Biological Resources Assessment

for

Burnham Strip

El Granada, California

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EXECUTIVE SUMMARY

At the request of the Granada Community Services District, BioMaAS, Inc. conducted an assessment of biological resources on a 6.38 acre parcel located on the Cabrillo Highway in the unincorporated area of El Granada (Census Designated Place), San Mateo County, California. The Study Area is located immediately west of Highway 1 (Cabrillo Highway). The Study Area that was evaluated for coastal resources is defined as the Study Area and a 200 buffer around the Study Area boundaries.

A summary of recommendations to avoid impacts to sensitive biological resources include the following:

1. A formal wetland delineation should be conducted and the proposed project design should be evaluated to reduce potential impacts to wetlands and waters and incorporate these features into the design.
2. A silt fence and an orange temporary Environmentally Sensitive Area (ESA) fence should be installed around all arroyo willow thickets, coastal brambles, and seasonal wetlands in the Study Area and other jurisdictional features identified in the wetland delineation.
3. Project activities should be prohibited within a 30-foot buffer zone from the edge of the arroyo willow thickets/coastal brambles and a 100-foot buffer from potential seasonal wetlands.
4. The staging area should be located outside the buffer zones of all jurisdictional features.
5. Removal of all vegetation should be minimized to the extent that is feasible. The removal of vegetation in and adjacent to the buffer zones should be minimized to prevent potential water quality impacts.
6. If moderately to highly invasive plant species are removed during construction activities, the debris should be hauled off site to prevent the spread of these species.
7. A tree survey should be conducted to identify significant trees that will be removed or remain in place, and a tree preservation plan should be developed. Tree permits should be obtained for the removal or major pruning of significant trees and the appropriate replacement species should be replanted as determined by the tree permit conditions.
8. Protocol level surveys should be conducted during at least one full season for special-status plants and sensitive vegetation communities. If special-status plants are found in the Study Area, they should be avoided and a 50-foot buffer should be established around them prior to construction. If it is not feasible to avoid these plants, a long-term mitigation and monitoring plan that is in accordance with the County LCP should be developed to compensate for impacts.
9. Designers should try to incorporate bumble bee foraging plants in their planting palette.
10. A wildlife exclusion fence should be erected around the limit of ground disturbance prior to the initiation of construction activities.

11. The removal of trees should take place between September 1 and January 31, outside of the avian breeding season, or alternatively, a qualified biologist could survey the Study Area for the presence of active bird nests during the breeding season prior to construction activities.
12. A qualified biologist should survey the Study Area for the presence of bat maternity or hibernation roosts prior to tree removal. Alternatively, trees could be removed from September 1st through October 31st, after the maternity roost season but before winter hibernation (which may begin as early as November).
13. A preconstruction survey for sensitive herpetofauna and San Francisco dusky-footed woodrat middens should be conducted by a qualified biologist prior to the start of construction. A biologist is also recommended to monitor fence installation, initial ground disturbance and vegetation removal.

Details regarding each recommendation are provided in the Potential Impacts and Mitigation Measures section.

INTRODUCTION

At the request of the Granada Community Services District (District), BioMaAS, Inc. (BioMaAS) conducted an assessment of biological resources on a 6.38 acre parcel (Study Area) located on the Cabrillo Highway in the town of El Granada, San Mateo County, California. (Figures 1 and 2).

The Study Area is a proposed park development on parcels owned by the District referred to as the "Burnham Strip". The Study Area is located immediately east of Highway 1 (The Cabrillo Highway), across the highway from Surfer's Beach and the Half Moon Bay Jetty (Figure 2). The project proponent is proposing to build a community park in Study Area. The current plan divides the site into three distinct zones: a largely untouched area on the south end of native riparian and invasive vegetation surrounding a perennial drainage (Burnham Creek); a central activity zone including a parking lot, active play zones, a passive lawn and reconfigured drainage channels; and a northern passive recreation zone with trails, picnic areas, and mounded landforms. Moderate improvements are proposed for Obispo Road, including a slight roadway realignment, formal street parking, crosswalks, curbs and gutters.

This report presents the results of field surveys and an analysis of potential project-related impacts on biological resources, including special-status plant and wildlife species, sensitive habitats, heritage trees, potential jurisdictional waters of the United States, and coastal resources. In addition, this report provides recommendations for avoiding and reducing potential impacts to special-status wildlife, riparian habitat, and potential jurisdictional waters of the United States.

REGULATORY BACKGROUND

Wetlands and Other Waters

Aquatic resources, including riparian areas, wetlands, and many other aquatic vegetation communities are considered sensitive biological resources and normally fall under the jurisdiction of several regulatory agencies, including the Army Corps of Engineers, California Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game [CDFG]).

BioMaAS

SOURCE: NAIP 2018, ESRI 2020

FIGURE 1

Project Location

Granada Community Services District Burnham Strip Project

BioMaAS

SOURCE: USDA (NAIP) 2018

FIGURE 2
Study Area

Granada Community Services District Burnham Strip Project

Stream channels, with a defined bed and bank, are addressed by the California Fish and Game Code (§1600 *et seq*.). Riparian vegetation adjacent to waterways is generally considered as waters of the State, extending to the outer drip-line of the tree canopy. In addition, "any river, stream or lake" is subject to this code section. There is no exclusionary criteria such as type of vegetation or faunal community present, size, duration, or timing of flow, or the physical characteristics of one stream form over another.

The U.S. Army Corps of Engineers (USACE) exerts jurisdiction over "waters of the U.S.", including, but not limited to, all waters which are subject to the ebb and flow of tide, wetlands, lakes, rivers, streams (including intermittent or ephemeral streams), "blue-line streams", mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, natural ponds, and tributaries of the above features. Wetland hydrology indicators include surface water, high water table, saturation, watermarks in a non-riverine situation, sediment deposits, drift deposits, surface soil cracks, and inundation visible on aerial imagery.

The extent of waters of the U.S. is generally defined as that portion which falls within the limits of "ordinary high water." Field indicators of ordinary high water include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris. Typically, the width of waters corresponds to the two-year flood event.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes and similar areas, are defined by the USACE as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 [b]; 40 CFR 230.3 [t]). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetlands hydrology as determined by field investigation) must generally be present for a site to be classified as a wetland by the USACE (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010).

Waters of the State are generally understood to include those aquatic features protected under California Fish and Game Code (§1600 *et seq*.). These include stream bed, channel, and stream banks, as well as associated wetland vegetation and/or riparian tree cover. Specifically, wetlands are defined by the State as lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, or periodically support hydrophytic dominant vegetation, or in which soils are hydric in nature (CERES 2011).

Any of the below criteria could be applicable in determining what constitutes a stream depending on the potential for the proposed activity to adversely affect fish and other stream-dependent wildlife resources.

(1) The term stream can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (United States Geological Survey [USGS] maps), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

(2) Biological components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.

(3) As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis), but also a bed or channel, a bank and/or levee, instream features such as logs or snags, and various flood plains depending on the return frequency of the flood event being considered (i.e. 10, 50, or 100 years, etc.).

(4) The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive:

(a) The flood plain of a stream can be the broadest measurement of a stream's lateral extent depending on the return frequency of the flood event used. For most flood control purposes, the 100-year flood plain exists for many streams. However, the 100-year flood plain may include significant amounts of upland or urban habitat and therefore may not be appropriate in many cases.

(b) The outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.

(c) Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark lateral extent of a stream.

(d) A levee or other artificial stream bank would also be used to mark the lateral extent of a stream. However, in many instances, there can be extensive areas of valuable riparian habitat located behind a levee.

Swales or erosional features (e.g., gullies, swales characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water, are generally not considered streams or jurisdictional waters.

Irrigation of crops can alter soil characteristics and vegetation of affected areas (U.S. Army Corps of Engineers, 2008). Long-term irrigation, including flood, sprinkler, and drip, has created new wetlands and altered existing wetlands throughout California. The appropriate Corps of Engineers District Regulatory Office should be consulted when it is necessary to distinguish between naturally occurring and irrigation-induced wetlands for Clean Water Act regulatory purposes. The U.S. Army Corps of Engineers recognizes multiple difficult wetland situations in semi-arid to arid regions of North America. These include atypical situations with problematic hydrophytic vegetation. These areas may exhibit indicators of hydric soil and wetland hydrology but lack all or some of the hydrophytic vegetation indicators at least at certain times. If a wetland determination is taking place during the dry season, a return visit is recommended during the normal wet portion of the growing season. A site qualifies for further consideration as a wetland if the plant community at the time of sampling does not exhibit hydrophytic vegetation indicators, but indicators of hydric soil and wetland hydrology are present.

San Mateo County General Plan

The San Mateo County General Plan provides information on existing natural and man-made conditions of the physical environment. The plan identifies key plans, regulations and agencies that affect planning decisions. State law requires local government decisions to be consistent with or based on consideration of the General Plan. General Plan policies addressed by this BRA include: Soil, Vegetative, Water, Fish and Wildlife Resources. General Plan definitions pertinent to the production of this BRA include the following.

Definition of Sensitive Habitats

Define a sensitive habitat as any area where the vegetative, water, fish and wildlife resources provide especially valuable and rare plant and animal habitats that can be easily disturbed or degraded. These areas include but are not limited to: (1) habitats containing or supporting rare or unique species; (2) riparian corridors; (3) marine and estuarine habitats; (4) wetlands; (5) sand dunes; (6) wildlife refuges, reserves, and scientific study areas; and (7) important nesting, feeding, breeding or spawning areas.

Definition of Rare or Unique Species

Define rare or unique species as any plant or animal that is determined to be rare, endangered, threatened, unique to the County and adjacent areas or protected by Federal or State law and State and County EIR guidelines.

Definition of Riparian Corridors

Define riparian corridors as the vegetative and wildlife areas adjacent to perennial and intermittent streams and other freshwater bodies, such as lakes, ponds, and reservoirs. Delineate these riparian corridors by the "limit of riparian vegetation," i.e., a line determined by the existence of plant species normally found near streams, lakes, and other freshwater bodies.

Definition of Wetlands

Define wetland as an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally grow in water or wet ground. Wetlands include fresh or salt water marshes, mud flats, brackish, tidal or seasonal wet areas and can occur along the margins of streams, lakes and ponds.

Definition of Buffer Zones

Define Buffer Zones as those areas adjacent to sensitive habitats which are necessary to allow for periodic, seasonal, or ecological changes, including the impacts of climate change, which could affect the boundaries of sensitive habitats.

California Coastal Act and San Mateo County Local Coastal Program

The California Coastal Act of 1976 regulates the conservation and development of coastal resources through the Local Coastal Program. The development of Local Coastal Programs was mandated in 1976 by the Coastal Act to ensure that the local government's land use plans, zoning ordinances, zoning maps, and implementation actions meet the requirements, provisions and polices of the Coastal Act.

Section 30240 of the California Coastal Act protects Environmentally Sensitive Habitat Areas (ESHA). An ESHA is defined as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments". Furthermore, this section of the Coastal Act states that ESHAs shall be protected against any significant disruption of habitat values and that development adjacent to an ESHA should be sited and designed to prevent impacts to it. A vegetation community that is considered sensitive by the CDFW is also likely to be considered an ESHA under the Coastal Act.

The California Coastal Commission (CCC) defines streams as a natural watercourse as designated by a solid line or dash and three dots symbol shown on recent USGS maps, or any well-defined channel with distinguishable bed and bank that shows evidence of having contained flowing water as indicated by scour or deposit or rock, sand, gravel, soil, or debris" (CCC 1981).

The Study Area falls within the jurisdiction of the County of San Mateo Local Coastal Program (LCP) Policies (San Mateo County 2013). Sections 7.1-7.14 discusses the Sensitive Habitats Component of the LCP. LCP definitions of Sensitive Habitats, Riparian Corridors and Wetlands are provided below.

> *7.1 Definition of Sensitive Habitats*
> Define sensitive habitats as any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes. Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species.
>
> *7.7 Definition of Riparian Corridors*
> Define riparian corridors by the "limit of riparian vegetation" (i.e., a line determined by the association of plant and animal species normally found near streams, lakes and other bodies of freshwater: red alder (*Alnus rubra*), jaumea (*Jaumea carnosa*), pickleweed (*Salicornia* spp.), big leaf maple (*Acer macrophylla*), narrow-leaf cattail (*Typha angustifolia*), arroyo willow (*Salix lasiolepis*), broadleaf cattail (*Typha latifolia*), horsetail (*Equisetum* spp.), creek dogwood (*Cornus sericea*), black cottonwood (*Populus tricocharpa*), and box elder (*Acer negundo)*. Such a corridor must contain at least a 50% cover of some combination of the plants listed.
>
> *7.14 Definition of Wetland*
> Define wetland as an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps. Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine.

The County LCP states that in San Mateo County, wetlands typically contain the following plants: cordgrass (*Spartina spp*.), pickleweed, jaumea, marsh mint (*Mentha arvensis*), tule (*Schoenoplectus spp.*), bulrush (*Schoenoplectus spp*. and *Bolboschoenus spp.*), narrow-leaf cattail, broadleaf cattail, Pacific silverweed (*Potentilla anserina ssp. pacifica*), salt rush (*Juncus lescurii)*,

and bog rush (*Juncus effusus*). To qualify, a wetland must contain at least a 50% cover of some combination of these plants, unless it is a mudlflat.

Development standards and buffers around wetlands and riparian corridors are required by the LCP to protect these resources and only permitted activities are allowed in the buffer unless special circumstances apply (such as trails, nature education and research - see Sections 7.9, 7.12, 7.16 and 7.19). For riparian corridors:

> a. On both sides of riparian corridors, from the "limit of riparian vegetation" extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams.
> b. Where no riparian vegetation exists along both sides of riparian corridors, extend buffer zones 50 feet from the predictable high water point for perennial streams and 30 feet from the midpoint of intermittent streams.
> c. Along lakes, ponds, and other wet areas, extend buffer zones 100 feet from the high water point except for man-made ponds and reservoirs used for agricultural purposes for which no buffer zone is designated.

For wetlands:

> Buffer zones shall extend a minimum of 100 feet landward from the outermost line of wetland vegetation. This setback may be reduced to no less than 50 feet only where: (1) no alternative development site or design is possible; and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the State Department of Fish and Game. A larger setback shall be required as necessary to maintain the functional capacity of the wetland ecosystem.

This section uses the U.S. Fish and Wildlife Service definition of a wetland to provide guidance in a formal delineation of wetlands: an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Wetlands include mud flats (barren or vegetated), and marshes. Wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds, and impoundments), nor marine or estuarine areas below extreme low water of spring tides, nor vernally wet areas where the soils are not hydric. This definition of what constitutes a wetland is referred to as the one-parameter approach to delineating wetlands because under this definition a potential jurisdictional feature only needs to exhibit indicators of one of three parameters (hydrology, hydric vegetation, and hydric soil) to be considered a wetland. The USACE approach

to delineating wetlands generally requires that a jurisdictional wetland exhibits indicators of all three parameters.

Sensitive Natural Communities and Riparian Habitats

Sensitive natural communities are vegetation communities that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection under Section 404 of the federal Clean Water Act or Section 1600, *et seq.* of the California Fish and Wildlife Code. The California Department of Fish and Wildlife (CDFW) has designated a number of natural communities as sensitive and these communities are given the highest inventory priority (CDFW 2018a).

Riparian habitats are considered by local, state, and federal regulatory agencies to represent a sensitive and declining resource. Wetlands and riparian areas often serve important biological functions by providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory wildlife species. CDFW's jurisdiction along stream corridors extends to the outer dripline of the riparian canopy, or to the top of the bank in the absence of riparian vegetation. Riparian areas and corridors and wetlands, as defined by the San Mateo County LCP above, are regulated under the LCP.

San Mateo County General Plan Heritage Trees

According to the General Plan, Heritage Trees are any trees in the city that have a trunk with a circumference of 50 inches or more, at 24 inches above grade, excluding eucalyptus. The City Council may also designate any tree or grove of trees with historical, environmental, or aesthetic value as Heritage Trees. These require special permits for removal, substantial trimming, or construction within its dripline; in some cases, a Tree Protection Plan prepared by a qualified arborist, landscape architect, or horticulturalist may be required prior to project approval.

San Mateo County Heritage Trees and Significant Trees

The *San Mateo County Regulation of the Removal and Trimming of Heritage Trees on Public and Private Property* (Ordinance 2727, April 5, 1977) protects the removal of heritage trees (San Mateo County, 1977). A tree permit is required from the San Mateo County Planning Department for the removal of a heritage tree. Heritage trees include the following trees:

- Any tree or grove of trees so designated after Board inspection, advertised public hearing and resolution by the Board of Supervisors.
- Bigleaf maple (*Acer macrophyllum*) of more than 36 inches in diameter at breast height (dbh) west of Skyline Boulevard or 28 inches east of Skyline Boulevard.
- Madrone (*Arbutus menziesii*) with a single stem or multiple stems touching each other 4 1/2 feet above the ground of more than 48 inches in DBH, or clumps visibly connected

above ground with a basal area greater than 20 square feet measured 4 1/2 feet above average ground level.

- Golden chinquapin (*Chrysolepis chrysophylla*) of more than 20 inches in dbh.
- All Santa Cruz cypress (*Cupressus abramsiana*).
- Oregon ash (*Fraxinus latifolia*) of more than 12 inches in dbh.
- Tan Oak (*Lithocarpus densiflorus*) of more than 48 inches in dbh.
- Douglas fir (*Pseudotsuga menziesii*) of more than 60 inches in DBH east of Skyline Boulevard and north of Highway 92.
- Coast live oak (*Quercus agrifolia*) of more than 48 inches in dbh.
- Canyon live oak (*Quercus chrysolepis*) of more than 40 inches in dbh.
- All Oregon white oak (*Quercus garryana*).
- Black oak (*Quercus kellogii*) of more than 32 inches in dbh.
- Interior live oak (*Quercus wislizenii*) of more than 40 inches in dbh.
- Valley oak (*Quercus lobata*) of more than 48 inches in dbh.
- Blue oak (*Quercus douglasii*) of more than 30 inches in dbh.
- California bay (*Umbellularia californica*) with a single stem or multiple stems touching each other 4 1/2 feet above the ground of more than 48 inches in dbh, or clumps visibly connected above ground with a basal area of 20 square feet measured 4 1/2 feet above average ground level.
- California nutmeg (*Torreya californica*) of more than 30 inches in dbh.
- Redwood (*Sequoia sempervirens*) of more than 84 inches in dbh west of Skyline Boulevard or 72 inches DBH east of Skyline Boulevard.

The San Mateo County *Significant Tree Ordinance* requires a permit for the removal of any native or non-native tree with a circumference of 38 inches (12.1 inches in diameter) as measured at breast height or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes (San Mateo County 2010). A permit is also required for the removal of part of a community of trees, which is defined as a group of trees of any size which are ecologically or

aesthetically related to each other such that loss of several of them would cause a significant ecological, aesthetic, or environmental impact in the immediate area.

Special-status Plant and Lichen Species

For the purpose of this BRA, special status plants and lichens include all plant and lichen species that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under ESA or candidates for possible future listing as threatened or endangered under the ESA (50 CFR §17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish and Game Code §2050 et seq.). A species, subspecies, or variety of plant is endangered when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors (Fish and Game Code §2062). A plant is threatened when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures (Fish and Game Code §2067).
- Listed as rare under the California Native Plant Protection Act (Fish & Game Code §1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish and Game Code §1901).
- Meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
    - Species with a California Rank Plant Rank (CRPR) of 1A (plants/lichens presumed extirpated in California and either rare or extinct elsewhere); 1B (plants/lichens rare, threatened, or endangered in California and elsewhere); 2A (plants/lichens presumed extirpated in California but common elsewhere); and 2B (plants/lichens rare, threatened, or endangered in California but more common elsewhere).
    - Species that may warrant consideration on the basis of local significance or recent biological information
- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Several CRPR 1B, 3, and 4 plant species and one plant species without a CRPR were assessed because of their local importance as described in the *County of San Mateo Local Coastal Program*

(LCP) Policies (San Mateo County, 2013). Monterey pine (*Pinus radiata*) and Monterey pine (*Hesperocyparis macrocarpa*) [*Cupressus macrocarpa*] have a CRPR of 1B and are included as sensitive species in the San Mateo County LCP. One species that was assessed, California strawberry (*Fragaria vesca*) [*Fragaria californica*], does not have a CRPR but was addressed because its importance to the local strawberry industry, as described in the San Mateo County LCP.

The County of San Mateo LCP Policies encourages the removal of invasive weeds from public and private lands. Section 7.5.2 requires public agencies, to the point feasible, to remove the undesirable pampas grass (*Cortaderia* spp.) and French broom (*Genista monspessulana*), Scotch broom (*Cytisus scoparius*), and other invasive brooms from their lands. Section 7.5.1 encourages the voluntary cooperation of private landowners to remove pampas grass, French broom, Scotch broom and other invasive brooms. It also encourages landowners to remove blue gum (*Eucalyptus globulus*) seedlings to prevent their spread.

Special-status Wildlife Species

Special-status wildlife species include those listed as Endangered, Threatened, Rare, or as Candidates for listing by the USFWS (2020) and/or CDFW (2020). Other species regarded as having special-status include special animals, as listed by the CDFW (2020). Additional animal species receive special protection under the federal Bald and Golden Eagle Protection Act and the federal Migratory Bird Treaty Act. The Fish & Game Code of California provides protection for "fully protected birds", "fully protected mammals", "fully protected reptiles and amphibians", and "fully protected fish". Federal Species of Concern is not defined in the federal Endangered Species Act of 1973; however, USFWS maintains a website (Environmental Conservation Online System, http://ecos.fws.gov/tess_public/) which lists plant and wildlife species that are declining or appear to be in need of conservation and designates species of special concern or a similar status.

The California Department of Fish and Wildlife is the responsible agency for protecting animals that are State listed as Species of Special Concern (SSC). Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered or threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Fish and Game Code §3503 and §3503.5 also protect birds of prey along with their nests and eggs.

The state has designated some wildlife species as "fully protected" which means that CDFW is charged with identifying and providing additional protection to those animals that are rare or face possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collection for scientific research.

In addition, the San Mateo County LCP (Section 7) lists a number of wildlife species as either rare, endangered or unique species. The species were incorporated in this analysis and include: San

Francisco garter snake (*Thamnophis sirtalis tetrataenia*), San Francisco tree lupine moth (*Grapholita edwardsiana*), California brackish water snail (*Mimic tryonia*), sea otter (*Enhydra lutris nereis*), globose dune beetle (*Coelus globosus*) and elephant seal (*Mirounga angustirostris*).

METHODS

The entire Study Area that was accessible was surveyed on foot. Most of the Study Area was accessible except for some areas in the dense arroyo willow (*Salix lasiolepis*) thickets in the southeastern part of the Study Area along Burnham Creek.

A literature review and database search for special-status plant and wildlife species was centered on the Half Moon Bay and Montara Mountain United States Geological Survey (USGS) 7.5-minute topographic quadrangles and a 5-mile radius around the Study Area. Information on special-status plants and lichens, wildlife and sensitive natural communities was compiled through a review of sources published by the California Department of Fish and Wildlife (CDFW 2020a), CNDDB searches (CDFW 2020b), the CNPS online *Inventory of Rare and Endangered Plants* (CNPS 2020a), USFWS (2020a) Information for Planning and Consultation (iPac), and the USFWS (2020) Environmental Conservation Online System (ECOS). Scientific nomenclature for plants conforms to the *Jepson eFlora* (Jepson Flora Project 2020).

Several sources were reviewed to assess the potential for the Study Area to support jurisdictional aquatic resources, including non-wetland waters, wetlands, and riparian habitats. The Half Moon Bay and Montara Mountain United States USGS 7.5 minute quadrangle maps, Google Earth (2020), National Wetland Inventory (USFWS 2020b) maps, and the U.S. Geological Survey's National Hydrography Dataset (NHD) (USGS 2018) were reviewed for aquatic resources in and adjacent to the Study Area. The California Aquatic Resource Inventory (CARI), a Geographic Information System (GIS) database, was also reviewed for jurisdictional features (SFEI 2020).

The U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS 2020) Web Soil Survey was queried for soils mapped in the Study Area. Soil types were reviewed for their potential to support hydric soils and soils that potentially support special status plants, including serpentinite, volcanic, and highly alkaline soils.

The Study Area was assessed for coastal resources as defined above by the *County of San Mateo Local Coastal Program (LCP) Policies* (San Mateo County 2013).

Vegetation communities and habitats were mapped in the field onto an aerial photograph of the site. Vegetation communities were classified according to the California Native Plant Society's online *A Manual of California Vegetation* to the extent that was feasible (CNPS 2020). CDFW provides of list of these CNPS vegetation communities that they rank as sensitive natural

communities because of their decline (CDFW 2020). The accuracy of mapping the intermittent channel in the southeastern portion of the Study Area was limited to the lack of access to that area through dense arroyo willows, thus the location of the channel was estimated based on limited visibility and historic Google Earth aerial images dating back to 1993.

A list of plant and wildlife species that were observed in the Study Area was compiled and a description of the flora in the vegetation communities and habitats was developed based on the site visits. Scientific nomenclature for plants in this report conforms to the *Jepson eFlora* (Jepson Flora Project 2020). A limitation to these descriptions is that generally by the end of October some plant species are no longer evident because this is late in the season. However, observations could still be made to identify some desiccated plant species since this was prior to significant rain events that decompose plants. On the other hand, the ruderal/non-native grasslands in the Study Area were mowed, making it difficult to identify most of the grasses in that habitat.

RESULTS

Soils

Most of the Study Area is mapped as Denison clay loam, nearly level (DcA). Denison loam, gently sloping (DmB) is mapped in a smaller portion of the northwestern Study Area (USDA NRCS 2020). Denison loam, sloping (DmC) is mapped in the southwestern portion of the Study Area. Denison clay loam, nearly level, imperfectly drained (DdA) occurs in a small portion of the southern corner of the Study Area. These three Denison soil types occur on low terraces, are alluvial material derived from granite material, and are moderately well drained except for DdA, which is somewhat poorly drained. The U.S. Department of Agriculture Soil Conservation Service soil survey from 1961 describes the Denison soil series as primarily associated with grasses (USDA SCS 1961).

There are two small portions of the northwestern corner and southern corner of the Study Area adjacent to Obispo Road mapped as Watsonville loam, sloping, eroded (WmC2). This moderately well drained soil type occurs on terraces and is alluvial material derived from sedimentary rocks. The U.S. Department of Agriculture Soil Conservation Service soil survey from 1961 describes the Watsonville soil series as primarily associated with coyote brush (*Baccharis pilularis*) and an understory of grasses and weeds such as plantain (*Plantago* sp.) (USDA SCS 1961).

None of the soil types in the Study Area are hydric, serpentinite, volcanic, or highly alkaline or saline.

Vegetation Communities and Habitats

A list of vegetation communities and habitats in the 6.38-acre Study Area is included in Table A and shown in Figure 3. Figure 2 provides an overview of the Study Area and adjacent habitats. The intermittent streams channels present in the Study Area are not included in Table A because their linear feet in the Study Area are reported in the description of that habitat below. A list of plant species observed in the Study Area is provided in Appendix A. Identification of plant species was limited on October 30th because it much of the westernmost half of Study Area was mowed, probably for fire hazard reduction, and it is at the end of the season so many plants were very desiccated. Photographs of the Study Area are provided in Appendix B. Elevations on the Study Area range from 17 to 36 feet (5 to 11 meters) above mean sea level and the Study Area is gently sloped.

Table A: Vegetation Communities and Habitats in the Study Area

Vegetation Community or Habitat	Acres
Ruderal/Non-native Grassland	4.54
Arroyo Willow Thickets/Coastal Brambles (California Blackberry)	0.61
Barren/Ruderal	0.66
Arroyo Willow Thickets	0.11
Blue Gum	0.34
Plume Acacia	0.02
Seasonal Wetlands (rush)	0.10
Total	**6.38**

Ruderal/Non-native Grassland

Ruderal/non-native grassland in the Study Area is approximately 4.54 acres (Table A). This habitat is located in the northwestern half of the Study Area and in openings and edges of other habitats in the Study Area (Figures 2 and 3). The dominant vegetation is primarily non-native annual grasses and non-native forbs that are ruderal species typical of the area (Appendix B, Photographs 1, 2, and 8). Non-native grasses observed in this habitat include wild oat (*Avena* sp.), Italian ryegrass (*Fesctuca perennis*), velvet grass (*Holcus lanatus*), ripgut brome (*Bromus diandrus*), panic veldtgrass (*Ehrharta erecta*), and reed fescue (*Festuca arundinacea*). Other ruderal non-natives species include fennel (*Foeniculum vulgare*), pin cushion flower (*Scabiosa*

Study Area
Riparian Buffer (30-Foot)
Wetland Buffer (100-Foot)
Vegetation Communities and Habitats
AWT - Arroyo Willow Thickets
AWT/CB - Arroyo Willow Thickets/Coastal Brambles (California Blackberry)
BAR/RUD - Barren/Ruderal
BG - Blue Gum
PA - Plume Acacia
RUD/NNG - Ruderal/Non-native Grasslands
SW - Seasonal Wetland
Potential Jurisdictional Features
Seasonal Wetland
Intermittent Stream Channel (Other Waters of the U.S.)

BioMaAS

SOURCE: USDA (NAIP) 2018

FIGURE 3
Vegetation Communities and Habitats

Granada Community Services District Burnham Strip Project

Path: F:\OneDrive - Watson Geographics\Projects\BioMaAs\2020\120_GCSD\BurnhamStrip\Map\BRA\Figure3_VegetationCommunities_Habitats.mxd

sp.), curly dock (*Rumex crispus*), common borage (*Borago officinalis*), field bind weed (*Convolvulus arvensis*) and wild radish (*Raphanus sativus*). Poison hemlock (*Conium maculatum*), a California Invasive Plant Council (Cal-IPC 2017) moderately invasive plant, is fairly abundant along the open edges of the central intermittent stream channel (IS-2) (Figure 3). Non-native forbs that are ruderal were common in this habitat, such as English plantain (*Plantago lanceolata*), bristly ox tongue (*Helminthotheca echioides*), and shortpod mustard (*Hirschfeldia incana*). Native species observed in this habitat are much less abundant than ruderal non-native species and include beach strawberry (*Fragaria chiloensis*), Pacific silverweed (*Potentilla anserina* ssp. *pacifica*), mugwort (*Artemisia douglasiana*), Pacific aster (*Symphyotrichum chilense*), and Hooker's evening-primrose (*Oenothera elata* ssp. *hookeri*). This habitat does not support trees with the exception an ornamental plume acacia (*Albizia lophantha*) in the northwestern corner of the Study Area that might not be inside the Study Area boundaries. This habitat only has a very sparse cover of shrubs, including several native coyote brush (*Baccharis pilularis*). A large native California coffeeberry (*Frangula californica*) shrub and a native blue blossom (*Ceanothus thyrsiflorus*) shrub are located along the northern boundary of the Study Area adjacent to the Picasso Preschool. These shrubs could have been planted and might be outside the Study Area. Native plant diversity in this habitat is likely to be higher in the spring and summer. The lack of native plants and relatively high abundance of invasive plants indicates a high degree of disturbance in this habitat. This habitat appeared to be mowed within the last several months (Appendix B, Photograph 1).

The U.S. Department of Agriculture Soil Conservation Service soil survey from 1961 describes the Denison soil series which is the dominant soil in the Study Area as associated with grasses and Watsonville soil series as primarily associated with coyote brush (*Baccharis pilularis*) and an understory of grasses and weeds such as plantain (*Plantago* sp.) (USDA SCS 1961). Prior to disturbance, the existing ruderal/non-native grassland habitats in the Study Area were probably sand dunes, coastal prairie, or coastal scrub habitats that supported a much higher diversity of native flora. Additional descriptions of possible historical habitats is provided below under the *Special-status Plant Species* section.

Arroyo Willow Thickets/Coastal Brambles (California blackberry)

This 0.61 acre vegetation community occurs in the Study Area along the Burnham Creek intermittent stream channel (IS-3) (Table A; Figure 3). It consists of a dense thicket of native arroyo willow (*Salix lasiolepis*) with a discontinuous understory of California blackberry (*Rubus ursinus*) (Appendix B, Photographs 2, 3, 5, and 6). This vegetation community corresponds to the arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance) and coastal brambles (*Rubus* (*parviflorus*, *spectabilis*, *and ursinus*) Shrubland Alliance in the CNPS (2020) *Manual of California Vegetation Online*. This latter alliance is considered sensitive by CDFW (2020). There are several blue gum (*Eucalyptus globulus*) and plume acacia trees in the adjacent arroyo willow thickets and

these trees are essentially part of this riparian corridor. These trees have been mapped separately on Figure 3. Additional plume acacia trees are intermixed with the arroyo willow thickets and were not mapped separately. Visibility in this habitat was somewhat limited so other small trees and shrubs are possibly present. Highly invasive English ivy (*Hedera helix*) and Cape Ivy (*Delairea odorata*) were observed along the edges of arroyo willow thickets along Obispo Road. A patch of highly invasive pampas grass (*Cortaderia* sp.) was also observed from Obispo Road near the Burnham Creek channel. Pampas grass is not extensive here or in other parts of the Study Area. Shrubs in the understory of the arroyo willow thickets that were observed along Obispo Road, besides California blackberry, were California coffeeberry (which might have been planted) and non-native cotoneaster (*Cotoneaster* sp.). Vegetation on the edges of this habitat are similar to the ruderal/non-native grassland habitat in the Study Area. Invasive ice plant (*Carpobrotus* sp.) was also observed along the edge of this habitat, but it was not extensive. Although some of this arroyo willow thickest/coastal brambles habitat appears undisturbed, there are several trails through this habitat, homeless camps, and trash piles.

Barren/Ruderal

Barren/non-native grassland in the Study Area is approximately 0.66 acres (Table A). This habitat is located in the central part of the Study Area and is a parking lot for Surfer's Beach (Figure 3). The habitat is constantly disturbed by vehicles and pedestrians and consists primarily of barren sandy substrate with scattered ruderal plants that are primarily non-native species (Appendix B, Photograph 3 and 6). Plants species in this habitat include non-native species that are typical of disturbed areas such as Italian ryegrass, bristly ox tongue, shortpod mustard, cut-leaf plantain (*Plantago coronopus*), and bird's foot trefoil (*Lotus corniculatus*). Native mugwort was sparsely present here. Invasive ice plant (*Carpobrotus* sp.) was also observed here but it was not extensive. Trees and shrubs are not present in this habitat.

Arroyo Willow Thickets

This 0.11 acre vegetation community occurs in the Study Area along the central intermittent stream channel (IS-2) (Table A; Figure 3, Appendix B, Photo 9). It consists of a relatively small thicket of native arroyo willow and corresponds to the arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance) in the CNPS (2020) *Manual of California Vegetation Online*. It supports several patches of California blackberry in the understory but it is more open than the arroyo willow thickets/coastal brambles (California blackberry) in the Study Area so it generally supports a higher diversity of plant species in the understory that includes ruderal/non-native grasslands species (Appendix B, Photographs 2, 3 and 4). Moderately invasive poison hemlock (*Conium maculatum*) and Bermuda buttercup (*Oxalis pes-caprae*) was observed on the banks here. There is also a patch of mugwort mixed in with Pacific aster, as well as ornamental pincushion flower near Obispo Road. Other ornamental plants include borage, pride of Madeira (*Echium candicans*), pelargonium (*Pelargonium* sp.), and fine leaved fumitory (*Fumaria*

parviflora). Native Hooker's evening primrose (*Oenothera elata* ssp. *hookeri*) was also observed on the bank.

Blue Gum

There are several blue gum (*Eucalyptus globulus*) trees (0.34 acres) along Burnham Creek and adjacent to the arroyo willow thickets that are essentially part of this riparian corridor (Table A; Appendix B, Photographs 3 and 4). They were mapped separately from arroyo willow thickets and are shown on Figure 3.

Plume Acacia

A patch of plume acacia (*Albizia lophantha*) trees (0.02 acres) occurs along Burnham Creek adjacent to the arroyo willow thickets (Table A). These trees are part of this riparian corridor. They were mapped separately from arroyo willow thickets and are shown on Figure 3. (Appendix B, Photograph 5).

Rush Seasonal Wetlands

Two areas with a subdominant cover of native rush (*Juncus* sp.) were identified during the October 30th site visit as potential jurisdictional seasonal wetlands (Figure 3). These areas are approximately 0.10 acres (Table A). This acreage is a rough estimate, and a formal delineation or Global Positioning System (GPS) was not used to record the wetland boundaries in the field.

The largest of the two rush areas is located in a low-lying area within the ruderal/non-native grasslands in the northern portion of the Study Area, adjacent to Obispo Road (Figure 3; Appendix B, Photograph 7). Rush is evident in this area but was not observed in surrounding, higher topographic areas. This species was not identifiable but it likely to be native salt rush (*Juncus lesueurii*) or native Baltic rush (*Juncus balticus*). This observed rush is not spreading rush (*Juncus patens*) or bog rush (*Juncus effusus*) because it is not growing in dense cespitose clumps like the growth form of spreading rush and bog rush. Salt rush and Baltic rush are both listed by the USACE Regional Wetland Plant List as facultative wetland (FACW) hydrophytic plant species (USACE 2018). During the October 30th site visit the soil was not ponded or saturated and a mix of upland and hydrophytic plant species was associated with this rush patch. Non-native bristly ox tongue, a facultative wetland (FAC) species, was a dominant species here. Native Pacific silverweed (*Potentilla anserina* ssp. *pacifica*), an obligate wetland species, was a subdominant plant species in this area. Velvet grass (*Holcus lanatus*), a non-native FAC, also occurs here. Upland species typical of the adjacent ruderal/non-native grasslands are also present here.

The other rush seasonal wetland is located adjacent to the plume acacia patch and arroyo willow thicket associated with Burnham Creek (Figure 3; Appendix B, Photograph 5). This rush species is also likely to be salt rush or Baltic rush and is a subdominant species that is mixed with California blackberry, an upland species, and velvet grass, a FAC species. It occurs on the outer

edge of these other habitats as well as partially under the plume acacia trees. During the October 30th site visit the soil was not ponded or saturated.

Intermittent Stream Channels

Three intermittent stream channels occur in the Study Area and are labelled in Figure 3 as IS-1 (147 linear feet), IS-2 (143 linear feet) and IS-3 (291 linear feet). There are approximately 581 linear feet of intermittent stream channels in the Study Area. None of these channels were identified in any of the database searches or USGS map reviews, as described in the *Methods* section above. Based on the October 30th site visit, all three channels support at least some instream seasonal wetland vegetation.

The westernmost intermittent stream channel (IS-1) in the central portion of the Study Area was the driest of the three channels (Figure 3; Appendix B, Photo 8). This drainage begins in the Study Area at a culvert that runs south under Obispo Road and is daylighted along the northern Study Area boundary. At the south end of the channel, outside the Study Area, it runs back into a culvert that goes under State Highway 1 and then presumably drains to the Pacific Ocean. The channel is approximately 3 feet wide. On October 30th, there was no ponded surface water or soil saturation present in the channel and the channel is not associated with riparian vegetation. The channel was partially barren and partially vegetated with upland and hydrophytic plant species. A sparse amount of Pacific silverweed (OBL) was in the channel, as well as rabbit's foot grass (*Polypogon monspeliensis*) (FACW), bristly ox tongue (FAC), Pacific aster (FAC), and annual bluegrass (*Poa annua*) (FAC). Upland species in the channel were typical species found in the adjacent ruderal/non-native grasslands, including wild oat and fine leaved fumitory. A small patch of Himalayan blackberry occurs on the bank of this channel. This is a highly invasive species that can be more easily eradicated when it occurs in small patches such as this one.

The central intermittent stream channel (IS-2) is associated with a small arroyo willow thicket along its northernmost reach in the Study Area (Figure 3 Appendix B, Photo 9 and 10). This drainage begins in the Study Area at a two culverts that runs south under Obispo Road and is daylighted along the northern Study Area boundary. At the south end of the channel, outside the Study Area, it runs back into two culverts that go under State Highway 1 and then presumably drains to the Pacific Ocean. The channel is approximately 3-7 feet wide. On October 30th, ponded surface water was observed in the northernmost area around the culverts and the channel dried out farther south. The channel was partially barren and partially vegetated with upland and hydrophytic plant species. The ponded and saturated areas support hydrophytic plants such as water cress (*Nasturtium officinale*) (OBL), mugwort (FACW), Pacific aster (FAC), annual bluegrass (*Poa annua*) (FAC) and Italian ryegrass (FAC). Upland vegetation consists of ruderal/non-native grassland species and is mixed with hydrophytic vegetation in the channel.

The third intermittent stream channel (IS-3) is the Burnham Creek channel and it is associated a riparian corridor consisting of arroyo willow thickets/coastal brambles (California blackberry) (Figure 3; Appendix B, Photos 4, 11 and 12). This channel begins in the Study Area at a culvert that runs south under Obispo Road from arroyo willow thickets on the north side of Obispo Road and is daylighted along the northern Study Area boundary. The channel runs parallel to Obispo Road through the Study Area and meanders a bit to the south in the Study Area. The channel is approximately 3-8 feet wide. On October 30th, ponded surface water was observed in the northernmost area around the culverts and in several isolated pools, but then the channel dried out farther south in the Study Area. Near the culvert and wetter reaches of the channel native hydrophytic plants include horsetail (*Equisetum* sp.) (FAC, FACW, or OBL) and native dotted smartweed (*Persicaria punctata*) (OBL). Other species in the channel or near the wet edges include Pacific silverweed (OBL). The drier portions of the channel were partially barren and partially vegetated with upland and hydrophytic plant species that were similar to the other intermittent channels in the Study Area.

Sensitive Vegetation Communities and Riparian Habitat

Riparian corridors in the Study Area consisting of the Burnham Creek intermittent stream channel and two other intermittent stream channels that support arroyo willow thickets, as well as rush seasonal wetlands in the Study Area, are considered sensitive habitats in the *County of San Mateo Local Coastal Program (LCP) Policies* (San Mateo County 2013) and San Mateo County General Plan. Arroyo willow thickets are not considered a sensitive natural community by CDFW (2018a), but they are regulated to the edge of the riparian dripline under the California Fish and Game Code (§1600 *et seq*.). Coastal brambles (California blackberry) is considered a sensitive natural community by CDFW. All these habitats and jurisdictional features described above could also be considered ESHAs under the California Coastal Act of 1976.

The ruderal/non-native grasslands and barren/ruderal habitat in the Study Area are remnant dune, coastal prairie, or coastal scrub vegetation communities that have been disturbed and thus support more ruderal and non-native plant species than historical habitats. Additional native dune flora that is currently unidentifiable because they are annual species that are not evident in the fall, might be present in these habitats. Spring surveys in the Study Area will potentially indicate higher floristic biodiversity than is present in the fall. Sand dunes are considered a sensitive habitat under the *County of San Mateo Local Coastal Program (LCP) Policies* because they are a limited habitat in the county. Non-native grassland/ruderal and barren/ruderal habitats in the Study Area could also be considered ESHAs under the California Coastal Act of 1976 because they are remnants of declining coastal habitats.

Wetlands and Other Waters

No wetlands and other waters were identified in in the Study Area during the review of multiple databases and maps. In addition, no online information was found for Burnham Creek.

Jurisdictional features identified in the Study Area during the October 30th site visit include seasonal wetlands, Burnham Creek intermittent stream channel and two other intermittent stream channels, associated arroyo willow thickets/coastal brambles (California blackberry) and arroyo willow thickets. The CDFW generally regulates riparian vegetation, including arroyo willow thickets, which are associated with a stream channel to the edge of the riparian vegetation's dripline. In addition, the County LCP requires a 30-foot buffer around intermittent stream channels that starts at the riparian edge, a 30-foot buffer from the center of an unvegetated intermittent stream channel, and a 100 foot buffer around wetlands (Figure 3).

Heritage Trees and Significant Trees

Potential significant trees in the Study Area include arroyo willow, blue gum, plume acacia and possibly other trees present in the arroyo willow thickets and along Burnham Creek in the Study Area and that were not evident during the October 30th site visit. Access and visibility in the dense arroyo willow thickets in the southeastern part of the Study Area along Burnham Creek was limited. There is also a multiple stemmed plume acacia in the northwestern corner of the Study Area near the Picasso preschool that could be large enough to be a significant tree. Potential heritage trees were not observed in the Study Area.

Special-status Plant Species

Forty-two special-status plant species, one special-status lichen, and wild strawberry (*Fragaria fresca*) [*Fragaria californica*], a plant species that does not have a CRPR, were evaluated for their potential to occur in the Study Area (Appendix C). CNDDB special-status plant species records that occur in the vicinity of the Study Area are shown in Figure 4a. Thirty-five plant species were ranked as having a moderate potential to occur in the Study Area and eight plants species and one lichen species were ranked as having a low potential to occur in the Study Area because of the lack of suitable habitat. The Study Area does support soils such as serpentinite that would support some special-status plants and except for riparian woodland, the Study Area lacks woodland and forest habitats and chaparral.

Project Location

5-Mile Study Area Radius

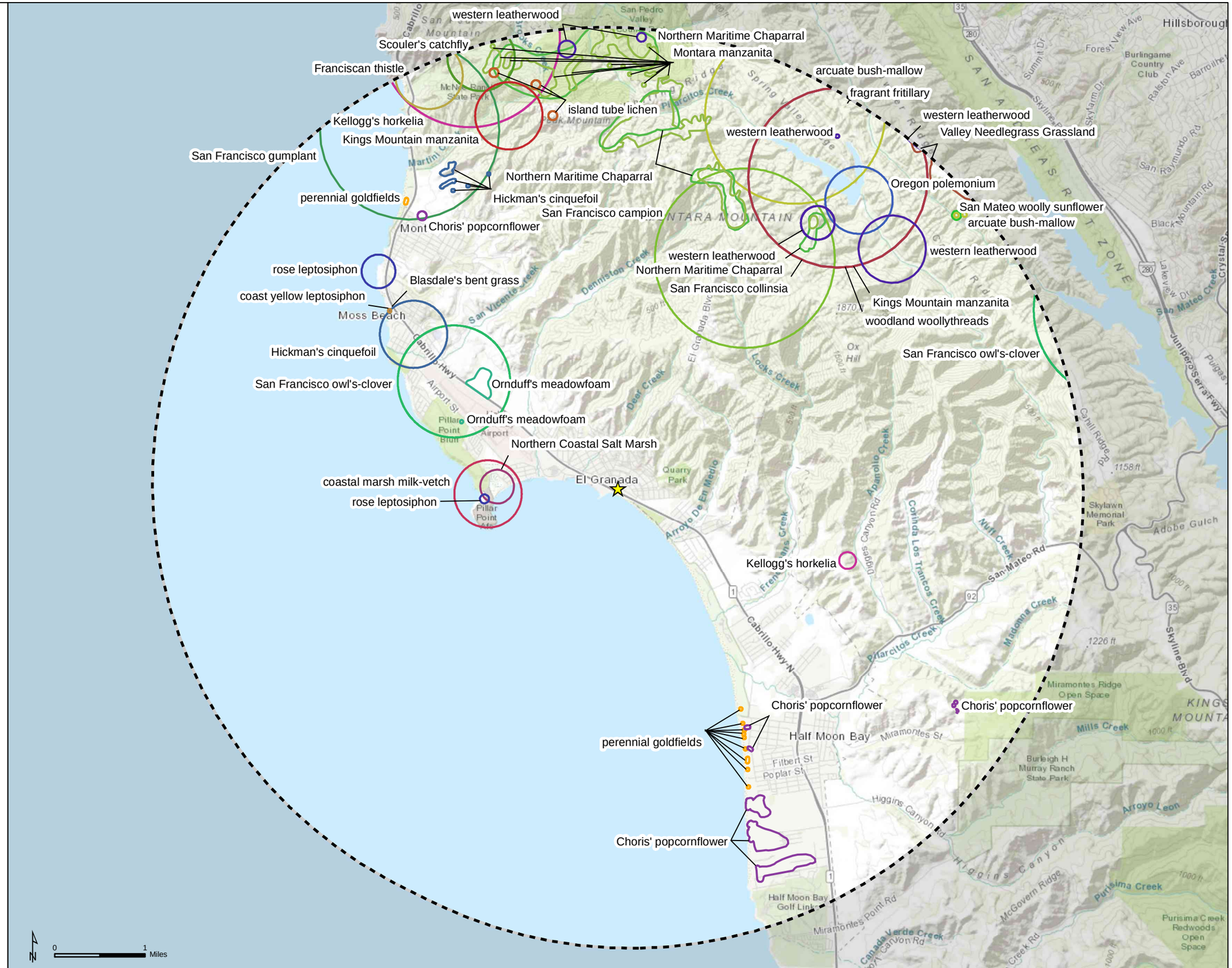
CNDDB Plant and Sensitive Natural Community Occurrences

Plants

- Arcuate bush-mallow (*Malacothamnus arcuatus*)
- Blasdale's bent grass (*Agrostis blasdalei*)
- Choris' popcornflower (*Plagiobothrys chorisianus* var. *chorisianus*)
- Coast yellow leptosiphon (*Leptosiphon croceus*)
- Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*)
- Fragrant fritillary (*Fritillaria liliacea*)
- Franciscan thistle (*Cirsium andrewsii*)
- Hickman's cinquefoil (*Potentilla hickmanii*)
- Island tube lichen (*Hypogymnia schizidiata*)
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)
- Kings Mountain manzanita (*Arctostaphylos regismontana*)
- Montara manzanita (*Arctostaphylos montaraensis*)
- Oregon polemonium (*Polemonium carneum*)
- Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*)
- Perennial goldfields (*Lasthenia californica* ssp. *macrantha*)
- Rose leptosiphon (*Leptosiphon rosaceus*)
- San Francisco campion (*Silene verecunda* ssp. *verecunda*)
- San Francisco collinsia (*Collinsia multicolor*)
- San Francisco gumplant (*Grindelia hirsutula* var. *maritima*)
- San Francisco owl's-clover (*Triphysaria floribunda*)
- San Mateo woolly sunflower (*Eriophyllum latilobum*)
- Scouler's catchfly (*Silene scouleri* ssp. *scouleri*)
- Western leatherwood (*Dirca occidentalis*)
- Woodland woollythreads (*Monolopia gracilens*)

Sensitive Natural Communities

- Northern Coastal Salt Marsh
- Northern Maritime Chaparral
- Valley Needlegrass Grassland



SOURCE: CDFW (10/2020), ESRI 2020

FIGURE 4**a**

CNDDB Special-status Plant and Sensitive Natural Community Occurrences Within a 5-Mile Radius of the Study Area

Granada Community Services District Burnham Strip Project

Most of the Study Area has a history of disturbances that has decreased native plant diversity. Google Earth historical aerial photographs date back only to 1993 and show a similar pattern of disturbance and habitats that are currently present (Google Earth 2020). The San Mateo County aerial imagery map service images only dated back to 2006, so they did not provide additional data than Google Earth (San Mateo County 2020). Online research on site history and historical habitats did not produce results. In a personal communication between BioMaAS biologist, Bill Stagnaro, and Kikuchi + Kankel Design Group Associate, Tom Conroy, Tom stated that the only recent site disturbance in the Study Area was grading for installation of a wet weather sanitary sewer overflow system in the center-north portion of the Study Area (pers. communication, 2020). The San Mateo area soil survey from 1961 describes associated vegetation in Denison soils as grasses and in Watsonville soils coyote brush and grasses (USDA SCS 1961). Based on the structure of coastal dune and coastal scrub ecosystems in northern California, assumptions can be made about the possible historical habitats in the Study Area. The ruderal/non-native grasslands and barren/ruderal habitats were most likely historical coastal prairie, stabilized sand dunes, coastal scrub habitats, or a more extensive system of tributaries and channels with additional arroyo willow thickets and seasonal wetlands. Typically, active dunes that are primarily unvegetated and actively shift with the winds are located closer to the shoreline and landward dunes become more stabilized by vegetation and form stabilized sand dunes, coastal scrub or coastal prairie habitats. Habitats in the Study Area have been fragmented and disconnected from the shoreline by the construction of State Highway 1 and potentially contain fill material from the construction of Highway 1. The presence of several intermittent stream channels, several scattered coyote brush (a dune and coastal scrub species), beach strawberry (a dune and coastal scrub/prairie species), and rush seasonal wetlands present in the ruderal/non-native grasslands in the Study Area suggests this habitat was historically a floodplain with seasonal wetlands with possibly a mosaic of stabilized dunes, coastal scrub, or coastal prairie. However, if vegetation was removed or fill material was placed here during developments and the natural topography was altered, then the current habitats might not be indicative of historic habitats. In general, human induced disturbances decrease the likelihood of some special-status plants that are sensitive to disturbances. However, plants that occur in sand dunes, and to some extent plants that occur in coastal prairies and coastal scrub, have evolved with the natural disturbances associated with the shifting sand substrate and fires, and thus could potentially still be present in the Study Area. Special-status plants that occur in dunes, coastal scrub and coastal prairie habitats could potentially be present in ruderal/non-native grasslands and barren/ruderal habitats in the Study Area, as well as along the openings and edges of arroyo willow thickets and coastal brambles (California blackberry).

Special-status Wildlife Species

Based on review of the California Natural Diversity Data Base (CNDDB 2020), USFWS Species Lists and the geographic range and habitat affinities of special-status animals, a total of 60 special-status wildlife species were considered to have potential to occur in the vicinity of the Study Area. Of these species, 17 have potential to occur in the Study Area: obscure bumble bee (*Bombus caliginosus*), Western bumble bee (*Bombus occidentalis*), California giant salamander (*Dicamptodon ensatus*), California red-legged frog (*Rana draytonii*; CRLF), San Francisco garter snake, white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), yellow warbler (*Dendroica petechia brewsteri*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), grasshopper sparrow (*Ammodramus savannarum*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*) and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

Wildlife species observed during the site visit are listed in Appendix D. A summary of the formal status, habitat affinities, and potential for occurrence within the Study Area for each of the wildlife species assessed is presented in Appendix E. Special-status wildlife species known to occur in the vicinity of the Study Area are shown in Figure 4b. The 17 species with potential to occur in the Study Area, or that may be affected by potential project activities, are discussed below.

Bumble Bees (Obscure and Western Bumble Bee)

The obscure bumble bee has a global and state rank of G4, S1, S2[1]and is an International Union for Conservation of Nature (IUCN) Vulnerable Species. The Western bumble bee has a global and state rank of G2, G3, S1 and is a Xerces Society Imperiled species. In addition, on June 12, 2019, the California Fish and Game Commission determined that listing four subspecies, included these two subspecies discussed, of bumble bee may be warranted under the California Endangered Species Act (CESA). The decision was made after the Xerces Society, Center for Food Safety, and Defenders of Wildlife filed a petition to list the Crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee as endangered species under CESA.

[1] All Heritage Programs, such as the California Natural Diversity Database (CNDDB) use the same ranking methodology, originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. It includes a Global rank (G-rank), describing the rank for a given taxon over its entire distribution, and a State rank (S-rank), describing the rank for the taxon over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the infraspecific taxon. See the end of the species table for more details.

The historical range of the Western bumble bee in California stretches from the Channel Islands to the northern extent of the state, primarily in the coastal and Sierra Nevada ranges and mostly excluding the Central Valley and drier, warmer areas. It notes that Cameron et al. (2011), comparing 2007-2009 records versus 1900-1999, estimated a 28 percent range decline in North America, and in recent years (2002-2012), the North American range of this species has declined by about half. A California-specific analysis is not included, but the Petition[2] notes the species appears to be increasingly restricted to the Sierra-Cascades and coastal areas. The obscure bumblebee favors the elect food plant genera *Baccharis, Cirsium, Lupinus, Lotus, Grindelia* and *Phacelia* and the western bumblebee favors *Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus* and *Eriogonum*. Most bumble bees nest in the ground in cavities such as abandoned rodent burrows, holes in building foundations, or stacks of firewood (USDA 2012).

Suitable foraging and burrowing habitat is available in the Study Area for the obscure bumble bee and the western bumble bee. *Baccharis* and *Lotus* plant species were observed in the Study Area during the rare plant surveys (Appendix A). In addition, Botta's pocket gopher (*Thomomys bottae*) burrows were observed in the Study Area as well as natural expansion cracks and other openings in the ground.

California Giant Salamander

California giant salamanders are year-round residents of north-central California, from southern Santa Cruz Co.to extreme southern Mendocino and Lake Cos. They occur up to 2,160 m (6,500 ft) primarily in humid coastal forests, especially in Douglas fir, redwood, red fir, and montane and valley-foothill riparian habitats (Stebbins 1972). They live in or near streams in damp forests, and California giant salamanders tend to be common where they occur (Stebbins 1985). Aquatic adults and larvae are found in cool, rocky streams and occasionally in lakes and ponds (Nussbaum and Clothier 1973). This species may have potential to occur in Burnham Creek.

California Red-legged Frog

The CRLF is a federally threatened species and a California Species of Special Concern. CRLF are pond frogs that breed from late November to early April, with earlier breeding records occurring in southern localities (Storer 1925). Adult CRLF appear to prefer dense, shrubby or emergent riparian vegetation closely associated with deep (>2.3 feet), still, or slow-moving water (Hayes and Jennings 1988).

[2] A Petition to the State of California Fish and Game Commission to List The Crotch bumble bee (Bombus crotchii), Franklin's bumble bee (Bombus franklini), Suckley cuckoo bumble bee (Bombus suckleyi), and western bumble bee (Bombus occidentalis occidentalis) as Endangered under the California Endangered Species Act. Submitted by The Xerces Society for Invertebrate Conservation, Defenders of Wildlife, Center for Food Safety, October 2018.

Project Location

5-Mile Study Area Radius

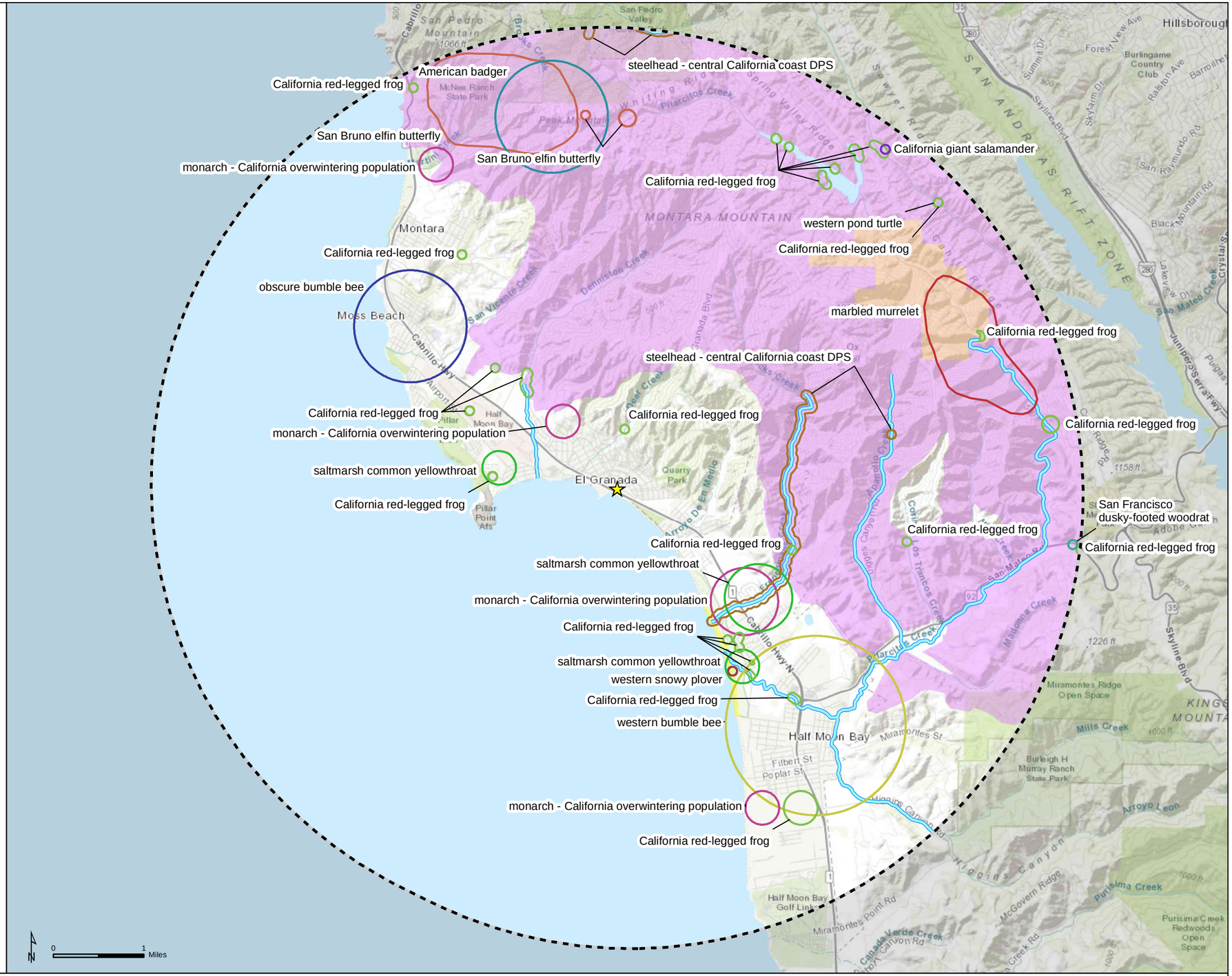
CNDDB Wildlife Species Occurrences

- American badger (*Taxidea taxus*)
- California giant salamander (*Dicamptodon ensatus*)
- California red-legged frog (*Rana draytonii*)
- Marbled murrelet (*Brachyramphus marmoratus*)
- Monarch - California overwintering population (*Danaus plexippus pop. 1*)
- Obscure bumble bee (*Bombus caliginosus*)
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)
- San Bruno elfin butterfly (*Callophrys mossii bayensis*)
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)
- Steelhead - central California coast DPS (*Oncorhynchus mykiss irideus pop. 8*)
- Western bumble bee (*Bombus occidentalis*)
- Western pond turtle (*Emys marmorata*)
- Western snowy plover (*Charadrius alexandrinus nivosus*)

USFWS Critical Habitat

- California red-legged frog (*Rana draytonii*)
- Marbled murrelet (*Brachyramphus marmoratus*)
- Western snowy plover (*Charadrius nivosus nivosus*)
- Steelhead (*Oncorhynchus mykiss*)

** San Francisco gartersnake (Thamnophis sirtalis tetrataenia) location details are supressed by the CNDDB. These species are known to occurr within the 5-mile search radius.*



SOURCE: CDFW (10/2020), USFWS 2005/ 2010/ 2012/ 2016, ESRI 2020

FIGURE 4**b**

CNDDB Wildlife Occurrences and Critical Habitat Within a 5-Mile Radius of the Study Area

Granada Community Services District Burnham Strip Project

BioMaAS

Path: F:\OneDrive - Watson Geographics\Projects\BioMaAS\2020\1020_GCSDBurnhamStrip\Map\BRAFigure4a_CNDDB_Wildlife_5Mile.mxd

This species is known to disperse during periods of wet weather, typically starting with the first rains of fall. These long-distance movements are straight-line, point-to-point migrations through all terrain and not necessarily through riparian or other topographic corridors (Bulger et al. 2003). The longest distance traversed by an individual was 2.24 miles by moving between two sites 1.74 miles apart (Bulger et al. 2003). Despite these observations of long distance dispersal, data from Bulger et al. (2003) suggest that only a relatively small segment of the adult population is liable to disperse in any given year. If a breeding site has suitable conditions, most adult frogs will remain year round.

There are four primary constituent elements (PCEs) that are considered to be essential for the conservation or survival of this species. The PCEs for the CRLF include: aquatic breeding habitat; non-breeding aquatic habitat; upland habitat; and dispersal habitat (USFWS 2006a). Dispersal Habitat includes accessible upland or riparian habitats between occupied locations within 0.7 miles of each other that allow for movement between these sites. Dispersal habitat includes various natural and altered habitats such as agricultural fields, which do not contain barriers to dispersal. Moderate to high density urban or industrial developments, large reservoirs and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2006a).

This species has a known occurrence less than one mile north of the Study Area. This species is common in aquatic features along the San Mateo County coast. High winter flows likely preclude breeding attempts in much of Burnham Creek by this species, however, CRLF may more commonly use Burnham Creek as non-breeding aquatic habitat, and the Study Area as potential upland habitat and dispersal habitat.

San Francisco Garter Snake

The SFGS is a subspecies of the common garter snake that is endemic to San Mateo County and northern Santa Cruz County. It eats a wide variety of prey, which includes the CRLF. This species is typically associated with ponds and emergent and bankside vegetation such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), and spike rushes (*Juncus* spp. and *Eleocharis* spp.) are preferred and used for cover (Stebbins, 2011). There are two significant components to SFGS habitat: 1) ponds that support the CRLF, American bullfrog (*Rana catesbeiana*), and Sierran treefrog (*Pseudacris sierra*) and 2) the surrounding upland that supports the Botta's pocket gopher and the California meadow vole (*Microtus californicus*) (USFWS 2006b). Ranid frogs are an obligate component of the SFGS's diet (USFWS 2006b).

Little is known regarding SFGS dispersal distances. Studies at Año Nuevo State Reserve found the mean distance of female hibernacula to the Visitor Center Pond was 459 feet, with a maximum distance of 637 feet. Distances of greater than 637 feet have been reported, including an unconfirmed distance of approximately 1000 feet (McGinnis et al. 1987). In addition, a study of

SFGS in coastal San Mateo County (Halstead et al. 2011) found SFGS up to 700 feet from aquatic habitat.

There are three SFGS occurrences within three miles of the Study Area (CNDDB suppressed data). The likelihood of this species occurring in the Study Area is moderate due to nearby occurrences and the presence of its obligate prey species (CRLF) within one mile of the Study Area.

White-tailed Kite

White-tailed kite are a CDFW Fully Protected species. This raptor places its nest near the top of dense oak, willow, or other tree stands; usually 6-20 m (20-100 feet) above ground (Dixon et al. 1957). Nests are usually located near open foraging areas. This kite is monogamous; usually breeds from February to October, with a peak from May to August (CDFG 2005a). The mature trees in the Study Area may provide suitable nesting habitat for this species.

Loggerhead Shrike

The loggerhead shrike is listed by CDFW as a SSC and by the USFWS as a Bird of Conservation Concern. In California, loggerhead shrike breed mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs or trees (also use fences or power lines) for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement (Shuford et al. 2008). They also need impaling sites for prey manipulation or storage, which can include sharp, thorny, or multi-stemmed plants and barbed wire fences (Yosef 1996, Pruitt 2000). The large shrubs and trees in and adjacent to the Study Area may provide suitable breeding habitat for this species.

San Francisco Common Yellowthroat

This SSC species is also known as the saltmarsh common yellowthroat. For the San Francisco Bay area as a whole, about 60% of yellowthroats occupy brackish marsh, 20% riparian woodland/swamp, 10% freshwater marsh, 5% salt marsh, and 5% upland (Hobson et al. 1986, Shuford 1993, Terrill 2000). The riparian trees in and adjacent to the Study Area may provide suitable breeding habitat for this species.

Yellow Warbler

The yellow warbler is listed by CDFW as a SSC and by the USFWS as a Bird of Conservation Concern. This species occurs principally as a migrant and summer resident from late March through early October and breeds from April to late July (Dunn and Garrett 1997). Throughout, they are found in willows (*Salix* spp.) and cottonwoods (*Populus* spp.), and in California they are found in numerous other species of riparian shrubs or trees, varying by biogeographic region (Shuford et al. 2008). The riparian trees in and adjacent to the Study Area may provide suitable breeding habitat for this species.

Bryant's Savannah Sparrow

The savannah sparrow is a CDFW SSC and a California endemic restricted to a narrow coastal strip from Humboldt Bay south to the Morro Bay area (AOU 1957); its center of abundance appears to be the San Francisco Bay Area. This sparrow occupies low tidally influenced habitats, adjacent ruderal areas, moist grasslands within and just above the fog belt, and, infrequently, drier grasslands. The grassland within and adjacent to the Study Area may provide suitable breeding habitat for this species.

Grasshopper Sparrow

The grasshopper sparrow is listed by CDFW as a SSC. It occurs in California primarily as a summer resident from March to September (Garrett and Dunn 1981, McCaskie et al. 1979). In general, grasshopper sparrows in California prefer short to middle-height, moderately open grasslands with scattered shrubs (Shuford et al. 2008). Grasshopper sparrows build nests domed with grasses and with a side entrance, typically well concealed in depressions at the base of grass clumps with the rim approximately level to the ground (Vickery 1996). The grassland within and adjacent to the Study Area may provide suitable breeding habitat for this species.

Pallid Bat

Pallid bat is a CDFW SSC. This large pale bat establishes maternity roosts in crevices in rocky outcrops and cliffs, caves, mines, hollowed trees, large tree cavities, and vacant buildings (Sherwin 2005). The mature trees in the Study Area may provide suitable roost habitat for this species.

Western Red Bat

The western red bat is a CDFW Species of Special Concern and a Western Bat Working Group (WBWG) High Priority species. The western red bat is typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. This bat may also occasionally use caves. Arousal from hibernation on warm days to feed has been reported, as has periodic foraging during the winter in the San Francisco Bay area (WBWG 2019). The trees and shrubs in the Study Area may provide suitable roost sites.

Hoary Bat

The hoary bat is a WBWG Medium Priority Species. This bat species is the most widespread North American bat and may be found at any location in California, although distribution is patchy in the southeastern deserts (Zeiner et al. 1988-1990). The hoary bat generally roosts in dense foliage of medium to large trees with preferred sites hidden from above, with few branches below, and that have ground cover of low reflectivity (Zeiner et al. 1988-1990). The medium to large trees in and adjacent to the Study Area may provide suitable roost habitat for this species.

Long-eared Myotis

The long-eared myotis is a WBWG Medium Priority Species. This bat species has been found in nearly all brush, woodland, and forest habitats, from sea level to at least 2700 m (9000 ft), but

coniferous woodlands and forests seem to be preferred. It roosts in buildings, crevices, spaces under bark, and snags. Caves are used primarily as night roosts. The long-eared myotis roosts singly, or is found in fairly small groups. The medium to large trees in and adjacent to the Study Area may provide suitable roost habitat for this species.

Long-legged Myotis

The long-eared myotis is a WBWG High Priority Species. This bat roosts in rock crevices, buildings, under tree bark, in snags, mines, and caves. Separate day and night roosts may be used. Trees probably are the most important day roosts. Caves and mines are used only as night roosts. The medium to large trees in and adjacent to the Study Area may provide suitable roost habitat for this species.

San Francisco Dusky-footed Woodrat

The San Francisco dusky-footed woodrat is a CDFW Species of Special Concern. Woodrats often occupy habitats with both woodland and scrub components that provide cover and food sources, such as live oak, coffeeberry, blackberry, gooseberry, poison oak, and honeysuckle (Linsdale and Tevis 1951). Nests (middens) are typically over three feet in diameter and are constructed out of piled sticks, leaves and grasses. No middens were observed in the Study Area during the site visit, however, this species has the potential to occur in the shrubs and trees within and adjacent to the Study Area.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The following section describes potential project impacts to biological resources and recommends mitigation measures to avoid and reduce these potential impacts.

CEQA Significance

The following threshold criteria, as defined within the *CEQA Guidelines*, Appendix G – Initial Study Checklist, were used to evaluate potential environmental impacts of the proposed project. Based on these criteria, a proposed project would have a significant impact on biological resources if it would:

a) *Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*

b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.*

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

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*

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

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

The proposed project has the potential to impact special-status plant and wildlife species, jurisdictional seasonal wetlands and non-wetland waters, nesting birds, and significant trees. The proposed project also has the potential to conflict with several local ordinances that protect biological resources, such as the San Mateo County General Plan and LCP. Implementation of the avoidance and mitigation measures described below will reduce these potential impacts to less than significant.

Jurisdictional Wetlands and Non-Wetland Waters

Potential jurisdictional features in the Study Area include two rush seasonal wetlands, three intermittent stream channels, arroyo willow thickets/coastal brambles, and arroyo willow thickets. The intermittent stream channels along Burnham Creek and the channel northwest of Burnham Creek support instream wetlands. The westernmost channel in the Study Area also potentially supports a jurisdictional instream seasonal wetland but needs to be evaluated in a formal delineation.

The project's preliminary Master Plan proposes to relocate the two intermittent stream channels west of Burnham Creek that drain to the Pacific Ocean (Kikuchi + Kankel Design Group 2020). This activity will likely require permits from the CCC, USACE, CDFW, and RWQCB due to impacts to jurisdictional instream wetlands and non-wetland other waters (which are stream channels that are non-vegetated channels or support upland vegetation). The current relocation of the channel that supports arroyo willow thickets and instream wetlands could potentially require removing arroyo willows or other riparian vegetation, filling a portion of the channel, or changing the hydrology of the channel and reduce the instream wetlands present and the water required to continue to support willows.

The project's preliminary Master Plan also shows soil mounds and native plantings throughout the site that could directly or indirectly impact the rush wetland and other potential seasonal wetlands in ruderal/non-native grassland habitats in the Study Area from filling or changes in hydrology. If the hydrology adjacent to the rush wetland is altered, this wetland might not receive sufficient water drainage to support wetland vegetation.

Potential project impacts to jurisdictional features that are not proposed to be impacted can be avoided by prohibiting project activities within defined buffer zones as specified in the County LCP:

- Establish a 30-foot buffer zone from the edge of the arroyo willow thickets,
- Establish a 30-foot buffer from the center line of the reaches of the intermittent stream channels that lack riparian vegetation, and
- Establish a 100 foot buffer around the two rush seasonal wetlands, and any other seasonal wetlands identified during the delineation.

These buffers are shown in Figure 3 and should be established to the extent that is feasible prior to construction activities. The reaches of the intermittent channels without riparian vegetation but that have instream wetlands do not meet the criteria for a wetland as defined in the LCP because they do not support the species described as occurring in wetlands or do not support a cover of 50 percent of those species, thus the centerline of the channel will be the starting location for the 30 foot buffer.

National Pollutant Discharge Elimination System (NPDES) permits that are typically required for development projects require a number of mitigation measures to protect water quality. These measures, as well as other measures, should be implemented to protect the potential jurisdictional stream channels, arroyo willow thickets, coastal brambles, and seasonal wetlands in the Study Area. If straw wattles are to be used as a Best Management Practice, wattles with no plastic filament (such as burlap or bio wattles) should be used to prevent entrapment of sensitive herpetofauna.

The following measures are recommended to prevent and reduce potential impacts to the stream channels, arroyo willow thickets, coastal brambles, rush wetlands, and other potential seasonal wetlands:

- A formal wetland delineation should be conducted to identify jurisdictional features present in the Study Area. The delineation should meet the USACE protocols described in the USACE Wetland Delineation Manual (Environmental Laboratory 1987) and the USACE Western Mountains, Valley, and Coast Regional Supplement (USACE 2010). In addition, the delineation should be conducted according to the CCC requirements for delineating wetlands under the one-parameter approach. The delineation should ideally be

conducted when indicators of the three parameters (hydrology, hydric soils, and hydrophytic vegetation) are most evident. This might require two separate site visits to investigate hydrology in the winter and identify plant species in the spring to summer. Seasonal wetlands in the Study Area might also be problem areas that make it challenging to identify indicators during the drier seasons or due to historical disturbances.

- Based on the results of the delineation, the project can be redesigned to avoid filling or altering rush wetlands, arroyo willow thickets, coastal brambles, and instream seasonal wetlands. These natural features can be incorporated into the design and enhanced. Both of the intermittent stream channels west of Burnham Creek probably meandered more prior to being culverted and might have historically supported more arroyo willows, depending on the site hydrology. Arroyo willow thickets along the coastline provide excellent wildlife habitat and arroyo willows or other native riparian vegetation, such as California blackberry, could be planted along these channels if sufficient water is available to support arroyo willows after re-grading these areas. Alternatively, the channels could be revegetated to support instream seasonal wetlands or seasonal wetlands adjacent to the channel. Native wetland species that occur in the Study Area include: horsetail, rush, Pacific silverweed, mugwort, punctate smartweed, and Pacific aster. Nearby restored or undisturbed sites such as Half Moon Bay State Park can provide design reference wetlands and a source for local native plants for propagating. The rush wetland in the northern portion of the site could also be enhanced by removing ruderal non-natives and planted with hydrophytic plants as well.

- Prior to the commencement of project activities, a silt fence and an orange temporary Environmentally Sensitive Area (ESA) fence will be installed around all arroyo willow thickets, coastal brambles, seasonal wetlands, and intermittent stream channels without arroyo willow thickets in the Study Area, as well as other jurisdictional features identified in the wetland delineation. The fence will be installed 30 feet from the edge of the riparian vegetation and from the centerline of intermittent channels without arroyo willow thickets or riparian vegetation as indicated on Figure 3. A 100-foot buffer zone should also be installed around any potential seasonal wetlands. All personnel and equipment shall be prohibited from entering this ESA.

- The staging area should be located outside the buffer zones of all jurisdictional features. Vehicle parking and equipment storage and refueling should be limited to the designated staging area to prevent accidental spills and discharges from entering the channel.

- Removal of riparian and seasonal wetland vegetation should be minimized to the extent that is feasible during construction activities. In addition, the removal of any vegetation

in and adjacent to the buffer zones should be minimized to prevent erosion and potential water quality impacts.

- If invasive species removed during construction activities, the debris should be hauled off site to prevent the spread of these species. The County LCP requires public agencies to prevent the spread of invasive plants and use native plants and drought tolerant non-invasive plant species for landscaping when possible.

- Exclude grasses, weeds in the Study Area that are ranked by the California Invasive Plant Council (Cal-IPC 2017) as highly invasive: pampas grass, Himalayan blackberry, Cape ivy, English ivy, and ice plant (or it is possibly moderately invasive depending on the species.).

- Exclude grasses, weeds in the Study Area that are ranked by the California Invasive Plant Council (Cal-IPC 2017) as moderately invasive: poison hemlock, fennel, shortpod mustard, Bermuda buttercup, and ice plant.

Heritage Trees and Significant Trees

The project could potentially require the removal of significant trees, i.e. trees that are 12.1 inches in dbh or larger, in the Study Area. Project impacts are not expected to occur in the riparian habitats along Burnham Creek. Large arroyo willow, eucalyptus, and plume acacia along Burnham Creek are therefore not expected to be impacted by the proposed project. If a 30-foot riparian buffer around the arroyo willow thickets is implemented during project construction, this will also protect existing significant trees along Burnham Creek. If the relocation of the central intermittent stream channel requires the removal of arroyo willows along that channel or if the hydrology is altered, some of these willows might be large enough to be considered significant trees. There is also a plume acacia in the northwestern corner of the Study Area with multiple stems that could be a significant tree. The proposed Master Plan does not show this tree.

A botanist or arborist should conduct a tree survey in the Study Area to determine the species and location of significant trees. Tree permits should be obtained for the removal or major pruning of significant trees and the appropriate replacement species should be replanted as determined by the tree permit conditions. Tree protection plans should also be developed for any significant trees that will remain onsite but that are in the vicinity of construction activities and that are outside established wetland buffers.

Special-status Plant Species and Sensitive Communities

Special-status plants are potentially present in all habitats in the Study Area and could be impacted by the proposed project. Thirty-five special-status plants have a moderate potential to occur in the Study Area based an evaluation of special-status plants that occur in the vicinity of the Study Area. The project proposes to regrade ruderal/non-native grasslands and the

barren/ruderal area and install bathroom, plantings, trails, and other features. To avoid impacting special-status plants and sensitive vegetation communities, surveys for special-status plant and sensitive communities that are in accordance with the protocols established by CDFW (2018c), CNPS (2001), and USFWS (1996) are recommended prior to construction activities. Protocol-level surveys should be conducted throughout at least one full season at times when the 35 target special-status plants are identifiable during their blooming periods. Generally, four to five surveys will be conducted from late winter to fall depending on the blooming periods of target plants. Prior to and during the special-status plant surveys, activities that will disturb vegetation, such as mowing fire strips or spraying herbicides, should be delayed until after the surveys.

If special-status plants are found in the Study Area, they should be mapped with a Global Positioning System with sub-meter accuracy and Impacts to special-status plants should be avoided to the extent that is feasible with a project redesign. Per the County LCP, development should be prevented within 50 feet of rare plant populations. An ESA fence should be established at least 50 feet from the population prior to construction. According to the County LCP, if avoidance is not feasible, then development can be permitted if: 1) the site or a significant portion thereof is returned to a natural state to allow for the reestablishment of the plant, or 2) a new site is made available for the plant to inhabit (San Mateo County 2013). In this case, a detailed long-term mitigation and monitoring plan should be developed by a qualified biologist/botanist that specifies monitoring performance criteria to reduce short term and long-term impacts to the population.

The mitigation measure described above under the *Jurisdictional Wetland and Other Waters* section will also protect and reduce potential impacts to sensitive vegetation communities and special-status plant populations present in the Study Area:

- If invasive species removed during construction activities, the debris should be hauled off site to prevent the spread of these species. The County LCP requires public agencies to prevent the spread of invasive plants and use native plants and drought tolerant non-invasive plant species for landscaping when possible.

- Exclude grasses, weeds in the Study Area that are ranked by the California Invasive Plant Council (Cal-IPC 2017) as highly invasive: pampas grass, Himalayan blackberry, Cape ivy, English ivy, and ice plant.

- Exclude grasses, weeds in the Study Area that are ranked by the California Invasive Plant Council (Cal-IPC 2017) as moderately invasive: poison hemlock, fennel, shortpod mustard, Bermuda buttercup, and ice plant.

Special-status Wildlife Species

The proposed project has the potential to impact seventeen special-status wildlife species. The following avoidance and mitigation measures are recommended to reduce potential impacts to less than significant.

Bumble Bees

The obscure bumblebee favors the elect food plant genera *Baccharis, Cirsium, Lupinus, Lotus, Grindelia* and *Phacelia* and the western bumblebee favors *Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus* and *Eriogonum*. It is recommended that landscape designers of Burnham Community Park incorporate some of these species in their planting palette.

Special-status Herpetofauna (California Giant Salamander, CRLF and SFGS)

CRLF, California giant salamander and SFGS have potential to be present in the Study Area. It is recommended that a wildlife exclusion fence be erected around the limit of ground disturbance prior to the initiation of construction activities to prevent these species from entering an active work area. The fence should be at least 24 inches high and should be entrenched three to six inches into the ground. The integrity of the fence must be maintained for the extent of the project. A Best Management Practice (BMP) silt fence of the appropriate qualities can be used in tandem as a wildlife exclusion fence. In addition, monofilament netting, which is commonly used in straw wattle and other erosion preventatives, should not be used in or adjacent to the Study Area in order to prevent possible entrapment of both common and special status wildlife species. It is recommended that a qualified biologist be present to perform a preconstruction survey, monitor fence installation and monitor initial ground disturbance and vegetation removal.

Birds

The stands of trees and shrubs within and adjacent to the Study Area and the vegetation within and surrounding the irrigation pond may provide suitable habitat for special status and common migratory birds. Nearly all nesting birds are protected under CDFW Code and the federal Migratory Bird Treaty Act. Generally, the removal of trees should take place between September 1 and January 31, outside of the avian breeding season. If construction activity begins between February 1 and August 31, the nesting season for raptors and most other birds, a qualified biologist should survey the Study Area for the presence of active bird nests prior to the commencement of vegetation removal or disturbing activities. If active nests are found, consultation and coordination with the CDFW should be sought. To avoid the disturbance of active nests, buffers may need to be established at the discretion of the biologist, with certain activities restricted or forbidden within the buffer. Disturbing active nests must be avoided until young birds have fledged.

Mammals

Some common and special status bat species (such as pallid bat, western red bat, hoary bat, long-legged myotis and long-eared myotis) may use the large trees as roost habitat from early spring (late March/early April and May) through the end of summer (August). If tree removal is planned in order to facilitate the project, a qualified biologist should survey the Study Area for the presence of bat maternity or hibernation roosts prior to tree removal. Disturbance of maternity roosts must be avoided until young bats are mature enough to leave on their own. Consultation with the CDFW would be required before relocation of bats could occur. Alternatively, trees and structures could be removed from September 1st through October 31st, after the maternity roost season but before winter hibernation (which may begin as early as November).

No San Francisco dusky-footed woodrat middens were observed during the site visit, however, the shrub and tree litter layer may provide suitable nesting habitat for this species. This species may also nest in low lying tree limbs, tree hollows and debris. A preconstruction survey for San Francisco dusky-footed woodrat middens should be conducted by a qualified biologist prior to vegetation removal. Middens identified in the Study Area should be flagged as a sensitive resource and avoided during construction, if feasible. Should avoidance of woodrat middens not be feasible, such as if a midden is observed within the project footprint, the middens should be dismantled by hand under the supervision of a qualified biologist. If young are encountered during dismantling of the nest, the material should be replaced and the biologist should return within approximately 24 hours to see if the young have been relocated. If the young have not been relocated, the biologist will make an age determination and return when it is likely that the young have been weaned to determine occupancy. A no-disturbance buffer should be established around the active midden at the discretion of the biologist. The buffer should remain in place until young have matured enough to disperse on their own.

MITIGATION MEASURE SUMMARY

For ease a reference, a condensed, itemized summary of mitigation measures is provided below. Details regarding each measure should be referenced in the above section.

1. A formal wetland delineation should be conducted and the proposed project design should be evaluated to reduce potential impacts to wetlands and waters and incorporate these features into the design.
2. A silt fence and an orange temporary Environmentally Sensitive Area (ESA) fence should be installed around all arroyo willow thickets, coastal brambles, and seasonal wetlands in the Study Area and other jurisdictional features identified in the wetland delineation.
3. Project activities should be prohibited within a 30-foot buffer zone from the edge of the arroyo willow thickets/coastal brambles and a 100-foot buffer from potential seasonal wetlands.

4. The staging area should be located outside the buffer zones of all jurisdictional features.
5. Removal of all vegetation should be minimized to the extent that is feasible. The removal of vegetation in and adjacent to the buffer zones should be minimized to prevent potential water quality impacts.
6. If moderately to highly invasive plant species are removed during construction activities, the debris should be hauled off site to prevent the spread of these species.
7. A tree survey should be conducted to identify significant trees that will be removed or remain in place, and a tree preservation plan should be developed. Tree permits should be obtained for the removal or major pruning of significant trees and the appropriate replacement species should be replanted as determined by the tree permit conditions.
8. Protocol level surveys should be conducted during at least one full season for special-status plants and sensitive vegetation communities. If special-status plants are found in the Study Area, they should be avoided and a 50-foot buffer should be established around them prior to construction. If it is not feasible to avoid these plants, a long-term mitigation and monitoring plan that is in accordance with the County LCP should be developed to compensate for impacts.
9. A wildlife exclusion fence should be erected around the limit of ground disturbance prior to the initiation of construction activities.
10. The removal of trees should take place between September 1 and January 31, outside of the avian breeding season or a qualified biologist should survey the Study Area for the presence of active bird nests during the breeding season.
11. A qualified biologist should survey the Study Area for the presence of bat maternity or hibernation roosts prior to structure removal. Alternatively, trees could be removed from September 1st through October 31st, after the maternity roost season but before winter hibernation (which may begin as early as November).
12. A preconstruction survey for sensitive herpetofauna and San Francisco dusky-footed woodrat middens should be conducted by a qualified biologist prior to the start of construction. A biologist is also recommended to monitor fence installation, initial ground disturbance and vegetation removal.

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Personal Communications

Personal Communication between BioMaAS biologist, Bill Stagnaro, and Kikuchi + Kankel Design Group Associate, Tom Conroy, via email on November 18, 2020.

APPENDIX A

Plant Species Observed in the Study Area

Plant Species Observed in the Study Area (October 30, 2020)

Family	Scientific Name	Common Name	Native	Cal-IPC Rank[2]
FABACEAE	*Albizia lophantha*	plume acacia		Watch
ASTERACEAE	*Artemisia douglasiana*	mugwort	yes	
POACEAE	*Avena* sp.	wild oat		Moderate
ASTERACEAE	*Baccharis pilularis* ssp. *pilularis*	coyote brush	yes	
BRASSICAEAE	*Brassica rapa*	black mustard		Limited
BORAGINACEAE	*Borago officinalis*	common borage		
POACEAE	*Bromus diandrus*	ripgut brome		Moderate
AIZOACEAE	*Carpobrotus* sp.	ice plant		Moderate or High
RHAMNACEAE	*Ceanothus thyrsiflorus*[1]	blueblossom	yes	
APIACEAE	*Conium maculatum*	poison hemlock		Moderate
ROSACEAE	*Contoneaster* sp.	contoneaster		Possibly Moderate
CONVOLVULACEAE	*Convolvulus arvensis*	field bindweed		
POACEAE	*Cortaderia* sp.	pampas grass		High
ASTERACEAE	*Delairea odorata*	Cape ivy		High
BORAGINACEAE	*Echium candicans*	pride of Madeira		Limited
POACEAE	*Ehrharta erecta*	panic veldtgrass		Moderate
ONAGRACEAE	*Epilobium brachycarpum*	annual fireweed	yes	
EQUISETACEAE	*Equisetum* sp.	horsetail	yes	
ASTERACEAE	*Erigeron* sp.	horseweed	maybe	
MYRTACEAE	*Eucalyptus globulus*	blue gum		Limited
POACEAE	*Festuca* arundinacea	reed fescue		Moderate
POACEAE	*Festuca perennis*	Italian rye grass		Moderate
APIACEAE	*Foeniculum vulgare*	fennel		Moderate

Family	Scientific Name	Common Name	Native	Cal-IPC Rank[2]
ROSACEAE	*Fragaria chiloensis*	beach strawberry	yes	
RHAMNACEAE	*Frangula californica*[1]	California coffeeberry	yes	
PAPAVERACEAE	*Fumaria parviflora*	fine leaved fumitory		
RUBIACEAE	*Galium aparine*	bedstraw	yes	
ASTERACEAE	*Gazania* sp.	gazania		
GERANIACEAE	*Geranium dissectum*	cutleaf geranium		Limited
ARALIACEAE	*Hedera helix*	English ivy		High
ASTERACEAE	*Helminthotheca echioides*	bristly ox tongue		Limited
BRASSICAEAE	*Hirschfeldia incana*	shortpod mustard		Moderate
POACEAE	*Holcus lanatus*	velvet grass		Moderate
JUNCACEAE	*Juncus* sp.	rush	yes	
ASTERACEAE	*Lactuca serriola*	prickly lettuce		
BRASSICAEAE	*Lobularia maritima*	sweet alyssum		Limited
FABACEAE	*Lotus corniculatus*	bird's foot trefoil		
MYRSINACEAE	*Lysimachia arvensis*	scarlet pimpernel		
MALVACEAE	*Malva* sp.	mallow		
FABACEAE	*Medicago polymorpha*	burclover		Limited
EUPHORBIACEAE	*Mercurialis annua*	annual mercury		
BRASSICACEAE	*Nasturtium officinale*	water cress	yes	
ONAGRACEAE	*Oenothera elata* ssp. *hookeri*	Hooker's evening-primrose	yes	
OXALIDACEAE	*Oxalis pes-caprae*	Bermuda buttercup		Moderate
GERANIACEAE	*Pelargonium* sp.	pelargonium		
POLYGONACEAE	*Persicaria punctata*	dotted smartweed	yes	
PLANTAGINACEAE	*Plantago coronopus*	cut-leaf plantain		

Family	Scientific Name	Common Name	Native	Cal-IPC Rank[2]
PLANTAGINACEAE	*Plantago lanceolata*	English plantain		
POACEAE	*Poa annua*	annual bluegrass		
POACEAE	*Polypogon monspeliensis*	rabbit's foot grass		Limited
ROSACEAE	*Potentilla anserina* ssp. *pacifica*	Pacific silverweed	yes	
ASTERACEAE	*Pseudognaphalium luteoalbum*	common cudweed		
BRASSICACEAE	*Raphanus sativus*	wild radish		Limited
ROSACEAE	*Rubus armeniacus*	Himalayan blackberry		High
ROSACEAE	*Rubus ursinus*	California blackberry	yes	
POLYGONACEAE	*Rumex crispus*	curly dock		Limited
SALICACEAE	*Salix lasiolepis*	arroyo willow	yes	
CARRIFOLIACEAE	*Scabiosa* sp.	pincushion flower		
ASTERACEAE	*Sonchus* sp.	sow thistle		
ASTERACEAE	*Symphyotrichum chilense*	Pacific aster	yes	
TROPAEOLACEAE	*Tropaeolum majus*	garden nasturium		
FABACEAE	*Vicia sativa*	spring vetch		

Notes:

Nomenclature based on: Jepson Flora Project (eds.). 2020. The Jepson eFlora (online). Available at: http://ucjeps.berkeley.edu/eflora/. Accessed November 2020.

[1]This shrub was probably planted.

[2]California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory Database. Available at: http://www.cal-ipc.org/ip/inventory/index.php

Cal-IPC Ranks:
High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are

conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Alert: An Alert is listed on species with High or Moderate impacts that have limited distribution in California but may have the potential to spread much further.

Watch: These species have been assessed as posing a high risk of becoming invasive in the future in California.

APPENDIX B

Photographs

Photograph 1: Ruderal/non-native grassland habitat (foreground) in the northwestern half of the Study Area. Vehicle tracks are evident where the site was apparently mowed. Obispo Road is in the upper left. Looking southeast from the northwestern boundary.

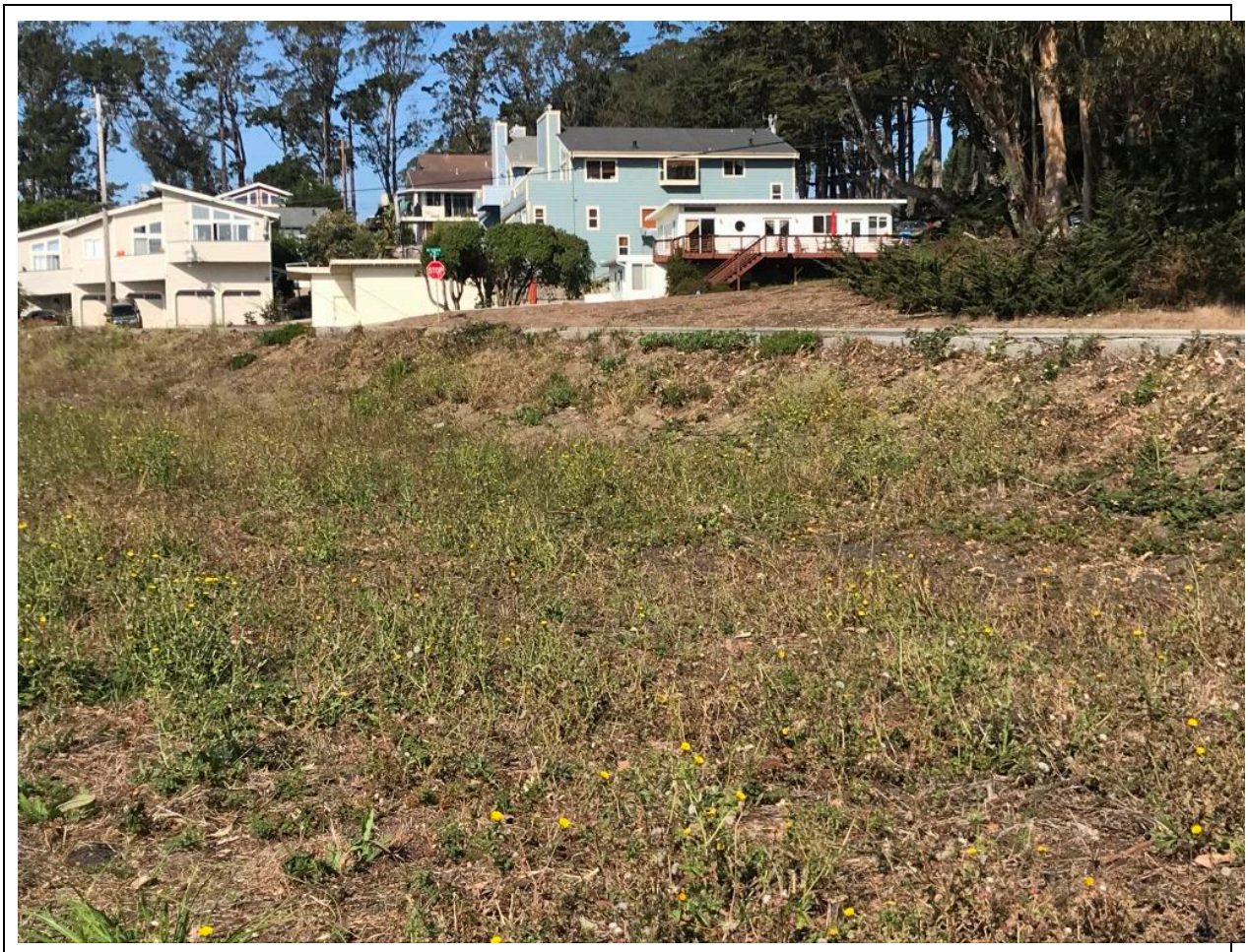
Photograph 2: Ruderal/non-native grassland habitat (foreground) and arroyo willow thickets/coastal brambles (California blackberry) (background) in the southern Study Area along Burnham Creek. Looking northwest from near the southern boundary.

Photograph 3: Arroyo willow thickets/coastal bramble (California blackberry) (background), blue gum (background, upper right corner), and barren/ruderal Surfer's Beach parking lot (foreground). Looking southeast from parking lot.

Photograph 4: Arroyo willow thickets/coastal brambles (California blackberry) along the Burnham Creek channel near Obispo Road. Blue gum tree (background). Looking southeast from near the culverts at Obispo Road.

Photograph 5: Plume acacia (background, right), arroyo willow thickets/coastal brambles (California blackberry) (background, left), and rush seasonal wetland (foreground) adjacent to the Burnham Creek riparian corridor. Looking north from rush wetland edge.

Photograph 6: Arroyo willow thickets/coastal brambles (California blackberry) (foreground, left. Barren/ruderal parking lot (background). Arroyo willow thicket along intermittent stream IS-2 (background). Looking west from Obispo Road.



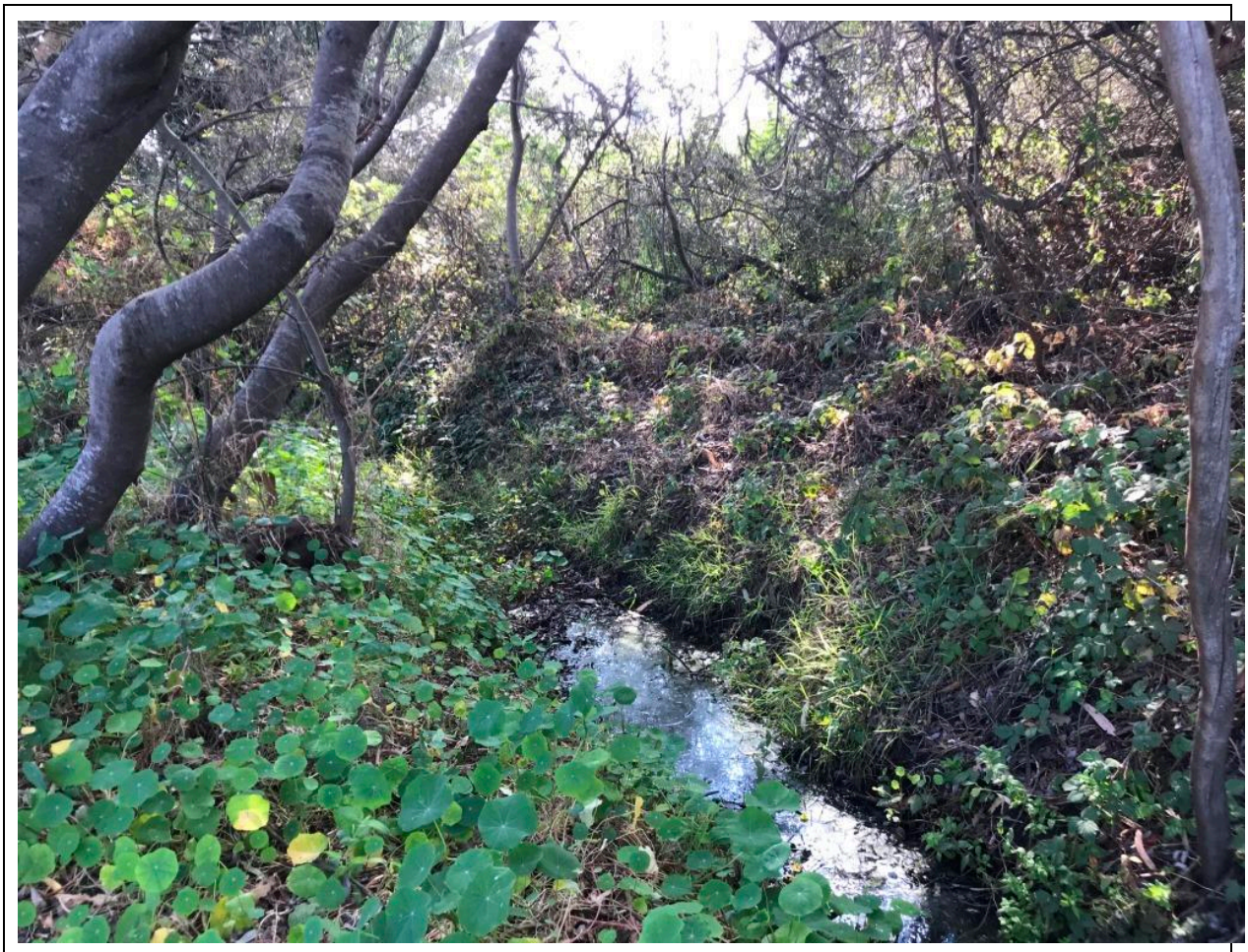
Photograph 7: Rush wetland adjacent to Obispo Road. Bristly ox tongue is a dominant plant species in this wetland and its yellow flowers are evident here. Looking north from wetland edge.

Photograph 8: Intermittent stream IS-1 and ruderal/non-native grassland. Looking northeast from southernmost end of channel.

Photograph 9: Arroyo willow thickets along intermittent stream IS-2 and ruderal/non-native grassland understory (foreground). Looking southwest from Obispo Road.

Photograph 10: Intermittent stream IS-2 and culverts running from under Obispo Road. Looking southwest from under Obispo Road. Looking north from the bank.

Photograph 11: Intermittent stream IS-3 (Burnham Creek) at culverts running from under Obispo Road. Looking northwest from the bank.



Photograph 12: Isolate pool on intermittent stream IS-3 (Burnham Creek) near the culvert. Looking southwest from the bank.

APPENDIX C

Special-status Plant and Lichen Species Table

(San Mateo County)

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Agrostis blasdalei	Blasdale's bent grass	1B.2	--	Perennial rhizomatous herb. Coastal bluff scrub, coastal dunes, coastal prairie. 0-150 m. May-July.	**Moderate.** Suitable habitat is potentially present in coastal brambles, ruderal, and ruderal/non-native grasslands in the Study Area.
Allium peninsulare var. *franciscanum*	Franciscan onion	1B.2	--	Perennial herb. Cismontane woodland, and valley and foothill grassland. Clay soils; often on serpentine. Dry hillsides. 52-305 m. (Apr.) May - Jun.	**Moderate.** Suitable habitat is potentially present in barren/ruderal and ruderal/non-native grasslands in the Study Area.
Amsinckia lunaris	bent-flowered fiddleneck	1B.2	--	Annual herb. Coastal bluff scrub, cismontane woodland, and valley and foothill grassland. 3-500 m. March-Jun.	**Moderate.** Suitable habitat is potentially present in barren/ruderal and ruderal/non-native grasslands in the Study Area.
Arabis blepharophylla	coast rock cress	4.3	--	Perennial herb. Rocky areas in broadleafed upland forest, coastal bluff scrub, coastal prairie, and coastal scrub. 3 - 1100 m. February – May.	**Moderate.** Suitable habitat is potentially present in barren/ruderal and ruderal/non-native grasslands in the Study Area.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Arctostaphylos montaraensis	Montara manzanita	1B.2	--	Evergreen shrub. Maritime chaparral and coastal scrub. Slopes and ridges. 80-500 m. Jan. - Mar.	**Low.** No suitable chaparral habitat present and this species was not observed in ruderal/non-native grasslands in the Study Area.
Astragalus nuttallii var. *nuttallii*	ocean bluff milk-vetch	4.2	--	Coastal bluff scrub and coastal dunes. 3-120 m. Jan.-Nov.	**Moderate.** Suitable habitat is potentially present in barren/ruderal and ruderal/non-native grasslands in the Study Area.
Arctostaphylos regismontana	Kings Mountain manzanita	1B.2	--	Evergreen shrub. Broadleaved upland forest, chaparral, and North Coast coniferous forest. Granitic or sandstone outcrops. 305-730 m. Dec. - Apr.	**Low.** No suitable habitat present.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B.2	--	Perennial herb. Mesic sites in coastal dunes, along streams, or coastal salt marshes. 0-30 m. (Apr.) June - Oct.	**Moderate.** Suitable habitat is potentially present in coastal brambles, arroyo willow thickets, barren/ruderal, ruderal/non-native grasslands, intermittent streams, and seasonal wetlands.
Castilleja ambigua ssp. *ambigua*	johnny-nip	4.2	--	Annual herb (hemiparasitic). Coastal bluff scrub, coastal prairie, coastal scrub, marshes, valley and foothill grassland, and vernal pools margins. 0-435 m. March-Aug.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, ruderal/non-native grasslands, and seasonal wetlands.
Centromadia parryi ssp. *parryi*	pappose tarplant	1B.2	--	Annual herb. Often in alkaline soils in chaparral, coastal prairie, meadows and seeps, coastal salt marshes, and valley and foothill grassland (vernally mesic). 0-420 m. May-Nov.	**Moderate.** Suitable habitat is potentially present in barren/ruderal, ruderal/non-native grasslands, and seasonal wetlands.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Cirsium andrewsii	Franciscan thistle	1B.2	--	Perennial herb. Mesic areas that are sometimes serpentinite in broadleaved upland forest, coastal bluff scrub, coastal prairie, and coastal scrub. 0-150 m. Mar. – July.	**Moderate.** Suitable habitat is potentially present in coastal brambles, arroyo willow thickets, barren/ruderal, ruderal/non-native grasslands, and seasonal wetlands.
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	1B.2	--	Annual herb. Coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub. 3-215 m. Apr. – July (Aug.)	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.
Collinsia multicolor	San Francisco collinsia	1B.2	--	Annual herb. Closed-cone coniferous forest, coastal scrub, and riparian forest. Sometimes serpentinite. 30-250 m. (Feb.) Mar. - May.	**Moderate.** Suitable habitat is potentially present in coastal brambles, arroyo willow thickets, barren/ruderal, ruderal/non-native grasslands.
Cypripedium fasciculatum	clustered lady's-slipper	4.2	--	Perennial rhizomatous herb. Usually serpentinite seeps and streambanks in lower montane coniferous forest and North Coast	**Low.** No suitable habitat present.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
				coniferous forest. 100 - 2435 m. Mar. – Aug.	
Dirca occidentalis	western leatherwood	1B.2	--	Deciduous shrub. Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 25-425 m. Jan. - Mar. (Apr.)	**Moderate:** Suitable habitat is potentially present in arroyo willow thickets and coastal brambles. The Study Area is generally lower in elevation (5-11 meters) than this species is known to occur.
Elymus californicus	California bottle-brush grass	4.3	--	Perennial herb. Broadleafed upland forest, cismontane woodland, North Coast coniferous forest, and riparian woodland. 15-470 m. May-Aug (Nov).	**Moderate.** Suitable habitat is potentially present in arroyo willow thickets, barren/ruderal, and ruderal/non-native grasslands.
Eriophyllum latilobum	San Mateo woolly sunflower	1B.1	FE/SE	Perennial herb. Cismontane woodland (often serpentinite roadcuts), coastal scrub, and lower montane coniferous forest. 45-330 m. May-June.	**Moderate.** Suitable habitat is potentially present in coastal brambles, ruderal, and ruderal/non-native grasslands in the Study Area. The Study Area is

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
					generally lower in elevation than known occurrences of this species.
Erysimum franciscanum	San Francisco wallflower	4.2	--	Perennial herb. Chaparral, coastal dunes, coastal scrub, and valley and foothill grassland. Often serpentinite or granitic, sometimes roadsides. 0 - 550 m. March - June.	**Moderate.** Suitable habitat is potentially present in coastal brambles, arroyo willow thickets, barren/ruderal, and ruderal/non-native grasslands.
Fragaria fresca [*Fragaria californica*]	California strawberry	--*	--	Perennial herb. Closed-cone pine forest, chaparral, mixed evergreen forest, yellow pine forest, and Douglas-fir forest. Generally in partial shade. 15 – 2000 m. Jan. – July.	**Low.** No suitable habitat present.
Fritillaria biflora var. *ineziana*	Hillsborough chocolate lily	1B.1	--	Perennial bulbiferous herb. Serpentinite soil in cismontane woodland and valley and foothill grassland. (No elevation data is reported.) Mar. - Apr.	**Low.** No suitable habitat present.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Fritillaria lanceolata var. *tristulis*	Marin checker lily	1B.1	--	Perennial bulbiferous herb. Coastal bluff scrub, coastal prairie, and coastal scrub. 15-150 m. Feb. - May.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.
Fritillaria liliacea	fragrant fritillary	1B.2	--	Perennial bulbiferous herb. Coastal scrub, valley and foothill grassland, coastal prairie, and cismontane woodland. Often on serpentine; various soils reported though usually clay, in grassland. 3-410 m. Feb. - Apr.	**Moderate.** Suitable habitat is potentially present in arroyo willow thickets, barren/ruderal, and ruderal/non-native grasslands.
Grindelia hirsutula var. *maritima*	San Francisco gumplant	3.2	--	Perennial herb. Sandy or serpentinite soils in coastal bluff scrub, coastal scrub, and valley and foothill grassland. 15-400 meters. June-Sept.	**Moderate.** Suitable habitat is potentially present in coastal brambles and ruderal/non-native grasslands.
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	1B.2	--	Annual herb. Coastal bluff scrub (sandy), coastal dunes, and coastal prairie. 0-215 m. March-June.	**Moderate.** Suitable habitat is potentially present in barren/ruderal and ruderal/non-native grasslands.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Hesperocyparis macrocarpa [*Cupressus macrocarpa*]	Monterey cypress	1B.2	--	Evergreen tree. Closed-cone coniferous forest. 10-30 m.	**Low.** No suitable habitat present.
Horkelia cuneata var. *sericea*	Kellogg's horkelia	1B.1	--	Perennial herb. Sandy or gravelly openings in closed-cone coniferous forest, coastal scrub, coastal dunes, and chaparral (maritime). 22210-200 m. Apr. - Sept.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.
Horkelia marinensis	Point Reyes horkelia	1B.2	--	Perennial herb. Coastal scrub, coastal dunes, and coastal prairie.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal and ruderal/non-native grasslands.
Hypogymnia schizidiata	island tube lichen	1B.3	--	Foliose lichen. On the bark of wood of hardwoods and conifers in chaparral and closed-cone coniferous forest.	**Low.** No suitable habitat present.
Iris longipetala	coast iris	4.2	--	Perennial rhizomatous herb. Mesic areas in coastal prairie, lower montane coniferous forest, and meadows and seeps. 0-600 m. March – May.	**Moderate.** Suitable habitat is potentially present in seasonal wetlands, barren/ruderal, and

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
					ruderal/non-native grasslands.
Lasthenia californica ssp. *macrantha*	perennial goldfields	1B.2	--	Perennial herb. Coastal bluff scrub, coastal dunes, and coastal scrub. 5-520 m. Jan - Nov.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.
Leptosiphon croceus	coast yellow leptosiphon	1B.1	--/SE	Annual herb. Apr. – June. Coastal bluff scrub and coastal prairie. 10-150 m. Apr. – June.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.
Leptosiphon rosaceus	rose leptosiphon	1B.1	--	Annual herb. Coastal bluff scrub. 0-100 m. Apr. - Jul.	**Low.** No suitable habitat present.
Lessingia arachnoidea	Crystal Springs lessingia	1B.2	--	Annual herb. Serpentinite, often roadsides in cismontane woodland, coastal scrub, and valley and foothill grassland. 60-200 m. July-Oct.	**Moderate.** Suitable habitat is potentially present in ruderal/non-native grassland and barren/ruderal habitats.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Limnanthes douglasii ssp. *orndufii*	Orduffi's meadow foam	1B.1	--	Annual herb. Mesic areas and seasonal wetlands, seeps, and meadows, in agricultural fields. 10-20 m. Nov. – May.	**Moderate.** Suitable habitat is potentially present in seasonal wetlands.
Lupinus arboreus var. *eximus*	San Mateo tree lupine	3.2	--	Perennial evergreen shrub. Chaparral and coastal scrub. 90 - 550 m. April - July.	**Moderate.** Suitable habitat is potentially present in ruderal/non-native grassland and barren/ruderal habitats.
Malacothamnus arcuatus	arcuate bush-mallow	1B.2	--	Evergreen shrub. Chaparral and cismontane woodland. 15-355 m. Apr. – Sept.	**Moderate.** Suitable habitat is potentially present in arroyo willow thickets.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Monolopia gracilens	woodland woollythreads	1B.2	--	Annual herb. Openings in chaparral, valley and foothill grasslands, cismontane woodland, broadleafed upland forests, and North Coast coniferous forest. Often seen on serpentine after burns but may have only weak affinity to serpentine. 100-1200 m. (Feb.) Mar. - Jul.	**Moderate.** Suitable habitat is potentially present in coastal brambles, arroyo willow thickets, barren/ruderal, and ruderal/non-native grasslands.
Pinus radiata	Monterey pine	1B.1	--	Evergreen tree. Cismontane woodland and closed-cone coniferous forest. 25-185 m.	**Low.** No suitable habitat present.
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	**1B.2**	--	Annual herb. Mesic areas in chaparral, coastal scrub, and coastal prairie. 3-160 m. Mar - Jun.	**Moderate.** Suitable habitat is potentially present in seasonal wetlands and intermittent streams.
Polemonium carneum	Oregon polemonium	2B.2	--	Perennial herb. Coastal prairie, coastal scrub, and lower montane coniferous forest. 0-1830 m. Apr. - Sept.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Potentilla hickmanii	Hickman's cinquefoil	1B.1	FE/SE	Perennial herb. Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, and marshes. Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 10-149 m. Apr. - Aug.	**Moderate.** Suitable habitat is potentially present in coastal brambles, arroyo willow thickets, intermittent streams, and seasonal wetlands.
Silene scouleri ssp. *scouleri*	Scouler's catchfly	2B.2	--	Perennial herb. Coastal bluff scrub, coastal prairie, and valley and foothill grassland. 0-600 m. (Mar.- May) June – Aug. (Sept.)	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.
Silene verecunda ssp. *verecunda*	San Francisco campion	1B.2	--	Perennial herb. Sandy soil in coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, and coastal prairie. Sometimes serpentinite. 30-645 m. (Feb.) Mar. - Jun. (Aug.)	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.

APPENDIX C: Special-status Plant and Lichen Species Table					
Scientific Name	**Common Name**	**CRPR**	**Federal/State Status**	**Life form, habitat, and blooming period.**	**Potential for Occurrence in the Study Area**
Triphysaria floribunda	San Francisco owl's-clover	1B.2	--	Annual herb. Coastal prairie, coastal scrub, and valley and foothill grassland. Often serpentinite. 10-160 m. Apr. - Jun.	**Moderate.** Suitable habitat is potentially present in coastal brambles, barren/ruderal, and ruderal/non-native grasslands.

Status Legend

Federal:

FE Listed as endangered under the Federal Endangered Species Act

FT Listed as threatened under the Federal Endangered Species Act

State:

SR Listed as rare under the California Endangered Species Act

SE Listed as endangered under the California Endangered Species Act

ST Listed as threatened under the California Endangered Species Act

California Rare Plant Rank (CRPR):

1A Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

1B Plants Rare, Threatened, or Endangered in California and Elsewhere

2A Plants Presumed Extirpated in California, But Common Elsewhere

2B Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

Threat Ranks:

0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

* Listed in the *County of San Mateo LCP Policies* (San Mateo County 2013) as a sensitive in relation to the strawberry industry.

APPENDIX D

Wildlife Species Observed in the Study Area

Wildlife Species Observed in the Study Area

(In order of appearance – October 22nd, 2020)

Scientific Name	Common Name
Thomomys bottae	Botta's pocket gopher
Melospiza melodia	Song sparrow
Calypte anna	Anna's hummingbird
Poecile rufescens	Chestnut-backed chickadee
Larus occidentalis	Western gull
Corvus brachyrhynchos	American crow
Zenaida macroura	Mourning dove
Falco sparverius	American kestrel
Sturnus vulgaris	European starling
Ardea herodias	Great blue heron
Larus californicus	California gull
Corvus corax	Common raven
Scapanus latimanus	Broad-footed mole

APPENDIX E

Special Status Wildlife Species Table

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Invertebrates				
Euphydryas editha bayensis Bay checkerspot butterfly	FT	--	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. purpurescens* are the secondary host plants.	**Low.** Suitable habitat is not present in the Study Area.
Speyeria callippe callippe Callippe silverspot	FE	--	The Callippe silverspot butterfly is a subspecies of the more common callippe fritallary butterfly (*Speyeria callippe*). The silverspot's hostplant is Johnny jump-up (*Viola pedunculata*).	**Low.** Suitable habitat is not present in the Study Area.
Plebejus icarioides missionensis Mission blue butterfly	FE	--	Inhabits grasslands of the San Francisco peninsula. The mission blue butterfly uses three larval host plants: *Lupinus albifrons*, *L. formosus*, and *L. variicolor*.	**Low.** Suitable habitat is not present in the Study Area.
Callophrys mossii bayensis San Bruno elfin butterfly	FE	--	Occurs in coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain. Elfin colonies are located on steep, north-facing slopes within the fog belt. The San Bruno elfin butterfly's larval host plant is *Sedum spathulifolium*.	**Low.** Suitable habitat is not present in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Danaus plexippus Monarch butterfly	--	Special Consideration under CEQA	Winter roosts sites located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with water and nectar sources nearby.	**Low.** Typical roost trees are typically located more inland or in drainages, protected from onshore ocean breeze.
Grapholita edwardsiana San Francisco tree lupine moth	--	--	The San Francisco tree lupine moth is listed in the San Mateo County LCP. The larval stage is found on the tree lupine (*Lupinus arboreus*).	**Low.** Suitable habitat is not present in the Study Area.
Coelus globosus Globose dune beetle	--	--	The globose dune beetle is listed in the San Mateo County LCP and also has a G1, G2, S1S2 and IUCN:VU listing on the CDFW Special Animals List. This species lives in foredune vegetation.	**None.** Suitable habitat is not present in the Study Area.
Bombus caliginosus Obscure bumble bee	--	--	This species occurs along the Pacific Coast, from southern California to southern British Columbia, with scattered records from the east side of California's Central Valley. Common plants visited by the workers in a sample included ceanothus, thistles, sweet peas, lupines, rhododendrons, Rubus, willows, and clovers. Status: G4? S1S2, IUCN:VU.	**Moderate.** Suitable foraging habitat is available in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Bombus occidentalis Western bumble bee	--	--	Historically broadly distributed in western North America. *Bombus occidentalis* occurs along the Pacific coast and western interior of North America, from Arizona, New Mexico and California, north through the Pacific Northwest and into Alaska. Eastward, the distribution stretches to the northwestern Great Plains and southern Saskatchewan. Status: G2,G3,S1; USFS:S; XERCES:IM	**Moderate.** This species nests underground in cavities or burrows left behind by rodents or other animals. Suitable burrow habitat is present in the Study Area.
Tryonia imitator California brackish water snail	--	--	The California brackish water snail is listed in the San Mateo County LCP and also has a G2, S2 and IUCN:DD listing on the CDFW Special Animals List. This species presumably inhabits brackish waters.	**Low.** Typical brackish water habitat is not present in the Study Area.
Fish				
Eucyclogobius newberryi Tidewater goby	FE	--	Brackish water habitats along the California Coast from San Diego north to the mouth of the Smith River in Del Norte County. Also listed as AFS:EN IUCN:VU on the CDFW Special Animals List.	**None.** Suitable habitat is not present in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Oncorhynchus mykiss Steelhead -central CA coastal ESU (DPS)	FT	--	Requires beds of loose, silt-free, well-oxygenated coarse gravel for spawning. After hatching, juveniles spend at least one summer in the freshwater rearing areas, so the stream must have either perennial flow or cool ephemeral pools with subsurface flow, shade, food, and shelter during the dry season. Also listed as AFS:TH on the CDFW Special Animals List.	**Low.** There are no known occurrences for this species in Burnham Creek.
Oncorhynchus kisutch Coho salmon-central CA coast	FE	SE	Central California Coast ESU includes all naturally spawned populations of Coho salmon from Punta Gorda in northern California south to and including the San Lorenzo River in central California, as well as populations in tributaries to San Francisco Bay, excluding the Sacramento–San Joaquin River system, as well as four artificial propagation programs.	**None.** Suitable habitat is not present in the Study Area.
Amphibians				
Ambystoma californiense California tiger salamander	FT	ST	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	**None.** This species is unlikely to occur in the Study Area because there are no known nearby occurrences.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Dicamptodon ensatus California giant salamander	--	SC	They occur up to 2,160 m (6,500 ft.) primarily in humid coastal forests, especially in Douglas fir, redwood, red fir, and montane and valley-foothill riparian habitats (Stebbins 1972). They live in or near streams in damp forests, and California giant salamanders tend to be common where they occur (Stebbins 1985).	**Moderate.** Suitable habitat may be present upstream in Burnham Creek, however, there are no known nearby occurrences.
Rana boylii Foothill yellow-legged frog	--	SE, SC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg laying.	**Low.** This species is no known occurrences near the Study Area.
Rana draytonii California red-legged frog	FT	SC	Occurs in a variety of ponds, sloughs, low-gradient streams, and low-salinity lagoons. Adults may forage in, and migrate through, terrestrial grasslands, riparian woodlands, and forests, but require weedy, slow moving or standing water that persists through most of the dry season for successful reproduction. Introduced bullfrogs and predatory fish are implicated in the decline of red-legged frogs throughout their range.	**High.** This species has known occurrences within dispersal range of the Study Area.
Reptiles				
Emys marmorata Pacific pond turtle	--	SC	Ponds, marshes rivers, streams, and irrigation ditches that have emergent or riparian vegetation and sunny basking sites. Upland nesting habitat consists of friable soil exposed to full sun.	**Low.** Typical aquatic habitat is not available in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Thamnophis sirtalis tetrataenia San Francisco garter snake	FE	SE, FP	Vicinity of freshwater marshes, ponds, and slow moving streams. Prefers dense cover and water depths of at least one foot. Upland areas near water are important.	**Moderate.** This species is known to occur in the vicinity of the Study Area.
Birds				
Pelecanus occidentalis californicus California brown pelican	--	FP	This pelican nests from the Channel Islands of southern California southward along the Baja California coast and in the Gulf of California to coastal southern Mexico.	**None.** There is no suitable breeding or foraging habitat in the Study Area.
Circus cyaneus Northern harrier	--	SC	Coastal salt and freshwater marsh. Nest built of a large mound of sticks in wet areas.	**Low.** Suitable nesting is not present in the Study Area, however, this species may forage in the grassland.
Elanus leucurus White-tailed kite	--	FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes nest to deciduous woodland. Open grasslands, meadows or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Moderate.** Suitable nesting habitat may be available in the trees within the Study Area.
Haliaeetus leucocephalus Bald eagle	BCC	SE, FP	This species requires large bodies of water, or free-flowing rivers with abundant fish and adjacent snags or other perches. A pair of bald eagle has nested on the west shore of Calaveras reservoir for at least the past three years.	**Low.** No nest observed in the tree stand.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Aquila chrysaetos Golden eagle	--	FP	Rolling foothills, mountain areas, sage-juniper flats and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also large trees in open areas.	**Low.** Typical nesting habitat is not present in the Study Area.
Falco peregrinus anatum Peregrine falcon	--	FP	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	**Low.** May forage in the area but suitable nesting habitat is not present.
Falco mexicanus Prairie falcon	BCC	--	This species is an uncommon permanent resident that ranges from southeastern deserts northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada. Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas.	**Low.** May forage in the area but suitable nesting habitat is not present in the Study Area.
Buteo regalis Ferruginous hawk	BCC	--	Uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges. No breeding records from California.	**None.** This species does not breed in the area.
Buteo swansoni Swainson's hawk	--	ST	The Swainson's Hawk breeds in the western United States and Canada and winters in South America as far south as Argentina.	**Low.** This species is not known to breed in the area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Charadrius alexandrinus nivosus Western snowy plover	FT	SC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sand, gravelly or friable soils for nesting.	**None.** No suitable habitat present.
Sternula antillarum browni California least tern	FE	SE	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills or paved areas.	**None.** No suitable habitat present.
Rynchops niger Black skimmer	--	SC	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	**None.** No suitable habitat present.
Asio otus Long-eared owl	--	SC	Nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands. Key habitat components are some dense cover for nesting and roosting, suitable nest platforms, and open foraging areas.	**Low.** There are no nearby occurrence for this species.
Asio flammeus Short-eared owl	--	SC	This species nests in swamp lands, lowland meadows and irrigated alfalfa fields. Tule patches or tall grass are needed for nesting and/or daytime seclusion.	**Low.** Typical nesting habitat is not present in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Athene cunicularia hypugea Western burrowing owl	--	SC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Low.** Suitable nesting habitat is not present.
Strix occidentalis caurina Northern spotted owl	FT	--	This species typically lives in evergreen forest and woodland.	**Low.** This species typically nests in forests that are not located in the Study Area.
Contopus cooperi Olive-sided flycatcher	--	SC	Breeding habitat for the olive-sided flycatcher is primarily late-successional conifer forests with open canopies (e.g., 0%–39% canopy cover; Verner 1980).	**Low.** This species typically nests in forests that are not located in the Study Area.
Lanius ludovicianus Loggerhead shrike	--	SC	In California, Loggerhead Shrikes breed mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground.	**Moderate.** The species has no known occurrences near the Study Area, however, suitable habitat is present in the mature trees and shrubs within and adjacent to the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Progne subis Purple martin	--	SC	Martins use a wide variety of nest substrates (e.g., tree cavities, bridges, utility poles, lava tubes, and, formerly, buildings), but nonetheless are very selective of habitat conditions nearby. In both Santa Clara and San Mateo Counties, the purple martin takes advantage of forested and shrubland habitats far from urban/suburban and agricultural lands where there are few Starlings.	**Low.** There are no known occurrences within five miles of the Study Area.
Riparia riparia Bank swallow	--	ST	Colonial nester, nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine textured/sandy soils near streams, rivers, lakes, ocean to dig nesting holes.	**None**. Suitable nesting habitat is not present.
Cypseloides niger Black swift	--	SC	This species typically nests on cliffs behind or adjacent to waterfalls.	**None**. Typical nesting habitat is not present in the Study Area.
Chaetura vauxi Vaux's swift	--	SC	These swifts nest in cavities in a variety of trees and less frequently in artificial structures, particularly chimneys.	**Low.** Typical coniferous nesting habitat is not present in the Study Area.
Dendroica petechia brewsteri Yellow warbler	--	SC	Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	**Moderate.** The species has no known occurrences near the Study Area, however, suitable habitat is present in the riparian trees.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	--	SC	Resident of the San Francisco bay region, in fresh and saltwater marshes.	**Low.** Typical marsh nesting habitat is not present in the Study Area.
Agelaius tricolor Tricolored blackbird	--	SC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Low.** The species has no known occurrences near the Study Area.
Passerculus sandwichensis alaudinus Bryant's savannah sparrow	--	SC	This sparrow occupies low tidally influenced habitats, adjacent ruderal areas, moist grasslands within and just above the fog belt, and, infrequently, drier grasslands. This sparrow generally avoids drier upland grasslands, especially in the interior Coast Ranges (Shuford 1993).	**Moderate.** Suitable nesting habitat may be present in the ruderal areas and grassland.
Ammodramus savannarum Grasshoppers sparrow	--	SC	Grasshopper Sparrows in California prefer short to middle-height, moderately open grasslands with scattered shrubs.	**Moderate.** Suitable nesting habitat may be present in the ruderal areas and grassland.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Mammals				
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	--	SC	Prefers forest habitats with moderate canopy, year-round greenery, a brushy understory, and suitable nest building materials. Feeds mainly on woody plants, especially live oak, maple, coffeeberry, alder, and elderberry when available (Linsdale and Tevis 1951).	**Moderate.** Stick house were not observed in the Study Area during the site visit, however, suitable habitat is present beneath the trees and shrubs within and adjacent to the Study Area.
Sorex vagrans halicoetes Salt marsh wandering shrew	--	SC	Salt marshes of the south arm of San Francisco Bay.	**None.** Suitable habitat is not present.
Reithrodontomys raviventris Salt marsh harvest mouse	FE	SE, FP	Salt marshes of the San Francisco Bay.	**None.** Suitable habitat is not present.
Antrozous pallidus Pallid bat	--	SC	Roosts in caves, mine tunnels, crevices in rocks, bridges, buildings, and hollowed trees.	**Moderate.** Suitable roost habitat is present in the larger trees within the Study Area.
Corynorhinus townsendii Townsend's big-eared bat	--	SC	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts.	**Low.** Typical roost habitat is not present in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Lasiurus blossevillii Western red bat	--	SC WBWG: H	Roosts primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark ground-cover. Such sites minimize water loss. Roosts may be from 0.6-13 m (2-40 ft) above ground level.	**Moderate.** Suitable roost habitat is present in the larger trees within the Study Area.
Lasiurus cinereus Hoary bat	--	WBWG: M	The hoary bat is the most widespread North American bat. Generally roosts in dense foliage of medium to large trees. Solitary species - winters along the coast and in southern California, breeding inland and north of the winter range. WBWG – Medium Priority species.	**Moderate.** Suitable roost habitat is present in the larger trees within the Study Area.
Eumops perotis californicus Western mastiff bat	--	SC	Primarily a cliff dwelling species with maternity roosts under exfoliating rock slabs, and crevices in large boulders and buildings. Foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland and agricultural areas (Siders 2005).	**Low.** Suitable roost habitat is not present in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Myotis evotis Long-eared myotis	--	WBWG: M	This species has been found in nearly all brush, woodland, and forest habitats, from sea level to at least 2700 m (9000 ft), but coniferous woodlands and forests seem to be preferred. This species roosts in buildings, crevices, spaces under bark, and snags. WBWG – Medium Priority Species.	**Moderate.** Suitable roost habitat is present in the larger trees within the Study Area.
Myotis thysanodes Fringed myotis	--	WBWG: H	Most common in drier woodlands, they may roost in caves, mines, buildings, and crevices.	**Low.** Typical roost habitat is not present in the Study Area.
Myotis volans Long-legged myotis	--	WBWG: H	The long-legged myotis roosts in rock crevices, buildings, under tree bark, in snags, mines, and caves. Separate day and night roosts may be used. Trees probably are the most important day roosts. Caves and mines are used only as night roosts. WBWG – High Priority species.	**Moderate.** Suitable roost habitat is present in the larger trees within the Study Area.
Bassariscus astutus Ringtail	--	FP	This species is usually found under 1400m in elevation in a variety of habitats throughout the western US including: riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests.	**Low.** The riparian corridor may provide suitable habitat, however, this species is sensitive to human disturbance and there are no nearby known occurrences.
Taxidea taxus American badger	--	SC	Dry open stages of most shrub, forest and herbaceous habitats with friable soils.	**Low.** No known occurrences nearby and typical habitat is not present in the Study Area.

APPENDIX E: Special-status Wildlife Species Table				
Species	**Status**		**Habitat Association**	**Potential for Occurrence in the Study Area**
	Federal	**State**		
Mirounga angustirostris Northern elephant seal	MMPA	--	Northern elephant seals are found in the North Pacific, from Baja California, Mexico to the Gulf of Alaska and Aleutian Islands. During the breeding season, they live on beaches on offshore islands and a few remote spots on the mainland.	**None.** This marine species is not likely to occur in the Study Area.

Status Legend

Federal:

FE	Listed as endangered under the Federal Endangered Species Act
FT	Listed as threatened under the Federal Endangered Species Act
FPE	Federally proposed for listing as endangered
FPT	Federally proposed for listing as threatened
FPD	Federally proposed for delisting
FC	Federal candidate species (former Category 1 candidates)

State:

SE	State listed as endangered
ST	State listed as threatened

SCE	State candidate for listing as endangered
SCT	State candidate for listing as threatened
SCD	State candidate for delisting
SSC	Listed as a species of special concern by California Department of Fish and Wildlife

Other:

WBWG	Western Bat Working Group (High or Medium Priority Species)
CDFW WL	California Department of Fish and Wildlife Watch List
(IUCN) VU	International Union for Conservation of Nature: Vulnerable
IM:	Xerces Society: Imperiled
USFS-S	United States Forest Service – Sensitive
MMPA	Marine Mammal Protection Act (1972) Species

GLOBAL RANKING

The global rank (G-rank) is a reflection of the overall status of an element throughout its global range. Both Global and State ranks represent a letter and number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two.

SPECIES OR NATURAL COMMUNITY LEVEL

G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

G5 = Secure—Common; widespread and abundant.

STATE RANKING

The state rank (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.

S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.

S5 = Secure—Common, widespread, and abundant in the state.