

# BIOLOGICAL LETTER REPORT

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## **APPENDIX C**

to the  
Alexandria Center for Life Science Project Draft EIR





## Alexandria District Phase Two Biological Letter Report for CEQA Review

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### **1.0 PURPOSE**

The purpose of this report is to provide an analysis of biological resources at the Alexandria District Phase 2 (Project Area) in San Carlos, San Mateo County, California. The report will address the questions in the California Environmental Quality Act (CEQA) Environmental Checklist (Appendix G of the CEQA Guidelines) and will be suitable for use by the City of San Carlos for the Project's CEQA documentation.

### **2.0 BACKGROUND AND EXISTING CONDITIONS**

The approximately 25-acre Project Area consists almost entirely of developed land, with a portion of Pulgas Creek present along the southeastern boundary. With the exception of Pulgas Creek, which is channelized, the Project Area has been under industrial or commercial usage since the 1940s, though many buildings on-site are currently vacant. It is situated within a heavily urbanized area and is surrounded on all sides by industrial, commercial, or residential uses. Primary site access is along Old County Road or Commercial Street.

### **3.0 METHODS**

This evaluation is based on a review of literature and database sources as well as a site visit completed by WRA on March 13, 2020. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive biological communities (e.g., wetlands) and special-status species (e.g., endangered plants), including:

- SoilWeb (CSRL 2020)
- Palo Alto, Redwood Point, San Mateo, and Woodside 7.5-minute quadrangles (USGS 2018a-d)
- Contemporary aerial photographs (Google Earth 2020)
- Historical aerial photographs (NETR 2020)

- National Wetlands Inventory (USFWS 2020a)
- California Natural Diversity Database (CNDDDB, CDFW 2020a)
- California Native Plant Society Electronic Inventory (CNPS 2020a)
- Consortium of California Herbaria 2 (CCH2 2020)
- USFWS Information Planning and Consultation database (USFWS 2020b)
- eBird Online Database (eBird 2020)
- California Department of Fish and Wildlife (CDFW) Publication, California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- CDFW and University of California Press publication California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2020b)
- California Natural Community List (CDFW 2019)

On March 13, 2020, WRA conducted a field assessment of the Project Area to observe conditions for presence of sensitive biological communities and potential to support habitat for special status plant and wildlife species. Potentially jurisdictional areas and sensitive habitats were mapped using a combination of mapping-grade GPS devices and hand-drawn boundaries on high-resolution aerial imagery.

## 4.0 RESULTS

### 4.1 Vegetation Communities and Other Land Cover

WRA observed two land cover types within the Project Area: developed areas and perennial stream. Developed areas are non-sensitive and the perennial stream is sensitive. Land cover types within the Project Area are depicted in Attachment A.

#### *Developed*

Developed areas comprise the vast majority of the Project Area and consist of buildings, paved and concrete areas, and landscaped areas typical of developed industrial land uses.



Typical view of developed parking areas.



Typical view of industrial land uses on the site interior.

### *Perennial Stream and Associated Ruderal Vegetation*

Pulgas Creek flows along the entirety of the southeastern boundary of the Project Area. The property boundary for the site is located in the center of Pulgas Creek. The stream is spanned by three existing bridges and is at the upper limit of tidal influence from San Francisco Bay. The banks of Pulgas Creek are a mixture of engineered armoring and ruderal vegetation growing on urban soil containing rubble from past development. Vegetation along the banks consists of species typical of nearshore urban creek along the margins of San Francisco Bay, including fennel (*Foeniculum vulgare*), Bermuda buttercup (*Oxalis pes-caprae*), iceplant (*Carpobrotus edulis*), creeping wildrye (*Elymus triticoides*), Italian ryegrass (*Festuca perennis*), and wild radish (*Raphanus sativus*). The creek does not support a woody riparian vegetation community. Some species occurring along the banks are wetland species typical of saline soils in the area, including saltgrass (*Distichlis spicata*) and gumplant (*Grindelia stricta*). These species were sparse and patchy, and were not present in areas containing wetland hydrology at a cover sufficient to be mapped as a wetland according to the Corps of Engineers wetland delineation procedures.



## **4.2 Special-status Species**

### **4.2.1 Special-status Plant Species**

Based upon a review of the resource databases listed in Section 3.0, 52 special-status plant species have been documented in the vicinity of the Project Area. All are unlikely or have no potential to occur within the Project Area because suitable conditions are lacking (e.g., edaphic [soil] conditions, topography, unique pH, associated natural communities, low levels of disturbance). Additionally, no special-status plant species were observed within the Project Area on March 13, 2020.

### **4.2.2 Special-status Wildlife Species**

Based upon a review of the resource databases listed in Section 3.0, 43 special-status wildlife species have been documented in the vicinity of the Project Area. Of these species, most are excluded based on a lack of habitat features (e.g. tidal marsh, old growth redwood or fir forest, grassland, sandy beaches or alkaline flats, and the presence of specific host plants). Two special-status bird species have potential to occur in vegetated areas along Pulgas Creek: Alameda song sparrow (*Melospiza melodia pusillula*) and San

San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuosa*). Non-status bird species protected by the Migratory Bird Treaty Act as well as by California Fish and Game Codes (CFGC) have potential to nest in vegetation or on structures within or adjacent to the Project Area.

The absence of habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. Given the Project Area's relative proximity to sensitive habitats on the San Francisco Bay, many species documented nearby are additionally obligates to marine or tidal marsh habitats which are not present on or in the immediate vicinity of the Project Area. Large sections of Pulgas Creek within the Project Area are hardscaped, including three bridges and associated box culverts, retaining walls, and Sakrete-lined banks. The lower section of Pulgas Creek is influenced by saltwater during tidal fluctuations, making most of the channel brackish and unsuitable for freshwater species such as California red-legged frog (*Rana draytonii*) and San Francisco garter snake (*Thamnophis sirtalis tetrataenia*).

The lack of expansive salt marsh habitat within the Project Area also eliminates the potential for salt marsh dependent species. Small patches of vegetation grow sporadically between the sections of concrete lined channel, but do not provide suitable cover or connectivity to occupied habitats.

Anadromous fish species such as steelhead (*Onchorhynchus mykiss*) are unlikely to occur in Pulgas Creek due to lack of suitable upstream habitat. While Pulgas Creek has not been surveyed for steelhead (Leidy et al. 2005, CEMAR 2016), much of the upstream extent of Pulgas Creek is culverted beneath developed areas and the creek is not suitable spawning habitat for steelhead. Historic surveys of Cordilleras Creek (which meets Pulgas Creek at Smith Slough) have not identified steelhead (Leidy et al. 2005), and no streams with current steelhead runs are located in the immediate surrounds (CEMAR 2016). As such, steelhead are unlikely to be present.

While Pulgas Creek within the Project Area is tidally influenced, based on a review of fish sampling surveys completed by CDFW and UC Davis researchers, as well as conditions present in Pulgas Creek within the Project Area, green sturgeon (*Acipenser medirostris*) do not have the potential to be present at any time within the Project Area. The San Francisco Bay Study (Bay Study) has been sampling since 1980 in the San Francisco Estuary to determine the impacts of freshwater outflow on fish distribution and abundance in the estuary (CDFW 2020b). The Bay Study uses a midwater trawl and an otter trawl to sample 52 stations, two of which are in the vicinity of the Project Area. An analysis of data collected by the Bay Study (midwater and otter trawls) since 2000 showed zero detections of green sturgeon at Bay Study stations 101 and 102, both of which are within 5 miles of the entrance to Pulgas Creek (CDFW 2020b). There were 2,307 combined midwater and otter trawl tows conducted at these three stations between 2000 and 2018. Additional sampling performed by the Hobbs Biogeochemistry and Fish Ecology Laboratory (Hobbs Lab) within south San Francisco Bay have detected no green sturgeon over the course of 1,669 sampling tows, and out of 78,863 individual fish captured (Lewis and Hobbs 2018). In addition, Pulgas Creek within the Project Area has substantial reaches of shallow water that are not suitable for habitation by the life stages of green sturgeon potentially present within south San Francisco Bay. The lack of detections of this species, combined with marginal habitat within the Project Area support no potential for this species to occur.

Longfin smelt (*Spirinchus thaleichthys*) adults seasonally occur within South San Francisco Bay, but are generally more concentrated in Suisun, San Pablo, and North San Francisco Bays (Moyle 2002, Merz 2013). Trawl surveys conducted by CDFW as part of the Bay Study have found longfin smelt are found in low numbers in South San Francisco Bay. Since 2008, low numbers of longfin smelt have been encountered

at these sampling stations every year between November and April, although no longfin smelt of any life stage have been encountered at these stations since March 2015. There is evidence that longfin smelt tend to remain in deeper channels and sloughs and fish captured by midwater trawl vs. otter trawl sampling as part of the IEP Bay Sampling Program suggested that longfin smelt downstream of San Pablo Bay prefer to be lower in the water column in deeper waters (Baxter 2009, Rosenfeld and Baxter 2007). This is consistent with this species' documented aversion to high temperatures above 22°C may limit longfin smelt (Rosenfeld and Baxter 2007, CDFG 2009). The shallow and exposed water observed within the urbanized Pulgas Creek provides little habitat value for this species. Light flow and limited tidal influence in the section of creek within the Project Area likely result in higher temperatures than adjacent waters in the Bay, making habitat less suitable for this species in general. Based on the conditions present in the Project Area, it is unlikely that longfin smelt are present.

Pulgas Creek is not mapped as Essential Fish Habitat for any managed species by NOAA (NOAA 2020).

## **5.0 PROJECT DESCRIPTION**

The proposed project will be known as the Alexandria District for Life Science and Technology at San Carlos, which is an open campus environment featuring six life science office buildings, one centrally located community center, two parking garages, and green spaces and amenities for the community. The site will be organized by Urban and Landscape Strands, which weave urban and natural elements throughout. The Project will be implemented in three phases, with all phases expected to be completed by 2028. The Project includes a trail along Pulgas Creek, located above the top of bank. The trail and Project activities will be sited to avoid impacts to Pulgas Creek. There is some potential that vegetation enhancement or creek stabilization activities could occur below the top of bank within Pulgas Creek. The outcome of the CEQA and project planning processes for other environmental quality resource categories may determine whether or not work will occur below the top of bank. The impacts evaluation below accounts for this potential work below the top of bank as required by CEQA, despite the possibility that no work below the top of bank will occur.

## **6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA**

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

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. 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; and/or,
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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

## 7.0 IMPACTS AND MITIGATION

The purpose of this impact assessment is to evaluate the potential impacts of Project construction and operation on existing conditions for biological resources based on the significance thresholds and methodology discussed above in Section 6.0. This section is structured to specifically address each significance threshold for biological resources from CEQA Appendix G. Each section addresses a specific question posed by Appendix G.

Specific impacts and a discussion of avoidance, minimization and mitigation are discussed below. For each subsection, potential significant impacts are first identified and discussed. Then, the approach for mitigation to compensate for those impacts is discussed. Finally, a significance conclusion is provided for each potential impact. A summary of Impacts and Mitigation is presented in Table 1 below.

**Table 1. Summary of Impacts and Mitigation**

CEQA ASSESSMENT CATEGORY IV.-BIOLOGICAL RESOURCES	BIOLOGICAL RESOURCES CONSIDERED	POTENTIALLY SIGNIFICANT IMPACT	SUMMARY OF MITIGATION MEASURES
Question A. Special-status species	Special-status Plants Special-status Wildlife Designated Critical Habitat	Direct impacts or indirect disturbance to special-status nesting birds and other native nesting birds protected by the CFGC by destroying active nests or causing disturbance that results in nest abandonment.	<p>If construction activities cannot be avoided from February 1-August 31:</p> <p>Pre-construction surveys within 500 feet of construction area within 4 days of initial ground disturbance or vegetation removal.</p> <p>If nests of protected avian species are present, no-work exclusion zones around any active protected nest until all young have fledged or are independent of nest.</p>

CEQA ASSESSMENT CATEGORY IV.-BIOLOGICAL RESOURCES	BIOLOGICAL RESOURCES CONSIDERED	POTENTIALLY SIGNIFICANT IMPACT	SUMMARY OF MITIGATION MEASURES
Question B. Sensitive natural communities & Riparian habitat	Sensitive Natural Communities Streams, Lakes, & Riparian Habitat	Activities within Pulgas Creek that result in loss of the creek  Increase in unvegetated bank armoring along Pulgas Creek	Work in Pulgas Creek will result in a net benefit to ecological conditions to the extent feasible.  If net benefit to ecological conditions are not feasible, mitigation at a minimum 1:1 ratio by enhancing on-site or off-site stream or riparian habitat, purchasing wetland mitigation bank credits, or other suitable regulatory-agency-approved mitigation.
Question C. State and federally protected wetlands	Wetlands Unvegetated surface waters	Same as Question B.	Same as Question B.
Question D. Fish & wildlife corridors	Essential Fish Habitat Wildlife Corridors	No impact because no movement or migratory corridors are absent.	Not applicable.
Question E. Local policies	Protected Trees Coastal zone resources Other biological protections	No impact because the Project will obtain a use and grading permit as well as a tree removal permit from the City of San Carlos.	Not applicable.
Question F. Local, state, federal conservation plans	Habitat Conservation Plans Natural Community Conservation Plans	No impact because the Project Area is not located within the plan area of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	Not applicable.

## 7.1 Impacts and Mitigation Evaluation for Special-status Species

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

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

*status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Potential impacts and mitigation for potentially significant impacts to special-status species are discussed below.

### **7.1.1 Special-status Plant Species**

A total of 52 special-status plant species have been documented within the vicinity of the Project Area. Of these species, all are unlikely or have no potential to occur within the Project Area. Additionally, no special-status plant species were observed within the Project Area on March 13, 2020. As such, impacts to special-status plant species would be less than significant under CEQA.

### **7.1.2 Special-status Wildlife Species**

A total of 43 special-status wildlife species have been documented from the vicinity of the Project Area. Of these species, two were determined to have moderate or high potential to occur within the Project Area. The following sections present recommendations for future studies and/or measures to avoid or reduce impacts to these species.

#### Special-status and Other Birds

The following special-status avian species have potential to occur within or adjacent to the Project Area: Alameda song sparrow and saltmarsh common yellowthroat.

Special-status and non-status nesting birds protected under the CFGC have the potential to nest in trees, shrubs, herbaceous vegetation, and on bare ground and man-made structures within and adjacent to the Project Area. Project construction activities have the potential to impact nests in these areas if construction is initiated during the breeding bird season (February 1 through August 31). Potential impacts include direct destruction of nests as well as indirect visual and acoustic disturbance to nesting birds from construction in adjacent areas that has the potential to result in nest abandonment. Destruction of nests or indirect disturbance from construction that results in nest abandonment are considered **potentially significant impacts** under CEQA. The project would also result in the loss of a small amount of suitable nesting habitat. Based on extensive development within and adjacent to the Project Area, the area of lost potential nesting habitat is considered a less than significant impact.

**Potential Impact BIO-1:** Project construction activities have the potential to result in direct impacts or indirect disturbance to special-status nesting birds and other native nesting birds protected by the CFGC. Construction could directly destroy active nests or cause disturbance that results in nest abandonment.

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

**Mitigation Measure BIO-1:** Initiation of construction activities during the avian nesting season (February 1 through August 31) will be avoided to the extent feasible. If construction initiation during the nesting season cannot be avoided, pre-construction nesting

bird surveys will be conducted within 14 days of initial ground disturbance or vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. Surveys can be used to detect the nests of special-status as well as non-special-status birds. Surveys will encompass the entire construction area and the surrounding 500 feet. An exclusion zone where no construction would be allowed will be established around any active nests of any protected avian species found in the Project Area until a qualified biologist has determined that all young have fledged and are independent of the nest. Suggested exclusion zone distances differ depending on species, location, and placement of nest, and will be at the discretion of the biologist and, if necessary CDFW. These surveys would remain valid as long as construction activity is consistently occurring in a given area and will be completed again if there is a lapse in construction activities of more than 14 consecutive days during the breeding bird season.

### **7.1.3 Sensitive Natural Communities Impacts and Mitigation Evaluation**

This section addresses the question outlined in CEQA Appendix G, Part IV (b):

- a) *Does the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;*

The Project Area contains 0.36 acre of Perennial Stream. Vegetation along the banks of Pulgas Creek consists of ruderal vegetation typical of disturbed and developed creek margins in urban areas along the margin of San Francisco Bay. The creek does not support a woody riparian vegetation community. The Project will reduce the amount of hardscape and increase the amount of vegetated areas, thereby reducing and slowing surface run off and increasing the amount of natural water filtration compared to existing conditions. These changes will improve the quality of water contributed to Pulgas Creek by the Project Area, as well as improve the ecological conditions in the vicinity of the creek. There is some potential that the project will require work below the top of bank to enhance vegetation along the creek, and some potential that work may be required within the active channel of Pulgas Creek. Erosion control measures such as silt fencing and straw wattles will be implemented along the length of the stream during any work adjacent to or below the top of bank. While work affecting the ruderal vegetation along the banks of Pulgas Creek may require a CDFW permit, it is not a sensitive vegetation community and potential impacts to vegetation in this area **less than significant** under CEQA. Work within the Perennial Stream that improves ecological function of the creek would be wholly beneficial and **less than significant** under CEQA. Similarly, work within the creek that maintains existing conditions but involves placement of fill to avoid potential future adverse consequences would be considered **less than significant** under CEQA because there would be no long term adverse change to current conditions in the creek. Given the current condition of the creek, potential temporary water quality and habitat disturbance effects resulting from access to complete these beneficial improvements would also be **less than significant**. **Potentially significant impacts** to Pulgas Creek could include activities within the creek that result in a loss of perennial stream or include work that would result in an increase of unvegetated bank armoring along the creek.

**Potential Impact BIO-3:** If Project activities include work within Pulgas Creek, those activities could result in a loss of perennial stream area or introduction of additional unvegetated armoring along the creek bank, which is a potentially significant impact.

To reduce potential impacts to Perennial Stream to a **less-than-significant** level, the following mitigation measure shall be implemented:

**Mitigation Measure BIO-3:** If the Project completes work within Pulgas Creek, it will be designed to result in a net benefit to the ecological conditions to the extent feasible. If work within Pulgas Creek results in a loss of area within the channel or addition of new reaches of unvegetated bank armoring, these impacts will need to be mitigated for at a minimum 1:1 ratio on a functions and values basis (“no net loss”). Required mitigation can be met by creating or enhancing stream and riparian habitat on-site or off-site, purchasing wetland credits (1:1 ratio) from a mitigation bank, or other suitable method of mitigation determined appropriate by the regulatory permitting agencies.

#### ***7.1.4 Impacts and Mitigation Evaluation for Wetlands and Other Areas Regulated by Section 404 of the Clean Water Act***

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

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

The Project Area contains 0.36 acres of Perennial Stream which are potentially regulated by state and/or federal law. With the implementation of Mitigation **Measure BIO-3**, potential impacts to the Perennial Stream will be reduced to a **less-than-significant** level.

#### ***7.1.5 Impacts and Mitigation Evaluation for Habitat Corridors and Linkages***

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

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

Movement and migratory corridors are segments of land that provide a link between core habitat areas (Beier 1992, Soule and Terborgh 1999). The majority of the Project Area is developed and is within a densely developed urban area. Pulgas Creek has limited vegetative cover and is disturbed (Sakrete) and culverted in many sections. Pulgas Creek may facilitate movement of local wildlife adapted to high levels of anthropogenic disturbance, but does not provide a connection between areas of core habitat in natural

areas. There is **no impact** to movement or migratory corridors resulting from the Project because no movement or migratory corridors are present on the site.

### **7.1.6 Impacts and Mitigation Evaluation for Local Policies and Ordinances**

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

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

The Project may involve ground-disturbance within or near Pulgas Creek. Under the City of San Carlos Municipal Code, Chapter 18.14, such activity within Pulgas Creek or within 25 feet of the top of bank of Pulgas Creek will require a use/grading permit from the City. The Project will be obtaining a use and grading permit from the City and will therefore not conflict with this ordinance.

The Project may impact trees that meet the definition of Protected Tree under section 18.18.070 of the City of San Carlos municipal code. A tree removal permit will be obtained from the City of San Carlos prior to the removal of Protected Trees, in compliance with City code. Therefore, the project will not conflict with this requirement of City code.

There is no impact of the Project resulting from potential conflict with local codes and ordinances protecting biological resources.

### **7.1.7 Habitat Conservation Plans**

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

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

The Project Area is not located within the plan area of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan and therefore would not have the potential to conflict with any such plans.

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- [USGS] United States Geological Survey. 2018c. San Mateo 7.5-minute Quadrangle map.
- [USGS] United States Geological Survey. 2018d. Woodside 7.5-minute Quadrangle map.
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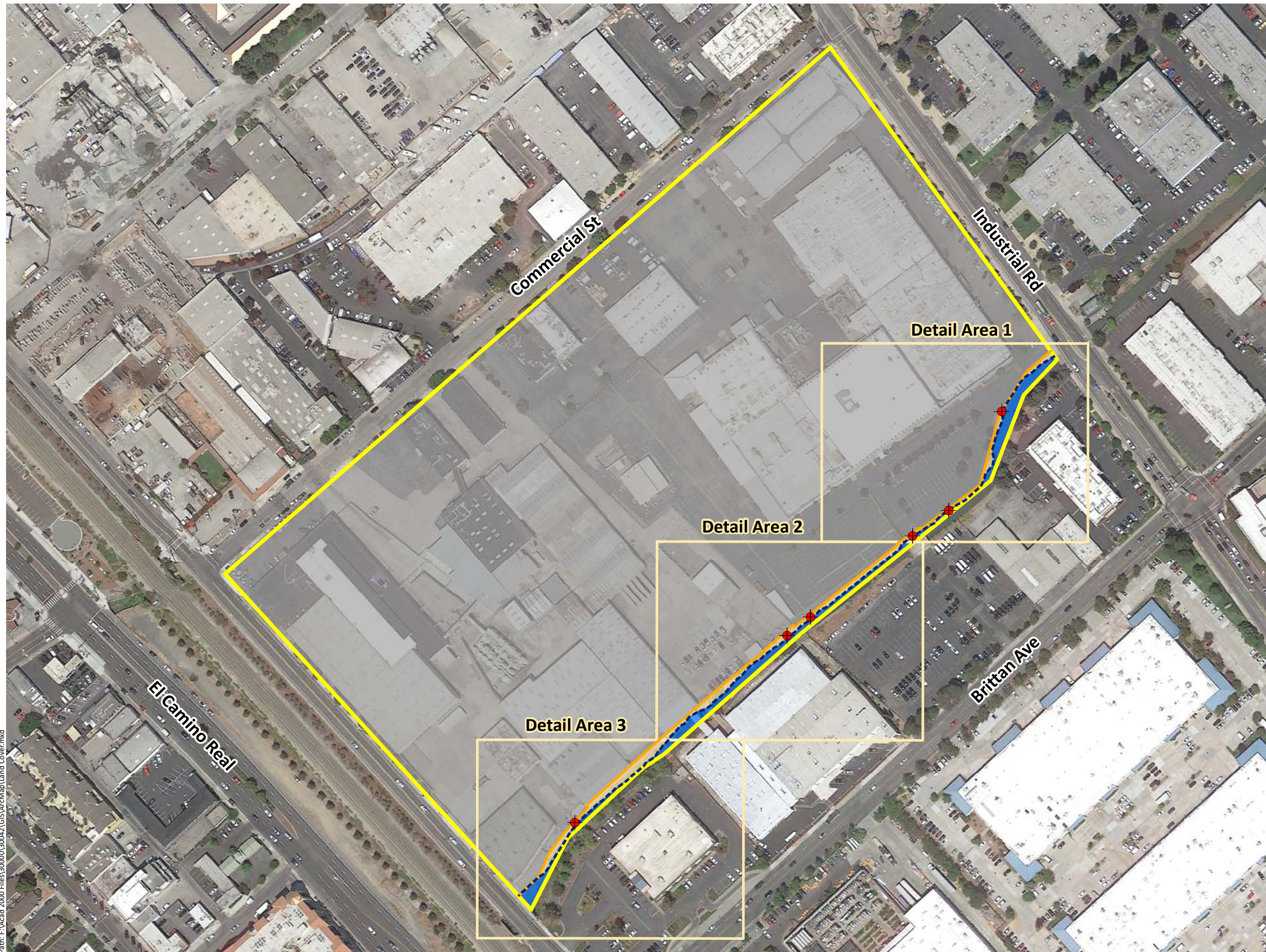
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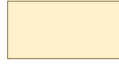


Attachment A. Land Cover Types

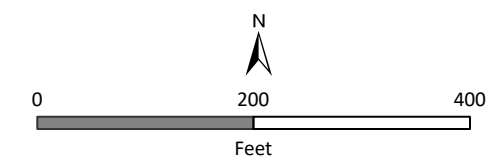
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# Attachment A. Land Cover Types (Overview)

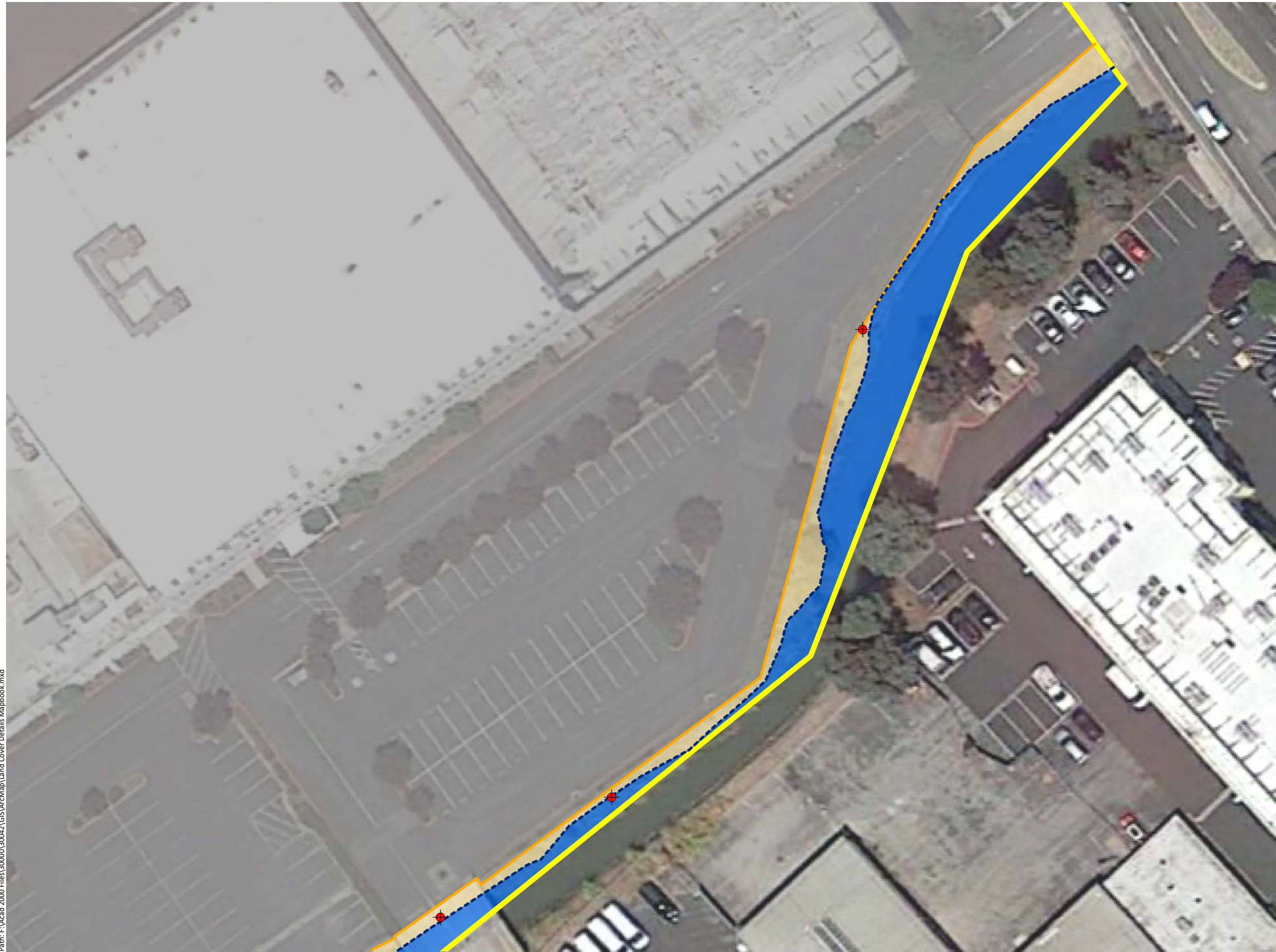
Alexandria District Phase 2  
San Carlos, California



-  Project Area - 25.33 ac.
  -  Culverts
  -  Extent Below Ordinary High Water Mark - 0.36 ac.
  -  Extent Below Top of Bank - 0.61 ac.
- Land Cover Types**
-  Associated Ruderal Vegetation - 0.25 ac.
  -  Developed - 24.72 ac.
  -  Perennial Stream - 0.36 ac.







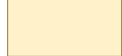
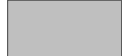
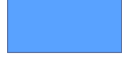
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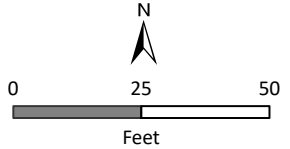


**Attachment A.  
Land Cover Types  
(Detail Area 1)**

Alexandria District Phase 2  
San Carlos, California

-  Project Area - 25.33 ac.
-  Culverts
-  Extent Below Ordinary High Water Mark - 0.36 ac.
-  Extent Below Top of Bank - 0.61 ac.

- Land Cover Types**
-  Associated Ruderal Vegetation - 0.25 ac.
  -  Developed - 24.72 ac.
  -  Perennial Stream - 0.36 ac.







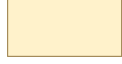
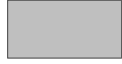

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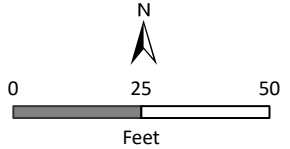


**Attachment A.  
Land Cover Types  
(Detail Area 2)**

Alexandria District Phase 2  
San Carlos, California

-  Project Area - 25.33 ac.
-  Culverts
-  Extent Below Ordinary High Water Mark - 0.36 ac.
-  Extent Below Top of Bank - 0.61 ac.

- Land Cover Types**
-  Associated Ruderal Vegetation - 0.25 ac.
  -  Developed - 24.72 ac.
  -  Perennial Stream - 0.36 ac.







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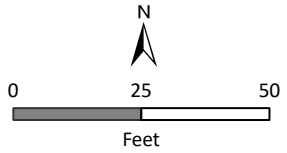
**Attachment A.  
Land Cover Types  
(Detail Area 3)**

Alexandria District Phase 2  
San Carlos, California

-  Project Area - 25.33 ac.
-  Culverts
-  Extent Below Ordinary High Water Mark - 0.36 ac.
-  Extent Below Top of Bank - 0.61 ac.

**Land Cover Types**

-  Associated Ruderal Vegetation - 0.25 ac.
-  Developed - 24.72 ac.
-  Perennial Stream - 0.36 ac.



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**Alexandria District Phase Two  
Biological Letter Report for CEQA Review:**

**Addendum for Pulgas Creek Improvements**

Prepared for:

Freyer & Laureta, Inc.

Prepared by:

Justin Semion, Technical Services Director

September 12, 2023

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## **1.0 BACKGROUND**

On September 2, 2020, WRA prepared a letter report reviewing the potential for the Alexandria Center for Life Sciences (ACLS) project located between Industrial Road and Old County Road in San Carlos, California. The approximately 25-acre Project Area consists almost entirely of developed land, with a portion of Pulgas Creek present along the southeastern boundary. With the exception of Pulgas Creek, which is channelized, the Project Area has been under industrial or commercial usage since the 1940s, though many buildings on-site are currently vacant. It is situated within a heavily urbanized area and is surrounded on all sides by industrial, commercial, or residential uses.

At the time the original letter report was prepared, improvements to Pulgas Creek were contemplated, but design for those improvements had not been proposed. Since that time, and in coordination with City Planning and Engineering staff, the ACLS team has completed a proposed design for the Pulgas Creek improvements. Potential impacts and mitigation for Pulgas Creek improvements were included at a conceptual level in WRA's 2020 Biological Letter Report. This Addendum to that report provides an overview of the proposed improvements as well as potential impacts and mitigation measures now that the proposed project design has been completed.

## **2.0 WORK DESCRIPTION**

The proposed ACLS Project ("Project") includes work within Pulgas Creek necessary to manage onsite flooding and to ensure the Project does not cause significant increases in offsite flooding. The Project may also include work within Pulgas Creek to address existing creek bank stability deficiencies identified in the City's Storm Drain Master Plan and treatments to the bed and bank

of the creek to improve stability.<sup>1</sup> All work would occur within the reach of Pulgas Creek between Old County Road and Industrial Road. Potential work along the creek includes the following:

- Installation of both an overflow weir and a box culvert in separate locations along the north bank of the creek to (a) route high flows into an onsite swale and landscaped depression capable of detaining water during high flow events and (b) convey return flows from the landscaped depression back to the creek. These features protect onsite development from flooding and prevent adverse changes in the depth or extent of flooding on off-site property and public rights-of-way.
- Stability treatments along the north bank of the creek, potentially including installation of rock slope protection, vegetated retaining walls, or bioengineering treatments to repair or replace existing unstable streambanks comprised of various materials, and which are generally comprised of roughly graded earthen slopes with non-native plants or sakrete walls.
- Stability treatments along the south bank of the creek, potentially including installation of rock slope protection, vegetated retaining walls, or bioengineering treatments to repair or replace existing unstable streambanks comprised of various materials,<sup>2</sup> and which are generally comprised of roughly graded earthen slopes with non-native plants or sakrete walls.
- Integration of native plant species into creek stability treatments and replacement of existing invasive plant species with native plant cover along creek banks.
- Debris removal within the creek channel to remove existing obstacles to flow.
- Potential placement of streambed gravel/cobble at the transition from the existing upstream concrete apron to the natural channel bed (if needed to provide hydraulic protection to reduce the risk of stream flows causing erosion at the edge of the existing concrete apron).
- Repair and replacement of existing stormwater infrastructure (culverts) conveying water to the creek along the north bank from the Project site.

### **3.0 POTENTIAL ENVIRONMENTAL IMPACTS**

- Work in Pulgas Creek would involve initial disturbance to the creek and creek banks, resulting in temporary impacts to jurisdictional waters and associated vegetation during construction.
- Temporary impacts to vegetation along the stream banks would be less than significant because the opportunistic and weedy ruderal vegetation present along the creek is not a sensitive vegetation community per community definitions the California Natural Community List (CDFW 2021) and A Manual of California Vegetation (CNPS 2020).

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<sup>1</sup> The ARE technical team met with City staff and City Consultants to review the proposed flood mitigation strategies including proposed improvements to Pulgas Creek on November 12, 2020, December 7, 2020, May 4, 2022, and July 20, 2022.

<sup>2</sup> This work would require the participation of the property owner to the south of the Project site.

Vegetation impacted during project construction would be replaced by native plant cover.

- Temporary dewatering and/or bypassing of the waters of Pulgas Creek may be required to complete work within the creek. Any dewatering or bypassing activities would comply with the requirements of all necessary regulatory permits and authorizations (e.g., Regional Water Quality Control Board, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Army Corps of Engineers).
- Potential temporary construction impacts to jurisdictional waters would include excavation, demolition, and replacement of existing armored stream banks comprised of various non-native materials as well as replacement of existing stormwater infrastructure. While this work is expected to result in improved stream bank conditions both biologically and hydraulically, it could cause temporary significant impacts during construction. These impacts would be reduced to less-than-significant levels by implementing Mitigation Measures Bio-3, Bio-4, and Bio 5.
- Bank and bed stabilization work would result in the placement of permanent structures and materials within the bed and bank of Pulgas Creek. Although these activities could result in fill of waters of the United States and Waters of the State and could cause potentially significant impacts, work to stabilize the bank and bed of the creek and increase the presence of native vegetation along creek banks would result in long-term improvement of the creek's ecological function by providing a stabilized channel, removing invasive species, improving habitat value, and reducing erosion and siltation. For this reason, work within Pulgas Creek is expected to result in a net increase in aquatic resource function and services.
- While work within Pulgas Creek is expected to result in a net increase in aquatic resource function and services, it is possible the work could result in a permanent loss of aquatic resources, thereby causing a significant impact. If work within Pulgas Creek is determined to result in a permanent net loss of aquatic resources, the applicant would be required to compensate for the loss by providing new aquatic habitat of the same type to offset this impact, either through the creation, enhancement, or restoration of stream and riparian habitat onsite or off-site in an appropriate location or through the purchase of mitigation credits from a USACE- or RWQCB approved mitigation bank, as described in Mitigation Measure Bio-5.
- Mitigation Measure 5 also requires the applicant to submit to CDFW a notification of lake or streambed alteration pursuant to Fish and Game Code section 1602 and to ensure compliance with the Porter-Cologne Water Quality Control Act, Section 404 of the Clean Water Act, and Rivers and Harbors Act Section 10, as applicable. Any permits issued for the Project by CDFW, the USACE or the San Francisco Regional Water Quality Control Board would be expected to identify minimization, avoidance, and mitigation requirements similar to those set forth in Mitigation Measures Bio-3, Bio-4, and Bio-5. The requirements of those mitigation measures would be superseded by any conflicting

and more stringent requirements set forth in any Lake or Streambed Alteration (LSA) Agreement, Rivers and Harbors Act Section 10 authorization, Section 404 permit, or Section 401 water quality certification issued for the Project.

- While creek restoration would require temporary disturbance and permanent placement of fill within jurisdictional features, improvement of the creek and riparian area is intended to improve aquatic conditions and functions of the creek. The overall benefit to jurisdictional features of the Project site would occur concurrent with potential adverse effects of temporary disturbance to the restoration area and potential placement of minimal fill to achieve these objectives. Potentially significant temporary impacts could occur during construction or if work within the creek resulted in a permanent net loss of aquatic resources. These potentially significant impacts would be mitigated to less-than-significant levels through implementation of Mitigation Measures Bio-3, Bio-4, and Bio 5.

#### **4.0 PROPOSED MITIGATION MEASURES**

##### ***Mitigation Measure BIO-3:***

Applicant shall implement the following measures to reduce construction-related impacts to Pulgas Creek:

- a. During construction above the top of bank, orange construction fencing backed by silt fencing and wildlife-friendly hay wattles (no monofilament netting) shall be installed along the banks of Pulgas Creek to prevent equipment from entering protected areas and to prevent fuels, lubricants, soils, *de minimis* fill, and other pollutants from impacting Pulgas Creek.
- b. Construction below the top of bank shall be completed with equipment staged above the top of bank to the greatest extent feasible. If operation of small equipment below the top of bank is required, that work shall be completed in a dewatered condition and all construction debris and equipment shall be removed from the channel before returning flow to the dewatered area.
- c. spill control absorbent material, for use beneath stationary equipment, shall be present on-site and available at all times. Any hazardous chemical spills shall be cleaned immediately.
- d. All stockpiling of construction materials, equipment, and supplies, including storage of chemicals such as fuel, oil or other substances that could adversely affect aquatic resources, shall occur outside the Pulgas Creek and surrounding riparian areas. No equipment shall be washed where runoff could enter the channel.
- e. All refueling and maintenance of equipment, other than stationary equipment, shall occur outside the channel's top-of-bank.
- f. All construction debris shall be gathered on a regular basis and placed in a dumpster or other container that is emptied or removed at least on a weekly basis.

- g. At the end of each workday, areas of the project site that are under construction must be cleaned and secured against potential erosion, dumping, or discharge to the creek, street, gutter, or storm drains.
- h. The Applicant shall comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ) adopted by the SWRCB by preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the requirements of the General Permit. The SWPPP must include BMPs specific to project construction and is subject to inspections by a Qualified Stormwater Practitioner (as defined in Order No. 2022-0057-DWQ). BMPs aim to control degradation of surface water by preventing soil erosion or pollution discharge from the project area.

These requirements shall be superseded by any conflicting and more stringent requirements set forth in any Lake or Streambed Alteration (LSA) Agreement, Section 404 permit, or Section 401 water quality certification issued for the Project.

***Mitigation Measure BIO-4:***

The project applicant shall submit a Dewatering and Diversion Plan for review and approval by the City Engineer to mitigate impacts to the creek during dewatering, and shall implement the approved Plan. The Plan shall comply, at a minimum, with the following:

- a. All dewatering and diversion activities shall comply with the requirements of all necessary regulatory permits and authorizations from other agencies (e.g., Regional Water Quality Control Board, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Army Corps of Engineers).
- b. All native aquatic life (e.g., fish, amphibians, and turtles) within areas to be dewatered shall be relocated by a qualified biologist prior to dewatering, in accordance with applicable regional, state, and federal requirements. The biologist shall check daily for stranded aquatic life until the area is dewatered. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the dewatered areas. Capture methods may include fish landing nets, dip nets, buckets, and by hand. Captured aquatic life shall be released immediately in the nearest appropriate downstream site. This mitigation measure does not authorize the take or disturbance of any state or federally listed species unless the applicant obtains a project-specific authorization from the California Department of Fish and Wildlife and/or the U.S. Fish and Wildlife Service, as applicable.
- c. If any temporary dam or other artificial obstruction is constructed to facilitate the proposed improvements, maintained, or placed in operation within the stream channel, the applicant shall ensure that sufficient water to maintain native aquatic life below the temporary dam or other artificial obstruction is allowed to pass down channel at all times.

- d. Construction and operation of dewatering/diversion devices shall meet the standards contained in the latest edition of the Erosion and Sediment Control Field Manual published by the Regional Water Quality Control Board.
- e. Cofferdams and/or water diversion system shall be constructed of a non-erodible material that will cause little or no siltation, such as encased sandbags, gravel bags, or inflatable bladders. Cofferdams and the water diversion system shall be maintained in place and functional throughout construction in the channel. If the cofferdams or water diversion systems fail, they shall be repaired immediately based on the recommendations of a qualified civil engineer in consultation with a qualified biologist. The devices shall be removed after construction is complete and the site is stabilized.
- f. Water pumped from the dewatered area shall be passed through a sediment settling device before returning to the stream channel. Velocity dissipation measures or devices are required at the outfall to prevent erosion.

These requirements shall be superseded by any conflicting and more stringent requirements set forth in any Lake or Streambed Alteration (LSA) Agreement, Rivers and Harbors Act Section 10 authorization, Section 404 permit, or Section 401 water quality certification issued for the Project.

***Mitigation Measure BIO-5:***

Prior to any work in or on the bed or bank of Pulgas Creek, the applicant shall submit to CDFW a Lake or Streambed Alteration (LSA) notification pursuant to Fish and Game Code section 1602. The Applicant shall comply with all requirements of any LSA agreement issued for the Project, including any compensatory mitigation requirements. If CDFW issues an LSA for the Project, a copy of the fully executed LSA Agreement shall be submitted to the City prior to initiation of any work impacting riparian habitats or Pulgas Creek.

For unavoidable placement of fill in jurisdictional waters, Applicant shall ensure compliance with the Porter-Cologne Water Quality Control Act, Section 404 of the Clean Water Act, and Rivers and Harbors Act Section 10, as applicable. Section 404 and Section 10 compliance may be accomplished by complying with the terms of any applicable Nationwide Permit, Regional General Permit, USACE-issued letter of permission or a individual permit. Applicant shall apply for a Section 401 water quality certification (permit) and waste discharge requirements (as applicable) from the San Francisco Regional Water Quality Control Board (RWQCB) as necessary and shall comply with any conditions or stipulations included in any Rivers and Harbors Act Section 10, Section 404 and 401 permits and waste discharge requirements and authorizations issued for the project.

If work within Pulgas Creek results in a permanent net loss of aquatic resources, the Applicant shall provide mitigation to offset this impact, either through (1) the creation, enhancement, or restoration of aquatic resources onsite or off-site in an appropriate location or (2) through the purchase of mitigation credits from a USACE, RWQCB, or CDFW approved mitigation bank. The purchase of such credits shall serve as full mitigation for impacts.

If Project-specific creation, enhancement, or restoration of aquatic resources is implemented, these resources shall be restored, enhanced, or created at a minimum ratio of 1:1

(compensation: impact) on an acreage basis or such greater amount as otherwise required by any state or federal permitting agencies, and at a location approved by the City or as otherwise required by any state or federal permitting agencies. A qualified biologist shall develop a mitigation and monitoring plan that includes the following components (or as otherwise modified by regulatory agency permitting conditions):

- Summary of habitat impacts and mitigation acreage requirements to meet the required mitigation ratio;
- Goal of the restoration to achieve no net loss of habitat functions and values;
- Location of mitigation site(s) and description of existing site conditions;
- Mitigation design:
  - o Existing and proposed site hydrology;
  - o Grading plan, if appropriate, including bank stabilization or other site stabilization features;
  - o Planting plan;
  - o Remedial measures and adaptive management; and
- Monitoring plan, including success criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. Success criteria shall include quantifiable measurements of riparian and aquatic vegetation type (e.g., dominance by natives), the appropriate extent for the restoration location, and the provision of ecological functions and values equal to or exceeding those in the affected by the Project. At a minimum, success criteria shall include following:
  - o At Year 5 post-mitigation, total cover or survivorship (as applicable based on mitigation design) by planted native vegetation shall be at least 75 percent.

The mitigation and monitoring plan must be approved by the City and other applicable agencies prior to the creek impacts and must be implemented within 1 year after the discharge of fill into the creek.

Prior to issuance of any City permits for construction, grading, or other site-disturbing activities with the potential to impact Pulgas Creek and surrounding riparian habitat, the Applicant shall provide proof to the City that any necessary permits and authorizations from the USACE, RWQCB, and CDFW have been obtained.

Potential for Special Status Plant and Wildlife Species to Occur within the Project Area. List Compiled from the California Department of Fish and Wildlife Natural Diversity Database (CDFW 2023), U.S. Fish and Wildlife Service Information for Planning and Consultation Species Lists (USFWS 2023), and California Native Plant Society Rare Plant Inventory (CNPS 2023) search of the Palo Alto, Redwood Point, San Mateo, and Woodside and U.S. Geological Survey 7.5' quadrangles.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>PLANTS</b>				
San Mateo thorn-mint <i>Acanthomintha duttonii</i>	FE, SE, Rank 1B.1	Chaparral, valley and foothill grassland. Elevation ranges from 165 to 985 feet (50 to 300 meters). Blooms Apr-Jun.	<b>No Potential.</b> This species is restricted to serpentine clay, which is absent from the Project Area.	No further actions are recommended for this species.
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	Rank 1B.2	Cismontane woodland, valley and foothill grassland. Elevation ranges from 170 to 1000 feet (52 to 305 meters). Blooms (Apr)May-Jun.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Cismontane woodland, coastal bluff scrub, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
California androsace <i>Androsace elongata</i> ssp. <i>acuta</i>	Rank 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 490 to 4280 feet (150 to 1305 meters). Blooms Mar-Jun.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Anderson's manzanita <i>Arctostaphylos andersonii</i>	Rank 1B.2	Broadleaved upland forest, chaparral, north coast coniferous forest. Elevation ranges from 195 to 2495 feet (60 to 760 meters). Blooms Nov-May.	<b>No Potential.</b> Chaparral and forest habitats are absent from the Project Area.	No further actions are recommended for this species.
Kings Mountain manzanita <i>Arctostaphylos regismontana</i>	Rank 1B.2	Broadleaved upland forest, chaparral, north coast coniferous forest. Elevation ranges from 1000 to 2395 feet (305 to 730 meters). Blooms Dec-Apr.	<b>No Potential.</b> Chaparral and forest habitats are absent from the Project Area.	No further actions are recommended for this species.
coastal marsh milk-vetch <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Elevation ranges from 0 to 180 feet (0 to 55 meters). Blooms (Apr)Jun- Oct.	<b>Unlikely.</b> Dunes, scrub, and salt marsh habitats are absent from the Project Area. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality. Additionally, the entirety of Pulgas Creek in the Project Area has been walked during a period of time when this conspicuous perennial taxon would have been readily identifiable, and no individuals were observed. This taxon has not been observed away from the coast since 1894.	No further actions are recommended for this species.
Brewer's calandrinia <i>Calandrinia breweri</i>	Rank 4.2	Chaparral, coastal scrub. Elevation ranges from 35 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar- Jun.	<b>No Potential.</b> Chaparral and scrub habitats are absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Oakland star-tulip <i>Calochortus umbellatus</i>	Rank 4.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 330 to 2295 feet (100 to 700 meters). Blooms Mar-May.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
pink star-tulip <i>Calochortus uniflorus</i>	Rank 4.2	Coastal prairie, coastal scrub, meadows and seeps, north coast coniferous forest. Elevation ranges from 35 to 3510 feet (10 to 1070 meters). Blooms Apr-Jun.	<b>No Potential.</b> Coastal prairie, scrub, meadows, seeps, and coniferous forest habitats are absent from the Project Area.	No further actions are recommended for this species.
johnny-nip <i>Castilleja ambigua</i> var. <i>ambigua</i>	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools (margins). Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 755 feet (0 to 230 meters). Blooms May-Oct(Nov).	<b>No Potential.</b> Alkaline substrate is absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Point Reyes salty bird's-beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	<b>Unlikely.</b> While tiny patches of tidal marsh species are present along parts of Pulgas Creek, true tidal marsh habitat is absent. Additionally, only historic occurrences of this taxon have been documented in the vicinity of the Project Area, and those occurrences are considered extirpated.	No further actions are recommended for this species.
fountain thistle <i>Cirsium fontinale</i> var. <i>fontinale</i>	FE, SE, Rank 1B.1	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland. Elevation ranges from 150 to 575 feet (45 to 175 meters). Blooms (Apr)May-Oct.	<b>No Potential.</b> This species is restricted to serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.
lost thistle <i>Cirsium praeteriens</i>	Rank 1A	Unknown	<b>Unlikely.</b> This species is known from only two collections from Palo Alto and has not been seen since 1901. The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
round-headed collinsia <i>Collinsia corymbosa</i>	Rank 1B.2	Coastal dunes. Elevation ranges from 0 to 65 feet (0 to 20 meters). Blooms Apr-Jun.	<b>No Potential.</b> Dunes are absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
San Francisco collinsia <i>Collinsia multicolor</i>	Rank 1B.2	Closed-cone coniferous forest, coastal scrub. Elevation ranges from 100 to 900 feet (30 to 275 meters). Blooms (Feb)Mar-May.	<b>No Potential.</b> Forest and scrub habitats are absent from the Project Area.	No further actions are recommended for this species.
clustered lady's-slipper <i>Cypripedium fasciculatum</i>	Rank 4.2	Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 330 to 7990 feet (100 to 2435 meters). Blooms Mar-Aug.	<b>No Potential.</b> Coniferous forest habitats are absent from the Project Area.	No further actions are recommended for this species.
western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr).	<b>No Potential.</b> Forest, woodland, and chaparral habitats are absent from the Project Area.	No further actions are recommended for this species.
California bottle-brush grass <i>Elymus californicus</i>	Rank 4.3	Broadleaved upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug(Nov).	<b>No Potential.</b> Forest and woodland habitats are absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
San Mateo woolly sunflower <i>Eriophyllum latilobum</i>	FE, SE, Rank 1B.1	Cismontane woodland (often serpentine, roadcuts), coastal scrub, lower montane coniferous forest. Elevation ranges from 150 to 1085 feet (45 to 330 meters). Blooms May-Jun.	<b>No Potential.</b> Woodland, scrub, and forest habitats are absent from the Project Area.	No further actions are recommended for this species.
Hoover's button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	Rank 1B.1	Vernal pools. Elevation ranges from 10 to 150 feet (3 to 45 meters). Blooms (Jun)Jul(Aug).	<b>No Potential.</b> Vernal pools are absent from the Project Area.	No further actions are recommended for this species.
Jepson's coyote-thistle <i>Eryngium jepsonii</i>	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 10 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	<b>No Potential.</b> Vernal pools are absent from the Project Area.	No further actions are recommended for this species.
San Francisco wallflower <i>Erysimum franciscanum</i>	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland. Elevation ranges from 0 to 1805 feet (0 to 550 meters). Blooms Mar-Jun.	<b>Unlikely.</b> Chaparral, dune, scrub, and grassland habitats are absent from the Project Area. The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
Hillsborough chocolate lily <i>Fritillaria biflora</i> var. <i>ineziana</i>	Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 490 to 490 feet (150 to 150 meters). Blooms Mar-Apr.	<b>No Potential.</b> This taxon is known from serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 10 to 1345 feet (3 to 410 meters). Blooms Feb- Apr.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
short-leaved evax <i>Hesperivax sparsiflora</i> var. <i>brevifolia</i>	Rank 1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 705 feet (0 to 215 meters). Blooms Mar- Jun.	<b>No Potential.</b> Coastal bluff scrub, coastal dunes, and coastal prairie habitats are absent from the Project Area.	No further actions are recommended for this species.
Marin western flax <i>Hesperolinon congestum</i>	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland. Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul.	<b>No Potential.</b> This species is restricted to serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.
harlequin lotus <i>Hosackia gracilis</i>	Rank 4.2	Broadleaved upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	<b>No Potential.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality. Additionally, the bank is dry and lacks suitable mesic conditions.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
coast iris <i>Iris longipetala</i>	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May(Jun).	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
serpentine leptosiphon <i>Leptosiphon ambiguus</i>	Rank 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 395 to 3710 feet (120 to 1130 meters). Blooms Mar- Jun.	<b>No Potential.</b> This species is restricted to serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.
bristly leptosiphon <i>Leptosiphon aureus</i>	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr- Jul.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
broad-lobed leptosiphon <i>Leptosiphon latisectus</i>	Rank 4.3	Broadleaved upland forest, cismontane woodland. Elevation ranges from 560 to 4920 feet (170 to 1500 meters). Blooms Apr- Jun.	<b>No Potential.</b> Forest and woodland habitats are absent from the Project Area.	No further actions are recommended for this species.
Crystal Springs lessingia <i>Lessingia arachnoidea</i>	Rank 1B.2	Cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 195 to 655 feet (60 to 200 meters). Blooms Jul- Oct.	<b>No Potential.</b> This species is restricted to serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3	Broadleaved upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	<b>Unlikely.</b> This species is typically known from serpentine and clay substrates, which are absent from the Project Area. The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
spring lessingia <i>Lessingia tenuis</i>	Rank 4.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 985 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	<b>No Potential.</b> Chaparral, woodland, and forest habitats are absent from the Project Area.	No further actions are recommended for this species.
arcuate bush-mallow <i>Malacothamnus arcuatus</i>	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 50 to 1165 feet (15 to 355 meters). Blooms Apr-Sep.	<b>No Potential.</b> Chaparral, woodland, and forest habitats are absent from the Project Area.	No further actions are recommended for this species.
woodland woollythreads <i>Monolopia gracilens</i>	Rank 1B.2	Broadleaved upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland. Elevation ranges from 330 to 3935 feet (100 to 1200 meters). Blooms (Feb)Mar-Jul.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality. Additionally, this species often occurs on serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
white-rayed pentachaeta <i>Pentachaeta bellidiflora</i>	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 115 to 2035 feet (35 to 620 meters). Blooms Mar-May.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality. Additionally, this species often occurs on serpentine substrate, which is absent from the Project Area.	No further actions are recommended for this species.
Michael's rein orchid <i>Piperia michaelii</i>	Rank 4.2	Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Elevation ranges from 10 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	<b>No Potential.</b> Chaparral, woodland, forest, and scrub habitats are absent from the Project Area.	No further actions are recommended for this species.
Choris' popcornflower <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Rank 1B.2	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 10 to 525 feet (3 to 160 meters). Blooms Mar-Jun.	<b>No Potential.</b> Chaparral, coastal prairie, and coastal scrub habitats are absent from the Project Area.	No further actions are recommended for this species.
Hickman's popcornflower <i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i>	Rank 4.2	Chaparral, closed-cone coniferous forest, coastal scrub, marshes and swamps, vernal pools. Elevation ranges from 50 to 1280 feet (15 to 390 meters). Blooms Apr-Jun.	<b>No Potential.</b> Chaparral, forest, scrub, marsh, swamp, and vernal pool habitats are absent from the Project Area.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May.	<b>No Potential.</b> This species occurs in seasonally ponded habitats, which are absent from the Project Area.	No further actions are recommended for this species.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	Rank 1B.2	Marshes and swamps (shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	<b>No Potential.</b> Marsh and swamp habitats are absent from the Project Area.	No further actions are recommended for this species.
chaparral ragwort <i>Senecio aphanactis</i>	Rank 2B.2	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 50 to 2625 feet (15 to 800 meters). Blooms Jan-Apr(May).	<b>No Potential.</b> Chaparral, woodland, and scrub habitats are absent from the Project Area.	No further actions are recommended for this species.
San Francisco campion <i>Silene verecunda</i> ssp. <i>verecunda</i>	Rank 1B.2	Chaparral, coastal bluff scrub, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 100 to 2115 feet (30 to 645 meters). Blooms (Feb)Mar-Jul(Aug).	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
northern slender pondweed <i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Rank 2B.2	Marshes and swamps (shallow freshwater). Elevation ranges from 985 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	<b>No Potential.</b> Marsh and swamp habitats are absent from the Project Area. This species is not known from tidally influenced habitats.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
two-fork clover <i>Trifolium amoenum</i>	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
saline clover <i>Trifolium hydrophilum</i>	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	<b>No Potential.</b> Mesic, alkaline habitat is absent from the Project Area.	No further actions are recommended for this species.
San Francisco owl's-clover <i>Triphysaria floribunda</i>	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 525 feet (10 to 160 meters). Blooms Apr-Jun.	<b>Unlikely.</b> The vast majority of the Project Area is developed, which precludes this species in those areas. The bank of Pulgas Creek is ruderal fill soil and is dominated by invasive species, which greatly diminishes habitat quality.	No further actions are recommended for this species.
Methuselah's beard lichen <i>Usnea longissima</i>	Rank 4.2	Broadleaved upland forest, north coast coniferous forest. Elevation ranges from 165 to 4790 feet (50 to 1460 meters). Blooms .	<b>No Potential.</b> Forest habitat is absent from the Project Area.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>WILDLIFE</b>				
<b>MAMMALS</b>				
<i>Antrozous pallidus</i> pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Unlikely.</b> No potential roosting sites are present within the Project Area. No hollow trees, crevices, snags, or suitable manmade structures were observed.	No further actions are recommended for this species.
<i>Corynorhinus townsendii</i> <i>townsendii</i> Townsend's western big-eared bat	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	<b>Unlikely.</b> No potential roosting sites are present within the Project Area. The Project Area does not contain suitable building features, caves, or mines.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Lasiurus cinereus</i> Hoary bat	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	<b>Unlikely.</b> No potential roosting sites are present within the Project Area. Trees within the Project Area do not provide foliage dense enough to support roosts.	No further actions are recommended for this species.
<i>Neotoma fuscipes annectens</i> San Francisco dusky-footed woodrat	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	<b>No Potential.</b> The Project Area does not contain forest or chaparral habitats.	No further actions are recommended for this species.
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	FE, SE, SFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for dryland refugia during high tides.	<b>Unlikely.</b> This species was documented in marsh habitat located approximately 0.5 miles east of the Project Area in 1992 (CDFW 2023). Pulgas Creek within the Project Area is at the upper limit of tidal influence from the San Francisco Bay and has connectivity to historically occupied habitat. However, Pulgas Creek within the Project Area is a mixture of engineered armoring and ruderal vegetation and does not contain vegetation that would support this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Sorex vagrans halicoetes</i> Salt-marsh wandering shrew	SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among <i>Salicornia</i> .	<b>Unlikely.</b> This species was documented in marsh habitat located approximately 0.5 miles east of the Project Area in 1985 (CDFW 2023). Pulgas Creek within the Project Area is at the upper limit of tidal influence from the San Francisco Bay and has connectivity to historically occupied habitat. However, Pulgas Creek within the Project Area is a mixture of engineered armoring and ruderal vegetation and does not contain vegetation that would support this species.	No further actions are recommended for this species.
<i>Taxidea taxus</i> American badger	SSC	Most abundant in drier open stages of most shrub, woodland, and herbaceous vegetation types. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	<b>No Potential.</b> The Project Area does not contain open grassland to support this species. The Project Area is within dense urban development.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>BIRDS</b>				
<i>Ardea herodias</i> great blue heron	breeding sites protected by CDFW	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	<b>No Potential.</b> The Project Area does not contain trees or other suitable substrate to support a nesting colony.	No further actions are recommended for this species.
<i>Asio flammeus</i> short-eared owl	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	<b>No Potential.</b> The Project Area is primarily developed and does not contain open habitat to support foraging by this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Athene cunicularia</i> burrowing owl	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	<b>Unlikely.</b> The Project Area does not provide grassland, scrub, or other open habitat to support this species. No mammal burrows or suitable surrogate burrows were observed within the Project Area.	No further actions are recommended for this species.
<i>Brachyramphus marmoratus</i> Marbled murrelet	FT, ST	Predominantly coastal marine. Nests in old-growth coniferous forests up to 30 miles inland along the Pacific coast, from Eureka to Oregon border, and in Santa Cruz/San Mateo Counties. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes.	<b>No Potential.</b> The Project Area does not contain old-growth forest habitat.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Charadrius alexandrinus nivosus</i> western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	<b>No Potential.</b> The Project Area is primarily developed and does not contain beaches or other suitable barren habitat to support nesting by this species.	No further actions are recommended for this species.
<i>Circus hudsonius</i> northern harrier	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	<b>Unlikely.</b> The Project Area is primarily developed and does not contain open grassland, marsh, or similar habitat to support nesting or foraging by this species.	No further actions are recommended for this species.
<i>Coturnicops noveboracensis</i> yellow rail	SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	<b>No Potential.</b> This species historically occurred in San Mateo County and was documented in Redwood Slough in 1912. However, the Project Area is outside of this species current breeding range.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Elanus leucurus</i> white-tailed kite	SFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	<b>Unlikely.</b> This species is known to occur in the vicinity (eBird 2023) but is unlikely to nest in the Project Area due to limited nesting or foraging habitat and high degree of anthropogenic disturbance.	No further actions are recommended for this species.
<i>Falco peregrinus anatum</i> American peregrine falcon	SE, SFP	Year-round resident and winter visitor. Occurs near water, including coastal areas, wetlands, lakes and rivers. Usually nests on sheltered cliffs or tall man-made structures. Preys primarily on waterbirds.	<b>No Potential.</b> The Project Area does not contain protected cliffs or tall man-made structures suitable for nesting by this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Geothlypis trichas sinuosa</i> San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	<b>Moderate Potential.</b> This species has been observed in Pulgas Creek downstream of the Project Area (eBird 2023). This species may occasionally forage within the Project Area. However, vegetation within the Project Area is limited.	If construction initiation during the nesting season (February 1 through August 31) cannot be avoided, pre-construction nesting bird surveys will be conducted within 14 days of initial ground disturbance or vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. An exclusion zone where no construction would be allowed will be established around any active nests of any protected avian species found in the Project Area until a qualified biologist has determined that all young have fledged and are independent of the nest.
<i>Haliaeetus leucocephalus</i> bald eagle	BGEPA, SE, SFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	<b>No Potential.</b> No large lakes, reservoirs, or rivers occur within the vicinity of the Project Area. A few moderate sized trees were observed in the vicinity, but none large enough to support nests of this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Laterallus jamaicensis coturniculus</i> California black rail	ST, SFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	<b>Unlikely.</b> This species has been documented in marsh habitat located approximately 2 miles east of the Project Area at Bair Island as recently as 2011 (CDFW 2023). Pulgas Creek within the Project Area is at the upper limit of tidal influence from the San Francisco Bay and has connectivity to suitable habitat. However, Pulgas Creek within the Project Area is a mixture of engineered armoring and ruderal vegetation and does not contain vegetation that would support this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Melospiza melodia pusillula</i> Alameda song sparrow	SSC	Year-round resident of salt marshes bordering the south arm of San Francisco Bay. Inhabits primarily pickleweed marshes; nests placed in marsh vegetation, typically shrubs such as gumplant.	<b>Moderate Potential.</b> This species has been observed in Pulgas Creek downstream of the Project Area (eBird 2023). This species may occasionally forage within the Project Area. However, vegetation within the Project Area is limited.	If construction initiation during the nesting season (February 1 through August 31) cannot be avoided, pre-construction nesting bird surveys will be conducted within 14 days of initial ground disturbance or vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. An exclusion zone where no construction would be allowed will be established around any active nests of any protected avian species found in the Project Area until a qualified biologist has determined that all young have fledged and are independent of the nest.
<i>Nycticorax nycticorax</i> black-crowned night heron	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	<b>Unlikely.</b> The Project Area and adjacent lands lack suitable nesting and foraging habitat.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Rallus obsoletus obsoletus</i> California Ridgway's (clapper) rail	FE, SE, SFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on mollusks and crustaceans.	<b>Unlikely.</b> This species has been documented in marsh habitat located approximately 2 miles east of the Project Area at Bair Island as recently as 2006 (CDFW 2023). Pulgas Creek within the Project Area is at the upper limit of tidal influence from the San Francisco Bay and has connectivity to suitable habitat. However, Pulgas Creek within the Project Area is a mixture of engineered armoring and ruderal vegetation and does not contain vegetation that would support this species.	No further actions are recommended for this species.
<i>Sternula antillarum browni</i> California least tern	FE, SE, SFP	Summer resident along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins.	<b>No Potential.</b> The Project Area does not contain sandy or gravelly substrates suitable for nesting. The nearest documented colony occurs approximately 2.5 miles southeast and is from 1976.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>REPTILES &amp; AMPHIBIANS</b>				
<i>Ambystoma californiense</i> California tiger salamander - central California DPS	FT, ST	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Adults are fossorial and utilize mammal burrows and other subterranean refugia. Breeding occurs primarily in vernal pools and other seasonal water features.	<b>No Potential.</b> There are no seasonal wetlands or grassland habitat within the Project Area to support this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Aneides niger</i> Santa Cruz black salamander	SSC	Climbing salamanders of the genus <i>Aneides</i> frequent damp woodlands and are usually found hiding under various debris (i.e. bark, woodrat nests, logs). The Santa Cruz black salamander exists south of the San Francisco Bay and was only recently recognized as a separate and protected species. Santa Cruz black salamander is highly sedentary, preferring to stay hidden under riparian debris. Prey items include millipedes, spiders, and other insects (Stebbins and McGinnis 2012).	<b>No Potential.</b> The Project Area does not contain woodland habitat to support this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Dicamptodon ensatus</i> California giant salamander	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	<b>No Potential.</b> The Project Area does not contain forest, woodland, or chaparral habitat to support this species.	No further actions are recommended for this species.
<i>Emys marmorata</i> Western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	<b>Unlikely.</b> Pulgas Creek within the Project Area is at the upper limits of the San Francisco Bay tidal influence. Pulgas Creek within the Project Area is a mixture of engineered armoring and ruderal vegetation and does not contain basking sites or grassy banks that would support this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Rana boylei</i> foothill yellow-legged frog	SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partially-sunlit, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on invertebrates (aquatic and terrestrial).	<b>No Potential.</b> Suitable rocky stream habitat is not present within the Project Area.	No further actions are recommended for this species.
<i>Rana draytonii</i> California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	<b>No Potential.</b> The Project Area does not contain suitable aquatic habitat to support larval development of this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Thamnophis sirtalis</i> <i>tetraena</i> San Francisco gartersnake	FE, SE, SFP	Vicinity of freshwater marshes, ponds and slow moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	<b>No Potential.</b> The Project Area does not contain suitable freshwater marsh or upland to support this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>FISH</b>				
<i>Acipenser medirostris</i> green sturgeon	FT, SSC	Spawns in the Sacramento River and Klamath Rivers, at temperatures between 8 and 14 degrees Celsius. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	<b>No Potential.</b> Based on a review of fish sampling surveys completed by CDFW and UC Davis researchers, as well as conditions present in Pulgas Creek within the Project Area, green sturgeon do not have the potential to be present at any time within the Project Area. An analysis of data collected by the San Francisco Bay Study (midwater and otter trawls) since 2000 showed zero detections of green sturgeon at Bay Study stations 101 and 102, both of which are within 5 miles of the entrance to Pulgas Creek (CDFW 2020b). In addition, Pulgas Creek within the Project Area has substantial reaches of shallow water that are not suitable for habitation by the life stages of green sturgeon potentially present within south San Francisco Bay.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Oncorhynchus mykiss irideus</i> steelhead - central CA coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	<b>Unlikely.</b> Steelhead are unlikely to occur in Pulgas Creek due to lack of suitable upstream habitat. While Pulgas Creek has not been surveyed for steelhead (Leidy et al. 2005, CEMAR 2016), much of the upstream extent of Pulgas Creek is culverted beneath developed areas and the creek is not suitable spawning habitat for steelhead. Historic surveys of Cordilleras Creek (which meets Pulgas Creek at Smith Slough) have not identified steelhead (Leidy et al. 2005), and no streams with current steelhead runs are located in the immediate surrounds (CEMAR 2016). As such, steelhead are unlikely to be present.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Spirinchus thaleichthys</i> longfin smelt	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	<b>Unlikely.</b> Longfin smelt adults seasonally occur within South San Francisco Bay, but are generally more concentrated in Suisun, San Pablo, and North San Francisco Bays (Moyle 2002, Merz 2013). Trawl surveys conducted by CDFW as part of the Bay Study have found longfin smelt are found in low numbers in South San Francisco Bay. The shallow and exposed water observed within the urbanized Pulgas Creek provides little habitat value for this species. Light flow and limited tidal influence in the section of creek within the Project Area likely result in higher temperatures than adjacent waters in the Bay, making habitat less suitable for this species in general. Based on the conditions present in the Project Area, it is unlikely that longfin smelt are present.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<b>INVERTEBRATES</b>				
<i>Bombus crotchii</i> Crotch bumblebee	SC	Range largely restricted to California. Favors grassland and scrub habitats. Typical of bumblebees, nests are usually constructed underground. Visits a variety of plants.	<b>Unlikely.</b> The Project Area is primarily developed and does not contain scrub or grassland habitat that may support this species.	No further actions are recommended for this species.
<i>Bombus occidentalis</i> western bumblebee	SC	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2015). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g., mammal burrows). Many plants are visited and pollinated.	<b>Unlikely.</b> The Project Area is primarily developed and does not contain mammal burrows or other suitable habitat that may support this species.	No further actions are recommended for this species.
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. <i>Plantago erecta</i> is the primary host plant; <i>Orthocarpus densiflorus</i> and <i>O. purpurascens</i> are the secondary host plants.	<b>No Potential.</b> The Project Area does not contain serpentine soil, nor the appropriate host plants for this species.	No further actions are recommended for this species.



SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<i>Speyeria zerene myrtleae</i> Myrtle's silverspot butterfly	FE	Restricted to the fog belt of northern Marin and southernmost Sonoma County, including the Point Reyes peninsula; extirpated from coastal San Mateo County. Occurs in coastal prairie, dunes, and grassland. Larval foodplant is typically <i>Viola adunca</i> . Adult flight season may range from late June to early September.	<b>No Potential.</b> The Project Area occurs outside of this species current known range.	No further actions are recommended for this species.

- FE: Federal Endangered
- FT: Federal Threatened
- FC: Federal Candidate
- SE: State Endangered
- ST: State Threatened
- SR: State Rare
- SSC: CDFW Species of Special Concern
- SFP: State Fully Protected Species
- WBWG: Western Bat Working Group Priority Species
- Rank 1A: Plants presumed extinct in California
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere
- Rank 3: Plants about which we need more information – a review list
- Rank 4: Plants of limited distribution – a watch list