

APPENDIX B
BIOLOGICAL RESOURCES ASSESSMENT

City of Pleasanton Stream and Pond Maintenance Biological Resources Assessment

Pleasanton and Unincorporated areas, Alameda County, California

Prepared for:

Rita Di Candia
City of Pleasanton
Operations Services Department
P.O. Box 520
Pleasanton, California 94566

Prepared by:

WRA, Inc.
2169-G East Francisco Blvd
San Rafael, California 94901
Contact: Élan Alford
alford@wra-ca.com



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LIST OF ACRONYMS AND ABBREVIATIONS

BGEPA	Bald and Golden Eagle Protection Act
BIOS	CDFW Biogeographic Information and Observation System
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife (formerly California Department of Fish and Game [CDFG])
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
City	City of Pleasanton
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California red-legged frog
CSRL	California Soils Resources Lab
CTS	California tiger salamander
CWA	Clean Water Act
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Federal Endangered Species Act
Inventory	CNPS Inventory of Rare and Endangered Plants
MBTA	Migratory Bird Treaty Act
NWI	National Wetlands Inventory
OWHM	Ordinary High Water Mark
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
SAA	Lake and Streambed Alteration Agreement
SJKF	San Joaquin kit fox
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WBWG	Western Bat Working Group
WRA	WRA, Inc.

LIST OF PREPARERS

Leslie Lazarotti – Principal-in-Charge/Project Director

Élan Alford – Associate Biologist

Brian Kearns - Biologist

Samantha Hill – Biologist

Sundaran Gillespie – GIS Analyst

1.0 INTRODUCTION

1.1 Purpose of Assessment

In July and October of 2019, WRA, Inc. conducted site visits as part of an assessment of biological resources at twenty-five (25) sites with channels and detention ponds, collectively totaling approximately 95-acres of land owned and/or maintained by the City of Pleasanton (City) in Alameda County, California (Figure 1). The collective Project Area assessed under this report includes all 25 individual Study Area locations. Twenty-four of the Study Area locations are within the City of Pleasanton, and one, the Vineyard East Detention Pond Study Area, is located in unincorporated Alameda County. The Project Area is located in developed portions of Pleasanton, with many Study Areas occurring near public parks or in residential developments.

The City is proposing to conduct routine maintenance activities at several streams and stormwater detention ponds either on City-owned properties or privately owned properties with easements. The City seeks to periodically remove debris, sediment, and/or vegetation from approximately seventeen (17) stream section Study Areas and eight (8) stormwater detention pond Study Areas (Table 1) to maintain their flood control and stormwater treatment capacity. The maintenance is proposed at the following channel Study Areas (designated by C-#) and detention pond Study Areas (designated by P-#):

Table 1. Study Area Numbers/ Names

Study Area Number	Study Area Name
Creeks	
C-01	Pimlico Canal
C-02	Pleasanton Canal
C-03	Foothill High School Trash Rack
C-04	Bernal V-ditch
C-05	Bernal North/South V-ditch
C-06	Mission Creek Restoration Project
C-07	Lower Kottinger Creek
C-08	Upper Kottinger Creek
C-09	Touriga Creek
C-10	Junipero Canal
C-11	Mission Park Creek
C-12	Cemetery Creek
C-13	Gold Creek
C-14	Dublin Canyon Creek
C-15	Stonedale Channel
C-16	Arlington Creek
C-17	Rutledge Place Culvert

Study Area Number	Study Area Name
Detention Ponds	
P-01	Stoneridge Pond
P-02	Bernal Detention Pond Central
P-03	Canyon Oaks Detention Pond
P-04	Bernal West Detention Pond
P-05	Callippe Detention Pond
P-06	Oak Tree Farms Detention Pond
P-07	Vineyard West Detention Pond
P-08	Vineyard East Detention Pond

The purpose of the assessment was to gather information necessary to complete a review of biological resources at each of the 25 Study Areas. This report is based on an evaluation of various online data and site visits of the Project Area and its vicinity. This report evaluates this information in order to determine the (1) potential to support special-status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. If special-status species were observed during the site visits, they were recorded. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys be conducted. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may occur as a result of future maintenance work at the Project Area as well as potential mitigation measures to compensate for those impacts.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. This biological assessment is not an official protocol-level survey for listed species that may be required for approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and onsite conditions that were observed during the site visits.

1.2 Project Summary

The City conducts periodic maintenance in its stream corridors and detention basins to improve stormwater conveyance and quality (Project). The proposed Projects may occur as necessary on any of the 17 stream sections and 8 stormwater detention ponds located throughout the City. These features occur in a myriad of settings, ranging from a concrete drainage between Pimlico Drive and Interstate 580, to a naturalized stream running through Mission Park, to a detention basin in the Bernal Community Park. Routine maintenance locations are anticipated to occur to City-owned lands of facilities located within or adjacent to stream channels, stormwater conveyance corridors, excavated upland detention basins and adjacent access roads and infrastructure as well as similarly situated locations on private property that have City access easements for storm related activity.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of

potential Project impacts. Table 2 provides a regulatory crosswalk between sensitive resources and jurisdictional agencies and regulations, as well as which specific question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines relates to the sensitive resource.

Table 2. Regulatory Crosswalk

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

¹ Descriptions have been summarized; see Section 6.2 for details.

² Includes, but not limited to: streams, creeks, rivers, ponds, lakes

Special-Status Species				
Special-Status Plants	Endangered Species Act (ESA) California Endangered Species Act (CESA) California Native Plant Protection Act (CNPPA) Local plans and ordinances	U.S. Fish and Wildlife Service (USFWS) CDFW Local agencies	Question A. Special-status Species Question E. Local Policies	ESA Listed Plants CESA Listed Plants CNPPA Listed Plants California Native Plant Society (CNPS) Rank 1, 2, & 3 Plants CNPS Rank 4 Plants (sometimes, analysis required) Locally listed Plants (sometimes, analysis required) Locally Listed Trees (local ordinance)
Special-status Wildlife	ESA CESA CFGC Bald and Golden Eagle Protection Act (BGEPA) Local plans and ordinances	USFWS National Marine Fisheries (NMFS) CDFW Local agencies	Question A. Special-status Species Question E. Local Policies	ESA Listed Wildlife CESA Listed Wildlife CDFW Fully Protected Species CDFW Species of Special Concern Native Nesting birds Bald and Golden Eagles
Critical Habitat	ESA	USFWS	Question A. Special-status Species Question F. Conservation Plans	Critical Habitat is only designated for ESA listed species such as: California red-legged frog, marbled murrelet etc.

2.1 Sensitive Natural Communities

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

Non-sensitive natural communities include vegetation alliances and associations on the CDFW Natural Communities List with a rarity ranking of S4 or S5, as well as other semi-natural (non-native species dominated) stands and non-sensitive land use designations such as agriculture,

developed areas, etc. These communities and land uses are not protected by federal, state, or local laws and are not considered sensitive under CEQA.

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

2.1.1 Sensitive Aquatic Resources

Waters of U.S.

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

Waters of the State

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

Lakes, Streams, and Riparian Habitat

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

other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). “Riparian” is defined as “on, or pertaining to, the banks of a stream.” Riparian vegetation is defined as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 SAA from CDFW.

2.2 Special-status Species

2.2.1 Special-status Plants

Special-status species include those plant species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the ESA or CESA. These acts afford protection to both listed species and those that are formal candidates for listing. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Rank 3 and Rank 4 species are also protected under CEQA, and are included in this analysis for completeness. A description of the CNPS Ranks is provided below in Table 3.

Table 3. CNPS Ranking List

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

CNPPA

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

Locally Rare

Locally rare species are those species that are considered sensitive or unique or that occur at the limits of their natural range within a specific region. Locally rare plant species can include species which are not formally listed nor have a CNPS Rank. Locally rare plant lists have been created for several regions within the state, including Ventura County, Santa Barbara County, Alameda County, and Contra Costa County. Plants on the locally rare lists are subject to review through CEQA.

Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties, Eighth Edition (Lake 2018) is a document produced by the East Bay Chapter of the CNPS that lists 706 plant taxa which are considered locally rare, unusual, or significant in Alameda and Contra Costa counties. Of these 706 species, 444 occur in two or fewer regions in Alameda and Contra Costa counties (ranked A1 in the East Bay), 262 occur in five or fewer regions in the two counties or are otherwise threatened (ranked A2 in the East Bay), and 83 are only known from the area historically and are presumed to have been extirpated from the East Bay during the last 100 years (A1x) [see Table 4 below]. A-ranked species receive consideration under sections 15380 and 15125(a) of CEQA and are considered “locally rare” for the purposes of this report. Any locally rare species observed in the Study Area are discussed in this report.

Table 4. Description of East Bay CNPS Rare Plant Rankings

Rank	Description
A1	Locally Rare Species. Species occurring in two or fewer regions in Alameda and Contra Costa counties
A1x	Locally Rare Species. Species presumed extirpated from Alameda and Contra Costa counties
A1?	Locally Rare Species. Species possibly occurring in Alameda and Contra Costa counties. Identification or location is uncertain
A2	Locally Rare Species. Plants occurring in three to five regions or are otherwise threatened in Alameda and Contra Costa counties.
B	High Priority Watch List. Plants occurring in six to nine regions in Alameda and Contra Costa counties.
C	Second Priority Watch List. Plants occurring in ten to fifteen regions in Alameda and Contra Costa counties.

*Ranks preceded by an asterisk (e.g. “*A1”) also have a statewide rarity ranking

2.2.2 Special-status Wildlife

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

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

Critical Habitat

Critical habitat is a term defined in the ESA as a specific and designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

Wildlife Corridors

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

2.3 Local Ordinances

2.3.1. *City of Pleasanton General Plan*

The Project Area is regulated by the City of Pleasanton General Plan (City of Pleasanton 2009) which outlines conservation goals and policies for the City of Pleasanton. These policies outline land use, zoning, housing and conservation among additional policies. All 25 Study Areas are either zoned as agriculture (City of Pleasanton, 2014) or as low density residential land use (City of Pleasanton 2012, 2015). The Project Area also lies within the East Alameda County Conservation Strategy (EACCS) boundaries (ICF International 2010). These policies provide a framework to protect natural resources while improving and streamlining the environmental permitting process. Relevant sections include 3.2 (Project-level Use of the Strategy), 3.5 (Conservation Goals and Objectives) 4.8 (Conservation Zone 8) and 5.5 (Project by Project Regulatory Compliance).

2.3.2. *City of Pleasanton Tree Ordinance*

The City of Pleasanton Municipal Code contains the City's tree ordinance (Chapter 17.16) which outlines the requirements to protect and replace trees within the city limits. Section 17.16.006 protects "Heritage Trees" which are:

- any single-trunked tree, regardless of species, with circumference of 55 inches (17-inch diameter) or more at 4.5 feet above ground level,
- any multi-trunked tree of which the two largest trunks have a circumference of 55 inches (17-inch diameter) or more at 4.5 feet above ground level,

- any tree 35 feet or more in height,
- a tree of historical significance or
- a stand of trees, the nature of which makes each dependent upon the other for survival.

Removal of any heritage trees requires an application which will be reviewed by the director. Section 17.16.050 requires new property development in which any trees are to be removed or affected to include an application to the City for review. If any trees are removed without review the developer shall pay a fine. Prior to issuance of any permit, the applicant shall post money in the sum of \$5,000 for each tree required to be preserved or \$25,000, whichever is less. The money shall be retained for one year and be forfeited in an amount equal to \$5,000 per tree in the event that a tree or trees required to be preserved are removed, destroyed or disfigured.

2.3.3. *Alameda County Regulation of Trees in County Right-Of-Way*

Alameda County Municipal Code contains its own tree regulations (Chapter 12.11) which outlines the requirements for protecting trees that occur in a right-of-way. Section 12.11.110 details prohibited activities which includes anything that could injure or damage a tree such as:

- top, head back, stub, pollard
- use of mechanical weeding devices
- lighting on fire
- poisoning
- attaching material (posters, stakes, staples, etc.)

The director has the authority to approve the removal of a tree from the right-of-way as a part of a scheduled tree removal and replacement program or in conjunction with an approved roadway improvement project.

3.0 ENVIRONMENTAL SETTING

3.1 Soils and Topography

3.1.1 Soils

The U.S. Department of Agriculture (USDA) *Soil Survey of Alameda County* (USDA 1974) and California Soils Resources Lab (CSRL) SoilWeb (CSRL 2019) indicates the Project Area is composed of twelve soil series: *Azule, Clear Lake, Danville, Diablo, Gravel Pits, Los Osos, Pleasanton, Positas, Sunnyvale, Sycamore, Yolo and Zamora*. These soil series are described below (Appendix A, Figure 2).

Azule Series: The Azule series consists of moderately deep, well drained soils on hills with slopes of 9 to 75 percent. They formed in material weathered from consolidated alluvium and from soft shale and fine grained sandstone and have medium to rapid runoff and slow permeability. In a typical profile, the surface layer is very dark grayish brown (2.5Y 3/2) slightly acid clay loam, 6 inches thick. This is underlain by very dark grayish brown to light yellowish brown (2.5Y 6/4) slightly acid clay to 25 inches. From 25 to 40 inches, the soil consists of light olive brown (2.5Y 5/4) consolidated sediment. Within the Project Area, this series occurs in Study Area C-13.

Clear Lake Series: The Clear Lake series consists of clays that formed under poorly drained conditions. These soils are underlain by alluvium from basic and sedimentary rock. They are on plains and flat basin areas. In a typical profile, the surface layer is black (N 4/0) or very dark gray (10YR 3/1) clay, about 39 inches thick. This is underlain by a dark-gray moderately alkaline clay that has light gray mottles, black (10YR 2/1) when moist. At a depth of about 46 inches, it is gray and light brownish-gray, moderately alkaline clay. At a depth of about 60 inches, it is light gray to white, mildly alkaline sandy clay loam. Within the Project Area, this series occurs in Study Area C-14.

Danville Series: The Danville series consists of very deep, well drained soils that formed in alluvium. Danville soils are on fans and terraces and have slopes of 0 to 9 percent. Within the Project Area, this series occurs in Study Area C-03.

Diablo Series: The Diablo series consists of moderately deep, well drained soils on hillslopes and mountain slopes. They formed from residuum weathered from calcareous shale. These soils are well drained and have very high runoff. The soil ecological setting is considered clayey hills and they are not considered to be hydric. Within the Project Area, this series occurs in Study Area C-14.

Gravel Pits: The gravel pits soil map unit consists of extremely gravelly sand up to 60 inches deep occurs. Runoff is very low. Gravel pits make up 95 percent of the composition and are non-hydric soils. The remaining 5 percent are other minor components including stream terraces, which are hydric soils. No landform positions are provided for this soil type. Within the Project Area, this series occurs in Study Area P-07.

Los Osos Series: The Los Osos series consists of moderately deep, well drained soils on uplands with slopes of 5 to 75 percent. They formed in material weathered from firm to hard sandstone and shale. These soils have very high runoff and slow permeability. A typical profile includes five soil horizons: A, Btss1, Btss2, C, and Cr.

The A horizon is a very dark grayish brown (10YR 3/2) moderately acid (pH 6.0) loam from 0 to 14 inches. Beneath this, from 14 to 24 inches, is the Btss1 layer, a dark yellowish brown (10YR 4/4), moderately acid clay. This is underlain, from 24 to 32 inches, by the Btss2 horizon, a dark yellowish brown, slightly acid (pH 6.5) clay loam. Beneath this is the C horizon, a light olive brown (2.5Y 5/4), neutral (pH 7.0) sandy loam. The deepest horizon, from 39 to 43 inches, is the Cr horizon, a brown (10YR 4/3) sandstone. Within the Project Area, this series occurs in Study Areas C-14 and P-06.

Pleasanton Series: The Pleasanton map unit consists very deep, well drained and fine-loamy soils. They are located on nearly level to gently sloping alluvial fans and terraces. A typical profile includes five soil horizons: Ap, A, B2t, B3, and C.

The Ap horizon is a very dark grayish brown (10YR 3/2), slightly acid (pH 6.3) and gravelly fine sandy loam from 0-9 inches. Beneath this is an A horizon from 9-21 inches containing very dark grayish brown (10YR 3/2), neutral (pH 6.8) and gravelly fine sandy loam. This is underlain by a Bt horizon from 21-48 inches containing a 10YR 3/3), neutral (pH 7.3) and gravelly sandy clay loam. This is underlain by a B horizon from 48-64 inches containing a dark brown (10YR 3/3), neutral (pH 7.3), gravelly loam. The final horizon in the soil profile is a C horizon from 64-72 and contains a slightly alkaline (pH 7.4), dark yellowish brown (10YR 4/4) and gravelly fine sandy loam near gravelly loam.

Within the Project Area, this series occurs in Study Areas C-03, C-09, C-13, P-05, and P-08.

Positas Series: The Positas series soils consist of well drained to excessively drained, shallow to moderately deep gravelly loam soils on nearly level to very steep high terraces south of the Livermore Valley. These soils formed in poorly sorted clay, sand, and gravel that are weakly consolidated in places. This well-drained soil has a very slowly permeable subsoil. Runoff is slow to medium, and the available water holding capacity is low.

Positas soils sloped at 2 to 20 percent and 20 to 40 percent series occur in the Study Area. Within the Project Area, this series occurs in Study Areas C-06, C-08, C-09, C-11, C-12, C-13, and C-16.

Sunnyvale Series: The Sunnyvale series consists of poorly drained, calcareous soils on nearly level valley floors north of Pleasanton. The surface soil is gray, granular, slightly calcareous, heavy clay loam. Sunnyvale soils are often used for irrigated row crops, for pasture, and for dry-farmed grain. A representative profile for the Sunnyvale series consists of an Ap horizon from 0 to 6 inches with dark gray to very dark grey (N4/ - N3/) silty clay. Similar colors are seen in an Alc2 horizon of silty clay from 6 to 14 inches. A Clca horizon extends from 14 to 34 inches, with light grey to dark grey (N7/ - N3/) silty clay.

Sunnyvale clay loam over clay: Is found on nearly level valley floors. The texture of surface soil ranges from silt loam to heavy clay loam or heavy silty clay loam. In some small areas the surface soil is strongly calcareous. This soil is poorly drained, the permeability of the subsoil is moderately slow, and runoff is slow. This soil type is listed as hydric in the National List of Hydric Soils (USDA 2012). Within the Project Area, this series occurs in Study Areas C-01, C-02, C-05, C-06, C-10, P-02, P-03, and P-04.

Sunnyvale clay loam, drained: The Sunnyvale series consists of poorly drained silty clays that are underlain by alluvium from material derived from sedimentary rock. These soils are in low positions on the alluvial plains and have slopes of less than 2 percent. Sunnyvale silty clay, drained, as it occurs on alluvial flats and in depressions, is listed as hydric on the US national hydric soils list (USDA 2012). The drained subtype of this series is typically used for agriculture such as row crops, sugar beets, prunes, and pears. Within the Project Area, this series occurs in Study Areas C-04 and P-02.

Sycamore Series: This soil unit consists of very deep, poorly drained soil that formed in alluvium derived from sedimentary rock. It is located on floodplains and has slopes of 0 to 2 percent, with elevations ranging from 10 to 50 feet. These soils have been artificially drained, runoff is slow, and permeability is moderate. The surface layer is a moderately alkaline silt loam about 18 inches thick that typically has a matrix chroma of 2. The water table is at a depth of 72 inches in most areas (USDA 1981). This soil series is included on the national hydric soils list, where it is listed as occurring on floodplain landforms (USDA 2015). Within the Project Area, this series occurs in Study Areas C-04, C-06, P-01 and P-04.

Yolo series: The Yolo series consists of very deep, well drained soils that formed in alluvium from mixed rocks. Yolo soils are on alluvial fans and flood plains. Slopes range from 0 to 20 percent, but are typically 0 to 2 percent. The soil is well drained with slow to medium runoff and moderate permeability. Tillage pans have developed over

broad areas and tend to restrict permeability. Within the Project Area, this series occurs in Study Areas C-04, C-05, C-06, C-07, C-08, C-11, C-15, and C-17.

Zamora series: The Zamora series consists of very deep, well drained soils that formed in alluvium from mixed rocks. Zamora soils are on nearly level to strongly sloping alluvial fans, stream terraces, and floodplains, usually with 0 to 9 percent slopes at elevations ranging from 30 to 1,300 feet. Mean annual precipitation ranges from 14 to 30 inches. Zamora soils exist in a dry, subhumid, mesothermal climate with hot dry summers and cool moist winters. Native vegetation typically consists of annual grasses, forbs, and widely spaced oaks. A typical profile includes five soil horizons: Ap, Bt1, Bt2, Bt3, and Bwk. Within the Project Area, this series occurs in Study Areas C-06, P-04, and P-06.

3.1.2 Topography

The Project Area consists of several detention ponds and stream channels located in highly disturbed or developed areas in a generally low elevation area. Elevations in the Project Area range from 300 to 440 feet. The excavated detention ponds range is approximately 15 feet below surrounding grades.

3.2 Climate and Hydrology

3.2.1 Climate

The Project Area is generally located in the southwest portion of Pleasanton with a majority of sites bound by the Arroyo de la Laguna to the west and Arroyo Valle to the north. The area has a Mediterranean climate with warm to hot, dry summers and mild to cool, wet winters. Average maximum temperatures range from 57 to 88 degrees Fahrenheit and average minimum temperatures range from 38 to 57 degrees Fahrenheit. Wind speeds are greatest in spring and summer, and least in the fall and winter (ICFI 2012). Precipitation typically occurs during the winter months, with little rainfall in the spring and summer. Average annual rainfall is 19 inches (NACSE 2019).

3.2.2 Hydrology

The Project Area consists of natural stream segments (Study Areas C-03, C-06, C-07, C-08, C-09, C-10, C-11, C-12, C-13, C-14, C-16, C-17, and P-06) and excavated channels (Study Areas C-01, C-02, C-04, C-05, C-10, and C-15) that are connected to surrounding streams and regulatory floodways within the City or unincorporated portions of Alameda County. The Project Area detention ponds are used as flood control features which are connected to the Project Area channels, floodways and streams via culverts. Arroyo de la Laguna, a freshwater forested/shrub wetland (NWI 2019), bounds nearly all Study Areas to the west with Study Area C-06, which sits within a 100 year flood zone (FEMA 2019), functioning as a major artery that directs flow to Arroyo de la Laguna. Approximately 2,000 ft. south of Arroyo de la Laguna's connection to Arroyo Valle, which travels mainly east to west within the Project Area, the palustrine wetland feature transitions to a riverine feature. All channel parcels of the Project Area are connected to Arroyo de la Laguna, Arroyo Mocho, Alamo Canal, or Arroyo Valle, directly or indirectly. Other sources of hydrology to the Project Area are precipitation and surface run-off from adjacent lands. Precipitation typically occurs during the winter months, with little rainfall in the spring and summer. Average annual rainfall is 19 inches (NACSE 2019).

3.3 Vegetation and Land-use

3.3.1 Vegetation

The dominant vegetation types in the proposed Project's 25 Study Areas are ruderal grassland, riparian forest, landscaped areas, coast live oak woodland, perennial marsh and coyote brush scrub. Each of the locations typically support a mixed vegetation assemblage, representing a subset of vegetation types that occur across all Study Areas. Ruderal grassland includes areas that have been partially developed/ residential areas or have been used in the past for agriculture. Dominant plant species observed in ruderal herbaceous grassland in the Project Area include wild oat (*Avena sativa*), Italian rye grass (*Festuca perennis*), and Italian thistle (*Carduus pycnocephalus*). Dominant riparian forest tree layer includes coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and black walnut (*Juglans hindsii*), with lower densities of willow (*Salix* sp.) and sycamore (*Platanus racemosa*). Dominant plant species observed in perennial marsh in the Project Area include bulrush (*Schoenoplectus californicus*), smartweed (*Persicaria* sp.) and goosefoot (*Chenopodium* sp.). Landscaped areas contain lawn and ornamental trees. Coast live oak woodland is dominated by coast live oak trees that grow in various canopy density, from open to closed. The coyote brush scrubland is dominated by mature coyote brush (*Baccharis pilularis*). Vegetation types are described further in Section 4 and Appendix A, Figure 3.

3.3.2 Land-Use

The Project Area consists of portions of natural streams, drainage channels and detention ponds used and maintained by the city of Pleasanton. Nearly all Study Areas were historically used for various agricultural purposes such as row crops dating back to 1949 (NETR 2019). Study Areas C-01, P-01, and C-07 have been located within residential developments dating back to at least 1949. From 1949 up to 2005 the Project Area that historically supported various agricultural practices (NETR 2019) began to develop various public park space or residential areas around Project Area in 2005. Study Area C-05 was an engineered agricultural channel since at least 1949 which had portions near Valley Ave. and south re-naturalized around 2009, the northern portion of Study Area C-05 remains as an excavated feature. The City of Pleasanton excavated the detention ponds sometime prior to 2002 with Study Area P-01 remaining as an undeveloped field until approximately 2012. All Study Areas are surrounded by a mix of residential and commercial developments with Arroyo Valle in the northern portion of the Project Area and bound by Interstate 580. To the west is Arroyo de la Laguna and Interstate 680. Study Areas C-02, C-03, C-04, C-05, C-06, C-07, C-08, C-09, C-11, and C-13 occur either immediately adjacent to or directly inside of public park space.

4.0 ASSESSMENT METHODOLOGY

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

- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- Aerial photographs (Google 2019)
- Breeding Bird Atlas of Santa Clara County (Bousman 2007)

- California Native Plant Society Rare Plant Electronic Inventory (CNPS 2019a)
- California Natural Diversity Database (CNDDDB, CDFW 2019a)
- CDFG publication “California’s Wildlife, Volumes I-III” (Zeiner et al. 1990)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- Consortium of California Herbaria (CCH 2019)
- eBird: a citizen-based bird observation network in the biological sciences (Sullivan et al 2019)
- NWI (USFWS 2019a)
- Santa Clara Valley Habitat Plan (ICFI 2012)
- *Soil Survey of Eastern Santa Clara County* (USDA 1974)
- USFWS Information for Planning and Consultation (IPac) (USFWS 2019b)
- WBWG, Species Accounts Region 5 (WBWG 2019)

Database searches (i.e., CNDDDB, CNPS) focused on the Altamont, Byron Hot Springs, Diablo, Dublin, Niles, Livermore, Tassajara, La Costa Valley, and Milpitas USGS 7.5-minute quadrangles. Appendix A, Figures 4 and 5 contain observations of special-status plant species and wildlife species documented within a five-mile radius of the Project Area.

Following the remote assessment, a wildlife biologist and a botanist traversed the entire Project Area on foot to document: (1) plant communities present within the Project Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present.

4.1 Natural Communities

4.1.1 Terrestrial Natural Communities

Each Study Area was evaluated for terrestrial natural communities to determine if such areas have the potential to support special-status plants or wildlife. In most instances, communities are delineated based on distinct shifts in plant assemblage (vegetation), and follow the *California Natural Community List* (CDFW 2018) and *A Manual of California Vegetation, Online Edition* (CNPS 2019b). In some cases it may be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature; should an undescribed variant be used, it will be noted in the description.

Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3), were considered as part of this evaluation³

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

4.1.2 *Aquatic Natural Communities*

Each Study Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFW were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils (WRA 2019).

4.2 **Special-status Species**

4.2.1 *General Assessment*

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

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

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

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

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

If a special-status species was observed during a site visit, its presence was recorded and is discussed below in Section 4.2.2. or 4.2.3. For some species, a site assessment visit at the

level conducted for this report may not be sufficient to determine presence or absence to the degree required by regulatory agencies. In these cases, a species may be assumed to be present or protocol-level surveys may be necessary to prove absence. Special-status species for which protocol-level surveys may be necessary are discussed in Section 5.0.

4.2.2 *Special-status Plants*

Focused Survey

No focused surveys or targeted assessments have been completed within the Study Areas.

Protocol-level Survey

No protocol-level surveys were conducted in the Study Areas.

4.2.3 *Special-status Wildlife*

Targeted Assessment

No previous protocol-level surveys, or targeted assessments have been completed within the Study Areas.

Critical Habitat

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

Wildlife Corridors

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

5.0 ASSESSMENT RESULTS

The Project Area covers 95.04 acres and is situated throughout the City of Pleasanton and the county of Alameda, mostly occurring in developed areas adjacent to park space or residential developments. The Project Area has 25 Study Area locations and is bounded to the north by Interstate 580; all creek segments and almost all detention ponds occur within the City. One detention pond, Vineyard East Detention Pond, is located in unincorporated Alameda County.

5.1 Natural Communities

Overall, the Project Area has seven sensitive natural communities and five non-sensitive natural communities represented within the Study Areas. The non-sensitive communities include: landscaped, developed, ruderal grassland, coyote brush scrub, and coast live oak woodland.

The sensitive communities observed in the Study Areas include: riparian, detention pond, drainage ditch, ephemeral stream, intermittent stream, perennial marsh, and perennial stream.

Table 5 summarizes the natural community types observed in the Study Areas. Natural communities and other land use designations mapped in the Study Areas are shown in Appendix A, Figure 3. A description of the natural community is contained in the following section. Appendix B lists all plant species observed within and around the Study Areas. Appendix C contains representative photographs of the Study Areas.

Table 5. Natural Communities

Vegetation Structure/ Land Use	Community	Vegetation Alliance/Association (CNPS 2019b)	Sensitive Status	Rarity Ranking	Present at Study Area Locations	Acres within Project Area
Terrestrial Communities						
Tree-Dominated	Coast Live Oak Woodland	Coast Live Oak Woodland (<i>Quercus agrifolia</i> Woodland Alliance)	Non-sensitive	G5S4	C-06, C-08, C-09, C-14, C-16	3.95
Herb-Dominated	Coyote Brush Scrub	Coyote Brush Scrub (<i>Baccharis pilularis</i> Shrubland Alliance)	Non-sensitive	G5S5	C-06	1.28
Tree-Dominated	Riparian	Coast Live Oak Woodland (<i>Quercus agrifolia</i> Woodland Alliance)	Sensitive	G5S4	C-03 through C-09, C-11 through C-14, C-16, C-17 P-01, P-02, P-06, P-08	21.67
Herb-Dominated	Ruderal Grassland	Wild Oat Grassland (<i>Avena sativa</i> Herbaceous Stand)	Non-sensitive	N/A	C-02, C-04 through C-06, C-10, C-12, C-14 through C-17 P-01 through P-08	39.04
Developed	N/A	N/A	Non-sensitive	N/A	C-01 through C-04, C-06, through C-10, C-13 through C-17 P-01, P-02, P-05 through P-08	6.92
Landscaped	N/A	N/A	Non-sensitive	N/A	C-07, through C-11, C-13 through C-17 P-01, P-06	5.62
Aquatic Communities						

Vegetation Structure/ Land Use	Community	Vegetation Alliance/Association (CNPS 2019b)	Sensitive Status	Rarity Ranking	Present at Study Area Locations	Acres within Project Area
Detention Basin	N/A	Open Water / Bare	Sensitive	N/A	C-11 P-01 through P-08	9.71
Intermittent Stream	N/A	Open Water/ Bare	Sensitive	N/A	C-07 through C-09, C-11, C-16	1.08
Ephemeral Stream	N/A	Open Water/ Bare	Sensitive	N/A	C-03, C-06, C-07, C-12, C-13, C-17 P-06	0.93
Wetland	Perennial Marsh	California Bulrush (<i>Schoenoplectus californicus</i> Herbaceous Alliance)	Sensitive	GNR3	C-16	0.04
Perennial Stream	N/A	Open Water	Sensitive	N/A	C-06, C-14	2.37
Drainage Ditch	N/A	N/A	Sensitive	N/A	C-01, C-02, C-04, C-05, C-10, C-15	2.45

5.1.1 Terrestrial Natural Communities

Non-Sensitive

Ruderal Grassland; No Rank. Overall, the Study Areas are dominated by ruderal grassland. Although not described in the literature, ruderal grassland includes areas that have been partially developed or have been used in the past for agriculture. However, these areas are not currently used for agricultural activities, and have been allowed to revert to a semi-natural condition. Based on soil conditions, vegetation composition, and review of historical imagery, the Study Areas have historically consisted of agricultural land. Dominant plant species observed in ruderal herbaceous grassland in the Study Areas include wild oat, Harding grass (*Phalaris aquatica*), Italian rye grass, Italian thistle, yellow star thistle (*Centaurea solstitialis*) and additional ruderal species.

Developed; No Rank. The Study Areas contain developed land. There is no described Holland alliance for Developed Areas. All developed land within the Study Areas consists of paved roads or trails (Figure 3).

Landscaped; No Rank. The Study Areas contain landscaped land. There is no described Holland alliance for landscaped vegetation. These areas are comprised of native or non-native plants which are planted and maintained through irrigation, pruning and/ or fertilizing. In the Study Areas, a majority of the landscaped areas can be found within the stream segments running through public parks.

Coyote Brush Scrub; G5S5. There is coyote brush scrub habitat located within the Study Areas. Coyote brush scrub is known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This vegetation community is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay (Sawyer et al., 2009). Plant species associated with coyote brush scrub in the Study Areas consists of coyote brush and ruderal grassland.

Coast Live Oak Woodland; G5S4. The Study Areas contain coast live oak woodland. This vegetation community is typically located on terraces, canyon bottoms, slopes, and flats underlain by deep, well-drained sandy or loam substrates with high organic content (Sawyer et al., 2009). A majority of this community can be found within the riparian corridor areas of the channel segments, along the riparian corridor of detention ponds with some woodland occurring just outside of the riparian corridor. Dominant species in the tree layer include coast live oak, valley oak, and black walnut. A majority of tree stands within the Study Areas lack density which allows for a denser than average shrub and herb layer which was dominated by coyote brush, Himalayan blackberry (*Rubus armeniacus*), and canary ivy (*Hedera canariensis*).

Sensitive

Riparian (Coast Live Oak Woodland); G5S4.

Riparian woodland is a sensitive natural community that occurs in the Study Areas. Riparian woodland is not classified as sensitive biological community existing in *A Manual of California Vegetation, Online Edition* (CNPS 2019b). However, this community does contain elements of the communities described as coast live oak woodland (*Quercus agrifolia* Woodland Alliance; Rarity ranking G5, S4; CNPS 2019b). The overstory is generally open to dense and the understory is generally open. Dominant riparian forest tree layer includes coast live oak, valley

oak, and black walnut, with lower densities of willow and sycamore. The understory shrub species include Himalayan blackberry, willow, and toyon (*Heteromeles arbutifolia*). The understory herbaceous species include wild oat, soft brome (*Bromus hordeaceus*), and fennel (*Foeniculum vulgare*).

5.1.2 Aquatic Natural Communities

Non-Sensitive

No non-sensitive aquatic natural communities occur in the Study Areas.

Sensitive

Streams, channels, drainage ditches, and some detention ponds are considered to be potential waters of the U.S./State. All detention ponds are also considered to be potential CDFW jurisdiction as habitat.

Detention Basin; No Rank. The Study Areas consist of eight (8) manmade detention basins that are used as flood control features. These ponds receive stormwater flow through a series of culverts that connect to various other City channels and natural streams. No open water was observed within any of the ponds during the site assessments except for P-02, which had standing water within the northernmost basin that was diked by a rip-rap dam preventing water from flowing into other portions of the pond. Vegetation on the banks of the basin was dominated by Harding grass, wild oat, and curly dock (*Rumex crispus*). Vegetation within the basin was dominated by cattail (*Typha latifolia*), seaside barley (*Hordeum marinum*), and rabbitsfoot grass (*Polypogon monspeliensis*).

Drainage Ditch; No Rank. The Study Areas consist of six (6) manmade channelized drainage ditches (C-01, C-02, C-04, C-05, C-10, and C-15). These drainage ditches vary from concrete lined to engineered earthen channels that are used as flood control conveyance. Dominant vegetation within the earthen channels/ ditches composed largely of weedy upland species including Harding grass, wild oat, bristly ox-tongue (*Helminthotheca echioides*), and Italian rye grass.

Ephemeral Stream. No Rank. The Study Areas contain ephemeral stream segments. Ephemeral streams are linear features within which water flows only during or immediately after a significant rain event. These streams are dry for the majority of the year. Streams and their riparian corridors are considered sensitive under CEQA and are protected by other federal and state laws.

Intermittent Stream. No Rank. The Study Areas contain intermittent stream segments. Intermittent streams are linear features within which water flows for a portion of the year, generally drying out during the driest time of the year. Intermittent streams generally have a well-developed riparian corridor dominated by coast live oak, coyote brush, valley oak, and black walnut. Streams and their riparian corridors are considered sensitive under CEQA and are protected by other federal and state laws.

Perennial Marsh. GNR3. The Study Areas contain perennial marsh habitat. This community can be found at Arlington Creek (C-16). This determination was given for the perennial bulrush

vegetation that is dominant in the feature. C-16 is located directly in a residential development to the east of Riddell Street and to the west of Arlington Drive. An intermittent stream feature runs east to west within C-16 which opens into an intervening section of perennial marsh as the stream feature turns south. Vegetation observed within the marsh includes California bulrush and smartweed. The perennial marsh then thins and returns to an intermittent stream feature with a defined bed and bank running south out of the Study Areas.

Perennial Stream. No Rank. There were two perennial streams (Study Areas C-06 and C-14) delineated within the Study Areas. Perennial streams are linear features with a distinct bed and banks that have a continuous flow of water all year during years of normal rainfall. Flowing water was observed at both of these features. C-06 spans from Bernal Avenue to Arroyo de la Laguna and travels south. Valley Avenue bisects C-06 which continues flowing under the road via culverts; it also travels under an Interstate 680 bridge. Habitat along this creek varies from coast live oak, coyote brush scrub, and riparian. Water was observed throughout much of the channel with the northernmost portion of the creek being dry. C-06 conveys water through a natural channel with its southern tip ending in a concrete channel that drains into Arroyo de la Laguna.

C-14 consists of four short segments of Dublin Canyon Creek and is located near the entrance of two residential developments, just south of I-580. Each segment has a distinct, steep bed and bank with mature riparian vegetation consisting of coast live oak, willow and sycamore.

5.3 Special-status Species

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

5.3.1 Special-status Plants

Potential for Occurrence

A five-mile radius search resulted in sixty-two (62) species being identified as known from around the Project Area (CDFW 2019, CNPS 2019). Appendix D summarizes the potential occurrence for each special-status plant species documented in the vicinity of the Project Area to occur. Special-status plants which have been recorded within 5-miles of the Project Area are shown in Figure 4. There are two (2) special-status plant species that were determined to have a moderate potential to occur within specific Study Area locations because of the presence of relatively suitable habitat with alkaline soils and recent documented proximity (Table 5).

Additionally, two plant species on the East Bay Locally Rare Plant list were observed within the Project Area, coast live oak, which is present in all mapped coast live oak woodland and riparian communities and black walnut only in the mapped riparian community. Black walnut trees were considered to be only native to three sites (Jepson Flora Project 2020) in the state and is thus not considered to be a locally rare individual tree in this location.

Table 5. Potential Special-Status Plants

SCIENTIFIC NAME	COMMON NAME	Conservation Status	Potential	Study Area Locations
CNPS Listed Plants				

<i>Centromadia parryi</i> <i>ssp. congdonii</i>	Congdon's Tarplant	1B.1	Moderate	C-05, C-06 P-01, P-02, P-03, P-04, P-06
<i>Extriplex joaquiniana</i>	San Joaquin Spearscale	1B.2	Moderate	C-05, C-06 P-01, P-02, P-03, P-04
Other Special-status Plants (CEQA, other)				
<i>Quercus agrifolia</i>	Coast live oak	Locally Rare A2	Present	C-06, C-08, C-09, C-11, C-12, C-13, C-14, C-16

The two CNPS ranked special-status plants with a high potential to occur within the Project Area which are listed and detailed below.

Congdon's tarplant (*Centromadia parryi* *ssp. congdonii*). CNPS List 1B.1.

Congdon's tarplant is an annual herb in the aster family (Asteraceae). It blooms from May through October and its nearest and most recent occurrence was documented in 2011, 1.7 miles northwest of Pimlico Canal (C-01) (CNDDDB, 2019). Congdon's tarplant habitat varies from valley and foothill grassland in elevations ranging from 0 to 755 feet (CDFW 2019, CNPS 2019a). This species can be associated with alkaline or saline soils. Study Areas C-05, C-06, P-01, P-02, P-03, P-04, and P-06 support some potential grassland habitat on alkaline soils for Congdon's tarplant which can tolerate disturbed areas therefore it has a moderate potential to occur onsite, but was not observed during the July or October 2019 site assessments.

San Joaquin spearscale (*Extriplex joaquinana*). CNPS List 1B.2.

San Joaquin spearscale is an annual herb in the goosefoot family (Chenopodiaceae) that blooms from April to October. It typically occurs in seasonal alkali sink scrub and wetlands in chenopod scrub, alkali meadow, and valley and foothill grassland habitat at elevations ranging from 0 to 2,740 feet (CDFW 2019, CNPS 2019). San Joaquin spearscale is known from Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, Tulare, and Yolo counties. The nearest and most recent CNDDDB occurrence was documented in 2002, 0.6 miles north of Stoneridge Pond (P-01). The species occurs in alkaline soils. Study Areas C-05, C-06, P-01, P-02, P-03, and P-04 support some disturbed foothill grassland habitat on alkaline soils and due to the proximity of the nearest and most recent occurrence there is a moderate potential this species could occur within the Project Area, but was not observed during the July or October 2019 site assessments.

Coast live oak (*Quercus agrifolia*). East Bay Locally Rare A.2

Coast live oak is an evergreen tree in the oak family (Fagaceae) that blooms from February to April. It occurs in valleys and slopes of mixed evergreen forest, foothill woodland, and oak woodland at elevations below 4,725 feet (Jepson 2020). Coast live oak is known from 33 counties in California. The species is relatively common and was observed in Study Areas C-06, C-08, C-09, C-11, C-12, C-13, C-14 and C-16 in riparian and coast live oak communities.

5.3.2 Special-status Wildlife

Thirty-nine (39) special-status wildlife species have been documented in the vicinity of the Project Area. Appendix D summarizes the potential for each of these species to occur in the

Project Area. One (1) special status wildlife species was observed in Study Area C-10 during the site assessment: tricolored blackbird. Eight (8) special status wildlife species were determined to have a moderate or higher potential to occur in the Project Area. Special-status wildlife species that have a moderate or high potential to occur in the Project Area are discussed below in Table 6.

Table 6. Potential Special-Status Wildlife

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC	Moderate
<i>Elanus leucurus</i>	white tailed Kite	CFP	Moderate
<i>Athene cunicularia</i>	burrowing owl	SSC	High
<i>Rana draytonii</i>	California red-legged frog	FT	Moderate
<i>Ambystoma californiense</i>	California tiger salamander	FT, ST	Moderate
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake	FT, ST	Moderate
<i>Circus hudsonius</i>	northern harrier	SSC	High
<i>Agelaius tricolor</i>	tricolored blackbird	ST	High

Species with a Moderate or higher potential to occur are discussed below.

Tricolored blackbird (*Agelaius tricolor*). State Threatened. High Potential. Tricolored blackbird is a locally common resident in the Central Valley and along coastal California. Most tricolored blackbirds reside in the Central Valley March through August, then moving into the Sacramento-San Joaquin Delta and east to Merced County and coastal locations during winter (Meese et al. 2014). This species breeds adjacent to fresh water, preferring emergent wetlands with tall, dense cattails or tules, thickets of willow or blackberry, and/or tall herbs. Flooded agricultural fields with dense vegetation are also used (Shuford and Gardali 2008). This species is highly colonial; nesting habitat must be large enough to support a minimum of 30 pairs, and colonies are commonly substantially larger (up to thousands of pairs). Tricolored blackbird often intermingles with other blackbird species during the non-breeding season. Individuals typically forage up to 5.6-miles (9-kilometers) from their colonies although in most cases only a small part of the area within this range provides suitable foraging (Hamilton and Meese 2006).

This species was identified during field assessments in Study Area C-10 (Junipero Canal). While it was not clear whether an established breeding colony currently exists at this location, several individuals were seen moving as a group through tall aquatic vegetation. Several Study Areas, chiefly C-10, P-02, and P-03, possess dense stands of cattails or tules that may provide a suitable location for a breeding colony. Due to the presence of potentially suitable nesting and foraging habitat, combined with field observations, this species has a high potential to occur within the Project Area in Study Areas C-10, P-02, and P-03.

Loggerhead shrike (*Lanius ludovicianus*). CDFW Species of Special Concern. Moderate Potential. Loggerhead shrike is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short

vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Shrikes nest in trees and large shrubs; nests are usually placed three to ten feet off the ground (Shuford and Gardali 2008).

This species prefers open grasslands with scattered trees or shrubs, which is present throughout the Project Area. Additionally, this species is known to occur in the vicinity of the Project Area (CDFW 2019). However, nesting substrates in areas with potential for this species to occur would likely not be impacted by project work unless tree removal was scheduled as part of maintenance.

Because the species is known to occur in the vicinity, typical foraging habitat is present, but nesting habitat is unlikely to be directly impacted by the proposed Project, the species has a moderate potential to occur within the Project Area.

Northern harrier (*Circus hudsonius [cyaneus]*). CDFW Species of Special Concern. High Potential. Northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates.

Multiple Study Areas (specifically P-02, P-03, P-04, and C-10) provide suitable nesting habitat for this species amid emergent vegetation or otherwise slightly sheltered areas near wetlands. Study Areas with the greatest potential to support this species are those without adjacent dense urban/residential matrix. Foraging opportunities are present across the Project Area in open grassland areas and in wetlands. Given the availability of both nesting and foraging habitat on the Project Area, this species has high potential to occur.

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

Nearby riparian habitats and open spaces are likely to provide suitable foraging habitat for kites. Small mammal burrows are present within several Study Areas, and open spaces directly adjacent to the City limits likely provide increased foraging opportunity. Suitable nest trees are present throughout the Project Area, though sites located within dense residential areas are unlikely to support nesting for this species. Because nesting substrates are scattered throughout the Project Area and foraging habitat is widely available, there is a high potential for this species to occur within the Project Area.

Burrowing Owl (*Athene cunicularia*), CDFG Species of Special Concern. High Potential. Burrowing owl typically favors flat, open grassland or gentle slopes and sparse shrub land

ecosystems. These owls prefer annual or perennial grasslands, typically with sparse or nonexistent tree or shrub canopies; however, they also colonize debris piles and old pipes. In California, burrowing owls are found in close association with California ground squirrels (*Otospermophilus beecheyi*). Burrowing owl exhibits high site fidelity and usually use the abandoned burrows of ground squirrels for shelter and nesting (Poulin et al 2011).

Ground squirrel burrows were observed during the site visit, mainly at Study Areas in the western portion of the Project Area (i.e. C-04, C-05, P-02, and P-03). In several cases, burrows were observed on excavated banks of detention ponds, or in other locations where owls, if confirmed present, could be adversely affected by the proposed Project. At the creek Study Areas, ground squirrel activity was chiefly present on open, level areas adjacent to drainages, where vegetation height and other conditions were highly suitable for burrowing owl occupation in both wintering and breeding. This species has been documented to nest throughout the region, including within the Project Area. Due to the presence of active ground squirrels in close proximity to Study Areas and a nearby breeding populations, there is high potential for this species to occur in the Project Area within or adjacent to Study Areas C-04, C-05, P-02, and P-03.

California Tiger Salamander (*Ambystoma californiense*), Federal Threatened, State Threatened. Moderate Potential. California tiger salamander (CTS) is restricted to grasslands and low-elevation foothill regions in California (generally under 1,500-feet) where it uses seasonal aquatic habitats for breeding. CTS breed in natural ephemeral pools, or ponds that mimic ephemeral pools (stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. CTS spend most of their time in the grasslands surrounding breeding pools. They survive hot, dry summers by estivating (going through a dormant period) in refugia (such as burrows created by ground squirrels and other mammals and deep cracks or holes in the ground) where the soil atmosphere remains near the water saturation point. During wet periods, CTS may emerge from refugia and feed in the surrounding grasslands.

CTS occurrences are generally documented in the vicinity of C-17, P-05, P-07, and P-08 (CDFW 2019). Other Study Areas are surround by complete barriers to dispersal (e.g. large arterial roads) and thus are unlikely to support event transient individuals of this species. All three of the aforementioned Study Areas are ephemeral in nature, and likely do not hold water for a sufficient period of time for CTS larvae to attain metamorphosis. However, ground squirrel burrows exist near P-05, P-07, and P-08 to provide potential upland or estivation habitat. C-17 is located in a developed residential area where hardscaping precludes burrowing mammal activity. Generally, these areas are separated from known occurrences to some degree by significant barriers to dispersal, such as roads or highly maintained landscaped areas. The Callippe Detention Pond Study Area (Site P-05) is the most accessible by source populations of CTS. However, it is not suitable breeding habitat due to its design-function to quickly draw down and disperse storm water. The nearest occurrence of this species is located in the open space adjacent to the Callippe golf course, and is approximately 0.5 mile to the southeast. This occurrence is within potential dispersal distance, although habitat present within Study Area P-05 is marginal and barriers to dispersal exist between this Study Area and known occurrences in the form of roads and highly maintained golf course areas.

The Project Area is also partially surrounded by development which may be a complete barrier to CTS, preventing colonization from known extant populations. No apparent upland or aquatic movement corridors exist between the Study Areas and extant populations within the known dispersal distance of the species, or approximately 1-mile. Without viable corridors between a

source population and the Project Area, there is no potential for CTS to use the Project Area as upland habitat.

Although barriers to dispersal exist between the Study Areas and regional extant CTS populations, nearby Study Areas that support intermittent or ephemeral streams or detention basins may be used in some years as aquatic dispersal habitat by individuals that occur incidentally during movements in precipitation events. Additionally, several of the Study Areas are within the known dispersal distance of CTS from extant populations. Therefore, CTS has moderate potential to occur on portions of the Project Area, specifically Study Areas C-17, P-05, P-07, and P-08.

California Red-legged Frog (*Rana draytonii*), Federal Threatened, CDFW Species of Special Concern. Moderate Potential. California red-legged frog (CRLF) is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, CRLF disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat are characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. CRLF estivates during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds.

Potential aquatic habitat is limited to Study Areas C-06, C-14, and P-02, all of which appear to hold water for sufficient duration for CRLF to complete their aquatic life-history. C-14 is particularly close to documented CRLF occurrences, although the documented occurrences are chiefly on the opposite (north) side of Interstate 680. The many detention ponds and intermittent/ephemeral streams in the Project Area do not constitute aquatic breeding or aquatic non-breeding habitat due to the rapid draw-down of standing water, and function as they were designed to capture and or rapidly dissipate storm flow. By design as flood-control infrastructure, they also lack aquatic and upland vegetation and neither effectively function as upland or dispersal habitat due to the lack of cover from predation.

The nearest documented occurrences of this species to most of the Study Areas is more than two miles away, which is beyond CRLF's longest known dispersal distance. Sites closer to extant populations are largely surrounded by barriers, such as residential development and paved roads that prevent dispersal and immigration to, and colonization of, the Study Areas. Perennial aquatic habitat is present in Upper Kottinger Creek (C-08), though this location is surrounded on all sides by residential development and believes to be completely isolated. Due to the presence of potential aquatic habitat with proximal extant populations in Study Areas C-06 and P-02, this species has moderate potential to occur in the Project Area.

Alameda whipsnake (*Masticophis lateralis euryxanthus*). Federal Threatened, State Threatened. Moderate Potential. The range of the Alameda whipsnake (AWS) is restricted to the inner Coast Range in western and central Contra Costa and Alameda Counties (USFWS 2000). Alameda whipsnake is associated with scrub communities, including mixed chaparral, chamise-redshank chaparral, coastal scrub, and annual grassland and oak woodlands that lie adjacent to scrub habitats that contain areas of rock outcroppings. Rock outcroppings are important as they are a favored location for lizard prey. Whipsnakes frequently venture into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland.

The physical and biological features required for habitation by AWS include: scrub/shrub communities with a mosaic of open and closed canopy; woodland or annual grassland plant communities contiguous to lands containing scrub communities; lands containing rock outcrops, talus, and small mammal burrows within or in proximity to scrub communities; and accessible

dispersal habitat (USFWS 2006). Use of habitats other than scrub by AWS is now known to be more common, especially for corridor movement. Thus, habitats, including grassland and riparian communities, adjacent to scrub habitat are considered essential to AWS conservation (USFWS 2006).

Most of the Study Areas assessed for this proposed Project are located outside of the known range of AWS. Study Areas located east of Interstate 680 are unlikely to provide habitat for AWS due to complete barriers to dispersal including Interstate Highways and residential/commercial development. Additionally, most sites do not provide the physical and biological features necessary to support this species. Specifically, they are located in developed areas without scrub communities, and lack the following: known extant contiguous population, rock outcroppings, and burrowing mammal activity.

Unlike other areas assessed, Study Area P-06 is located adjacent to a large swath of suitable habitat, is characterized by oak scrub and ruderal open spaces, and overlaps with AWS critical habitat (see below). However despite potentially suitable habitat in the immediate vicinity, the portions of P-06 that will be impacted by proposed stream maintenance activities provide very little habitat value for resident AWS. Study Area P-06 may potentially be used as a movement corridor for dispersing individuals. Due to the proximity of the Study Area to suitable habitat and location within the boundaries of designated Critical Habitat for this species, AWS has moderate potential to occur in Study Area P-06.

Critical Habitat

Study Area P-06 is located at the most extreme eastern edge of Unit 3 of the designated critical habitat of AWS. However, Critical Habitat mapping in general is not fine-tuned and suitable habitat must still be evaluated. Within the Project Area, no rocky outcrops were observed which is considered a critical habitat element for this species. Woodland/scrub mosaic is not present in any areas that would be disturbed as a result of the proposed Project. Small mammal burrows were absent or lacking around the Oak Tree Farms Detention Pond, suggesting the prey base is poor. Although Study Area P-06 falls within designated Critical Habitat, this Study Area lacks the physical and biological features required to support AWS. The proposed Project therefore neither removes nor modifies designated Critical Habitat in a way that would affect AWS either positively or negatively.

Essential Fish Habitat (EFH)

No EFH is present within the Project Area.

Wildlife Corridors

A review of the California essential connectivity project (CDFW 2019b) showed that the westernmost edge of the Project Area is located within an essential connectivity area, core reserve or corridor, landscape block, or general wildlife corridor identified in the BIOS system. While some overlap exists between the Project Area and an essential connectivity area, these areas are defined as “less permeable”, indicating that impacts to that portion of the Study Area should not have a significant impact on habitat connectivity, particularly given the proposed timing, short duration, limited scope, and fundamentally low impact of the proposed Project on wildlife species to utilize this area as a corridor at the time Project activities occur, or in the future.

The Project Area is various in land cover types, but is generally surrounded by suburban residential development or ruderal/landscaped open spaces that are intended and used for human recreation. The presence of anthropogenic features such as roads and contiguous housing tracts, and lack of intact natural communities or other areas that would provide necessary elements for wildlife to persist, mean that the Project Area does not likely function as a wildlife corridor. It does not provide any logical connection between two or more core habitats, or provide a linkage between areas commonly used by wildlife for daily, or annual activities. Furthermore, given the extensive open space surrounding the City of Pleasanton, wildlife movement is much more likely to occur across natural landscapes than the portions of the Project Area subject to the proposed Project.

6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

6.1 Project Description

Overview

The City of Pleasanton proposes to conduct periodic routine maintenance, including weed abatement, silt and rock removal, tule removal, and riparian tree maintenance over a 10-year period (2020-2030) in its stream corridors and detention basins to improve stormwater conveyance and quality. The proposed Project includes routine maintenance slated for 18 stream sections and 7 stormwater detention ponds located throughout the City in a myriad of settings, ranging from a concrete drainage between Pimlico Drive and the Interstate 580 freeway, to a naturalized stream running through Mission Park or a detention basin in the Bernal Community Park.

Maintenance Actions

Maintenance actions include sediment/rock removal and vegetation removal (in and adjacent to stream corridors and detention basins). All activities are scheduled to begin on or after April 15 and will be completed by end of October, unless otherwise allowed by environmental regulatory agencies. All materials will be off-hauled to the City's existing soil disposal (Laguna Creek) site, located in the southwestern portion of Pleasanton.

In order to minimize impacts to the local residents, maintenance actions will generally occur only during normal working hours, or 8 a.m. to 5 p.m., Monday through Friday, or as allowed by City noise ordinance. Each location will likely have between one and four pieces of equipment working at any given time, and two to four crew members plus a supervisor, and may include the following actions.

Weed Abatement in Detention Basins: An agriculture tractor equipped with a fail or rotary type mower is used to abate weeds along and in the maintenance road, along the top of the banks of the basin, the basin floor and the internal and external bank slopes of the basin. Time required for this maintenance action ranges from one to two days depending on the size of the basin.

Silt and Rock Removal in Detention Basins: Dump trucks, backhoe at excavator are used to scrape and off-haul the silt or washed in rock materials layer from floor of the basin. Time required for maintenance actions varies from one to four days.

Weed Abatement in Streams: An enclosed cab, tracked Bobcat with a mowing attachment is used along the maintenance road, along stream bank tops and within the channel itself. Weed abatement along steeper banks or areas unreachable by the Bobcat occurs with gas powered string trimmers. For small sites the time required for this maintenance action varies from two to three hours. Larger sites for which a Bobcat is required take four to 12 hours. This work may occur at most stream sites.

Silt and Rock Removal in Stream: While less likely to be required as a stream maintenance activity, infrequent silt and rock removal may occasionally be needed within stream areas. If necessary, sand bags and plastic sheeting are used to temporarily dewater during the dry season. Dump trucks, backhoe or excavator are used to remove and haul off silt or washed in rock materials from the streams. Time required for maintenance actions varies from one to three days.

Tule Removal from Streams: Dump trucks and an excavator are utilized to dig out tules and their roots from streambeds in order to allow flow through existing channels and infrastructure, such as culverts. Removed tules are loaded into the dump trucks and hauled to Laguna Creek soil disposal site. Tule removal in locations with potential for CTS to occur, such as P-08, may use herbicide treatment during the dry season when no water is present instead of mechanical control in order to avoid and minimize the potential to disturb moist soils. Only EPA registered herbicides will be use in channels or basins for tule control. Herbicide application will conform to all applicable County, State, and Federal Regulations and licenses. Streets sweepers are scheduled to sweep the haul route mid-day and after the last load of the day. Time required for these maintenance actions varies from one to five days at Study Area C-10 (Junipero Canal).

Riparian Tree Maintenance: Hand-powered mechanical methods will be used to prune and trim riparian trees along the tops of stream banks as found to be necessary. Trimming may take place in designated sites after storm damage to reduce public health and safety risk from damaged or injured tree limbs.

6.2 CEQA Analysis Methodology

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

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

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

This report utilizes these thresholds in the analysis of impacts and determination of the significance of those impacts. The assessment of impacts under CEQA is based on the changes caused by the proposed Project's routine maintenance actions across the 25 Study Area locations relative to the existing conditions in the individual Study Areas. The existing conditions in the Study Areas are described above, based on surveys conducted in 2019. In applying CEQA Appendix G, the terms "substantial" and "substantially" are used as the basis for significance determinations in many of the thresholds, but are not defined qualitatively or quantitatively in CEQA or in technical literature. In some cases, such as direct impacts to special-status species listed under the CESA or ESA, the determination of a substantial impact may be relatively straightforward. In other cases, the determination is less clear, and requires application of best professional judgment based on knowledge of site conditions as well as the ecology and physiology of biological resources present in a given area. Determinations of whether or not the proposed Project will result in a substantial adverse effect to biological resources are discussed in the following sections for sensitive biological communities, special-status plant species, special-status wildlife species, and local policies.

6.3 Impacts Assessment and Mitigation Measures

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

The following impact analysis is focused on potential effect of the proposed Project. Generally, any adverse effects would occur during and immediately after the maintenance actions. Potential impacts are expected to include adverse effects to sensitive biological communities, including riparian, detention ponds, wetlands, and waters, special-status plant and wildlife species, and local policies. In addition, potential impacts are expected to include adverse effects to water quality by way of sediment release. However, potential impacts may occur in a repetitive manner over the 10-year duration of the proposed Project with several short term actions occurring at a Study Area over the period. A specific Study Area may be subject to several maintenance actions simultaneously or in succession, such as weed abatement in one year, followed by sediment removal and riparian vegetation trimming in another year.

Based on these maintenance actions or combinations of maintenance actions over the Project duration, WRA has assessed potential impacts in a programmatic manner. A detailed quantification of impacts on biological resources is complicated by the nature of maintenance actions to be performed in that the specific locations, and dimensions for actions are not known beforehand. Therefore, a more general assessment is outlined. Table 7 shows the anticipated impact to occur at each Study Area based on prior maintenance actions conducted between 2009 and 2019.

Table 7. Anticipated Impacts in the Study Areas

Study Area Number	Study Area Name	Study Area Size (acre)	Maintenance Action
Creeks			
C-01	Pimlico Canal	0.35	Removal of debris and vegetation (Apr 15 - Oct 31)
C-02	Pleasanton Canal	3.42	Removal of debris and vegetation (May 1 - Oct 31)
C-03	Foothill High School Trash Rack	0.30	Removal of debris and vegetation in front of trash rack (May 1 - Oct 31)
C-04	Bernal V-ditch	1.17	Removal of debris and vegetation (May 1 - Oct 31)
C-05	Bernal North/South V-ditch	3.35	
C-06	Mission Creek Restoration Project	31.29	
C-07	Lower Kottinger Creek	0.92	
C-08	Upper Kottinger Creek	8.01	
C-09	Touriga Creek	6.63	
C-10	Junipero Canal	5.18	
C-11	Mission Park Creek	0.96	
C-12	Cemetery Creek	0.81	
C-13	Gold Creek	2.82	
C-14	Dublin Canyon Creek	1.66	
C-15	Stonedale Channel	0.08	Removal of debris and vegetation (Apr 15 - Oct 31)
C-16	Arlington Creek	1.02	Removal of debris and vegetation (May 1 - Oct 31)
C-17	Rutledge Place Culvert	0.09	
Detention Ponds			
P-01	Stoneridge Pond	3.75	Removal of debris and vegetation in detention pond, vegetation control on banks (Aug 15 - Oct 31)
P-02	Bernal Detention Pond Central	9.86	
P-03	Canyon Oaks Detention Pond	3.43	
P-04	Bernal West Detention Pond	6.26	
P-05	Callippe Detention Pond	0.18	
P-06	Oak Tree Farms Detention Pond	0.35	
P-07	Vineyard West Detention Pond	1.83	
P-08	Vineyard East Detention Pond	1.33	
Total		95.04	

6.3.1 Sensitive Terrestrial Natural Community

BIO IMPACT 1.0: Sensitive Terrestrial Resources

The majority of the Study Areas within the overall Project Area contain non-sensitive community types, including coast live oak woodland, coyote brush scrub, ruderal grassland, developed, and landscaped. Overall, the Project Area contains approximately 22-acres of sensitive riparian woodland. Riparian habitats may fall under the jurisdiction of the RWQCB and CDFW. This sensitive terrestrial biological community may potentially be temporarily impacted by proposed Project activities and is described below.

Use of mechanized equipment for silt or rock removal in the creek, channel, or basin would present an opportunity for accidental release of hazardous materials to the environment. Spills or leaks of fuel or lubricants could temporarily or permanently contaminate riparian habitat and water quality. Use of mechanized equipment for vegetation removal in the creek, channel, or basin would present an opportunity for accidental release of hazardous materials to the environment. Spills or leaks of fuel or lubricants could contaminate riparian habitat.

Potential Impacts from Vegetation Management (Weed Abatement, Riparian Tree Trimming)

Weed abatement consists of mechanical mowing vegetation with tractors or tracked Bobcats and, in steeper areas, with handheld gas powered string mowers and is considered a temporary impact from vegetation reduction. This type of vegetation control will occur in Study Areas with both channels and stormwater detention basins, including in non-sensitive locations like maintenance roads and above top of bank, as well as in sensitive areas like inside top of bank along channels, in-channel, and in basin floors.

Maintenance actions are focused on clearing over-grown vegetation, fallen trees, or other debris that is inhibiting flow capacity, increasing fire risk, impairing infrastructure, or reducing success of native vegetation through weed competition. These activities are temporary impacts from mowing, weed removal, small tree (less than 4-inch diameter at breast height) thinning or removal, or minor tree trimming (trimming less than one-quarter of a tree's canopy) that are targeted and generally small scale in nature and limited in duration, such as one or two days. Potential impacts associated with weed abatement actions include temporary loss of vegetation, as well as temporary water quality degradation if soil is destabilized from the ground disturbance, such as removing plants to denude soils or if root wads are removed. Any vegetation removal work in the creek or channel that involves ground disturbance, such as root wad removal, may result in temporarily increased sediment loading to the creek, particularly if heavy equipment is used. The physical removal of invasive plants could result in the spread of invasive plants, including seeds, stems, or rooting structures, into adjacent habitats or downstream areas resulting in habitat degradation. Potential temporary impacts associated with minor tree trimming may occur from selective pruning and removal activities resulting in the short term reduction of canopy.

Avoidance and minimization measures will be required for any mechanized vegetation removal activities. Hand removal activities, such as tree pruning and invasive species removal, will minimally impact water quality and biological resources. To prevent potential impacts, invasive plant species control measures would be implemented. These include requirements to import only certified weed-free materials, focus invasive species removal before flowering and seed set, and containment of invasive plant parts being removed to prevent their spread.

Potential Impacts from Silt and Rock Removal Activities

Silt and rock removal activities may temporarily impact habitat for sensitive wildlife and plant species. Impacts on sensitive species habitat from silt and rock removal activities would potentially result from direct disturbance to the creek or channel bed, banks, or basins in-channel vegetation removal, and creek or channel dewatering. These actions may occur over a period brief period of one to four days, depending on the location, and may cause sediment loading, erosion, or accumulation of debris.

Silt removal in creeks/channels or basins would also remove vegetation established in the accumulated materials. However, silt movement in the creeks and channels often results with in-channel vegetation quickly reestablishing on an annual basis. Thus, it is expected that in-channel vegetation will likely reestablish and therefore the disruption to habitat is temporary.

The temporary impacts to sensitive natural communities would have the potential to occur during maintenance activities and would be potentially significant without mitigation. To mitigate these impacts to a less than significant level, implementation of mitigation measures BIO MM-1.1 to BIO MM-1.4, described below, is required.

BIO MM-1.1: Implement BMPs

The following BMPs were developed to ensure that maintenance activities would be conducted to protect and enhance existing habitat. When heavy equipment must access sensitive areas such as the creek bed and riparian banks, measures will be taken to avoid harm to trees and compaction of soil and the area will be stabilized and restored after maintenance is complete.

1. Dry season work window for in-stream, in-channel, and in-basin work. The City may request work be authorized by the regulatory agencies to begin earlier than the start of the dry season and extend past the end of the dry season, subject to agency approval.
 - i. Work in concrete lined channels between April 15 and October 31
 - ii. Work in earthen channels between May 1 and October 31
 - iii. Work in detention basins between August 15 and October 31
2. Access to channels and ponds for the purposes of maintenance will be minimized to the amount necessary. Access points should avoid large mature trees and native vegetation to the extent feasible. Temporary access locations shall be sited to minimize tree removal.
3. No heavy equipment will be operated in streambeds.
4. Control of weeds and grasses on channel access roads or shoulders by mowing will take place between April 1 and October 31.
5. Before the first significant rainfall (defined as 0.5 inch of rain in a 24 hour period) occurs, all in-channel equipment shall be removed.
6. Exposed soils in upland areas will be stabilized via hydroseeding or with erosion control fabric/ blankets.
7. Staging will occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation to the extent feasible. To the extent practical, all maintenance equipment and materials will be contained within the existing service roads, paved roads, or other pre-determined staging areas.
8. Stockpiling of material will occur on disturbed, barren, or ruderal surfaces that do not support habitat for sensitive species.

9. Maintenance-related materials, including sediment, will not be stockpiled or stored where they could spill into water bodies or storm drains or where they will cover aquatic or riparian vegetation.
10. No runoff from the staging areas may be allowed to enter water of the U.S./ State, including the creek channel or storm drains, without being subject to adequate filtration (e.g., vegetated buffer, wattles, silt screens). Runoff from the Study Areas to other waters of the U.S./ State is prohibited.
11. All maintenance-related items including equipment, stockpiled material, temporary erosion control treatments and trash will be removed within 72 hours of maintenance action completion. All residual soils and/ or materials will be cleared from the project site.
12. All spoils will be disposed of in an approved location.
13. No vehicles or equipment will be refueled within 100 feet of jurisdictional waters or non-wetland waters unless a bermed and lined refueling area is constructed. Spill kits will be maintained on site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven and/or operated within or adjacent to drainages or basins will be checked and maintained daily to prevent leaks of materials.

BIO MM-1.2: Vegetation Management Mitigation Measures

1. Herbaceous layers that provide erosion protection and habitat value will be left in place.
2. Vegetation along the boundary of the Study Areas will be preserved to the extent feasible to maintain temporary soil stabilization.
3. Removal of mature trees will be avoided whenever possible.
4. Vegetation removed from the Study Areas shall be handled in a manner to prevent spread of seed and shall be contained so that stray plant parts do not leave the site or contaminate adjacent areas.

BIO MM-1.3: Silt and Rock Removal Mitigation Measures

1. Upland soils or areas above ordinary high water mark exposed from maintenance activities will be stabilized using erosion control fabric or hydroseeding.
2. Erosion control fabric will consist of natural fibers that will biodegrade over time.
3. Other erosion control measures shall be implemented as necessary to ensure that sediment or other contaminants do not reach surface water bodies for stockpiled or reused/ disposed sediments.
4. After sediment removal, the creek shall be graded so that the transition between the existing creek/ channel both upstream and downstream is smooth and continuous between the maintained and non-maintained areas and does not present a barrier of sediment or other blockages that could erode once flows are restored to the creek or channel.
5. BMPs including silt fencing, fiber rolls, and/or wattles, will be implemented throughout the duration of Project activities to minimize the potential for sediment movement offsite.

BIO MM-1.4: Riparian Woodland Mitigation Measure

Project activities resulting in the maintenance actions in riparian communities may require a 401 permit from RWQCB and an SAA from the CDFW under Section 1602 of the CDFG. The City would apply for permits from the appropriate regulatory agencies and comply with terms. Terms

of these permits would likely include, but not necessarily be limited to, the mitigation measures listed below:

1. To the extent feasible, maintenance to riparian trees will be avoided unless they are directly affecting stream flow or are considered a flood hazard.
2. If riparian vegetation requires removal for access to Study Areas, non-native species and/ or quick growing species shall be targeted first for removal. Removal of native, mature trees will be avoided whenever possible.
3. If any Project activity results in the permanent impact of sensitive riparian habitat it shall be replaced at a replacement-to-loss ratio of 3:1 (three acres of riparian habitat created for each acre disturbed). Mitigation would occur either through the purchase of mitigation credits from a local riparian mitigation bank or pursuant to a site-specific mitigation plan. At a minimum, this plan shall identify mitigation areas, a planting plan, and success criteria, along with remedial measures to compensate for lack of success.

6.3.2 *Sensitive Aquatic Resources*

BIO IMPACT 2.0: Sensitive Aquatic Resources

The Project Area contains sensitive aquatic community types, including detention basins, drainage ditches, ephemeral stream, intermittent stream, perennial stream, and perennial marsh that may fall under the jurisdiction of the CDFW under the 1600 program or as waters of the U.S./State. These detention ponds are used as flood control features and are generally dry during the dry summer months. The stream and drainage ditches vary from ephemeral to perennial flow regimes and thus some may be dry in the summer months while others may be flowing. These sensitive aquatic resources may potentially be temporarily impacted by Project activities and is described below.

Temporary dewatering for vegetation management or silt and rock removal activities may temporarily impact water quality and biological resources. Installation, operation, and removal of dewatering systems will involve disturbance to the streambed and bank or basin. These actions can temporarily increase turbidity and increase sedimentation downstream. Temporary dewatering may require temporary placement of fill to dewater an area to conduct repairs over a few days. This may result in isolation of the work site and could harm aquatic species, such as fish and frogs. Once maintenance activities are complete, creek or channel flow would be restored as would water quality and biological resources.

Use of mechanized equipment such as Bobcats and back hoe excavators for vegetation or sediment removal in the aquatic resources may result in accidental release of hazardous materials. Potential temporary impacts could include erosion from stockpiled sediments or pollutants from work equipment entering the creek. Spills or leaks of fuel or lubricants could contaminate water quality and habitat. This impact would have the potential to occur only during maintenance activities and would be mitigated by implementation of BIO MM-1.1 (Implement BMPs) as described above. To prevent such impacts, all maintenance activities shall occur during the dry season when rain and flows are minimized. The staging and stockpiling of maintenance equipment and materials will be restricted, monitored, and maintained to prevent transport of wash water containing sediment or hazardous chemicals to storm drains, creeks, or surrounding properties.

Potential Impacts from Vegetation Management (Weed Abatement, Tule Removal)

Weed abatement and tule removal consists of mechanical mowing vegetation with tractors or tracked Bobcats and, in steeper areas, with handheld gas powered string mowers and is considered a temporary impact from vegetation reduction. This type of vegetation control will occur in both channels and stormwater detention basin Study Areas, including sensitive areas like inside top of bank along channels, in-channel, and in basin floors. Potential impacts associated with weed abatement actions include temporary loss of vegetation, as well as temporary water quality degradation.

Maintenance actions are focused on clearing over-grown vegetation, fallen trees, or other debris that is inhibiting flow capacity or impairing infrastructure. These activities are temporary impacts that are targeted and generally small scale in nature and limited in duration, such as a few hours or up to five days. Tule removal may require dump trucks and excavators to dig out tules and their roots from streambeds. Any vegetation removal work in the creek or channel that involves ground disturbance, such as root wad removal, may result in temporarily increased sediment loading to the creek, particularly if heavy equipment is used. Potential impacts associated with weed abatement and tule removal actions include temporary loss of vegetation, as well as temporary water quality degradation if soil is destabilized or if heavy equipment is used. The physical removal of invasive plants could result in the spread of invasive plants, including seeds, stems, or rooting structures, into adjacent habitats or downstream areas resulting in habitat degradation.

In select locations where CTS may be present, herbicide use may be used as alternative tule removal treatment to prevent potential disturbance of moist soils by Bobcats. Herbicides used to prevent growth of tules, could impact non-target vegetation or water quality if improperly used. Additionally, accidental herbicide spills could adversely impact water quality and biological resources. To prevent these impacts, herbicide use will be restricted to hand application to vegetation in the channel or basin. All herbicide use will be consistent with all label instructions. Herbicide use will be restricted to the minimum amount needed to ensure adequate control of vegetation. Application of herbicides will not be made within 72 hours of predicted rainfall. Herbicides will not be directly applied to waters of the U.S.

Avoidance and minimization measures will be required for any mechanized vegetation removal activities. Hand removal activities, such as invasive species removal, will minimally impact water quality and biological resources. To prevent potential impacts, invasive plant species control measures would be implemented. These include requirements to import only certified weed-free materials, focus invasive species removal before flowering and seed set, and containment of invasive plant parts being removed to prevent their spread.

Potential Impacts from Silt and Rock Removal Activities

Silt and rock removal activities may temporarily impact habitat for sensitive wildlife, fish, and plant species. Impacts on sensitive species from silt and rock removal activities would potentially result from direct disturbance to the creek or channel bed, banks, or basins in-channel vegetation removal, and dewatering. Silt removal in creeks/channels or basins would also remove vegetation established in the accumulated materials. As a result of the nature of silt movement in the creeks and channels, in-channel vegetation can quickly reestablish, largely on an annual basis. Thus, in-channel vegetation will reestablish and the disruption to habitat is temporary.

Project activities requiring the maintenance of streams and ditches that would introduce fill or create impacts to jurisdictional wetlands and other waters of the U.S. would require a Section 404 permit approval from the USACE, and the proposed Project would likely be authorized under a Regional General Permit for Maintenance. In addition, a Section 401 Water Quality Certification would be required from the San Francisco Bay RWQCB. CDFW has jurisdiction in the Proposed Project Area over riparian habitat, including stream bed and banks and work in these areas would require an SAA.

Disturbance may include but is not limited to removal of vegetation, placement of fill, excavation, or the alteration of the bed-and-bank. Avoidance and minimization measures will be required for any mechanized vegetation removal activities. Hand removal activities will minimally impact water quality and biological resources.

The temporary impacts to sensitive natural communities would have the potential to occur during maintenance activities and would be potentially significant without mitigation. To mitigate these impacts to a less than significant level, implementation of mitigation measures BIO MM-1.1 through BIO MM-1.4, above, and BIO MM-2.1, described below.

BIO MM-2.1: Aquatic Resources

Project activities resulting in the maintenance actions in aquatic resources may require a Section 404 permit from the USACE, Section 401 permit from RWQCB, and/or an SAA from the CDFW under Section 1602 of the CDFG. The City would apply for permits from the appropriate regulatory agencies and comply with terms prior to initiating maintenance actions in streams or detention basins. The City and contractors shall comply with the conditions of these regulatory permits. If repair activities affect the active channel, the work area will be isolated from flowing stream segments using silt fences, wattles, and/or cofferdams.

The following dewatering BMPs will be used to help minimize impacts to sensitive aquatic resources and species during Project implementation:

1. A water diversion plan will be prepared and approved by the agencies prior to implementation.
2. A qualified biologist will be present to monitor coffer dam installation, dewatering, and removal.
3. To the extent feasible, work will occur during the dry season.
4. Cofferdams or diversion structures will be constructed from materials that are fully contained and can be completely removed from the aquatic resources, such as clean, bagged gravel, sandbags, or rubber bladders. Once maintenance is complete, the diversion structures will be fully removed as soon as possible.

Project specific mitigation for impacts to features jurisdictional to state and federal agencies will be determined during the wetland permitting process with a minimum of 1:1 required. Mitigation could include land conservation and management in perpetuity, on-site habitat enhancement and restoration, payment of in-lieu fees to authorized conservation organizations, or a combination of these measures. Habitat enhancement and restoration would require a mitigation and monitoring plan to ensure environmental impacts are mitigated and the sensitive habitats are returned to a natural state after the project is complete.

6.3.3 Special-status Plants

BIO IMPACT 3.0 Special-status Plant Species

Of the 62 special-status plant species known to occur in the vicinity of the Project Area, two have a moderate potential to occur in specific Study Areas with alkaline soils in grassland, San Joaquin spearscale and Congdon's tarplant (Table 8). These potentials are based on recent and nearby occurrences. The Project Area does not contain prime habitat for sensitive status plants and much of it is highly disturbed by development and landscaping, however these two species are known to be tolerant to disturbance.

Table 8. Potential Special-Status Plants Impacted by Project

SCIENTIFIC NAME	COMMON NAME	Study Area Locations
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's Tarplant	C-05, C-06 P-01, P-02, P-03, P-04, P-06
<i>Extriplex joaquiniana</i>	San Joaquin Spearscale	C-05, C-06 P-01, P-02, P-03, P-04

If these species are present in the proposed maintenance action locations, Project work could cause direct mortality to individuals or changes in site conditions could alter microhabitat or hydrology and indirectly affect individuals. Individual plants or habitat may be directly impacted by vehicular access, weed abatement actions, vegetation removal, and debris removal if these actions occur during the growing seasons when the plant is not dormant. Debris removal may remove habitat if ground is disturbed. Additionally, indirect impacts may occur from introduction of invasive species. If direct or indirect loss of a special-status plant species population would occur, this may be considered a significant impact. However, weed abatement activities may benefit these species because of improved habitat conditions.

If found on-site during future surveys, and if impacts cannot be avoided, direct impacts to 10% or more of the occupied area or individuals of Congdon's tarplant or San Joaquin spearscale would be significant. Implementing MM BIO 3.1 would avoid or minimize impacts to these special-status plant species to a less-than-significant level.

One plant species on the East Bay Locally Rare Plant list, coast live oak, was observed within the Study Areas C-06, C-08, C-09, C-11, C-12, C-13, C-14 and C-16 which is present in the coast live oak woodland and riparian communities listed and may occur occasionally at other Study Areas as well. However, because of the relatively common extent of these trees in the region, that tree removal is not anticipated, and the avoidance and minimization measures that will be implemented for riparian habitat (see sensitive terrestrial communities above) or individual trees (see local policies below), no loss of these trees are expected to occur. With the implementation of the mitigation measures described for the riparian habitat and the Local Tree Ordinance, impacts to the locally-listed species will be less than significant.

BIO MM 3.1: Special Status Plants Mitigation Measures

For maintenance actions in Study areas where San Joaquin spearscale or Congdon's tarplant may occur, a focused botanical survey is recommended within the grassland habitat underlain with alkaline soils prior to proposed maintenance work to avoid impacts.

1. Each year, prior to any vegetation removal or ground-disturbing activities, a focused special-status plant survey is recommended for suitable habitat (grassland on alkaline soils) for Congdon's tarplant and San Joaquin spearscale in Study Areas C-05, C-06, and P-01 through P-04 as well as suitable habitat for Congdon's tarplant at Study Area P-06 prior to the start of the Project. These plant surveys will be required to confirm the presence or absence of these species.
2. Surveys shall be conducted in accordance with the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018). These guidelines require special-status plant surveys to be conducted at the proper time of year when special status species are both "evident" and identifiable. Field surveys shall be scheduled to coincide with known blooming periods, and/or during periods of physiological development that are necessary to identify the plant species of concern.
 - a. If no special-status plant species are found, then the Project activities that year will not have any impacts to the species and no additional mitigation measures are necessary.
 - b. If the survey determines that one or more special-status plant species are present within the Project Area, direct and indirect impacts of the Project on the species shall be avoided where feasible through the establishment of activity exclusion zones, where no ground-disturbing activities shall take place, including the staging or other temporary work areas. Activity exclusion zones for special-status plant species shall be established prior to maintenance activities around each occupied habitat site, the boundaries of which shall be clearly marked with standard orange plastic exclusion fencing or its equivalent. The establishment of activity exclusion zones shall not be required if no maintenance action-related disturbances would occur within 50 feet of the occupied habitat site. The size of activity exclusion zones may be reduced through consultation with a qualified biologist.
3. If exclusion zones and avoidance of impacts to special-status species within the Project Area are not feasible, vegetation management activities such as mowing will be conducted under the guidance of the qualified biologists to reduce potential impacts. The activities should be timed to avoid the blooming period of the species, after the month of August.
4. If exclusion zones and full avoidance is not feasible, then the loss of individuals or occupied habitat of special-status plants shall be enumerated and compensated for through either the restoration by seed collection, planting, and subsequent management of propagules from on-site or preservation by acquisition, protection, and subsequent management of other existing off-site occurrences. Before the implementation of compensation measures, the Project's applicant shall provide detailed information to the lead agency on the quality of restored or preserved habitat, location of the restored or preserved occurrences, provisions for protecting and managing the areas, the responsible parties involved, and other pertinent information that demonstrates the feasibility of the compensation. A mitigation plan identifying appropriate mitigation ratios at a minimum ratio of 1:1 shall be developed in consultation with, and approved by, the lead agency prior to the commencement of any activities that would impact special-status plant species that occur within the Project Area. A mitigation plan may include but is not limited to the following: plant collection, planting, maintenance, and monitoring

plans with success criteria for a restoration site, the acquisition of off-site mitigation areas presently supporting the special-status species within the Project Area, purchase of credits in a mitigation bank that is approved to sell credits for special-status plants, or payment of in-lieu fees to a public agency or conservation organization (e.g. a local land trust) for the preservation and management of existing populations of special-status plants.

6.3.4 *Special-status Wildlife*

Of the 39 special-status wildlife species known to occur in the vicinity of the Project Area, most are excluded from the Study Areas based on a lack of appropriate habitats. Features lacking from the Study Areas and required to support special-status wildlife species include:

- vernal pools
- perennial aquatic features
- old growth redwood or fir forest
- coastal marsh
- sandy beaches or alkaline flats
- caves, mine shafts or abandoned buildings
- wildlife movement corridors

These habitat features are necessary for the survival or movement of many special-status species found in the vicinity. The absence of these features categorically precludes habitation by most of the species included in Appendix D. Any special-status wildlife species discussed in this report and that have the potential to be impacted by the proposed Project may fall under the jurisdiction of USFWS under the ESA and BGEPA and/or the CDFW under the CFGC, CESA, and CEQA.

Table 9 outlines the special-status wildlife that may be directly or indirectly impacted by the proposed Project. No other special-status wildlife species were determined to have a reasonable potential to occur and therefore impacts to special-status wildlife are limited to those included below.

Table 9. Special-status wildlife species potential, by Study Area.

Study Area Number	Scientific Name/ Common Name <i>Special-status Wildlife (CEQA, other)</i>								
	<i>Lanius ludovicianus</i>	<i>Elanus leucurus</i>	<i>Athene cunicularia</i>	<i>Rana draytonii</i>	<i>Ambystoma californiense</i>	<i>Masticophis lateralis</i>	<i>Circus hudsonius</i>	<i>Agelaius tricolor</i>	Various
	logger-head shrike	white tailed Kite	burrowing owl	California red-legged frog	California tiger salamander	Alameda whipsnake	northern harrier	tricolored blackbird	nesting birds
Creeks									
C-01									X
C-02		X						X	X
C-03		X							X
C-04	X	X	X						X
C-05	X	X	X				X		X
C-06	X	X		X			X		X
C-07									X
C-08									X
C-09									X
C-10								X	X
C-11									X
C-12									X
C-13		X				X			X
C-14				X					X
C-15									X
C-16	X								X
C-17					X				X
Detention Ponds									
P-01		X					X	X	X
P-02	X	X	X					X	X
P-03	X	X	X					X	X

Study Area Number	Scientific Name/ Common Name <i>Special-status Wildlife (CEQA, other)</i>								
	<i>Lanius ludovicianus</i>	<i>Elanus leucurus</i>	<i>Athene cunicularia</i>	<i>Rana draytonii</i>	<i>Ambystoma californiense</i>	<i>Masticophis lateralis</i>	<i>Circus hudsonius</i>	<i>Agelaius tricolor</i>	Various
	logger-head shrike	white tailed Kite	burrowing owl	California red-legged frog	California tiger salamander	Alameda whipsnake	northern harrier	tricolored blackbird	nesting birds
P-04									X
P-05	X	X			X				X
P-06	X	X				X			X
P-07					X				X
P-08					X				X

BIO IMPACT 4.0: Nesting Birds

This assessment determined that five species of special-status birds may use the Project Area for breeding and foraging including white-tailed kite, loggerhead shrike, and northern harrier. These species may forage in the ruderal and agricultural portions of the Study areas, and may nest in trees and shrubs within the Project Area. Proposed maintenance actions within the Project Area may impact special-status and common bird species by causing direct mortality of eggs or young, or may impact these species through visual and auditory disturbance sufficient to cause nest abandonment. Such impacts would be considered significant under CEQA.

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

BIO MM 4.1: Nesting Birds Mitigation Measure

Work on the proposed Project shall be conducted outside of the bird nesting season (generally February 1 – August 31) to the extent practicable. It is also recommended that any trees and shrubs in or adjacent to a Study Area, that are proposed for removal, be removed during the non-breeding season (September 1 through February 1), if possible. In the event that work must occur during the bird nesting season, pre-action nesting bird surveys shall be conducted within 14-days of ground disturbance on a Study Area by Study Area basis to determine whether active nests are present that may be disturbed, and to avoid disturbance to active nests, eggs, and/or young of nesting birds.

In the event that an active nest (defined as containing live eggs, chicks, or young) is located, a no disturbance buffer shall be established around the nest until all young have fledged or the nest otherwise becomes inactive (e.g. due to predation). Exclusion buffer sizes differ depending on species, location, and placement of nest and will be determined and implemented in the field by the surveying ornithologist.

Minimization measures for both special-status species and common nesting birds are the same and implementation of BIO MM-4.1 would reduce impacts to nesting birds to less than significant levels.

BIO IMPACT 5.0: Tricolored blackbird

Several of the Study Areas associated with this Project have the potential to support nesting colonies of tricolored blackbird during the nesting season, generally March – July near the coast. However, the Study Area is regularly maintained and there is no documented use of the Study Areas for nesting. Removal of vegetation containing an active nesting colony (or any active nests) of tricolored blackbird could result in the early termination of nests or individual mortality, which would be considered take. Impacts to this species' short-term nesting success or individual mortality through direct mortality of eggs or young, or visual and auditory disturbance would be considered significant under CEQA, and take as defined by CESA of any individuals would require a Section 2081 Incidental Take Permit from CDFW. Removal of tules from the regularly maintained Study Areas is not anticipated to result in a loss of nesting or foraging habitat. The Study Areas would still provide foraging habitat for this species, and no nesting is known to occur at these Study Areas. No significant impacts under CEQA to nesting or foraging habitat are anticipated from the Project.

BIO MM 5.1: Tricolored Blackbird Mitigation Measure

Removal of wetland vegetation within Study Area where tricolored blackbird has the potential to occur (see Table 9) should be limited to the non-nesting season, generally August 16 – March 14 for this species. If working outside of the nesting season is not possible, pre-construction nesting bird surveys (BIO MM 4.1) should also include an assessment for the presence of tricolored blackbird. If nesting tricolored blackbird are found within a Study Area, avoidance 250-foot buffer should be implemented around the vegetation that contains the nesting colony until such time as nests within the colony are no longer active. With the implementation of this measure, the Project's impact to nesting tricolored blackbird will be reduced to a less than significant level.

BIO IMPACT 6.0: Burrowing Owl

Ground squirrel burrows are present at varying degrees throughout the Project Area. Within some Study Areas, ground squirrel activity is localized around features that will be impacted as a result of the proposed Project. Burrowing owls may use ground squirrel burrows within the Project Area for both overwintering and breeding, though the timing of the proposed Project would coincide chiefly with the breeding season. Although the proposed Project would likely not directly impact a burrow occupied by a burrowing owl, visual and auditory disturbance associated with maintenance actions could potentially result in nest abandonment or disturbance or abandonment of winter burrows. Burrowing owl is protected by CFGC and is an SSC, and is thus afforded specific protections. Any impacts to this species, including injury or mortality to individuals, or active nests, indirect disturbance that results in nest abandonment, or exclusion from suitable habitat including foraging habitat would be considered a significant impact under CEQA. Burrowing owl is not known to be present in the Project Area; therefore, no loss of occupied habitat is anticipated to occur as a result of this Project, and no significant impacts to habitat are anticipated to occur, and a measure to reduce impacts from disturbance is below.

BIO MM 6.1: Burrowing Owl

Maintenance actions performed at any Study Area with potential burrowing owl habitat (see Table 9) within 500-feet shall be preceded by a pre-activity survey focused on detecting burrowing owl. Burrowing owl take avoidance surveys should be conducted using similar methods as outlined within the *CDFW Staff Report on Burrowing Owl Mitigation* (2012). These surveys often consist of a minimum of two (2) surveys that are conducted 14 days and within 48 hours prior to the start of work to determine whether burrowing owls occur in an area where they may be adversely affected by the proposed Project. Level of survey effort will be determined in consultation with CDFW. Pre-activity surveys for burrowing owl are not restricted to the nesting season.

If determined to be present, exclusion buffers of up to 500 feet during the nesting season (March 15 through August 31) and 250 feet in the non-nesting season shall be established and maintained around occupied burrows until such time as the burrow becomes unoccupied through natural processes. If avoidance is not feasible, a minimization and monitoring plan shall be prepared for burrows following CDFW guidance (CDFW 2012). The plan shall outline methods to reduce disturbance of Project activities, and may include monitoring of owls during work, installation of visual barriers, or other methods as appropriate for the owl locations and Project activities proposed. Avoidance of occupied burrows as determined through pre-activity

surveys and, under certain circumstances, minimization and monitoring plan implementation, will reduce the impacts to burrowing owl to a less than significant level.

BIO IMPACT 7.0: California Tiger Salamander

The proposed Project has the potential to impact CTS which is listed as threatened under the ESA and CESA. Though most of the Study Areas were determined to be unlikely to support CTS, certain Study Areas (C-06 and P-02) may provide upland habitat given their proximity or connectivity to areas with extant populations of CTS. Work is not anticipated to impact any known or likely breeding habitats of this species, but may encounter adults or juveniles in upland habitats or non-breeding aquatic habitats. Take of this species is prohibited without permits from the jurisdictional agencies that administer ESA and CESA. The proposed Project is not anticipated to result in changes to CTS breeding or upland habitat and no significant impacts to CTS habitat would occur as a result of the proposed Project.

Maintenance activities, such as mowing, at Study Areas P-05, P-07, or P-08 may impact CTS and consultation with USFWS and CDFW may be required. It is anticipated that consultation with the USFWS would occur through consultation between the Corps and USFWS pursuant to Section 7 of the ESA.

CTS is also a threatened species under CESA. Maintenance actions that may result in injury or mortality of CTS would require an incidental take permit (ITP) to be authorized pursuant to Section 2081 of the CFGC. A 2081 ITP would be issued to an applicant following receipt of an application for take and consultation with CDFW.

BIO MM 7.1: California Tiger Salamander

The mitigation measures listed below have been obtained from the Programmatic Biological Opinion for CTS for small projects within the San Francisco Bay Area (USFWS 2014a) and are similar to those that would likely be required by the USFWS and CDFW following consultation. If consultation with USFWS and/or CDFW is required, additional measures for proposed maintenance work and required timing of implementation of measures would be determined and implemented by the proposed Project. In addition to any measures required by Project permits, the following would be implemented to avoid and minimize impacts to CTS:

- Work at Study Areas where potential exists for CTS to be present shall be conducted during the dry season and when aquatic features are dry. This is generally considered to be May 1 – October 31.
- The qualifications of qualified biologist(s) shall be submitted to the USFWS for review at least thirty (30) calendar days prior to the start of work.
- A qualified biological monitor should be onsite during all activities at C-06 and P-02 that may result in take of CTS including vegetation removal, silt removal, and ground disturbance.
- A qualified biologist should conduct an education training for employees working on the Project. Personnel would be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.

- Plastic monofilament netting (erosion control matting, or wrapping around wattles), or similar material in any form should not be used on the Project in order to avoid entangling, strangling, or trapping CTS.
- To minimize temporary habitat disturbances, Project-related vehicle traffic should be restricted to established roads, and maintenance activity areas. Project-related vehicles shall observe a 15-mile per hour speed limit within maintenance activity areas.
- All maintenance equipment should be maintained to prevent leaks of fuels, lubricants, or other potentially toxic fluids.
- In order to avoid attracting predators of CTS, all trash shall be deposited in covered or closed trash containers that are removed from the Project site regularly.
- Initial ground disturbance activities shall cease no less than 30 minutes before sunset and shall not begin again prior to no less than 30 minutes after sunrise.
- No work in wet weather or within 48 hours of a rain event defined as 0.25 inch of rain within a 24-hour period.
- Removal of vegetation and any soil disturbance in Study Areas where CTS has potential to occur shall be conducted with hand tools. Soil manipulations at locations with potential for CTS to occur shall further not disturb the soil subsurface to avoid take of individuals in underground refugia.
- If herbicide applications are anticipated as part of vegetation management at any Study Area with potential for CTS to occur, applications should be made outside of the wet season (i.e. applied May 1 – October 31) to avoid runoff events into downstream waters and when the Study Area is dry.

BIO IMPACT 8.0: California Red-legged Frog

The proposed Project has the potential to impact individual CRLF and/or their habitat, which is listed as threatened under the ESA and is a CDFW SSC. Though most of the Study Areas were determined to be unlikely to support CRLF, Study Areas C-06 and C-14 may provide aquatic non-breeding habitat. Individual CRLF may also use portions of other Study Areas as migration corridors during the wet season. Work is not anticipated to impact any known or likely breeding habitats of this species, and no conversion of CRLF habitat would occur. However, take of this species is prohibited without permits from the jurisdictional agency that administers ESA.

Maintenance activities may impact CRLF, and consultation with USFWS may be required. It is anticipated that consultation with the USFWS would occur through consultation between the Corps and USFWS pursuant to Section 7 of the ESA.

BIO MM 8.1: California Red-legged Frog

The mitigation measures listed below have been obtained from the Programmatic Biological Opinion for CRLF for small projects within the San Francisco Bay Area (USFWS 2014b) and are similar to those that would likely be required by the USFWS following consultation. If consultation with USFWS is required, additional measures for proposed maintenance work and required timing of implementation of measures would be determined and implemented by the proposed Project. In addition to any measures required by Project permits, the following would be implemented to avoid and minimize impacts to CRLF:

- To the extent practicable, ground-disturbing activities will be avoided between November 1 and March 31 because that is the time period when CRLF are most likely to be moving through upland areas.

- A qualified biologist(s) will be onsite during all activities that may result in take of CRLF at Study Areas C-06 and C-14.
- The qualifications of the qualified biologist(s) will be submitted to the Service for review at least thirty (30) calendar days prior to the date earthmoving is initiated at the project site.
- The qualified biologist will conduct employee education training for employees working on earthmoving and/or maintenance activities. Personnel will be required to attend the presentation which will describe the CRLF, avoidance, minimization, and conservation measures, legal protection of the animal, and other related issues.
- To minimize temporary habitat disturbances, project-related vehicle traffic should be restricted to established roads, and maintenance activity areas. Project-related vehicles shall observe a 15-mile per hour speed limit within maintenance activity areas.
- All maintenance equipment should be maintained to prevent leaks of fuels, lubricants, or other potentially toxic fluids.
- Plastic monofilament netting (erosion control matting, or wrapping around wattles), or similar material in any form should not be used on the Project in order to avoid entangling, strangling, or trapping CRLF.
- In order to avoid attracting predators of CRLF, all trash shall be deposited in covered or closed trash containers that are removed from the Project site regularly.
- No work in wet weather or within 48 hours of a rain event defined as 0.25 inch of rain within a 24-hour period.

Work in Study Areas with potential for CRLF to occur shall be conducted only after the Study Areas have naturally dried.

BIO IMPACT 9.0: Impacts to Alameda Whipsnake

The proposed Project has the potential to impact AWS which is listed as threatened under the ESA and CESA. All Study Areas except P-06 were determined to be unlikely to support AWS. The proximity of Study Area P-06 to suitable and occupied habitat indicates that AWS could be transiently present within Study Area P-06. Study Area P-06 does not contain foraging or refugia habitat; therefore, presence of AWS within Study Area P-06 would be associated with dispersal movements. Although encounters are anticipated to be rare, there is potential for impacts to dispersing AWS individuals during the course of the proposed Project. Study Area P-06 is also within designated critical habitat for AWS, and impacts to critical habitat may require consultation with USFWS. If consultation with the USFWS is necessary for impacts to AWS and critical habitat, consultation is anticipated to be between the Corps and USFWS pursuant to Section 7 of the ESA. However, the proposed Project is not anticipated to result in changes to AWS habitat and no significant impacts to AWS habitat would occur as a result of the proposed Project.

AWS is also a threatened species under CESA. Maintenance actions that may result in injury or mortality of AWS would require an ITP to be authorized pursuant to Section 2081 of the CFGC. A 2081 ITP would be issued to an applicant following receipt of an application for take and consultation with CDFW.

BIO MM 9.1: Alameda Whipsnake

If consultation with USFWS and/or CDFW is required, additional measures for proposed maintenance work and required timing of implementation of measures would be determined

during consultation and implemented by the proposed Project. In addition to any measures required by Project permits, the following would be implemented to avoid and minimize impacts to AWS:

- The qualifications of qualified biologist(s) shall be submitted to the USFWS for review at least thirty (30) calendar days prior to the start of work.
- A qualified biologist should conduct an education training for employees working on the Project. Personnel would be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.
- Maintenance activities performed within Study Area P-06, where potential for take of individual AWS exists, shall be overseen by a qualified biological monitor. The qualified biological monitor will be present during all ground disturbing activities.
- Prior to start of work each day, the qualified biological monitor will inspect the work area and should AWS be discovered on any portion of the Study Area work will be postponed and the snake will be allowed to leave of its own volition. Work would not resume until the qualified biologist has determined the AWS has left the work area and is out of harm's way.

BIO IMPACT 10.0: Roosting Bats

Though presence of bat roosts is unlikely on most portions of the Project Area, certain proposed maintenance actions have the potential to disturb bat roosts should they be present. The largest risk of bat roost disturbance exists on the Mission Creek Restoration Project Study Area (C-06), due to the presence of an underpass of Interstate 680 and extensive riparian habitat. Other Study Areas also possess riparian habitat including mature trees that could play host to maternity or day roosts. There is no potential for hibernation roosts, and no impacts to hibernating bats or hibernation roosts are anticipated as a result of the proposed Project. Disturbance to roosting bats or the loss of roost habitat would be a significant impact.

BIO MM 10.1: Roosting Bats

The following measures will be implemented to avoid and minimize impacts to roosting bats:

- To the extent practicable, work that involves disturbance of potential bat roost habitat should be scheduled to occur between October and March to avoid the bat maternity season.
- If limiting work to this window is not feasible and noise disturbances are anticipated to exceed the baseline level of disturbance at the Study Area, or in the event that trees greater than 12" DBH are slated for removal, a bat roost habitat assessment shall be performed at least 30 days prior to the commencement of maintenance actions. The bat roost assessment shall be performed by a qualified bat biologist and will assess whether potential bat roost habitat is present, and whether maintenance actions within any given Study Area will result in direct or indirect impacts to roosts that may be present.
 - The assessment shall consist of visual examination of trees (greater than 12" dbh), buildings, bridges, or other structures in the immediate vicinity, or along access routes of each Study Area. The assessment would address conditions that may be favorable or unfavorable for bat use such as maintenance materials used, thermal conditions, frequency of disturbance, and evidence of potential

predators. If maternity roosts are detected during the assessment, additional avoidance measures may be required.

- Any larger trees or branches (>6 inches in diameter) that are downed in the course of maintenance actions should be left on the ground for a minimum of 24-hours before being chipped, off-hauled, or otherwise processed, to ensure any roosting bats therein have the opportunity to leave the vicinity of their own volition.

Summary of Special-status Wildlife Work Windows by Study Area

Below, Table 10 summarizes and combines the various work windows described in Section 3.4 for special-status wildlife species with potential to occur in each Study Area.

Table 10. Study Area combined special-status wildlife species work window

Study Area Number	Individual Species Work Windows ¹		Combined Species Work Window ¹ (Period of No Constraint)	Relevant Special-Status Species
	Nesting Birds ² (constraint only if nests present)	Special-status Species		
Creeks				
C-01	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-02	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	TCB
C-03	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-04	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-05	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-06	Aug. 15-Jan. 31	Apr. 1 – Oct. 31	Aug. 15-Oct. 31	CRLF
C-07	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-08	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-09	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-10	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	TCB
C-11	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-12	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-13	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-14	Aug. 15-Jan. 31	Apr. 1 – Oct. 31	Aug. 15-Oct. 31	CRLF
C-15	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-16	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
C-17	Aug. 15-Jan. 31	May 1 – Oct. 31	Aug. 15-Oct. 31	CTS
Detention Ponds				
P-01	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	TCB
P-02	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	TCB
P-03	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	TCB

Study Area Number	Individual Species Work Windows ¹		Combined Species Work Window ¹ (Period of No Constraint)	Relevant Special-Status Species
	Nesting Birds ² (constraint only if nests present)	Special-status Species		
P-04	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
P-05	Aug. 15-Jan. 31	May 1 – Oct. 31	Aug. 15-Oct. 31	CTS
P-06	Aug. 15-Jan. 31	N/A	Aug. 15-Jan. 31	N/A
P-07	Aug. 15-Jan. 31	May 1 – Oct. 31	Aug. 15-Oct. 31	CTS
P-08	Aug. 15-Jan. 31	May 1 – Oct. 31	Aug. 15-Oct. 31	CTS

¹ Work may proceed during this time without requiring pre-construction wildlife surveys. The exception is at Study Areas where burrowing owl has potential presence, where pre-activity surveys for this species are required year-round.

² Nesting bird work window covers all special-status birds with the exception of burrowing owl. Burrowing owl should be surveyed for and may be a constraint at all times of year at Study Areas where potential is moderate or higher.

6.3.5 Local Policies or Ordinances

BIO IMPACT 11.0: Local Tree Ordinance

Within the overall Project Area, there are numerous protected/ ordinance sized trees, as defined by the City and Alameda County. Activities that compact soil, trench through roots, or pile soil up around the base of trees may adversely affect the health of protected trees. The removal or injury of protected trees, would require permits or mitigation measures under the City Municipal Code (Chapter 17.16).

Disturbance or removal of trees in natural channels shall not exceed the minimum necessary to complete maintenance activities. Precautions shall be taken to avoid other damage to vegetation by people or equipment. Branches and/or limbs overhanging the channel and impacting water flows shall be properly pruned. Trees may be removed from natural channels if and only if they are below ordinary high water mark and they are restricting the capacity of the channel and they are causing erosion or flooding. Any trees which must be cut are to be cut at ground level and the root mass left in place to maintain bank stability.

The following measures shall be implemented to assure that impacts to protected trees are less than significantly impacted. Implementation of the following measures will reduce potential impacts on protected trees to a less-than-significant level by bringing the project into compliance with all local ordinances.

BIO MM 11.1: Avoid Trees

To the extent feasible, activities will avoid impacts to protected trees. Avoidance is considered to be the exclusion of any maintenance work on protected trees. If complete avoidance is not feasible, BIO MM 11.2 will be implemented.

BIO MM 11.2: Comply with Tree Ordinances

The Project proponent will comply with the local ordinances, including replacement ratios, and submit permit applications for removal, trimming, damage, or relocation of all protected trees covered by the applicable City or County ordinance listed in Section 2.3.2 and 2.3.3.

7.0 REFERENCES

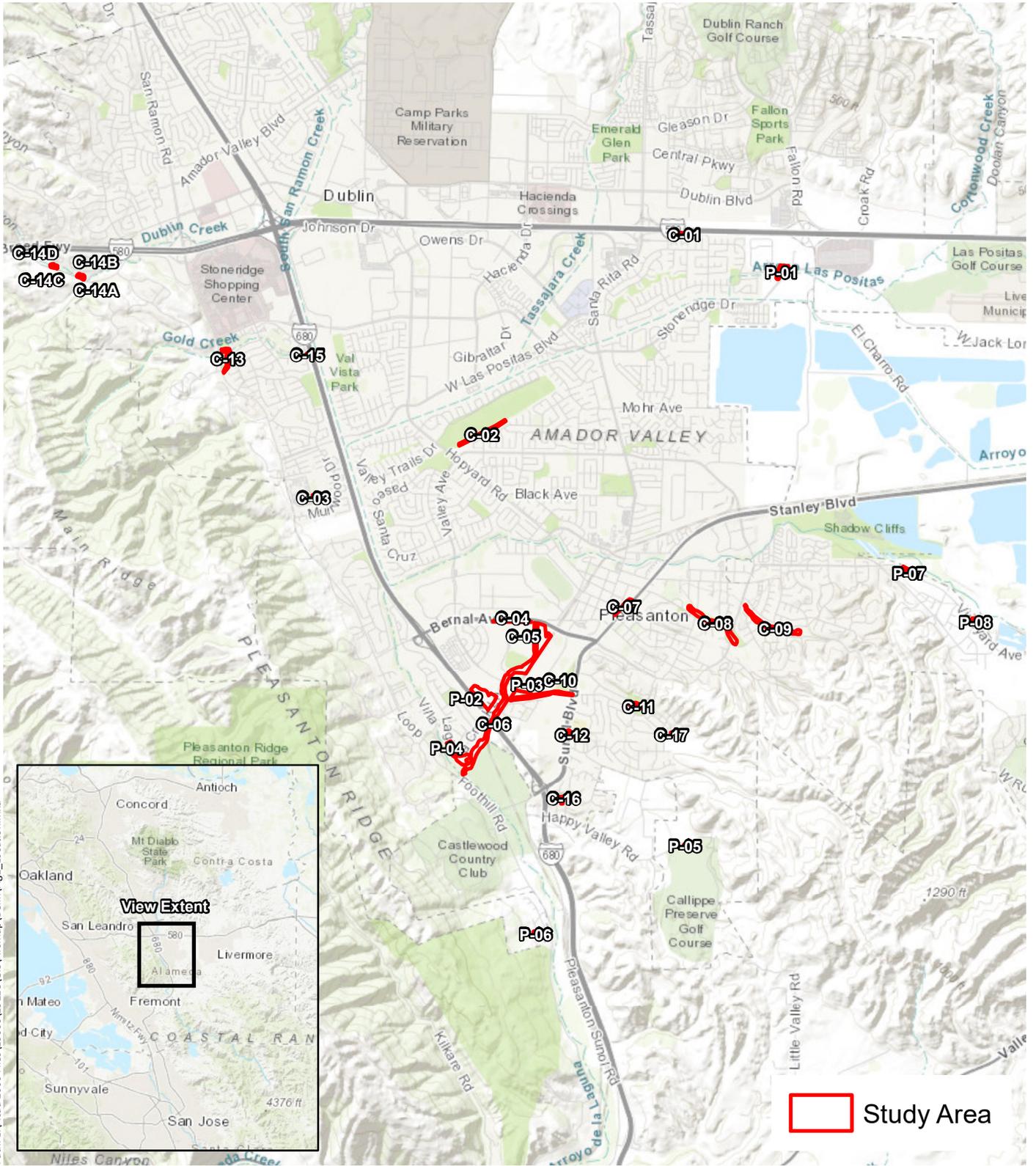
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Appendix A
Figures

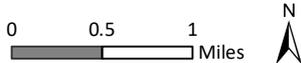
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Sources: ESRI World Topo, WRA | Prepared By: SGillespie, 11/19/2019

Figure 1. Study Area Location Map

City of Pleasanton
 Stream Maintenance Program
 Alameda County, California

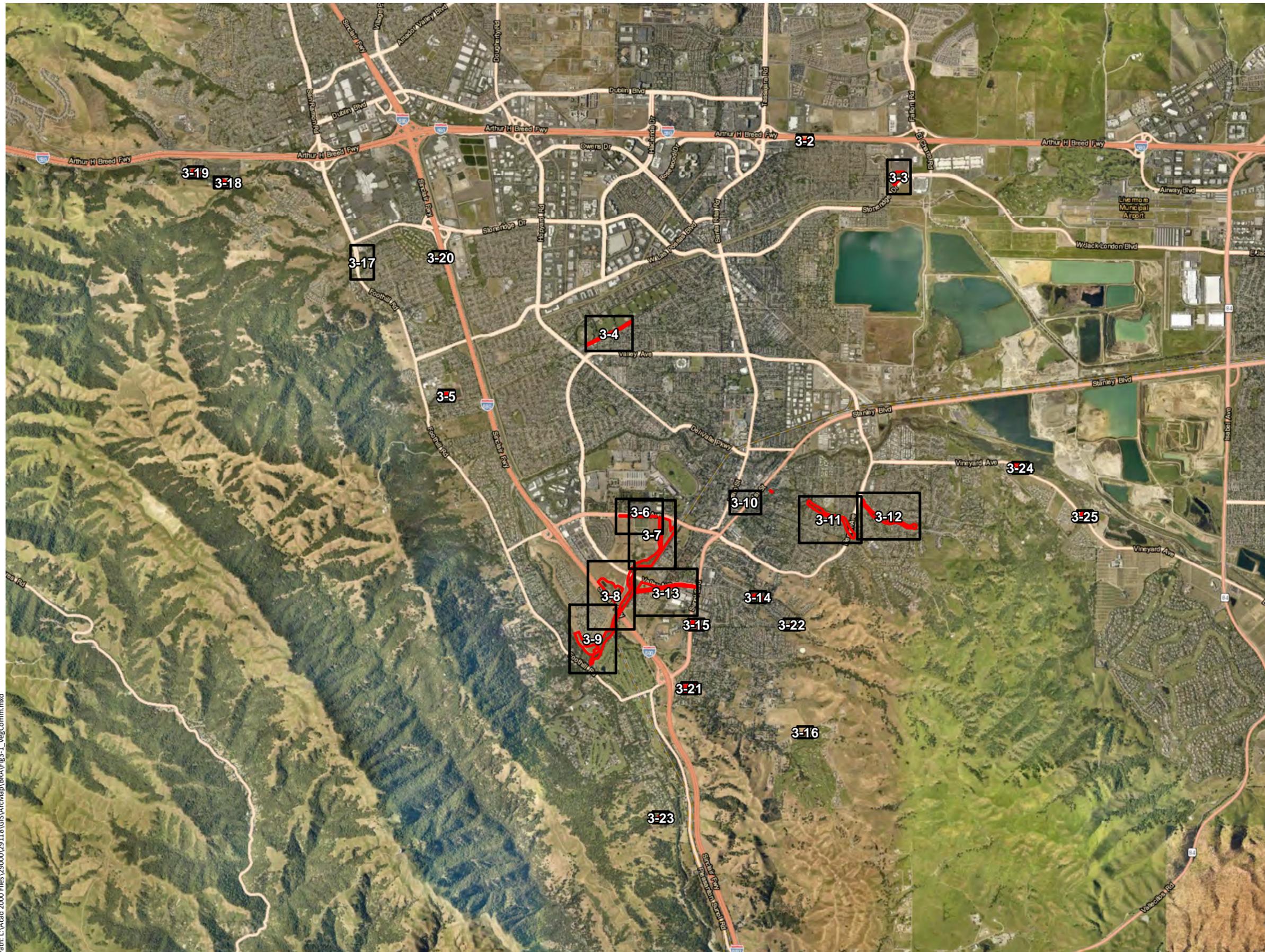


Study Area Name	Mapunit Symbol	Mapunit Name	Acres	
C-01	Pimlico Canal	Sm	Sunnyvale clay loam over clay	0.352233
C-02	Pleasanton Canal	Sm	Sunnyvale clay loam over clay	3.415609
C-03	Foothill High School Trash Rack	PgB	Pleasanton gravelly loam, 3 to 12 percent slopes	0.007496
C-03	Foothill High School Trash Rack	DaB	Danville silty clay loam, 3 to 10 percent slopes	0.291867
C-04	Bernal V-ditch	Sn	Sunnyvale clay loam, drained	0.168243
C-04	Bernal V-ditch	So	Sycamore silt loam	0.048659
C-04	Bernal V-ditch	YmA	Yolo loam, 0 to 3 percent slopes	0.229393
C-04	Bernal V-ditch	YmA	Yolo loam, 0 to 3 percent slopes	0.726659
C-05	Bernal North/South V-ditch	Sm	Sunnyvale clay loam over clay	0.302884
C-05	Bernal North/South V-ditch	YmA	Yolo loam, 0 to 3 percent slopes	3.047726
C-06	Mission Creek Restoration Project	So	Sycamore silt loam	0.002174
C-06	Mission Creek Restoration Project	Za	Zamora silt loam, 0 to 4 percent slopes	5.261105
C-06	Mission Creek Restoration Project	Sm	Sunnyvale clay loam over clay	16.93082
C-06	Mission Creek Restoration Project	PoE2	Positas gravelly loam, 20 to 40 percent slopes, eroded	0.000205
C-06	Mission Creek Restoration Project	YmA	Yolo loam, 0 to 3 percent slopes	9.094755
C-07	Lower Kottinger Creek	YmA	Yolo loam, 0 to 3 percent slopes	0.923921
C-08	Upper Kottinger Creek	PoC2	Positas gravelly loam, 2 to 20 percent slopes, eroded	6.818884
C-08	Upper Kottinger Creek	YmA	Yolo loam, 0 to 3 percent slopes	1.192352
C-09	Touriga Creek	PgB	Pleasanton gravelly loam, 3 to 12 percent slopes	1.419873
C-09	Touriga Creek	PoC2	Positas gravelly loam, 2 to 20 percent slopes, eroded	5.208783
C-10	Junipero Canal	Sm	Sunnyvale clay loam over clay	5.181662
C-11	Mission Park Creek	PoC2	Positas gravelly loam, 2 to 20 percent slopes, eroded	0.231582
C-11	Mission Park Creek	YmA	Yolo loam, 0 to 3 percent slopes	0.72632
C-12	Cemetery Creek	PoC2	Positas gravelly loam, 2 to 20 percent slopes, eroded	0.80553
C-13	Gold Creek	PoC2	Positas gravelly loam, 2 to 20 percent slopes, eroded	1.203053
C-13	Gold Creek	PtB2	Positas gravelly loam, thick surface, 2 to 10 percent slopes, eroded	1.153209
C-13	Gold Creek	AzD	Azule clay loam, 3 to 30 percent slopes	0.123006
C-13	Gold Creek	PgB	Pleasanton gravelly loam, 3 to 12 percent slopes	0.345408
C-14A	Dublin Canyon Creek	DbD	Diablo clay, 15 to 30 percent slopes	0.00918
C-14A	Dublin Canyon Creek	CdB	Clear Lake clay, drained, 3 to 7 percent slopes	0.507591
C-14B	Dublin Canyon Creek	DbD	Diablo clay, 15 to 30 percent slopes	0.037363
C-14B	Dublin Canyon Creek	CdB	Clear Lake clay, drained, 3 to 7 percent slopes	0.329303
C-14C	Dublin Canyon Creek	LuD	Los Osos and Millsholm soils, 7 to 30 percent slopes	0.158413
C-14C	Dublin Canyon Creek	CdB	Clear Lake clay, drained, 3 to 7 percent slopes	0.259869
C-14D	Dublin Canyon Creek	LuD	Los Osos and Millsholm soils, 7 to 30 percent slopes	0.102265
C-14D	Dublin Canyon Creek	CdB	Clear Lake clay, drained, 3 to 7 percent slopes	0.256712
C-15	Stonedale Channel	YmA	Yolo loam, 0 to 3 percent slopes	0.07666
C-16	Arlington Creek	PoC2	Positas gravelly loam, 2 to 20 percent slopes, eroded	1.018006
C-17	Rutledge Place Culvert	YmA	Yolo loam, 0 to 3 percent slopes	0.092445
P-01	Stoneridge Pond	So	Sycamore silt loam	3.749115
P-02	Bernal Detention Pond Central	Sn	Sunnyvale clay loam, drained	1.409681
P-02	Bernal Detention Pond Central	Sm	Sunnyvale clay loam over clay	8.447849
P-03	Canyon Oaks Detention Pond	Sm	Sunnyvale clay loam over clay	3.431635
P-04	Bernal West Detention Pond	So	Sycamore silt loam	5.440545
P-04	Bernal West Detention Pond	Za	Zamora silt loam, 0 to 4 percent slopes	0.81048
P-04	Bernal West Detention Pond	Sm	Sunnyvale clay loam over clay	0.007974
P-05	Callippe Detention Pond	PgB	Pleasanton gravelly loam, 3 to 12 percent slopes	0.176971
P-06	Oak Tree Farms Creek/Detention Pond	LuD	Los Osos and Millsholm soils, 7 to 30 percent slopes	0.107675
P-06	Oak Tree Farms Detention Pond	Za	Zamora silt loam, 0 to 4 percent slopes	0.24045
P-07	Vineyard West Detention Pond	Gp	Gravel pit	1.826506
P-08	Vineyard East Detention Pond	PgB	Pleasanton gravelly loam, 3 to 12 percent slopes	1.331326

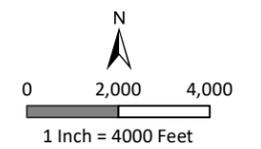
Figure 2. Project Area Soils Table

**Figure 3-1.
Vegetation Communities
(Overview)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California

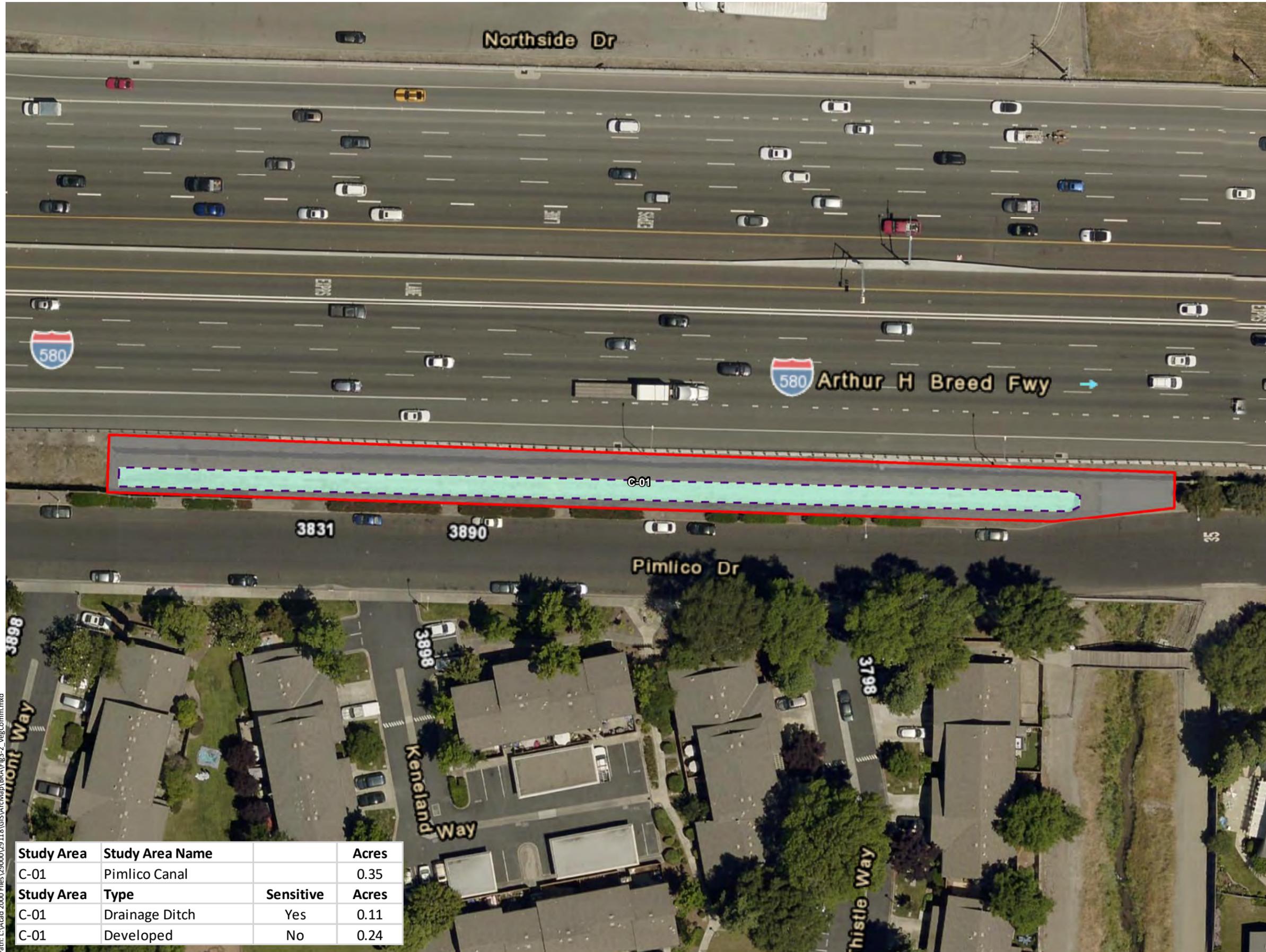


- Study Area
- Appendix Index

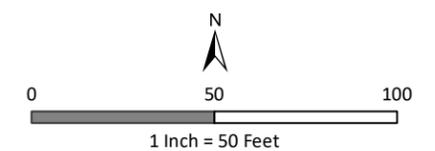
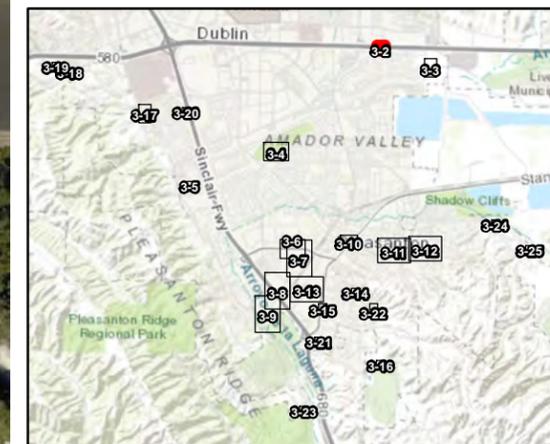


**Figure 3-2.
Vegetation Communities
(C-01)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



- Study Area
- Top of Bank
- Sensitive**
- Drainage Ditch
- Non-sensitive**
- Developed



Study Area	Study Area Name		Acres
C-01	Pimlico Canal		0.35
Study Area	Type	Sensitive	Acres
C-01	Drainage Ditch	Yes	0.11
C-01	Developed	No	0.24

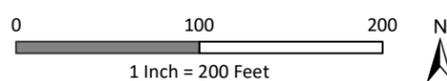
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019

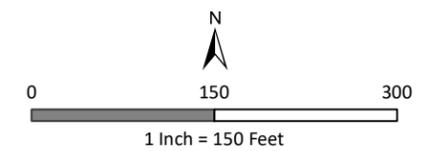
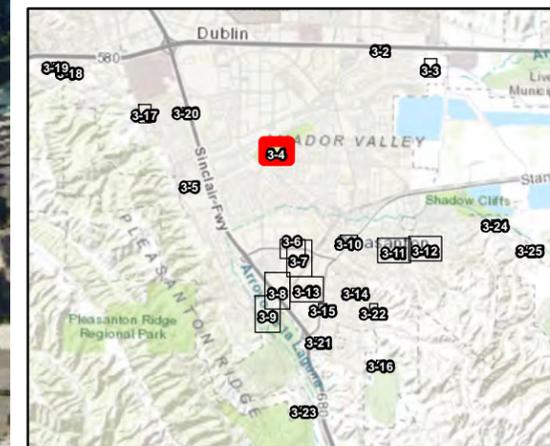
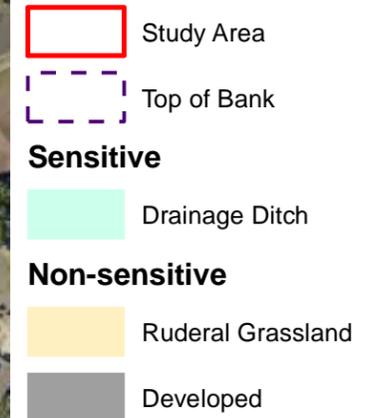
Figure 3-3. Vegetation Communities (P-01)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



**Figure 3-4.
Vegetation Communities
(C-02)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-02	Pleasanton Canal		3.42
Study Area	Type	Sensitive	Acres
C-02	Drainage Ditch	Yes	0.71
C-02	Developed	No	0.71
C-02	Ruderal Grassland	No	1.99

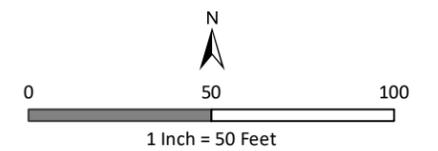
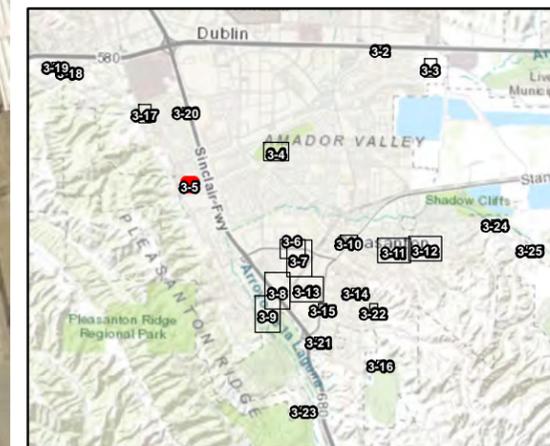
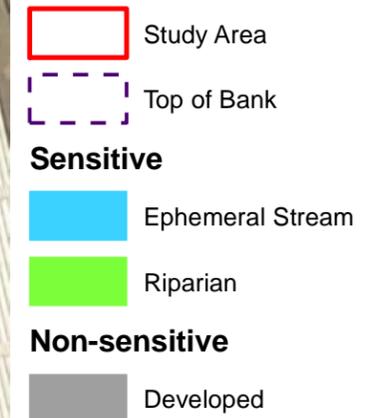
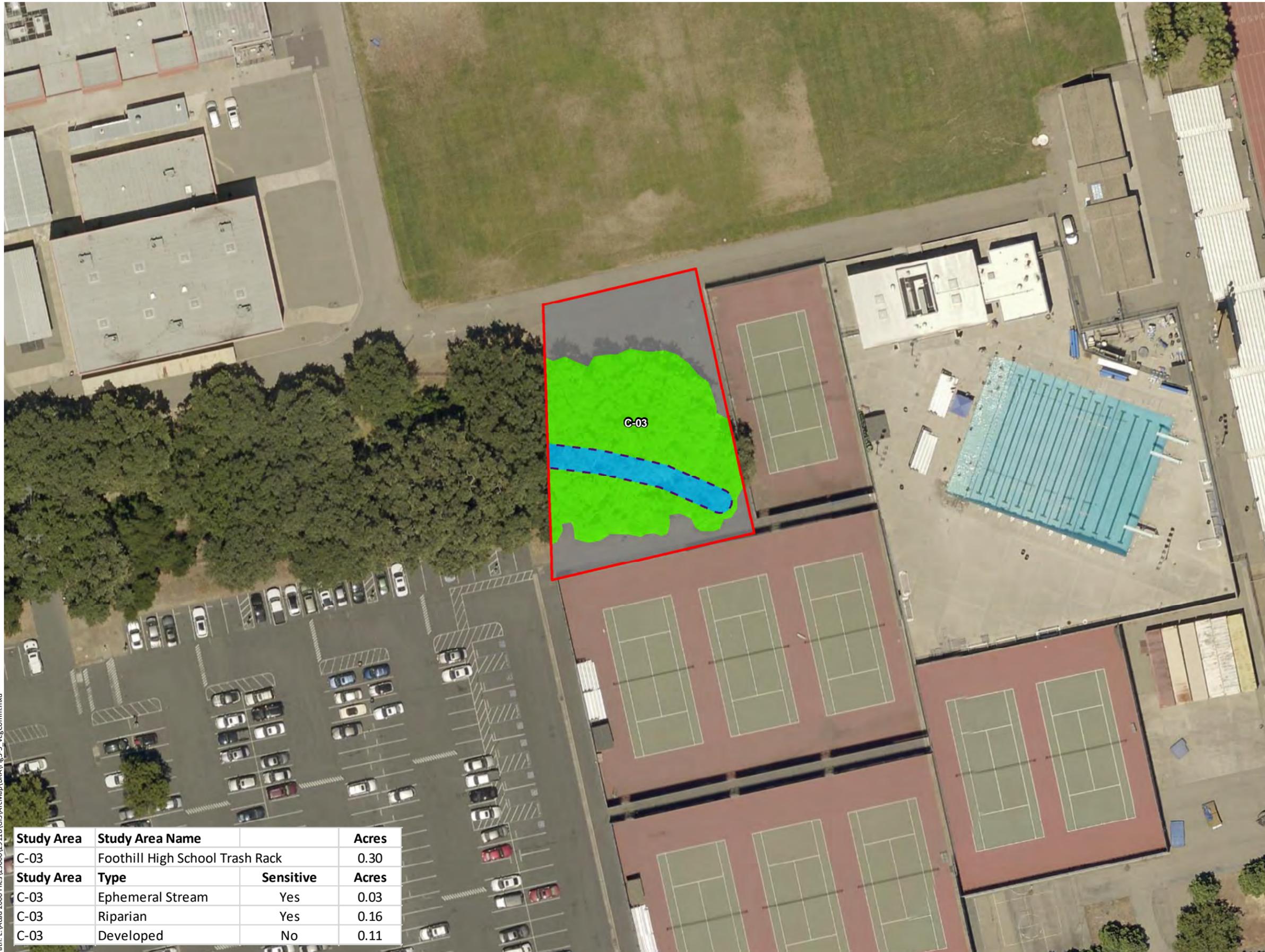
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



**Figure 3-5.
Vegetation Communities
(C-03)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-03	Foothill High School Trash Rack		0.30
Study Area	Type	Sensitive	Acres
C-03	Ephemeral Stream	Yes	0.03
C-03	Riparian	Yes	0.16
C-03	Developed	No	0.11

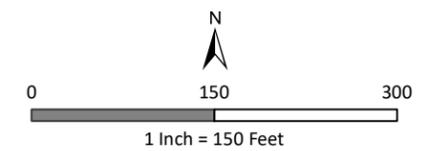
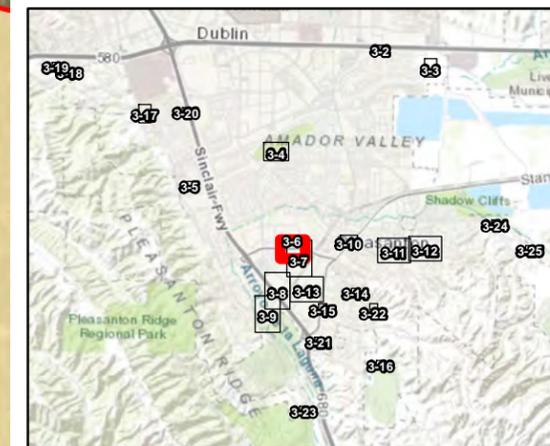
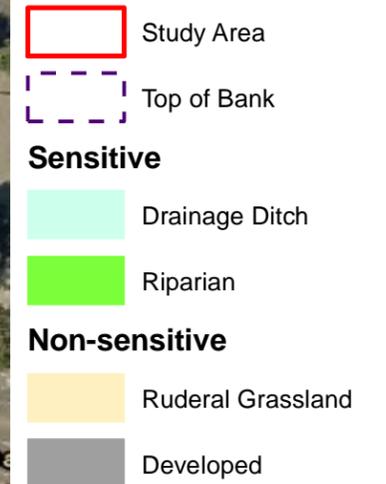
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



**Figure 3-6.
Vegetation Communities
(C-04, C-05)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-04	Bernal V-ditch		1.17
Study Area	Type	Sensitive	Acres
C-04	Drainage Ditch	Yes	0.24
C-04	Riparian	Yes	0.10
C-04	Developed	No	0.44
C-04	Ruderal Grassland	No	0.39
Study Area	Study Area Name		Acres
C-05	Bernal North/South V-Ditch		3.35
Study Area	Type	Sensitive	Acres
C-05	Drainage Ditch	Yes	0.22
C-05	Riparian	Yes	0.20
C-05	Ruderal Grassland	No	2.93

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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



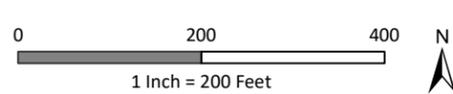


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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/26/2019

Figure 3-7. Vegetation Communities (C-04, C-05, C-06)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



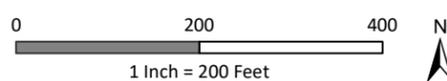


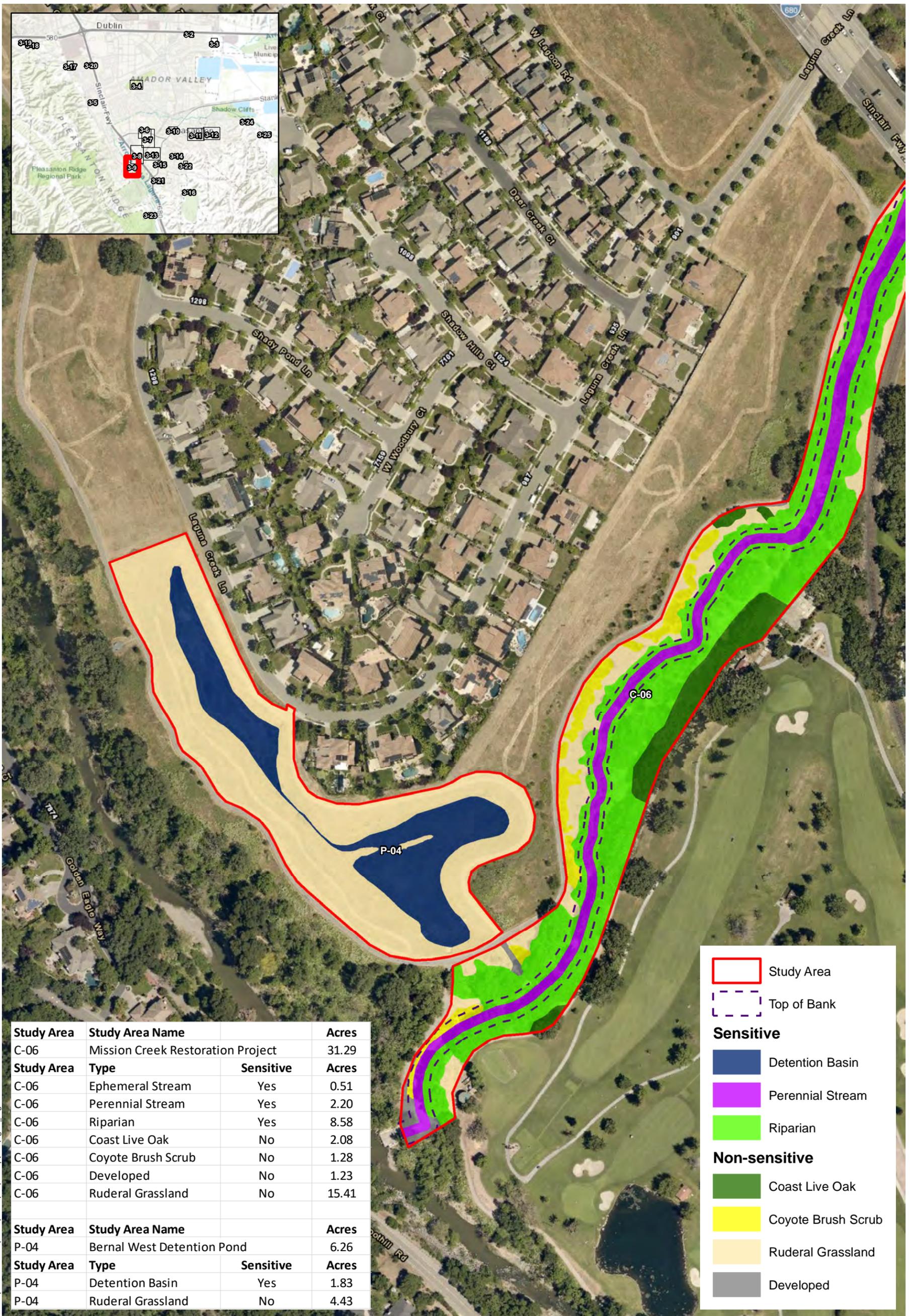
Study Area	Study Area Name	Acres	
C-06	Mission Creek Restoration Project	31.29	
Study Area	Type	Sensitive	Acres
C-06	Ephemeral Stream	Yes	0.51
C-06	Perennial Stream	Yes	2.20
C-06	Riparian	Yes	8.58
C-06	Coast Live Oak	No	2.08
C-06	Coyote Brush Scrub	No	1.28
C-06	Developed	No	1.23
C-06	Ruderal Grassland	No	15.41
Study Area	Study Area Name	Acres	
P-02	Bernal Detention Pond Central	9.86	
Study Area	Type	Sensitive	Acres
P-02	Detention Basin	Yes	4.08
P-02	Riparian	Yes	0.18
P-02	Developed	No	0.03
P-02	Ruderal Grassland	No	5.57

Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/26/2019

Figure3-8. Vegetation Communities (C-06, P-02)

City of Pleasanton
Stream Maintenance Program
Alameda County, California





Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/26/2019

Figure 3-9. Vegetation Communities (C-06, P-03)

City of Pleasanton
Stream Maintenance Program
Alameda County, California

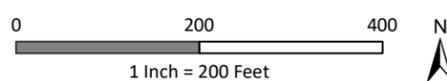
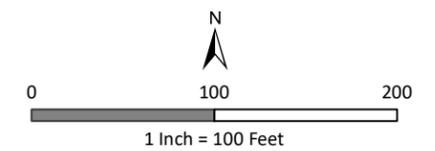
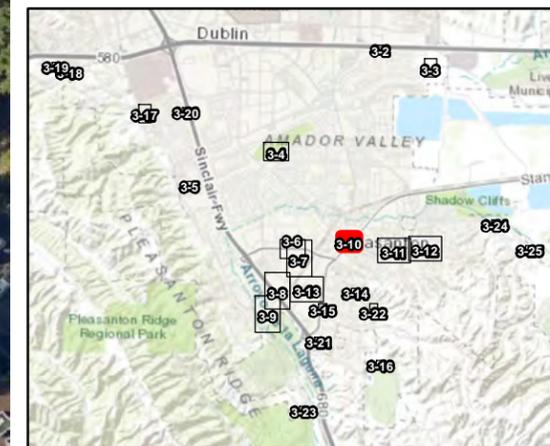
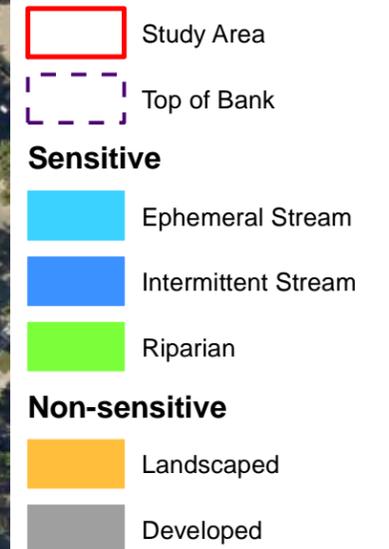


Figure 3-10.
Vegetation Communities
(C-07)

City of Pleasanton
Stream Maintenance Program
Alameda County, California

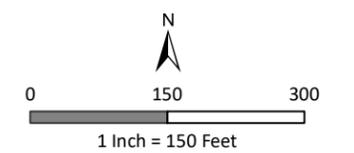
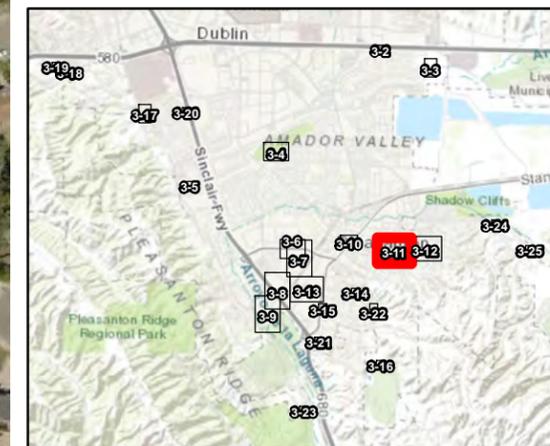
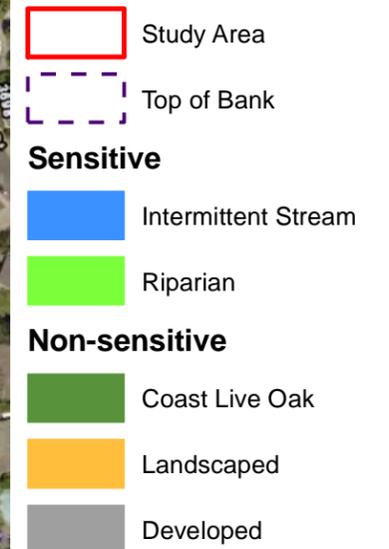


Study Area	Study Area Name		Acres
C-07	Lower Kottinger Creek		0.92
Study Area	Type	Sensitive	Acres
C-07	Ephemeral Stream	Yes	0.10
C-07	Intermittent Stream	Yes	0.06
C-07	Riparian	Yes	0.23
C-07	Developed	No	0.04
C-07	Landscaped	No	0.49

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Figure 3-11.
Vegetation Communities
(C-08)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-08	Upper Kottinger Creek		8.01
Study Area	Type	Sensitive	Acres
C-08	Intermittent Stream	Yes	0.34
C-08	Riparian	Yes	3.97
C-08	Coast Live Oak	No	1.48
C-08	Developed	No	1.12
C-08	Landscaped	No	1.10

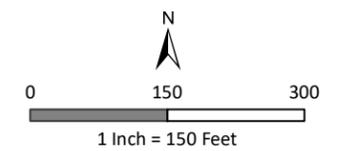
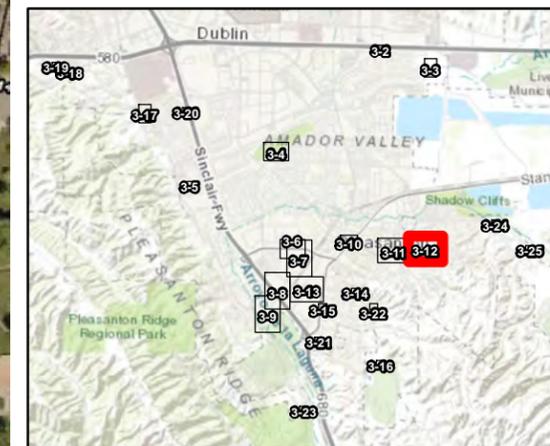
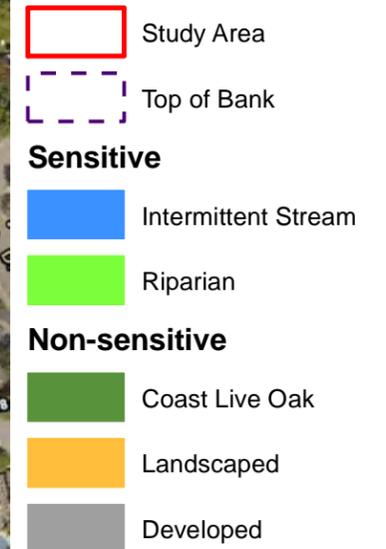
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



Figure 3-12.
Vegetation Communities
(C-09)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-09	Touriga Creek		6.63
Study Area	Type	Sensitive	Acres
C-09	Intermittent Stream	Yes	0.58
C-09	Riparian	Yes	4.44
C-09	Coast Live Oak	No	0.11
C-09	Developed	No	0.29
C-09	Landscaped	No	1.22

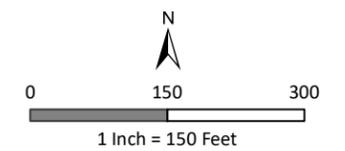
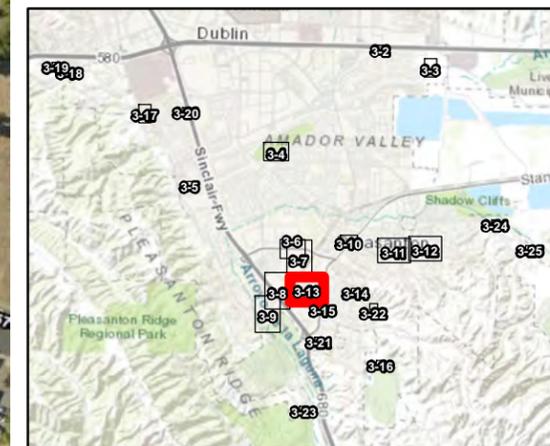
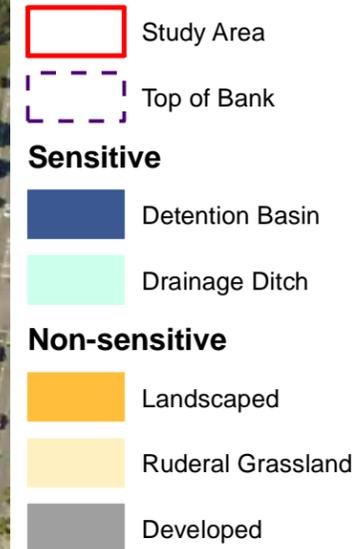
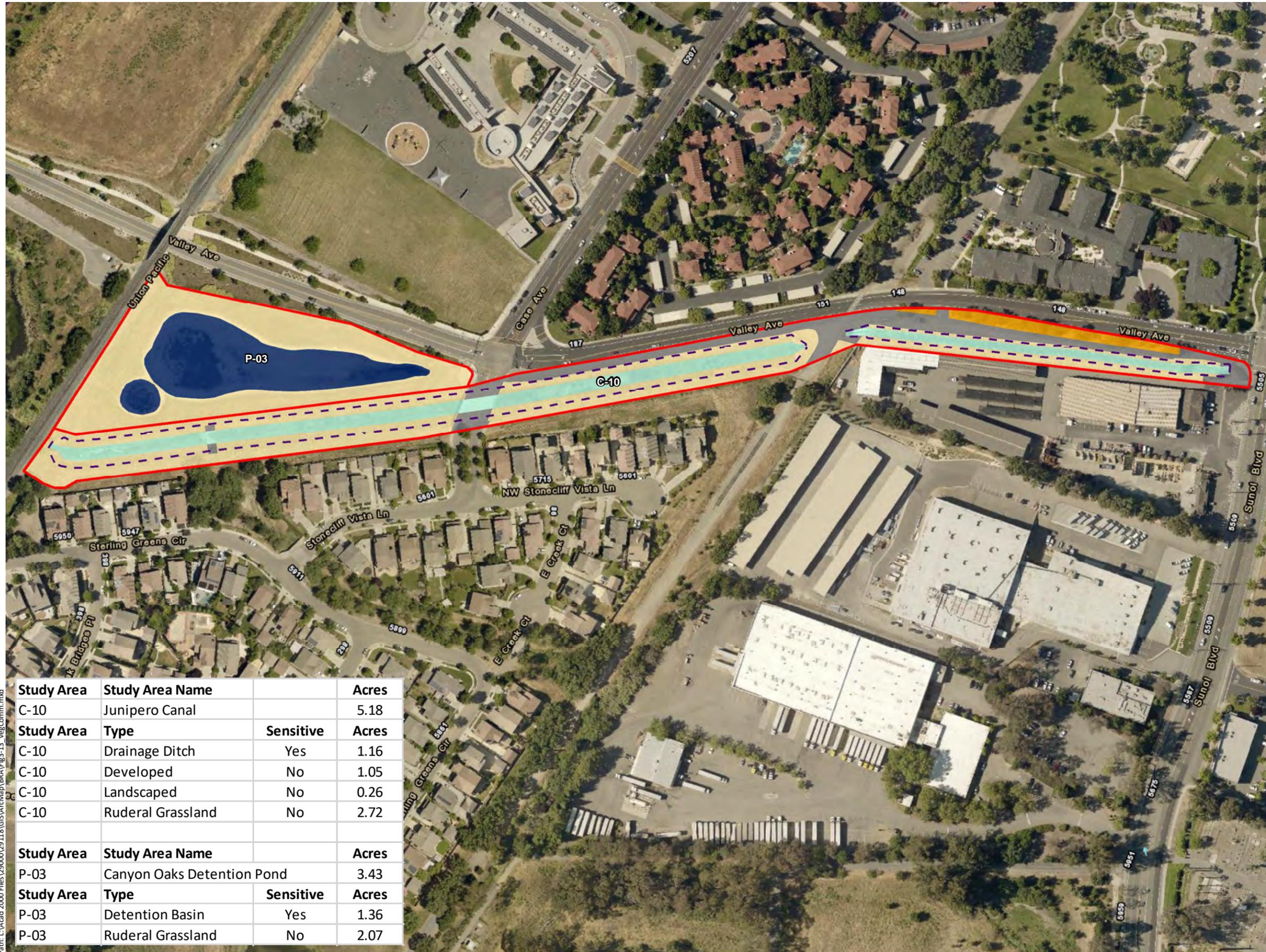
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



Figure 3-13.
Vegetation Communities
(C-10, P-03)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-10	Junipero Canal		5.18
Study Area	Type	Sensitive	Acres
C-10	Drainage Ditch	Yes	1.16
C-10	Developed	No	1.05
C-10	Landscaped	No	0.26
C-10	Ruderal Grassland	No	2.72
Study Area	Study Area Name		Acres
P-03	Canyon Oaks Detention Pond		3.43
Study Area	Type	Sensitive	Acres
P-03	Detention Basin	Yes	1.36
P-03	Ruderal Grassland	No	2.07

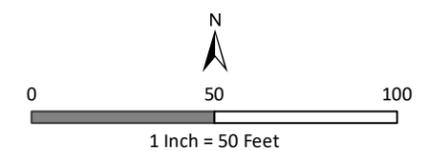
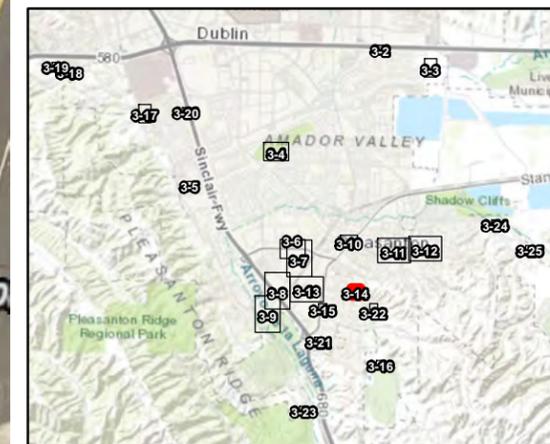
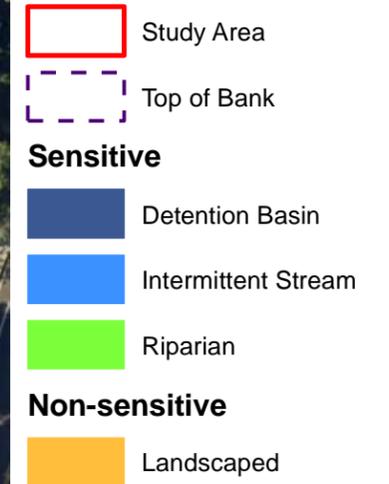
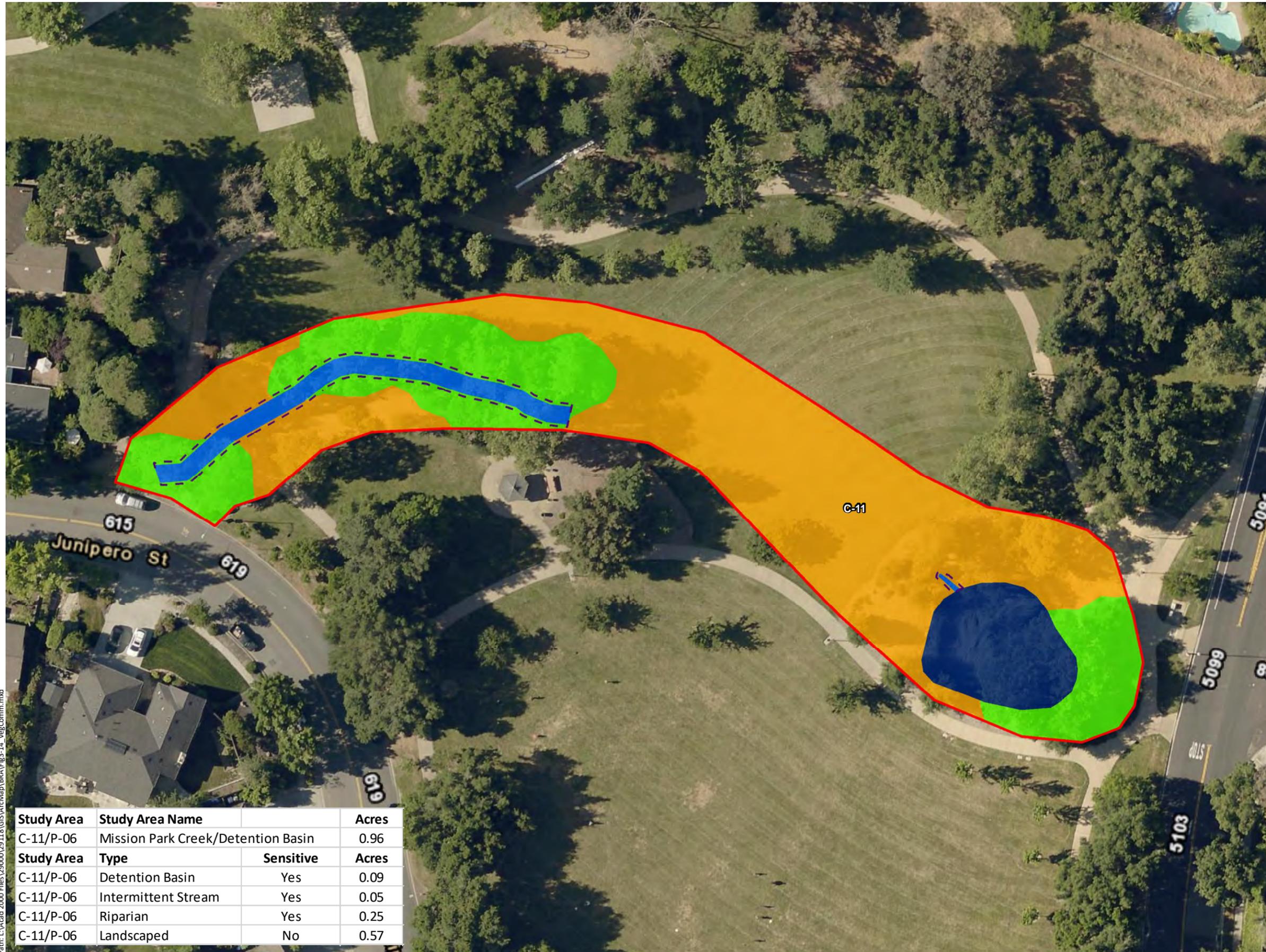
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



Figure 3-14.
Vegetation Communities
(C-11)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-11/P-06	Mission Park Creek/Detention Basin		0.96
Study Area	Type	Sensitive	Acres
C-11/P-06	Detention Basin	Yes	0.09
C-11/P-06	Intermittent Stream	Yes	0.05
C-11/P-06	Riparian	Yes	0.25
C-11/P-06	Landscaped	No	0.57

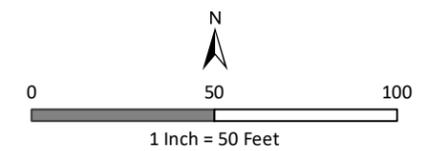
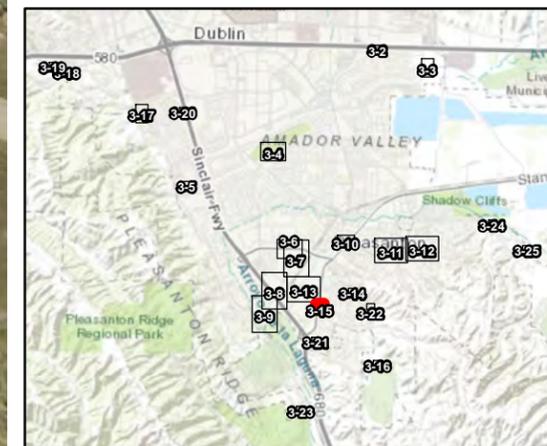
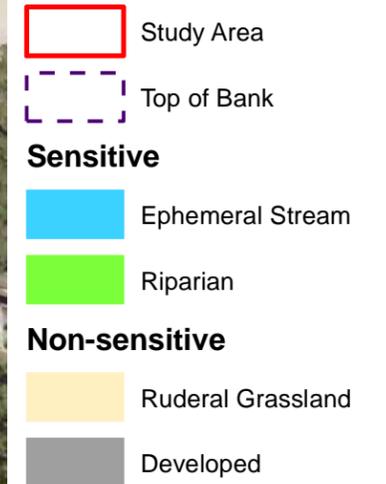
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



**Figure 3-15.
Vegetation Communities
(C-12)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-12	Cemetery Creek		0.81
Study Area	Type	Sensitive	Acres
C-12	Ephemeral Stream	Yes	0.05
C-12	Riparian	Yes	0.55
C-12	Developed	No	0.02
C-12	Ruderal Grassland	No	0.19

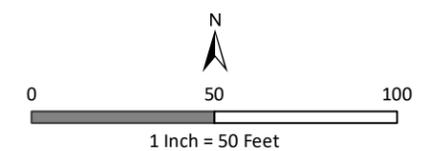
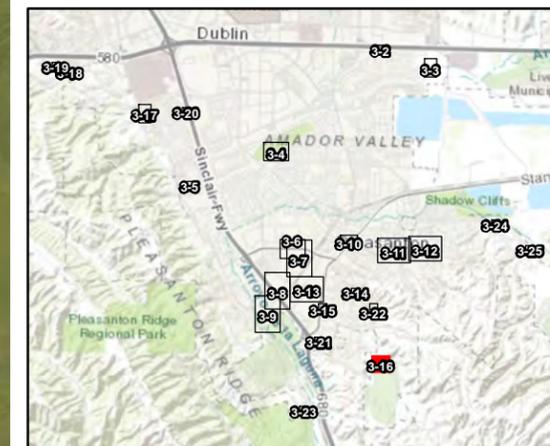
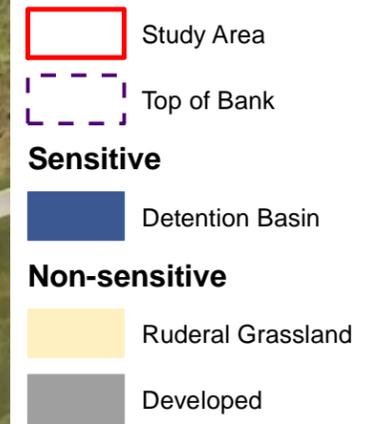
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



Figure 3-16.
Vegetation Communities
(P-05)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
P-05	Callippe Detention Pond		0.18
Study Area	Type	Sensitive	Acres
P-05	Detention Basin	Yes	0.08
P-05	Developed	No	0.03
P-05	Ruderal Grassland	No	0.06

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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



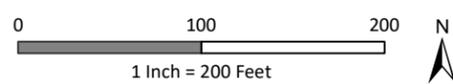


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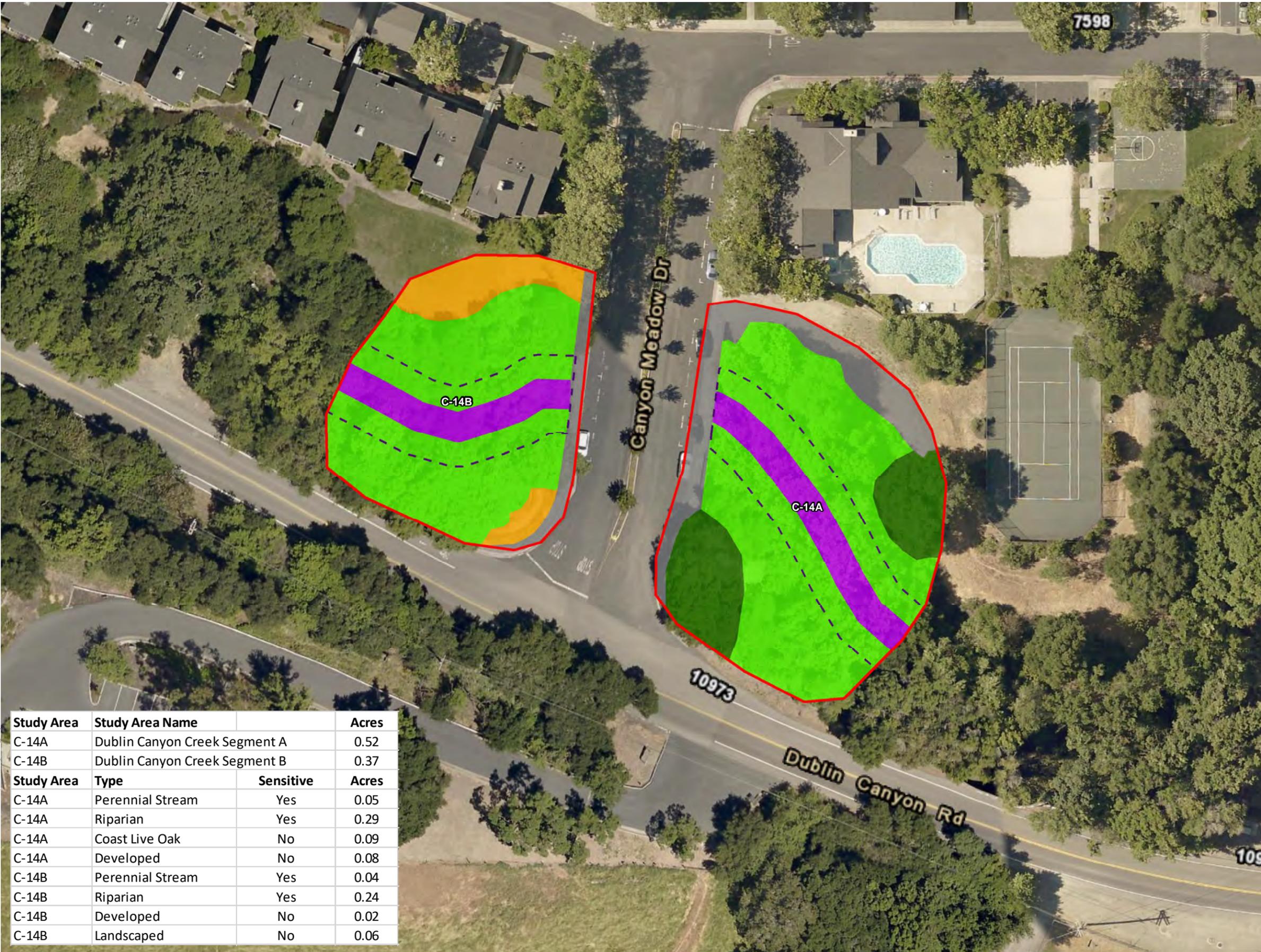
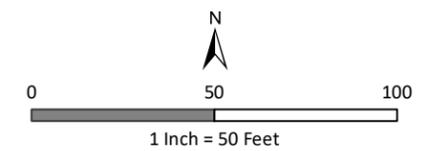
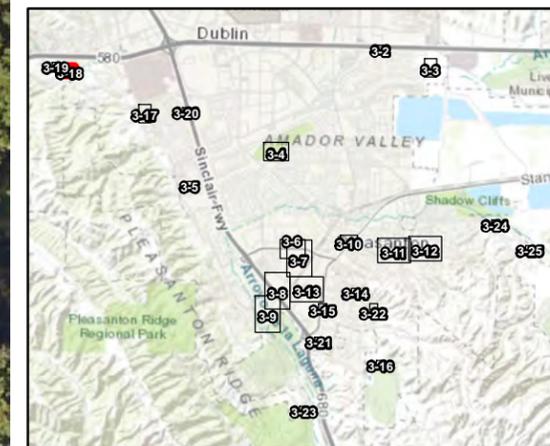
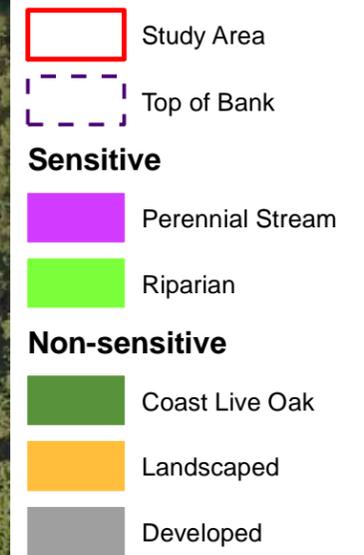
Figure 3-17. Vegetation Communities (C-13)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



**Figure 3-18.
Vegetation Communities
(C-14A, C-14B)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



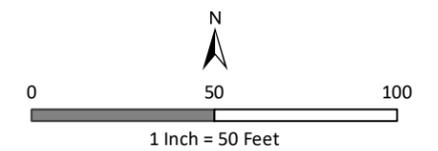
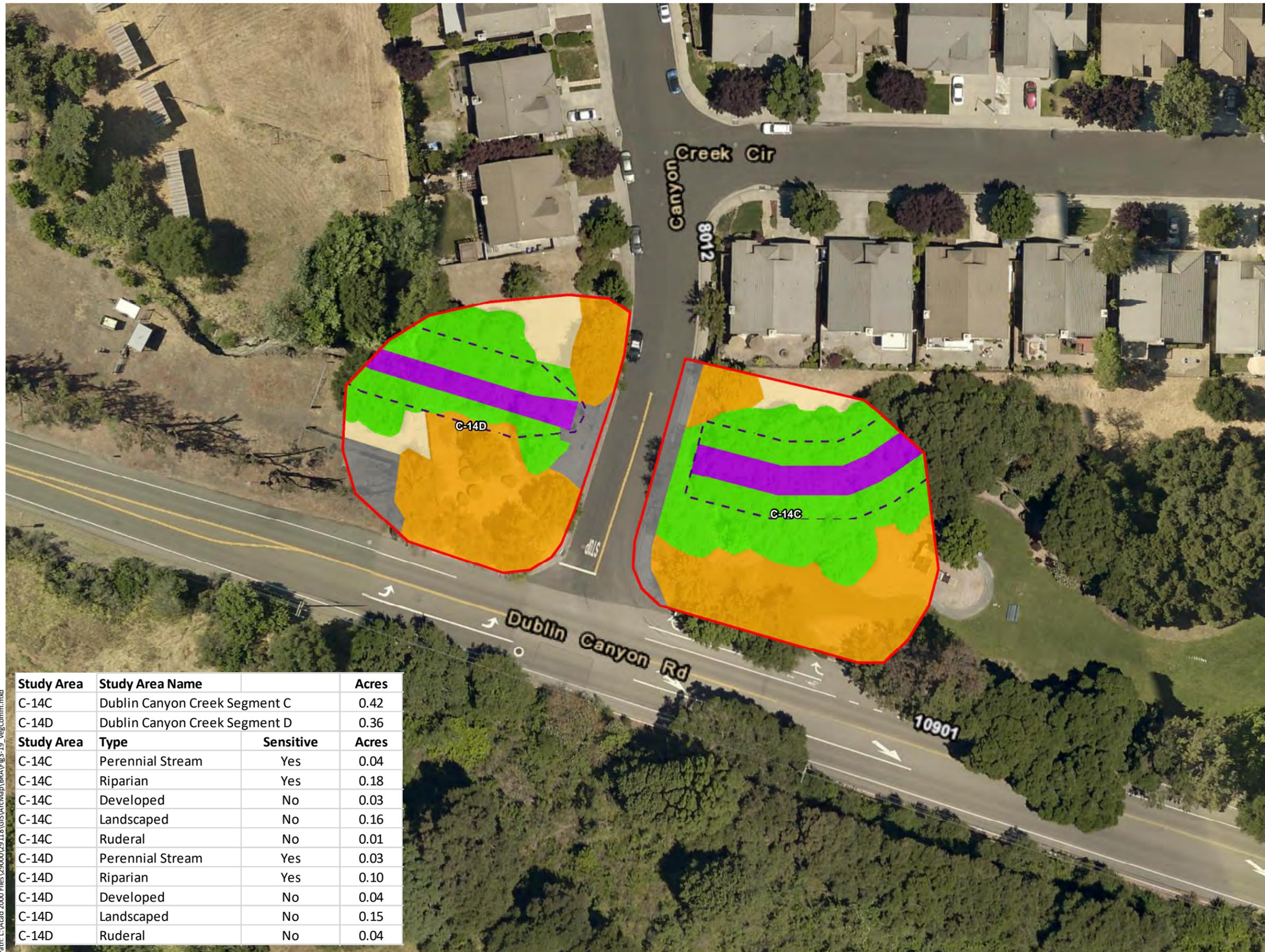
Study Area	Study Area Name	Acres	
C-14A	Dublin Canyon Creek Segment A	0.52	
C-14B	Dublin Canyon Creek Segment B	0.37	
Study Area	Type	Sensitive	Acres
C-14A	Perennial Stream	Yes	0.05
C-14A	Riparian	Yes	0.29
C-14A	Coast Live Oak	No	0.09
C-14A	Developed	No	0.08
C-14B	Perennial Stream	Yes	0.04
C-14B	Riparian	Yes	0.24
C-14B	Developed	No	0.02
C-14B	Landscaped	No	0.06

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Figure 3-19.
Vegetation Communities
(C-14C, C-14D)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-14C	Dublin Canyon Creek Segment C		0.42
C-14D	Dublin Canyon Creek Segment D		0.36
Study Area	Type	Sensitive	Acres
C-14C	Perennial Stream	Yes	0.04
C-14C	Riparian	Yes	0.18
C-14C	Developed	No	0.03
C-14C	Landscaped	No	0.16
C-14C	Ruderal	No	0.01
C-14D	Perennial Stream	Yes	0.03
C-14D	Riparian	Yes	0.10
C-14D	Developed	No	0.04
C-14D	Landscaped	No	0.15
C-14D	Ruderal	No	0.04

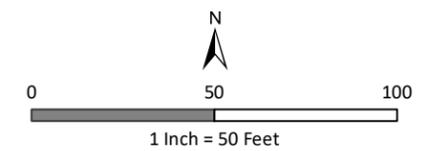
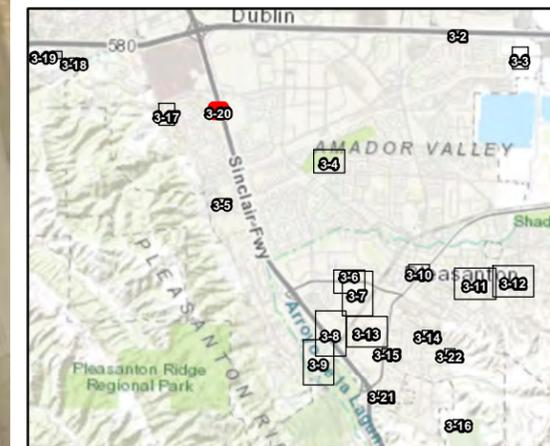
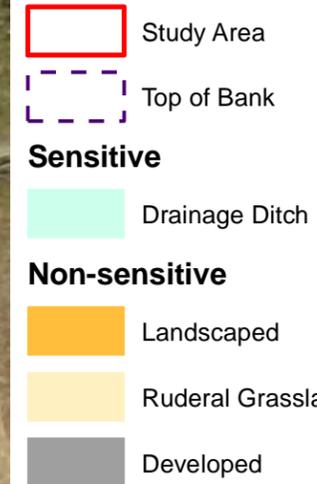
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 1/2/2020



Figure 3-20.
Vegetation Communities
(C-15)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-15	Stonedale Channel		0.08
Study Area	Type	Sensitive	Acres
C-15	Drainage Ditch	Yes	0.01
C-15	Developed	No	0.04
C-15	Landscaped	No	0.03
C-15	Ruderal	No	<0.01

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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019

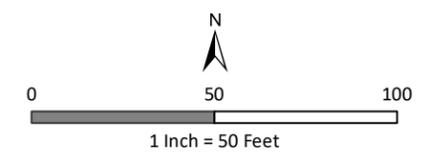
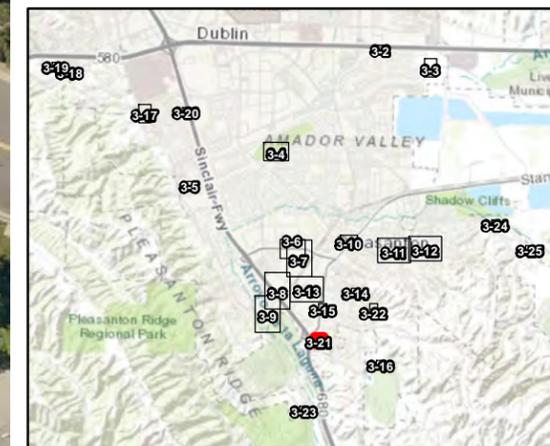


**Figure 3-21.
Vegetation Communities
(C-16)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



- Study Area
- Top of Bank
- Sensitive**
 - Intermittent Stream
 - Perennial Marsh
 - Riparian
- Non-sensitive**
 - Coast Live Oak
 - Landscaped
 - Ruderal Grassland
 - Developed



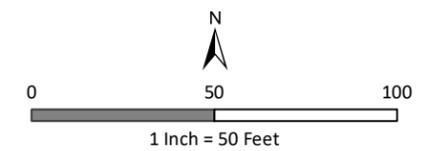
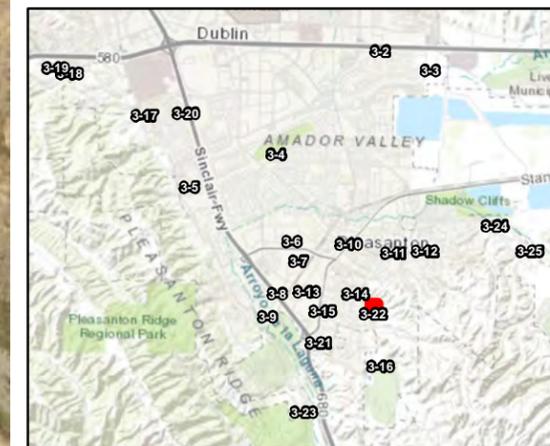
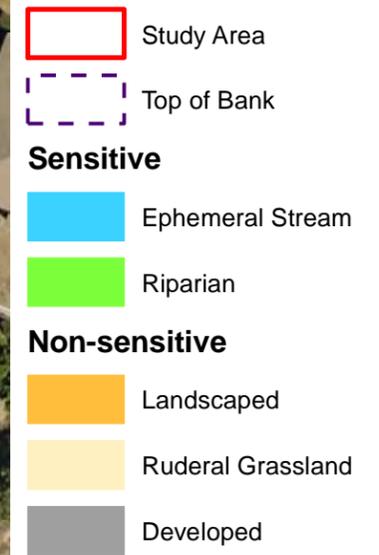
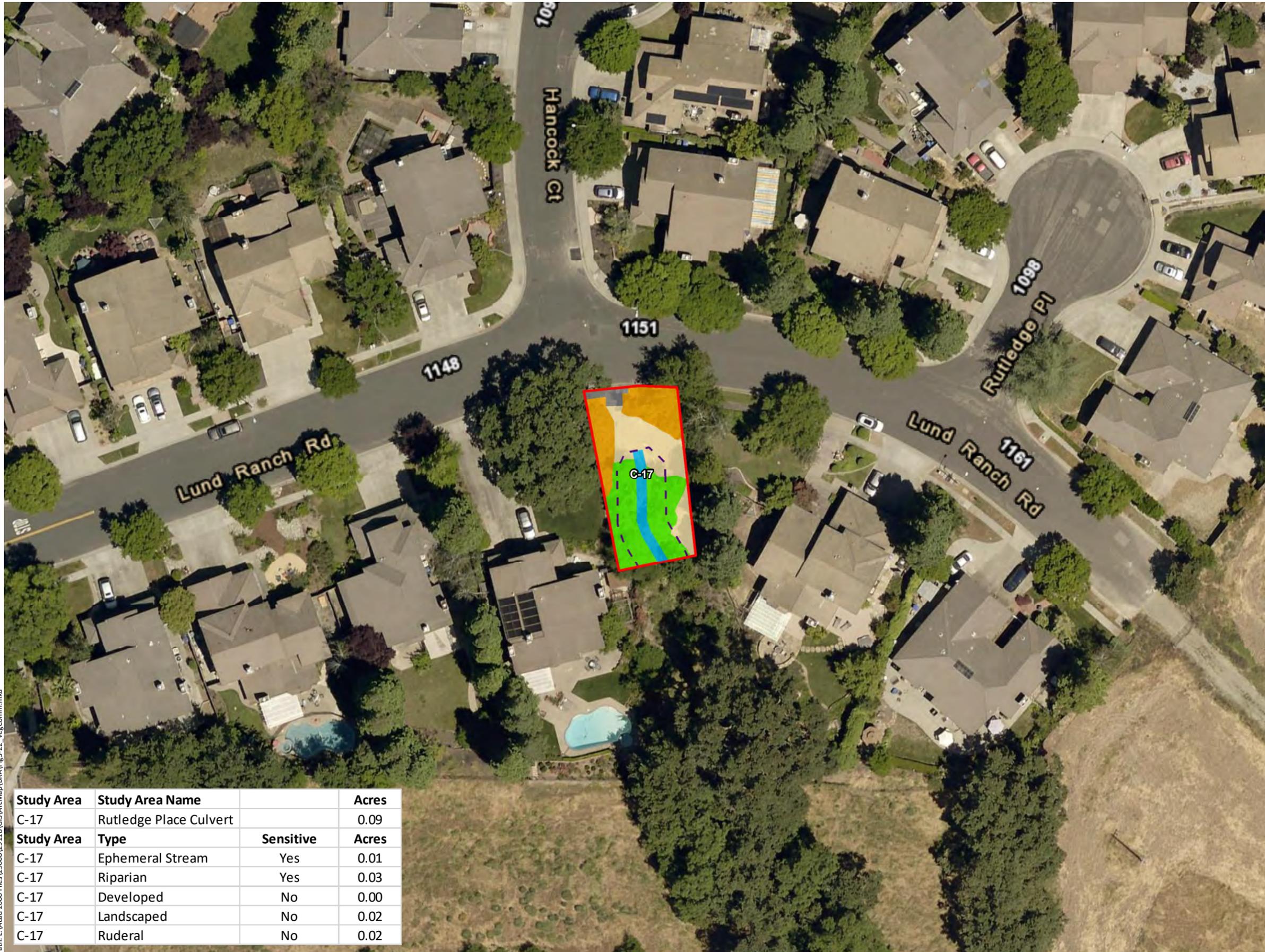
Study Area	Study Area Name		Acres
C-16	Arlington Creek		1.02
Study Area	Type	Sensitive	Acres
C-16	Intermittent Stream	Yes	0.05
C-16	Perennial Marsh	Yes	0.04
C-16	Riparian	Yes	0.27
C-16	Coast Live Oak	No	0.20
C-16	Developed	No	0.08
C-16	Landscaped	No	0.16
C-16	Ruderal	No	0.22

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Figure 3-22.
Vegetation Communities
(C-17)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
C-17	Rutledge Place Culvert		0.09
Study Area	Type	Sensitive	Acres
C-17	Ephemeral Stream	Yes	0.01
C-17	Riparian	Yes	0.03
C-17	Developed	No	0.00
C-17	Landscaped	No	0.02
C-17	Ruderal	No	0.02

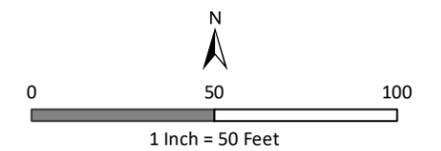
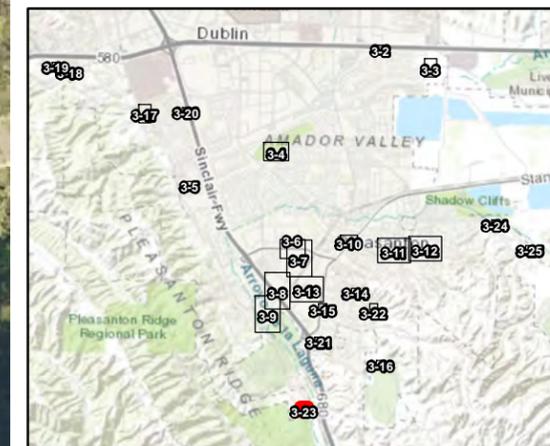
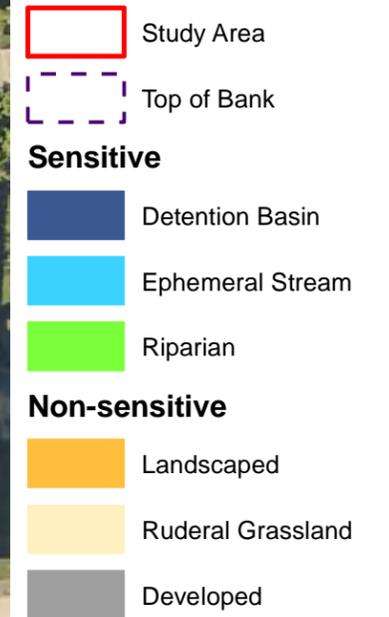
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 11/20/2019



**Figure 3-23.
Vegetation Communities
(P-06)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California

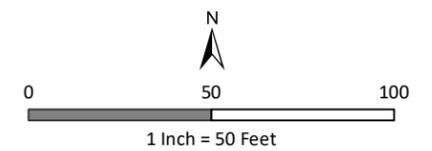
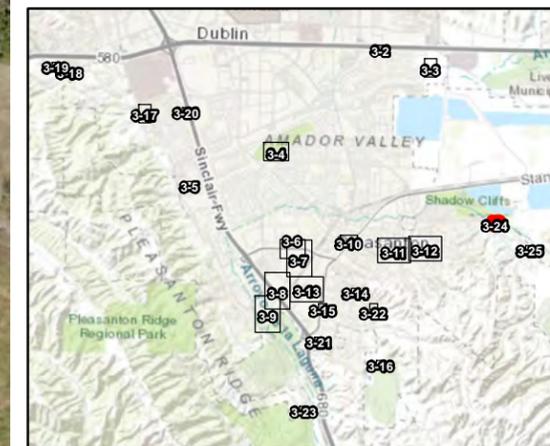
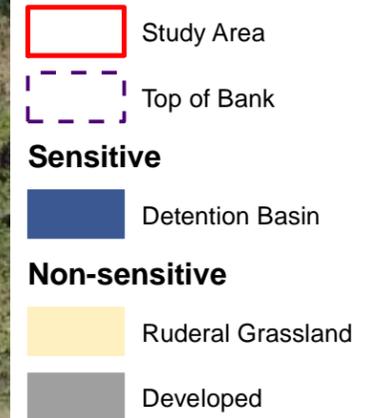
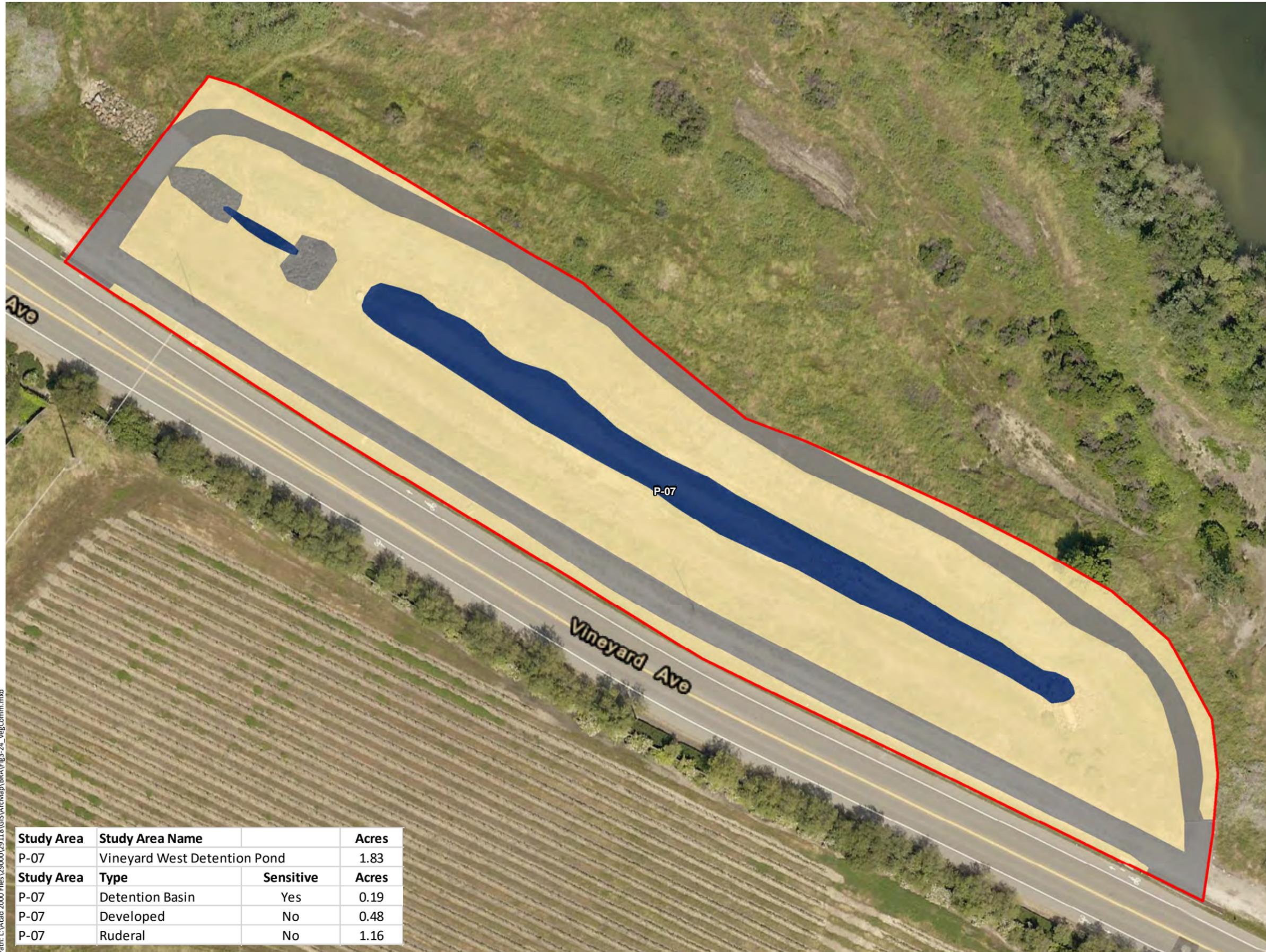


Study Area	Study Area Name		Acres
P-06	Oak Tree Farms Creek/Detention Pond		0.35
Study Area	Type	Sensitive	Acres
P-06	Detention Basin	Yes	0.02
P-06	Ephemeral Stream	Yes	0.01
P-06	Riparian	Yes	0.01
P-06	Developed	No	0.02
P-06	Landscaped	No	0.01
P-06	Ruderal	No	0.27

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Figure 3-24.
Vegetation Communities
(P-07)

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
P-07	Vineyard West Detention Pond		1.83
Study Area	Type	Sensitive	Acres
P-07	Detention Basin	Yes	0.19
P-07	Developed	No	0.48
P-07	Ruderal	No	1.16

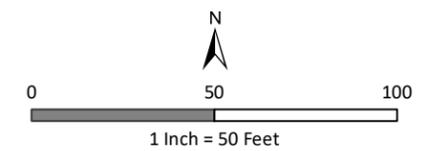
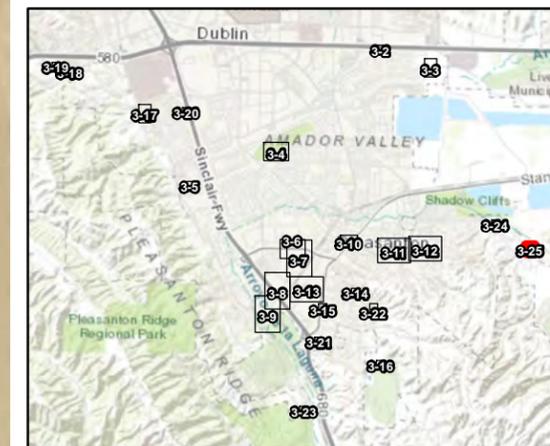
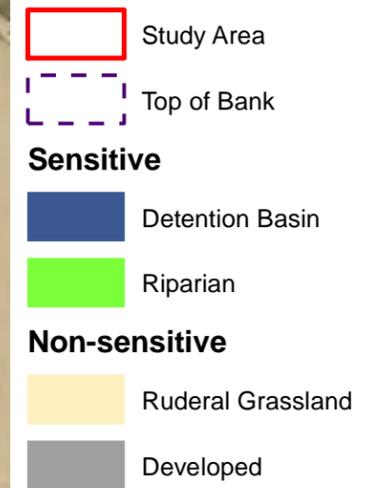
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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 1/2/2020



**Figure 3-25.
Vegetation Communities
(P-08)**

City of Pleasanton
Stream Maintenance Program
Alameda County, California



Study Area	Study Area Name		Acres
P-08	Vineyard East Detention Pond		1.33
Study Area	Type	Sensitive	Acres
P-08	Detention Basin	Yes	0.23
P-08	Riparian	Yes	0.01
P-08	Developed	No	0.33
P-08	Ruderal	No	0.76

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Sources: Alameda County 2017, WRA | Prepared By: SGillespie, 1/2/2020



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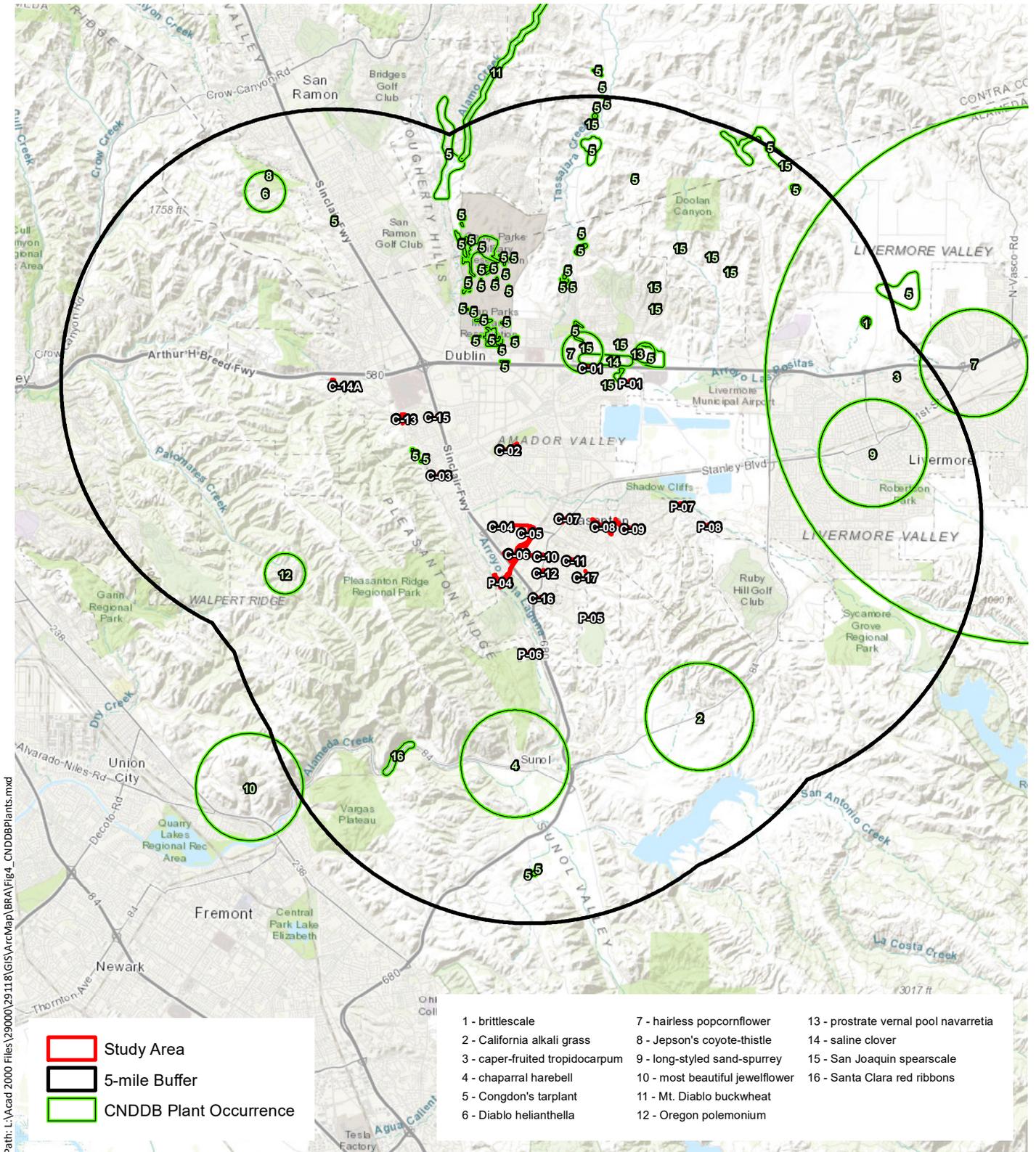
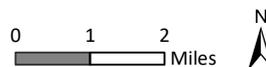


Figure 4. Special-status Plant Species within 5-mile Radius of Study Area

City of Pleasanton
 Stream Maintenance Program
 Alameda County, California



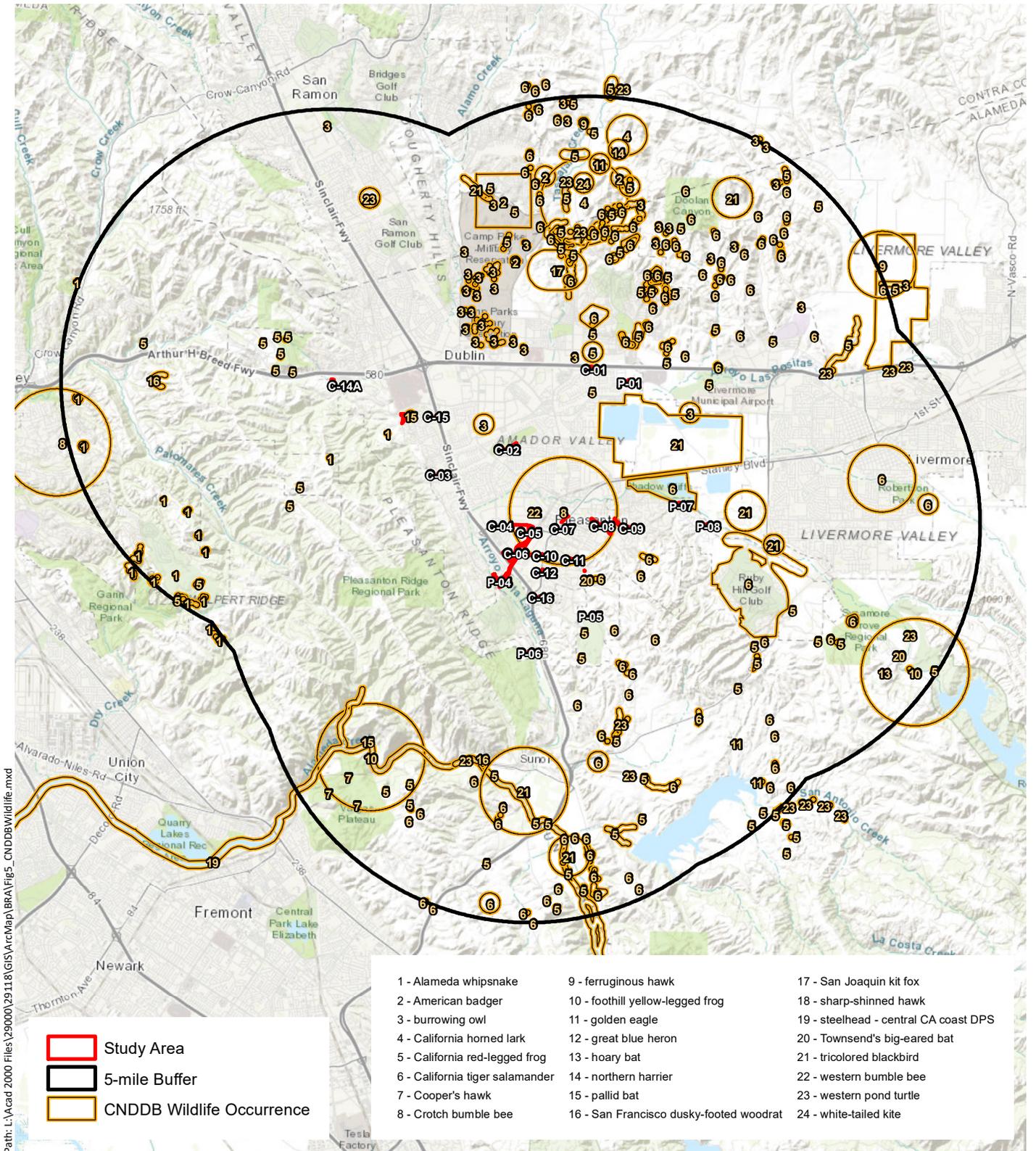
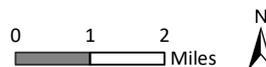


Figure 5. Special-status Wildlife Species within 5-mile Radius of Study Area

City of Pleasanton
 Stream Maintenance Program
 Alameda County, California



Appendix B

Species Observed in and around the Project Area

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Appendix B. List of plant and wildlife species observed within the Study Area during the July and October, 2019 site visits.

Scientific Name	Common Name
Wildlife	
<i>Cathartes aura</i>	turkey vulture
<i>Aphelocoma californica</i>	California scrub jay
<i>Agelaius tricolor</i>	Tricolored blackbird
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Carpodacus mexicanus</i>	house finch
<i>Pipilo maculatus</i>	Spotted towhee
<i>Charadrius vociferus</i>	killdeer
<i>Sayornis nigricans</i>	black phoebe
<i>Zenaida macroura</i>	mourning dove
<i>Spinus psaltria</i>	Lesser goldfinch
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Melospiza crissalis</i>	California towhee
<i>Corvus brachyrhynchos</i>	American crow
<i>Hirundo rustica</i>	Barn swallow
<i>Thryomanes bewickii</i>	Bewicke's wren
<i>Psaltriparus minimus</i>	bushtit
<i>Petrochelidon pyrrhonota</i>	Cliff swallow
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Leuconotopicus villosus</i>	Hairy woodpecker
<i>Otospermophilus beecheyi</i>	California ground squirrel
Plants	
<i>Aesculus californica</i>	buckeye
<i>Avena barbata</i>	slender oat
<i>Avena sativa</i>	wild oat
<i>Baccharis pilularis</i> ssp. <i>pilularis</i>	coyote brush
<i>Baccharis salicina</i>	willow baccharis
<i>Brassica nigra</i>	black mustard
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus hordeaceus</i>	Soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Catalpa bignonioides</i>	southern catalpa
<i>Centaurea solstitialis</i>	yellow star thistle
<i>Chenopodium</i> sp.	goosefoot
<i>Cirsium vulgare</i>	spear thistle
<i>Convolvulus arvensis</i>	field bindweed
<i>Cynodon dactylon</i>	Bermuda grass
<i>Cyperus eragrostis</i>	tall cyperus
<i>Epilobium brachycarpum</i>	tall annual willowherb

<i>Eschscholzia californica</i>	California poppy
<i>Festuca myuros</i>	rattail fescue
<i>Festuca perennis</i>	Italian rye grass
<i>Foeniculum vulgare</i>	fennel
<i>Hedera canariensis</i>	canary ivy
<i>Helminthotheca echioides</i>	bristly ox-tongue
<i>Heteromeles arbutifolia</i>	toyon
<i>Hordeum marinum</i>	seaside barley
<i>Hordeum murinum</i>	Foxtail barley
<i>Juglans hindsii</i>	black walnut
<i>Lactuca serriola</i>	prickly lettuce
<i>Lepidium latifolium</i>	perennial pepperweed
<i>Liquidambar styraciflua</i>	sweetgum
<i>Lotus corniculatus</i>	bird's foot trefoil
<i>Mentha pulegium</i>	pennyroyal
<i>Nerium oleander</i>	Oleander
<i>Persicaria hydropiper</i>	common smartweed
<i>Phalaris aquatica</i>	harding grass
<i>Plantago lanceolata</i>	English plantain
<i>Polypogon monspeliensis</i>	rabbitsfoot grass
<i>Populus fremontii</i>	Fremont cottonwood
<i>Pseudognaphalium californicum</i>	ladies' tobacco
<i>Quercus agrifolia</i>	coast live oak
<i>Raphanus sativus</i>	jointed charlock
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	curly dock
<i>Sequoia sempervirens</i>	coast redwood
<i>Schoenoplectus californicus</i>	California bulrush
<i>Tribulus terrestris</i>	puncture vine
<i>Trifolium hirtum</i>	rose clover
<i>Typha angustifolia</i>	narrow leaf cattail
<i>Typha latifolia</i>	broadleaf cattail
<i>Ulmus americana</i>	American elm
<i>Vicia sativa</i>	spring vetch
<i>Washingtonia robusta</i>	Mexican fan palm
<i>Xanthium strumarium</i>	cocklebur

Appendix C

Representative Photographs of the Project Area

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Photo 1: Concrete channel of Pimlico canal (C-01)



Photo 2: Concrete culvert at Pleasanton Canal (C-02)

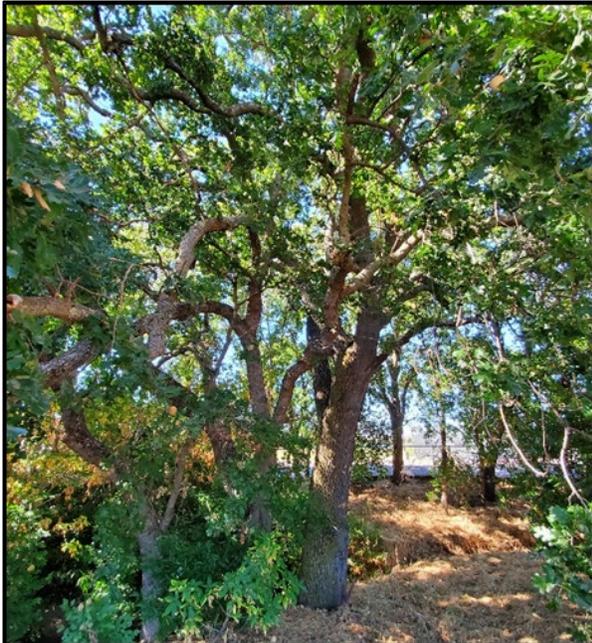


Photo 3: Riparian forest at Foothill High School Trash Rack (C-03)



Photo 4: Excavated channel at Bernal V-Ditch (C-04)



Photo 5: Excavated channel at Bernal North/
South Ditch (C-05)



Photo 6: Intermittent stream at Mission Creek
Restoration Project (C-06)



Photo 7: Lower Kottinger Creek (C-07)

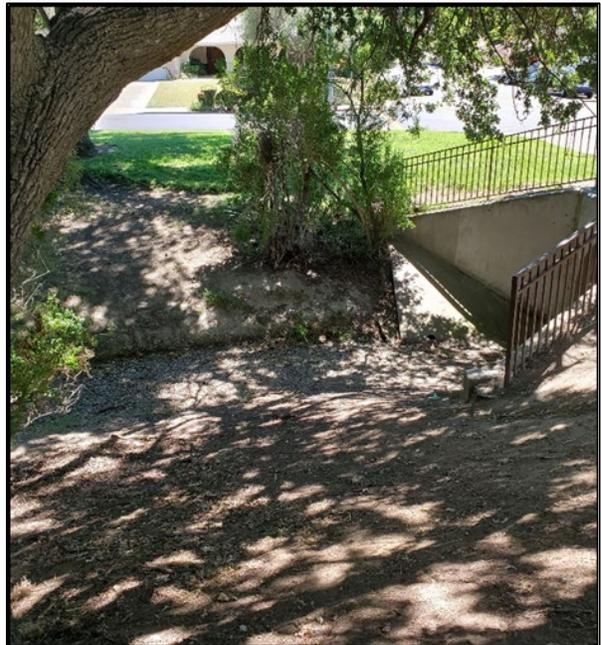


Photo 8: Upper Kottinger Creek (C-08)

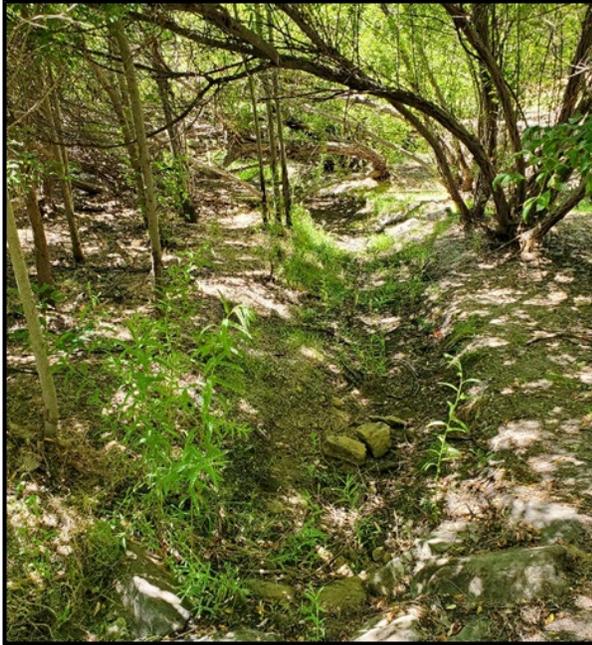


Photo 9: Streambed and riparian forest at Touriga Creek (C-09)

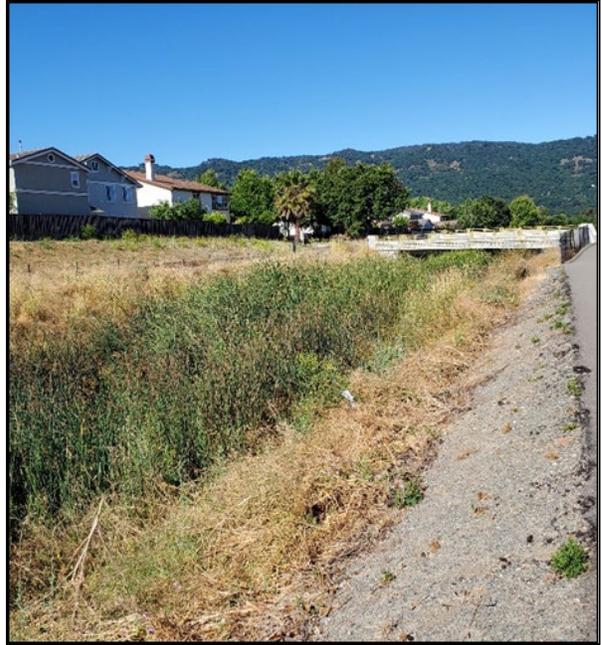


Photo 10: Junipero Canal (C-10)

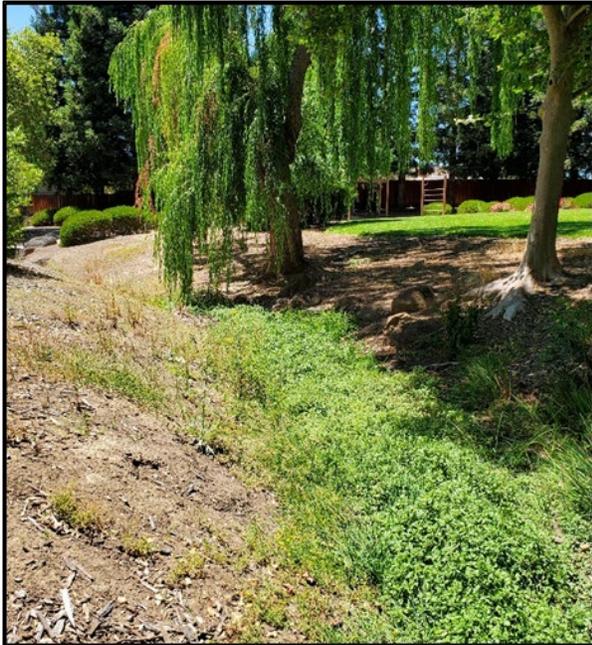


Photo 11: Mission Creek Park (C-11)

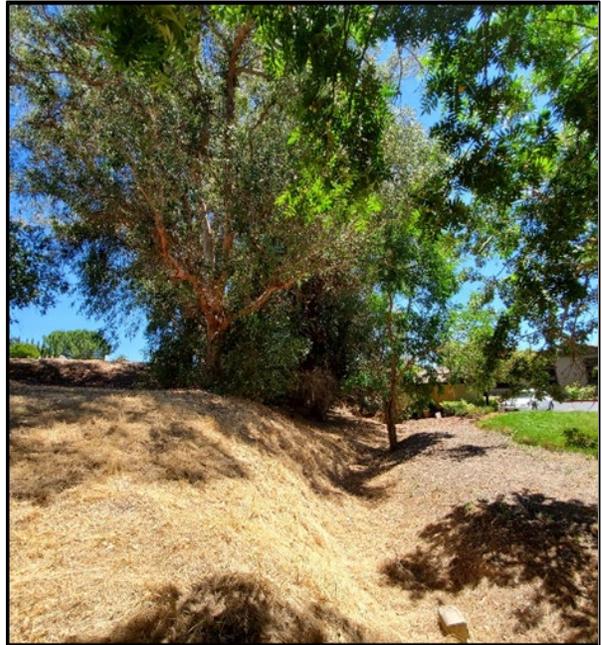


Photo 12: Cemetery Creek (C-12)



Photo 13: Gold Creek (C-13).



Photo 14: Dublin Canyon Creek (C-14).



Photo 15: Stonedale Channel (C-15).



Photo 16: Arlington Creek (C-16).



Photo 17: Rutledge Place Culvert (C-17).

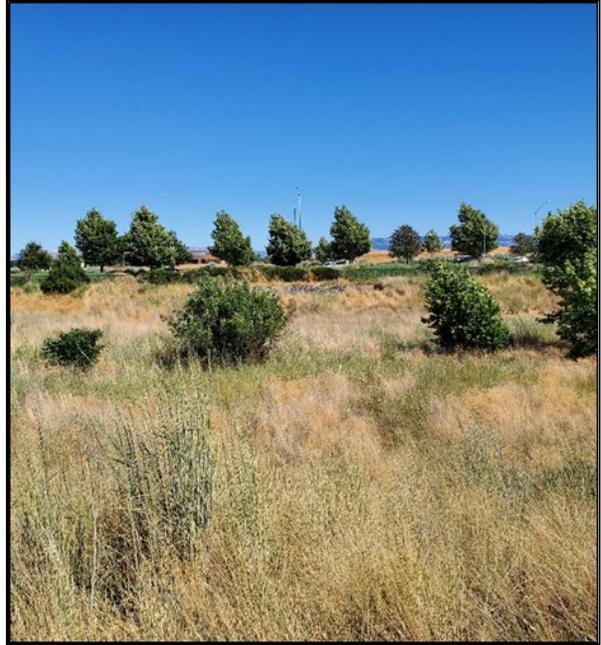


Photo 18: Stoneridge Pond (P-01)



Photo 19: Bernal Central Detention Pond (P-02)

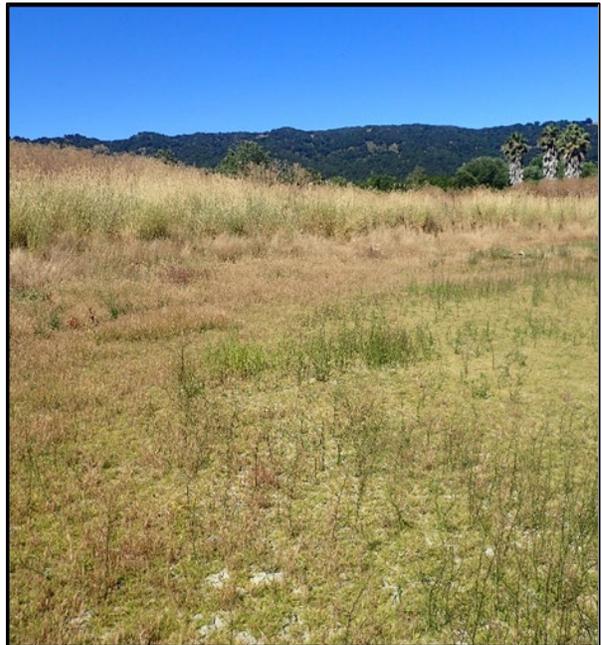


Photo 20: Canyon Oaks Detention Pond (P-03)



Photo 21: Bernal West Detention Pond (P-04)



Photo 22. Callippe Detention Pond (P-05).



Photo 23: Oak Tree Farms Detention Pond (P-06).

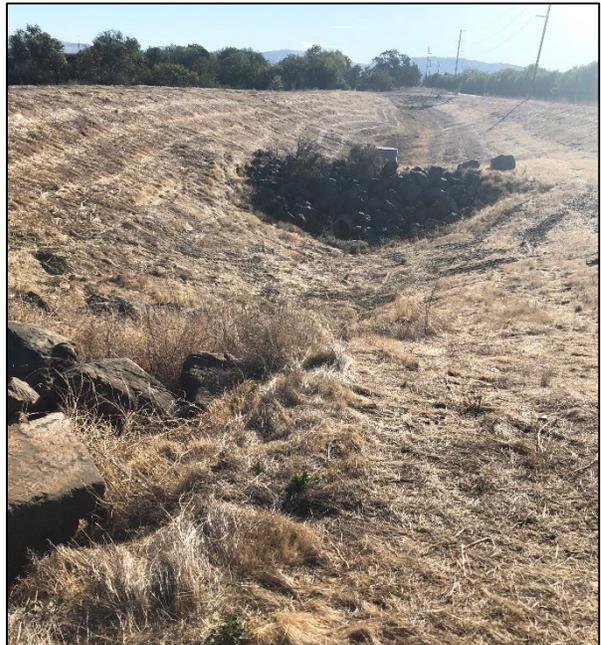


Photo 24: Vineyard West Detention Pond (P-07).



Photo 25: Vineyard East Detention Pond (P-08).

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Appendix D

Special-Status Species Potential Table

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SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Plants				
Santa Clara thorn-mint <i>Acanthomintha lanceolata</i>	Rank 4.2	Chaparral (often serpentine), cismontane woodland, coastal scrub. Elevation ranges from 260 to 3935 feet (80 to 1200 meters). Blooms Mar-Jun.	No Potential. The Project Area does not contain chaparral, cismontane woodland or coastal scrub. Therefore there is no potential for this species to occur within the Project Area.	No further actions are recommended for this species.
large-flowered fiddleneck <i>Amsinckia grandiflora</i>	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 885 to 1805 feet (270 to 550 meters). Blooms (Mar)Apr-May.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 5 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
California androsace <i>Androsace elongata ssp. 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.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
slender silver moss <i>Anomobryum julaceum</i>	Rank 4.2	Broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 325 to 3280 feet (100 to 1000 meters).	Unlikely. Although the Project Area contains broadleafed upland forest, it is too developed and disturbed to support this species. There there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Mt. Diablo manzanita <i>Arctostaphylos auriculata</i>	Rank 1B.3	Chaparral (sandstone), cismontane woodland. Elevation ranges from 440 to 2135 feet (135 to 650 meters). Blooms Jan-Mar.	No Potential. The Project Area does not contain chaparral or cismontane woodland therefore there is no potential for this species to occur.	No further actions are recommended for this species.
Contra Costa manzanita <i>Arctostaphylos manzanita ssp. laevigata</i>	Rank 1B.2	Chaparral (rocky). Elevation ranges from 1410 to 3610 feet (430 to 1100 meters). Blooms Jan-Mar(Apr).	No Potential. The Project Area does not contain chaparral habitat therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.
alkali milk-vetch <i>Astragalus tener var. tener</i>	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 0 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	No Potential. The Project Area does not contain playas, clay grasslands or vernal pool habitat therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.
heartscale <i>Atriplex cordulata var. cordulata</i>	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland (sandy). Elevation ranges from 0 to 1835 feet (0 to 560 meters). Blooms Apr-Oct.	Unlikely. The Project Area does not contain microhabitat conditions that supports this species, although there are recent occurrences within a close proximity to the Project Area.	No further actions are recommended for this species.
crownscale <i>Atriplex coronata var. coronata</i>	Rank 4.2	Chenopod scrub, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1935 feet (1 to 590 meters). Blooms Mar-Oct.	Unlikely. The Project Area does contain disturbed valley and foothill grassland but has no open, alkaline areas. There is a low potential for it to occur onsite because of poor habitat conditions.	No further actions are recommended for this species.
brittlescale <i>Atriplex depressa</i>	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1050 feet (1 to 320 meters). Blooms Apr-Oct.	Unlikely. The Project Area does contain disturbed valley and foothill grassland but has no open, alkaline areas. There is a low potential for it to occur onsite because of poor habitat conditions.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
lesser saltscale <i>Atriplex minuscula</i>	Rank 1B.1	Chenopod scrub, playas, valley and foothill grassland. Elevation ranges from 45 to 655 feet (15 to 200 meters). Blooms May-Oct.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
big-scale balsamroot <i>Balsamorhiza macrolepis</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
big tarplant <i>Blepharizonia plumosa</i>	Rank 1B.1	Valley and foothill grassland. Elevation ranges from 95 to 1655 feet (30 to 505 meters). Blooms Jul-Oct.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 95 to 2755 feet (30 to 840 meters). Blooms Apr-Jun.	Unlikely. Although the Project Area contains riparian woodland, it is highly developed with riparian woodland occurring adjacent to roadways that are maintained by the city of Pleasanton. Therefore there is an unlikely potential for this species to occur onsite.	No further actions are recommended for this species.
Oakland star-tulip <i>Calochortus umbellatus</i>	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 325 to 2295 feet (100 to 700 meters). Blooms Mar-May.	Unlikely. Although the Project Area contains broadleafed upland forest and valley/ foothill grassland, it is too developed and disturbed to support this species. There there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
chaparral harebell <i>Campanula exigua</i>	Rank 1B.2	Chaparral (rocky, usually serpentine). Elevation ranges from 900 to 4100 feet (275 to 1250 meters). Blooms May-Jun.	No Potential. The Project Area does not contain chaparral therefore there is no potential for it to occur onsite.	No further actions are recommended for this species.
Congdon's tarplant <i>Centromadia parryi ssp. 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).	Moderate Potential. Although the valley and foothill grassland habitat found within the Project Area is highly disturbed, the species tolerates disturbance and there are many nearby occurrences of this species. Although this species is threatened by development, there is a moderate potential it could occur onsite.	Rare plant surveys and appropriate mitigation measures are recommended.
hispid bird's-beak <i>Chloropyron molle ssp. hispidum</i>	Rank 1B.1	Meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 0 to 510 feet (1 to 155 meters). Blooms Jun-Sep.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	FE, SE, Rank 1B.1	Chenopod scrub, valley and foothill grassland. Elevation ranges from 15 to 510 feet (5 to 155 meters). Blooms May-Oct.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Santa Clara red ribbons <i>Clarkia concinna ssp. automixa</i>	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 295 to 4920 feet (90 to 1500 meters). Blooms (Apr)May-Jun(Jul).	No Potential. The Project Area does not contain chaparral or cismontane woodland therefore there is no potential for this species to occur.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
small-flowered morning-glory <i>Convolvulus simulans</i>	Rank 4.2	Chaparral (openings), coastal scrub, valley and foothill grassland. Elevation ranges from 95 to 2430 feet (30 to 740 meters). Blooms Mar-Jul.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Livermore tarplant <i>Deinandra bacigalupii</i>	SE, Rank 1B.1	Meadows and seeps (alkaline). Elevation ranges from 490 to 605 feet (150 to 185 meters). Blooms Jun-Oct.	No Potential. The Project Area does not contain meadows or seeps therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.
Hospital Canyon larkspur <i>Delphinium californicum ssp. interius</i>	Rank 1B.2	Chaparral (openings), cismontane woodland (mesic), coastal scrub. Elevation ranges from 635 to 3595 feet (195 to 1095 meters). Blooms Apr-Jun.	No Potential. The Project Area does not contain chaparral, cismontane woodland or coastal scrub. Therefore there is no potential for this species to occur within the Project Area.	No further actions are recommended for this species.
recurved larkspur <i>Delphinium recurvatum</i>	Rank 1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 5 to 2590 feet (3 to 790 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr).	Unlikely. Although the Project Area contains riparian forest/ woodland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Mt. Diablo buckwheat <i>Eriogonum truncatum</i>	Rank 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1150 feet (3 to 350 meters). Blooms Apr-Sep(Nov-Dec).	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Jepson's woolly sunflower <i>Eriophyllum jepsonii</i>	Rank 4.3	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 655 to 3365 feet (200 to 1025 meters). Blooms Apr-Jun.	No Potential. The Project Area does not contain chaparral, cismontane woodland or coastal scrub. Therefore there is no potential for this species to occur within 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 5 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	Rank 1B.1	Valley and foothill grassland (alkaline, clay). Elevation ranges from 0 to 3200 feet (0 to 975 meters). Blooms Mar-Apr.	No Potential. Although the Project Area contains valley and foothill grassland, it is heavily disturbed and is not alkaline or clay. Therefore there is no potential for this species to occur within the Project Area.	No further actions are recommended for this species.
San Joaquin spearscale <i>Extriplex joaquinana</i>	Rank 1B.2	Alkaline areas in chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	Moderate Potential. Although the valley and foothill grassland habitat found within the Project Area is highly disturbed, the species tolerates disturbance and there are many nearby occurrences of this species. Therefore there is a moderate potential for this species to occur within the Project Area.	Rare plant surveys and appropriate mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
stinkbells <i>Fritillaria agrestis</i>	Rank 4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 30 to 5100 feet (10 to 1555 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Diablo helianthella <i>Helianthella castanea</i>	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 195 to 4265 feet (60 to 1300 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains broadleaf upland forest, riparian woodland and grassland, each of these habitats is heavily disturbed and urbanized by the City of Pleasanton. Due to this, it is unlikely that this species will occur onsite.	No further actions are recommended for this species.
hogwallow starfish <i>Hesperovax caulescens</i>	Rank 4.2	Valley and foothill grassland (mesic, clay), vernal pools (shallow). Elevation ranges from 0 to 1655 feet (0 to 505 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Brewer's western flax <i>Hesperolinon breweri</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 95 to 3100 feet (30 to 945 meters). Blooms May-Jul.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
legenere <i>Legenere limosa</i>	Rank 1B.1	Vernal pools. Elevation ranges from 0 to 2885 feet (1 to 880 meters). Blooms Apr-Jun.	No Potential. There is no vernal pool habitat within the Project Area therefore there is no potential for it to occur onsite.	No further actions are recommended for this species.
bristly leptosiphon <i>Leptosiphon acicularis</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.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	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 390 to 3705 feet (120 to 1130 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Mt. Hamilton coreopsis <i>Leptosyne hamiltonii</i>	Rank 1B.2	Cismontane woodland (rocky). Elevation ranges from 1800 to 4265 feet (550 to 1300 meters). Blooms Mar-May.	No Potential. There is no cismontane woodland habitat within the Project Area therefore there is no potential for it to occur onsite.	No further actions are recommended for this species.
Hall's bush-mallow <i>Malacothamnus hallii</i>	Rank 1B.2	Chaparral, coastal scrub. Elevation ranges from 30 to 2495 feet (10 to 760 meters). Blooms (Apr)May-Sep(Oct).	No Potential. There is no chaparral or coastal scrub habitat within the Project Area therefore there is no potential for it to occur onsite.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Antonio Hills monardella <i>Monardella antonina ssp. antonina</i>	Rank 3	Chaparral, cismontane woodland. Elevation ranges from 1045 to 3280 feet (320 to 1000 meters). Blooms Jun-Aug.	No Potential. There is no chaparral or coastal scrub habitat within the Project Area therefore there is no potential for it to occur onsite.	No further actions are recommended for this species.
woodland woollythreads <i>Monolopia gracilens</i>	Rank 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland. Elevation ranges from 325 to 3935 feet (100 to 1200 meters). Blooms (Feb)Mar-Jul.	Unlikely. Although the Project Area contains broadleaf upland forest and valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
little mouseltail <i>Myosurus minimus ssp. apus</i>	Rank 3.1	Valley and foothill grassland, vernal pools (alkaline). Elevation ranges from 65 to 2100 feet (20 to 640 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
adobe navarretia <i>Navarretia nigelliformis ssp. nigelliformis</i>	Rank 4.2	Valley and foothill grassland vernal mesic, vernal pools sometimes. Elevation ranges from 325 to 3280 feet (100 to 1000 meters). Blooms Apr-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
shining navarretia <i>Navarretia nigelliformis ssp. radians</i>	Rank 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Elevation ranges from 210 to 3280 feet (65 to 1000 meters). Blooms (Mar)Apr-Jul.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
prostrate vernal pool navarretia <i>Navarretia prostrata</i>	Rank 1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. Elevation ranges from 5 to 3970 feet (3 to 1210 meters). Blooms Apr-Jul.	Unlikely Potential. There is no vernal pool habitat in the Project Area and alkaline grassland is generally disturbed, therefore there is an unlikely potential for this species to occur.	No further actions are recommended for this species.
Mt. Diablo phacelia <i>Phacelia phacelioides</i>	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 1640 to 4495 feet (500 to 1370 meters). Blooms Apr-May.	No Potential. There is no chaparral or cismontane woodland habitat within the Project Area therefore there is no potential for it to occur onsite.	No further actions are recommended for this species.
hairless popcornflower <i>Plagiobothrys glaber</i>	Rank 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt). Elevation ranges from 45 to 590 feet (15 to 180 meters). Blooms Mar-May.	No Potential. There is no alkaline meadow, seep or coastal salt marsh/ swamp within the Project Area therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.
Oregon polemonium <i>Polemonium carneum</i>	Rank 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6005 feet (0 to 1830 meters). Blooms Apr-Sep.	No Potential. There is no coastal prairie, coastal scrub or lower montane coniferous forest habitat within the Project Area therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.
California alkali grass <i>Puccinellia simplex</i>	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 5 to 3050 feet (2 to 930 meters). Blooms Mar-May.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
rock sanicle <i>Sanicula saxatilis</i>	SR, Rank 1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland. Elevation ranges from 2030 to 3855 feet (620 to 1175 meters). Blooms Apr-May.	Unlikely. Although there is broadleafed upland forest and valley and foothill grassland, it is disturbed and heavily developed, therefore there is an unlikely potential for this species to occur onsite.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
chaparral ragwort <i>Senecio aphanactis</i>	Rank 2B.2	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 45 to 2625 feet (15 to 800 meters). Blooms Jan-Apr(May).	No Potential. There is no chaparral, cismontane woodland or coastal scrub located within the Project Area therefore there is no potential for this species to occur in the Project Area.	No further actions are recommended for this species.
long-styled sand-spurrey <i>Spergularia macrotheca var. longistyla</i>	Rank 1B.2	Meadows and seeps, marshes and swamps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May(Jun).	Unlikely. The Project Area does not contain open, alkaline marsh areas. There is a low potential for it to occur onsite because of poor habitat conditions.	No further actions are recommended for this species.
most beautiful jewelflower <i>Streptanthus albidus ssp. peramoenus</i>	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 310 to 3280 feet (95 to 1000 meters). Blooms (Mar)Apr-Sep(Oct).	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
Mt. Diablo jewelflower <i>Streptanthus hispidus</i>	Rank 1B.3	Chaparral, valley and foothill grassland. Elevation ranges from 1195 to 3935 feet (365 to 1200 meters). Blooms Mar-Jun.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
slender-leaved pondweed <i>Stuckenia filiformis ssp. alpina</i>	Rank 2B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 980 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	Unlikely. Although the Project Area contains some marsh/ swamp habitat, it is heavily disturbed and maintained. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
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.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
coastal triquetrella <i>Triquetrella californica</i>	Rank 1B.2	Coastal bluff scrub, coastal scrub. Elevation ranges from 30 to 330 feet (10 to 100 meters).	No Potential. There is no coastal bluff or coastal scrub habitat within the Project Area therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.
caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	Rank 1B.1	Valley and foothill grassland (alkaline hills). Elevation ranges from 0 to 1495 feet (1 to 455 meters). Blooms Mar-Apr.	Unlikely. Although the Project Area contains valley and foothill grassland, the habitat is heavily disturbed and developed. Therefore there is an unlikely potential for this species to occur within the Project Area.	No further actions are recommended for this species.
oval-leaved viburnum <i>Viburnum ellipticum</i>	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 705 to 4595 feet (215 to 1400 meters). Blooms May-Jun.	No Potential. There is no chaparral, cismontane woodland or lower montane coniferous forest habitat within the Project Area therefore there is no potential for this species to occur onsite.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
MAMMALS				
pallid bat <i>Antrozous pallidus</i>	SSC, WBWG High	Found in a variety of habitats ranging from grasslands to mixed forests, favoring open and dry, rocky areas. Roost sites include crevices in rock outcrops and cliffs, caves, mines, and also hollow trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Unlikely. Although a bridge underpass occurs on the Mission Creek Restoration Project site, it is unlikely to provide the necessary thermoregulation for a roost site.	No further actions are recommended for this species.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, WBWG High	Associated with a wide variety of habitats from deserts to higher-elevation mixed and coniferous forests. Females form maternity colonies in buildings, caves and mines, and males roost singly or in small groups. Foraging typically occurs at edge habitats near wooded areas, e.g. along streams.	Unlikely. Though portions of the Project Area contain foraging habitat for this species, areas that are typical of roosting habitat are not anticipated to be disturbed.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
hoary bat <i>Lasiurus cinereus</i>	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	Unlikely. Few forested habitats exist on the Project Area to support roosting habitat for this species. Forested habitats that do exist are mostly directly bordered by residential development that would not provide good foraging habitat for this species.	No further actions are recommended for this species.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	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.	Unlikely. Though habitat that may be suitable for this species is available, CNDDB occurrences are not known from the immediate vicinity of any of the Project locations.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE, ST, RP	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.
salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, CFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	No Potential. No salt-marsh habitat exists on the Survey Area to support this species.	No further actions are recommended for this species.
American badger <i>Taxidea taxus</i>	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	Unlikely. Though burrowing rodent activity is present in some of the Project locations, most of the locations are surrounded by development and are unlikely to provide connectivity to typical habitats for this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
BIRDS				
great blue heron <i>Ardea herodias</i>	none (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and on cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	Unlikely. No breeding colonies are currently known from the area, and larger bodies of water typical of breeding colony locations for this species are not present near Project locations.	No further actions are recommended for this species.
golden eagle <i>Aquila chrysaetos</i>	CFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	No Potential. No cliffs or deep canyons exist in close proximity to any portion of the Survey Area.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Swainson's hawk <i>Buteo swainsoni</i>	ST	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	Unlikely. The Project Area is outside the known breeding range of this species.	No further actions are recommended for this species.
northern harrier <i>Circus hudsonius (cyaneus)</i>	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.	High Potential. Nesting habitat for this species exists near portions of the Project Area that contain portions of grassland near wetland areas.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
white-tailed kite <i>Elanus leucurus</i>	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	High Potential. Trees suitable for nesting by this species are present on all portions of the Project Area.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.
bald eagle <i>Haliaeetus leucocephalus</i>	FD, SE, CFP	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.	No Potential. No large bodies of water with adjacent suitable nesting habitat exist on any portion of the Survey Area.	No further actions are recommended for this species.
American peregrine falcon <i>Falco peregrinus anatum</i>	FD, SD, CFP	Year-round resident and winter visitor. Occurs in a wide variety of habitats, though often associated with coasts, bays, marshes and other bodies of water. Nests on protected cliffs and also on man-made structures including buildings and bridges. Preys on birds, especially waterbirds. Forages widely.	No Potential. No nesting habitat for this species is present on or in the vicinity of any portion of the Project Area.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California Ridgway's (clapper) rail <i>Rallus obsoletus obsoletus</i>	FE, SE, CFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on molluscs and crustaceans.	No Potential. The Survey Area is outside the known breeding range of this species. Additionally, no salt marsh habitat exists on any portion of the Survey Area.	No further actions are recommended for this species.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, CFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California least tern <i>Sternula antillarum browni</i>	FE, SE, CFP	Summer resident along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins.	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.
burrowing owl <i>Athene cunicularia</i>	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.	High Potential. Burrowing mammal activity is high on certain portions of the Project Area, which may provide suitable nesting habitat for this species. CNDDDB occurrences for this species are plentiful in the region.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	High Potential. Open areas with scattered vegetation are plentiful on several portions of the Project Area, that could provide suitable nesting habitat for this species.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.
Alameda song sparrow <i>Melospiza melodia pusillula</i>	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.	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.
tricolored blackbird <i>Agelaius tricolor</i>	SSC, RP	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	High Potential. Several portions of the survey area contain dense wetland/riparian vegetation that could support breeding by this species.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.
AMPHIBIANS				

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California tiger salamander <i>Ambystoma californiense</i>	FE/FT, ST, RP	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Adults are fossorial and utilize mammal burrows and other subterranean refugia. Breeding occurs primarily in vernal pools and other seasonal water features.	Moderate Potential. Though most locations within the Project Area are isolated from known populations of CTS by extensive suburban development, certain sites may provide upland or movement habitat for this species.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.
western spadefoot <i>Spea (=Scaphiopus) hammondi</i>	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Shallow temporary pools formed by winter rains are essential for breeding and egg-laying.	No Potential. The Project Area is outside the known breeding range of this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California red-legged frog <i>Rana draytonii</i>	FT, SSC, RP	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	Moderate Potential. Though most locations within the Project Area are isolated from known populations of CTS by extensive suburban development, certain sites may provide upland or movement habitat for this species.	Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.
foothill yellow-legged frog <i>Rana boylei</i>	SC, SSC	Found in or adjacent to rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.
REPTILES				

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western pond turtle <i>Actinemys marmorata</i>	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.	Unlikely. Though CNDDDB occurrences exist within approximately 5 miles of the Project Area, this species is not known to breed in aquatic features on the Project Area.	No further actions are recommended for this species.
Blainville's (Coast) horned lizard <i>Phrynosoma blainvillii (coronatum)</i>	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers friable, rocky, or shallow sandy soils for burial; open areas for sunning; bushes for cover; and an abundant supply of ants and other insects.	No Potential. The Project Area is outside the known breeding range of this species.	No further actions are recommended for this species.
San Joaquin whipsnake <i>Masticophis flagellum ruddocki</i>	SSC	Found in valley grassland and saltbush scrub in the San Joaquin Valley in open, dry habitats with little or no tree cover. Requires mammal burrows for refuge and breeding sites.	No Potential. The Project Area is outside the known breeding range for this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
<p>Alameda whipsnake <i>Masticophis lateralis euryxanthus</i></p>	<p>FT, ST</p>	<p>Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area. Prefers south-facing slopes and ravines with rock outcroppings where shrubs form a vegetative mosaic with oak trees and grasses and small mammal burrows provide basking and refuge.</p>	<p>Moderate Potential. Though the Project Area is chiefly composed of small temporal wetland and surrounding riparian areas that would not support this species, one of the Study Areas overlaps with Unit 3 of AWS critical habitat. Additionally, the CNDDB does document this species in the vicinity. Given the proximity of suitable habitat to portions of the Project Area, this species has moderate potential to translocate through work areas.</p>	<p>Please see section 5.3.2 for a discussion of this species, and section 6.3.9 for appropriate mitigation measures.</p>
<p>FISHES</p>				

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
steelhead - central CA coast DPS <i>Oncorhynchus mykiss irideus</i>	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.	No Potential. No suitable spawning streams exist to support steelhead within the Survey Area.	No further actions are recommended for this species.
Delta smelt <i>Hypomesus transpacificus</i>	FT, SE, RP	Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	No Potential. The Survey Area is outside the known breeding range of this species, and no estuarine habitat exists to support this species.	No further actions are recommended for this species.
INVERTEBRATES				
conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE, RP	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	No Potential. No vernal pool habitat exists at any potential work area to support this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
longhorn fairy shrimp <i>Branchinecta longiantenna</i>	FE, RP	Endemic to the eastern margin of the central coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	No Potential. No vernal pool habitat exists at any potential work area to support this species.	No further actions are recommended for this species.
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT, RP	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No Potential. No vernal pool habitat exists at any potential work area to support this species.	No further actions are recommended for this species.
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	FE	Endemic to San Diego and Orange county mesas. Vernal pools.	No Potential. No vernal pool habitat exists at any potential work area to support this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE, RP	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	No Potential. No vernal pool habitat exists at any potential work area to support this species.	No further actions are recommended for this species.
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT, RP	Occurs only in the central valley of California, in association with blue elderberry (<i>Sambucus</i> spp.). Prefers to lay eggs in elderberry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry.	No Potential. No elderberry bushes were identified within any portion of the Survey Area to support this species.	No further actions are recommended for this species.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, <i>Sedum spathulifolium</i> .	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT, RP	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. purpurscens</i> are the secondary host plants.	No Potential. The Survey Area is outside the known breeding range of this species.	No further actions are recommended for this species.