a series of culverted channels and berms that have been relocated over time. From at least 1948 to present, a berm running parallel to Grand Boulevard has muted tidal connectivity to the southern portion of the Project Area. Sometime between 1960 and 1968, a secondary berm was constructed to the south of the initial berm that separates the southeastern portion of the Project Area from tidal influence. Between 1968 and 1980, the western end of the initial berm was degraded, allowing tidal connectivity between the two berms. In 2011, the initial berm was degraded in an additional two locations, further increasing tidal connectivity and creating a series of upland islands surrounded by tidal areas.

4.0 ASSESSMENT METHODOLOGY

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):

- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- Aerial photographs (Google Earth 2019)
- Breeding Bird Atlas of Santa Clara County (Bousman 2007)
- California Native Plant Society Rare Plant Electronic Inventory (CNPS 2019a)
- California Natural Diversity Database (CNDDB; CDFW 2019a)
- CDFG publication “California’s Wildlife, Volumes I-III” (Zeiner et al. 1990)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- Consortium of California Herbaria (CCH 2019)
- eBird: a citizen-based bird observation network in the biological sciences (Sullivan et al. 2009)
- National Wetlands Inventory (USFWS 2019a)
- Santa Clara Valley Habitat Plan (ICFI 2012)
- *Soil Survey of Eastern Santa Clara County* (USDA 1974)
- *Supplement to the Soil Survey of Santa Clara Area, California, Western Part* (USDA 2015)
- USFWS Information for Planning and Consultation (IPaC; USFWS 2019b)
- Western Bat Working Group, Species Accounts Region 5 (WBWG 2019)

Database searches (i.e., CNDDB, CNPS) focused on the Milpitas, Mountain View, Newark, Niles, La Costa Valley, Calaveras Reservoir, San Jose East, San Jose West, and Cupertino USGS 7.5-minute quadrangles. Appendix A, Figures 4 and 5 contain observations of special-status plant species and wildlife species documented within a five-mile radius of the Project Area.

Following the remote assessment, a wildlife biologist, a general biologist, and a botanist traversed the entire Project Area on foot to document: (1) plant communities present within

the Project Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present.

3.2.1 Climate

The Project Area is located at the northern extent of the Santa Clara Valley, and at the southern tip of the San Francisco Bay. It experiences a coastal-influenced, cool-summer Mediterranean climate with fog common throughout the summer months. Wind speeds are greatest in spring and summer, and least in the fall and winter (ICFI 2012). Average maximum temperatures range from 58 to 77 degrees Fahrenheit and average minimum temperatures range from 40 to 56 degrees Fahrenheit. Precipitation in the region falls predominantly as rainfall during the winter and spring, with an annual average of 14.31 inches recorded at the National Climate Data Center weather station in Newark (#046144), located approximately 9 miles northeast of the Project Area (WRCC 2019).

3.2.2 Hydrology

The primary hydrological source for non-tidal portions of the Project Area is precipitation and surface run-off from adjacent lands. The primary hydrological source for the tidal portions of the Project Area consists of tidal action from the San Francisco Bay. Tidal action reaches the Project Area from the north through a culvert running under Grand Boulevard and via an unculverted tidal channel in the northern corner of the Project Area, all of which ultimately connect to Coyote Creek (USFWS 2019a, USGS 2018). The USFWS National Wetlands Inventory (USFWS 2019a) indicates that there are channels that directly connect to the adjacent area via culverts under the railroad tracks bordering the southwestern edge of the Project Area. However, this direct connection was not observed during the November 20 and 21 site visits. Instead, based on aerial imagery (Google Earth 2019) and field observations, it appears that a berm paralleling the southwestern boundary of the Project Area would cause any potential hydrologic surface connection to occur where the berm terminates in the northwestern corner of the Project Area.

4.1 Natural Communities

4.1.1 Terrestrial Natural Communities

The Project Area's terrestrial natural communities were 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 2019b) and *A Manual of California Vegetation, Online Edition* (CNPS 2019b). 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 considered as part of this evaluation[3]

[3] Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2019)

4.1.2 Aquatic Natural Communities

The Project Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, CDFW, or BCDC were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils.

BCDC Jurisdiction

As stated in Section 2.1.1, BCDC Bay jurisdiction extends, where tidal marsh is present, up to 5 feet above MSL. However, tidal effect is muted by passage through channels in the Don Edwards National Wildlife Refuge and the culvert under Grand Boulevard and does not extend to MSL. As a result, MSL could not be used to determine BCDC jurisdiction. The extent of tidal influence was instead determined by a combination of field observations and historic aerial imagery (Google Earth 2019) interpretation. Field indicators included increasing distance from tidal open water combined with a transition from pickleweed-dominated to annual-grass-dominated vegetation, slight changes in elevation, physical barriers such as berms, and evidence of the direction of precipitation runoff and ponding based on a combination of topography and wetland hydrology indicators. Aerial images were studied to determine where inundation regularly occurs, particularly during the dry season.

4.2 Special-status Species

4.2.1 General Assessment

Potential occurrence of special-status species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area 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.

A site visit was made to the Project Area to search for suitable habitats for special-status species. Habitat conditions observed at the Project Area were used to evaluate the potential for presence of special-status wildlife based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Project Area was then evaluated 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.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Project Area. Methods for these assessments are described below. If a special-status species was observed during the site visit, its presence was recorded and discussed.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up-to-date information regarding species biology and ecology.

If a special-status species was observed during the site visit, its presence is recorded and discussed below in Section 4.2.2. or 4.2.3. For some species, a site assessment visit at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described in Section 5.0.

4.2.2 Special-status Plants

Focused Survey

No focused surveys were conducted within the Project Area.

Protocol-level Survey

No protocol-level surveys were conducted in the Project Area.

4.2.3 Special-status Wildlife

Targeted Assessment

No previous protocol level surveys or targeted assessments have been completed within the Project Area.

Critical Habitat

During the search of background literature, prior to the site visit the USFWS Critical Habitat Mapper was referenced to determine if critical habitat for any species occurs within the Project Area (USFWS 2019c).

Wildlife Corridors

Prior to the site assessment, biologists reviewed maps from the California Essential Connectivity Project and associated habitat connectivity or mapping data available through the CDFW Biogeographic Information and Observation System (BIOS; CDFW 2019c). In addition, aerial imagery (Google Earth 2019) for the local area was referenced to determine if core habitat areas were present within, or connected to the Project Area.

5.0 ASSESSMENT RESULTS

The Project Area is set in a largely open muted tidal plain surrounded by a mix of industrial complexes to the southeast and open ruderal herbaceous cover along the margins of muted tidal areas and developed landscapes. The Project Area abuts the Don Edwards National Wildlife Refuge to the north, which contains a mix of muted tidal wetlands and transitional ecotone. Evidence of past management and/or disturbance was found throughout much of the Project Area, including evidence of past diking and channelization of wetlands, draining of uplands via drainage ditches, and likely mowing of upland areas.

5.1 Natural Communities

Table 3 summarizes the area of the five non-sensitive and four sensitive natural community types observed in the Project Area. Non-sensitive community types include: ruderal herbaceous, ornamental/landscaped, developed, transitional upland, and wastewater pond. Sensitive community types include: tidal open water/mud flat, tidal wetland, muted tidal wetland, and seasonal wetland. Descriptions of each natural community are contained in the following section. Natural communities and other land use designations mapped in the Project Area are shown in Appendix A, Figure 3. Appendix B lists all plant species observed within and around the Project Area. Appendix C contains representative photographs of the Project Area.

Table 3. Natural Communities

Vegetation Structure/ Land Use	Community (Holland 1986)	Vegetation Alliance/Association (CNPS 2019b)	Sensitive Status	Rarity Ranking	Acres within Project Area
Terrestrial Communities					
Ruderal Herbaceous	Ruderal grassland	*Lolium perenne* Herbaceous Semi-Natural Alliance *Brassica nigra* – *Raphanus* ssp. Herbaceous Semi-Natural Alliance	Non-sensitive	None	15.56
Ornamental/ Landscaped	None	N/A	Non-sensitive	None	0.70
Developed	N/A	N/A	Non-sensitive	None	31.62
Transitional Upland	Northern coastal salt marsh	*Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance	Non-sensitive	S3/G4	5.37
Aquatic Communities					
Wastewater Pond	N/A	Open Water / Bare	Non-sensitive	N/A	0.79
Tidal Open Water/Mud Flat	N/A	Open Water / Bare	Sensitive	N/A	7.40
Tidal Wetland	Cismontane alkali marsh	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	Sensitive	S3/GNR	0.64
Muted Tidal Wetland	Northern coastal salt marsh	*Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance	Sensitive	S3/G4	11.45
Seasonal Wetland	Ruderal grassland Northern coastal salt marsh	*Lolium perenne* Herbaceous Semi-Natural Alliance *Sarcocornia pacifica* (*Salicornia depressa*) Herbaceous Alliance	Sensitive	N/A	1.27

5.1.1 Terrestrial Natural Communities

Non-Sensitive

Ruderal Herbaceous (no vegetation alliance). CDFW Rank: none. Roadside edges, upland vegetated areas, and the steep graded slopes of the WMU are dominated by

ruderal herbaceous vegetation. Although not described in the literature, ruderal herbaceous includes areas that have been partially developed or have been used in the past. However, these areas are not currently in use and have been allowed to revert to a semi-natural condition. Ruderal herbaceous vegetation is typically dominated by mustards, thistles, and non-native grasses. Species richness and composition varies throughout the site, and this community contains elements of several vegetation alliances that are too small to map separately, such as the *Lolium perenne* Herbaceous Semi-Natural Alliance and *Brassica nigra* – *Raphanus* ssp. Herbaceous Semi-Natural Alliance. Italian ryegrass (*Festuca perennis*) is common along the roadsides and the borders of the WMU. Other portions of the Project Area, particularly the tops of berms, are dominated almost entirely by black mustard (*Brassica nigra*), short-podded mustard (*Hirschfeldia incana*), and/or wild radish (*Raphanus sativus*). Pockets of ruderal herbaceous vegetation throughout the Project Area are dominated by ripgut brome (*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus*), stinkwort (*Dittrichia graveolens*), or smilo grass (*Stipa miliacea*). Oat (*Avena* sp.), salt grass (*Distichlis spicata*), and bristly ox-tongue (*Hirschfeldia incana*) are also present in much of the ruderal herbaceous vegetation within the Project Area.

Developed (no vegetation alliance). CDFW Rank: none. The majority of the WMU consists of bare paved and/or graded areas. This land use type includes paved lots, buildings, and the active landfill area. This land use type does not have an associated vegetation community, alliance, or association as it is generally devoid of vegetation.

Landscaped/Ornamental (no vegetation alliance). CDFW Rank: none. Areas around the edges of the WMU and around the parking lot and main offices contain strips planted with native and non-native ornamental species. The most prevalent ornamental trees include privet (*Ligustrum* sp.), eucalyptus (*Eucalyptus* sp.), and Peruvian pepper tree. Planted understory herbs include deergrass (*Muhlenbergia rigens*). This land use type does not have an associated vegetation community, alliance, or association as all vegetation was intentionally planted and landscaped.

Transitional Upland (*Sarcocornia pacifica* [*Salicornia depressa*]) Herbaceous Alliance. CDFW Rank: S3 G4. Within the Project Area, upland areas with native soils are dominated by Italian ryegrass interspersed with pickleweed (*Salicornia pacifica*) interspersed with alkali heath (*Frankenia salina*). Ripgut brome and soft chess (*Bromus hordeaceus*) are also present at lower relative cover. Based on the absolute cover of pickleweed, this vegetation meets the membership rules of the *Sarcoconia pacifica* (*Salicornia depressa*) Herbaceous Alliance. Although this alliance has a CDFW rank of S3, the description of this vegetation alliance specifies that it refers to marsh habitat (CNPS 2019b). Transitional upland areas that meet the vegetative cover membership rules for this alliance lack wetland hydrology indicators, hydric soil indicators, or both and are therefore not considered marsh habitat. Pickleweed is a halophyte, and its presence is likely driven by the presence of saline soils formed during historic tidal connectivity rather than wetland hydrology. In addition, transitional upland within the Project Area was determined to be potential foraging habitat for special-status salt marsh mammals although it is unlikely to support nesting by special-status salt marsh birds because of proximity to disturbance, providing further indication that it does not represent high-quality marsh habitat. Therefore, this upland vegetation type is not considered sensitive.

5.1.2 Aquatic Natural Communities

Non-Sensitive

Wastewater Pond. CDFW Rank: none. Four excavated wastewater ponds are located within or adjacent to the WMU. The man-made basins receive stormwater flow from the WMU and were built in ruderal herbaceous vegetation and/or developed landscape in from 1999 to 2017. These ponds appear to be relatively well-maintained. Ponds were dry at the time of the site visit, but appear to fill during the wet season, according to aerial imagery (Google Earth 2019). Sparse vegetation on the banks of the ponds is dominated by wild radish and non-native grasses. These features are man-made, not appearing in historical aerials prior to 1999 (Google Earth 2019). As this is a maintained man-made feature it is not under the jurisdiction of the Corps, RWQCB, or CDFW.

Sensitive

Tidal open water/mud flat. CDFW Rank: none. Tidal open water/mudflats occurs in the northern corner of the Project Area, along an unculverted tidal channel connected to Coyote Creek, and in the western portion of the Project Area, in low-lying areas of the relatively flat plain that were inundated and/or saturated at the time of the November 2019 site visits. The latter areas receive tidal connection from a culvert under Grand Boulevard. Tidal open waters/mudflats within the Project Area are unvegetated, consisting of either open waters or barren, permanently saturated mudflats, and therefore do not have an associated vegetation community, alliance, or association.

Tidal open water/mud flat within the Project Area is potentially subject to Corps and RWQCB under Sections 404 and 401 of the Clean Water Act, CDFW under Section 1600 of the CFGC, and BCDC Bay jurisdiction under the McAteer-Petris Act.

Tidal wetland. CDFW Rank: S3 G4. A tidal wetland fringe, dominated by a near-monotypic stand of California bulrush (*Schoenoplectus acutus*) with small patches of cattail (*Typha* sp.), occurs along both banks of the tidal channel in the northern corner of the Project Area. Soils in this area are very dark and assumed to be hydric based on their low-lying topography adjacent to a tidal channel and saturation at the soil surface at the time of sampling, which was during the dry season.

Vegetation within this community would meet the membership rules for the *Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance, which has a CDFW rank of S3 GNR and would therefore potentially be considered a sensitive natural community. Tidal wetland within the Project Area is potentially subject to Corps and RWQCB under Sections 404 and 401 of the Clean Water Act, CDFW under Section 1600 of the CFGC, and BCDC Bay jurisdiction under the McAteer-Petris Act. This community provides potential foraging and nesting habitat for sensitive salt marsh mammals, Ridgway's rail, black rail, northern harrier, white-tailed kite, Alameda song sparrow, San Francisco common yellowthroat and other birds.

Muted tidal wetland. CDFW Rank: S3 G4. Within the Project Area, vegetated areas that have muted tidal connectivity, supplied by a culvert below Grand Boulevard, can be classified as muted tidal wetland. This vegetation type is dominated by pickleweed in the herb stratum, which frequently occur in dense monotypic stands. Pickleweed density decreases with distance from tidal open water/mudflat, and cover of non-native grasses, such as Italian ryegrass, Mediterranean barley (*Hordeum marinum*), and annual

beardgrass (*Polypogon monspeliensis*), increases. Muted tidal wetland within the Project Area contain biotic crust, indicating wetland hydrology, and soils with a dark matrix color with redoximorphic concentrations sufficient to meet Corps requirements for hydric soils (the Redox Dark Surface indicator).

Vegetation within this community would meet the membership rules for the *Sarcoconia pacifica* (*Salicornia depressa*) Herbaceous Alliance, which has a CDFW rank of S3 G4 and would therefore potentially be considered a sensitive natural community. Muted tidal wetland within the Project Area is potentially subject to Corps and RWQCB under Sections 404 and 401 of the Clean Water Act, and BCDC Bay jurisdiction under the McAteer-Petris Act.

This community provides potential foraging and nesting habitat for sensitive salt marsh mammals, black rail, northern harrier, white-tailed kite, Alameda song sparrow, San Francisco common yellowthroat, and other birds. Ridgway's rail have the potential to forage here, but are generally absent from highly muted tidal wetlands.

Seasonal wetland. CDFW Rank: S3 G4. Seasonal wetland within the Project Area occurs in low-lying areas where the primary source of hydrology is due to precipitation rather than tidal influence. Seasonal wetland is disconnected from tidal activity either by man-made berms or slight changes in elevation. In the latter case, the boundary between muted tidal to seasonal wetlands was determined based on increasing distance from tidal open water combined with a transition from pickleweed-dominated to annual-grass-dominated vegetation, slight changes in elevation, physical barriers such as berms, and evidence of the direction of precipitation runoff and ponding based on a combination of topography and wetland hydrology indicators. During the November site visits, dried biotic crust, seed shrimp shells, water stained leaves, and surface soil cracks all indicated the presence of wetland hydrology in areas designated as seasonal wetland. Soils underlying seasonal wetland contain a dark matrix color with redoximorphic concentrations sufficient to meet Corps requirements for hydric soils (the Redox Dark Surface indicator).

Seasonal wetland is present in three different areas within the Project Area. Along the southern border of the Project Area, parallel to Los Esteros Road, a man-made ditch contains vegetation dominated by Italian ryegrass and salt grass. This ditch eventually connects with muted tidal wetland to the west. Just southwest of the WMU, water appears to pond against man-made berms in a slight depression and along a short, discrete ditch. In these areas, the vegetation is comprised of scattered pickleweed with non-native grasses, including Italian ryegrass, Mediterranean barley, and annual beard grass, with scattered patches of goldfields (*Lasthenia* sp.). Along the northern border of the Project Area, just south of Grand Boulevard, muted tidal wetland also transitions to seasonal wetland with distance from tidal influence and slight elevation differences. Vegetation is similarly dominated by pickleweed and non-native grasses.

Seasonal wetland within the Project Area is potentially subject to Corps and RWQCB under Sections 404 and 401 of the Clean Water Act.

This community provides potential foraging and high water refuge for sensitive salt marsh mammals; potential foraging and nesting habitat for Alameda song sparrow; and potential foraging habitat for Northern harrier and white-tailed kite.

5.2 Special-status Species

Appendix B lists all plant and wildlife species observed within and around the Project Area. Appendix C contains representative photographs of the Project Area. Appendix D lists all special-status plant and wildlife species with potential to occur within and around the Project Area.

5.2.1 Special-status Plants

Potential for Occurrence

Fifty-one special-status plant species have been documented within the vicinity of the Project Area (CDFW 2019a, CNPS 2019a). Appendix D summarizes the potential occurrence for each special-status plant species documented in the vicinity of the Project Area. Special-status plants which have been recorded within 5 miles of the Project Area are shown in Figure 4. Of the 51 special-status plant species documented in the vicinity of the Project Area, 40 were determined to be unlikely or have no potential to occur within the Project Area for one or more of the following reasons:

- Specific edaphic conditions, such as sandy soils, acidic soils, or soils derived from serpentine or metamorphic rock, are absent;
- Specific habitats such as coastal scrub, chenopod scrub, chaparral, cismontane woodland, pinyon and juniper woodland, or broadleaf forest, are absent from the Project Area;
- Dominance by non-native species in grass-covered areas, which occur in diked baylands and highly graded, disturbed soils, rendering them unsuitable to support plant species requiring grassland habitat; and/or
- Lack of a viable seed bank due to historic and contemporary soil alterations.

Special-status plants with moderate to high potential to occur are discussed in more detail below.

Alkali milk-vetch (*Astragalus tener* var. *tener*). CNPS Rare Plant Rank (CRPR) 1B.2. Moderate Potential. Alkali milk-vetch is an annual herb in the pea family (Fabaceae) that blooms from March to June. It typically occurs on low ground in alkali flats and flooded lands in alkali playa, valley and foothill grassland, and vernal pool habitat at elevations ranging from 0 to 200 feet (CDFW 2019a, CNPS 2019a). This species is a facultative wetland plant (Lichvar et al. 2016), and is regularly known from vernal pool habitat, but may occur in other wetland habitat types (Keeler-Wolf et al. 1998). Known associated species include docks (*Rumex crispus, R. pulcher*), rough cocklebur, spiny cocklebur, bird's-foot trefoil (*Lotus corniculatus*), Mediterranean barley, Italian ryegrass, harvest brodiaea (*Brodiaea elegans*), stipitate popcornflower (*Plagiobothrys stipitatus*), woolly marbles (*Psilocarphus tenellus*), salt grass, mousetail (*Myosurus minimus*), and alkali heath (CDFW 2019a).

Alkali milk-vetch is known from 35 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo counties (CNPS 2019a). The nearest recently documented occurrence of alkali milk vetch is less than four miles from the Project Area at the edge of created vernal pools; other nearby historical occurrences are presumed to be extirpated by urban development (CDFW 2019a). Alkali milk-vetch has a moderate

potential to occur in the Project Area due to the presence of suitable hydrological conditions and alkaline, clay soils in seasonal wetland habitat. However, suitable habitat was converted from diked historic baylands, and alkali milk-vetch may not have colonized the Project Area in the intervening years. This species was not observed during a 2008 targeted survey of a portion of the Project Area (WRA 2008); however, this survey did not cover all potential habitat in the current Project Area boundary.

Brittlescale (*Atriplex depressa*). CRPR 1B.1. Moderate Potential. Brittlescale is an annual forb in the goosefoot family (Chenopodiaceae) that blooms from April to October. It typically occurs on alkali clay substrate in scalds, meadows, and grassy areas in chenopod scrub, meadow, playa, valley and foothill grassland, and vernal pool habitat at elevations ranging from 3 to 1040 feet (CDFW 2019a, CNPS 2019a). Known associated species include common tarplant (*Centromadia pungens*), fivehook (*Bassia hyssopifolia*), pickleweed, horned seablite (*Suaeda calceoliformis*), salt grass, alkali heath, annual beardgrass, and Mediterranean barley (CDFW 2019a).

Brittlescale is known from 32 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, and Yolo counties (CNPS 2019a). The nearest recently documented occurrence of brittlescale is less than four miles from the Project Area in the Don Edwards National Wildlife Refuge (CDFW 2019a). Brittlescale has a moderate potential to occur in the Project Area due to the presence of associated species; suitable hydrological conditions; and alkaline, clay soils in seasonal wetland habitat. However, suitable habitat was converted from diked historic baylands, and brittlescale may not have colonized the Project Area in the intervening years.

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*). CRPR 1B.1. High Potential. Congdon's tarplant is an annual forb in the sunflower family (Asteraceae) that blooms from June to November. It typically occurs in alkaline grassy areas on the edge of brackish marsh in valley and foothill grassland habitat at elevations ranging from 1 to 750 feet (CDFW 2019a, CNPS 2019a). Known associated species include common tarplant (*Centromadia pungens* ssp. *pungens*), alkali heath, salt grass, Italian ryegrass, Mediterranean barley, foxtail barley, stinkwort, yellow star thistle (*Centaurea solstitialis*), Italian thistle, bull thistle (*Cirsium vulgare*), and Bermuda grass (*Cynodon dactylon*) (CDFW 2019a).

Congdon's tarplant is known from 31 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, and Solano counties (CNPS 2019a). There are multiple occurrences of Congdon's tarplant in the vicinity of the Project Area, the nearest of which is less than 0.25 mile away in a disked field (CDFW 2019a). Congdon's tarplant has a high potential to occur in the Project Area due to the proximity of known populations, the plant's ability to thrive in ruderal and disturbed environments, the presence of several associated species, and the presence of alkaline soils.

Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustris*). CRPR 1B.2 Moderate Potential. Point Reyes bird's-beak is an annual herb in the broomrape family (Orobanchaceae) that blooms from June to October. It typically occurs in coastal salt marsh habitat at elevations ranging 0 to 10 feet (CDFW 2019a, CNPS 2019a). Known associated species include salt grass, pickleweed, cord grass (*Spartina* spp.), fleshy

jaumea (*Jaumea carnosa*), bulrushes (*Schoenoplectus* spp.), and Baltic rush (*Juncus balticus*) (CDFW 2019a).

This species is known from 23 USGS 7.5-minute quadrangles in Alameda, Humboldt, Marin, Santa Clara, San Francisco, San Mateo, and Sonoma Counties, and is also known from the state of Oregon (CNPS 2019a). All occurrences of Point Reyes bird's beak in the vicinity of the Project Area are presumed to be extirpated by development (CDFW 2019a); however, Point Reyes bird's beak has moderate potential to occur within in the Project Area within fringes of muted tidal wetlands due to the presence of associated species, suitable hydrological conditions, and its historic presence in the region. This species was not observed during a 2008 targeted survey of a portion of the Project Area (WRA 2008); however, this survey did not cover all potential habitat in the current Project Area boundary.

Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*). CRPR 1B.1. Moderate Potential. Hoover's button-celery is an annual forb in the carrot family (Apiaceae) that blooms from June to August. It typically occurs in alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast at elevations ranging from 5 to 150 feet (CDFW 2019a, CNPS 2019a). This species is an obligate wetland plant in the Arid West region (Lichvar et al. 2016), and is a restricted regional vernal pool indicator species in the Central Coast Vernal Pool Region (Keeler-Wolf et al. 1998). Known associated species include stipitate popcornflower, mousetail, flatface downingia (*Downingia pulchella*), and wooly heads (*Psilocarphus brevissimus* var. *brevissimus*).

Hoover's button-celery is known from 11 USGS 7.5-minute quadrangles Alameda, San Benito, Santa Clara, San Diego, and San Luis Obispo Counties (CNPS 2019a). The nearest extant occurrence of this species is located less than four miles from the Project Area in a depressional wetland adjacent to tidal wetlands, growing with pickleweed and saltgrass (CDFW 2019a). Other occurrences in the vicinity of the Project Area are assumed to have been extirpated by urban development. Hoover's button-celery has moderate potential to occur within the Project Area within seasonal wetland, due to the presence of associated species, suitable hydrological conditions, and its historic presence in the region.

San Joaquin spearscale (*Extriplex joaquinana*). CRPR 1B.2. Moderate Potential. San Joaquin spearscale is an annual herb in the goosefoot family (Chenopodiaceae) that blooms from April to October. It typically occurs in seasonal alkali sink scrub and wetlands in chenopod scrub, alkali meadow, and valley and foothill grassland habitat at elevations ranging from 0 to 2740 feet (CDFW 2019a, CNPS 2019a). Known associated species include salt grass, alkali heath, Mediterranean barley, Italian ryegrass, bird's-foot trefoil, docks, pickleweed, and fat hen (*Atriplex prostrata*) (CDFW 2019a).

San Joaquin spearscale is known from 48 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, Tulare, and Yolo Counties (CNPS 2019a). The nearest occurrence of this species is located less than four miles from the Project Area, along the upland edges of created vernal pools (CDFW 2019a). San Joaquin spearscale has a moderate potential to occur in the Project Area due to the presence of suitable hydrological conditions, associated species, and alkaline, clay soils in seasonal wetland habitat. However, suitable habitat was converted from diked historic baylands, and San Joaquin spearscale may not have colonized the Project Area in the intervening years.

Contra Costa goldfields (*Lasthenia conjugens*) Federal Endangered, CRPR 1B.1. Moderate Potential. Contra Costa goldfields is an annual herb in the sunflower family (Asteraceae) that bloom from March to June. It typically occurs in vernally saturated areas in pools, depressions, and swales of open grassy areas in valley and foothill grassland, vernal pool, and cismontane woodland habitat at elevations ranging from 0 to 470 feet (CDFW 2019a, CNPS 2019a). This species is a facultative wetland plant (Lichvar et al. 2016) and is restricted to vernal pool habitat (Keeler-Wolf et al. 1998). Known associated species include Italian ryegrass, Mediterranean barley, woolly marbles, stipitate popcornflower, legenere (*Legenere limosa*), smooth goldfields (*Lasthenia glaberrima*), yellow rayed goldfields (*L. glabrata*), semaphore grass (*Pleuropogon californicus*), calico flowers (*Downingia* spp.), and brass buttons (*Cotula coronopifolia*) (CDFW 2019a).

Contra Costa goldfields is known from 24 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Marin, Mendocino, Monterey, Napa, Santa Barbara, Santa Clara, Solano, and Sonoma Counties (CNPS 2019a). The nearest occurrence of this species is located less than four miles from the Project Area, in grassy areas of a vernal pool/swale complex (CDFW 2019a). Senescent goldfields were observed within seasonal wetland habitat in the Project Area during the November 21, 2019 site visit. It was too late in the season to identify the species, but during a 2013 delineation, yellow rayed goldfields were identified in these areas (WRA 2013). Contra Costa goldfields has moderate potential to occur within the Project Area due to the presence of suitable hydrological conditions and associated species in seasonal wetland habitat. However, suitable habitat was converted from diked historic baylands. Contra Costa goldfields may not have colonized the Project Area in the intervening years.

Prostrate vernal pool navarretia (*Navarretia prostrata*). CRPR 1B.1. Moderate Potential. Prostrate vernal pool navarretia is an annual herb in the phlox (Polemoniaceae) that blooms April to July. It typically occurs on alkaline soils in grassland, or in vernal pools, at elevations ranging from 5 to 3,970 feet (CNPS 2019a, CDFW 2019a). This species is an obligate wetland plant (Lichvar et al. 2016). Known associated species include alkali milk-vetch, Contra Costa goldfields, San Joaquin spearscale, Congdon's tarplant, flatface downingia, woolly marbles, and stipitate popcornflower (CDFW 2019a).

Prostrate vernal pool navarretia is known from 35 USGS 7.5-minute quadrangles in Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, and San Luis Obispo counties (CNPS 2019a). The nearest occurrence of this species is located less than four miles from the Project Area, in seasonal wetlands and created vernal pools (CDFW 2019a). Prostrate vernal pool navarretia has moderate potential to occur within the Project Area due to the presence of suitable hydrological conditions and alkaline soils in seasonal wetland. However, suitable habitat was converted from diked historic baylands, and prostrate vernal pool navarretia may not have colonized the Project Area in the intervening years.

California alkali grass (*Puccinellia simplex*). CRPR 1B.2. Moderate Potential. California alkali grass is an annual grass (Poaceae) that occurs in chenopod scrub, meadows and seep, valley and foothill grassland, vernal pools, sinks, flats, and lake margins at elevations ranging from 10 to 3,050 feet (CNPS 2019a, CDFW 2019a). It is typically found in alkaline, vernally mesic sinks, flats, and lake margins (CDFW 2019a). This species is a facultative wetland plant (Lichvar et al. 2016).

This species is known from 61 USGS 7.5-minute quadrangles in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, kings, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo Counties (CNPS 2019a). The nearest occurrence of this species is located less than four miles from the Project Area in a seasonal wetland. California alkali grass has a moderate potential to occur within the Project Area due to the presence of alkaline soils and suitable hydrological conditions in seasonal wetland. However, suitable habitat was converted from diked historic baylands, and California alkali grass may not have colonized the Project Area in the intervening years.

California seablite (*Suaeda californica*). Federal Endangered, CRPR 1B.1. Moderate Potential. California seablite is a perennial herb in the goosefoot family (Chenopodiaceae) that blooms from July to October. It typically occurs on the margins of coastal salt marsh habitat at elevations ranging from 0 to 50 feet (CDFW 2019a, CNPS 2019a). Known associated species include salt grass, fat hen, alkali heath, pickleweed, fleshy jaumea, sea rocket (*Cakile maritima*), California sea lavender (*Limonium californicum*), salt marsh dodder (*Cuscuta salina*), and iceplant (*Carpobrotus edulis*) (CDFW 2019a).

This species is known from eight USGS 7.5-minute quadrangles in Alameda, Contra Costa, Santa Clara, San Francisco, and San Luis Obispo Counties (CNPS 2019a). The nearest occurrence of this species is located roughly five miles from the Project Area, but the exact location of this occurrence is not documented (CDFW 2019a). California seablite has moderate potential to occur within in the Project Area within fringes of muted tidal wetlands due to the presence of associated species, suitable hydrological conditions, and its historic presence in the region.

Saline clover (*Trifolium hydrophilum*). CRPR 1B.2. Moderate Potential. Saline clover is an annual herb in the pea family (Fabaceae) that blooms from April to June. It typically occurs in mesic, alkali sites in marsh, swamp, valley and foothill grassland, and vernal pool habitat at elevations ranging from 0 to 980 feet (0 to 300 meters) (CDFW 2019a, CNPS 2019a). This species is a facultative plant (Lichvar et al. 2016). Known associated species include semaphore grass, salt grass, Italian ryegrass, brass buttons, calico flowers, Congdon's tarplant, hyssop loosestrife, toad rush (*Juncus bufonius*), California oat grass (*Danthonia californica*), purslane speedwell (*Veronica peregrina* ssp. *xalapensis*), meadow barley (*Hordeum brachyantherum*), clovers (*Trifolium microdon*, *T. wormskioldii*, *T. fucatum*), and sand spurry (*Spergularia macrotheca*) (CDFW 2019a).

Saline clover is known from 41 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, Lake, Monterey, Napa, Sacramento, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, and Yolo counties (CNPS 2019a). The nearest occurrence of this species is located less than four miles from the Project Area in a vernal pool complex (CDFW 2019a). Historic occurrences of saline clover located in closer proximity to the Project Area are presumed to be extirpated due to urban development (CDFW 2019a). Saline clover has moderate potential to occur within the Project Area due to the presence of suitable hydrological conditions, alkaline soils, and associated species in seasonal wetland. However, suitable habitat was converted from diked historic baylands, and saline clover may not have colonized the Project Area in the intervening years.

Observations and Recommendations

There are no occurrences of any special-status plant species documented within the Project Area. No special-status plant species were observed during the November 20 and 21 site visits; however, no protocol-level rare plant surveys were conducted at this time. Targeted surveys for Point Reyes salty bird's beak and alkali milk-vetch were conducted in 2008 in a portion of the Project Area, and neither species was observed; however, potential habitat exists for both of these species in unsurveyed portions of the current Project Area. Potential impacts to special-status plants and proposed mitigation measures are described in Section 6.3 below.

5.2.2 Special-status Wildlife

Forty (40) special-status species of wildlife have been recorded in the vicinity of the Project Area. Appendix D summarizes the potential for each of these species to occur in the Project Area. One special-status wildlife species was observed in the Project Area during the site assessment, Alameda song sparrow (*Melospiza melodia pusillula*). Nine special-status wildlife species were determined to have a moderate to high potential to occur in the Project Area. Special-status wildlife species that have a moderate or higher potential to occur in the Project Area are discussed below and in Table 4.

Table 4. Potential Special-Status Wildlife

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL
Reithrodontomys raviventris	salt-marsh harvest mouse	FE, SE, CFP	High
Sorex vagrans halicoetes	salt-marsh wandering shrew	SSC	Moderate
Rallus longirostris obsoletus	California Ridgway's rail	FE, SE, CFP	Moderate
Laterallus jamaicensis coturniculus	California black rail	ST, CFP, BCC	Moderate
Circus cyaneus	Northern harrier	SSC	Moderate
Elanus leucurus	White-tailed Kite	CFP	Moderate
Melospiza melodia pusillula	Alameda song sparrow	SSC, BCC	Present
Geothlypis trichas sinuosa	San Francisco (salt-marsh) common yellowthroat	SSC, BCC	Moderate
Athene cunicularia	Burrowing owl	SSC, BCC	Moderate
Other Wildlife			
Various	Native nesting birds	CFGC, MBTA	Moderate

Species that are present or have a moderate to high potential to occur are discussed below.

Salt-Marsh Harvest Mouse (*Reithrodontomys raviventris*), Federal Endangered, State Endangered, CDFW Fully Protected. High Potential. The salt-marsh harvest

mouse (SMHM) is a relatively small rodent found only in and adjacent to suitable salt- and brackish-marsh habitat in the greater San Francisco Bay, San Pablo Bay, and Suisun Bay areas. This species has been divided into two subspecies: the northern SMHM (*Reithrodontomys raviventris halicoetes*), which lives in the brackish marshes of the San Pablo and Suisun Bays, and the southern SMHM (*R. r. raviventris*), which is found in the marshes of San Francisco Bay and several locations north of the Golden Gate. The Project Area occurs within the range of the southern subspecies, which generally persists in smaller and more isolated populations than the northern subspecies. Most of the marshes of South San Francisco Bay are narrow, strip-like marshes and thus support fewer harvest mice than those in the northern portions of the species' range (USFWS 2010, USFWS 2013).

Habitat associated with SMHM has been described as pickleweed-dominated (*Salicornia* spp.) marsh (Fisler 1965), though more recent studies have shown that SMHM is supported equally in pickleweed-dominated and mixed-vegetation marsh (including native and non-native salt- and brackish-marsh species; Sustaita et al. 2011; Smith et al. 2019). Shellhammer et al. (2010) found that SMHM inhabit brackish marshes with a developed thatch layer of vegetation, including bulrush (*Schoenoplectus* spp.), pepperweed/bulrush, and pepperweed/spearscale marshes. Known SMHM habitat in brackish areas, such as the marshes of Suisun Bay, is often composed of mixed salt- and brackish-marsh vegetation such as rushes, alkali heath, spearscale (*Atriplex triangularis*), and saltgrass, with pickleweed as a relatively minor component. In more saline marshes, like those of the South San Francisco Bay, habitat for SMHM tends to be marshes dominated largely by low pickleweed plains with patchy cordgrass.

The SMHM does not burrow, and thus it is dependent on year-round vegetative cover. As such, the plant species composition is less important than the quality of cover from predators and the food sources provided by the vegetation. Habitat for SMHM must also provide suitable food sources, such as seeds, grass, and pickleweed. The presence of grassland habitat adjacent to the marsh is not a strict requirement either, though the SMHM's seasonal use of available upland grasslands (sometimes over 300 feet from the marsh edge) suggests that they opportunistically forage and seek cover within grasslands (USFWS 2010; Smith and Kelt 2019).

There are records of SMHM in the marshes of the Don Edwards National Wildlife Refuge directly adjacent to the Project Area, which are hydrologically connected to the pickleweed habitats within the Project Area, and are separated only by a narrow, low road. There is abundant nesting and foraging habitat for the species within the Project Area in the tidal, muted tidal, and seasonal wetlands, and the transitional uplands provide additional foraging habitat during high tides. The species should be presumed present.

Salt-marsh wandering shrew (*Sorex vagrans halicoetes*), CDFW Species of Special Concern. This species is found in medium high salt marshes (6-8 feet above sea level) of the south San Francisco Bay. Salt marsh wandering shrews inhabit pickleweed marsh which is inundated daily by tides. According to Johnston and Rudd (1957), salt marsh wandering shrews prefer salt marshes that provide dense cover, an abundant source of invertebrates for food, suitable nesting and resting sites, and continuous ground moisture. Suitable middle marsh habitat frequented by this taxon is usually inundated only by high tides and is characterized by 30-60 cm high pickleweed with driftwood and other debris resting directly on the vegetation. The surface debris provides nesting and resting sites and foraging habitat during dry periods. High salt marsh, from 2.4 to 2.7 m in elevation,

provides refuge for shrews during extremely high tides. Low marsh, dominated by cordgrass and subjected to daily tidal floods, is used by this taxon as foraging habitat only during low tides (Johnston and Rudd 1957).

The Project Area contains a relatively large area of higher pickleweed dominated wetlands and transitional uplands that could provide nesting and foraging habitat for shrews. However, as the muted tidal and seasonal wetlands within the Project Area do not receive any unimpeded tidal flows, there is little woody debris on site, and virtually no mechanism for any being deposited there naturally. Further, the fully tidal marsh in the northern corner is dominated by tall emergent vegetation with no woody debris. Consequently, while the wetlands within the Project Area represent potential habitat, they lack some of the shrew's preferred habitat features, which reduce the likelihood that the species occurs there.

California Ridgway's Rail (*Rallus longirostris obsoletus*), Federal Endangered, State Endangered, CDFW Fully Protected. The California Ridgway's rail (CRR) occurs only within salt and brackish marshes. According to Harvey (1988), Shuford (1993) and Eddelman and Conway (1998), important CRR habitat components are: 1) well-developed tidal sloughs and secondary channels; 2) beds of cordgrass in the lower marsh zone; 3) dense salt marsh vegetation for cover, nest sites, and brooding areas; 4) intertidal mudflats, gradually sloping banks of tidal channels, and cordgrass beds for foraging; 5) abundant invertebrate food resources; and 6) transitional vegetation at the marsh edge to serve as a refuge during high tides. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, CRR typically inhabits salt marshes dominated by pickleweed and cordgrass, with other halophytes (e.g., marsh gumplant [*Grindelia stricta*], saltgrass, or jaumea) typically present. Brackish marshes supporting CRR occur along major sloughs and rivers of San Pablo Bay and along tidal sloughs of Suisun Marsh.

Breeding begins in mid-March and extends into July, with peak activity in late April to late May (DeGroot 1927; Harvey 1980, 1988). California Ridgway's rail nests, constructed of wetland vegetation and platform-shaped, are placed near the ground in clumps of dense vegetation, usually in the lower marsh zone near small tidal channels (DeGroot 1927; Evens and Page 1983; Harvey 1988). Existing marsh vegetation or drift material is used as a canopy over the nest platform. Although CRR is considered non-migratory, numerous accounts exist of juveniles dispersing widely between habitat areas (USFWS 1984).

The tidal wetland habitat surrounding the Project Area is surveyed each year for CRR by the Invasive Spartina Project and Point Blue Conservation Science, and both organizations have detected numerous CRR during breeding season surveys in the marshes to the north of the Project Area (McBroom 2017; Olofson Environmental, Inc. 2018). It is unlikely that CRR nest within the pickleweed habitats such as muted tidal wetland, seasonal wetland, or transitional upland habitat in the Project Area due to the lack of tidal channels and tidal activity, and due to high predator activity and the persistent disturbance from the WMU. However, it is extremely likely that CRR nest within approximately 656 feet (200 meters) of the Project Area in adjacent suitable tidal salt marsh habitat within the adjacent Don Edwards National Wildlife Refuge.

California black rail (*Laterallus jamaicensis coturniculus*), State Threatened, CDFW Fully Protected Species, USFWS Bird of Conservation Concern. The California black rail (CBR) is the resident black rail subspecies that occurs in California coastal salt and brackish marshes from Bodega Bay to Morro Bay, with additional populations known from freshwater marshes near or in the northern Sierra Nevada foothills (Eddelman et al. 1994;

Richmond et al. 2008). According to a published analysis by Spautz et al. (2005), important habitat elements for this species within the San Francisco Bay estuary are: 1) emergent marsh dominated by pickleweed, marsh gumplant, bulrush, rushes, and/or cattails (*Typha* spp.); 2) high density of vegetation below four inches in height; 3) high marsh elevation with transitional upland vegetation; 4) large total area of contiguous marsh; 5) proximity to a major water source; and, 6) isolation from disturbance. This species feeds primarily on invertebrates. Black rails are extremely secretive and very difficult to glimpse or flush; identification typically relies on voice. Nests are placed on the ground in dense wetland vegetation.

There are records of CBR to the northeast and west of the Project Area, and there is a substantial amount of suitable habitat present. However, these secretive marsh birds are sensitive to disturbance, and the WMU and roads to the northwest and southwest of the Project Area are likely a source of continuous and significant disturbance. So, while it is unlikely that CBR nest within the pickleweed dominated habitats such as seasonal wetland or transitional upland habitat in the Project Area, they may nest within approximately 656 feet (200 meters) of the Project Area in adjacent suitable tidal salt marsh habitat within the adjacent Don Edwards National Wildlife Refuge.

Northern harrier (*Circus cyaneus*). CDFW Species of Special Concern. The northern harrier is a resident within and winter visitor to open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall vegetation that varies in composition. Nests are constructed on the ground and are often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey that subsist on a variety of small mammals and other vertebrates.

Northern harriers have the potential to forage throughout the Project Area, and abundant wetlands to the north of the Project Area, and open grassy areas to the south of the Project Area provide additional foraging habitat. Further, this species has been documented in the wetlands to the north of the Project Area. While industrial disturbance may degrade portions of the potential habitat at and near the Project Area, the northern harrier is commonly found in urban marshes throughout the San Francisco Estuary, so the WMU operations likely don't preclude the species from utilizing habitat at the Project Area. Though the species commonly nests in habitat similar to that within the Project Area, the presence of abundant predators likely restricts use of habitat at the Project Area by northern harriers to foraging only.

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

White-tailed kites may forage throughout the Project Area (though small mammal burrows are rare), in the abundant wetlands to the north of the Project Area, and in the open grassy areas to the south of the Project Area. However, shrubs and trees on-site are very small, with limited cover, and are subject to persistent disturbance from the WMU, which likely provide sub-optimal nesting habitat for this species. Therefore, kites may forage at the Project Area, and in surrounding wetlands and grasslands, but are unlikely to nest at the Project Area.

Alameda (South Bay) song sparrow (*Melospiza melodia pusillula*), CDFW Species of Special Concern, USFWS Bird of Conservation Concern. Alameda song sparrow, a subspecies of the common and widespread song sparrow (*M. melodia*), is an endemic resident of marsh habitat along the fringes of south and east San Francisco Bay. This subspecies prefers tidally influenced marsh, and taller shrubs such as gumplant and native cordgrasses (*Spartina* sp.), primarily along channel edges (Takekawa et al. 2012), are required for breeding, to avoid nest flooding during high tides (Chan and Spautz 2008; Nordby et al. 2009). Densities of Alameda song sparrows are higher in areas with compact, patchy marshes (Moffett et al. 2014). Alameda song sparrows are primarily aerial foragers and marsh surface gleaners, preying on insects within and above the canopies of tidal wetlands (Takekawa et al. 2012).

There is suitable habitat for Alameda song sparrows throughout the Project Area. The species can forage in the tidal, muted tidal, and seasonal wetlands, and potentially in the transitional uplands. They can nest in the wetland areas where *Salicornia* is >30 cm, or where other tall emergent vegetation is present. There are records of the species near the Project Area, and the species was observed during a site visit. Alameda song sparrows should be considered present within the Project Area.

San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuosa*), USFWS Bird of Conservation Concern, CDFW Species of Special Concern. This subspecies of the common yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, brackish marshes, and saltwater marshes. Their 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). Yellowthroats are primarily aerial foragers, preying on insects within and above the canopies of tidal wetlands (Takekawa et al. 2012).

There is suitable foraging habitat for common yellowthroats throughout the Project Area. The species can forage in the tidal and muted tidal wetlands, and freshwater seasonal wetlands and transitional uplands, especially when they are wetted. The species may nest in the emergent marsh north of the Project Area, and potentially in areas of the ruderal herbaceous and landscaped areas with taller grass or other tall vegetation. There is a record of the species at the Project Area, and several other records in surrounding areas; there is a moderate potential for the species to be present in the Project Area for at least part of the year.

Other special-status species that have been documented within the vicinity of the Project Area, but are unlikely to occur include: hoary bat, pallid bat, Townsend's big-eared bat, Yuma myotis, San Francisco dusky-footed woodrat, bank swallow, black swift, burrowing owl, California least tern, golden eagle, grasshopper sparrow, great blue heron, Swainson's hawk, tricolored blackbird, western snowy plover, western yellow-billed

cuckoo, yellow rail, Alameda whipsnake, California giant salamander, California red-legged frog, California tiger salamander, foothill yellow-legged frog, northern California legless lizard, Pacific (Western) pond turtle, Santa Cruz black salamander, longfin smelt, steelhead, bay checkerspot butterfly, Crotch bumble bee, vernal pool tadpole shrimp, and western bumble bee. These species are discussed further in Appendix D.

Burrowing owl (*Athene cunicularia*). CDFW Species of Special Concern. The burrowing owl occurs as a year-round resident and winter visitor in much of California's lowlands, inhabiting open areas with sparse or non-existent tree or shrub canopies. Typical habitat is annual or perennial grassland, although human-modified areas such as agricultural lands and airports are also used (Poulin et al. 1993). This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in northern California is typically found in close association with California ground squirrels (*Otospermophilus beecheyi*). Manmade substrates such as pipes or debris piles may also be occupied in place of burrows. Prey consists of insects and small vertebrates. Breeding typically takes place from March to July.

Burrowing owl has been documented within approximately 0.2 mile of the Project Area along the levees of nearby portions of Don Edwards National Wildlife Refuge (CDFW 2019a). Additionally, the open space directly south of the Project Area has been designated as a preserve for this species, which, based on CDDNB information, is actively used for both wintering and breeding life history periods (CDFW 2019a). While burrowing owl was not identified within the Project Area during the site visit, potential habitat where suitable burrows could establish exists along the landfill face and on nearby levees. Given the prevalence of the species in the area and the proximity of potentially suitable habitat, burrowing owl has moderate potential to occur within or directly adjacent to the Project Area.

Critical Habitat

No critical habitat is present within the Project Area.

Essential Fish Habitat (EFH)

No EFH is present within the Project Area.

Wildlife Corridors

A review of the California essential connectivity project (CDFW 2019c) showed that the Project Area is largely not located within areas previously identified as an essential connectivity area, core reserve or corridor, or general wildlife corridors identified in the BIOS system, though a small extension of the "Large Natural Habitat Area" does overlap a small northern corner of the Project Area. On all sides, except the north side, the Project Area is surrounded by many miles of landscape deemed to have limited connectivity area. The Large Natural Habitat Area to the north of the Project Area is composed largely of tidal marsh that surrounds the South San Francisco Bay. Although there is a small amount of overlap between this large area of tidal marsh and the Project Area, the Project Area does not currently provide aquatic connectivity between the tidal marsh to the north, and other saline wetlands surrounding the Project Area. Creation of new retention basins in the proposed locations likely would not have a negative impact on species reliant on these saline wetlands and could potentially facilitate movement by aquatic and semi-aquatic species, by creating additional aquatic habitat on the Project Area.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Project Description

6.1.1 Location

ZRRML proposes to construct two separate storm water retention basins near the northwestern and southwestern comers of the existing WMU (referred to herein as the NW Basin and SW Basin, respectively). The basins will be located on property already owned and maintained by ZRRML that is immediately adjacent to the ZMPF.

6.1.2 Design

One side of each proposed basin will be formed by the existing perimeter soil levee of the permitted WMU. The remaining perimeter berms for these basins will be constructed of suitable soil using conventional soil construction techniques. Accordingly, soil layers will be placed in horizontal lifts that are properly moisture conditioned and compacted. All equipment and labor needed for construction of these berms will be provided from existing equipment and personnel at the ZMPF. Construction quality assurance (CQA) monitoring will be conducted during construction in accordance with a CQA plan developed specifically for this project.

The berms will be constructed with stable sideslopes to approximately 14-feet MSL. The top surface of the berms will be wide enough to provide vehicle access for routine berm maintenance and inspection. Approximately 10,000 cubic yards (CY) of soil will be used to construct the NW Basin, and approximately 26,000 CY of soil will be used to construct the SW Basin. The 36,000 CY of soil needed to construct these berms will be generated from ongoing operations at the ZMPF. Therefore, no increase in routine truck traffic will occur on Zanker Road/Los Esteros Road during the construction of these soil berms.

6.1.3 Capacity

With the proposed design, the NW Basin will have a total capacity of approximately 8.4 acre feet (approximately 366,000 cubic feet; or 2.7 million gallons), and the SW Basin will have a total capacity of approximately 21.9 acre feet (approximately 950,000 cubic feet; or 7.1 million gallons). Using the development scenario when runoff will be greatest (i.e., when the on-site landfill is closed and the 200,000 square feet Materials Recycling Facility is in full operation) it is estimated that the runoff generated during a 100-year, 24-hour storm event will be approximately 1.0 acre foot for the NW Basin, and approximately 5 acre feet for the SW Basin. As designed, therefore, the proposed retention basins will be able to hold multiple 100-year 24-hour events.

As noted above, the total capacity of these proposed basins will be large enough to hold multiple storm events. Additionally, the water that collects in these proposed basins will be utilized at the ZMPF whenever possible for material processing and dust control. Therefore, when these proposed basins are incorporated into storm water control measures for the site, no storm water discharge is expected to occur at the ZMPF.

6.1.4 Operational Considerations

After construction of the proposed basins is complete, ongoing operational/maintenance requirements are expected to be minimal. Regular inspection of the levees will be incorporated into ongoing site inspections to insure areas experiencing unusual erosion or other damage (settlement, cracks, burrows, etc.) are addressed immediately. These regular inspections will also consider the various drainage control systems (ditches, swales, down drains, drop inlets, etc.) in use throughout the ZMPF.

Prior to each wet-weather season, maintenance will occur as necessary to manage vegetative growth on the berms and within the basin and remove accumulated sedimentation. These maintenance activities will occur when the basin are dry and accessible.

6.2 CEQA Analysis Methodology

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

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

This report utilizes these thresholds in the analysis of impacts and determination of the significance of those impacts. The assessment of impacts under CEQA is based on the changes caused by the Project relative to the existing conditions in the Project Area. The existing conditions in the Project Area are described above, based on surveys conducted in 2019. In applying CEQA Appendix G, the terms “substantial” and “substantially” are used as the basis for significance determinations in many of the thresholds, but are not defined qualitatively or quantitatively in CEQA or in technical literature. In some cases, such as direct impacts to special-status species listed under the CESA or ESA, the determination of a substantial impact may be relatively straightforward. In other cases, the determination is less clear, and requires application of best professional judgment based on knowledge of site conditions as well as the ecology and physiology of biological resources present in a given area. Determinations of whether or not Project activities will

result in a substantial adverse effect to biological resources are discussed in the following sections for sensitive natural communities, special-status plant species, and special-status wildlife species.

6.3 Impacts Assessment and Mitigation Measures

Using the CEQA analysis methodology outlined in Section 6.2 above, the following section describes potential significant impacts to sensitive resources within the Project Area as well as suggested mitigation measures which are expected to reduce impacts to less than significant. With the implementation of mitigation measures described below, no significant impacts are expected to occur. An assessment of the potentially significant Project-related impacts and their associated mitigation measures are provided below.

6.3.1 Sensitive Terrestrial Natural Community

No sensitive terrestrial natural communities occur in the Project Area and none will be impacted by the proposed Project.

6.3.2 Sensitive Aquatic Resources

Construction of the NW and SW Basins would result in impacts to seasonal wetland. Other sensitive aquatic resources within the Project Area, such as muted tidal wetland and tidal wetland, are outside the limit of disturbance of the current Project Area. Impacts to sensitive aquatic resources are depicted in Figure 6.

Impact BIO-1: Wetlands and Non-Wetland Waters

Construction of the NW and SW Basins would result in permanent impacts to 0.14 acre of seasonal wetland, and an additional 0.05 acre of temporary impacts resulting from access and staging (Figure 6). Seasonal wetland within the Project Area is potentially subject to Corps and RWQCB under Sections 404 and 401 of the Clean Water Act or BCDC under the McAteer-Petris Act. Without proper erosion and sedimentation measures, ground-disturbing activities and vegetation removal also increase the likelihood of sedimentation occurring in adjacent seasonal wetland and muted tidal wetland outside of the proposed limit of disturbance. Additionally, earth work and equipment use may result in erosion, siltation, or discharge of fuels or other construction equipment-related substances into the seasonal wetlands. Discharge of sediment or hazardous materials may impact potentially jurisdictional features within the Project Area and aquatic resources downstream of the Project Area.

In the absence of suitable mitigation measures, any impacts to seasonal wetland would be potentially significant.

Mitigation for Impact BIO-01

MM BIO-1.1: Prepare a Wetland Delineation Report. Prior to issuance of grading permit for any vegetation removal or ground-disturbing activities, a formal wetland delineation report shall be prepared for the project area by a qualified biologist. Based on the findings of the delineation report, relevant permits through the USACE, RWQCB, and BCDC shall be acquired prior to the fill of seasonal wetlands. The formal wetland delineation report and proof of permits (as applicable) shall be submitted by the project applicant to the Director of Planning, Building and Code Enforcement or the Director's designee for review prior to the issuance of any grading permit.

MM BIO-1.2: Demarcate Wetlands Within the Project Site to be Avoided. Delineated wetlands to be avoided during construction activities shall be demarcated with barrier fencing around the boundaries of the wetlands prior to construction activities. The installation of the fencing shall be overseen by a qualified biologist. Demarcated wetlands shall be designated as an environmentally sensitive area and clearly identified on construction documents, contracts, and project plans. A qualified biologist shall review the construction documents, contracts, and project plans prior to the commencement of construction. The project applicant shall submit all construction documents, contracts, and project plans with the demarcated wetlands identified prior to the issuance of any grading permit.

MM BIO-1.3: Purchase Mitigation Credits for Permanent Loss of Wetlands. If there would be a permanent loss of Waters of the US and State, then the project shall purchase appropriate mitigation credits from either an approved mitigation bank or via permittee responsible mitigation which would involve creating, restoring, or enhancing analogous habitat types. The ratio for acres of mitigation to acres impacted shall be no less than 1:1. The project applicant shall submit proof of purchase of mitigation credits to the Director of Planning, Building, and Code Enforcement or the Director's designee prior to the issuance of any grading permit.

MM BIO-1.4: Prepare Best Management Practices for Wetlands. Best Management Practices (BMPs) shall be devised by a qualified biologist and implemented by the general contractor to prevent discharge of any project-related materials such as fuel, engine lubricants or sediment into potentially jurisdictional wetlands and water features. If wattles are used, only natural fiber or biodegradable wattles shall be installed. Silt fencing is recommended for erosion control as it would double as a wildlife exclusion fence. All erosion control products shall be removed at the completion of construction activities. All BMPS shall be printed on all construction documents, contracts, and project plans.

MM BIO-1.5: Prepare a Worker Education Program for Wetlands. Prior to the issuance of any grading permit, a worker education program shall be developed and implemented by a qualified biologist to train workers on identification of wetlands and avoiding impacts to project area wetlands. Construction personnel working in or near wetlands shall participate in environmental training prior to beginning work in or near wetlands. The project applicant shall submit evidence that a worker education program was developed and implemented by a qualified biologist, prior to ground disturbance, to the Director of Planning, Building and Code Enforcement or the Director's designee.

With implementation of the mitigation measures described above, impacts to state or federally protected wetlands would be reduced to a less than significant level by requiring

permits to be obtained, mitigated removed wetlands at a 1:1 ratio, and implementing erosion and sediment control measures.

With the implementation of these mitigation measures, adverse effects to sensitive aquatic natural communities will be mitigated to less than significant.

6.3.3 Special-status Plants

Of the 51 special status plant species known to occur in the vicinity of the Project Area, 11 were determined to have a moderate or high potential to occur in the Project Area. Most of the species found in the review of background literature occur in habitats not found in the Project Area. Habitat suitability for grassland-associated species in the Project Area is reduced due to a history of intensive grading and disturbance, as well as the dominance of invasive species. Seasonal wetlands with alkaline, clay soils that occur on the Project Area have the potential to support several special status species. Muted tidal wetlands that occur on the Project Area have the potential to support an additional two special status species; however, the Project as currently proposed would not impact muted tidal wetlands. Special status plant species on-site may fall under the jurisdiction of USFWS under the Endangered Species Act and/or the CDFW under the California Environmental Quality Act.

Table 5 outlines the special-status plants that may be directly or indirectly impacted by the Project. No other special-status plant species were determined to have a moderate or high potential to occur and therefore impacts to special-status plant species are limited to those included below. If these species are present in the proposed basin locations, Project construction could cause direct mortality to individuals or changes in site grading and elevation conditions could alter hydrology and indirectly affect individuals. If direct or indirect loss of a special-status plant species population would occur, this would be considered a significant impact.

Table 5. Potential Special-Status Plants Impacted by Project

SCIENTIFIC NAME	COMMON NAME	BLOOMING PERIOD (INCLUSIVE)	STATUS
Special-status Plants			
Astragalus tener var. *tener*	Alkali milk-vetch	March 1 - July 30	CRPR 1B.1
Atriplex depressa	Brittlescale	June 1 - October 31	CRPR 1B.1
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	May 1 - October 31	CRPR 1B.1
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	April 1 - October 31	CRPR 1B.1
Extriplex joaquinana	San Joaquin spearscale	March 1 - June 30	CRPR 1B.1
Lasthenia conjugens	Contra Costa goldfields	April 1 - July 30	FE, CRPR 1B.1
Navarretia prostrata	Prostrate vernal pool navarretia	March 1 - May 31	CRPR 1B.1
Puccinellia simplex	California alkali grass	April 1 - June 30	CRPR 1B.2
Trifolium hydrophilum	Saline clover	June 1 - October 31	CRPR 1B.2

Impact BIO-2: Special-status plant species

Eleven special-status plant species have a moderate or high potential to occur within the project site. Congdon's tarplant, which can withstand high levels of disturbance and competition from invasive species, has a high potential to occur in portions of the Project Area with mesic to dry alkaline soils, which encompass all of the Project Area outside of the WMU, which is developed and/or underlain by fill soils, and tidal open water/mudflat, which is perennially inundated and/or saturated. Alkali milk-vetch, brittlescale, Hoover's button-celery, San Joaquin spearscale, Contra Costa goldfields, prostrate vernal pool navarretia, California alkali grass, and saline clover have a moderate potential to occur within the Project Area due to the presence of suitable hydrological conditions and alkaline soils in seasonal wetland habitat. Point Reyes bird's beak (blooming period: July 1 to July 30) and California seablite (blooming period: March 1 to July 30) have a moderate potential to occur at the fringes of muted tidal wetland within the Project Area; however, no impacts are proposed to muted tidal wetland and therefore the Project is unlikely to affect these species.

Project impacts to seasonal wetland would result in direct impacts to the species listed in Table 5 if they are present within the Project Area. Additionally, any Project impacts occurring in vegetated areas outside the current WMU would result in direct impacts to Congdon's tarplant, if present. Special-status plant surveys will be required prior to the start of construction to confirm the presence or absence of these species. If found on-site during future surveys, and if impacts cannot be avoided, impacts to individual in the occupied area or individuals of alkali milk-vetch, brittlescale, Congdon's tarplant, Hoover's button-celery, San Joaquin spearscale, prostrate vernal pool navarettia, or California alkali

grass would be significant. Impacts to individuals of a Contra Costa goldfields population or occupied area would be significant. MM BIO-2.0 would avoid or minimize impacts to these special-status plant species to a less-than-significant level. Contra Costa goldfields, which is a federal endangered species, would require additional measures described under MM BIO-2.1.

Mitigation for Impact BIO-2

MM BIO-2.0: Special-Status Plants Avoidance and Mitigation

MM BIO-2.1 Complete Surveys. Prior to issuance of any grading permit for vegetation removal and ground-disturbing activities at the proposed stormwater basin locations, a focused survey (when rare or endangered species are both "evident" and identifiable) shall be conducted by a qualified biologist to determine the presence of the special-status plant species (i.e., alkali milk-vetch, brittlescale, Congdon's tarplant, Hoover's button-celery, San Joaquin spearscale, Contra Costa goldfields, Prostrate vernal pool navarretia, California alkali grass, and saline clover) with potential to occur within the project area. Surveys shall be conducted in accordance with the 2018 California Department of Fish and Wildlife Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. The following is a condensed summary of this protocol:

- Relevant botanical information shall be compiled for the general project area pre-survey to provide a regional context.
- Surveys shall be floristic in nature (every plant taxon is identified to the taxonomic level necessary to determine rarity and listing status), comprehensive and systematic over the entire project area, and conducted when plants are evident and identifiable.
- Reference sites shall be visited by the qualified biologist to confirm that the survey timing is appropriate and to gain familiarity with suitable habitats.
- For each special status plant and sensitive natural community observed, specific locations, site specific characteristics, phenology, and prevalence data shall be recorded and photographs taken.
- Special-status plant data shall be submitted to the California Natural Diversity Database.
- Voucher specimens shall be collected for each special-status plant species observed and deposited in herbaria that are members of the Consortium of California Herbaria.
- A botanical survey report shall be submitted that includes:
    - Project and location description
    - List of potential sensitive botanical resources and list of background references
    - Detailed description of survey methodology and results

- List of all plants and natural communities detected
- Assessment of potential project impacts, including avoidance, minimization, or mitigation measures.

These guidelines require special-status plant surveys to be conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys shall be scheduled to coincide with known blooming periods, as determined by a qualified biologist, that are necessary to identify the plant species of concern. Table 5 shows the typical blooming periods for these special-status plant species.

Prior to the issuance of any grading permit, a botanical survey report indicating the results of the surveys and any measures needed to avoid and reduce impacts to any special status plant species found present (see description of measures below) shall be submitted to the Director of Planning, Building, and Code Enforcement or the Director's designee for review and approval.

If no special-status plant species are found during the surveys, then the project would not have any impacts to the species and no additional mitigation measures are necessary.

MM BIO-2.2 Establish Exclusion Zones or Provide Compensatory Mitigation. If any of the identified rare plant species are found on-site, option 1 below shall be implemented. If Option 1 is found infeasible, then Option 2 shall be implemented.

1. Option 1: If the survey determines that one or more special-status plant species are present within the project area, direct and indirect impacts of the project on the species shall be avoided where feasible through the establishment of activity exclusion zones, where no ground-disturbing activities shall take place, including construction staging or other temporary work areas. Prior to the issuance of any grading permit for vegetation removal and ground-disturbing activities, activity exclusion zones for special-status plant species shall be established, around each occupied habitat site, the boundaries of which shall be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The boundaries of the activity exclusion zones shall be identified in the biological survey report described above in MM BIO-1.1 and marked on all construction documents, contracts, and project plans. The establishment of activity exclusion zones shall not be required if construction-related disturbances would not occur within 250 feet of the occupied habitat site. The size of activity exclusion zones may be reduced if a qualified biologist determines that the reduction would not increase impacts to the habitat and the reduction is approved by the Director of Planning, Building, and Code Enforcement or the Director's designee.

   OR

2. Option 2: If exclusion zones and avoidance of impacts to special-status species within the project area are not feasible, then the loss of individuals or occupied habitat of special-status plants shall be compensated for through the on-site or off-site preservation, restoration and/or creation of habitat that would support affected special-status species, prior to the issuance of any grading permit and construction activities. A mitigation plan that details appropriate compensation shall be prepared by a qualified biologist for impacted subject special status

species for review and approval by the Director of Planning, Building, and Code Enforcement or the Director's designee. A mitigation plan shall result in the replacement of the special status plants and habitat lost during project construction at a proportional basis to the impact, which may be achieved through the following:

- Restoration of temporarily impacted special status plant habitat on-site.
- The preservation, enhancement, restoration and/or creation of special status plant habitat at off-site mitigation areas that historically and/or presently support the special-status species within the project area;
- Purchase of credits in a mitigation bank that is approved by a federal or state trustee agency to sell credits for special-status plants; or
- Payment of in-lieu fees to a public agency or conservation organization (e.g., a local land trust) for the preservation and management of existing populations of special-status plants.

If the mitigation plan includes areas to be preserved, restored/enhanced, and/or created by the applicant, the areas shall be managed in perpetuity to encourage persistence and even expansion of the impacted species. A Habitat Mitigation and Monitoring Plan (HMMP) shall be developed by a qualified plant or restoration ecologist and implemented for the mitigation lands. The HMMP shall include, at minimum, the following information:

- A summary of impacts to the special-status plant species in question, including impacts to its habitat, and the proposed mitigation;
- A description of the location and boundaries of the mitigation site and description of existing site conditions;
- A description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the species;
- A description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which shall be determined by a qualified plant or restoration ecologist);
- Proposed management activities to maintain high-quality habitat conditions for the species;
- A description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria shall demonstrate that any plant population fluctuations over the monitoring period of a minimum of five years for preserved populations and a minimum of 10 years for enhanced or established populations do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be

attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management);

- If a new population is established, the new population must contain at least the same number of impacted individuals by year five. If year five is a poor weather year for summer and fall-blooming annual plants and reference populations show a decline, this criterion can be measured in the next year occurring with average or better rainfall; and

- Contingency measures for mitigation elements that do not meet performance criteria. Potential remediation actions shall be proposed if monitoring observations indicate that performance criteria are not being met. For example, changes in management or timing of management, alterations in monitoring, replacement plantings, irrigation or changes in irrigation management could be recommended for the following monitoring period. Alternative mitigation (purchase of mitigation bank credits, purchase of in-lieu fees) could be proposed as a contingency for performance criteria failures at the end of the monitoring period where no feasible corrective actions can be undertaken.

If an HMMP is required, the HMMP shall be provided to the Director of Planning, Building and Code Enforcement, or the Director's designee for approval, prior to issuance of any grading permit.

Implementation of the mitigation measure described above would reduce impacts to special-status plant species to a less than significant level by requiring pre-construction plant surveys, establishing activity exclusion zones for special-status species (if present), and/or adequately compensating for or replacing impacted individuals if avoidance is not feasible.

Implementation of these measures would reduce the impact to special-status plant species to less than significant.

6.3.4 Special-status Wildlife

Of the 40 special-status wildlife species known to occur in the vicinity of the Project Area, nine were determined to have a moderate or high potential to occur in the Project Area. Most of the species found in the review of background literature occur in habitats not found in the Project Area. Habitat suitability for grassland-associated species in the Project Area is reduced due to persistent auditory and visual disturbance by WMU operations. Additional adjacent auditory disturbance sources include: automobile and truck traffic on Los Esteros Road to the south and Grand Boulevard to the north, Railroad traffic on the on the rail spur to and from the San José-Santa Clara Regional Wastewater Facility to the south and west, and overhead commercial airline traffic from flights taking off from San Jose International Airport, as the property is in the takeoff flight path. Any areas that may become inundated, such as the transitional uplands and the stormwater detention basin on the Project Area, are highly intermittent, and do not provide value as migration corridors or breeding habitat for species with freshwater aquatic life-histories. The tidal and muted tidal saline wetlands that occur on the Project Area have the potential to support several special-status species. Special-status wildlife species on-site may fall under the

jurisdiction of USFWS under the ESA and MBTA, and/or the CDFW under the CFGC, CESA, and CEQA.

Table 6 outlines the special-status wildlife that may be directly or indirectly impacted by the Project. No other special-status wildlife species were determined to have a moderate or high potential to occur and therefore impacts to special-status wildlife are limited to those included below.

Table 6. Potential Special-Status Wildlife Impacted by Project

SCIENTIFIC NAME	COMMON NAME
Special-status Wildlife (CEQA, other)	
Reithrodontomys raviventris	salt-marsh harvest mouse
Sorex vagrans halicoetes	salt-marsh wandering shrew
Rallus longirostris obsoletus	California Ridgway's rail
Laterallus jamaicensis coturniculus	California black rail
Circus cyaneus	Northern harrier
Elanus leucurus	White-tailed Kite
Melospiza melodia	Alameda song sparrow
Geothlypis trichas sinuosa	San Francisco (salt-marsh) common yellowthroat
Athene cunicularia	Burrowing owl
Various	Native nesting birds

BIO IMPACT 3: Upland Nesting Birds

This assessment determined that four species of special-status birds may use the sensitive and non-sensitive upland habitats (e.g., transitional uplands) in the Project Area for foraging and, in some cases, breeding, including the Northern harrier, white-tailed kite, Alameda song sparrow and San Francisco common yellowthroat. These species may forage in the transitional uplands, ruderal herbaceous areas, or wetlands on-site, and the passerines may find nesting habitat in trees, shrubs or other vegetation within the Project Area, potentially even in landscaped areas with ornamental species. Nesting by the raptors is less likely due to significant and continual disturbance from WMU operations, nearby traffic and rail auditory disturbance, and a lack of large trees. Grading within the Project Area may reduce nesting and foraging habitat for special status species, or may impact these species through visual and auditory disturbance sufficient to cause nest abandonment. Such impacts would be considered significant under CEQA.

In addition to special-status nesting birds, common avian species may also nest within the Project Area and may be similarly affected by project activities. Due to the protected status of these species under both the MBTA and CFGC, impacts to common native nesting birds would also be considered a significant impact under CEQA.

Temporary disturbance from this impact are expected to affect 1.05 acre, and 5.16 acres of potential foraging and nesting habitat for birds are expected to be permanently lost though grading and permanent conversion of transitional upland habitat to retention basin.

BIO MM 3.0: Nesting Birds Mitigation Measure

MM BIO-3.1: Avoid Nesting Season or Complete Pre-construction Surveys. The project applicant shall schedule ground-disturbing and construction activities to avoid the nesting season. The nesting season for most birds, in the San Francisco Bay area, extends from February 1 through August 31 (inclusive) to the extent feasible.

If project activities are initiated during the nesting season (February 1 through August 31, inclusive), a pre-construction nesting bird survey of the project site and surrounding 500 feet shall be conducted by a qualified ornithologist within 14 days and within 48 hours of commencement of ground disturbance or construction activities, whichever occurs first, to avoid disturbance to active nests, eggs, and/or young of nesting birds. If project construction activities (including shrub removal) are initiated outside of the nesting season, no pre-construction surveys are required for nesting birds.

MM BIO-3.2 Establish Buffer. In the event that an active nest is observed on the project site or is located within the 500 feet surrounding the site, the ornithologist shall establish a no disturbance buffer around the nest. The buffer shall remain in place until all young have fledged or the nest otherwise becomes inactive (e.g., due to predation) as determined by a qualified ornithologist. Suggested buffer zone distances differ depending on species, location, and placement of nest and shall be determined and implemented in the field by the ornithologist. Prior to the issuance of any grading permit, the ornithologist shall submit a report indicating the results of the survey and any designated buffer zones for review and approval by the Director of Planning, Building and Code Enforcement or the Director's designee.

Implementation of the mitigation measure above would reduce potential impacts to nesting birds to a less than significant level by requiring pre-construction surveys during the nesting season and establishing disturbance buffers if the nest of a protected species is located.

Implementation of these measures would reduce impacts to nesting birds to less than significant levels**.**

<u>BIO IMPACT 4: Salt Marsh Mammals</u>

The tidal, muted tidal, and seasonal wetlands, and transitional uplands that occur within the Project Area have the potential to support two species of special status mammals. There is a high potential for salt marsh harvest mice to nest and forage in the tidal and muted tidal wetlands within the Project Area. They also likely move into the transitional uplands and seasonal wetlands to forage nocturnally, and to seek high tide refuge during the day or night. The salt marsh wandering shrew has a moderate potential to occur on the Project Area. It may nest and forage in wetland areas, and along the ecotone between the wetlands and adjacent habitats. These species could be impacted by visual or auditory disturbance, which could interfere with important life history actions such as feeding and breeding. Individual animals could also be harmed or killed by crew or equipment working in or near suitable habitat. Animals will also be impacted by permanent loss of foraging and high water refuge habitat. Such impacts would be considered significant under ESA and/or CEQA.

Approximately 0.05 acre seasonal wetland habitat are expected to be temporarily impacted by the Project, and 0.14 acre is expected to be lost permanently due to grading and permanent conversion of transitional upland habitat to retention basin. The following measures shall be implemented to assure that impacts to salt marsh mammals are less than significant. Implementation of the following measures will reduce impacts to a less-than-significant level by bringing the project into compliance.

MM BIO-4.1 Avoid Breeding Season or Complete Pre-construction Surveys. To the extent feasible, project construction activities shall be scheduled outside of the salt marsh harvest mouse breeding season (March 1 – November 30, inclusive) and outside of the salt marsh wandering shrew breeding season (February 1 – June 30, inclusive).

If project construction activities are initiated during the breeding season, prior to the start of construction activities in salt marsh habitat, the project proponent shall retain a qualified biologist to conduct pre-construction surveys for salt marsh harvest mouse and salt marsh wandering shrew. Surveys shall take place no more than 24 hours prior to the onset of site preparation and construction activities with the potential to disturb these species or their habitat and shall include inspection of nesting substrate, such as salt marsh vegetation and debris within the work footprint. If the salt marsh harvest mouse and/or salt marsh wandering shrew are discovered during the pre-construction survey, consultation with the USFWS and/or CDFW would be required and necessary protection measures shall be in place prior to the onset of site preparation and construction activities. The results of the pre-construction survey, including results of the consultation with USFWS and/or CDFW and all measures required to reduce and avoid impacts to the salt marsh harvest mouse and/or salt marsh wandering shrews (including required no-work buffers, plans for vegetation removal, and exclusionary fencing outlined below), shall be documented in a report to be submitted to the Director of Planning, Building, and Code Enforcement or the Director's designee for review.

MM BIO-4.2: Establish Buffer or Complete Vegetation Removal. If salt marsh harvest mouse and/or salt marsh wandering shrew are found on-site and cannot be avoided, option 1 shall be implemented. If option 1 is found infeasible, then option 2 shall be implemented. The chosen option shall be implemented prior to and during construction to avoid or minimize impacts to salt marsh harvest mice and salt marsh wandering shrews:

1. Option 1: If the salt marsh harvest mouse or salt marsh wandering shrew are found during surveys, a 100 meter no-work buffer shall be established by a qualified biologist around occupied habitat or individual observations of salt marsh harvest mice and salt marsh wandering shrews.

   OR

2. Option 2: If salt marsh harvest mouse or salt marsh wandering shrew are not found during surveys, or if they are found during surveys but a 100 meter no-work buffer cannot be established (e.g., because work cannot be avoided within the buffer area), then vegetation removal in work areas taking place in potential salt marsh mammal habitat (e.g., seasonal wetlands and transitional upland) shall be performed to remove cover and render these areas unattractive to salt marsh harvest mouse and salt marsh wandering shrew.

- Only non-motorized equipment, hand-held motorized equipment (i.e., string trimmers), and high-clearance (minimum six-inch), push-type, motorized mowers shall be used to remove the vegetation.
- The qualified biologist shall inspect areas of vegetation removal immediately prior to the initiation of removal to search for salt marsh harvest mice and "flush"[4] small mammals out of the area and toward adjacent tidal marsh areas that would not be subject to removal.
- Vegetation removal shall start in the position farthest from the highest quality and most accessible salt marsh harvest mouse habitat within the work area, and progress toward that habitat, such that the salt marsh harvest mice are protected to the greatest degree possible as they move out of the focal area.
- Vegetation shall be cut in at least two passes: with the first pass cutting vegetation at approximately half of its height above the ground (mid-canopy) and the next pass, or subsequent passes, cutting vegetation to ground-level or no higher than one inch.
- Cut vegetation shall be removed from the exclusion area (work area) so that no cut vegetation remains there once the exclusionary fence is installed.
- All non-native, invasive vegetation removed shall be discarded at a location outside of any tidal marsh areas to prevent reseeding.

Following completion of vegetation removal, temporary exclusionary fencing shall be installed.

- The fencing shall be installed between suitable habitat areas (e.g., tidal marsh and other pickleweed-dominated areas) and the defined work area (or areas) immediately following vegetation removal and prior to the start of other construction/excavation activities. A figure showing the location(s) of proposed fencing shall be provided to the City for approval prior to the initiation of vegetation removal and construction.
- The fence shall consist of a material that does not allow salt marsh harvest mice to pass through or climb, or a standard silt fence with slick tape (or an effectively similar material) a minimum of six inches wide fixed to the fence to render it non-climbable. The bottom shall be buried to a depth of at least four inches so that animals cannot crawl under the fence. Fence height shall be at least 12 inches higher than the highest adjacent vegetation with a maximum height of four feet.
- Fence posts shall be placed facing the work area side (i.e., vegetation-cleared side) and not the side of the fencing facing intact habitat areas. The fencing shall be installed under the supervision of a qualified biologist.

[4] Flushing refers to the agitation or moving of vegetation to reveal the species.

- The qualified biologist shall routinely inspect exclusionary fencing daily to ensure that it remains intact and effective. Fencing deficiencies noted during the daily inspection or during construction shall immediately be repaired by the Contractor. The project applicant shall submit proof of contracting with a qualified biologist for daily fence inspection to the Director of Planning, Building, and Code Enforcement or the Director's designee.

With implementation of the mitigation measures described above, the proposed project would result in a less than significant impact on the salt marsh harvest mice and salt marsh wandering shrew by avoiding the species, creating no-work buffers, or removing vegetation then installing temporary fencing to discourage the species from entering the project site during construction.

BIO IMPACT 5: Marsh Birds

The tidal wetlands that occur within the Project Area have the potential to support two species of special status birds. The California Ridgway's rail and California black rail both have the potential to occur in the Project Area. The rails may nest or forage in the tidal wetlands in and north of the Project Area and forage on the tidal mudflats. Rails could be impacted by visual or auditory disturbance, which could interfere with important life history actions such as feeding and nesting, and potentially cause nest abandonment. Individual animals could also be harmed or killed by crew or equipment working near suitable habitat. Such impacts would be considered significant under ESA and/or CEQA.

Approximately 0.05 acre seasonal wetland habitat are expected to be temporarily impacted by the Project, and 0.14 acre is expected to be lost permanently due to grading and conversion of transitional upland habitat to retention basin. The following measures shall be implemented to assure that indirect impacts to secretive marsh birds are less than significant. Implementation of the following measures will reduce impacts to a less-than-significant level by bringing the project into compliance.

MM BIO-5.1: Avoid Breeding Season or Complete Pre-construction Surveys. No construction work, except as noted below, shall not occur within 200 meters (656 feet) of potential rail nesting habitat from February 1 to August 31, inclusive, to avoid impacts to nesting rails. Only the following limited construction work may be performed from June 1 to August 31, inclusive, within 200 meters of rail nesting habitat:

- Installation of temporary construction fencing
- Installation of any stormwater pollution prevention measures
- Clearing and grubbing of vegetation within the project site using hand-held equipment.

Construction work within 200 meters (656 feet) of potential rail nesting habitat may be performed outside of both the rail breeding and nesting rail survey period of September 1 to January 14, inclusive.

If construction work must take place during the rail nesting season from February 1 to August 31 (inclusive), then a qualified biologist shall perform a protocol-level survey for the California Ridgway's rail and California black rail in areas where habitat for these species may be present, as determined by the biologist. The results of the pre-

construction, protocol-level survey, including results of the consultation with USFWS and/or CDFW (required if California Ridgway's rail and the California black rail are identified) and all measures required to reduce and avoid impacts to the California Ridgway's rail and the California black rail (including the 200 meter no-work buffer), shall be submitted via a report to the Director of Planning, Building and Code Enforcement or the Director's designee for review and approval prior to the issuance of any grading permit.

The California Ridgway's rail protocol-level survey shall be conducted in accordance with the June 2015 USFWS California Clapper Rail Survey Protocol and must be conducted between January 15 through April 15 (inclusive). A total of four surveys shall be completed during this time period: two passive surveys, followed by two active surveys. Surveys shall be spaced at least two weeks apart. For the California black rail protocol survey, no protocol has been published for this species; therefore, the protocol survey shall follow the 2015 California Clapper Rail Survey Protocol.[5] A total of four surveys (two passive and two active surveys) shall be conducted for the California black rail protocol survey between March 15 and May 31 (inclusive) with each of the surveys conducted at least two weeks apart.

- If no species are detected during protocol-level surveys for California Ridgway's rail and California black rail, then the project would not have any impacts to the species and no additional measures are necessary.
- If California Ridgway's rail and/or California black rail are detected during protocol level surveys, the detections shall be recorded and a 200 meter (656 feet) no-work buffer shall be established around each detection of California Ridgway's rail and California black rail. Construction work shall not occur within the 200 meters (656 feet) no-work buffers from February 1 to August 31 (inclusive), which is the greater rail breeding season).

MM BIO-5.2: Prepare a Worker Education Program. A worker education program shall be developed and implemented by a qualified biologist to train workers on identification of the California Ridgway's rail and the California black rail and avoiding impacts (e.g., educate about the nesting season, potential nesting habitat, and the measures described in MM BIO-4.1 to avoid impacts) to these species. Construction personnel working in or near wetlands shall participate in environmental training prior to beginning work in or near wetlands. Prior to the issuance of any grading permit, the project applicant shall submit a copy of the worker education program with evidence that a qualified biologist has been contracted to perform the training to the Director of Planning, Building and Code Enforcement or the Director's designee.

With implementation of the mitigation measure described above, impacts to the California Ridgway's rail and the California black rail would be reduced to a less than significant level by conducting protocol surveys, establishing no work buffer zones, and providing worker training.

<u>BIO Impact 6: Burrowing Owl</u>

Levees and other uplands within the Project Area have the potential to support wintering or nesting burrowing owl. These areas have the potential to become inhabited by California ground squirrels or may otherwise contain suitable burrow surrogate structures that could support this species. If grading activities were to impact and occupy burrow, the mortality of individual owls or the destruction of an owl nest could occur. Similarly,

[5] The California Ridgeway Rail was formerly known as the California Clapper rail.

construction activities generating significant noise and/or visual disturbance above baseline could cause nest abandonment were they to occur in the proximity of an active burrowing owl nest. Nest abandonment or destruction, or mortality of individuals owls, would all be considered significant impacts under CEQA. Implementation of the following measures will reduce the potential impacts to burrowing owl from the Project to a less-than-significant level.

MM BIO-6.1: Complete Pre-construction Surveys. Prior to issuance of any grading permit, a qualified biologist shall conduct pre-construction surveys in all suitable habitat areas within the project site and within 250 feet of the project site, as accessible. A minimum of two site visits shall occur as part of pre-construction surveys (if owls are detected, a second site visit is not needed): one within 14 days prior to commencement of construction work, and one within 48 hours of commencement of construction work. To maximize the likelihood of detecting owls, the pre-construction survey shall last a minimum of three hours. The survey shall begin one hour before sunrise and continue until two hours after sunrise (three hours total) or begin two hours before sunset and continue until one hour after sunset. Any owls observed location of the occupied burrow shall be mapped. A qualified biologist shall submit results of the pre-construction burrowing owl surveys, including a description of all measures required to reduce and avoid impacts to the burrowing owl (if present), to the City of San José Director of Planning, Building and Code Enforcement or the Director's designee for review prior to issuance of any grading permit.

MM BIO-6.2: Establish Buffer. If nesting owls are encountered during the breeding season (February 1 – August 31, inclusive), active nests shall be avoided by maintaining a 250 foot no-disturbance buffer either until the end of the breeding season or until the nest can be confirmed to be inactive by a qualified biologist. If work must occur within this buffer, consultation with CDFW may be required.

If owls are encountered during the non-breeding season (September 1 to January 31, inclusive), the occupied burrow shall be avoided by maintaining a 250-foot no-disturbance buffer until such time as a qualified biologist can confirm that the owl is no longer utilizing the burrow site.

Prior to issuance of any grading permit, qualified biologist must establish the 250-foot buffers. The established buffers shall be marked in the field (e.g., with flagging, fencing, paint, or other means appropriate for the location in question). This marking shall be maintained intact and in good condition throughout project-related construction activities.

With implementation of the mitigation measure described above, impacts to burrowing owls would be reduced to a less than significant level by conducting surveys to determine if burrowing owls are present, protecting the nests of burrowing owls until declared inactive, and consulting with CDFW when required.

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Appendix A

Figures

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Sources: ESRI Streets, WRA | Prepared By: njander, 12/11/2019

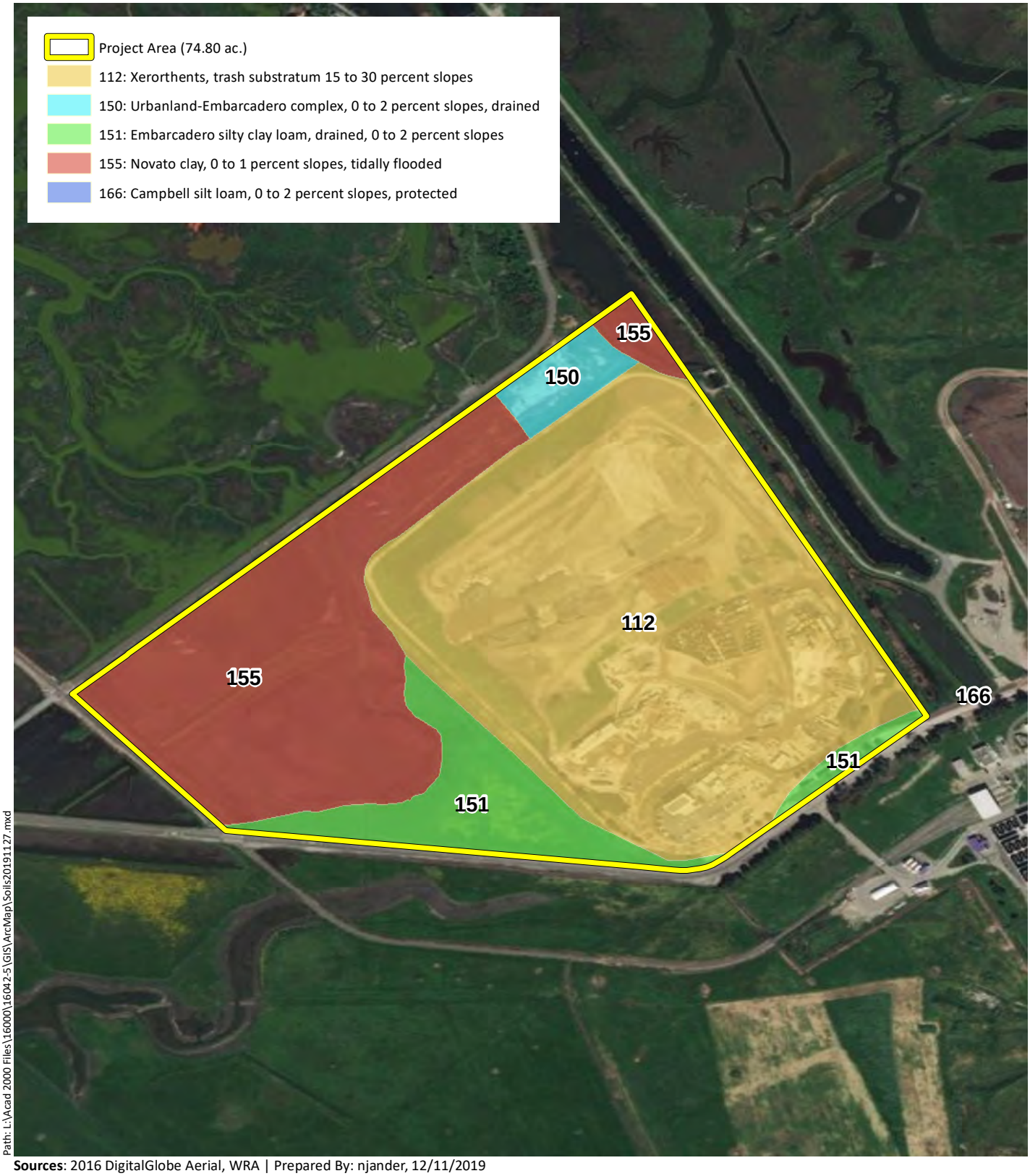
Figure 1. Project Area Regional Location Map

Zanker Storm Water Basins
San Jose, Santa Clara County, California

0 0.25 0.5 Miles

N

ENVIRONMENTAL CONSULTANTS



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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: njander, 12/11/2019

Figure 2. Project Area Soils Map

Zanker Material Processing Facility Stormwater Basins
San Jose, Santa Clara County, California

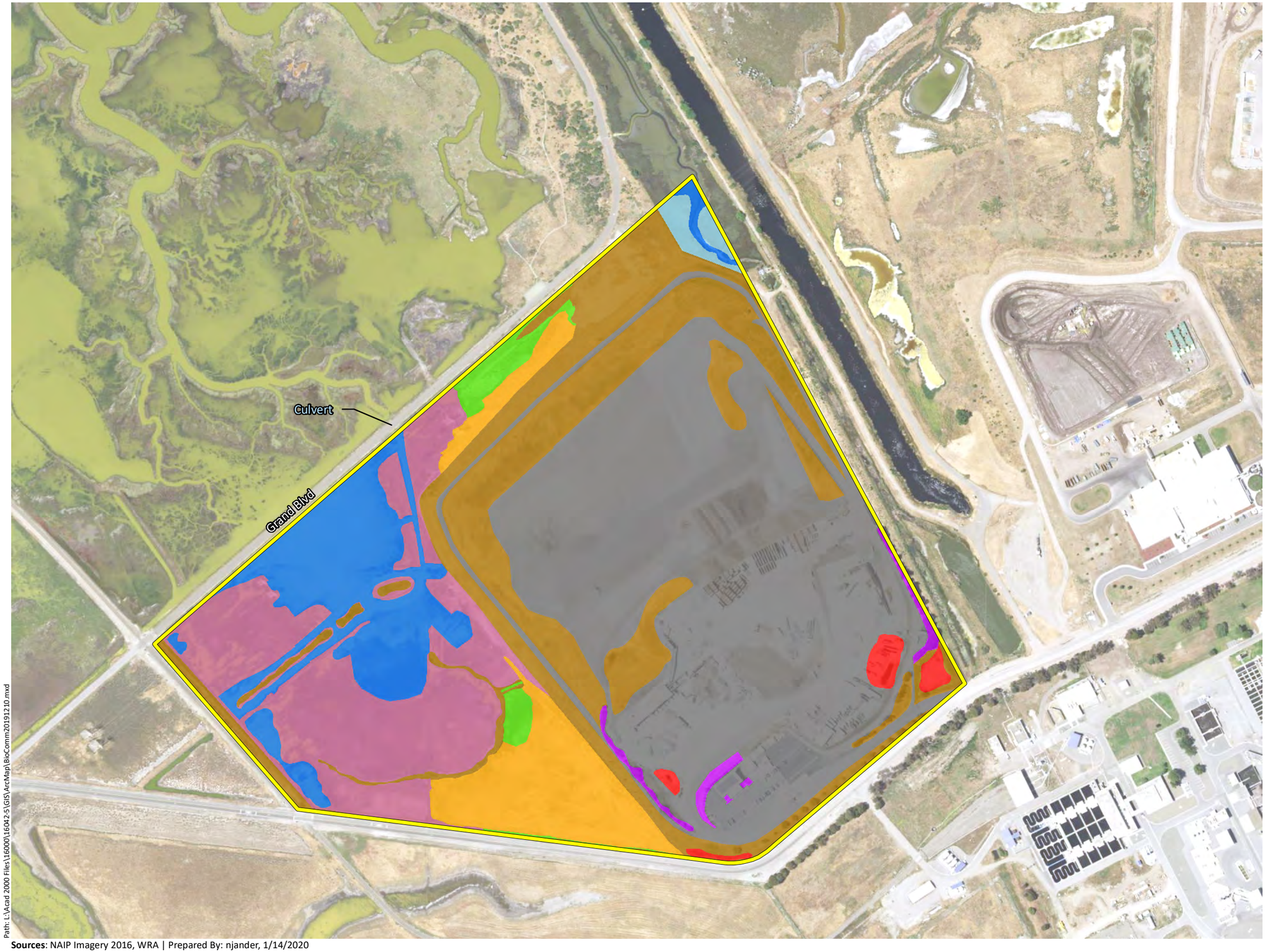
0 500 1,000 Feet

N

wra
ENVIRONMENTAL CONSULTANTS

Figure 3.
Natural Communities in the Project Area

Zanker Storm Water Basins
Santa Clara County, California



Project Area (74.80 ac.)

Sensitive Natural Communities

- Seasonal Wetland (1.27 ac.)
- Tidal Open Water/Mudflat (7.40 ac.)
- Tidal Wetland (0.64 ac.)
- Muted Tidal Wetland (11.45 ac.)

Non-Sensitive Natural Communities

- Ornamental/Landscaped (0.70 ac.)
- Transitional Upland (5.37 ac.)
- Wastewater Pond (0.79 ac.)
- Ruderal Herbaceous (15.56 ac.)
- Developed (31.62 ac.)

N

0 200 400

Feet

wra
ENVIRONMENTAL CONSULTANTS

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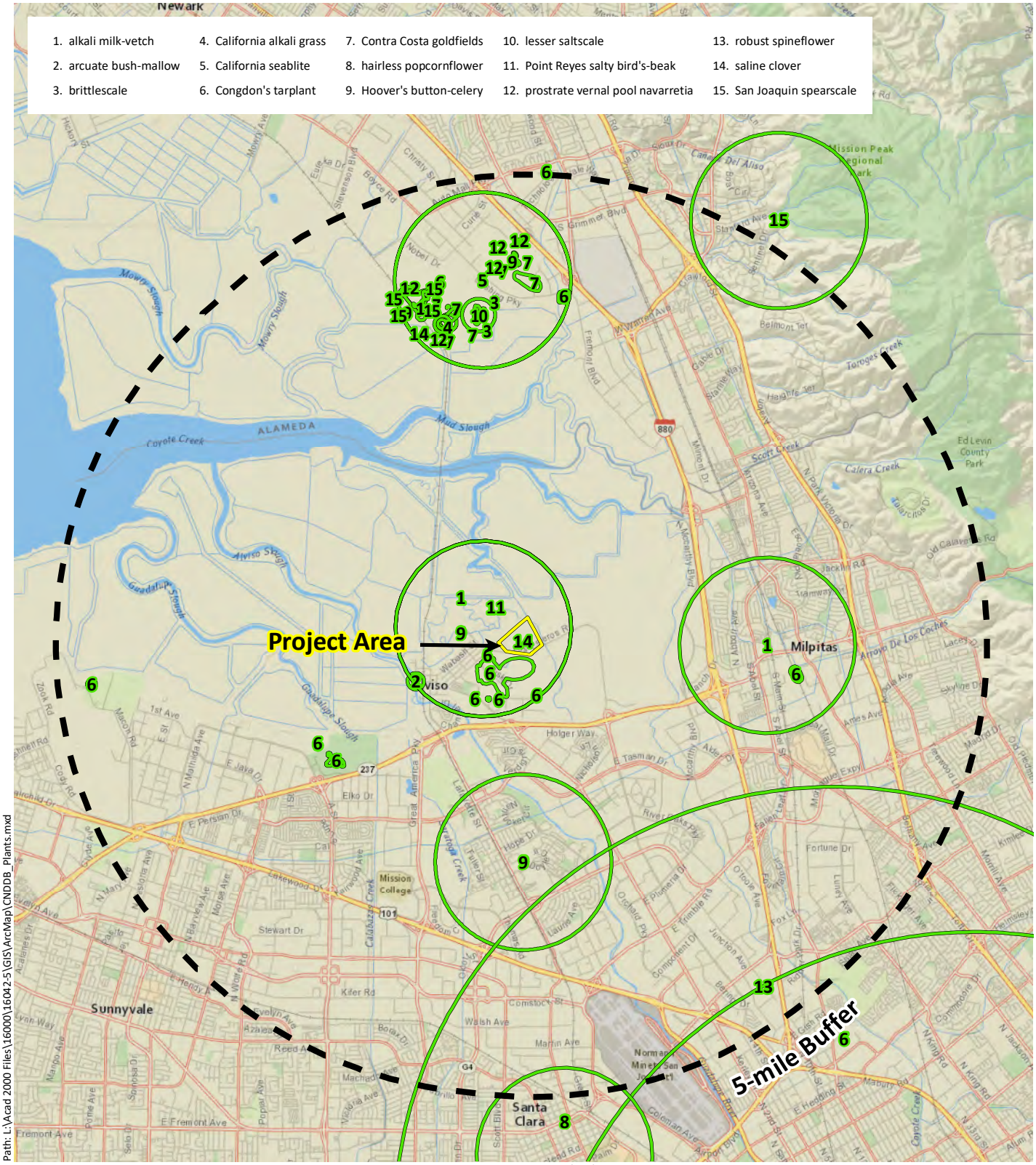
Sources: NAIP Imagery 2016, WRA | Prepared By: njander, 1/14/2020



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Sources: National Geographic, CNDDB November 2019, WRA | Prepared By: njander, 12/11/2019

Figure 4. Special-Status Plant Species Documented within 5-miles of the Project Area

Zanker Material Processing Facility Stormwater Basins
San Jose, Santa Clara County, California

0 1 2 Miles N

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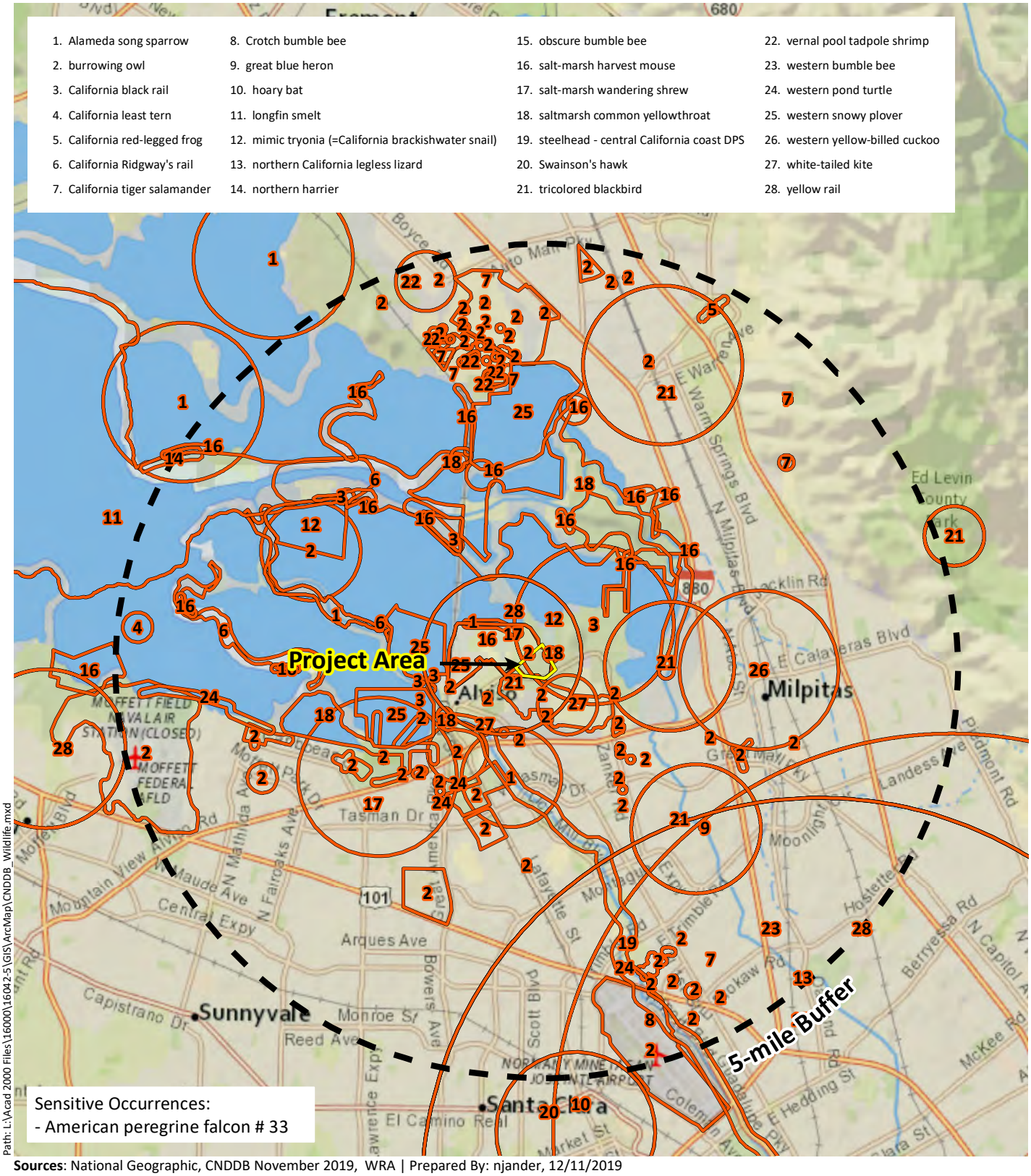

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Sources: National Geographic, CNDDB November 2019, WRA | Prepared By: njander, 12/11/2019

Figure 5. Special-Status Wildlife Species Documented within 5-miles of the Study Area

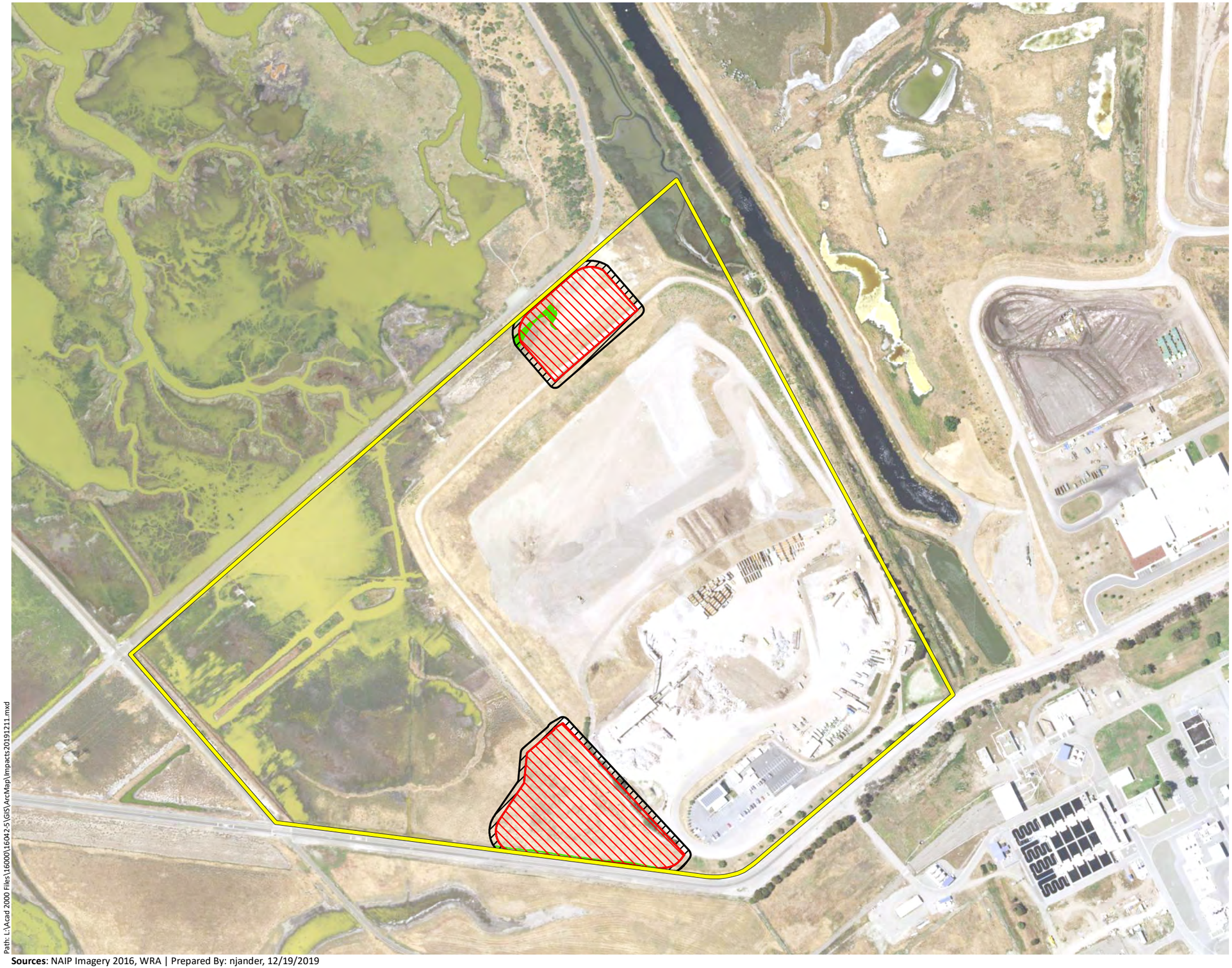
Zanker Material Processing Facility Stormwater Basins
San Jose, Santa Clara County, California

0 1 2 Miles N

wra ENVIRONMENTAL CONSULTANTS

Figure 6.
Impacts to Sensitive Natural Communities in the Project Area

Zanker Storm Water Basins
Santa Clara County, California



Project Area (74.80 ac.)

Impact Type

Permanent (5.16 ac.)

Temporary (1.05 ac.)

Impacts to Sensitive Natural Communities (Permanent Acres / Temporary Acres)

Seasonal Wetland (0.14 ac. / 0.05 ac.)

N

0 200 400

Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: L:\Acad 2000 Files\16000\16042-5\GIS\ArcMap\Impacts20191211.mxd

Sources: NAIP Imagery 2016, WRA | Prepared By: njander, 12/19/2019

Appendix B

Species Observed Within the Project Area

Appendix B-1. Plant species observed within the Project Area on November 20 and 21, 2019.

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Ambrosia psilostachya	Ragweed	native	perennial herb	-	-	FACU
Atriplex prostrata	Fat-hen	non-native	annual herb	-	-	FACW
Atriplex rosea	Redscale	non-native	annual herb	-	-	FACU
Avena sp.	Wild oat	non-native	annual grass	-	-	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Beta vulgaris	Common beet	non-native	perennial herb	-	-	-
Bolboschoenus maritimus ssp. paludosus	Saltmarsh bulrush	native	perennial grasslike herb	-	-	OBL
Brassica nigra	Black mustard	non-native (invasive)	annual herb	-	Moderate	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Bromus madritensis	Foxtail brome	non-native	annual grass	-	-	UPL
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Centaurea melitensis	Tocalote	non-native (invasive)	annual herb	-	Moderate	-
Centaurea solstitialis	Yellow starthistle	non-native (invasive)	annual herb	-	High	-
Centromadia pungens ssp. *pungens*	Common tarweed	native	annual herb	-	-	FAC
Conium maculatum	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
Convolvulus arvensis	Field bindweed	non-native	perennial herb, vine	-	-	-
Cuscuta pacifica	Goldenthread	native	annual herb, vine (parasitic)	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Cynara cardunculus	Cardoon	non-native (invasive)	perennial herb	-	Moderate	-
Distichlis spicata	Salt grass	native	perennial grass	-	-	FAC
Dittrichia graveolens	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Echium candicans	Pride of madeira	non-native (invasive)	shrub	-	Limited	-
Epilobium brachycarpum	Willow herb	native	annual herb	-	-	-
Erigeron bonariensis	Flax-leaved horseweed	non-native	annual herb	-	-	FACU
Eucalyptus sp.	Eucalyptus	non-native	tree	-	-	-
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Frankenia salina	Alkali heath	native	perennial herb	-	-	FACW
Grindelia stricta	Gumweed	native	perennial herb	-	-	FACW
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
Hordeum murinum	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Kickxia elatine	Sharp point fluellin	non-native	perennial herb	-	-	UPL
Kickxia spuria	Fluellin	non-native	perennial herb	-	-	-
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU
Lasthenia sp.	Goldfields	native	annual herb	-	-	FACW

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Lepidium latifolium	Perennial pepperweed	non-native (invasive)	perennial herb	-	High	FAC
*Ligustrum s*p.	Privet	Non-native	tree	-	-	-
Limonium ramosissimum	Algerian sealavender	non-native (invasive)	perennial herb	-	Limited	FACW
Lotus corniculatus	Bird's foot trefoil	non-native	perennial herb	-	-	FAC
Lythrum hyssopifolia	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
Malva pseudolavatera	Cretan mallow	non-native	shrub	-	-	-
Malva sp.	Mallow	non-native	annual herb	-	-	-
Medicago polymorpha	California burclover	non-native (invasive)	annual herb	-	Limited	FACU
Melilotus sp.	Sweetclover	non-native		-	-	FACU
Mesembryanthemum nodiflorum	Small flowered iceplant	non-native (invasive)	annual herb	-	Limited	FAC
Muhlenbergia rigens	Deergrass	native	perennial grass	-	-	FAC
Parapholis incurva	Sickle grass	non-native	annual grass	-	-	FACU
Pennisetum clandestinum	Kikuyu grass	non-native (invasive)	perennial grass	-	Limited	FACU
Plantago coronopus	Cut leaf plantain	non-native	annual herb	-	-	FAC
Polygonum aviculare	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
Polypogon monspeliensis	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
Raphanus sativus	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Salicornia depressa	Virginia glasswort	native	annual herb	-	-	OBL
Salicornia pacifica	Pickleweed	native	perennial herb	-	-	OBL

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status (AW 2016)[3]
Schinus molle	Peruvian pepper tree	non-native (invasive)	tree	-	Limited	FACU
Schoenoplectus californicus	California bulrush	native	perennial grasslike herb	-	-	OBL
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Sonchus arvensis	Perennial sow thistle	non-native	perennial herb	-	-	FACU
Stipa miliacea var. *miliacea*	Smilo grass	non-native (invasive)	perennial grass	-	Limited	-
Typha sp.	Cattail	-	perennial herb (aquatic)	-	-	OBL

All species identified using the *Jepson Flora Project (Jepson eFlora 2019)*; nomenclature follows Jepson eFlora. Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2019a)

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 1B: Rare in native stands only)
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 2019)

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

* Species only considered rare in native habitat; Study Area is not located within native habitat and species is therefore not considered rare.

Appendix B-2. Wildlife species observed within the Project Area on November 20, 2019.

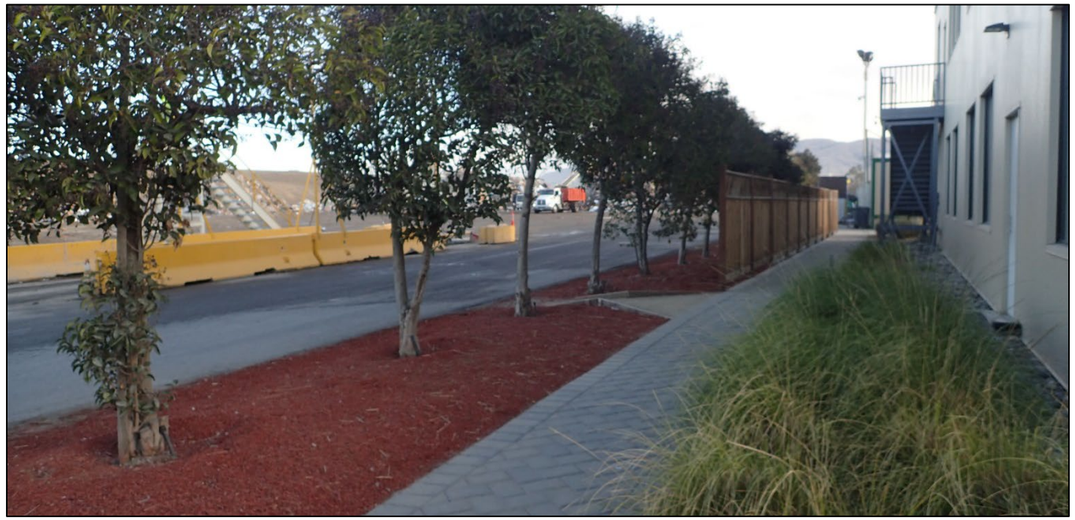
SCIENTIFIC NAME	COMMON NAME
Birds	
Anas clypeata	Northern shoveler
Ardea alba	great egret
Branta canadensis	Canada goose
Buteo jamaicensis	red-tailed hawk
Calidris minutilla	least sandpiper
Cathartes aura	turkey vulture
Charadrius vociferus	killdeer
Corvus brachyrhynchos	American crow
Fulica americana	American coot
Himantopus mexicanus	black-necked stilt
Junco hyemalis	dark-eyed junco
Larus spp.	gulls
Melospiza melodia	song sparrow
Sayornis nigricans	black phoebe
Tringa melanoleuca	greater yellowlegs
Zonotrichia leucophrys	white crowned sparrow
*Mammals (*sign only)*	
*Canis latrans**	coyote
*Lontra canadensis**	river otter
Mephitis mephitis	striped skunk
*Procyon lotor**	raccoon

Appendix C

Representative Photographs of the Project Area

Photograph 1. Photo of developed hardscape in the southwest corner of the WMU, facing northeast. Photo taken in the office parking lot.

Photograph 2. Photo of developed areas associated with operations of ZMPF. Photo taken in the southwest portion of the WMU, facing northwest.



Photograph 3. Photo of developed hardscape and ornamental/landscaped areas, planted with privet and deergrass, associated with office buildings in the southwest corner of the WMU facing northwest.

Photograph 4. Photograph of ornamental/planted eucalyptus bordering the eastern edge of the Project Area, facing south.

Photograph 5. Photo of a wastewater pond located in the southwest part of the WMU, facing west. A row of planted ornamental Peruvian peppertrees can be seen in the background.

Photograph 6. Photo of a recently maintained wastewater pond located along the southern border of the Project Area, adjacent to Los Esteros Road, facing east. Ruderal herbaceous vegetation is growing along the edge of the WMU in the left part of the photo.

Photograph 7. Photo of a wastewater pond in the western corner of the Project Area, facing north.

Photograph 8. Photo of ruderal herbaceous vegetation, dominated by smilo grass, growing along the southern boundary of the WMU, facing northwest. Ornamental Peruvian peppertrees can be seen in the top right, and transitional upland, dominated by pickleweed, can be seen to the left.

Photograph 9. Photo of ruderal herbaceous vegetation, dominated by non-native grasses, thistles, and mustards, growing along the western edge of the WMU facing northwest.

Photograph 10. Photo of a berm dominated by black mustard, which separates pickleweed-dominated muted tidal wetland (right) from pickleweed-dominated transitional upland (left). Photo taken facing southwest

Photograph 11. Photo of ruderal herbaceous vegetation, consisting of sparse cover by perennial pepperweed and sickle grass (*Parapholis incurva*), occurring just northeast of the edge of seasonal wetland (top left). Photo taken facing northwest.

Photograph 12. Photo of stinkwort-dominated ruderal herbaceous vegetation in the center of the WMU.

Photograph 13. Photo of transitional upland, dominated by pickleweed and non-native grasses, in the southern portion of the Project Area. Photo taken facing southwest.

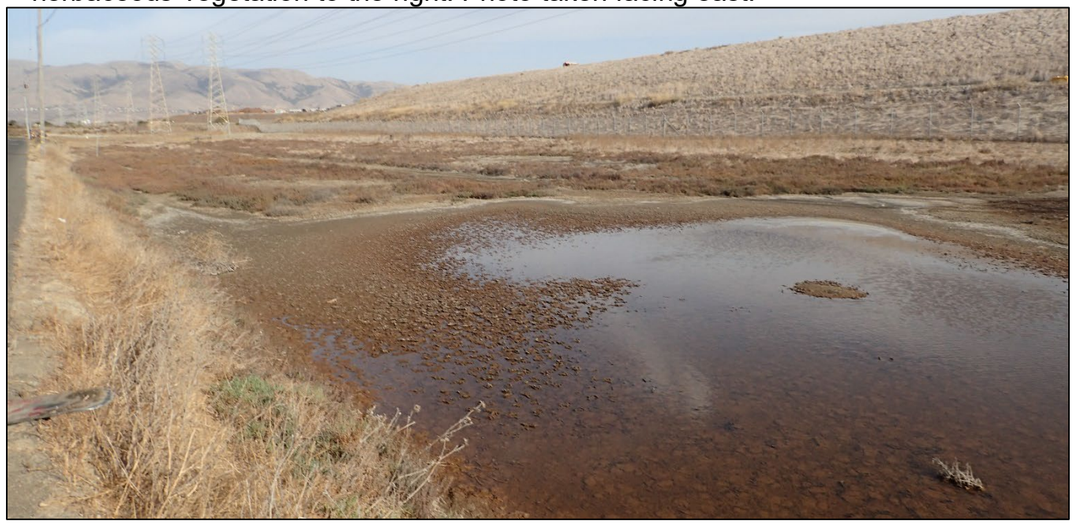
Photograph 14. Photo of transitional upland, dominated by pickleweed and non-native grasses, in the northeastern portion of the Project Area facing northeast. Ruderal herbaceous vegetation along the western edge of the WMU can be seen top left.

Photograph 15. Photo of seasonal wetland occurring in a ditch adjacent to Los Esteros Road, with ruderal herbaceous vegetation to the left and transitional upland to the right. Photo taken facing west.

Photograph 16. Photo of an unconnected ditch, containing seasonal wetland, with ruderal herbaceous vegetation on either side. This ditch separates pickleweed-dominated muted tidal wetland (left) from pickleweed-dominated seasonal wetland (right). Photo taken facing east.

Photograph 17. Photo of pickleweed-dominated muted tidal wetland, which transitions to seasonal wetland (top left), occurring in a ditch along the southern border of the Project Area. Transitional upland can be seen on the left, and ruderal herbaceous vegetation to the right. Photo taken facing east.

Photograph 18. Photo of pickleweed dominated seasonal wetland in the southwestern corner of the Project Area. Photo taken facing west. Tidal open water can be seen in the background.



Photograph 19. Photo of pickleweed-dominated muted tidal wetland in the northern portion of the Project Area. Ruderal herbaceous vegetation can be seen in the left and top right, and seasonal wetland/transitional upland can be seen in the background. Photo facing northeast.

Photograph 20. Photo taken from the WMU, facing southwest. A mosaic of tidal open water/mudflat, pickleweed-dominated muted tidal wetland, and ruderal herbaceous upland occurring in the western portion of the Project Area is visible from this vantage point.

Photograph 21. Photo of tidal open water with islands of pickleweed-dominated muted tidal wetland. Photo taken of the western portion of the Project Area, facing northwest.

Photograph 22. Photo of an island of black mustard-dominated ruderal herbaceous vegetation, bordered by a fringe of pickleweed-dominated muted tidal wetland, surrounded by tidal open water. Photo taken in the western portion of the Project Area, facing southwest.

Photograph 23. Photo of California bulrush-dominated tidal wetland, surrounding tidal open water, in the northern corner of the Project Area. Photo taken facing north.

Appendix D

Special-Status Species Potential Table

Appendix D. Potential Special Status Plant and Wildlife Species Table. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (December 2019), U.S. Fish and Wildlife Service (USFWS) Species Lists, and California Native Plant Society (CNPS) Electronic Inventory search of the nine USGS 7.5' quadrangles within 5 miles of the Project Area, as well as a review of other CDFW lists and publications (Thomson et al. 2016, Zeiner et al. 1990).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
PLANTS				
Santa Clara thorn-mint *Acanthomintha lanceolata*	Rank 4.2	Chaparral (often serpentine), cismontane woodland, coastal scrub. Elevation ranges from 260 to 3935 feet (80 to 1200 meters). Blooms Mar-Jun.	**No potential**. The Project Area does not contain chaparral or coastal scrub habitat to support this species.	No further recommendations are required for this species.
California androsace *Androsace elongata ssp. acuta*	Rank 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 490 to 4280 feet (150 to 1305 meters). Blooms Mar-Jun.	**No potential**. The Project Area does not contain chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species.
alkali milk-vetch *Astragalus tener var. tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 0 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	**Moderate Potential.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species	A 2008 targeted survey of a portion of the Project Area did not discover any individuals this species (WRA 2008). A protocol-level survey for this species should be conducted within the new Project Area boundary, during the bloom period (March through

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			historically. The nearest occurrence is less than four miles from the Project Area in the Don Edwards San Francisco Bay National Wildlife Refuge.	June), or when plants are readily identifiable, to determine whether it is present.
brittlescale *Atriplex depressa*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1050 feet (1 to 320 meters). Blooms Apr-Oct.	**Moderate Potential.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species historically. The nearest occurrence is less than four miles from the Project Area in the Don Edwards San Francisco Bay National Wildlife Refuge.	A protocol-level survey for this species should be conducted during the bloom period (April through October), or when plants are readily identifiable, to determine whether it is present.
lesser saltscale *Atriplex minuscula*	Rank 1B.1	Chenopod scrub, playas, valley and foothill grassland. Elevation ranges from 45 to 655 feet (15 to 200 meters). Blooms May-Oct.	**Unlikely.** The Project Area does not contain sandy soils, nor does it contain chenopod scrub, playas, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species. Similarly, playa-like habitat within the Project Area has been created through human	No further recommendations are required for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			activity and experiences frequent high disturbance.	
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	**No potential.** The Project Area does not contain chaparral, cismontane woodland, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species.
Brewer's calandrinia *Calandrinia breweri*	Rank 4.2	Chaparral, coastal scrub. Elevation ranges from 30 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar-Jun.	**Unlikely.** The Project Area does not contain chaparral habitat to support this species. Coastal habitat within the Project Area does not contain sandy or loamy soils to support this species. There are no occurrences of this species within five miles of the Project Area.	No further recommendations are required for this species
chaparral harebell *Campanula exigua*	Rank 1B.2	Chaparral (rocky, usually serpentine). Elevation ranges from 900 to 4100 feet (275 to 1250 meters). Blooms May-Jun.	**No potential**. The Project Area does not contain rocky or serpentine chaparral to support this species.	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Congdon's tarplant *Centromadia parryi ssp. congdonii*	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 755 feet (0 to 230 meters). Blooms May-Oct(Nov).	**High potential**. The Project Area contains disturbed habitat with strongly alkaline, clay soils that could support this species. There is an occurrence of Congdon's tarplant a quarter mile from the Project Area.	This species was not observed during the November 20 and 21, 2019 site visits, when remnants would have been identfiable. A protocol-level rare plant survey is recommended for this species during the bloom period (May through November), or when senesced remnants are readily identifiable, to determine whether it is present.
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.	**Moderate Potential.** The Project Area contains fringes of coastal salt marsh that could support this species, although nearby occurrences of Point Reyes bird's-beak are presumed to be extirpated by development.	A 2008 targeted survey of a portion of the Project Area did not discover any individuals this species (WRA 2008). Potential habitat for this species lie outside the limits of proposed Project disturbance. No further recommendations are required for this species at this time.
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 Project Area does not contain sandy bluffs or loose sandy substrate to support this species.	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Mt. Hamilton fountain thistle *Cirsium fontinale var. campylon*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 325 to 2920 feet (100 to 890 meters). Blooms (Feb)Apr-Oct.	**No potential.** The Project Area does not contain serpentine substrates, nor does it contain chaparral, cismontane woodland, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species
Santa Clara red ribbons *Clarkia concinna ssp. automixa*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 295 to 4920 feet (90 to 1500 meters). Blooms (Apr)May-Jun(Jul).	**No potential.** The Project Area does not contain chaparral or cismontane woodland to support this species.	No further recommendations are required for this species
Lewis' clarkia *Clarkia lewisii*	Rank 4.3	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Elevation ranges from 95 to 3920 feet (30 to 1195 meters). Blooms May-Jul.	**No potential**. The Project Area does not contain broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, or coastal scrub habitat to support this species.	No further recommendations are required for this species
San Francisco collinsia *Collinsia multicolor*	Rank 1B.2	Closed-cone coniferous forest, coastal scrub. Elevation ranges from 95 to 820 feet (30 to 250 meters). Blooms (Feb)Mar-May.	**No potential.** The Project Area does not contain decomposed shale or serpentinite substrate, nor does it contain closed-cone coniferous forest or coastal scrub habitat to support this species	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
clustered lady's-slipper *Cypripedium fasciculatum*	Rank 4.2	Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 325 to 7990 feet (100 to 2435 meters). Blooms Mar-Aug.	**No potential.** The Project Area does not contain lower montane coniferous forest or north coast coniferous forest to support this species.	No further recommendations are required for this species
Hospital Canyon larkspur *Delphinium californicum ssp. interius*	Rank 1B.2	Chaparral (openings), cismontane woodland (mesic), coastal scrub. Elevation ranges from 635 to 3595 feet (195 to 1095 meters). Blooms Apr-Jun.	**No potential.** The Project Area does not contain openings in chaparral, mesic cismontane woodland, or coastal scrub habitat to support this species.	No further recommendations are required for this species
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).	**No potential.** The Project Area does not contain broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, or riparian woodland to support this species.	No further recommendations are required for this species.
Santa Clara Valley dudleya *Dudleya abramsii ssp. setchellii*	FE, Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 195 to 1495 feet (60 to 455 meters). Blooms Apr-Oct.	**No potential.** The Project Area does not contain rocky serpentine outcrops or rocks within grassland or woodland habitat to support this species.	No further recommendations are required for this species.
Jepson's woolly sunflower *Eriophyllum jepsonii*	Rank 4.3	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 655 to 3365 feet (200 to 1025 meters). Blooms Apr-Jun.	**No potential.** The Project Area does not contain chaparral, cismontane woodland or coastal scrub habitat to support this species.	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Hoover's button-celery *Eryngium aristulatum var. hooveri*	Rank 1B.1	Vernal pools. Elevation ranges from 5 to 150 feet (3 to 45 meters). Blooms (Jun)Jul(Aug).	**Moderate Potential.** The Project Area contains freshwater seasonal wetland with alkaline soils that could support this species. The nearest occurrence of this species is less than four miles from the Project Area in the Don Edwards San Francisco Bay National Wildlife Refuge.	A protocol-level survey for this species should be conducted during the bloom period (April through October), or when plants are readily identifiable, to determine whether it is present.
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**Moderate Potential.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species historically. The nearest occurrence is less than four miles from the Project Area in the Don Edwards San Francisco Bay National Wildlife Refuge.	A protocol-level survey for this species should be conducted during the bloom period (April through October), or when plants are readily identifiable, to determine whether it is present.
stinkbells *Fritillaria agrestis*	Rank 4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 30 to 5100 feet (10 to 1555 meters). Blooms Mar-Jun.	**Unlikely.** The Project does not contain chaparral, cismontaine woodland, pinyon and juniper woodland, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands	No further recommendations are required for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			and/or highly graded, disturbed soils unsuitable to support this species.	
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.	**Unlikely**. The Project Area does not contain cismontane woodland, coastal prairie, coastal scrub, or grassland habitat to support this species. . Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species.
Diablo helianthella *Helianthella castanea*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 195 to 4265 feet (60 to 1300 meters). Blooms Mar-Jun.	**No potential.** The Project Area does not contain hillslopes that support transitional areas between woodland and grassland to support this species.	No further recommendations are required for this species.
Loma Prieta hoita *Hoita strobilina*	Rank 1B.1	Chaparral, cismontane woodland, riparian woodland. Elevation ranges from 95 to 2820 feet (30 to 860 meters). Blooms May-Jul(Aug-Oct).	**No potential.** The Project Area does not contain chaparral, cismontane woodland, or riparian woodland habitat to support this species.	No further recommendations are required for this species.
coast iris *Iris longipetala*	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to	**No potential**. The Project Area does not contain coastal prairie, lower montane coniferous forest, or meadows and seeps	No further recommendations are required for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
		1970 feet (0 to 600 meters). Blooms Mar-May.	habitat to support this species.	
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**Moderate Potential**. The Project Area contains freshwater seasonal wetland with clay substrates that could support this species. Senescent goldfields, assumed to be *Lasthenia glabrata*, were observed during the November 21, 2019 site visit. The nearest occurrences of this species are less than four miles from the Project Area.	A protocol-level survey for this species should be conducted during the bloom period (March through June) to determine whether it is present.
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.	**No potential.** The Project Area does not contain chaparral, cismontane woodland, coastal prairie, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species.
serpentine leptosiphon *Leptosiphon ambiguus*	Rank 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 390 to 3705 feet (120 to 1130 meters). Blooms Mar-Jun.	**No potential.** The Project Area does not contain serpentine soils, nor does it contain cismontane woodland, coastal scrub, or grassland habitat to support	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**No potential.** The Project Area does not contain broadleafed upland forest; coastal scrub; lower montane coniferous forest; or serpentine, undisturbed grassland habitat to support this species.	No further recommendations are required for this species
smooth lessingia *Lessingia micradenia var. glabrata*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 390 to 1380 feet (120 to 420 meters). Blooms (Apr-Jun)Jul-Nov.	**No potential.** The Project Area does not contain serpentine substrates, nor does it contain chaparral, cismontane woodland, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species
arcuate bush-mallow *Malacothamnus arcuatus*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 45 to 1165 feet (15 to 355 meters). Blooms Apr-Sep.	**No potential**. The Project Area does not contain gravelly alluvium, nor does it contain chaparral or cismontane woodland habitat to support this species.	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Hall's bush-mallow *Malacothamnus hallii*	Rank 1B.2	Chaparral, coastal scrub. Elevation ranges from 30 to 2495 feet (10 to 760 meters). Blooms (Apr)May-Sep(Oct).	**No potential**. The Project Area does not contain chaparral or coastal scrub to support this species.	No further recommendations are required for this species
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**No potential.** The Project Area does not contain broadleafed upland forest, chaparral, cismontaine woodland, or grassland habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species
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. Elevation ranges from 0 to 6430 feet (0 to 1960 meters).	**No potential**. The Project Area does not contain acidic soils, nor does it contain metamorphic rock or substrate to support this species.	No further recommendations are required for this species
San Antonio Hills monardella *Monardella antonina ssp. antonina*	Rank 3	Chaparral, cismontane woodland. Elevation ranges from 1045 to 3280 feet (320 to 1000 meters). Blooms Jun-Aug.	**No potential.** The Project Area does not contain chaparral or cismontane woodland habitat to support this species.	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
woodland woolythreads *Monolopia gracilens*	Rank 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland. Elevation ranges from 325 to 3935 feet (100 to 1200 meters). Blooms (Feb)Mar-Jul.	**No potential.** The Project Area does not contain sandy or rocky soils, nor does it contain openings in broadleafed upland forest, chaparral, cismontane woodland, or north coast coniferous forest habitat to support this species. Portions of the Project Area containing grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unsuitable to support this species.	No further recommendations are required for this species
Patterson's navarretia *Navarretia paradoxiclara*	Rank 1B.3	Meadows and seeps. Elevation ranges from 490 to 1410 feet (150 to 430 meters). Blooms May-Jun(Jul).	**No potential.** The Project Area does not contain serpentinite substrates, nor does it contain meadows and seeps habitat to support this species.	No further recommendations are required for this species
prostrate vernal pool navarretia *Navarretia prostrata*	Rank 1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. Elevation ranges from 5 to 3970 feet (3 to 1210 meters). Blooms Apr-Jul.	**Moderate Potential.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species historically. The nearest occurrence is less than four miles from the Project Area in the Don Edwards San	A protocol-level survey for this species should be conducted during the bloom period (April through July), or when plants are readily identifiable, to determine whether it is present.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			Francisco Bay National Wildlife Refuge.	
hairless popcornflower *Plagiobothrys glaber*	Rank 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt). Elevation ranges from 45 to 590 feet (15 to 180 meters). Blooms Mar-May.	**No potential.** Although the Project Area contains alkaline seasonal wetlands and coastal salt marsh to support this species, hairless popcornflower is presumed to be extinct.	No further recommendations are required for this species
California alkali grass *Puccinellia simplex*	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 5 to 3050 feet (2 to 930 meters). Blooms Mar-May.	**Moderate Potential.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species historically. The nearest occurrence is less than four miles from the Project Area in the Don Edwards San Francisco Bay National Wildlife Refuge.	A protocol-level survey for this species should be conducted during the bloom period (March through May), or when plants are readily identifiable, to determine whether it is present.
chaparral ragwort *Senecio aphanactis*	Rank 2B.2	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 45 to 2625 feet (15 to 800 meters). Blooms Jan-Apr(May).	**Unlikely.** The Project Area does not contain chaparral, cismontane woodland, or coastal scrub habitat to support this species. Drying alkaline flats within the Project Area have been created through human activity and experiences frequent high disturbance	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			and are therefore unlikely to host this species.	
maple-leaved checkerbloom *Sidalcea malachroides*	Rank 4.2	Broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, riparian woodland. Elevation ranges from 0 to 2395 feet (0 to 730 meters). Blooms (Mar)Apr-Aug.	**No potential.** The Project Area does not contain any woodland clearings to support this species.	No further recommendations are required for this species
long-styled sand-spurrey *Spergularia macrotheca var. longistyla*	Rank 1B.2	Meadows and seeps, marshes and swamps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May(Jun).	**Unlikely.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species historically. Since there are no documented occurrences of this species within five miles of the Project Area, it is unlikely that this species has colonized potentially suitable habitat, created by human disturbance, within the Project Area.	No further recommendations are required for this species.
Metcalf Canyon jewelflower *Streptanthus albidus ssp. albidus*	FE, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 145 to 2625 feet (45 to 800 meters). Blooms Apr-Jul.	**No potential**. The Project Area does not contain serpentine grassland to support this species.	No further recommendations are required for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
most beautiful jewelflower *Streptanthus albidus ssp. peramoenus*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 310 to 3280 feet (95 to 1000 meters). Blooms (Mar)Apr-Sep(Oct).	**No potential.** The Project Area does not contain serpentine outcrops in chaparral, cismontane woodland, or grassland habitat to support this species.	No further recommendations are required for this species
slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	Rank 2B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 980 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	**No potential.** The Project Area does not contain shallow freshwater marsh or swamp to support this species.	No further recommendations are required for this species.
California seablite *Suaeda californica*	FE, Rank 1B.1	Marshes and swamps (coastal salt). Elevation ranges from 0 to 50 feet (0 to 15 meters). Blooms Jul-Oct.	**Moderate Potential.** The Project Area contains fringes of coastal salt marsh that could support this species, although nearby occurrences of Point Reyes bird's-beak are presumed to be extirpated by development.	This species was not observed during the November 2019 site visits, when plants should have been identifiable; however, no protocol-level survey was conducted at this time. Potential habitat for this species lie outside the limits of proposed Project disturbance. No further recommendations are required for this species at this time.
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**Moderate Potential.** The Project Area contains freshwater seasonal wetland on alkaline clay substrates that could support this species, although the Project Area consists of diked baylands and would not have contained suitable habitat for this species historically. The nearest	A protocol-level survey for this species should be conducted during the bloom period (April through June), or when plants are readily identifiable, to determine whether it is present.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
			occurrence is less than four miles from the Project Area in the Don Edwards San Francisco Bay National Wildlife Refuge.	
caper-fruited tropidocarpum *Tropidocarpum capparideum*	Rank 1B.1	Valley and foothill grassland (alkaline hills). Elevation ranges from 0 to 1495 feet (1 to 455 meters). Blooms Mar-Apr.	**Unlikely.** Alkaline soils supporting grass cover are dominated by non-native species and consist of diked baylands and/or highly graded, disturbed soils unlikely to support this species. There are no known occurrences of this species within five miles of the Project Area.	No further recommendations are required for this species.
WILDLIFE				
Mammals				
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Found only in the saline emergent wetlands of San Francisco Bay, its tributaries and adjacent habitats. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.	**High Potential.** The tidal and seasonal pickleweed habitat in the northwest corner of the Project Area and along the outboard side of the levee on the northern border and adjacent upland habitats are suitable for this species which is known to occur in surrounding marshes. The species may also forage nocturnally in the transitional upland and ruderal herbaceous habitats adjacent to the wetlands.	Mitigation considerations are provided in Section 6.3.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Hoary bat *Lasiurus cinereus*	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	**Unlikely.** There are buildings and trees present that may support roosting by this species, however, the buildings are subject to continual and extreme visual and noise disturbance, and trees are sparse and small.	No further surveys or avoidance measures are recommended.
Pallid bat *Antrozous pallidus*	SSC, WBWG High	Found in a variety of habitats ranging from grasslands to mixed forests, favoring open and dry, rocky areas. Roost sites include crevices in rock outcrops and cliffs, caves, mines, and also hollow trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Unlikely.** There are buildings and trees present that may support roosting by this species, however, the buildings are subject to continual and extreme visual and noise disturbance, and trees are sparse and small.	No further surveys or avoidance measures are recommended.
San Francisco Dusky-footed Woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**No Potential.** The Project Area is entirely composed of wetlands, grasslands, and developed areas. Few small trees are present to supply woody material, and shrubs are sparse without adequate cover. No nests of this species were observed during the site visit.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
salt-marsh wandering shrew *Sorex vagrans halicoetes*	SSC	Forages under litter and debris on moist ground in salt marshes bordering the southern part of the San Francisco Bay. Nests on the ground or in *Salicornia*.	**Moderate Potential.** The Project Area contains abundant wetland habitat, but with relatively small amount of litter and debris present. There are also abundant avian predators present in the area, and a high number of perches present.	Mitigation considerations are provided in Section 6.3.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC, WBWG High	Associated with a wide variety of habitats from deserts to higher-elevation mixed and coniferous forests. Females form maternity colonies in buildings, caves and mines, and males roost singly or in small groups. Foraging typically occurs at edge habitats near wooded areas, e.g. along streams.	**No Potential.** The Project Area does not contain mines, sheer rock faces or similar habitat features to support roosting by this species. Buildings that could support roosting are subject to continuous and extreme noise and visual disturbance.	No further surveys or avoidance measures are recommended.
Yuma myotis *Myotis yumanensis*	WBWG: Low-Medium	Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	**No Potential.** The Project Area does not contain large trees, mines, sheer rock faces or similar habitat features to support roosting by this species. Buildings that could support roosting are subject to continuous and extreme noise and visual disturbance.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Birds				
Alameda song sparrow *Melospiza melodia*	BCC, SSC	Resident of the San Francisco Bay region, and restricted to the tidal marshes on the margins of the South San Francisco Bay. Prefers tidal habitat where the marsh plain is intersected by sloughs. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	**Present.** Song sparrows observed at margins of wetlands during site visit. May forage and nest in tidal wetlands, muted tidal wetlands, seasonal wetlands, and transitional uplands where *Salicornia* is abundant.	Work windows or pre-construction nesting bird surveys. Mitigation considerations are provided in Section 6.3.
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. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. 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.** No vertical cliffs, rivers, lakes or similar habitat features are present to support nesting by this species.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Black swift *Cypseloides niger*	BCC, 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.** No suitable vertical nesting habitat is present onsite.	No further surveys or avoidance measures are recommended.
Black skimmer *Rynchops niger*	BCC, SSC	Occurs year round in Santa Clara County. Ground nesting and colonial, requires large areas of bare substrate isolated from disturbance and predators. Roost on urban beaches. Require large areas of calm, shallow waters for skim foraging.	**No Potential**. No exposed substrate available for nesting. No large areas of open water available in Project Area for skim foraging.	No further surveys or avoidance measures are recommended.
Burrowing owl *Athene cunicularia*	BCC, 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.	**Moderate Potential.** Levees and other uplands within the Project Area have the potential to support wintering or nesting burrowing owl. In addition, the open space directly south of the Project Area has been designated as a preserve for this species. While burrowing owl was not identified within the Project Area during site visit, potential habitat where suitable burrows could establish exists along the landfill face and on nearby levees.	Mitigation considerations are provided in Section 6.3.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
California black rail *Laterallus jamaicensis coterniculus*	ST, CFP, BCC	Resident in marshes (saline to freshwater) with dense vegetation below four inches in height. Prefers larger, undisturbed marshes close to a major water source.	**Moderate Potential.** This species has been recorded in the marshes surrounding the Project Area, and there is abundant wetland habitat available. However, there are abundant avian and mammalian predators present in the area, which likely preclude nesting in the Project Area.	Work windows or protocol-level nesting surveys to determine nest proximity to Project activities. Nesting buffers extend up to 200 meters. Mitigation considerations are provided in Section 6.3.
California least tern *Sterna antillarum browni*	FE, SE, CFP	Summer resident along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins.	**No Potential.** No suitable nesting or foraging habitat is present to support the species.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
California Ridgway's rail *Rallus longirostris obsoletus*	FE, SE, CFP	Resident in tidal marshes of the San Francisco Bay Estuary. Requires tidal sloughs and mud flats for foraging, and dense vegetation for nesting. Associated with abundant growth of cordgrass and pickleweed.	**Moderate Potential.** This species has been recorded in the marshes surrounding the Project Area, and while there is wetland habitat available, there are few of the channels and mudflats that the species prefers for foraging. Further, there are also abundant avian and mammalian predators present in the area, which likely preclude nesting in the Project Area.	Work windows or protocol-level nesting surveys to determine nest proximity to Project activities. Nesting buffers extend up to 200 meters. Mitigation considerations are provided in Section 6.3.
Golden eagle *Aquila chrysaetos*	BCC, CFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**No Potential.** While this species may be seen flying overhead in this portion of Santa Clara County and a nest is recorded 0.75 mile off-site, no large trees, cliff faces or other similar nesting substrates are present on-site that might support nesting by the species. .	No further surveys or avoidance measures are recommended.
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.	**Unlikely.** This species is not known to nest in the vicinity of the Project Area (Bousman 2007). Because the species is not known to nest in the vicinity, it is unlikely to occur despite the presence of grasslands.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Great blue heron *Ardea herodias*	none (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and on cliffs, also 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.	**No Potential for Nesting.** No large trees or present in the vicinity to support a rookery of this species, though the species may forage in the wetlands and adjacent uplands in the Project Area.	No further surveys or avoidance measures are recommended.
Northern harrier *Circus cyaneus*	SSC	Resident and winter visitor in California. Nests and forages in grassland habitats, usually in association with coastal salt and freshwater marshes. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Moderate Potential.** The Project Area provides suitable grassland foraging habitat for the species. Suitable nesting habitat is also present; however, high human disturbance and abundant predators may preclude nesting.	Work windows or pre-construction nesting bird surveys. Mitigation considerations are provided in Section 6.3.
San Francisco (salt-marsh) common yellowthroat *Geothlypis trichas sinuosa*	SSC, BCC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Moderate Potential.** This species may nest in the tidal wetland habitat in the north corner of the Project Area, and may forage in the tidal wetlands, muted tidal wetlands, and seasonal wetlands.	Work windows or pre-construction nesting bird surveys. Mitigation considerations are provided in Section 6.3.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Swainson's hawk *Buteo swainsoni*	ST, BCC	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**No Potential.** No suitable large trees or other nesting substrates are present within the Project Area to support nesting by this species. Additionally, the Project Area is within a mostly developed section of San Jose which has high levels of anthropogenic disturbance and decreased availability of foraging habitat.	No further surveys or avoidance measures are recommended.
Tricolored blackbird *Agelaius tricolor*	ST, SSC, BCC, RP	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.	**No Potential.** Adjacent aquatic habitat does not support large expanses of tule or cattail which are required to support nesting by a colony.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Western snowy plover *Charadrius alexandrinus nivosus*	FT, SSC, BCC, RP	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**No Potential for Nesting.** No suitable sandy beach or similar habitats are present to support nesting. Potential for plovers to forage in small open tidal ponds within the Project Area. The closest patch of Critical Habitat for Western snowy plover occurs 3 miles away.	No further surveys or avoidance measures are recommended.
western yellow-billed cuckoo *Coccyzus americanus*	FT, SE, BCC	Forage in a variety of riparian habitats including cottonwood and willow trees. Require large blocks of riparian habitats for nesting.	**No Potential.** No suitable blocks of riparian habitat present to support foraging or nesting.	No further surveys or avoidance measures are recommended.
White-tailed Kite *Elanus leucurus*	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Moderate Potential.** Wetlands and grasslands within and adjacent to the Project Area provide suitable foraging habitat, and there are few trees and shrubs on the Project Area. But the Project Area is subject to high levels of anthropogenic disturbance, so nesting is unlikely.	Pre-construction breeding bird surveys are recommended for Project activities that occur between February 1 and August 31.
Yellow rail *Coturnicops noveboracensis*	SSC, BCC	Resident in California, and occurs as a winter visitor to the San Francisco Bay area. A secretive bird that utilizes sedge marshes with shallow water and moist soil. Nest in senescent sedge-dominated vegetation assemblages.	**No Potential.** No suitable sedge dominated vegetation communities present within the Project Area.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Reptiles and Amphibians				
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT, ST	Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area. Prefers south-facing slopes and ravines with rock outcroppings where shrubs form a vegetative mosaic with oak trees and grasses and small mammal burrows provide basking and refuge.	**No Potential.** Outside of the known range of the species. No occurrences within 5 miles of the Project Area. No preferred habitat within the Project Area.	No further surveys or avoidance measures 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.	**No Potential.** No perennial creeks or moist conifer forest is present to support this species.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
California red-legged frog *Rana draytonii*	FT, SSC, RP	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	**No Potential.** The nearest CNDDB occurrence is greater than four miles from the Project Area (CDFW 2019) and is separated from the Project Area by dense urban development which isolates the Project Area from nearby populations.	No further surveys or avoidance measures are recommended.
California Tiger Salamander *Ambystoma californiense*	FE/FT, ST, RP	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Adults are fossorial and utilize mammal burrows and other subterranean refugia. Breeding occurs primarily in vernal pools and other seasonal water features.	**No Potential.** The nearest historic CNDDB historic occurrence is over 4 miles from the Project Area (CDFW 2019), and the area has since been fully developed. The Project Area is within historic marsh habitat and is not within historic habitat for this species. No suitable breeding habitat occurs within the Project Area, and the Project Area does not occur within designated Critical Habitat for this species.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Foothill yellow-legged frog *Rana boylii*	SC, SSC	Found in or adjacent to rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**No Potential.** No aquatic habitat suitable for this species occurs onsite. The Project Area is outside the known range for this species, and there are no historical records within 5 miles of the Project Area.	No further surveys or avoidance measures are recommended.
Pacific (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.	**No Potential.** Although the nearest CNDDB occurrences are less than five miles from the Project Area at a golf course (CDFW 2019), occurrences are separated from the Project Area by a railroad, a major expressway, and several miles of fully developed city. All perennial aquatic habitat present onsite is saline and unsuitable for the species.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Santa Cruz black salamander *Aneides flavipunctatus niger*	SSC	Climbing salamanders of the genus *Aneides* frequent damp woodlands and are usually found hiding under various debris (i.e. bark, woodrat nests, logs). The Santa Cruz black salamander exists south of the San Francisco Bay and was only recently recognized as a separate and protected species. Santa Cruz black salamander is highly sedentary, preferring to stay hidden under riparian debris. Prey items include millipedes, spiders, and other insects (Stebbins and McGinnis 2012).	**No Potential.** No damp woodland, or riparian forest is present to support this species.	No further surveys or avoidance measures are recommended.
Northern California legless lizard *Anniella pulchra*	SSC	Occurs in coastal dunes, valley-foothill, chaparral, and coastal scrub habitats. Forages under vegetation, or in leaf litter or sandy soil. Seek cover under debris or litter, and are likely active year round in coastal areas.	**No Potential.** No suitable habitat exists on the Project Area, and the nearest historical occurrence is almost 5 miles away.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Fish				
longfin smelt *Sprinichus thaleichthys*	FC, ST, SSC	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.	**No Potential.** The Project Area is connected aquatically to the San Francisco Bay only through a series of narrow channels and culverts, which may potentially be screened, and no significant open water habitat exists on site.	No further surveys or avoidance measures are recommended.
steelhead - south/central CA coast DPS *Oncorhynchus mykiss irideus*	FT	Occurs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River. 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.	**No Potential.** The Project Area is connected aquatically to the San Francisco Bay only through a series of narrow channels and culverts, which may potentially be screened, and no significant open water habitat exists on site.	No further surveys or avoidance measures are recommended.
Invertebrates				
bay checkerspot butterfly *Euphydryas editha bayensis*	FT, SSI, RP	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**No Potential.** No suitable serpentine outcrops, soils or native grasslands are present within the Project Area.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
vernal pool tadpole shrimp *Lepidurus packardi*	FE, SSI, RP	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**No Potential**. While occurrences of this species are recorded within 5-miles of the Project Area at the Fremont vernal ponds, they are separated from the Project Area by several miles of fully developed city. There is no vernal pool habitat within the Project Area. The closest Critical Habitat occurs over 4 miles away.	No further surveys or avoidance measures are recommended.
Crotch bumble bee *Bombus crotchii*	SC	More common in southern and central California, occurs occasionally in northern California. Inhabits grasslands and scrub habitats, historically primarily in the Central Valley. Construct nests and winter underground in soft, disturbed soil, or under debris or litter. Forages on a wide variety of flowers.	**Unlikely.** There is one historical record of the species over 4 miles from the Project Area. The Project Area is dominated by muted tidal wetlands and adjacent uplands with compacted soils. Vegetation is dominated by *Salicornia* and upland grasses which likely provide little to no forage value for the species.	No further surveys or avoidance measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS***
Western bumble bee *Bombus occidentalis*	SC, SSC	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2019). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	**No Potential.** The species is presumed extirpated from the region. The Project Area is dominated by muted tidal wetlands and adjacent uplands with compacted soils, and there was limited evidence of burrowing by small mammals. Vegetation is dominated by *Salicornia* and upland grasses which likely provide little to no forage value for the species.	No further surveys or avoidance measures are recommended.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
SC	State Candidate
SE	State Endangered
SD	State Delisted
ST	State Threatened
SR	State Rare
SSC	State Species of Special Concern

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.