

Appendix C

Biological Resources Assessment, including Jurisdictional and Wetlands Delineation



City of Monterey Storm Drainage Maintenance Plan Project

Biological Resources Assessment

prepared for

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Executive Summary

The City of Monterey Storm Drainage Maintenance Plan Project includes as needed maintenance of storm drains, culverts, and detention basins at 29 distinct project sites (project area) within the City of Monterey. The proposed Project activities include routine maintenance activities, including removal of trash and debris, trimming of vegetation, and removal of sediment, as well as minor repair of headwall slopes and structures.

Eight vegetation communities and/or land cover types were identified within the proposed project area: coast live oak woodland, Monterey pine forest, mixed Monterey pine and coast live oak woodland, annual grassland, ruderal/developed/landscaped, Arroyo willow riparian woodland, mixed riparian woodland, and freshwater emergent wetland.

Two special status plant species are present within the project area: Monterey pine (*Pinus radiata*) and Monterey cypress (*Hesperocyparis macrocarpa*). Suitable habitat is present for an additional 17 special status plant species.

Eight special status wildlife species have the potential to occur within the project area: western pond turtle (*Emys marmorata*), tricolored blackbird (*Agelaius tricolor*), northern California legless lizard (*Anniella pulchra*), coast horned lizard (*Phrynosoma blainvillii*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), two-striped garter snake (*Thamnophis hammondi*), and Coast Range newt (*Taricha torosa*).

Approximately 0.47 acre of wetland Waters of the U.S., 2.37 acres/6,633 linear feet of non-wetland Waters of the U.S., and 7.7 acres/6,602 linear feet of Waters of the State, streambed, banks and riparian habitat were delineated within the project area.

The proposed maintenance activities could impact special status plant and wildlife species if these species are determined to be present. Additionally, the project could impact potentially jurisdictional waters of the U.S. and State. Measures to avoid and reduce impacts are provided in Section 5.0.

1 Introduction

Rincon Consultants, Inc. (Rincon) has prepared this Biological Resources Assessment (BRA) to document existing conditions, summarize previous biological resource reports and studies, and provide a basis for evaluation of potential impacts to special status and sensitive biological resources from the implementation of the Storm Drainage Maintenance Plan (SDMP) project (Project) located in the City of Monterey, California (City). This BRA has been prepared to support the California Environmental Quality Act (CEQA) environmental review of the SDMP and associated jurisdictional waters permitting.

1.1 Project Location

The project consists of 29 separate locations (project sites) within the City. Three of the proposed project sites are located on the city limit boundary between the cities of Monterey and Seaside, California. The project sites are depicted within the *Seaside and Monterey, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangles. Thirty-eight (38) maintenance sites were originally proposed, and that number was reduced to 29 when nine sites were removed from inclusion in the SDMP, generally due to access issues (private property or the City has no easement). Additionally, some sites are under contract for analysis with another firm and are not addressed in this report. These sites will be included in the SDMP at a later date, when access can be arranged, and additional analysis has been completed. The maintenance site numbers are retained from the previous analysis accounting for 29 projects numbered between 1 and 38. Figure 1 and Figure 2 show the regional and specific project locations, respectively. Detailed location descriptions of each maintenance site are presented in Table 1 below.

Table 1 SDMP Maintenance Site Locations

Site #	Site Name	Location Description	Approximate Coordinates
1	Culvert B03-H1	Oak Newton Park, drainage between Presidio of Monterey and Army St.	36.608613°, -121.906456°
2	Culvert D03-H4	Drainage along Madison St. west of Pebble St.	36.599345°, -121.905105°
3	Culvert D03-H6	Drainage along Madison St. south of Manzanita St.	36.598934°, -121.903356°
4 ¹	Culvert E04-H1 (Dropped)	Culvert located under Herrmann Drive	36.597187°, -121.901041°
5	Culvert E04-H3	Hartnell Creek south of Monterey High school to the Monterey Public Library parking lot.	36.595845°, -121.897726°
6	Culvert E04-H4	Culvert at intersection of Martin St. and Pacific St.	36.593432°, -121.898195°
7 ¹	Culvert E04-H6 (Dropped)	Culvert located under Hartnell Street	36.596650°, -121.895450°
8	Culvert E03-H3	Culvert underneath Via Paraiso St. East of Via Del Pinar St. West of Via Paraiso Park	36.593085°, -121.906494°
9	Culvert F02-H3	Culvert located south of turn where Wyndemere Way becomes Skyline Drive. North of residential developments at Greenwood Vale cul-de-sac	36.588522°, -121.917238°

Site #	Site Name	Location Description	Approximate Coordinates
10	Culvert F02-H2	Culvert underneath Crandall Road, south of Shady Lane	36.588422°, -121.914279°
11	Culvert F03-H1	Culvert/drainage south of the intersection of Soledad drive between Mar Vista Drive and southern Y of Soledad Drive	West:36.588602°, -121.910095° East: 36.588443°, -121.908954°
12	Culvert G02-H2	Culvert underneath Skyline Drive, north of intersection of Forest Knoll Road.	36.583371°, -121.915558°
13 ¹	Culvert G02-H4 (Dropped)	Culvert located under Mar Vista and Skyline Drive	36.583992°, -121.912403°
14 ¹	Culvert G03-H4 (Dropped)	Culvert located under Soledad Drive south of Soledad Place	36.585822°, -121.907918°
15	Culvert F03-H2	Culvert underneath San Bernabe Drive, between Via Ventura to the north and Via Descanso to the south. Site Located in designated open space	36.587779°, -121.903868°
16	Culvert F04-H2	Culvert underneath Alameda Ave. south of Ave Maria Road.	36.589153°, -121.900968°
17	Culvert G03-H6	Drainage approximately parallels Via Esperanza between Soledad Drive and Via Esperanza at Via Arcerolo Drive	36.585572°, -121.903491°
18	Culvert G03-H9	Culvert underneath San Bernabe Road, just north of Pacific Street	36.586383°, -121.901596°
19	Culvert F04-H4	Drainage approximately parallels Pacific Street, with culverts located under pacific street, Alameda Ave., and Viscaino Road.	36.588671°, -121.900629°
20	Majors Creek	Creek located in open space greenbelt between Del Monte Boulevard and the Del Monte Center.	36.584337°, -121.900666°
21	Culvert F04-I7	Culvert underneath don Dahvee Lane, east of Munras Ave, and north of the northern entrance to Del Monte Center	36.586887°, -121.898498°
22	Culverts E05-H1 and F05-H2	Culverts located at intersection of El Dorado Street and Major Sherman Lane.	36.592170°, -121.892754°
23	Iris Canyon	Southern drainages adjacent to intersection of El Dorado Street, Fishnet Road, and Iris Canyon Road. Northern Drainages close to Via Mirada split between two main channels, one on either side of Iris Canyon Road.	South: 36.587319°, -121.890402° North: 36.593922°, -121.887308°
24 ¹	Lagunita Mirada (Dropped)	Site is a perennial pond at the lower end of the Iris Canyon	36.594432°, -121.887844°
25 ¹	Aguajito Creek (Dropped)	Aguajito Creek between Castro Way and Monhollan Road	36.583509°, -121.874372°
26 ¹	Washerwoman Pond (Dropped)	Pond between Highway 1 and Fremont Street	36.592738°, -121.881548°
27	Wilson Road Detention Basin	Basin between Hwy. 68 and a business park southwest of intersection of York Road and Wilson Road. Constructed basin and swale overflow into a creek that approximately parallels Hwy. 68	36.572541°, -121.808960°
28	Lower Ragsdale Detention Basin	Basin north of Hwy. 68, south of Lower Ragsdale Drive and west of Ryan Court.	36.574516°, -121.820738°

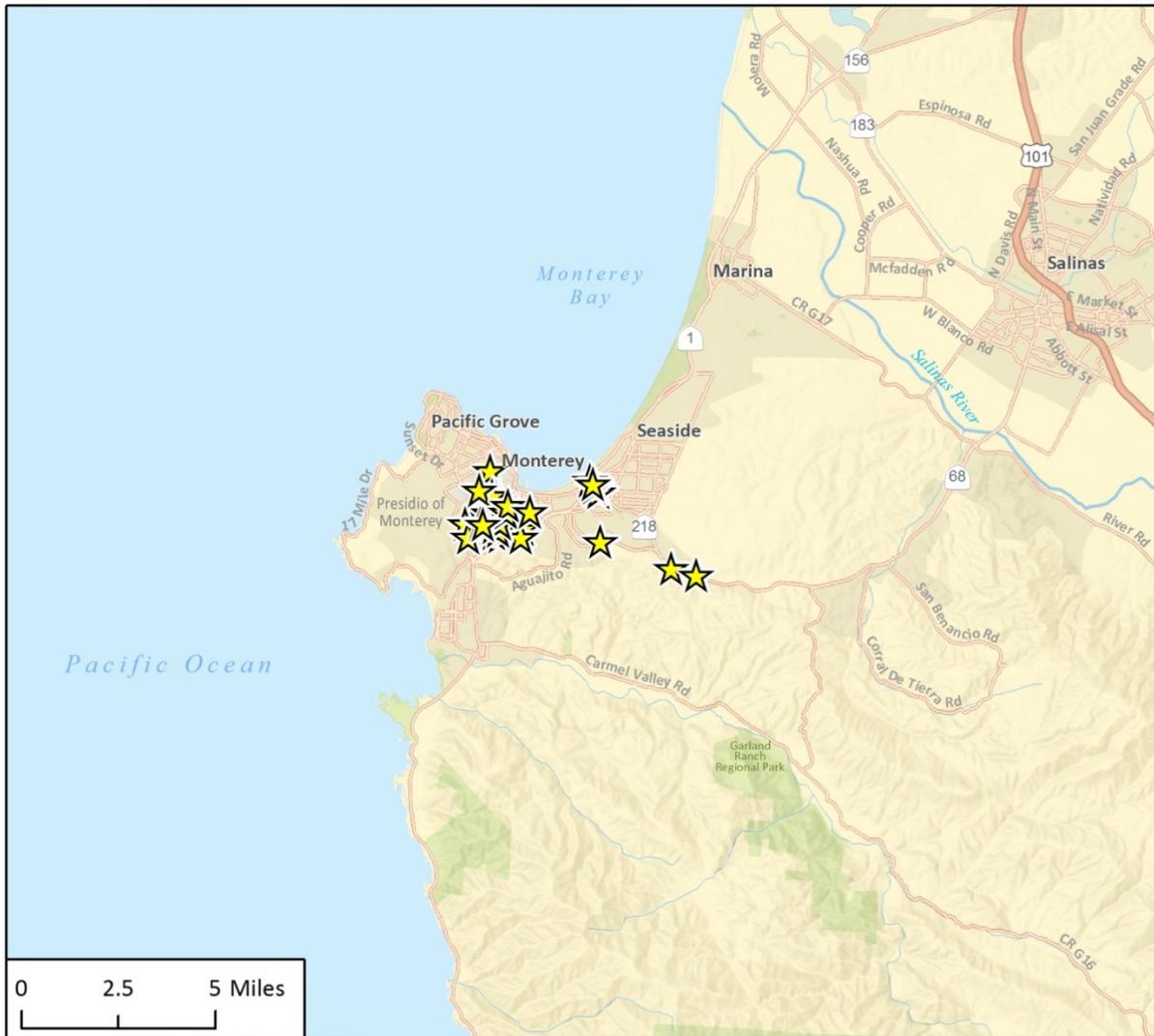
City of Monterey
City of Monterey Storm Drainage Maintenance Plan Project

Site #	Site Name	Location Description	Approximate Coordinates
29	Virgin/Grant St. Swale	Swale northeast of intersection of Virgin Ave and Grant Ave, southwest of the Laguna Grande Regional Park Trail.	36.604035°, -121.857969°
30 ²	Outfall D09-O1	Outfall located north of the Laguna Grande Regional Park Trail within the Laguna Grande Lake. Outfall northeast of intersection of Virgin Street and Branner Ave.	36.602277°, -121.855750°
31 ²	Outfall C08-E1	Outfall located on southwestern edge of Roberts Lake, northwest of intersection of Roberts Ave and Del Monte Boulevard.	36.606295°, -121.859958°
32 ¹	G07-H1 & F07-E1 (Dropped)	Includes G07-H1, the route of the culvert that conveys water underground through Josselyn Canyon (in roadway) and the outlet at culvert F07-E1	G07-H1: 36.584110°, -121.866643° F07-E1 :36.592472°, -121.870294°
33	Garden Court Basin	Basin located in open space north of Highway 68 and south of the business park located at 60 Garden Court.	36.583752°, -121.854202°
34	Encina Ave/Myers St. Swale	Swale located east of Myers Street and southeast of Del Monte Boulevard, west of the In-n-Out in Seaside on the other side of the Monterey City boundary.	36.605212°, -121.858431°
35 ¹	Culvert E03-H6 (Dropped)	Culvert and channel located behind 22 Via Del Rey.	36.596452°, -121.903043°
36	Culvert D02-H3	Culvert underneath Veterans Drive, generally south of Chaplain Magsig Avenue and north of Skyline Drive	36.601180°, -121.911163°
37	Culvert G05-H2	Culvert adjacent to intersection of Glenwood Circle and Iris Canyon Road, north of Hwy 1.	36.584100°, -121.891054°
38	San Bernabe to Alameda Sewer Easement	Drainage between residential neighborhoods along Bartolomea Way, San Bernabe Drive, and Ave Maria Road, east of Alameda Ave.	36.588767°, -121.902454°

¹ This site was one of the 38 maintenance sites originally proposed, but is not included in the 29 maintenance sites that have been analyzed in this Biological Resources Assessment.

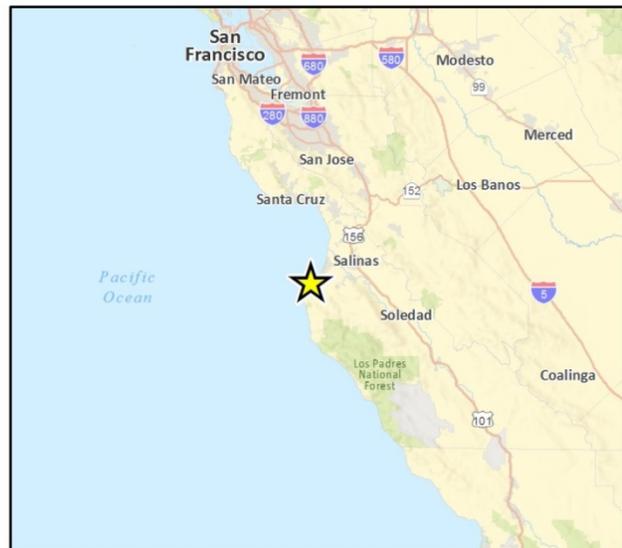
² This site is located within the City of Seaside, but will be maintained by the City of Monterey on behalf of the City of Seaside.

Figure 1 Regional Location Map



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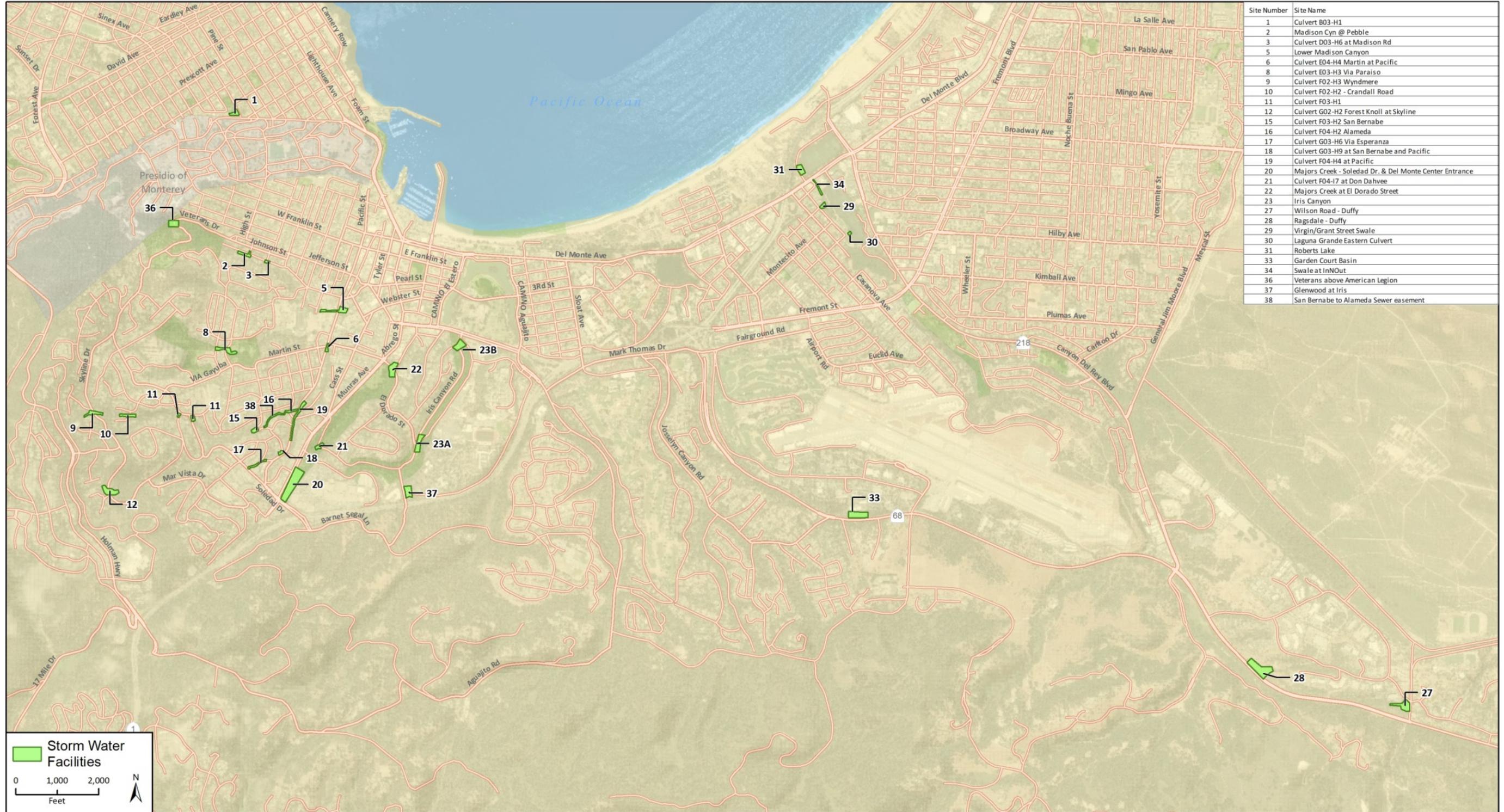
★ Project Location



30 Fig. 1 Regional Location

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Figure 2 Project Area Map



Site Number	Site Name
1	Culvert B03-H1
2	Madison Cyn @ Pebble
3	Culvert D03-H6 at Madison Rd
5	Lower Madison Canyon
6	Culvert E04-H4 Martin at Pacific
8	Culvert F03-H3 Via Paraiso
9	Culvert F02-H3 Wyndmere
10	Culvert F02-H2 - Crandall Road
11	Culvert F03-H1
12	Culvert G02-H2 Forest Knoll at Skyline
15	Culvert F03-H2 San Bernabe
16	Culvert F04-H2 Alameda
17	Culvert G03-H6 Via Esperanza
18	Culvert G03-H9 at San Bernabe and Pacific
19	Culvert F04-H4 at Pacific
20	Majors Creek - Soledad Dr. & Del Monte Center Entrance
21	Culvert F04-17 at Don Dahwee
22	Majors Creek at El Dorado Street
23	Iris Canyon
27	Wilson Road - Duffy
28	Ragsdale - Duffy
29	Virgin/Grant Street Swale
30	Laguna Grande Eastern Culvert
31	Roberts Lake
33	Garden Court Basin
34	Swale at InNOut
36	Veterans above American Legion
37	Glenwood at Iris
38	San Bernabe to Alameda Sewer easement

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1.2 Project Description

The proposed Project, the Storm Drainage Maintenance Plan (SDMP), is intended, in part, to address concerns from both the U.S. Environmental Protection Agency (EPA) and Regional Water Quality Control Board (RWQCB) regarding the lack of regulatory permits or certifications for storm drainage maintenance work. The storm drainage system maintenance locations include nine discreet sites throughout the city, plus 20 culverts, for a total of 29 locations. The City plans to conduct operation and maintenance activities in the identified system maintenance locations as soon as possible, with a longer-term goal of reviewing system-wide drainage more holistically and preparing a citywide, watershed-based SDMP.

The proposed maintenance activities are routine maintenance activities, including removal of trash and debris, trimming of vegetation, and removal of sediment, as well as major capital replacements such as repair of a failing retaining wall or reconstruction of an outlet structure. Mechanical and non-mechanical maintenance techniques will be applied with heavy equipment or hand-tools. Equipment that cannot be accommodated within designated access areas will not be used. The majority of the sites are in ephemeral or intermittent streams; however, a few sites are within constructed basins, and four sites are within or near Roberts Lake and Laguna Grande, within the coastal zone. In most cases, maintenance is expected to occur along the existing streambed bottom of the facilities and approximately two feet up the adjacent banks to ensure the ability of the channels to transport floodwaters and prevent flooding. Sediment, trash, and green waste generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina. In some instances, Study areas have been expanded slightly to assist with avoidance of impacts to jurisdictional areas at the maintenance sites.

2 Methodology

2.1 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees.

2.1.1 Definition of Special Status Species

For the purposes of this report, special status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project;
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA);
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW);
- Plant species recognized on the California Rare Plant Rank (CRPR) list by the California Native Plant Society (CNPS) and CDFW;
- Species designated as sensitive by the U.S. Forest Service or Bureau of Land Management, if the project would affect lands administered by these agencies; and
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

2.1.2 Environmental Statutes

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix A):

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (FESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- California Coastal Act
- City of Monterey General Plan

2.1.3 Guidelines for Determining CEQA Significance

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

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

2.2 Literature Review

Prior to the field survey, Rincon conducted a literature review to characterize the nature and extent of biological resources on and adjacent to the site. The literature review included an evaluation of current and historical aerial photographs of the site (Google Earth 2018), regional and site-specific topographic maps, climatic data, and other available background information.

Queries of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation system (IPaC; 2018), CDFW California Natural Diversity Database (CNDDDB; 2018a), and CNPS online Inventory of Rare and Endangered Plants of California (2018) were conducted to obtain comprehensive information regarding State and federally listed species, as well as other special status species, considered to have potential to occur within the *Monterey and Seaside, California* USGS 7.5-minute topographic quadrangles and the surrounding six quadrangles (Marina, Salinas, Spreckels, Carmel Valley, Mt. Carmel, and Soberanes Point). The results of these scientific database queries were compiled into a table that is presented as Appendix D.

In addition, the following resources were reviewed for information about the maintenance sites:

- Aerial photographs of the maintenance sites and vicinity
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (2018)
- USFWS Critical Habitat Portal (2018a)
- CDFW CNDDDB map of State and federally listed species that have been previously documented within a 5-mile (8-kilometer) radius of the project sites (2018a)

- CDFW Biogeographic Information and Observation System (BIOS; 2018b)
- CNDDDB Special Vascular Plants, Bryophytes, and Lichens List (2018c)

2.3 Field Reconnaissance Survey

The Biological Study Area (BSA) analyzed in this BRA consists of all 29 project sites (Figure 2), referred to as the maintenance sites and/or the BSA throughout this document.

The reconnaissance-level field surveys were conducted by Senior Biologist Meg Perry and Associate Biologist Samantha Kehr on July 31, and August 1/2, and 10, 2017, with additional fieldwork conducted by Ms. Perry on August 3/4, September 12, and October 25/26, 2017. The surveys consisted of pedestrian surveys of each of the maintenance sites to document and field-verify vegetation communities and site conditions.

The potential presence of special status species is based on the literature review and reconnaissance-level field surveys, which are intended to assess habitat suitability within the 29 maintenance sites. Definitive surveys to confirm the presence or absence of special status species were not performed and are not included with this analysis. Definitive surveys for special status plant and wildlife species generally require specific survey protocols, extensive field survey time, and are conducted only at specific time periods of the year. The findings and opinions conveyed in this report are based exclusively on the literature review, reconnaissance-level surveys, and habitat suitability analysis.

2.4 Jurisdictional Delineation

Within the limits of the BSA, waters of the U.S., including wetlands, potentially subject to USACE and RWQCB jurisdictions pursuant to Sections 404 and 401 of the CWA were delineated in accordance with the following:

- *Wetlands Delineation Manual* (Environmental Laboratory 1987)
- *Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest* (USACE 2001)
- *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification* (USACE 2005)
- *Distribution of Ordinary High Water Mark (OHWM) Indicators and Their Reliability in Identifying the Limits of "Waters of the United States" in Arid Southwestern Channels* (USACE 2006)
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a)
- *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b)
- *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010)
- Ms. Perry and Ms. Kehr, evaluated each study area during the field reconnaissance surveys on July 31, and August 1, 2, 3, 4, 10 and 12, and October 25 and 26, 2017. This field delineation was completed to identify, describe, and map all potential jurisdictional waters/wetlands within the Study Areas. The Study Areas were surveyed on foot for potential wetlands and non-wetland aquatic resources including streams, ditches, and ponds that might exhibit an ordinary high water mark (OHWM) and which might constitute waters of the state. General site

characteristics were noted and vegetation was documented. Identification and delineation of potentially jurisdictional areas followed federal and state policies, methods, and guidelines. The results of the jurisdictional waters analysis are presented under a separate cover.

3 Existing Conditions

3.1 Physical Characteristics

The BSA is located almost entirely within the City of Monterey, with three sites located along the Monterey-Seaside city limits. The project area is in the City of Monterey, on the southern coast of the Monterey Bay. The sites are scattered irregularly throughout the city. The project sites occur in areas with predominantly flat topography surrounded by gradually rolling hills. They all occur within the urban and residential development of Monterey. Most of the project sites are actively managed for recreational use, with adjacent existing roads, trails, parking areas, picnic areas, play structures, restrooms, and landscaping. Each maintenance site consists of a drainage channel and associated culvert or a detention basin for stormwater.

3.1.1 Climate

The climate within the city of Monterey is a cool Mediterranean type, greatly influenced by the proximity to the Pacific Ocean with typical California central coast with mild year-round and morning coastal fog, generally cleared by afternoon breezes. Average temperatures range from approximately 44 to 68 degrees Fahrenheit, with highest temperatures in September, and lowest temperatures in January. The city of Monterey receives an average annual rainfall of approximately 18 inches typically concentrated between December and February (NWS).

3.1.2 Watershed and Drainages

Hydrology of the individual maintenance sites and vicinity was evaluated through review of topographic maps, aerial photos, and the NHD (USGS 2018).

The maintenance sites are located within the Point Pinos and Seaside subwatersheds, and an undefined subwatershed of the larger Monterey Bay HUC-10 watershed (1806001503 and 1806001504; USGS). Several ephemeral/intermittent waterways such as Hartnell Creek, Iris Canyon Creek, Canyon Del Rey Creek, Josselyn Canyon Creek, and Aquajito Creek, travel through the city from the surrounding hills. These subwatershed drainages are heavily modified in their lower reaches as they approach the City and more densely developed areas. Most of these creeks and drainages are diverted to underground to stormwater systems west of the downtown area before flowing into El Estero, Del Monte Lake, and Laguna Del Ray before eventually discharging into the Pacific Ocean (USGS, National Map).

Drainage ditches, seasonal wetlands, ephemeral and perennial streams, and seasonally flooded constructed basins in the Study Areas may be jurisdictional waters of the U.S. under CWA Sections 404 and 401, subject to USACE and RWQCB jurisdictions. In addition, the aquatic resources have defined beds, banks, and/or riparian habitats that are potentially under CDFW jurisdiction. Note the final jurisdictional determinations of the boundaries of waters, and riparian habitat are made by each agency, typically at the time that authorizations to impact such features are requested. Refer to Section 4.3 for details regarding the results of the Jurisdictional Delineation.

Point Pinos Subwatershed

The Point Pinos subwatershed drains approximately 11,092 acres on the Monterey Peninsula, and includes Hartnell Creek, Iris Canyon Creek, Josselyn Canyon Creek, Aquajito Creek, and many unnamed tributaries and drainages. These streams are highly modified by residential and commercial development. In the lower reaches of Hartnell Creek and two unnamed drainages are diverted to an underground stormwater box culvert that flows beneath Pearl Street to Figueroa Street, and terminates at the ocean via a gate valve at Wharf II. An overflow weir exists to divert water from Pearl Street to Lake El Estero, should the box culvert get overwhelmed at Figueroa Street. Habitats observed in this watershed are typically coast live oak woodland and mixed coast live oak and Monterey pine with an open understory of poison oak, California blackberry, Himalayan blackberry, or French broom. Some sections of these streams are dominated by nonnatives or ornamental trees such as eucalyptus and Monterey cypress.

Iris Canyon and Major Sherman Creek flow into Lagunita Mirada, and then El Estero Lake before flowing out to the Pacific Ocean.

Seaside Subwatershed

The Seaside subwatershed drains approximately 9,336 acres along the coast northeast of Monterey, and includes Josselyn Canyon Creek, the lower reach of Canyon Del Rey, and several unnamed tributaries, drainages and constructed stormwater basins. Josselyn Canyon Creek and its unnamed tributaries flows into Del Monte Lake through a culvert system near the north end of Josselyn Canyon Road into a channelized concrete ditch. Del Monte Lake connects to the Pacific Ocean through an existing outflow gate valve on the lake to twin storm drain pipes that outfall to the ocean; access is restricted due to the Lake's location on military property. The habitat along Josselyn Canyon Creek and its unnamed tributaries is primarily coast live oak and Monterey pine woodland.

Canyon Del Rey creek flows into Laguna Grande and Roberts Lake. Roberts Lake joins the Pacific Ocean downstream. Habitats along Canyon Del Rey Creek in the Study Areas consist primarily of Coast live oak and nonnative grasses and shrubs. At Laguna Grande and Roberts Lake, blackwood acacia and arroyo willow are dominant in the tree canopy, and freshwater emergent wetlands are dominated by bulrush, and cattail, and tule in the Study Areas.

Undefined Subwatershed

The undefined subwatershed drains approximately 7,882 acres between the Seaside subwatershed and the Carmel River subwatershed and includes the upper reach of Canyon Del Rey creek and associated wetlands. Within the Study Area cattails, tule, umbrella sedge (*Cyperus eragrostis*), rush (*Juncus patens*), brown-headed rush (*Juncus phaeocephalus*), and Mexican rush (*Juncus mexicanus*) occur in stormwater detention and infiltration basins along this reach.

3.1.3 Soils

Based on the Web Soil Survey (USDA NRCS 2017), the BSA overlaps 14 soil map units. Note that soil surveys are completed at a coarser scale than site-specific surveys, and additional soils may be present in small areas and as inclusions in mapped types. Site-specific soil mapping was not completed as part of this study; however, observations of surface soil conditions were generally consistent with mapped soils depicted on Web Soil Survey (USDA NRCS 2018). The following sections summarize soil information from the USDA NRCS Web Soil Survey and the NRCS official soil series descriptions.

Arnold Loamy Sand, 9 to 20 Percent Slopes, MLRA 15

Arnold loamy sand, 9 to 20 percent slopes, is somewhat excessively drained sandy soil that occurs on terraces. It is formed of residuum weathered from sandstone. A typical profile consists of loamy sand down to 8 inches, loamy fine sand between 8 and 48 inches, and bedrock. This soil type is found at Site 33.

Baywood Sand, 2 to 15 Percent Slopes

Baywood sand is somewhat excessively drained soils derived from Stabilized sandy eolian sands with 2 to 15 percent slopes. This soil map unit has 8 centimeters (cm) of available water storage. This soil map unit typically lacks hydric soils. This soil type is found at Sites 29, 31, and 34.

Chamise Channery Loam, 9 to 15 Percent Slopes, MLRA 15

Chamise channery loam is well drained soil derived from loamy alluvium from shale. This soil map unit has a slope between 9 and 15 percent. This soil type is found at Sites 22 and 37.

Rindge Muck, 0 to 2 Percent Slopes, MLRA 14

Rindge muck is very poorly drained soil derived from plant residue with mixed alluvium. This soil map unit typically has a slope of 0 to 2 percent and approximately 90 percent hydric soils. Rindge muck has available water storage of 28 cm. This soil type is found at Site 30.

Santa Lucia Channery Clay Loam, 30 to 50 Percent Slopes, MLRA 15

The Santa Lucia series consists of well drained soils derived from Shale and clay residuum weathered from shale. This soil map unit has a slope between 30 and 50 percent. This soil type is found at Sites 21 and 22.

Santa Ynez Fine Sandy Loam, 2 to 9 Percent Slopes

Santa Ynez fine sandy loam consists of moderately well-drained soils that formed in fine-loamy alluvium derived from igneous and sedimentary rock. This soil has a fine sandy loam surface layer to about 18 inches and is underlain by clay to approximately 43 inches, with sandy clay loam from 43 to 61 inches. This soil type occurs on gently sloping to moderately sloping terraces. This soil type is found at Site 33.

Santa Ynez Fine Sandy Loam, 15 to 30 Percent Slopes

The Santa Ynez fine sandy loam consists of moderately well-drained soils that formed in fine-loamy alluvium derived from igneous and sedimentary rock. This soil has a fine sandy loam surface layer to about 18 inches and is underlain by clay loam to approximately 43 inches. Santa Ynez soils are on terraces and have slopes of 0 to 50 percent. The substratum is sandy loam. This soil type is found at Site 28.

Elder Very Fine Sandy Loam, 2 to 9 Percent Slopes

Elder very fine sandy loam is well drained and derived from Coarse-loamy alluvium from igneous and sedimentary rock. This soil map unit has a slope between 2 to 9 percent. The very fine sandy loam is adjacent to unweathered bedrock at approximately 40 inches depth. This soil type is found at Site 27.

Xerorthents, Loamy

Xerorthents, loamy soil is well drained and derived from mixed loamy alluvium. This soil map unit varies in slope from 15 to 50 percent and lacks hydric soils. Xerorthents have available water storage of 13 cm. This soil type is found at Site 23.

Narlon Loamy Fine Sand, 2 to 9 Percent Slopes

Narlon loamy fine sand is somewhat poorly drained soil derived from clay marine deposits from sedimentary rock. This soil map unit has a slope between 2 to 9 percent and has a typical soil profile of loamy fine sand to a depth of 13 inches, clay between 13 and 53 inches, and weathered bedrock to a depth of 57 inches. This soil type is found at Sites 1, 5, 6, 8, 11, 15, 17, 19, 20, 23, and 38.

Narlon Loamy Fine Sand, 15 to 30 Percent Slopes

This soil map unit is the same as the above described Narlon loamy fine sand, 2 to 9 percent slopes, with slopes between 15 and 30 percent. This soil type is found at Sites 9 and 12.

Sheridan Coarse Sandy Loam, 30 to 75 Percent Slopes

Sheridan coarse sandy loam is well drained soil derived from Coarse-loamy residuum weathered from igneous and metamorphic rock. This soil map unit has a slope between 30 and 75 percent and is adjacent to weathered bedrock at approximately 39 inches deep. This soil type is found at Sites 2, 3, 8, and 36.

Gazos Silt Loam, 30 to 50 Percent Slopes

Gazos silt loam is well drained soil derived from Residuum weathered from sandstone and shale. This soil map unit has a slope between 30 and 50 percent and has a typical soil profile of gravelly silty clay loam to a depth of 29 inches, and unweathered bedrock between 29 and 33 inches. This soil type is found at Sites 9, 10, 11, 15, 16, 17, 18, 19, and 38.

Water

This soil map unit contains no identifiable soils. This unit is used to identify open water, and includes; streams, lakes, ponds, and estuaries more than about 2.5 meters deep or less than 2.5 meters deep that lack either distinguishable horizons or rooted vegetation. This soil map unit is found at Sites 30 and 31.

3.2 Vegetation and Other Land Cover

Vegetation community mapping for the BSA is based on aerial imagery and reconnaissance surveys conducted between July 31 and October 26, 2017. Vegetation classification was based on A Manual of California Vegetation, Second Edition (Sawyer et al., 2009), Preliminary Descriptions of the Terrestrial Communities of California (Holland, 1986), and A Guide to Wildlife Habitats of California (Mayer and Laudenslayer, 1988); however, classifications have been modified as needed to accurately describe the existing habitats observed on-site.

Vegetation composition and structure within the BSA varies from site to site, but generally falls within eight vegetation communities and land cover types. In general, vegetation within the BSA primarily consists of a canopy dominated by coast live oak (*Quercus agrifolia*) and/or Monterey pine

(*Pinus radiata*) at the majority of the sites and a mixed canopy of ornamental and planted species at several sites. Due to the proximity of the maintenance sites to residential and urban development, the typical understory at most sites is somewhat disturbed and includes ornamental and invasive species including infestations of Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), cape ivy (*Delairea odorata*) and garden nasturtium (*Tropaeolum majus*).

Descriptions of these vegetation communities and land cover types are provided below. These descriptions generally describe the primary constituents and overall composition of the vegetation communities and do not detail the exact composition and structure of each of these vegetation communities within each maintenance site. Table 2 below summarizes the vegetation communities and land cover types present at each site.

Coast Live Oak Woodland

Within the BSA, coast live oak woodland typically consists of a canopy dominated by coast live oak with occasional individuals of other species such as Monterey pine. The understory typically consists of shrubby native species such as poison-oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), and non-native grasses such as quaking grass (*Briza minor*), wild oats (*Avena fatua*), and perennial ryegrass (*Festuca perennis*). Due to the proximity of the maintenance sites to residential and urban development, the understory also commonly includes ornamental and invasive species such as French broom (*Genista monspessulana*), English ivy, periwinkle (*Vinca major*), Kikyuru grass (*Pennisetum clandestinum*), and veldt grass (*Ehrharta erecta*).

Holland (1986) and Sawyer et al. (2009) describe this community as singularly dominated by coast live oak with an open underdeveloped understory. Within the BSA this vegetation community is largely degraded by fragmentation and disturbance due to development and contains a varying degree of understory density. In the BSA this community occurs primarily along Aguajito Creek and Josselyn Canyon; and is consistent with a live oak, poison oak (*Toxicodendron diversilobum*) alliance (Sawyer et al., 2009). This vegetation community is found at Sites 1, 8, 18, 22, and 27.

Monterey Pine Forest

Monterey pine forest community within the BSA typically consists of a canopy dominated by Monterey pine with a dense shrubby understory. Holland (1986) and Sawyer et al. (2009) describe this community as dominated or co-dominated by Monterey pine. Typical understory constituents within the BSA include tangles of California blackberry and poison oak, patches of wood fern (*Dryopteris arguta*) and bracken fern (*Pteridium aquilinum*), and non-native grasses such as quaking grass, perennial ryegrass, hedgehog dogtail grass (*Cynosurus echinatus*). Ornamental and invasive species such as French broom, English ivy, and garden nasturtium are also prevalent in the understory at some sites, typically observed in disturbed areas along roads, trails and maintenance facilities. This vegetation community is found at Sites 9, 12, and 16.

Mixed Monterey Pine and Oak Woodland

Portions of the BSA contain a woodland canopy with coast live oak and Monterey Pine occurring as codominant. The understory of this vegetation community is consistent with the coast live oak woodland and Monterey pine forest communities that occur within the BSA and typically consist of an open to dense understory of poison oak and California blackberry with non-native grasses, ornamental, and invasive species. This community is not described by Holland (1986), Sawyer et al. (2009), or Mayer and Laudenslayer (1988); however, this vegetation community is best described by

live oak, poison-oak alliance by Sawyer et al. This vegetation community is found at Sites 2, 3, 8, 9, 10, 11, 15, 19, 20, 21, 23, 29, 33, 36, 37, and 38.

Annual Grassland

Annual grassland vegetation community within the BSA consists of areas dominated by predominantly non-native annual grasses such as bromes (*Bromus* spp.) and wild oats and ruderal herbs such as horseweed (*Erigeron canadensis*), wild radish (*Raphanus sativa*), and jersey cudweed (*Pseudognaphalium luteoalbum*). Annual grassland areas within the BSA are generally somewhat disturbed and occur in openings within the tree canopy or along the margins of stream channels. This vegetation community is best described as a wild oats grassland (*Avena fatua* Semi – Natural Herbaceous Stand) by Sawyer et al. (2009). This vegetation community is found at Sites 1, 2, and 28.

Ruderal/Developed/Landscaped

This community is not described by Holland (1986) or Sawyer et al. (2009), but is best described by Mayer and Laudenslayer (1988) as an “Urban” community. This vegetation consists of a mixture of native, non-native, and ornamental species in tree groves, street strips, shade trees, lawns, ruderal areas, and paved areas. Tree species found in this community are highly variable and typically non-native or not occurring as a natural community woodland. Species observed in the BSA include blue gum eucalyptus (*Eucalyptus globulus*), red plum (*Prunus cerasifera*), mock orange (*Pittosporum undulatum*), with some Monterey cypress (*Hesperocyparis macrocarpa*) among others. This vegetation community/land cover type also includes disturbed and ruderal margins of roads, trails, buildings, etc. and are dominated by ruderal herbs such as annual willow herb (*Epilobium brachycarpum*) and Italian thistle (*Carduus pycnocephalus*) and annual grasses such as bromes, wild oats, and veldt grass. This vegetation community/land cover type also includes all areas that have been developed, including paved roads, sidewalks, parking lots, driveways, buildings, and basketball courts, with no vegetation component. This land cover type is found at each of the 29 sites.

Arroyo Willow Riparian Woodland

This vegetation community consists of a dense canopy dominated by arroyo willow (*Salix lasiolepis*) in tree and shrub forms. Other trees in this community include blackwood acacia (*Acacia melanoxylon*) and occasional coast live oak trees. The understory is generally undeveloped or mixed with native and non-native components. Holland (1986) and Sawyer et al. (2009) describe this community as an arroyo willow thicket (*Salix lasiolepis* Shrubland Alliance). This vegetation type is somewhat limited within the BSA and generally occurs within the maintenance sites that contain more consistent standing water: Sites 29, 30, and 34.

Mixed Riparian Woodland

Mixed riparian woodland habitat within the BSA consists of Canopy dominated by non-native blue gum and red plum (*Prunus cerasifera*) intermixed with native coast live oak, black cottonwood (*Populus trichocarpa*), and box elder (*Acer negundo*). The understory of this vegetation community also consists of primarily of non-native ornamental and invasive species English ivy and garden nasturtium with patches of poison-oak and California blackberry. This community is not described by Holland (1986), Sawyer et al. (2009), and Mayer and Laudenslayer (1988). This vegetation community is found at Sites 5, 6, 16, and 30.

Freshwater Emergent Wetlands

Freshwater emergent wetlands are generally dominated by hydrophytic perennial monocots (Mayer and Laudenslayer, 1988). In the BSA this community is primarily comprised of large emergent herbaceous wetland species, including tule (*Schoenoplectus californicus*) and cattails (*Typha* spp.), which typically grow in large stands along the margins of ponds and shallow waters within the BSA. Soils within this vegetation community are typically saturated or inundated for many weeks each year. This community also includes patches of other emergent herbaceous wetland vegetation, in which other, smaller emergent species such as rushes (*Juncus* spp.), loosestrife (*Lythrum hyssopifolia*), and rabbitsfoot grass (*Polypogon monspeliensis*) in relatively small patches within the channels at numerous maintenance sites. This vegetation community is best described as a California bulrush marsh – *Schoenoplectus californicus* – *Typha latifolia* association by Sawyer et al. (2009). This vegetation community is found at Sites 1, 20, 27, 28, 30, 31, 33, and 34.

3.3 General Wildlife

The BSA is largely surrounded by existing development; with more heavily developed areas to the west along the coast and less densely developed residential areas to the east. The ephemeral creeks and drainages in the BSA provide a corridor for movement from less developed areas east of the City. Generally, the BSA provides habitat for more disturbance tolerant species such as northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*) and black-tailed deer (*Odocoileus hemionus*). These species are likely to use habitat along the edges of Laguna Grande, Roberts Lake, and ephemeral creeks and drainages. Amphibians likely to be found in the BSA include western toad (*Anaxyrus boreas*), Sierran treefrog (*Pseudacris sierra*), and American bullfrog (*Lithobates catesbeianus*). Additionally, many bird species are likely to forage and nest in the vegetation communities found in the BSA. These species include; American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), house finch (*Haemorhous mexicanus*), California towhee (*Melospiza crissalis*), and red-shouldered hawk (*Buteo lineatus*).

Table 2 Vegetation Communities and Land Cover Types

Site	Coast Live Oak Woodland	Monterey Pine Forest	Mixed Monterey Pine and Oak Woodland	Arroyo Willow Riparian	Mixed Riparian Woodland	Annual Grassland	Freshwater Emergent Wetlands	Ruderal/ Developed/ Landscaped
1	X*					X	X	X
2			X*			X		X
3			X*					X
5					X*			X
6					X*			X
8	X*		X					X
9		X	X*					X
10			X*					X
11			X*					X
12		X*						X
15			X*					X
16		X*			X			X
17			X*					X
18	X*							X
19			X*					X
20			X*				X	X
21			X*					X
22	X*							X
23			X*					X
27	X						X*	X
28						X*	X	X
29			X	X				X*
30				X	X		X	X*
31							X*	X
33			X*				X	X
34				X*			X	X
36			X*					X
37			X*					X
38			X*					X

X = vegetation community/land cover type present

* = dominant vegetation community/land cover type at each site

4 Sensitive Biological Resources

Local, state, and federal agencies regulate special status species and other sensitive biological resources and require an assessment of their presence or potential presence to be conducted on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed in the BSA and evaluates the potential for the each maintenance site to support additional sensitive biological resources. Assessments for the potential occurrence of special status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDDB, species occurrence records from other sites near the BSA, previous reports for the BSA, and the results of surveys of the BSA. The potential for each special status species to occur in the study area was evaluated according to the following criteria:

- **Not Expected.** 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), and species would have been identifiable on-site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.
- **Low Potential.** 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. Protocol surveys (if conducted) did not detect species.
- **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 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 (e.g., CNDDDB, other reports) on the site recently (within the last 5 years).

For the purpose of this report, special status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS or National Marine Fisheries Service (NMFS) under the FESA; those listed or proposed for listing as Rare, Threatened, or Endangered by the CDFW under the CESA or Native Plant Protection Act; those recognized as Fully Protected or Species of Special Concern (SSC) by the CDFW; raptors and nesting birds as protected by the CFGC; and plants ranked as CRPR 1 and 2, per the following definitions:

- **Rank 1A** = Plants presumed extinct in California
- **Rank 1B.1** = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- **Rank 1B.2** = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened)
- **Rank 1B.3** = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known)
- **Rank 2** = Rare, threatened or endangered in California, but more common elsewhere

CRPR 1B and 2 plant species are typically regarded as rare, threatened, or endangered under the CEQA by lead CEQA agencies and were considered as such in this document. CRPR 3 and 4 plant species are typically not considered for analysis under CEQA except where they are designated as rare or otherwise protected by local governments or where cumulative impacts could result in population-level effects.

- CDFW previously tracked sensitive natural communities and kept records of their occurrences in the CNDDDB. However, while CDFW works to transition fully to a vegetation alliance-based system consistent with national standards, the Sensitive Natural Communities List in the CNDDDB has not been maintained and no new information has been added in recent years. Therefore, vegetation types on site were also compared with the List of Vegetation Alliances and Associations (CDFW 2018c). According to the CDFW Vegetation Program, Alliances with State ranks of S1-S3, and certain other associations, are considered to be imperiled, and thus, potentially of special concern. Plant communities are also considered special status biological resources if they have limited distributions, have high value for sensitive wildlife, contain special status species, or are particularly susceptible to disturbance.

4.1 Special Status Species

Based on the results of the agency database searches, the literature review, and the results of the reconnaissance survey of the BSA, Rincon evaluated 82 special status species (56 special status plant species and 26 special status animal species) and eight sensitive natural communities. Each of these species was evaluated for its potential to occur in the BSA and project development footprint (see Appendix D).

4.1.1 Special Status Plant Species

Based on the database and literature review of records from the *Monterey and Seaside, California* USGS 7.5-minute topographic quadrangles and the surrounding six quadrangles, as well as the USFWS IPaC list of federally listed species, 56 special status plant species are known to occur, or have the potential to occur within the vicinity of the BSA (Appendix B). Of these species, 37 were eliminated from the analysis due to lack of habitat, unsuitability of soils, the Project's location outside of the known distribution and/or elevation range of the species (e.g., special status plants that are associated with coastal dune habitat, serpentine soils or highly alkaline soils that are not present in the BSA) and/or the species is perennial and was not observed within the BSA during the reconnaissance surveys. The remaining 19 special status plants were further evaluated based on the location of the BSA, presence of suitable habitat, and types of soils present on site.

Two special status species were observed within the BSA: Monterey cypress (CRPR 1B.2) and Monterey pine (CRPR 1B.1). Both species are only considered to be special status when they are present as part of an existing natural woodland. Both species are trees that are commonly planted as ornamental species and have no special status in those cases; however, within the BSA most individuals occur as part of a highly disturbed, but intact natural woodland within their native range. Monterey cypress was present at two sites within the BSA (Sites 5 and 16) and Monterey pine was present at 17 sites within the BSA (Sites 1, 2, 9, 10, 11, 12, 15, 16, 17, 19, 21, 23, 31, 33, 36, 37, and 38). Monterey pine makes up a relatively large portion of the canopy within most maintenance sites.

Of the remaining 17 special status plant species, seven species have a moderate potential to occur within one or more of the sites within the BSA:

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- Hickman's onion (*Allium hickmanii*) – CRPR 1B.2
- Pink Johnny-nip (*Castilleja ambigua* var. *insalutata*) – CRPR 1B.1
- Monterey spineflower (*Chorizanthe pungens* var. *pungens*) – Federally Threatened, CRPR 1B.2
- Jolon clarkia (*Clarkia jolonensis*) – CRPR 1B.2
- Seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*) – State Endangered, CRPR 1B.1
- Hickman's cinquefoil (*Potentilla hickmanii*) – Federally Endangered, State Endangered, CRPR 1B.1
- Pacific Grove clover (*Trifolium polyodon*) – State Rare, CRPR 1B.1

Ten special status plant species have a low potential to occur within one or more of the sites within the BSA:

- Alkali milk-vetch (*Astragalus tener* var. *tener*) – CRPR 1B.2
- San Francisco collinsia (*Collinsia multicolor*) – CRPR 1B.2
- Hutchinson's larkspur (*Delphinium hutchinsoniae*) – CRPR 1B.2
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) – CRPR 1B.1
- Contra Costa goldfields (*Lasthenia conjugens*) – Federally Endangered, CRPR 1B.1
- Oregon meconella (*Meconella oregana*) – CRPR 1B.1
- Marsh microseris (*Microseris paludosa*) – CRPR 1B.2
- Northern curly-leaved monardella (*Monardella sinuata* ssp. *nigrescens*) – CRPR 1B.2
- Santa Cruz microseris (*Stebbinsoseris decipiens*) – CRPR 1B.2
- Monterey clover (*Trifolium trichocalyx*) – Federally Endangered, State Endangered, CRPR 1B.1

4.1.2 Special Status Animal Species

Based on the database and literature review of records from the *Monterey* and *Seaside, California* USGS 7.5-minute topographic quadrangles and the surrounding 6 quadrangles, 26 special status wildlife species are known to occur, or have the potential to occur within the vicinity of the BSA (Appendix D). Due to species specific habitat requirements such as marine and estuarine species, 16 species could be excluded from potentially occurring in the BSA.

Of the remaining ten species, two special status wildlife species were observed or known to occur within the BSA: California brown pelican (*Pelecanus occidentalis californicus*; California Fully Protected), and bank swallow (*Riparia riparia*). Both species' special status pertains specifically to nesting sites. Both species are known to forage and/or roost at Roberts Lake (Site 31); however, suitable nesting habitat is not present with the BSA or immediate vicinity. As such, nesting brown pelicans and bank swallows are not expected to occur within the BSA and are not discussed further in this report.

The remaining eight special status wildlife species have potential to occur at one or more of the sites within the BSA due to the presence of natural native vegetation communities.

One species has a high potential to occur at one or more of the sites within the BSA:

- Western pond turtle (*Emys marmorata*) – State Species of Special Concern

Two special status wildlife species have a moderate potential to occur:

- Tricolored blackbird (*Agelaius tricolor*) – State Candidate Endangered, State Species of Special Concern
- Northern California legless lizard (*Anniella pulchra*) – State Species of Special Concern

Five special status wildlife species have a low potential to occur:

- California tiger salamander (*Ambystoma californiense*) – Federally Threatened, State Threatened
- California red-legged frog (*Rana draytonii*) – Federally threatened, State Species of Special Concern
- Coast horned lizard (*Phrynosoma blainvillii*) – State Species of Special Concern
- Two-striped garter snake (*Thamnophis hammondi*) – State Species of Special Concern
- Coast Range newt (*Taricha torosa*) – State Species of Special Concern

The potential for each species' presence in the BSA was based on the presence of specific habitat requirements within the vegetation communities and land cover types observed within and adjacent to the BSA. Generally, some of the above listed special status species have the potential to occur within riparian or streamside communities; while others may occur within woodland or grassland habitats. However, due to the developed condition of the BSA, suitable habitat for these species is not present within the majority of the maintenance sites. A discussion for each of species with potential to occur is presented below.

Western Pond Turtle

Western pond turtle is a diurnal and aquatic species that is found in ponds, lakes, rivers, creeks, marshes, and irrigation ditches, with abundant vegetation. It requires basking sites of logs, rocks, cattail mats, or exposed banks. Western pond turtle is active from approximately February to November. It will estivate during summer droughts by burying itself in soft bottom mud. When creeks and ponds dry up in summer, some turtles will travel along the creek until they find an isolated deep pool, others stay within moist mats of algae in shallow pools, and many turtles move to woodlands above the creek or pond and bury themselves in loose soil. Pond turtle will overwinter underground until temperatures warm up and the heavy winter flows of the creek subside. They return to the creek in the spring.

This species was observed at Lagunita Miranda Park directly across from Site 23. The nearest CNDDDB record to the BSA for this species is at Pacific Grove Reservoir, approximately 0.57 mile north of Site 1. Potential aquatic habitat for this species is present within the BSA at the maintenance sites with ponded water: Sites: 27, 30, 31, and 33. This species is likely present with the BSA.

Tri-colored Blackbird

Tri-colored blackbird is a highly colonial species, largely endemic to California. It requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of the colony. The nearest CNDDDB record to the BSA for this species is at Laguna Seca Pond, approximately 2.2 miles east of Site 27 (CNDDDB #380). Marginal nesting habitat is present within the emergent wetland vegetation occurring along the margins of Roberts Lake and Laguna Grande Regional Park (Sites 30 and 31). Foraging habitat for tricolored blackbird is present at open sites near potential nesting habitat at Sites 27, 28, 29, and 34.

Northern California Legless Lizard

The northern California legless lizard is typically found in coastal dune, valley-foothill chaparral, and coastal scrub vegetation communities, and areas with sandy or loose organic soils or high amounts of leaf litter. California legless lizards have been documented within five miles of the BSA. The nearest CNDDDB record to the BSA for this species is along the northwestern shores of Roberts Lake, approximately 0.1 mile north of Site 31 (CNDDDB #52). Numerous additional CNDDDB localities are located between 0.13 and 0.25 mile west of Site 31 (CNDDDB #51). Suitable soils and shrubby habitat is present at Sites 29, 30, 31, and 34.

California Tiger Salamander

California tiger salamander (CTS) is a lowland species found primarily in grasslands and low foothill and oak woodland habitats located within approximately 2,200 feet (671 meters [m]) of breeding pools (Trenham and Shaffer 2005). CTS breed in long-lasting rain pools (e.g., seasonal ponds, vernal pools, slow-moving streams) that are often turbid, and occasionally in permanent ponds lacking fish predators. Adults spend 90% of their lives underground. During the non-breeding season, adults occur in upland habitats and occupy ground squirrel or pocket gopher burrows. They migrate nocturnally to aquatic sites to breed during relatively warm winter or spring rains. Juveniles emigrate at night from the drying pools to upland refuge sites, such as rodent burrows and cracks in the soil.

The nearest CNDDDB record to the BSA for this species is from two ponds at the Tehama golf course, approximately 0.79 mile south of Site 28 (CNDDDB #394). Numerous other records are located between 1.2 and 4.5 miles northeast of Site 27. The stormwater basins at Sites 27 and 28 contain suitable dispersal habitat for CTS and are within dispersal distance to known populations. Suitable aquatic breeding habitat is not present at any of the sites within the BSA. CTS has a low potential for occurrence at Sites 27 and 28.

California Red-legged Frog

California red-legged frog (CRLF) occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. It typically inhabits quiet pools of streams, marshes, and ponds. All life history stages are most likely to be encountered in and around breeding sites, which include coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds. Eggs are typically deposited in permanent pools, attached to emergent vegetation. This species typically requires 11 to 20 weeks of permanent water for larval development and must have access to estivation habitat.

The nearest CNDDDB records to the BSA for this species are associated with ponds at the Tehama Golf Course, approximately 1.1 miles south and southwest of Site 28 (CNDDDB #939 and 940). However, the majority of occurrences in the vicinity of the BSA are from the Carmel River, more than 3 miles south of the project area. The majority of the drainages within the BSA site are unsuitable for CRLF for most of the year as they are ephemeral to intermittent in flows. Roberts Lake and Laguna Del Rey (Sites 30 and 31) present the best source of potentially suitable aquatic habitat for CRLF as ponded water and emergent aquatic vegetation are perennially present. Suitable or marginal upland habitat is present immediately adjacent to the Roberts Lake and Laguna Del Rey in willow riparian habitat.

Upland habitat within the remainder of the BSA is generally marginal or unsuitable for long term usage due to a general lack of moisture surrounding the ephemeral or intermittent drainages for most of the year. Additionally, the City development surrounding the maintenance sites would effectively inhibit the dispersal of CRLF from one site to another and transient individual would not be expected throughout the majority of the BSA. However, frogs may disperse into or through Sites 28 and 29 during periods of wet weather. Occurrences within upland habitat or temporarily inundated areas at these sites are expected to be transient in nature.

Coast Horned Lizard

Coast horned lizards can be found in grasslands, coniferous forests, woodlands, and chaparral, in open areas and patches of loose soil. Horned lizards are active above-ground between April and October, with most activity concentrated between April and June. During the remainder of the year they aestivate underground in mammal burrows or rock crevices or beneath objects such as boulders and logs (Condor 2007). Horned lizard diets are specialized and almost exclusively consist of native ants (>94% by prey item [Suarez et al. 2000]). There are currently no CNDDDB records for the coast horned lizard within five miles of the BSA. However, the BSA is within the known range of the species and suitable grassland and woodland habitats and sandy soils are present within the BSA. The coast horned lizard could occur within grassland habitat and in open areas of the woodland habitat at Sites 8, 9, 10, 13, 19, 23, 28, 29, 30, 31, and 34.

Two-striped Garter Snake

The two-striped garter snake occurs from Monterey County south along the coast, mostly west of the South Coast Ranges, into San Diego County west of the Peninsular Ranges. It is primarily an aquatic species that occurs near ponds, pools, creeks, cattle tanks, and other sources of water within oak woodland, chaparral, scrub communities, and coniferous forest habitats. It is often found in rocky areas also. Depending upon weather conditions, two-striped garter snake can be active during January through November and typically breeds March through April.

There are currently no CNDDDB records for the two-striped garter snake within five miles of the BSA. However, the BSA is within the known range of the species and aquatic and woodland habitats are present within the BSA. Due to the presence of standing fresh water, two-striped garter snake has a low potential to occur within sites 4, 5, 20, 23, 30, 31, and 34.

Coast Range Newt

This species inhabits terrestrial habitats such as oak woodlands, annual grassland, and chaparral where sufficient moisture is present. As adults they will migrate over 0.62 mile (1 km) to breed in ponds, reservoirs and slow moving streams. The nearest CNDDDB records to the BSA for this species is associated with a stock pond at Palo Corona Regional Park, approximately 4.8 miles south Site 37 (CNDDDB #70). The majority of the drainages within the BSA site are unsuitable for Coast Range newt for most of the year as they are ephemeral to intermittent in flows and the associated woodland does not provide moisture required for suitable upland habitat. As such, this species would have the greatest chance of occurring with the Wilson Road detention basin (Site 27) and/or the Lower Ragsdale basin (Site 28).

4.2 Sensitive Plant Communities and Critical Habitats

Plant communities are considered sensitive biological resources if they have limited distributions, high wildlife value, include sensitive species, or are particularly susceptible to disturbance. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in CNDDDB. CNDDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Some alliances with the rank of 4 and 5 have also been included in the 2018 sensitive natural communities list under CDFW's revised ranking methodology (2018c).

The BSA is not located within critical habitat for any of the federally threatened and state endangered species. The CNDDDB documents eight sensitive plant communities with the *Monterey and Seaside, California* USGS 7.5-minute topographic quadrangles and the surrounding six quadrangles (Figure 3).

One special status natural community was observed within the BSA: Monterey pine forest. Monterey pine forest is considered a sensitive natural community by CDFW with a rank of G1 S1.1. This vegetation community is found at Sites 9, 12, and 16.

The remaining seven sensitive plant communities were not observed during the reconnaissance-level field survey. Additionally, vegetation types on site were compared with the List of Vegetation Alliances and Associations (California Department of Fish and Wildlife, 2010). No types designated as potentially rare in the hierarchical list are present in the project area, therefore no additional sensitive plant communities are expected to occur within the BSA.

Riparian vegetation is present within most of the maintenance sites, but occurs somewhat contiguously with the surrounding woodland or urban areas. As such, riparian vegetation was not specifically mapped. Freshwater emergent wetland vegetation was also present in limited patches within eight maintenance sites. Riparian and wetland vegetation is typically considered a sensitive vegetation type by federal and state regulatory agencies.

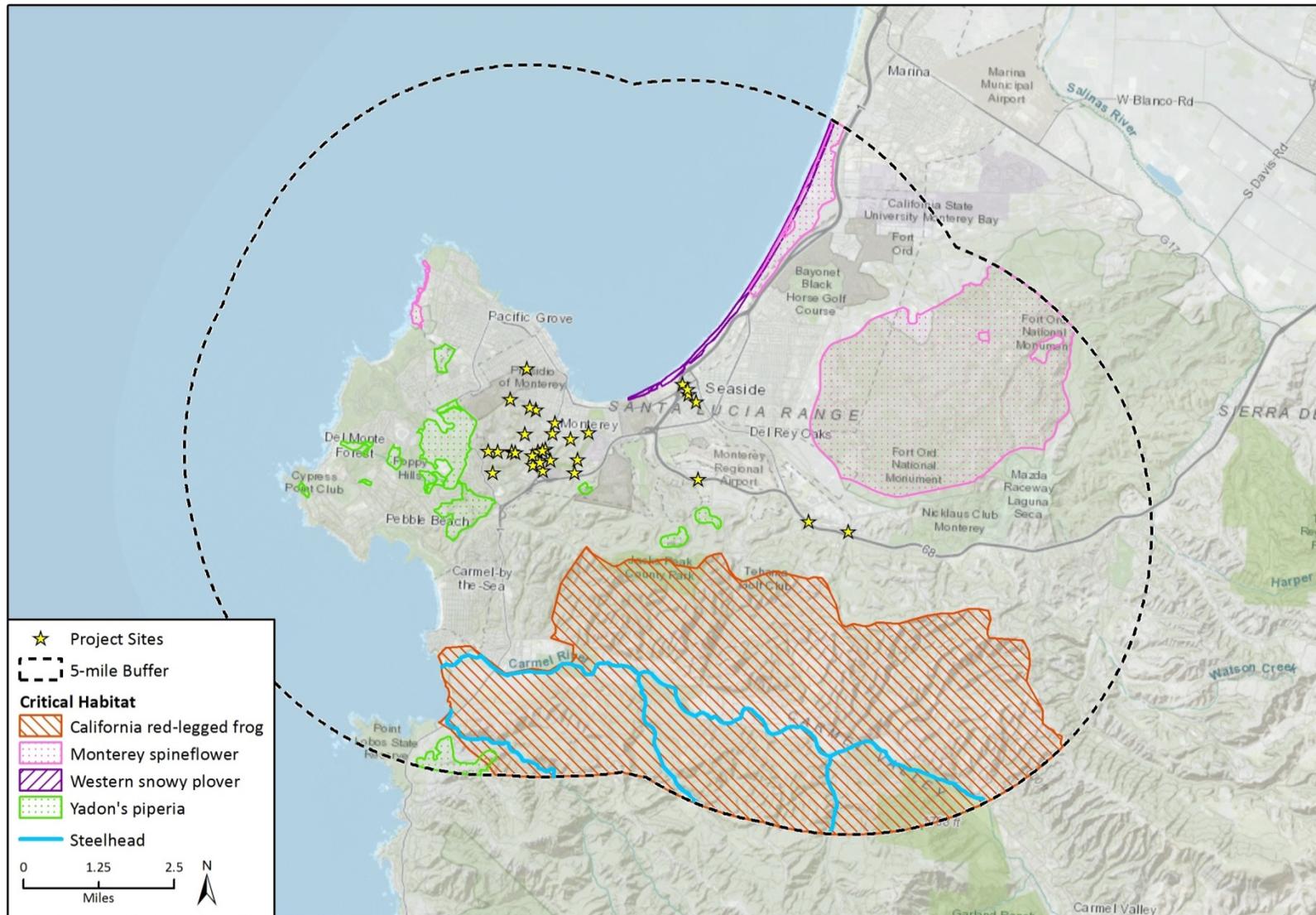
The BSA is not within USFWS Designated Critical Habitat or California Coastal Commission designated Environmentally Sensitive Habitat Areas. Figure 3 shows Designated Critical Habitat in the vicinity of the BSA.

Table 3 Special Status Natural Communities in the Regional Vicinity of the BSA

Sensitive Natural Communities	G-Rank/S-Rank	Sites Where Present	Rationale
Central Dune Scrub	G2/S2.2	None	Not Present in BSA
Central Maritime Chaparral	G3/S2.2	None	Not Present in BSA
Monterey Cypress Forest	G1/S1.2	None	Not Present in BSA
Monterey Pine Forest	G1/S1.1	9, 12, 16	Canopy dominated by Monterey pine with a dense understory.
Monterey Pygmy Cypress Forest	G1/S1.1	None	Not Present in BSA
Northern Bishop Pine Forest	G2/S2.2	None	Not Present in BSA
Northern Coastal Salt Marsh	G3/S3.2	None	Not Present in BSA
Valley Needlegrass Grassland	G3/S3.1	None	Not Present in BSA

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind5.

Figure 3 Designated Critical Habitat



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Additional data provided by USFWS, 2018.

BRA FigX Critical Habitat

4.3 Jurisdictional Waters and Wetlands

The delineation of waters of the U.S. and State within the BSA identified jurisdictional wetland waters, non-wetland waters and streambed/riparian habitats. A final jurisdictional determination of the boundaries of waters and riparian habitats will be made by each agency. Approximately 0.47 acre of wetland waters of the U.S., 2.37 acres/6,633 linear feet of non-wetland waters of the U.S., and 7.7 acres/6,602 linear feet of waters of the State, streambed, banks and riparian habitat were delineated within the BSA. Table 4 and Table 5 below provide a summary of the potentially jurisdictional areas within at each maintenance site. For a detailed description of the potentially jurisdictional features at each site, please refer to the Jurisdictional Delineation Report (Appendix E).

4.3.1 USACE and RWQCB Jurisdiction

Wetland and Non-Wetland Waters of the United States

Table 4 Summary of Potentially Jurisdictional Aquatic Resources Calculated to OHWM/Edge of Wetland

Site	Type	Potentially Jurisdictional Area (ac/linear ft)
CWA Section 404/401 Potential Jurisdiction		
Point Pinos Subwatershed		
1, unnamed stream	Ephemeral/Intermittent Stream	0.024/171
	Freshwater Emergent Wetland	0.011/61
2, Hartnell Creek	Ephemeral/Intermittent Stream	0.025/179
3, Hartnell Creek	Ephemeral/Intermittent Stream	0.016/110
5, Hartnell Creek	Ephemeral/Intermittent Stream	0.052/167
6, tributary to Hartnell Creek	Ephemeral/Intermittent Stream	0.020/127
8, tributary to Hartnell Creek	Ephemeral/Intermittent Stream	0.70/490
	In Stream Basin	0.021
10, unnamed stream	Ephemeral/Intermittent Stream	0.037/236
11, unnamed stream	Ephemeral/Intermittent Stream	0.006/89
12, unnamed stream	Ephemeral/Intermittent Stream	0.039/322
15, unnamed stream	Ephemeral/Intermittent Stream	0.019/131
16, unnamed stream	Ephemeral/Intermittent Stream	0.025/187
17, unnamed stream	Ephemeral/Intermittent Stream	0.077/278
18, unnamed stream	Ephemeral/Intermittent Stream	0.017/77
19, unnamed stream	Ephemeral/Intermittent Stream	0.119/848
20, Major Sherman Creek	Ephemeral/Intermittent Stream	0.044/179
	Freshwater Emergent Wetland	0.148/479
21, Major Sherman Creek	Ephemeral/Intermittent Stream	0.022/167
22, Major Sherman Creek	Ephemeral/Intermittent Stream	0.037/242
23, Iris Canyon Creek	Ephemeral/Intermittent Stream	0.126/601

Site	Type	Potentially Jurisdictional Area (ac/linear ft)
36, Hartnell Creek	Ephemeral/Intermittent Stream	0.020/179
37, Iris Canyon Creek	Ephemeral/Intermittent Stream	0.045/214
38, unnamed stream	Ephemeral/Intermittent Stream	0.094/731
Seaside Subwatershed		
30, Laguna Grande - Outfall	Freshwater Emergent Wetland	0.042
31, Roberts Lake - Outfall	Freshwater Emergent Wetland	0.198
	Open Water	0.115
34. Encina Ave./Myers St. Swale	Forested Wetlands	0.049
Undefined Subwatershed		
27, Wilson Rd Basin	Constructed Basin	0.170
28, Lower Ragsdale Basin	Constructed Basin	1.093
	Ephemeral/Intermittent Stream	0.001
Total		2.841 ac/6,633 ft

4.3.2 CDFW Jurisdiction

Table 5 Summary of Aquatic Resources Calculated to Top of Bank/Edge of Riparian

Site	Type	Potentially Jurisdictional Area (ac/linear ft)
Potential CDFW 1600 Jurisdiction		
Point Pinos Subwatershed		
1, unnamed stream	Top of Bank	0.132/171
2, Hartnell Creek	Top of Bank	0.108/61
3, Hartnell Creek	Top of Bank	0.041/268
5, Hartnell Creek	Top of Bank/Edge of Riparian	0.297/110
6, tributary to Hartnell Creek	Top of Bank	0.087/167
8, tributary to Hartnell Creek	Top of Bank/Edge of Riparian	0.215/167
9, unnamed stream	Top of Bank	0.222/490
10, unnamed stream	Top of Bank	0.197/284
11, unnamed stream	Top of Bank	0.031/0
12, unnamed stream	Top of Bank	0.177/236
15, unnamed stream	Top of Bank/Edge of Riparian	0.096/82
16, unnamed stream	Top of Bank	0.065/322
17, unnamed stream	Top of Bank/Edge of Riparian	0.199 131
18, unnamed stream	Top of Bank	0.073/189
19, unnamed stream	Top of Bank	0.320/278
20, Major Sherman Creek	Top of Bank/Edge of Riparian	0.742/77
21, Major Sherman Creek	Top of Bank/Edge of Riparian	0.127/848
22, Major Sherman Creek	Top of Bank/Edge of Riparian	0.366/179
23, Iris Canyon Creek	Top of Bank/Edge of Riparian	0.908/479

Site	Type	Potentially Jurisdictional Area (ac/linear ft)
36, Hartnell Creek	Top of Bank/Edge of Riparian	0.118/167
37, Iris Canyon Creek	Top of Bank	0.248/184
38, unnamed stream	Top of Bank	0.239/601
Seaside Subwatershed		
29, Virgin/Grant St. Swale	Riparian/Lake	0.190/0
30, Laguna Grande - Outfall	Riparian/Lake	0.100/0
31, Roberts Lake - Outfall	Riparian/Lake	0.421/0
34, Encina Ave./Myers St. Swale	Riparian/Lake	0.113/0
Undefined Subwatershed		
27, Wilson Rd Basin	Stormwater Basin	0.210/0
28, Lower Ragsdale Basin	Stormwater Basin	1.658/0
Total		7.701 ac/6,602 ft

4.4 Wildlife Movement

The BSA is situated between the Pacific Ocean and eastward mountain ranges. Although none of the 29 maintenance sites within the BSA are located within California Essential Habitat Connectivity areas, as designated by CDFW, several natural landscape blocks are identified within the California Essential Habitat Connectivity area approximately 2.0 miles east of the BSA (BIOS 2018). The regional location and proximity to known landscape blocks of the BSA lead to an increased expectation for greater wildlife movement through the region. Additionally, many of the sites occur in urban and suburban areas and function as small local corridors for movement.

4.5 Resources Protected By Local Policies and Ordinances

Chapter 37 of the City of Monterey's Municipal Code regulates the removal of trees within City limits (Ord. 3318, 4/03). This ordinance requires permitting and mitigation for the removal of protected trees and landmark trees. Protected Trees are defined as:

- a) *trees located on a vacant private parcel that are more than two inches (2") in diameter when measured at a point four feet six inches (4'6") above the tree's natural grade; and,*
- b) *trees located on a private, developed parcel that are more than six inches (6") when measured at a point four feet six inches (4'6") above the tree's natural grade.*

Local Landmark Trees are designated by the City, and are evaluated based on prominence, health, and species.

Under this ordinance a permit issued by the City Forester is required to; cut, prune, damage, or remove trees or shrubs from city parks, green belts, and other public areas. On private property a permit is also required for tree removal (Ord. 3424 § 13, 2009). Avoidance and mitigation measures to protect trees are also required as part of the tree protection plan. These measures include/but are not limited to: replacement of trees up to a 1:3 ratio, or payment in lieu of replacement.

An exemption may be given for the removal of trees damaged by natural disasters and determined to be dangerous by a peace officer, fireman, or forester.

The BSA includes trees within City greenbelts and other public areas, but were not mapped or specifically measured as part of this analysis.

4.6 Habitat Conservation Plans

There are no habitat conservation plans (HCPs), natural community conservation plans (NCCPs), or other similar plans that govern activities in the BSA.

5 Impact Analysis and Mitigation Measures

The proposed Project activities include routine maintenance activities such as removal of trash and debris, trimming of vegetation, and removal of sediment, as well as minor repair of headwall slopes and structures. In most cases, maintenance is expected to occur along the bottom of the facilities and approximately two feet up the adjacent banks to ensure the ability of the channels to transport floodwaters and prevent flooding. The impacts and recommended avoidance and minimization measures described hereafter may or may not apply to a proposed maintenance activity depending on the nature of the activity and the specific maintenance site proposed for the activity. Suitable conditions for specific sensitive biological resources are not present at all proposed maintenance sites. The applicable maintenance sites are indicated.

5.1 Special Status Species

The proposed project would have a significant effect on biological resources if it would:

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

5.1.1 Special Status Plants

Two special status plant species are present within the BSA: Monterey cypress and Monterey pine. An additional 17 species have potential to occur within the BSA based upon known ranges, habitat preferences, species occurrence records from the vicinity of the BSA, and presence of suitable habitat. These species typically bloom in the spring and/or summer and were not identifiable during the time of the fall 2017 surveys. Maintenance activities would involve routine trimming of the vegetation and removal of sediment within suitable habitat for special status plant species. If present, special status plant species could be impacted by directly trimming individuals or removing individuals during the sediment removal process. Removal of special status trees, Monterey cypress and Monterey pine, is not proposed as part of routine would only occur if necessary, and would be selectively performed to remove obstructions from the channel; maintenance activity; however, impacts to these species could also occur during trimming/pruning of individuals. We recommend the following measures to reduce the potential for impacts to special status plant species:

1. *Pre-activity Survey for Special Status Plant Species (All Maintenance Sites)*

Prior to the initiation of maintenance activities, one protocol survey for special status plant species, with a focus on state and/or federally listed species, shall be conducted by a qualified botanist within all of the proposed maintenance sites. If any non-listed species special status plant species are detected and it is determined by a qualified botanist that there would not be adverse effects to regional or local population, no further mitigation is required. If impacts to a non-listed plant species is determined to be potentially significant (i.e. would adversely affect a local or regional population), then adherence to measure 2 is required.

If federally and/or state listed plant species are found during the protocol survey, and listed species would be directly impacted by the prescribed maintenance activity, then the boundary of the work area for the maintenance site shall be revised to completely avoid impacting all listed plant species if feasible. Listed plant occurrences that are not within the immediate disturbance footprint shall be flagged with brightly colored flagging or fencing and avoided to protect them from harm. If state or federally listed plant species cannot be avoided, then adherence to measure 2 is required.

2. *Plant Mitigation*

Based on the results of the survey required under measure 1, if federal or state listed plants or non-listed special status plant populations cannot be avoided and will be impacted by proposed maintenance activities, all impacts shall be mitigated by the City at a ratio to be determined by the City (in coordination with CDFW and USFWS as and if applicable), but not less than a ratio of 1:1 (for both area of impact and number of individuals lost) for each species as a component of habitat restoration. A restoration plan shall be prepared by a qualified biologist and submitted to the City for review and approval. (Note: if a federally and/or state listed plant species will be impacted, the restoration plan shall be submitted to the USFWS and/or CDFW for review, and federal and/or state take authorization may be required by these agencies). The restoration plan shall include, at a minimum, the following components:

- Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type)
- Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved]
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values)
- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan).
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule)
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports)
- Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type
- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria
- Notification of completion of compensatory mitigation and agency confirmation
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism)

3. *Special Status Tree Trimming/Removal (Sites 1, 2, 5, 9, 10, 11, 12, 15, 16, 17, 19, 21, 23, 31, 33, 36, 37, and 38)*

To minimize the potential for death or decline of special status tree species, avoid removal, trimming and/or pruning of Monterey pine and Monterey cypress trees to the extent feasible. If trimming or pruning of Monterey pine or Monterey cypress trees is necessary, it shall be conducted to International Society of Arboriculture and American National Standards Institute standards for tree trimming. If removal is necessary, removed trees shall be mitigated by planting replacement trees of the same species at a 2:1 ratio in City open spaces. Replacement trees shall be planted in open space adjacent to the tree removal site where feasible.

5.1.2 Special Status Wildlife

Eight special status wildlife species have potential to occur within the BSA based upon known ranges, habitat preferences, species occurrence records in the vicinity of the BSA, and presence of suitable habitat. No individuals or sign of these special status species were observed within the BSA during the reconnaissance surveys; however western pond turtle was observed within the vicinity of the BSA and is likely present at Sites 27, 30, and 31. Nesting special status bird species and/or nesting migratory birds protected under CFGC may occur at any one of the proposed maintenance sites. Proposed maintenance activities could result in direct impacts to special status wildlife species and nesting migratory birds during vegetation clearing, vehicle/equipment use on site, or sediment removal. Impacts to special status wildlife could be considered significant under CEQA. Impacts to non-special status migratory birds would not be considered significant under CEQA; however, this would be a violation of CFGC.

Suitable aquatic breeding habitat for listed species CRLF and CTS and Species of Special Concern Coast Range newt is not present within the BSA and both species are expected only to occur transiently at Sites 27 and 28 during periods of wet weather. Marginal nesting habitat is present at Sites 30 and 31, and suitable foraging habitat is present at Sites 27, 28, 29, and 34. The project could result in direct impacts to these species if individuals are present within the Project Area during maintenance activities, and those impacts could be considered significant under CEQA.

Two-stripe garter snake and coast horned lizard could potentially occur within woodland or grassland habitat throughout the BSA. Additionally, northern California legless lizard could occur at Sites 29, 30, 31, and 34. The project could result in direct impacts to these species if present within the Project Area during maintenance activities and those impacts could be considered significant under CEQA.

Potential indirect impacts to special status species includes temporary loss of foraging habitat after vegetation clearing or trimming and sediment removal. Due to the somewhat disturbed condition of the sites within the BSA and their limited area within the watershed as a whole, the temporary loss of foraging habitat potential created by maintenance activities is not likely to have a substantial impact to foraging habitat for these species. Direct significant impacts to special status wildlife species and violations of CFGC due to implementation of the proposed project could be avoided with the incorporation of the mitigation/avoidance measures detailed below:

4. *Non-listed Special Status Animal Species Avoidance and Minimization (All Sites)*

The following measures are recommended to avoid or minimize impacts to non-listed special status species:

- Worker Environmental Awareness Program (WEAP). Prior to initiation of maintenance activities under the SDMP (including staging and mobilization), all personnel associated with the maintenance activity(ies) shall attend a programmatic Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in recognizing special status biological resources with potential to occur onsite. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of the maintenance activity(ies) and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with maintenance activities. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to the City to document compliance. The WEAP training materials shall be kept at the City Department of Public Works and any subsequent trainings for new workers shall be administered by the City. A copy of the training handout shall be kept onsite during maintenance activities.
- Pre-activity Survey for Special Status Wildlife Species. A qualified biologist shall conduct a pre-activity survey for non-listed special status wildlife species within a proposed maintenance site(s) within one week of maintenance activities, if suitable habitat was herein identified at the site. Target species include: western pond turtle, northern California legless lizard, coast horned lizard, two-striped garter snake, and Coast Range newt. If a non-listed special status species is detected during the survey, maintenance activities shall not occur until the individual has left the site or has been relocated to the nearest appropriate habitat by a qualified biologist, as feasible.
- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged.
- Maintenance activities shall be restricted to daylight hours.
- All vehicle maintenance/fueling/staging shall occur not less than 50 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.

5. *Endangered/Threatened Species Avoidance and Minimization (Sites 27, 28, 30, and 31)*

The following measures are recommended to avoid or minimize impacts to listed special status species:

- All maintenance occurring within/adjacent to Sites 27 and 28 (including riparian habitats and wetlands) shall be completed between April 1 and October 31, if feasible, to avoid impacts to California red-legged frog and California tiger salamander.
- Pre-activity Survey for CTS and/or CRLF. If maintenance activities are proposed for the Wilson Road Detention Basin (Site 27), Lower Ragsdale Detention Basin (Site 28), Roberts Lake (Site 30), or Laguna Del Rey (Site 31) while water is present, a qualified biologist shall conduct a pre-activity survey for CTS and/or CRLF within the proposed maintenance site(s) within 48 hours of maintenance activities. For CRLF, the survey shall consist of both a daytime and nighttime component.
- If a CRLF or CTS is detected during the survey, the City shall consult with CDFW and the USFWS. Maintenance activities shall not occur until the individual has left the site. If CRLF or CTS is to be relocated to the nearest appropriate habitat, this can only occur if CDFW and/or USFWS have issued formal take authorization, and the relocation is conducted by a CDFW- and/or USFWS-approved biologist. No endangered/threatened species shall be captured and relocated without express permission from the CDFW, NMFS, and/or USFWS.
- A qualified biologist shall be present during all onsite work to monitor for CTS and CRLF during maintenance at Sites 27 and 28.
- If at any time during maintenance activities an endangered/threatened species enters the maintenance site or otherwise may be impacted by the project, all maintenance activities shall cease. A qualified biologist shall document the occurrence and consult with CDFW and USFWS, as appropriate, to determine whether it was safe for maintenance activities to resume.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.

6. *Pre-construction Surveys for Nesting Birds for Construction Occurring within Nesting Season (All Sites)*

For proposed maintenance activities that require the removal of trees or vegetation that may contain a nesting bird, maintenance activities shall occur outside of the nesting season wherever feasible (September 16 to January 31). If maintenance activities must occur during the nesting season (February 1 to September 15), surveys for nesting birds, and specific surveys for nesting tricolored blackbird at Sites 30 and 31, shall be conducted by a qualified biologist no more than 14 days prior to vegetation removal. The surveys shall include the entire maintenance activity area plus a 200-foot buffer around the site. If active nests are located, all maintenance work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the maintenance activities occurring in the vicinity of the nest. The buffer area may be reduced with consultation and approval from CDFW. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer.

A report of these preconstruction nesting bird surveys shall be submitted to the City to document compliance within 30 days of its completion.

5.2 Sensitive Plant Communities

The proposed project would have a significant effect on biological resources if it would:

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

One sensitive natural community list by CDFW was identified within the BSA: Monterey pine forest. Monterey pine forest occurs within three sites: 9, 12, and 16. Additionally, riparian communities are present throughout the BSA associated with the drainages and streams. Riparian and wetland vegetation is also present within most of the maintenance sites, and is generally considered a sensitive habitat. Maintenance activities such as vegetation trimming or removal and sediment removal could impact vegetation within a sensitive natural community. We recommend the following measures to reduce the potential for impacts to special status plant species:

7. Riparian/Wetland Vegetation Trimming/Removal (All Sites)

If removal of riparian vegetation is necessary, non-native species and invasive species shall be targeted to the maximum extent feasible. Removed invasive species shall be contained to prevent spread and taken to an appropriate facility for disposal. Areas of wetland vegetation shall be identified prior to maintenance activities. To minimize impacts to wetland vegetation, native wetland vegetation shall be trimmed instead of removed to the maximum extent feasible.

- To reduce the risk of spreading invasive weeds, all tools, equipment, vehicles, clothing, boots, and other gear shall be cleaned prior to entering and again before exiting the site. Removed weed materials shall be placed in closed containers for disposal.
- To promote the establishment of native cover species, all temporarily disturbed areas requiring bank stabilization shall be seeded or planted with a mix of locally native species upon completion of work.
- Where feasible in channels adjacent to open space parcels, large diameter woody debris (logs) shall be relocated into uplands and retaining onsite as habitat.

Additionally, Measure 2 above will reduce impacts to sensitive plant communities within the BSA.

5.3 Jurisdictional Waters and Wetlands

The proposed project would have a significant effect on biological resources if it would:

- 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.*

Approximately 0.47 acre of wetland waters of the U.S., 2.37 acres/6,633 linear feet of non-wetland waters of the U.S., and 7.7 acres/6,602 linear feet of waters of the State, streambed, banks and riparian habitat were delineated within the BSA. Proposed maintenance would impact federally

protected wetlands and waters of the U.S. and State if vegetation removal and/or sediment removal is to occur within the wetlands or waters. The following measures are recommended to reduce the potential for impacts to jurisdictional waters:

8. *Work within Jurisdictional Areas (All Sites)*

- No work shall be completed without securing authorization from the applicable regulatory agencies (USACE, RWQCB, and/or CDFW).
- Ground disturbance shall be limited to the minimum necessary to complete the maintenance activity. The limits of disturbance for the maintenance activity shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance. Temporary BMPs for erosion and sediment control, such as staked fiber rolls, secured jute netting, secure cover to prevent rainfall erosivity, native seeding or hydroseeding, and the like may be utilized where identified necessary to assist with ground disturbed areas needing temporary stabilization.
- All vehicle maintenance/fueling/staging shall occur not less than 50 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.

9. *Restoration for Impacts to Jurisdictional Areas (All Sites)*

- Impacts to jurisdictional areas shall be mitigated through onsite restoration. All temporary impacts to jurisdictional areas shall be fully restored to natural condition. The removal of native trees shall require replacement at a 1:1 ratio either onsite or in adjacent parks and open space as feasible. Removal of more than 20 percent of native vegetation at any one site shall be seeded or planted with a mix of locally native species upon completion of work. Higher mitigation ratios may be required by regulatory agencies.
- Sediment removal shall not alter the natural contours of any channel or jurisdictional feature.

Additionally, Measure 6 above will reduce impacts to jurisdictional waters and wetlands within the BSA.

5.4 Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

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

While wildlife could utilize many of the sites within the BSA for movement, the proposed project would not significantly interfere with wildlife movement or impede the uses of wildlife nursery sites. Conversely, the proposed maintenance would improve ability of wildlife to travel through or utilize the sites. Therefore, no measures are recommended.

5.5 Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

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

The BSA includes trees within City greenbelts and other public areas. These trees may be impacted by maintenance activities if they will be pruned or removed. As condition of approval any project with the potential to prune or remove trees from public areas will require a permit from the City Forester. With the appropriate permit, pruning and removal of public trees would not have a significant affect.

Additionally, Chapter 31.5 of the City of Monterey's Municipal Code regulates urban storm water quality and discharge management control, and includes Code Section 31.5-18 Watercourse Protection. In part, this code requires that protections be considered in the maintenance of watercourses, and stipulates a property owner or lessee shall not remove healthy bank vegetation beyond that actually necessary for maintenance, or remove said vegetation in such a manner as to increase the vulnerability of the watercourse to erosion. Also, watercourse protection is required to be identified in the development planning stage through which a watercourse passes, "...in order to retain creeks, wetlands, and riparian areas that provide habitat and to remediate degraded water quality." This includes the preservation of setbacks from creeks, wetlands, and riparian habitats in compliance with applicable local, state, and federal laws and regulatory permit authorities, such as the U.S. Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB)/Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Monterey Bay National Marine Sanctuary (MBNMS), and others as applicable.

Lastly, the City of Monterey General Plan outlines multiple programs, goals, and policies for the protection of the City's wooded canyons and drainages and supports maintenance that doesn't present environmental impacts to those waterways. Urban Design Element program 'c.' speaks to the interconnecting system of canyons being vital to natural drainage and wildlife habitat in the City; and, policy c.1. speaks to maintaining the canyons and their native vegetation throughout their lengths.

Conservation Element program b. Water Quality speaks to City efforts to manage storm water runoff with policy b.1. stating the need to protect creeks, lakes, wetlands, beaches, and Monterey Bay from pollutants, and policies b.3. and b.4. minimizing removal of vegetation in areas particularly susceptible to erosion, and retaining and restoring wetlands, riparian areas, and other habitats, which provide remediation for degraded water quality. Program d. Flora and Fauna and Marine Resources, states a goal to protect the character and composition of existing native vegetative communities through conserving, managing, and restoring habitats for endangered species, and protect biological diversity represented by special-status plant and wildlife species. Some of policies of this program include, but are not limited to:

- Protect existing sensitive habitats by careful planning to avoid and/or mitigate significant impacts to habitat areas identified as having high and moderate biological values, and,
- Protecting and managing habitats that support special-status species, are of high biological diversity, or are unusual or regionally restricted. Prepare biotic reports or habitat management plans as needed to ensure protection of habitat values.

The Open Space Element includes programs for the use and protection of the City’s waterways, including lakes and streams. Policy d.3. states to maintain the lakes and waterways as flood control features, and Policy d.4 protects native plants, animals, and native habitats in Lake El Estero, Del Monte Lake, and Laguna Grande Lake. Policy e. recognizes the intermittent streams flowing through the City with a Goal to ensure streams continue to function as natural flood control channels and habitat for native plants and animals.

Public Facilities Element Program I. Storm Drain has a goal to continue to improve drainage and urban runoff quality throughout the City through the implementation of applicable water quality regulations. It also supports continuing Monterey’s status as a regional lead agency for storm water management programs.

With the implementation of the policies and programs described above, there would be no conflicts with local policies or ordinances.

5.6 Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

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

There are no HCPS, NCCPs, or other similar plans that govern activities in the BSA. Therefore, there would be no conflict and no measures are recommended.

Table 6 Temporary Impacts by Project Site

Site #	Site Name	Mitigation Measure	Summary
1	Culvert B03-H1	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
2	Culvert D03-H4	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
3	Culvert D03-H6	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
5	Culvert E04-H3	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
6	Culvert E04-H4	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
8	Culvert E03-H3	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas

Site #	Site Name	Mitigation Measure	Summary
9	Culvert F02-H3	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
10	Culvert F02-H2	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
11	Culvert F03-H1	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
12	Culvert G02-H2	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
15	Culvert F03-H2	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
16	Culvert F04-H2	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
17	Culvert G03-H6	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
18	Culvert G03-H9	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
19	Culvert F04-H4	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
20	Majors Creek	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
21	Culvert F04-I7	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
22	Culverts E05-H1 and F05-H2	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas

City of Monterey
City of Monterey Storm Drainage Maintenance Plan Project

Site #	Site Name	Mitigation Measure	Summary
23	Iris Canyon	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
27	Wilson Road Detention Basin	1, 2, 4, 5, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, endangered/threatened species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
28	Lower Ragsdale Detention Basin	1, 2, 4, 5, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization endangered/threatened species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
29	Virgin/Grant St. Swale	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
30	Outfall D09-O1	1, 2, 3, 4, 5, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization endangered/threatened species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
31	Outfall C08-E1	1, 2, 4, 5, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization endangered/threatened species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
33	Garden Court Basin	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
34	Encina Ave/Myers St. Swale	1, 2, 4, 6, 7, 8	Rare plant surveys and mitigation, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
36	Culvert D02-H3	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
37	Culvert G05-H2	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas
38	San Bernabe to Alameda Sewer Easement	1, 2, 3, 4, 6, 7, 8	Rare plant surveys and mitigation, tree trimming, special status species avoidance and minimization, nesting bird survey, riparian/wetland vegetation trimming/removal, work within jurisdictional areas

6 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period for most special status plant species, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDDB RareFind5, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDDB, may vary with regard to accuracy and completeness. In particular, the CNDDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

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Appendix A

Regulatory Setting

Regulatory Setting

Special status habitats are vegetation types, associations, or sub-associations that support concentrations of special status plant or animal species, are of relatively limited distribution, or are of particular value to wildlife.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g. Audubon Society, CNPS, The Wildlife Society), and the scientific community.

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States);
- Central Coast Regional Water Quality Control Board (waters of the State);
- U.S. Fish and Wildlife Service (federally listed species and migratory birds);
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; Species of Special Concern; nesting birds);

U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters (typically a navigable water). The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through avoidance and minimization to the extent practicable, followed by compensatory mitigation involving creation or enhancement of similar habitats.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and the local Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements

(WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The RWQCB administers actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

United States Fish and Wildlife Service

The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 et seq.). Generally, the USFWS implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is restricted to direct mortality of a listed species and the law does not prohibit indirect harm by way of habitat modification. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated.

The CDFW also enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibits take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided.

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal Migratory Bird Treaty Act. CDFW administers these requirements.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species in special consideration when

decisions are made concerning the development of natural lands. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 *et seq.*). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Perennial, intermittent, and ephemeral streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 *et seq.* of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over activities that divert, obstruct, or alter the channel, bed, or bank of any river, stream or lake.

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Appendix B

Site Photographs



Site 1. View from inlet culvert looking upstream (west).



Site 2. Upstream reach, facing upstream, from culvert. North bank (right side in photo) adjoins private property.



Site 3. Downstream reach, facing downstream, approximately parallel to Madison Street.



Site 5. Culvert outlet east of Pacific near library, facing structure. The outlet is armored for about 20 feet.



Site 6. Downstream reach of stream just above confluence with Hartnell Creek. Note walls and retaining structures on banks.



Site 8. Outfall and downstream reach of stream below the culvert under Via Paraiso, facing upstream toward the road.



Site 9. Upstream reach looking upstream from Culvert F02-H3.



Site 10. Upstream reach, facing upstream from culvert F02-H2.



Site 11. Inlet at F03-H1.



Site 12. Both tributary channels viewed from culvert under Skyline Drive near Forest Knoll Road.



Site 15. Channel condition upstream of culvert F03-H2 inlet, facing upstream.



Site 16. Channel condition facing upstream from culvert at Alameda.



Site 17. Upstream reach, facing downstream along Via Esperanza.



Site 18. Upstream reach facing downstream at culvert under San Bernabe.



Site 19. Channel below outlet of Structure F04-H4 facing downstream.



Site 20. The southern reach of Major Sherman Creek at Del Monte Center supports wetland vegetation. Viewed facing north.



Site 21. Roadside ditch that catches seep water, looking west toward upstream reach of stream.



Site 22. Downstream reach, viewed looking upstream from structure E05-H1.



Site 23. Reach upstream of Via Mirada, looking upstream from structure E05-H4.



Site 27. Wilson Road basin, looking northeast toward corner of York and Wilson Roads.



Site 28. Lower Ragsdale basin - lower of two basins. Wetland vegetation is dominant in the floor.



Site 29. Stormwater treatment project near Virgin and Grant Streets. Swale would be maintained.



Site 30.



Site 31. The outlet channel has recruited dense emergent vegetation which may obstruct flow from the outfall during storms. Vegetation on the north bank is primarily blackberry.



Site 33. Garden Ct. Basin - looking toward Hwy 68.



Site 34. Swale, looking toward Laguna Grande.



Site 36. Upstream reach near road, looking upstream.



Site 37. Upstream reach, looking toward Glenwood Circle. Vegetation obscures channel. Sewer easement also present.



Site 38. Sewer easement facing upstream.

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Appendix C

Floral and Faunal Compendium

Plant Species Observed Within the Study Area During Reconnaissance Surveys

Scientific Name	Common Name	Status	Native or Introduced
Plants			
Trees			
<i>Acacia dealbata</i>	silver wattle		Introduced
<i>Acacia melanoxylon</i>	blackwood acacia		Introduced
<i>Acer negundo</i>	box elder		Native
<i>Arctostaphylos sp.</i>	manzanita		Native
<i>Cercis occidentalis</i>	redbud		Native
<i>Cupressus sp.</i>	cypress		Introduced
<i>Eucalyptus globulus</i>	blue gum		Introduced
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	CRPR 1B.2	Native
<i>Ilex aquifolium</i>	English holly		Introduced
<i>Malus sp.</i>	crabapple		Introduced
<i>Myoporum laetum</i>	lollipop tree		Planted
<i>Pinus radiata</i>	Monterey pine	CRPR 1B.1	Native
<i>Pittosporum undulatum</i>	Victorian box		Introduced
<i>Populus trichocarpa</i>	black cottonwood		Native
<i>Prunus cerasifera</i>	cherry plum		Introduced
<i>Prunus ilicifolia</i>	holly-leaf cherry		Native
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	coast live oak		Native
<i>Salix laevigata</i>	red willow		Native
<i>Sequoia sempervirens</i>	coast redwood		Native
<i>Ulmus sp.</i>	elm		Planted
<i>Umbellularia californica</i>	California bay laurel		Native
Shrubs			
<i>Artemisia californica</i>	California sagebrush		Native
<i>Baccharis pilularis</i>	coyote brush		Native
<i>Ceanothus sp.</i>	ceanothus		Introduced
<i>Cotoneaster lacteus</i>	cotoneaster		Introduced
<i>Echium candicans</i>	pride-of-Madeira		Introduced
<i>Frangula californica</i>	coffeeberry		Native
<i>Garrya elliptica</i>	silk tassel		Native
<i>Genista monspessulana</i>	French broom		Introduced
<i>Grevillea sp.</i>	grevillea shrub		Introduced (Planted)
<i>Heteromeles arbutifolia</i>	toyon		Native
<i>Lonicera hispidula</i>	honeysuckle		Native
<i>Lonicera japonica</i>	honeysuckle		Introduced
<i>Lupinus albifrons</i>	bush lupine		Native
<i>Lupinus chamissonis</i>	silver bush lupine		Native
<i>Mimulus aurantiacus</i>	sticky monkeyflower		Native

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Scientific Name	Common Name	Status	Native or Introduced
<i>Morella californica</i>	wax myrtle		Native
<i>Pelargonium sp.</i>	garden geranium		Introduced
<i>Rhus integrifolia</i>	lemonade berry		Native
<i>Ribes sanguineum</i>	pink-flowered gooseberry		Native
<i>Ribes speciosum</i>	fuchsia-flowered gooseberry		Native
<i>Rosa californica</i>	California wild rose		Native
<i>Rosa sp.</i>	rose		Undetermined
<i>Rubus armeniacus</i>	Himalayan blackberry		Introduced
<i>Rubus leucodermis</i>	white bark raspberry		Native
<i>Rubus ursinus</i>	California blackberry		Native
<i>Salvia mellifera</i>	black sage		Native
<i>Sambucus nigra ssp. caerulea</i>	blue elderberry		Native
<i>Symphoricarpos mollis</i>	snowberry		Native
<i>Toxicodendron diversilobum</i>	western poison oak		Native
<i>Vaccinium ovatum</i>	California huckleberry		Native
Herbs			
<i>Amaryllis belladonna</i>	naked ladies		Introduced
<i>Artemisia douglasiana</i>	mugwort		Native
<i>Baccharis douglasii</i>	marsh baccharis		Native
<i>Berula erecta</i>	water parsnip		Native
<i>Calystegia macrostegia ssp. cyclostegia</i>	morning glory		Native
<i>Cardamine oligosperma</i>	bittercress		Native
<i>Carduus pycnocephalus</i>	Italian thistle		Introduced
<i>Carex barbarae</i>	Santa Barbara sedge		Native
<i>Carex sp.</i>	sedge		Undetermined
<i>Carpobrotus chilensis</i>	Chilean sea fig		Introduced
<i>Cirsium vulgare</i>	bull thistle		Introduced
<i>Clinopodium douglasii</i>	yerba buena		Native
<i>Conium maculatum</i>	poison hemlock		Introduced
<i>Convolvulus arvensis</i>	bindweed		Introduced
<i>Cotula coronopifolia</i>	brass buttons		Introduced
<i>Crocosmia x crocosmiiflora</i>	montbretia		Introduced
<i>Cyperus eragrostis</i>	flat sedge		Native
<i>Cyperus papyrus</i>	papyrus reed		Introduced (Planted)
<i>Delairea odorata</i>	cape-ivy		Introduced
<i>Dipsacus fullonum</i>	common teasel		Introduced
<i>Dittrichia graveolens</i>	stinkwort		Introduced
<i>Dryopteris arguta</i>	wood fern		Native
<i>Eleocharis macrostachya</i>	spikerush		Native

Scientific Name	Common Name	Status	Native or Introduced
<i>Epilobium brachycarpum</i>	willow-herb		Native
<i>Epilobium ciliatum</i>	willow-herb		Native
<i>Epipactis helleborine</i>	broad-leaved helleborine		Introduced
<i>Equisetum arvense</i>	common horsetail		Native
<i>Erigeron bonariensis</i>	flax-leaved horseweed		Introduced
<i>Erigeron canadensis</i>	horseweed		Native
<i>Erigeron sp.</i>	daisy		Undetermined
<i>Eschscholzia californica</i>	California poppy		Native
<i>Euphorbia peplus</i>	petty spurge		Introduced
<i>Foeniculum vulgare</i>	fennel		Introduced
<i>Fragaria vesca</i>	woodland strawberry		Native
<i>Galium sp.</i>	bedstraw		Undetermined
<i>Geranium molle</i>	dovefoot geranium		Introduced
<i>Geranium sp.</i>	geranium		Undetermined
<i>Hedera helix</i>	English ivy		Introduced
<i>Helenium puberulum</i>	sneezeweed		Native
<i>Heliotropium curassavicum</i>	heliotrope		Native
<i>Helminthotheca echioides</i>	bristly ox-tongue		Introduced
<i>Heracleum maximum</i>	cow parsnip		Native
<i>Hirschfeldia incana</i>	perennial mustard		Introduced
<i>Hydrocotyle ranunculoides</i>	pennywort		Native
<i>Hypochaeris glabra</i>	smooth cat's ear		Introduced
<i>Hypochaeris radicata</i>	hairy cat's ear		Introduced
<i>Ipomoea sp.</i>	white morning glory		Introduced
<i>Iris pseudacorus</i>	yellowflag iris		Introduced
<i>Iris germanica</i>	bearded iris		Introduced
<i>Iris sp.</i>	iris		Undetermined
<i>Isolepis cernua</i>	Low bulrush		Native
<i>Juncus effusus</i>	soft rush		Native
<i>Juncus mexicanus</i>	curly rush		Native
<i>Juncus patens</i>	spreading rush		Native
<i>Juncus phaeocephalus</i>	brown-headed rush		Native
<i>Lactuca serriola</i>	prickly lettuce		Introduced
<i>Lathyrus sp.</i>	wild pea		Undetermined
<i>Lemna sp.</i>	duckweed		Native
<i>Lepidium didymum</i>	swinecress		Introduced
<i>Lysimachia arvensis</i>	scarlet pimpernel		Introduced
<i>Lythrum hyssopifolium</i>	hyssop loosestrife		Introduced
<i>Madia sativa</i>	coast tarweed		Native
<i>Marah fabacea</i>	man-root		Native

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Scientific Name	Common Name	Status	Native or Introduced
<i>Medicago polymorpha</i>	bur clover		Introduced
<i>Muehlenbeckia complexa</i>	maidenhair vine		Introduced
<i>Myosotis latifolia</i>	common forget-me-not		Introduced
<i>Nasturtium officinale</i>	water cress		Native
<i>Oxalis corniculata</i>	sorrel		Introduced
<i>Parietaria judaica</i>	pellitory		Introduced
<i>Plantago coronopus</i>	plantain		Introduced
<i>Plantago lanceolata</i>	English plantain		Introduced
<i>Plantago major</i>	common plantain		Introduced
<i>Polygonum aviculare</i>	common knot weed		Introduced
<i>Polystichum munitum</i>	western sword fern		Native
<i>Potentilla anserina</i>	Pacific silverweed		Native
<i>Pseudognaphalium luteoalbum</i>	cudweed		Introduced
<i>Pteridium aquilinum</i>	bracken fern		Native
<i>Raphanus sativus</i>	Wild radish		Introduced
<i>Rumex acetosella</i>	sheep sorrel		Introduced
<i>Rumex crispus</i>	curly dock		Introduced
<i>Rumex sp.</i>	dock		Undetermined
<i>Schoenoplectus californicus</i>	southern bulrush		Native
<i>Scirpus microcarpus</i>	small-seeded rush		Native
<i>Scrophularia californica</i>	California figwort		Native
<i>Senecio glomeratus</i>	cutleaf burnweed		Introduced
<i>Senecio sp.</i>	ragwort		Undetermined
<i>Solanum americanum</i>	American nightshade		Native
<i>Solanum douglasii</i>	Douglas' nightshade		Native
<i>Sonchus asper</i>	prickly sow thistle		Introduced
<i>Sonchus oleraceus</i>	common sow thistle		Introduced
<i>Sparganium eurycarpum</i>	bur reed		Native
<i>Stachys bullata</i>	wood mint; hedge nettle		Native
<i>Stellaria media</i>	common chickweed		Introduced
<i>Tetragonia tetragonioides</i>	New Zealand spinach		Introduced
<i>Triteleia laxa</i>	Ithuriel's spear		Native
<i>Tropaeolum majus</i>	garden nasturtium		Introduced
<i>Typha latifolia</i>	broad-leaved cattail		Native
<i>Urtica dioica</i>	stinging nettle		Native
<i>Vicia sativa ssp. sativa</i>	winter vetch		Introduced
<i>Vinca major</i>	periwinkle		Introduced
<i>Woodwardia fimbriata</i>	giant chain fern		Native
<i>Zantedeschia aethiopica</i>	calla lily		Introduced

Scientific Name	Common Name	Status	Native or Introduced
Grasses			
<i>Agrostis sp.</i>	bent grass		Introduced
<i>Avena barbata</i>	slender wild oat		Introduced
<i>Avena fatua</i>	wild oat		Introduced
<i>Briza maxima</i>	Rattlesnake grass		Introduced
<i>Briza minor</i>	small quaking grass		Introduced
<i>Bromus carinatus</i>	California brome		Introduced
<i>Bromus catharticus</i>	Rescue Grass		Native
<i>Bromus diandrus</i>	ripgut brome		Native
<i>Bromus hordeaceus</i>	soft chess		Native
<i>Cortaderia jubata</i>	jubata grass		Introduced
<i>Cynosurus echinatus</i>	hedgehog dogtail		Native
<i>Dactylis glomerata</i>	orchard grass		Introduced
<i>Ehrharta erecta</i>	panic veldtgrass		Introduced
<i>Elymus condensatus</i>	giant wild rye		Introduced
<i>Elymus glaucus</i>	blue wild rye		Introduced
<i>Elymus triticoides</i>	creeping wild rye		Introduced
<i>Festuca arundinacea</i>	tall fescue		Native
<i>Festuca elmeri</i>	Elmer's fescue		Introduced
<i>Festuca myuros</i>	rattail fescue		Introduced
<i>Festuca perennis</i>	ryegrass		Introduced
<i>Gastridium ventricosum</i>	nit grass		Introduced
<i>Holcus lanatus</i>	common velvet grass		Introduced
<i>Hordeum murinum</i>	wall barley		Native
<i>Melica sp.</i>	melic grass		Introduced
<i>Pennisetum clandestinum</i>	Kikuyu grass		Introduced
<i>Phalaris aquatica</i>	Harding grass		Introduced
<i>Polypogon interruptus</i>	beardgrass		Introduced
<i>Polypogon monspeliensis</i>	rabbitsfoot grass		Introduced
<i>Polypogon viridis</i>	water beard grass		Introduced
<i>Stipa pulchra</i>	purple needlegrass		Native

Animal Species Observed Within the Study Area During Reconnaissance Surveys

Scientific Name	Common Name	Status	Native or Introduced
Birds			
<i>Corvus brachyrhynchos</i>	American crow		Native
<i>Aphelocoma californica</i>	California scrub-jay		Native
<i>Melanerpes formicivorus</i>	acorn woodpecker		Native
<i>Haemorhous mexicanus</i>	house finch		Introduced
<i>Calypte anna</i>	Anna's hummingbird		Native
<i>Bubo virginianus</i>	great horned owl		Native
<i>Columba livia</i>	rock pigeon		Introduced
Mammals			
<i>Thomomys bottae</i>	Botta's pocket gopher		Native
<i>Procyon lotor</i>	raccoon		Native
<i>Odocoileus hemionus</i>	black- tailed deer		Native

Appendix D

Special Status Species Evaluation Tables

Special Status Plant and Lichen Species in the Regional Vicinity (Seven Quad) of the Survey Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Agrostis lacuna-vernalis</i> vernal pool bent grass	None/None G1/S1 1B.1	Vernal pools. In mima mound areas or on the margins of vernal pools. 125-150 m. annual herb. Blooms Apr-May	Not Expected	No vernal pools were observed in the BSA. Species not expected to occur on site.
<i>Allium hickmanii</i> Hickman's onion	None/None G2/S2 1B.2	Closed-cone coniferous forest, chaparral, coastal scrub, coastal prairie, cismontane woodland. Sandy loam, damp ground and vernal swales; mostly in grassland though can be associated with chaparral or woodland. 5-200 m. perennial bulbiferous herb. Blooms Mar-May	Moderate	Suitable closed-cone coniferous forest, coastal scrub, cismontane woodland adjacent to work areas; however no disturbance is expected to occur in those habitats. Suitable grassland habitat with damp ground and vernal swales was observed within some of the work areas. CNDDB documents 14 occurrences of this species within a 5-miles radius of the approximate center of the project (2018). Species has moderate potential to occur on site.
<i>Arctostaphylos edmundsii</i> Little Sur manzanita	None/None G2/S2 1B.2	Coastal bluff scrub, chaparral. Forming mounds on sandy terraces on ocean bluffs. 30-95 m. perennial evergreen shrub. Blooms Nov-Apr(May)	Not Expected	No suitable coastal bluff scrub habitat observed in the BSA. Additionally, species is a perennial shrub readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.
<i>Arctostaphylos hookeri</i> <i>ssp. hookeri</i> Hooker's manzanita	None/None G3T2/S2 1B.2	Chaparral, coastal scrub, closed-cone coniferous forest, cismontane woodland. Sandy soils, sandy shales, sandstone outcrops. 30-550 m. perennial evergreen shrub. Blooms Jan-Jun	Not Expected	Suitable closed-cone coniferous forest and cismontane woodland habitat adjacent to work areas; however no disturbance is expected to occur in those habitats. Additionally, species is a perennial shrub readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.
<i>Arctostaphylos montereyensis</i> Toro manzanita	None/None G2?/S2? 1B.2	Chaparral, cismontane woodland, coastal scrub. Sandy soil, usually with chaparral associates. 45-765 m. perennial evergreen shrub. Blooms Feb-Mar	Not Expected	Suitable cismontane woodland and coastal scrub habitat adjacent to work areas; however no disturbance is expected to occur in those habitats. Additionally, species is a perennial shrub readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	None/None G1/S1 1B.1	Chaparral. Sandy soils. 30-155 m. perennial evergreen shrub. Blooms Dec-Mar	Not Expected	No suitable chaparral habitat observed in the BSA. Additionally, species is a perennial shrub readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.
<i>Arctostaphylos pumila</i> sandmat manzanita	None/None G1/S1 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal dunes, coastal scrub. On sandy soil with other chaparral associates. 3-210 m. perennial evergreen shrub. Blooms Feb-May	Not Expected	Suitable closed cone coniferous forest, cismontane woodland and coastal scrub habitat adjacent to work areas; however no disturbance is expected to occur in those habitats. Additionally, species is a perennial shrub readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.

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Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	None/None G2T2/S2 1B.2	Alkali playa, valley and foothill grassland, riparian wetland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-168 m. annual herb. Blooms Mar-Jun	Low	Suitable grassland and riparian wetland habitats within areas of frequent flooding observed within some of the work areas however, there are no documented occurrences of this species within a 5-mile radius of the approximate center of the project. This species has low potential to occur on site.
<i>Astragalus tener</i> var. <i>titi</i> coastal dunes milk-vetch	Endangered/ Endangered G2T1/S1 1B.1	Coastal bluff scrub, coastal dunes, coastal prairie. Moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean; one site on a clay terrace. 1-45 m. annual herb. Blooms Mar-May	Not Expected	No suitable coastal bluff scrub habitat observed within the BSA. Species not observed during seasonally timed site surveys, therefore species is not expected to occur on site.
<i>Bryoria spiralifera</i> twisted horsehair lichen	None/None G3/S1S2 1B.1	North coast coniferous forest. Usually on conifers. 0-30 m. fruticose lichen (epiphytic).	Not Expected	No suitable north coast coniferous forest habitat observed within the BSA. Perennial species not observed during site surveys, therefore species is not expected to occur on site.
<i>Castilleja ambigua</i> var. <i>insalutata</i> pink Johnny-nip	None/None G4T2/S2 1B.1	Coastal bluff scrub, coastal prairie, wetland-riparian. 0-100 m. annual herb (hemiparasitic). Blooms May-Aug	Moderate	Suitable coastal bluff scrub, coastal prairie, and wetland riparian habitats observed within some of the work areas. CNDDDB documents six occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has moderate potential to occur on site.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	None/None G3T2/S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 m. annual herb. Blooms May-Oct(Nov)	Not expected	No alkaline soils observed within the BSA. Species not observed during seasonally timed site surveys, therefore species is not expected to occur on site.
<i>Chorizanthe minutiflora</i> Fort Ord spineflower	None/None G1/S1 1B.2	Coastal scrub, chaparral (maritime). Sandy, openings. 60-145 m. annual herb. Blooms Apr-Jul	Not Expected	No suitable coastal scrub or chaparral with sandy opening observed within the BSA. Species not observed during seasonally timed site surveys. Species is not expected to occur on site.
<i>Chorizanthe pungens</i> var. <i>pungens</i> Monterey spineflower	Threatened/None G2T2/S2 1B.2	Coastal dunes, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Sandy soils in coastal dunes or more inland within chaparral or other habitats. 0-170 m. annual herb. Blooms Apr-Jun(Jul-Aug)	Moderate	Suitable coastal bluff scrub, cismontane woodland, valley and foothill grassland observed within some of the work areas. CNDDDB documents ten occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has moderate potential to occur on site.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	Endangered/None G2T1/S1 1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 9-245 m. annual herb. Blooms Apr-Sep	Not Expected	No suitable cismontane woodlands or coastal scrub habitats with sandy terraces and bluffs observed within the work areas. Species not observed during seasonally timed site surveys and there are no documented occurrences of this species within a 5-mile radius of the approximate center of the project. This species is not expected to occur on site.
<i>Clarkia jolonensis</i> Jolon clarkia	None/None G2/S2 1B.2	Cismontane woodland, chaparral, coastal scrub, riparian woodland. 10-1280 m. annual herb. Blooms Apr-Jun	Moderate	Suitable cismontane woodland, coastal scrub, and riparian woodland observed within some of the work areas. CNDDDB documents four occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has moderate potential to occur on site.
<i>Collinsia multicolor</i> San Francisco collinsia	None/None G2/S2 1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 30-275 m. annual herb. Blooms (Feb)Mar-May	Low	Suitable cismontane woodland and coastal scrub habitat observed within some of the work areas, however sites do not contain suitable soil profiles. CNDDDB documents two occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has low potential to occur on site.
<i>Cordylanthus rigidus</i> ssp. <i>Littoralis</i> seaside bird's-beak	None/Endangered G5T2/S2 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, coastal dunes. Sandy, often disturbed sites, usually within chaparral or coastal scrub. 30-520 m. annual herb (hemiparasitic). Blooms Apr-Oct	Moderate	Suitable closed-cone coniferous forest, cismontane woodland and coastal scrub habitat observed within some of the work areas. CNDDDB documents five occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species not observed during seasonally timed site surveys. Species has moderate potential to occur on site.
<i>Delphinium californicum</i> ssp. <i>interius</i> Hospital Canyon larkspur	None/None G3T3/S3 1B.2	Cismontane woodland, chaparral, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. 195-1095 m. perennial herb. Blooms Apr-Jun	Not expected	Suitable mesic cismontane woodland and coastal scrub habitat observed within some of the work areas, however there are no documented occurrences of this species within a 5-mile radius of the approximate center of the project (CNDDDB 2018). Species is not expected to occur on site.
<i>Delphinium hutchinsoniae</i> Hutchinson's larkspur	None/None G2/S2 1B.2	Broadleafed upland forest, chaparral, coastal prairie, coastal scrub. On semi-shaded, slightly moist slopes, usually west-facing. 15-535 m. perennial herb. Blooms Mar-Jun	Low	Suitable mesic forests, coastal prairie and coastal scrub habitat observed within some of the work areas. CNDDDB documents three occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has low potential to occur on site.
<i>Delphinium umbraculorum</i> umbrella larkspur	None/None G3/S3 1B.3	Cismontane woodland, chaparral. Mesic sites. 215-2075 m. perennial herb. Blooms Apr-Jun	Not expected	Suitable mesic cismontane woodland habitat observed adjacent to some of the work areas. There are no documented occurrences of this species within a 5-mile radius of the approximate center of the project (CNDDDB 2018). Species is not expected to occur on site.

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Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Ericameria fasciculata</i> Eastwood's goldenbush	None/None G2/S2 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal scrub, coastal dunes. In sandy openings. 30-215 m. perennial evergreen shrub. Blooms Jul-Oct	Not expected	Suitable closed cone coniferous forest and coastal scrub habitat with sandy openings adjacent to work areas; however no disturbance is expected to occur in those habitats. Additionally, species is a perennial shrub readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.
<i>Eriogonum nortonii</i> Pinnacles buckwheat	None/None G2/S2 1B.3	Chaparral, valley and foothill grassland. Sandy soils; often on recent burns; western Santa Lucias. 90-975 m. annual herb. Blooms (Apr)May-Aug(Sep)	Not expected	No suitable chaparral or valley and foothill grasslands observed within the BSA. Species not observed during seasonally timed site surveys. Species is not expected to occur on site.
<i>Erysimum ammophilum</i> sand-loving wallflower	None/None G2/S2 1B.2	Chaparral (maritime), coastal dunes, coastal scrub. Sandy openings. 5-130 m. perennial herb. Blooms Feb-Jun	Not expected	No suitable maritime chaparral, coastal dunes, or coastal scrub with sandy openings observed within the BSA. Species is not expected to occur on site.
<i>Erysimum menziesii</i> Menzies' wallflower	Endangered/ Endangered G1/S1 1B.1	Coastal dunes. Localized on dunes and coastal strand. 1-25 m. perennial herb. Blooms Mar-Sep	Not expected	No suitable dunes or coastal strand habitats observed within the BSA. Species not observed during seasonally timed site surveys. Species is not expected to occur on site.
<i>Fritillaria liliacea</i> fragrant fritillary	None/None G2/S2 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-400 m. perennial bulbiferous herb. Blooms Feb-Apr	Not expected	Suitable coastal scrub, valley and foothill grassland, coastal prairie, and cismontane woodland occur within the BSA, however the BSA does not contain suitable soil profiles for this species. Species is not expected to occur on site.
<i>Galium clementis</i> Santa Lucia bedstraw	None/None G3/S3 1B.3	Lower montane coniferous forest, upper montane coniferous forest. Forming soft mats in shady rocky patches; on granite or serpentine; mostly on exposed peaks. 975-1645 m. perennial herb. Blooms (Apr)May-Jul	Not expected	No suitable shady rock patches of granite or serpentine observed within BSA. Species not observed during seasonally timed site surveys. Species is not expected to occur on site.
<i>Gilia tenuiflora ssp. arenaria</i> Monterey gilia	Endangered/ Threatened G3G4T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral (maritime), cismontane woodland. Sandy openings in bare, wind-sheltered areas. Often near dune summit or in the hind dunes; two records from Pleistocene inland dunes. 5-245 m. annual herb. Blooms Apr-Jun	Not expected	No suitable sandy habitat observed within BSA. Species is not expected to occur on site.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Hesperocyparis goveniana</i> Gowen cypress	Threatened/None G1/S1 1B.2	Closed-cone coniferous forest, chaparral. Coastal terraces; usually in sandy soils; sometimes with Monterey pine, bishop pine. 100-125 m. perennial evergreen tree.	Not expected	Suitable closed cone coniferous forest habitat observed adjacent to work areas; however no disturbance is expected to occur in those habitats. Additionally, species is a perennial tree readily identified all year round. Species not observed during site surveys, therefore species not expected to occur.
<i>Hesperocyparis macrocarpa</i> Monterey cypress	None/None G1/S1 1B.2	Closed-cone coniferous forest. Granitic soils. 10-20 m. perennial evergreen tree.	Present	Suitable closed cone coniferous forest habitat observed adjacent to work areas; however no disturbance is expected to occur in those habitats. This species was observed within the BSA during reconnaissance surveys.
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	None/None G4T1?/S1? 1B.1	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 5-430 m. perennial herb. Blooms Apr-Sep	Low	Suitable closed-cone coniferous forest, and coastal scrub habitat with openings with sandy observed within some of the work areas. CNDDB documents four occurrences of this species within a 5-miles radius of the approximate center of the project (2018), however species not observed during seasonally timed site survey. Species has low potential to occur on site.
<i>Horkelia marinensis</i> Point Reyes horkelia	None/None G2/S2 1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m. perennial herb. Blooms May-Sep	Not Expected	Suitable grassland communities observed within some of the work areas, however work areas not on immediate coast. There are no documented occurrences of this species within a 5-miles radius of the approximate center of the project (2018). Species is not expected to occur on site.
<i>Lasthenia conjugens</i> Contra Costa goldfields	Endangered/None G1/S1 1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-450 m. annual herb. Blooms Mar-Jun	Low	Suitable grassland communities within mesic swales and low depressions observed within some of the work areas. There are no documented occurrences of this species within a 5-miles radius of the approximate center of the project (2018). Species has low potential to occur on site.
<i>Layia carnosa</i> beach layia	Endangered/ Endangered G2/S2 1B.1	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m. annual herb. Blooms Mar-Jul	Not Expected	No suitable coastal semi-stabilized dune habitat observed within the BSA. Species not expected to occur on site.
<i>Legenere limosa</i> legenere	None/None G2/S2 1B.1	Vernal pools. In beds of vernal pools. 1-1005 m. annual herb. Blooms Apr-Jun	Not Expected	No vernal pools were observed in the BSA. Species not expected to occur on site.
<i>Lupinus tidestromii</i> Tidestrom's lupine	Endangered/ Endangered G1/S1 1B.1	Coastal dunes. Partially stabilized dunes, immediately near the ocean. 4-25 m. perennial rhizomatous herb. Blooms Apr-Jun	Not Expected	No suitable coastal semi-stabilized dune habitat observed within the BSA. Species not expected to occur on site.

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Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Malacothamnus palmeri</i> <i>var. involucratus</i> Carmel Valley bush- mallow	None/None G3T2Q/S2 1B.2	Cismontane woodland, chaparral, coastal scrub. Talus hilltops and slopes, sometimes on serpentine. Fire dependent. 5-520 m. perennial deciduous shrub. Blooms Apr-Oct	Not Expected	BSA does not contain a suitable soil profile for this species. Perennial species not observed during seasonally timed site survey. Species not expected to occur on site.
<i>Malacothamnus palmeri</i> <i>var. palmeri</i> Santa Lucia bush-mallow	None/None G3T2Q/S2 1B.2	Chaparral. Dry rocky slopes, mostly near summits, but occasionally extending down canyons to the sea. 3-670 m. perennial deciduous shrub. Blooms May-Jul	Not Expected	BSA does not contain a suitable soil profile for this species. Perennial species not observed during seasonally timed site survey. Species not expected to occur on site.
<i>Malacothrix saxatilis</i> <i>var. arachnoidea</i> Carmel Valley malacothrix	None/None G5T2/S2 1B.2	Chaparral, coastal scrub. Rock outcrops or steep rocky roadcuts. 30-1040 m. perennial rhizomatous herb. Blooms (Mar)Jun-Dec	Not Expected	BSA does not contain a suitable soil profile for this species. Perennial species not observed during seasonally timed site survey. Species not expected to occur on site.
<i>Meconella oregana</i> Oregon meconella	None/None G2G3/S2 1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 m. annual herb. Blooms Mar-Apr	Low	Marginal suitable open moist habitat present within the BSA. Species has low potential to occur on site.
<i>Microseris paludosa</i> marsh microseris	None/None G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 3-610 m. perennial herb. Blooms Apr-Jun(Jul)	Low	Suitable closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland habitats observed within the BSA. CNDDDB documents six occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has low potential to occur on site.
<i>Monardella sinuata</i> <i>ssp. nigrescens</i> northern curly-leaved monardella	None/None G3T2/S2 1B.2	Coastal dunes, coastal scrub, chaparral, lower montane coniferous forest. Sandy soils. 10-245 m. annual herb. Blooms (Apr)May-Jul(Aug-Sep)	Low	Suitable coniferous forest habitats with sandy soils observed within the BSA. CNDDDB documents five occurrences of this species within a 5-mile radius of the approximate center of the project (2018). Species has low potential to occur on site.
<i>Monolopia gracilens</i> woodland woollythreads	None/None G3/S3 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, North Coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. 120-975 m. annual herb. Blooms (Feb)Mar-Jul	Not Expected	No suitable grassy sites, in openings with sandy to rocky soils observed within the BSA. No serpentine soils or recent burn sites observed. Species not expected to occur on site.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Pinus radiata</i> Monterey pine	None/None G1/S1 1B.1	Closed-cone coniferous forest, cismontane woodland. Three primary stands are native to California. Dry bluffs and slopes. 60-125 m. perennial evergreen tree.	Present	Species observed within most project sites within suitable cismontane woodland and closed cone coniferous forest habitats. Habitats are adjacent to work areas; however no disturbance is expected to occur in those habitats. Species not expected to be impacted during project implementation.
<i>Piperia yadonii</i> Yadon's rein orchid	Endangered/None G1/S1 1B.1	Closed-cone coniferous forest, chaparral, coastal bluff scrub. On sandstone and sandy soil, but poorly drained and often dry. 10-505 m. perennial herb. Blooms (Feb)May-Aug	Not Expected	Suitable closed cone coniferous habitat with poorly drained, dry and sandy soils adjacent to work areas; however no disturbance is expected to occur in those habitats. Species not expected to occur.
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcorn flower	None/None G3T2Q/S2 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 2-705 m. annual herb. Blooms Mar-Jun	Not Expected	No suitable mesic habitats associated with coastal scrub, chaparral or coastal prairie observed within the BSA. Species not expected to occur.
<i>Plagiobothrys uncinatus</i> hooked popcorn flower	None/None G2/S2 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Sandstone outcrops and canyon sides; often in burned or disturbed areas. 210-855 m. annual herb. Blooms Apr-May	Not Expected	BSA does not contain a suitable soil profile for this species, recent burn sites were not observed. Species not expected to occur on site.
<i>Potentilla hickmanii</i> Hickman's cinquefoil	Endangered/ Endangered G1/S1 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps. Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 5-125 m. perennial herb. Blooms Apr-Aug	Moderate	Suitable mesic sites associated with closed-cone coniferous forest and meadow habitats observed within the BSA. CNDDDB documents three occurrences of this species within a 5-miles radius of the approximate center of the project (2018). Species has moderate potential to occur on site.
<i>Ramalina thrausta</i> angel's hair lichen	None/None G5/S2? 2B.1	North coast coniferous forest. On dead twigs and other lichens. 75-430 m. fruticose lichen (epiphytic).	Not Expected	No suitable north coast coniferous forest habitat observed within the BSA. Perennial species not observed during site surveys, therefore species is not expected to occur on site.
<i>Rosa pinetorum</i> pine rose	None/None G2/S2 1B.2	Closed-cone coniferous forest, cismontane woodland. 5-1090 m. perennial shrub. Blooms May,Jul	Not Expected	Suitable closed cone coniferous forest and cismontane woodland habitat observed adjacent to work areas; however no disturbance is expected to occur in those habitats. Species not observed during site surveys, therefore species not expected to occur.

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Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	None/None G2/S2 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes. 90-750 m. annual herb. Blooms Apr-May	Low	Suitable closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland habitats observed on site. BSA contains areas of loose and disturbed soils derived from sandstone and/or shale. Species has low potential to occur on site.
<i>Tortula californica</i> California screw moss	None/None G2G3/S2S3 1B.2	Chenopod scrub, valley and foothill grassland. Moss growing on sandy soil. 10-1460 m. moss.	Not Expected	No suitable valley and foothill grassland habitat observed within the BSA. Grassland within the BSA is substantially disturbed and does not contain habitat for special status species. Species is not expected to occur on site.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	None/None G2/S2 1B.1	Coastal prairie, broadleafed upland forest, cismontane woodland. Moist grassland. Gravelly margins. 30-550 m. annual herb. Blooms Apr-Oct	Not expected	Suitable habitat is not present within the BSA. Species has low potential to occur on site.
<i>Trifolium hydrophilum</i> saline clover	None/None G2/S2 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 1-335 m. annual herb. Blooms Apr-Jun	Not Expected	No suitable mesic and alkaline habitats observed within the BSA. Species not expected to occur on site.
<i>Trifolium polyodon</i> Pacific Grove clover	None/Rare G1/S1 1B.1	Closed-cone coniferous forest, meadows and seeps, coastal prairie, valley and foothill grassland. Along small springs and seeps in grassy openings. 5-260 m. annual herb. Blooms Apr-Jun(Jul)	Moderate	Suitable mesic sites associated with closed-cone coniferous forest, valley and foothill grasslands, and meadow habitats observed within the BSA. CNDDDB documents nine occurrences of this species with in a 5-miles radius of the approximate center of the project (2018). Species has moderate potential to occur on site.
<i>Trifolium trichocalyx</i> Monterey clover	Endangered/ Endangered G1/S1 1B.1	Closed-cone coniferous forest. Openings, burned areas, and roadsides. Sandy soils. 60-210 m. annual herb. Blooms Apr-Jun	Low	Suitable sandy openings associated with closed-cone coniferous forest habitats observed within the BSA. CNDDDB documents two occurrences of this species with in a 5-miles radius of the approximate center of the project (2018). Species has low potential to occur on site.

Scientific Name Common Name	Status		Habitat Requirements	Potential for Impact	Potential for Occurrence
	Fed/State ESA G-Rank/S-Rank CRPR				

Regional Vicinity refers to within a [5] mile radius of site.

FE = Federally Endangered FT = Federally Threatened

SE = State Endangered ST = State Threatened SR = State Rare

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind3.

CRPR (CNPS California Rare Plant Rank):

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2A=Plants presumed extirpated in California, but more common elsewhere

2B=Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3=Need more information (a Review List)

4=Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension:

.1=Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

Special Status Animal Species in the Regional Vicinity (Five Miles) of the Survey Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Mammals				
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	None/None G3G4/S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in caves and mines, in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Not Expected	The BSA is within urban and suburban habitats, and no caves or mines are present.
<i>Taxidea taxus</i> American badger	None/None G5/S3 SSC	Most abundant in drier open stages of moist shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not Expected	The BSA is surrounded by residential development and does not contain habitat patches large enough to support a predator of this size. No dens large enough for badger were observed in the BSA.
Birds				
<i>Agelaius tricolor</i> tricolored blackbird	None/Threatened G2G3/S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Moderate	Patches of suitable vegetation adjacent to open water are present at site 31, Roberts Lake, and this species is known to occur at Laguna Grande and El Estero Parks.
<i>Athene cunicularia</i> burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not Expected	Open dry sites large enough to support burrowing owl are not present in the BSA.
<i>Buteo regalis</i> ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Not Expected	The BSA is surrounded by development, open grasslands and scrublands are not present.
<i>Charadrius alexandrinus nivosus</i> western snowy plover	Threatened/None G3T3/S2S3 SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Not Expected	Sandy beaches and lake shores are not present.
<i>Coturnicops noveboracensis</i> yellow rail	None/None G4/S1S2 SSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Not Expected	Suitable habitat is present however there is only one historical occurrence in the vicinity (1896).

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Cypseloides niger</i> black swift	None/None G4/S2 SSC	Coastal belt of Santa Cruz and Monterey counties; central & southern Sierra Nevada; San Bernardino & San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.	Not Expected	Cliffs, deep canyons, and/or waterfalls are not present.
<i>Eremophila alpestris actia</i> California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Not Expected	Open plains and meadows are not present.
<i>Falco mexicanus</i> prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Not Expected	Cliffs and open terrain are not present
<i>Laterallus jamaicensis coturniculus</i> California black rail	None/Threatened G3G4T1/S1 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Not Expected	Historical occurrences have been reported in the vicinity and one recent occurrence from 2007 (ebird), however this species is considered a very rare migrant in Monterey.
<i>Oceanodroma homochroa</i> ashy storm-petrel	None/None G2/S2 SSC	Colonial nester on off-shore islands. Usually nests on driest part of islands. Forages over open ocean. Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.	Not Expected	Suitable island nesting habitat is not present.
<i>Pelecanus occidentalis californicus</i> California brown pelican	Delisted/Delisted G4T3/S3 FP	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	Present (foraging only)	This species is known to forage and roost at Roberts Lake (Site 31). Suitable nesting habitat is not present.
<i>Riparia riparia</i> bank swallow	None/Threatened G5/S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Present (foraging only)	This species is known to forage at Roberts Lake. Suitable nesting habitat is not present.

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Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Reptiles				
<i>Anniella pulchra</i> northern California legless lizard	None/None G3/S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	Moderate	This species is known to occur in the vicinity and suitable sandy soils are present.
<i>Emys marmorata</i> western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	High	This species was observed during site surveys at Lagunta Niranda Park across from Site 23 at Iris Canyon.
<i>Phrynosoma blainvillii</i> coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Moderate	This species is known to occur in the vicinity and suitable sandy soils are present.
<i>Thamnophis hammondi</i> two-striped garter snake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Low	Suitable habitat is present at or near sites 4, 5, 20, 23, 30, 31, and 34. However there are no reported occurrences in the vicinity.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander	Threatened/ Threatened G2G3/S2S3 WL	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Low	Suitable aquatic and upland habitat is present within the BSA. Sites 27 and 28 are within one mile of a known occurrence.
<i>Rana boylei</i> foothill yellow-legged frog	None/Candidate Threatened G3/S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Not expected	Suitable rocky substrate stream habitat is not present within the BSA. This species is not expected to occur within the BSA.
<i>Rana draytonii</i> California red-legged frog	Threatened/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Low	Suitable aquatic stream and pond habitat is present within the BSA. The BSA also contains suitable upland habitat. The species has a moderate potential for occurrence.

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
<i>Taricha torosa</i> Coast Range newt	None/None G4/S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	Low	Marginal aquatic pond habitat is present within the BSA; however, stream habitat within the BSA is not suitable for this species. The BSA is not within dispersal distance (1 km) to any known population. This species has low potential for occurrence.
Fish				
<i>Eucyclogobius newberryi</i> tidewater goby	Endangered/None G3/S3 SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Not expected	Suitable brackish water habitat is not present within the BSA
<i>Oncorhynchus mykiss irideus pop. 9</i> steelhead - south-central California coast DPS	Threatened/None G5T2Q/S2	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	Not expected	The BSA does not contain suitable flows or stream habitat for steelhead salmon.
Invertebrates				
<i>Danaus plexippus pop. 1</i> monarch - California overwintering population	None/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Not expected	Suitable wind-protected groves winter roosting sites are not present within the BSA.
<i>Euphilotes enoptes smithi</i> Smith's blue butterfly	Endangered/None G5T1T2/S1S2	Most commonly associated with coastal dunes & coastal sage scrub plant communities in Monterey & Santa Cruz counties. Hostplant: <i>Eriogonum latifolium</i> and <i>Eriogonum parvifolium</i> are utilized as both larval and adult food plants.	Not expected	Suitable coastal dune and sage scrub communities are not present within the BSA. Host plants <i>Eriogonum latifolium</i> and <i>Eriogonum parvifolium</i> were not observed within

Regional Vicinity refers to within a [5] mile radius of site.

FT = Federally Threatened SE = State Endangered

FC = Federal Candidate Species ST = State Threatened

FE = Federally Endangered SR = State Rare

FS = Federally Sensitive SS = State Sensitive

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind3

SC = CDFW Species of Special Concern

FP = Fully Protected

WL = Watch List

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Appendix E

Jurisdictional Delineation Report



City of Monterey Storm Drain Maintenance Plan

Jurisdictional Waters and Wetlands Delineation

prepared for

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Executive Summary

Rincon Consultants, Inc. conducted a jurisdiction waters and wetland delineation on behalf of the City of Monterey (City) for the Storm Drain Maintenance Plan (Project) in Monterey County, California. The delineation was conducted to determine the location and extent of waters and wetlands that are potentially subject to regulation under the federal Clean Water Act, State Porter-Cologne Water Quality Control Act and California Fish and Game Code within 29 Study Areas, each of which represents a location where maintenance of the City's storm drainage system may be needed. Some sites originally identified have been removed from this project, including sites 4, 7, 13, 14, 24, 25, 26, 32, and 35.

The City proposes to conduct stormwater operation and maintenance activities in the identified system maintenance locations. The proposed Project activities are routine maintenance activities, including removal of trash and debris, trimming of vegetation, and removal of sediment, as well as minor repair of headwall slopes and structures.

The Jurisdictional Delineation identified Jurisdictional areas at sites along Hartnell Creek, Iris Canyon Creek, Canyon Del Rey Creek, Josselyn Canyon Creek, Roberts Lake, and Laguna Grande Lake. These creeks and lakes, and their adjacent wetlands, are potentially subject to United States Army Corps of Engineers (USACE) and Central Coast Regional Water Quality Control Board (RWQCB) jurisdictions under Sections 404 and 401, respectively, of the Clean Water Act. The jurisdictional delineation also identified areas potentially subject to the California Department of Fish and Wildlife's permitting authority pursuant to Section 1600 et seq. of the California Fish and Game Code between tops of banks, or to the edge of riparian canopy. Additionally, Hartnell Creek, Iris Canyon Creek, Canyon Del Rey Creek, Josselyn Canyon Creek, Roberts Lake, and Laguna Grande Lake are also potentially subject to RWQCB jurisdiction under the Porter-Cologne Water Quality Control Act. Note that the final jurisdictional determinations of the boundaries of waters, including wetlands, and streambeds are made by each agency, typically at the time that authorizations to impact such features are requested.

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1 Introduction

Rincon Consultants, Inc. (Rincon) conducted a jurisdictional waters and wetlands delineation for the City of Monterey (City) Storm Drain Maintenance Plan (Project), located in Monterey County, California. The delineation was conducted to determine the location and extent of waters and wetlands within 29 project sites that are potentially subject to the jurisdictions of the United States Army Corps of Engineers (USACE), Central Coast Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). The 29 sites are located throughout the City of Monterey, at locations where storm drainage facilities require urgent maintenance. Many of these sites experienced flooding, clogging, excessive sedimentation, or washouts during the above average rains of the 2016-2017 season and are the City's highest priority for maintenance.

Any proposed activity in areas identified as jurisdictional waters and/or wetlands may be subject to the permit requirements of the USACE under Section 404 of the Clean Water Act (CWA), Central Coast RWQCB under Section 401 of the CWA and under the Porter-Cologne Water Quality Control Act (Porter-Cologne), and/or CDFW pursuant to Section 1600 et seq. of the California Fish and Game Code. Final jurisdictional determinations of the boundaries of waters and riparian habitats are made by each agency, typically at the time that authorizations to impact such features are requested.

1.1 Project Location and Study Area

The Project includes maintenance work at 29 sites on the Monterey Peninsula at the southern end of Monterey Bay, depicted within the *Seaside and Monterey, California* U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles. The sites, or Study Areas, are primarily located within the urban City of Monterey, consisting of the current extent of existing City easements for maintenance access (Appendix A, Figures 1 and 2). Areas studied include the structures requiring maintenance, access routes, and staging areas. Three of the sites are located on the city limit boundary between Monterey and Seaside, California. Sites range from within 0.25 mile to 3.8 miles from the Pacific Ocean. Elevations within the Study Area range between 17 and 609 feet above mean sea level.

The Study Area analyzed in this JD contains all the project sites to thoroughly ascertain the potential Project impacts to jurisdictional wetlands and waters. These project components are collectively referred to as the project sites and/or the Study Areas throughout the remaining document. A description of each project location is provided in Table 1 below.

Table 1 Project Site Locations

Site	Name*	Location Description	Approximate Coordinates	Acres
1	Culvert B03-H1	Oak Newton Park, drainage between Presidio of Monterey and Army St.	36.608613°, -121.906456°	0.47
2	Culvert D03-H4	Drainage along Madison St. west of Pebble St.	36.599345°, -121.905105°	0.49
3	Culvert D03-H6	Drainage along Madison St. south of Manzanita St.	36.598934°, -121.903356°	0.16

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Site	Name*	Location Description	Approximate Coordinates	Acres
5	Culvert E04-H3	Hartnell Creek south of Monterey High school to the Monterey Public Library parking lot.	36.595845°, -121.897726°	1.00
6	Culvert E04-H4	Culvert at intersection of Martin St. and Pacific St.	36.593432°, -121.898195°	0.22
8	Culvert E03-H3	Culvert underneath Via Paraiso St. East of Via Del Pinar St. West of Via Paraiso Park	36.593085°, -121.906494°	0.87
9	Culvert F02-H3	Culvert located south of turn where Wyndemere Way becomes Skyline Drive. North of residential developments at Greenwood Vale cul-de-sac	36.588522°, -121.917238°	0.70
10	Culvert F02-H2	Culvert underneath Crandall Road, south of Shady Lane	36.588422°, -121.914279°	0.59
11	Culvert F03-H1	Culvert/drainage south of the intersection of Soledad drive between Mar Vista Drive and southern Y of Soledad Drive	West:36.588602°, -121.910095° East: 36.588443°, -121.908954°	0.41
12	Culvert G02-H2	Culvert underneath Skyline Drive, north of intersection of Forest Knoll Road.	36.583371°, -121.915558°	1.23
15	Culvert F03-H2	Culvert underneath San Bernabe Drive, between Via Ventura to the north and Via Descanso to the south. Site Located in designated open space	36.587779°, -121.903868°	0.38
16	Culvert F04-H2	Culvert underneath Alameda Ave. south of Ave Maria Road.	36.589153°, -121.900968°	0.30
17	Culvert G03-H6	Drainage approximately parallels Via Esperanza between Soledad Drive and Via Esperanza at Via Arcerolo Drive	36.585572°, -121.903491°	0.42
18	Culvert G03-H9	Culvert underneath San Bernabe Road, just north of Pacific Street	36.586383°, -121.901596°	0.22
19	Culvert F04-H4	Drainage approximately parallels Pacific Street, with culverts located under pacific street, Alameda Ave., and Viscaino Road.	36.588671°, -121.900629°	1.03
20	Majors Creek	Creek located in open space greenbelt between Del Monte Boulevard and the Del Monte Center.	36.584337°, -121.900666°	3.86
21	Culvert F04-I7	Culvert underneath don Dahvee Lane, east of Munras Ave, and north of the northern entrance to Del Monte Center	36.586887°, -121.898498°	0.41
22	Culverts E05-H1 and F05-H2	Culverts located at intersection of El Dorado Street and Major Sherman Lane.	36.592170°, -121.892754°	1.25
23	Iris Canyon	Southern drainages adjacent to intersection of El Dorado Street, Fishnet Road, and Iris Canyon Road. Northern Drainages close to Via Mirada split between two main channels, one on either side of Iris Canyon Road.	South: 36.587319°, -121.890402° North: 36.593922°, -121.887308°	2.14
27	Wilson Road Detention Basin	Basin between Hwy. 68 and a business park southwest of intersection of York Road and Wilson Road. Constructed basin and swale overflow into a creek that approximately parallels Hwy. 68	36.572541°, -121.808960°	1.39

Site	Name*	Location Description	Approximate Coordinates	Acres
28	Lower Ragsdale Detention Basin	Basin north of Hwy. 68, south of Lower Ragsdale Drive and west of Ryan Court.	36.574516°, -121.820738°	2.75
29	Virgin/Grant St. Swale	Swale northeast of intersection of Virgin Ave and Grant Ave, southwest of the Laguna Grande Regional Park Trail.	36.604035°, -121.857969°	0.30
30	Outfall D09-O1	Outfall located north of the Laguna Grande Regional Park Trail within the Laguna Grande Lake. Outfall northeast of intersection of Virgin Street and Branner Ave.	36.602277°, -121.855750°	0.12
31	Outfall C08-E1	Outfall located on southwestern edge of Roberts Lake, northwest of intersection of Roberts Ave and Del Monte Boulevard.	36.606295°, -121.859958°	0.74
33	Garden Court Basin	Basin located in open space north of Highway 68 and south of the business park located at 60 Garden Court.	36.583752°, -121.854202°	1.59
34	Encina Ave/Myers St. Swale	Swale located east of Myers Street and southeast of Del Monte Boulevard, west of the In-n-Out in Seaside on the other side of the Monterey City boundary.	36.605212°, -121.858431°	0.30
36	Culvert D02-H3	Culvert underneath Veterans Drive, generally south of Chaplain Magsig Avenue and north of Skyline Drive	36.601180°, -121.911163°	0.79
37	Culvert G05-H2	Culvert adjacent to intersection of Glenwood Circle and Iris Canyon Road, north of Hwy 1.	36.584100°, -121.891054°	0.97
38	San Bernabe to Alameda Sewer Easement	Drainage between residential neighborhoods along Bartolomea Way, San Bernabe Drive, and Ave Maria Road, east of Alameda Ave.	36.588767°, -121.902454°	0.61

*Culvert naming convention provided by the City of Monterey

1.2 Project Description

The proposed Storm Drain Maintenance Plan is intended, in part, to address concerns from both the Environmental Protection Agency (EPA) and RWQCB related to the City completing work without regulatory permits or certifications prior to 2013. The storm drainage system maintenance locations include nine discrete sites (stormwater basins, drainages and swales) throughout the City, plus 20 culverts, for a total of 29 locations. The City plans to conduct operation and maintenance activities in the identified locations as soon as possible, with a longer-term goal to look at drainage more holistically with an eye to preparing a citywide, watershed-based Storm Drainage Management Plan.

The proposed Project activities are routine maintenance activities, including removal of trash and debris, trimming of vegetation, and removal of sediment, as well as minor repair of headwall slopes and structures. Mechanical and non-mechanical maintenance techniques will be applied with heavy equipment or hand-tools. Equipment that cannot be accommodated within designated access areas will not be used. The majority of the sites are in ephemeral or intermittent streams; however, a few sites are within constructed basins, and four sites are within or near Roberts Lake and Laguna Grande, which fall within the coastal zone. In most cases, maintenance is expected to occur along the bottom of the facilities and approximately two feet up the adjacent banks to ensure the ability of the channels to transport floodwaters and prevent flooding. Sediment, trash, and green waste

generated from the proposed activities would be disposed of properly at the Monterey Peninsula Landfill in Marina. Some additional Study Areas have been included because of their proximity to wetlands or waters, the edges of these areas have been delineated to avoid impacts to jurisdictional areas during work. Relevant staff contact information is provided in Table 2 below.

1.3 Contact Information

Table 2 Pertinent Contact Information

Applicant	Applicant's Agent
City of Monterey 580 Pacific Street Monterey, California 93940	Rincon Consultants, Inc. 437 Figueroa St, Suite 203 Monterey, California 93940 831-333-0310
Contacts Elizabeth Caraker - caraker@monterey.org Steve Wittry - wittry@monterey.org	Contacts David Daitch - ddaitch@rinconconsultants.com Colby Boggs - cboggs@rinconconsultants.com
Technical Specialists	Property Owner(s)
Rincon Consultants, Inc. 437 Figueroa St, Suite 203 Monterey, California 93940 831-333-0310	Information will be provided with application submittal.
Contacts David Daitch - ddaitch@rinconconsultants.com Colby Boggs - cboggs@rinconconsultants.com	

2 Methodology

2.1 Regulatory Overview

Within the limits of the Study Areas, waters of the United States (U.S.), including wetlands, potentially subject to USACE jurisdiction were delineated in accordance with the *Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and the Code of Federal Regulations sections that pertain to factors constituting the OHWM for non-wetland waters (“other waters”) (33 CFR 328.3 and 33 CFR 328.4).

Potential RWQCB jurisdiction was determined in accordance with the above-listed methodologies to identify waters of the U.S. and thus, mirrors the jurisdictional limits of federal jurisdiction pursuant to Section 401 of the CWA. Waters of the U.S. are also waters of the State, which are regulated under Porter-Cologne; however, the jurisdictional extent of waters of the State typically also includes features that fall under CDFW jurisdiction as well. Potential CDFW jurisdiction was delineated in accordance with Section 1600 et seq. of the CFGC. Appendix B presents a discussion of pertinent regulations and definitions pertaining to jurisdictional wetlands, other waters and riparian habitats.

Some of the sites fall within the City’s Coastal Zone. Under the California Coastal Act (CCA) and the City’s Local Coastal Program, coastal wetlands receive protection from degradation or destruction caused by coastal development projects. California Coastal Commission regulations and guidance direct that coastal wetlands should be delineated using the three-parameter approach described in the USACE’s 1987 Wetlands Delineation Manual, except that only one of the three parameters (wetland hydrology, predominance of hydrophytic vegetation, or hydric soils) is required to make a positive determination.

2.2 Literature Review

To initiate the delineation, Rincon reviewed aerial imagery depicting all of the Study Areas (Google Earth 2017), the *Monterey and Seaside, California* USGS 7.5-minute topographic quadrangles (USGS 2017), the Web Soil Survey (United States Department of Agriculture, Natural Resources Conservation Service [USDA, NRCS] 2017a) and other publications to better characterize the nature and extent of potentially jurisdictional waters, including wetlands, that could occur on the project sites.

Furthermore, the *National Wetlands Inventory* (NWI) (United States Fish and Wildlife Service [USFWS] 2017) and the *National Hydrography Dataset* (USGS 2017) were reviewed to determine if any wetland and/or other waters had been mapped on or in the vicinity of the proposed project sites. The *National Hydric Soils List by State: California* (USDA, NRCS 2017b) was also reviewed to determine if any soil map unit mapped on in the Study Areas were classified as hydric. Rincon reviewed a number of published current and historical data sources and other available background

information to better characterize the nature and extent of jurisdictional wetlands, other waters and riparian habitats potentially occurring on the project sites, evaluate potential resources previously mapped on each site for these resources.

Rincon also reviewed a previous delineation conducted by Denise Duffy and Associates in 2017 for the City of Monterey Detention Basin Management Project. The purpose of this delineation was to identify USACE jurisdictional areas at six detention basins proposed for maintenance activities. This delineation included areas at Wilson Road Detention Basin (Site 27) and Lower Ragsdale Detention Basin (Site 28). USACE jurisdiction at Wilson Detention Basin was mapped using aerial imagery during the field visits. USACE jurisdiction at Lower Ragsdale Detention Basin was mapped during the field surveys and was recorded on Wetland Determination Data Forms for the Arid West Region. GIS data from this delineation were provided by the City and are incorporated in this report.

2.3 Field Survey and Mapping

Within the limits of the Study Areas, waters of the United States (U.S.), including wetlands, potentially subject to USACE jurisdiction were delineated in accordance with the following:

- *Wetlands Delineation Manual* (Environmental Laboratory 1987);
- *Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest* (USACE 2001);
- *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification* (USACE 2005);
- *Distribution of Ordinary High Water Mark (OHWM) Indicators and Their Reliability in Identifying the Limits of “Waters of the United States” in Arid Southwestern Channels* (USACE 2006);
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a);
- *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b); and
- *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010).

After completion of the literature review, Senior Biologist/Botanist Meg Perry, assisted by Associate Biologist Samantha Kehr, evaluated each study area in the field on July 31, and August 1, 2, and 10, 2017, with additional fieldwork conducted by Ms. Perry on August 3 and 4, September 12, and October 25 and 26, 2017. This field delineation was completed to identify, describe, and map all potential jurisdictional waters/wetlands within the Study Areas. The Study Areas were surveyed on foot for potential wetlands and non-wetland aquatic resources including streams, ditches, and ponds that might exhibit an ordinary high water mark (OHWM) and which might constitute waters of the state. General site characteristics were noted and vegetation was documented. Current federal policy, methods and guidelines were used to identify and delineate potential jurisdictional areas are described in detail below.

Non-Wetland Waters of the United States

The lateral limits of USACE jurisdiction (i.e., width) for non-wetland waters or “other waters” was determined by the presence of physical characteristics indicative of the OHWM. Each Study Area was surveyed on foot for potential wetland and non-wetland jurisdictional areas including streams. General site characteristics were noted and vegetation was documented. Thirteen sample soil

points were selected to evaluate observed changes in hydrology, soil, and vegetation to assist in defining boundaries of wetlands.

Rincon was aware of above-normal and unusual rainfall patterns in the wet season preceding the delineation and drought conditions prior to the 2016/2017 storm season. This was considered in evaluating areas that had marginal indicators of OHWM, such as near the terminus of some of the drainages where they begin to dissipate into the flatter landscape, and mapping was done conservatively (inclusively) given the unusual rainfall in the preceding year.

Additionally, Rincon evaluated sources of water, potential connections to Traditional Navigable Waters (TNWs), proximity and connectivity to TNWs and other waters that are jurisdictional under the guidance of the 2015 Clean Water Rule (Rule) to evaluate whether waters in the Study Areas are adjacent to TNWs, tributaries or otherwise jurisdictional as defined in the Rule. A summary of the regulatory framework is presented in more detail in Appendix B, USACE Jurisdiction.

Wetland Waters of the United States

Each Study Area was searched for areas supporting species of plant life potentially indicative of wetlands, and was evaluated according to routine wetland delineation procedures, including the U.S. Army Corps of Engineers *Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 1987, 2008a). A list of plant species observed in the Study Areas is provided as Appendix D.

Dominance of hydrophytic vegetation (i.e., wetland plants) was determined by creating a species list for those plants occurring within an appropriate radius around each data point (wetland and upland data points only). Radius of the sample plot was determined based on life form – for herbaceous plots, a minimum 5-foot radius was used; for shrubs, a 15-foot radius, and for trees, a 30-foot radius was used. After creating the species list, Rincon wetland specialists estimated absolute percent cover for each species by stratum, assigning an indicator status category to each species using the current National Wetland Plant List, version 3.3 (Lichvar et al. 2016; USACE 2016), and determining whether wetland plants dominated the subject areas using the dominance and/or prevalence tests (USACE 2008a). Taxonomic nomenclature for plant species is in accordance with The Jepson Manual (Baldwin et al. 2012); where discrepancies exist with the National Wetlands Plant List, both names are provided. The 2016 National Wetland Plant List went into effect on May 1, 2016 and thus was utilized for this delineation effort.

To establish whether hydric soils were present, a soil pit approximately 18 inches deep was dug to determine the presence or absence of positive field indicators for hydric soils as described in Field Indicators of Hydric Soils in the United States, version 7 (USDA, NRCS 2010) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USDA 2008a). Soil color was determined using a Munsell® (2000) Soil Color Chart. In some instances, wetland scientists assumed hydric soils were present when they observed direct observation of saturated or inundated soil more than 18 days after the last significant (more than 0.05 inch) precipitation event; at these sample locations soil profiles were not fully described.

Wetland hydrology was determined by the presence or absence of primary and secondary indicators, such as surface water and drainage patterns, respectively. A data point was considered to be potentially within a jurisdictional wetland if the area met the criteria for all three factors.

Data Collection and Processing

Extents of potential jurisdictional features and data points were mapped using a Trimble R1 Global Positioning System (GPS) unit with sub-meter accuracy, and were also plotted on aerial photographs. Data collection was focused at areas where the Study Areas intersected a potential waterway or wetland, as these data points best represent the conditions at sites that would potentially be impacted by the proposed project. The data were subsequently transferred to Rincon's geographic information system (GIS) software. The results of collected data are summarized in Appendix C. Representative photographs of the drainages and the surrounding conditions are presented in Appendix E.

3 Environmental Setting

This section presents a summary of the site conditions and environmental setting to provide context for the delineation. A description of local climate, the major vegetation units observed in the Study Areas, soil map units reported in the Soil Survey and observed in the field, and a discussion of local hydrology in the survey areas are presented below. Additionally, a summary of information reviewed from published data sources is also included.

3.1 Topography, Climate, and Land use

The Study Areas are located predominantly within the City, with three sites located along the Monterey-Seaside city limits. The project areas are located along the southern coast line of the Monterey Bay, extending approximately two miles inland. The Study Areas have predominantly flat topography with gradually rolling hills and are dominated by the urban and residential development of the cities. Large portion of the Study Areas are actively managed for recreational use with the presence of existing roads, trails, parking areas, picnic areas, play structures, restrooms, and landscaping

The climate within the City is greatly influenced by the close proximity to the Pacific Ocean with typical California central coast with mild year-round and morning coastal fog, generally cleared by afternoon breezes. Average temperatures range from approximately 40 to 68 degrees Fahrenheit, with highest temperatures in September, and lowest temperatures in January. The city of Monterey receives an average annual rainfall of approximately 15 inches typically concentrated between December and February (Western Regional Climate Center 2018).

3.2 Hydrology and Watersheds

Hydrology of the Study Areas and vicinity was evaluated through review of topographic maps, aerial photos, and the NHD (USGS 2016).

The Study Areas are located within the Point Pinos and Seaside subwatersheds, and an undefined subwatershed of the larger Monterey Bay HUC-10 watershed (1806001503 and 1806001504; USGS 2017). Several ephemeral/intermittent waterways such as Hartnell Creek, Iris Canyon Creek, Canyon Del Rey Creek, Josselyn Canyon Creek, and Aquajito Creek, travel through the city from the surrounding hills. These subwatershed drainages are heavily modified in their lower reaches as they approach the City and more densely developed areas. Most of these creeks and drainages are diverted to underground to stormwater systems west of the downtown area before flowing into El Estero, Del Monte Lake, and Laguna Del Ray before eventually discharging into the Pacific Ocean (USGS 2017).

3.3 Vegetation/Land Cover Types

Vegetation communities and land cover types within the Study Area include natural vegetation, landscaped areas and paved or developed areas. Vegetation classification was based on the classification systems provided in A Manual of California Vegetation, Second Edition (MCV) (Sawyer

et al. 2009) and Preliminary Descriptions of the Terrestrial Communities of California (Holland 1986); but have been adapted to reflect the existing site conditions.

Vegetation composition and structure within the Study Areas varies from site to site, but generally fall within seven vegetation communities and land cover types. In general, vegetation consists of a canopy dominated by coast live oak (*Quercus agrifolia*) and/or Monterey pine (*Pinus radiata*) at most of the sites and a mixed canopy of ornamental and planted species at several sites. Due to the proximity of the project sites to residential and urban development, the typical understory at most sites is somewhat disturbed and includes ornamental and invasive species including infestations of Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), cape ivy (*Delairea odorata*) and garden nasturtium (*Tropaeolum majus*).

Descriptions of these vegetation communities and land cover types are provided below. These descriptions generally detail the primary constituents and overall composition of the vegetation communities and do not detail the exact composition and structure of each of these vegetation communities within each project site. Table 3 below denotes which vegetation community and land cover type is present at each site.

Coast Live Oak Woodland

Coast live oak woodland in the Study Areas typically consists of a canopy dominated by coast live oak with occasional individuals of other species such as Monterey pine. The understory typically consists of shrubby native species such as poison-oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), and non-native grasses such as quaking grass (*Briza minor*), wild oats (*Avena fatua*), and perennial ryegrass (*Festuca perennis*). Due to the proximity of the project sites to residential and urban development, the understory also commonly includes ornamental and invasive species such as French broom (*Genista monspessulana*), English ivy, periwinkle (*Vinca major*), Kikyuru grass (*Pennisetum clandestinum*), and veldt grass (*Ehrharta erecta*).

Holland (1986) and Sawyer et al. (2009) describe this community as singularly dominated by coast live oak with an open underdeveloped understory. Within the BSA this vegetation community is largely degraded by fragmentation and disturbance due to development and contains a varying degree of understory density. In the Study Areas this community occurs primarily along Josselyn Canyon; and is consistent with a live oak, poison oak (*Toxicodendron diversilobum*) alliance (Sawyer et al., 2009). This vegetation community is found at sites 1, 8, 18, 22, and 27.

Monterey Pine Forest

Monterey pine forest community within the Study Areas typically consists of a canopy dominated by Monterey pine with a dense shrubby understory. Holland (1986) and Sawyer et al. (2009) describe this community as dominated or co-dominated by Monterey pine. Typical understory constituents within the sites include tangles of California blackberry and poison oak, patches of wood fern (*Dryopteris arguta*) and bracken fern (*Pteridium aquilinum*), and non-native grasses such as quaking grass, perennial ryegrass, and hedgehog dogtail grass (*Cynosurus echinatus*). Ornamental and invasive species such as French broom, English Ivy, and garden nasturtium are also prevalent in the understory at some sites, typically observed in disturbed areas along roads, trails and maintenance facilities. This vegetation community is found at sites 9, 12, and 16.

Mixed Monterey Pine and Oak Woodland

Some of the Study Areas contain a woodland canopy with coast live oak and Monterey Pine occurring as codominant. The understory of this vegetation community is consistent with the coast live oak woodland and Monterey pine forest communities that occur within the BSA and typically consist of an open to dense understory of poison oak and California blackberry with non-native grasses, ornamental, and invasive species. This community not described by Holland (1986), Sawyer et al. (2009), or Mayer and Laudenslayer (1988); however, this vegetation community is best described by live oak, poison-oak alliance by Sawyer et al. This vegetation community is found at sites 2, 3, 8, 9, 10, 11, 15, 19, 20, 21, 23, 29, 33, 36, 37, and 38.

Annual Grassland

Annual grassland vegetation community within the Study Areas consists of areas dominated by annual grasses such as bromes (*Bromus* spp.) and wild oats and ruderal herbs such as horseweed (*Erigeron canadensis*), wild radish (*Raphanus sativa*), and jersey cudweed (*Pseudognaphalium luteoalbum*). Annual grassland areas within the BSA are generally somewhat disturbed and occur in openings within the tree canopy or along the margins of stream channels. This vegetation community is best described as a wild oats grassland (*Avena fatua* Semi – Natural Herbaceous Stand) by Sawyer et al. (2009). This vegetation community is found at sites 1, 2, and 28.

Ruderal/Developed/Landscaped

This community is not described by Holland (1986) or Sawyer et al. (2009) but is best described by Mayer and Laudenslayer (1988) as “Urban” community. This vegetation consists of a mixture of native, non-native, and ornamental species in tree groves, street strips, shade trees, lawns, ruderal areas, and paved areas. Tree species found in this community are highly variable and typically non-native or not occurring as a natural community woodland. Species observed in the Study Areas include blue gum eucalyptus (*Eucalyptus globulus*), red plum (*Prunus cerasifera*), mock orange (*Pittosporum undulatum*), with some Monterey cypress (*Hesperocyparis macrocarpa*) among others. This vegetation community/land cover type also includes disturbed and ruderal margins of roads, trails, buildings, etc. and are dominated by ruder herbs such as annual willow herb (*Epilobium brachycarpum*) and Italian thistle (*Carduus pycnocephalus*) and annual grasses such as bromes, wild oats, and veldt grass. This vegetation community/land cover type also includes all areas that have been developed, including paved roads, sidewalks, parking lots, driveways, buildings, and basketball courts, with no vegetation component. This land cover type is found at each of the 29 sites.

Arroyo Willow Riparian Woodland

This vegetation community consists of a dense canopy dominated by arroyo willow (*Salix lasiolepis*) in tree and shrub forms. Other trees in this community include blackwood acacia (*Acacia melanoxylon*) and occasional coast live oak trees. The understory is generally undeveloped or mixed with native and non-native components. Holland (1986) and Sawyer et al. (2009) describe this community as an arroyo willow thicket (*Salix lasiolepis* Shrubland Alliance). This vegetation type is somewhat limited in the Study Areas and generally occurs within sites that contain more consistent standing water: sites 29, 30, and 34.

Mixed Riparian Woodland

Mixed riparian woodland habitat in the Study Areas consists of Canopy dominated by non-native blue gum and red plum (*Prunus cerasifera*) intermixed with native coast live oak, black cottonwood (*Populus trichocarpa*), and box elder (*Acer negundo*). The understory of this vegetation community also consists of primarily of non-native ornamental and invasive species English ivy and garden nasturtium with patches of poison-oak and California blackberry. This community is not described by Holland (1986), Sawyer et al. (2009), and Mayer and Laudenslayer (1988). This vegetation community is found at sites 5, 6, 16, and 30.

Emergent Wetlands

Freshwater emergent wetlands are generally dominated by hydrophitic perennial monocots (Mayer and Laudenslayer, 1988). In the Study Areas this community is primarily comprised of large emergent herbaceous wetland species, including tule (*Schoenoplectus californicus*) and cattails (*Typha* spp.), which typically grow in large stands along the margins of ponds and shallow waters. Soils within this vegetation community are typically saturated or inundated for many weeks each year. This community also includes patches of other emergent herbaceous wetland vegetation, in which other, smaller emergent species such as rushes (*Juncus* spp.), loosestrife (*Lythrum hyssopifolia*), and rabbitsfoot grass (*Polypogon monspeliensis*) in relatively small patches within the channels at numerous project sites. This vegetation community is best described as a California bulrush marsh - *Schoenoplectus californicus* – *Typha latifolia* association by Sawyer et al. (2009). This vegetation community is found at sites 1, 20, 27, 28, 30, 31, 33, and 34.

Table 3 Vegetation Communities and Land Cover Types

Site	Coast Live Oak Woodland	Monterey Pine Forest	Mixed Monterey Pine and Oak Woodland	Arroyo Willow Riparian	Mixed Riparian Woodland	Annual Grassland	Emergent Wetlands	Ruderal/ Developed/ Landscaped
1	X*					X	X	X
2			X*			X		X
3			X*					X
5					X*			X
6					X*			X
8	X*		X					X
9		X	X*					X
10			X*					X
11			X*					X
12		X*						X
15			X*					X
16		X*			X			X
17			X*					X
18	X*							X
19			X*					X
20			X*				X	X
21			X*					X
22	X*							X
23			X*					X
27	X						X*	X
28						X*	X	X
29			X	X				X*
30				X	X		X	X
31							X	X
33			X				X	X
34				X			X	X
36			X					X
37			X					X
38			X					X

X = vegetation community/land cover type present

* = dominant vegetation community/land cover type at each site

3.4 Soils

Based on the Web Soil Survey (USDA NRCS 2017), the Study Areas overlap 14 soil map units. Note that soil surveys are completed at a coarser scale than site-specific surveys, and additional soils may be present in small areas and as inclusions in mapped types. Site-specific soil mapping was not completed as part of this study; however, observations of surface soil conditions were generally consistent with mapped soils depicted on Web Soil Survey (USDA NRCS 2017). The following sections summarize soil information from the USDA NRCS Web Soil Survey and the NRCS official soil series descriptions. Soil maps for each site where wetlands were present, or delineation sample points were taken are provided in Appendix A, Figure 3.

Arnold Loamy Sand, 9 to 20 Percent Slopes, MLRA 15

Arnold loamy sand, 9 to 20 percent slopes, is somewhat excessively drained sandy soil that occurs on terraces. It is formed of residuum weathered from sandstone. A typical profile consists of loamy sand down to 8 inches, loamy fine sand between 8 and 48 inches, and bedrock. This soil type is found at site 33.

Baywood Sand, 2 to 15 Percent Slopes

Baywood sand is somewhat excessively drained soils derived from stabilized sandy Aeolian sands with 2 to 15 percent slopes. This soil map unit has 8 centimeters (cm) of available water storage. This soil map unit typically lacks hydric soils. This soil type is found at sites 29, 31, and 34.

Chamise Channery Loam, 9 to 15 Percent Slopes, MLRA 15

Chamise channery loam is well drained soil derived from loamy alluvium from shale. This soil map unit has a slope between 9 and 15 percent. This soil type is found at sites 22 and 37.

Rindge Muck, 0 to 2 Percent Slopes, MLRA 14

Rindge muck is very poorly drained soil derived from plant residue with mixed alluvium. This soil map unit typically has a slope of 0 to 2 percent and approximately 90 percent hydric soils. Rindge muck has available water storage of 28 cm. This soil type is found at site 30.

Santa Lucia Channery Clay Loam, 30 to 50 Percent Slopes, MLRA 15

The Santa Lucia series consists of well drained soils derived from Shale and clay residuum weathered from shale. This soil map unit has a slope between 30 and 50 percent. This soil type is found at sites 21 and 22.

Santa Ynez Fine Sandy Loam, 2 to 9 Percent Slopes

Santa Ynez fine sandy loam consists of moderately well-drained soils that formed in fine-loamy alluvium derived from igneous and sedimentary rock. This soil has a fine sandy loam surface layer to about 18 inches and is underlain by clay to approximately 43 inches, with sandy clay loam from 43 to 61 inches. This soil type occurs on gently sloping to moderately sloping terraces. This soil type is found at site 33.

Santa Ynez Fine Sandy Loam, 15 to 30 Percent Slopes

The Santa Ynez fine sandy loam consists of moderately well-drained soils that formed in fine-loamy alluvium derived from igneous and sedimentary rock. This soil has a fine sandy loam surface layer to about 18 inches and is underlain by clay loam to approximately 43 inches. Santa Ynez soils are on terraces and have slopes of 0 to 50 percent. The substratum is sandy loam. This soil type is found at site 28.

Elder Very Fine Sandy Loam, 2 to 9 Percent Slopes

Elder very fine sandy loam is well drained and derived from Coarse-loamy alluvium from igneous and sedimentary rock. This soil map unit has a slope between 2 to 9 percent. The very fine sandy loam is adjacent to unweathered bedrock at approximately 40 inches depth. This soil type is found at site 27.

Xerorthents, Loamy

Xerorthents, loamy soil is well drained and derived from mixed loamy alluvium. This soil map unit varies in slope from 15 to 50 percent and lacks hydric soils. Xerorthents have available water storage of 13 cm. This soil type is found at site 23.

Narlon Loamy Fine Sand, 2 to 9 Percent Slopes

Narlon loamy fine sand is somewhat poorly drained soil derived from clay marine deposits from sedimentary rock. This soil map unit has a slope between 2 to 9 percent and has a typical soil profile of loamy fine sand to a depth of 13 inches, clay between 13 and 53 inches, and weathered bedrock to a depth of 57 inches. This soil type is found at sites 1, 5, 6, 8, 11, 15, 17, 19, 20, 23, and 38.

Narlon Loamy Fine Sand, 15 to 30 Percent Slopes

This soil map unit is the same as the above described Narlon loamy fine sand, 2 to 9 percent slopes, with slopes between 15 and 30 percent. This soil type is found at sites 9 and 12.

Sheridan Coarse Sandy Loam, 30 to 75 Percent Slopes

Sheridan coarse sandy loam is well drained soil derived from Coarse-loamy residuum weathered from igneous and metamorphic rock. This soil map unit has a slope between 30 and 75 percent and is adjacent to weathered bedrock at approximately 39 inches deep. This soil type is found at sites 2, 3, 8, and 36.

Gazos Silt Loam, 30 to 50 Percent Slopes

Gazos silt loam is well drained soil derived from Residuum weathered from sandstone and shale. This soil map unit has a slope between 30 and 50 percent and has a typical soil profile of gravelly silty clay loam to a depth of 29 inches, and unweathered bedrock between 29 and 33 inches. This soil type is found at sites 9, 10, 11, 15, 16, 17, 18, 19, and 38.

Water

This soil map unit contains no identifiable soils. This unit is used to identify open water, and includes; streams, lakes, ponds, and estuaries more than about 2.5 meters deep or less than 2.5 meters deep that lack either distinguishable horizons or rooted vegetation. This soil map unit is found at sites 30 and 31.

4 Assessment of Potentially Jurisdictional Aquatic Resources

4.1 Summary of Findings

Drainage ditches, seasonal wetlands, ephemeral and perennial streams, and seasonally flooded constructed basins in the Study Areas may be jurisdictional waters of the U.S. under CWA Sections 404 and 401, subject to USACE and RWQCB jurisdictions. In addition, the aquatic resources have defined beds, banks, and/or riparian habitats that are potentially under CDFW jurisdiction. Sites within the Coastal Zone may also require an application for a coastal development permit. Note the final jurisdictional determinations of the boundaries of waters, and riparian habitat are made by each agency, typically at the time that authorizations to impact such features are requested. Potentially jurisdictional areas within the Study Area are summarized below and shown in Appendix A, Figure 4, and representative photographs of each Site can be found in Appendix E.

Point Pinos Subwatershed

The Point Pinos subwatershed drains approximately 11,092 acres on the Monterey Peninsula, and includes Hartnell Creek, Iris Canyon Creek, Josselyn Canyon Creek, Aquajito Creek, and many unnamed tributaries and drainages. These streams are highly modified by residential and commercial development. In the lower reaches of Hartnell Creek and two unnamed drainages are diverted to an underground stormwater system above the downtown area, which ultimately connects to the Pacific Ocean through El Estero Lake through an existing storm drain system. Habitats observed in this watershed are typically coast live oak woodland and mixed coast live oak and Monterey pine with an open understory of poison oak, California blackberry, Himalayan blackberry, or French broom. Some sections of these streams are dominated by nonnatives or ornamental trees such as eucalyptus and Monterey cypress.

Iris Canyon and Major Sherman Creek flow into Lagunita Mirada, and then El Estero Lake before flowing out to the Pacific Ocean.

1 Culvert B03-H1 at Oak Newton Park

This site is in Oak Newton Park (Appendix A, Figure 4. 1). An intermittent drainage enters the site from a culvert at the west end of the site and flows approximately east to a second culvert. A pedestrian footbridge spans the drainage approximately near the center of the study area.

This stream had trickling water during the site visit and rock in the channel bottom. This stream is likely intermittent in most years. USGS topographic maps and the NHD do not depict this feature, which drains to the Pacific Ocean through an existing storm drain system. The riparian canopy consists of coast live oak and Monterey pine, a small patch of in channel wetlands with ditch grass and small-headed rush was observed. Two soil pits were dug at this site, one in the wetland area and one on the upper bank. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 7 feet (Table 4). CDFW jurisdiction was mapped at top of bank (TOB), average channel width at TOB was approximately 25 feet (Table 5).

A trash rack is present near the middle of the drainage and a second trash rack protects the culvert inlet. Maintenance would include removal of debris and downed materials from the trash racks and keeping sediment from building up at the culvert inlet.

2 *Culvert D03-H4 at Madison Canyon*

This site is in a residential area in mixed Monterey pine and coast live oak woodland. The stream enters the Study Area from the west, and flows east-southeast through the Study Area, passing through existing culvert D03-H4 under Pebble Street and continuing east, approximately paralleling Madison Street (Appendix A, Figure 4. 2).

The upstream channel bed is bare of vegetation, and has a mix of sand, gravel and larger rock. Debris, logs, branches and roots are also present in some areas, including some small log jams. Stormwater swales on the west side of Pebble Street also convey water into the channel here.

Downstream of the culvert under Pebble, the stream emerges into a residential yard. A portion of the channel and the south bank are in City right of way. A lawn in the yard extends to the edge of the north bank of the channel. The channel bed includes mud and rock as well as debris, brick and concrete. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 4 feet (Table 4). CDFW jurisdiction was mapped at top of TOB, average channel width at TOB was approximately 18 feet (Table 5).

Trickling water was present during the site visit. This stream is likely intermittent in most years. USGS NHD depicts this feature as Hartnell Creek, which ultimately connects to the Pacific Ocean by way of El Estero through an existing storm drain system.

3 *Culvert D03-H6 at Madison Street*

This site is in a residential area in mixed Monterey pine and coast live oak woodland. The stream enters the Study Area from the west, and flows south-southeast under Madison Street through existing culvert D03-H6 before continuing southeast (Appendix A, Figure 4. 3).

The upstream reach is in the right of way along Madison Street, adjoining residential lots with existing homes and driveways. Just upstream of the Study Area, an existing bridge over the stream provides access to an existing home. The channel bed could not be seen due to overgrowth of blackberry here, but further upstream includes sand and cobble.

Downstream of Madison Street, the channel turns southeast and flows in the right of way along Madison, between the street and an existing residence. The edge of the residential area nearest the stream is walled with a short rock wall. The channel bed is a mixture of sand, gravel, and cobble and is unvegetated. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 7 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 17 feet (Table 5).

Trickling water was present during the site visit. This stream is likely intermittent in most years. USGS NHD depicts this feature as Hartnell Creek, which ultimately connects to the Pacific Ocean by way of El Estero through an existing storm drain system.

5 *Culvert E04-H3 at Lower Madison Canyon*

This site is bordered by a residential neighborhood, a school, and public safety buildings (City Police and Fire). Vegetation at the upstream portion of this site is mixed riparian woodland, with eucalyptus, red-plum, coast live oak, and black cotton wood in the tree canopy. Downstream of

Pacific Street, the drainage daylights near the library parking lot in an armored channel. Vegetation on the banks includes dense English ivy, and some willows are present starting approximately 20 feet downstream of the culvert outlet. Eucalyptus and Monterey cypress rooted in uplands nearby partially shade the channel. Hartnell Creek enters the study area from the west (Appendix A, Figure 4. 4). The stream enters culvert E04-H3 and flows east through an underground culvert that outlets on the east side of Pacific Street. A trash rack protects the culvert inlet. Downstream of Pacific Street, the drainage daylights near the library parking lot in an armored channel. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 12 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 51 feet (Table 5).

This stream had trickling water during the site visit and sand, gravel, and cobble in the channel bottom. This Stream is likely intermittent in most years. USGS NHD depicts this feature as Hartnell Creek, which ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

6 *Culvert E04-H4 at Martin and Pacific Street*

This site is in an area that supports residential and commercial uses. The culvert structure E04-H4 is at the intersections of Martin Street and Pacific Street, just south of the intersection of El Dorado Street and Pacific Street. The structure conveys stream water through the existing storm drainage system downstream. Vegetation in the Study Area are mixed riparian woodlands, predominantly coast live oak, with box elder and red plum.

The upstream reach is channelized near the culvert inlet, and a retaining wall is present along the Pacific Street side of the channel. Near the culvert inlet, the top of bank/edge of riparian canopy extends to the sidewalk, and vegetation appears to be kept pruned to keep the sidewalk clear. The channel bed had some trickling water during the site visit, and a sandy bottom, but lacked vegetation. East of the drainage, topography rapidly steepens and a hillside constrains the stream to the east. Further upstream, the channel is further from Pacific Street and is not channelized or constrained by a wall. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 8 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 35 feet (Table 5).

From culvert E04-H4, this tributary to Hartnell Creek is conveyed in a culvert for about 580 feet, before daylighting into a natural channel. This stream joins Harnell Creek near the library and flows to El Estero and then to the Pacific Ocean through an existing storm drain system.

8 *Culvert E03-H3 at Via Paraiso Park*

This site is in open space between residences, and in open space associated with Via Paraiso Park (Appendix A, Figure 4. 6). The upstream reach is between residences in an open space parcel, with mixed Monterey pine and coast live oak woodland. The channel has existing stabilization structures in place including log drops and gabion walls that were constructed in the past to control erosion and sedimentation. The channel bed is bare and rocky. The upper reach of the channel was dry during the site visit. An existing pedestrian path next to the channel provides pedestrian access from Via del Pinar to Via Paraiso. An existing pedestrian footbridge spans the tops of bank just upstream of Via Paraiso.

The downstream reach is within oak woodland at Via Paraiso Park. The site had trickling water during the site visit and was investigated for wetland conditions and one soil pit was dug. However, the vegetation did not meet criteria for wetland conditions. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB or to edge of willows where canopy was present, average channel width at TOB was approximately 20 feet (Table 5). The channel meanders eastward and eventually flows into a second culvert fitted with a trash rack west of the baseball field. That culvert conveys the water eastward, eventually joining Hartnell Creek, which ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

9 *Culvert F02-H3 at Wyndmere Way*

This site is located in a residential area under mixed Monterey pine and coast live oak (Appendix A, Figure 4. 7). An ephemeral stream enters the Study Area from the southwest edge, between existing residences. The stream flows through a culvert under Skyline Drive and continues eastward into a designated open space area east of the road.

Upstream of the road, the drainage has existing log drop crib walls from a past effort to stabilize the channel and reduce erosion and sedimentation. The channel widens into a basin near the inlet to culvert structure F02-H3. The basin supports some facultative and hydrophytic vegetation. Wetland determination data was collected to evaluate and document the condition, although the feature appears to be constructed and hydrology in the basin is influenced by the road embankment, and hydrophytic vegetation indicators were not met. Two soil pits were dug at this site.

Downstream of Skyline drive, the outfall is within open space. The culvert outfalls into an entrenched channel with steep banks and some sandstone exposures. The upstream reach was dry, but trickling water was present in the downstream reach during the site visit. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 9 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 26 feet (Table 5).

This unnamed stream is likely ephemeral to intermittent in most years. USGS NHD depicts this feature as an unnamed ephemeral stream which meets up with other tributaries to Hartnell Creek downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

10 *Culvert F02-H2 at Crandall Road*

This site is located in a residential area under mixed Monterey pine and coast live oak woodland downstream of site 9 (Appendix A, Figure 4. 8). An ephemeral stream enters the study area from the west edge, between existing residences. The stream flows through a culvert under Crandall Road, and continues eastward into a designated open space area east of the road.

Upstream of the road, periodic sediment control structures including crib walls and grouted rock are present in the channel. The downstream reach shows evidence of past stabilization efforts, including geotextile fabric, and log drops/ sediment check dam structures. Grouted rock is also present. UngROUTED sections of channel have rocky and sandy substrate in the bed. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of

approximately 8 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 33 feet (Table 5).

Trickling water was present during the site visit. This unnamed stream is likely ephemeral to intermittent in most years. USGS NHD depicts this feature as an unnamed ephemeral stream which meets up with other tributaries to Hartnell Creek downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

11 Culvert F03-H1 at Mar Vista and Soledad Drive

This site is located in a residential area under mixed Monterey pine and coast live oak woodland. An ephemeral stream enters the study area from the west edge, between existing residences. The stream flows through a culvert under Mar Vista that extends to the far side of Soledad Drive (Appendix A, Figure 4. 9). The stream outlets into a greenbelt east of Soledad Drive, and flows southeastward. Upstream of the road the culvert F03-H1 has a trash rack at the inlet.

Downstream of Soledad Drive, the channel is deeply incised and entrenched with nearly vertical banks. A shotcrete apron below the culvert outfall has been partially undercut. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 18 feet (Table 5).

This stream had trickling water about 3 inches deep during the site visit and sand in the channel bottom. Stream is likely intermittent in most years. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with a tributary to Hartnell Creek, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

12 Culvert G02-H2 at Skyline Drive

This site is located in open space adjacent to a residential area under Monterey pine forest. Upstream of Skyline Drive, two ephemeral streams meet just upstream of the road (Appendix A, Figure 4. 10). The southern tributary is a small channel with an OHWM approximately 2 feet wide. The channel is armored with boulders. This small tributary starts from a seep at the road above the open space parcel, and eventually forms a channel that meets a larger ephemeral stream just above the culvert under Skyline Drive.

The larger channel is armored with rock gabion crib walls and log drops set at intervals throughout the channel upstream to the location where the stream enters the study area. Shotcrete is present in the channel in some areas. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 18 feet (Table 5).

Downstream of Skyline Drive, the culvert outlets into an open channel. The banks are eroding, and log jams are present in the channel downstream of the culvert outlet.

This unnamed stream is likely ephemeral to intermittent in most years. USGS NHD depicts this feature as an unnamed ephemeral stream which meets up with other tributaries to Hartnell Creek downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

15 *Culvert F03-H2 at San Bernabe Drive*

This site is in designated open space and a residential neighborhood under mixed Monterey pine and coast live oak woodland with some arroyo willow (Appendix A, Figure 4. 11). An intermittent stream enters the site from the west, flowing through a designated open space parcel to a culvert under San Bernabe Drive.

At this site, the channel bed is sandy and lacks vegetation on the bottom, though banks are vegetated. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 8 feet (Table 4). CDFW jurisdiction was mapped at TOB or to edge of willows where canopy was present, average channel width at TOB was approximately 13 feet (Table 5).

This stream had trickling water about 3 inches deep during the site visit and sand in the channel bottom. This stream is likely intermittent in most years. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with Hartnell Creek approximately 0.7 mile downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

16 *Culvert F04-H2 at Alameda Avenue*

This site is in a residential area in Monterey pine forest (Appendix A, Figure 4. 12). An intermittent drainage enters the Study Area at its west end and flows eastward under Alameda Street to a culvert just west of Pacific Street. The upstream reach of the drainage is partially armored with rock walls on the banks. The stream bed is generally lacking vegetation.

The downstream reach of the drainage is deeply incised, and the banks are partially eroded. Existing retaining walls support some areas of the bank. The channel bed is a mixture of cobble and sand and is not vegetated. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 14 feet (Table 5).

This stream had trickling water about 3 inches deep during the site visit and rock in the channel bottom. This stream is likely intermittent in most years. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with Hartnell Creek approximately 0.5 mile downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

17 *Culvert G03-H6 at Via Esperanza*

This site is in a residential neighborhood mixed under Monterey pine and coast live oak woodland (Appendix A, Figure 4. 13). The site includes a reach of drainage that approximately parallels Via Esperanza between Soledad Drive and Via Esperanza at Via Arcerolo Drive. The drainage enters the study area from the west, from a culvert (G03-H6) under Soledad Drive. Fences are present along one bank of the channel set back just slightly from top of bank for most of the reach. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 8 feet (Table 4). CDFW jurisdiction was mapped at TOB or to edge of willow canopy where present, average channel width at TOB was approximately 29 feet (Table 5).

This stream had trickling water about 3 inches deep during the site visit and rock in the channel bottom. Stream is likely intermittent in most years. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with Hartnell Creek approximately 0.8 mile downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

18 *Culvert G03-H9 at San Bernabe Drive*

This site is in a residential neighborhood, with residences on the north side of the drainage, and Pacific Street south of the drainage (Appendix A, Figure 4. 14). This area is in mixed Monterey pine coast live oak woodland with landscaped residential lots interspersed. An intermittent drainage enters the Study Area at its west edge and flows northeast into a culvert under San Bernabe Road, just north of Pacific Street. The upstream reach is entrenched in a channel with abrupt, steep banks. The downstream reach the slope above the outfall is eroding. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 9 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 40 feet (Table 5).

This stream had trickling water in some places during the site visit and rock in the channel bottom. This stream is likely intermittent in most years. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with Hartnell Creek approximately 0.75 mile downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

19 *Culvert F04-H4 at Pacific Street*

The site is in a residential area under mixed Monterey pine and coast live oak woodland (Appendix A, Figure 4. 15). At the culvert under Pacific the stream is channelized and armored with concrete where the stream parallels Pacific for approximately 20 linear feet. The stream then approximately parallels Pacific and flows toward Whispering Pines Park. The channel is entrenched and narrow. The channel flows through a series of culverts under a driveway, Alameda Avenue, and Viscano Road at approximately 260, 540, and 765 feet downstream of F04-H4, respectively. At Whispering Pines Park the channel is stabilized with log drops and the streambed is comprised of boulders and or river rock set in concrete. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB, average channel width at TOB was approximately 13 feet (Table 5).

Trickling water was present at the inlet and outlet of Culvert F04-H4 though portions of the downstream channel were dry when the site was visited. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with Hartnell Creek approximately 0.7 mile downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero.

20 *Major Sherman Creek at the Del Monte Center*

This site is in open space that forms a greenbelt between Del Monte Boulevard and the Del Monte Center (Appendix A, Figure 4. 16). The open space has some scattered Monterey Pine and coast live oak south of the entrance to Del Monte Center, as well as some Monterey cypress. Grassy vegetation in uplands south of Del Monte Center appears to be mowed on a regular basis. North of the entrance road, tree canopy is denser, and includes occasional willow and red willow.

The stream enters the site from the south through an existing culvert under Hwy. 1 and Soledad Drive. The upstream reach above Structure G04-H1, which conveys water under the entrance to the Del Monte center, includes a portion of the stream that contains dense wetland vegetation, dominated by cattail. Wetland determination data points were collected near the footbridge to confirm conditions. The culvert under the Del Monte center entrance is fairly small and potentially contributes to slow movement of water through the system; the grade changes to much lower elevation downstream at the outlet. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 9 feet (Table 4). CDFW jurisdiction was

mapped at TOB where canopy was not present, or to edge of riparian where canopy was present, average channel width at TOB was approximately 35 feet (Table 5).

The channel bed downstream of the entrance road is not vegetated; it supports some sand and gravel. The channel continues northeastward through the greenbelt. Although the stream is not named on the NHD, City staff report the drainage as Major Sherman Creek. The stream conveys the water northward, eventually joining El Estero, which ultimately connects to the Pacific Ocean through an existing storm drain system.

21 Culvert F04-I7 at Don Dahvee Lane

This site is in open space that forms a greenbelt at Don Dahvee Park (Appendix A, Figure 4. 17). The open space is in mixed Monterey Pine and coast live oak woodland. The stream enters the site from the south in a natural channel that flows through the greenbelt. Upstream of Don Dahvee Road, overgrown vegetation obscures the culvert structure F04-I7. The channel is entrenched, and the bed does not appear to support hydrophytes. A small hillside seep drains into a roadside ditch that is partially hardened and drains into the stream on its east side. Some hydrophytic vegetation has recruited into the ditch, including hyssop-leaved loosestrife (*Lythrum hyssopifolium*), willow-herb (*Epilobium ciliatum*), and some rush (*Juncus patens*).

Downstream of Don Dahvee road, the drainage channel bed is partially visible, and is a mixture of gravel, cobble, and larger rocks. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB where canopy was not present, or to edge of riparian where canopy was present, average channel width at TOB was approximately 19 feet (Table 5).

The channel continues northeastward through the greenbelt. Although the stream is not named on the NHD, City staff report the drainage as Major Sherman Creek. The stream conveys the water northward, eventually joining El Estero, which ultimately connects to the Pacific Ocean through an existing storm drain system.

22 Culverts E05-H1 and F05-H2 at Major Sherman Lane

This site is in open space that forms a greenbelt near the intersection of El Dorado Street and Major Sherman Lane (Appendix A, Figure 4. 18). This area is within mixed Monterey pine and coast live oak woodland with willow riparian woodland in the upstream reach. The stream enters the site from the south in a natural channel that flows through the greenbelt and is conveyed under El Dorado Street through culvert structure F05-H2. The stream leaves the site through culvert structure E05-H1.

The channel upstream of culvert inlet F05-H2 was dry during the site visit and the channel bed had a mud bottom. Some downed logs, branches, and debris jams were noted in the upstream channel. An elevated walkway for pedestrians is present along the top of bank of the downstream reach. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB where canopy was not present, or to edge of riparian where canopy was present, average channel width at TOB was approximately 23 feet (Table 5).

The stream is conveyed underground from the north end of the study area to El Estero, which ultimately connects to the Pacific Ocean through an existing storm drain system. Although the stream is not named on the NHD, City staff report the drainage as Major Sherman Creek.

23 Structures E05-H4, E05-H6, F05-H1 at Iris Canyon

Iris Canyon Creek enters the southern part of the Study Area from the south near the intersection of El Dorado Street at Iris Canyon Road at Structure E05-H4 Street (Appendix A, Figure 4. 19 and 4.20). The upstream portion of this structure is under mixed Monterey pine and coast live oak woodland. The upland area on the west side of the channel near Iris Canyon Road is mowed regularly. The channel is entrenched and has nearly vertical banks.

In the northern part of the Study Area close to Via Mirada, the drainage is split between two main channels, one on either side of Iris Canyon Road. Willow Riparian woodland is present south of Via Mirada. At the eastern channel, water enters culvert structure E05-H6. At the western channel, the drainage enters culvert structure F05-H1, both flow under Via Mirada Road into Lagunita Mirada. A homeless camp is present in the willow canopy of the western channel starting about 50 feet upstream of the road. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at TOB where canopy was not present, or to edge of riparian where canopy was present, average channel width at TOB was approximately 13 feet (Table 5).

Iris Canyon Creek had a small amount of tricking water during the site visit. This creek drains to Lagunita Mirada, and then El Estero before flowing out to the Pacific Ocean.

36 Culvert D02-H3 at Veterans Drive

This site is in open space in a greenbelt. The open space is in mixed Monterey Pine and coast live oak woodland. The stream enters the site from the west in a natural channel that flows through a culvert under Veterans Drive (Appendix A, Figure 4. 28). The channel bed does not support vegetation. The channel banks and immediately adjacent uplands support coffeeberry (*Frangula californica*), huckleberry (*Vaccinium occidentalis*), toyon (*Heteromeles arbutifolia*), with some French broom, and English ivy. Some rock exposures were noted - possibly granitic or sandstone downstream of Veterans Drive.

Trickling water was present during the site visit. This reach of the stream is likely intermittent in most years. USGS NHD depicts this feature as Hartnell Creek, which ultimately connects to the Pacific Ocean by way of El Estero through an existing storm drain system. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 6 feet (Table 4). CDFW jurisdiction was mapped at top of bank where canopy was not present, or to edge of riparian where canopy was present, average channel width at TOB was approximately 25 feet (Table 5). Riparian woodland was differentiated from surrounding forest by evaluating landscape position, species composition and understory vegetation.

37 Culvert G05-H2 at Glenwood Circle

This site is in mixed Monterey Pine and coast live oak woodland, near residential and senior living facilities near the intersection of Glenwood Circle with Iris Canyon. Understory includes California blackberry, poison oak, wood mint (*Stachys bullata*), and rush. Downstream of Glenwood Circle, the channel is incised (Appendix A, Figure 4. 29). The channel was dry during the site visit. The stream is depicted as intermittent in this reach on the NHD, the upper portion of Iris Canyon Creek. This creek drains to Lagunita Mirada, and then El Estero before flowing out to the Pacific Ocean. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 7 feet (Table 4). CDFW jurisdiction was mapped at top of bank, average channel width at TOB was approximately 52 feet (Table 5).

38 *San Bernabe Sewer Easement*

This site is in mixed Monterey Pine and coast live oak woodland, in a residential neighborhood (Appendix A, Figure 4. 30). Some horsetails (*Equisetum arvense*) were observed in the understory but were not abundant or dominant enough to constitute hydrophytic vegetation indicative of wetland conditions. An intermittent stream enters the site from the west, flowing in a natural channel between residences on the slopes to either side of the channel. In some areas the stream banks are very steep. Some large boulders and cobble are present in the streambed and appear to be either sandstone or granitic rock. The sewer line crosses back and forth across the channel, and some manholes are at the edge of the channel bed.

This stream had trickling water about 3 inches deep during the site visit and sand in the channel bottom. This stream is likely intermittent in most years. USGS NHD depicts this feature as an unnamed intermittent stream which meets up with Hartnell Creek approximately 0.5 to 0.7 mile downstream, and ultimately connects to the Pacific Ocean through an existing storm drain system and El Estero. USACE jurisdiction of the feature was mapped to OHWM, which had an average channel width of approximately 5 feet (Table 4). CDFW jurisdiction was mapped at top of bank, average channel width at TOB was approximately 18 feet (Table 5).

Seaside Subwatershed

The Seaside subwatershed drains approximately 9,336 acres along the coast northeast of Monterey, and includes Josselyn Canyon Creek, the lower reach of Canyon Del Rey, and several unnamed tributaries, drainages and constructed stormwater basins. Josselyn Canyon Creek and its unnamed tributaries flows into Del Monte Lake through a culvert system near the north end of Josselyn Canyon Road into a channelized concrete ditch. Del Monte Lake presumably connects to the Pacific Ocean through an existing storm drain system, although this could not be verified due to the Lake's location on military property. The habitat along Josselyn Canyon Creek and its unnamed tributaries is primarily coast live oak and Monterey pine woodland.

Canyon Del Rey creek flows into Laguna Grande and Roberts Lake. Roberts Lake joins the Pacific Ocean downstream. Habitats along Canyon Del Rey Creek in the Study Areas consist primarily of Coast live oak and nonnative grasses and shrubs. At Laguna Grande and Roberts Lake blackwood acacia and arroyo willow are dominant in the tree canopy, and freshwater emergent wetlands are dominated by bulrush, and cattail, and tule in the Study Areas.

29 *Virgin/Grant Street Swale at Laguna Grande Lake*

This site is associated with a recent stormwater treatment project that included creation of a stormwater swale near the intersection of Virgin and Grant Streets (Appendix A, Figure 4. 27). In the stormwater swale area, vegetation includes wild radish, horseweed, and Jersey cudweed. A band of Himalayan blackberry is present east of the area dominated by herbs, separating the swale from the riparian woodland along Laguna Grande. The project site itself does not appear to be in a jurisdictional area but is close to the riparian and wetland bands associated with Laguna Grande to the west. The swale does not support hydrophytic vegetation. At this location, jurisdictional areas adjacent to the expected work area were mapped to aide in identifying resources to avoid during maintenance. CDFW jurisdiction was mapped to the edge of riparian (willow) canopy and covered 0.190 acres of the site (Table 5). No USACE jurisdictional areas occur in this Study Area (Table 4). This site is within the Coastal Zone.

30 *Outfall D09-O1 at Laguna Grande*

This site is associated with an outfall of the City's storm drain system into Laguna Grande Lake (Appendix A, Figure 4. 24). Structure D09-O1 conveys water out of the storm system and into the lake. Vegetation immediately adjacent to the outfall and its flow path into the lake is predominantly non-native and includes blackwood acacia, cape ivy, and periwinkle. However, native riparian vegetation is present nearby. At the end of the flow path from the culvert at the lake edge, a patch of wetland is present in the Study Area, vegetated with bulrush and cattail. This wetland is connected to a band of cattails and rushes which form a border along the edges of Laguna Grande Lake. The site was saturated. Laguna Grande conveys water into Roberts Lake, which then conveys water to the Pacific Ocean. USACE jurisdiction of the feature was mapped to OHWM or edge of wetland where present and covered 0.042 acres of the site (Table 4). CDFW jurisdiction was mapped at top of bank where canopy was not present, or to edge of riparian where present and covered 0.100 acres of the site (Table 5).

Species composition was used to aide in detecting edge of riparian. This site is within the Coastal Zone.

31 *Outfall C08-E1 at Roberts Lake*

This site is associated with an outfall of the City's storm drain system into Roberts Lake (Appendix A, Figure 4. 25). Structure C08-E1 conveys water out of the storm system and into the lake. Vegetation immediately adjacent to the outfall and its flow path into the lake is predominantly tall wetland vegetation, particularly cattails and tules, that recruited into the shallows created by sedimentation from the drain system Street. A pair of wetland determination data points were collected to confirm the presence and extent of wetland indicators. This site is within the Coastal Zone.

Adjacent to and north of the outfall channel, the bank and uplands immediately surrounding Roberts Lake supports a mixture non-native and upland species. Roberts Lake conveys water to the Pacific Ocean. USACE jurisdiction of the feature was mapped to OHWM or edge of wetland where present and covered 0.313 acres of the site (Table 4). CDFW jurisdiction was mapped at top of bank where canopy was not present, or to edge of riparian where present and covered 0.421 acres of the site (Table 5).

Species composition was used to aide in detecting edge of riparian.

33 *Garden Court Basin*

This site is on a city lot that is open space south of a business park, and north of Highway 68 (Appendix A, Figure 4. 26). The basin appears to have been constructed in uplands and has no apparent inlets from natural waters. The basin is somewhat overgrown and has a lot of downed wood and debris. Some vegetation is present in the basin floor, including small patches of dried cattails and tule. The margins of the basin are similar to the surrounding mixed coast live oak and Monterey pine woodland. The basin has a reinforced spillway and a drop structure to convey water south under Hwy. 68. No USACE or CDFW jurisdictional areas were mapped at this site (Table 4 and Table 5).

34 Encina Avenue and Myers Street Swale

This site is at Laguna Grande Park, just west of the Seaside City boundary (Appendix A, Figure 4. 27). A shallow earthen swale begins near the end of Encina Avenue and captures runoff from the neighborhood, and outlets into wetlands and riparian woodland near the north end of Laguna Grande Lake.

The swale supports sparse weedy herbaceous vegetation, including poison hemlock (*Conium maculatum*), jersey cudweed, bull mallow (*Malva nicaeensis*), horseweed, and perennial mustard (*Hirschfeldia incana*). The swale appears to have been recently maintained, and some of the adjacent willows appear to have been recently pruned. The swale runs approximately southward and drains into a wetland near Laguna Grande. A wetland is present near the southern end of the Study Area and is separated from the main lake by an existing footpath. The wetland supports duckweed (*Lemna* sp.), cattail, ditch grass, cow parsnip (*Berula erecta*), and willow herb. Willow, Himalayan blackberry, and rush are present at the edges.

The swale itself does not appear to be jurisdictional but is close to riparian and wetland areas that are. These riparian and wetland areas have been mapped to aid in avoidance during maintenance of the swale (Table 4 and Table 5).

This site is partially in the coastal zone on the south side.

Undefined Subwatershed

The undefined subwatershed drains approximately 7,882 acres between the Seaside subwatershed and the Carmel River subwatershed and includes the upper reach of Canyon Del Rey creek and associated wetlands. Within the Study Area cattails, tule, umbrella sedge (*Cyperus eragrostis*), spreading rush, brown-headed rush (*Juncus phaeocephalus*), and Mexican rush (*Juncus mexicanus*) occur in stormwater detention and infiltration basins along this reach.

27 Wilson Road Detention Basin

This site is between Hwy. 68 and a business park and consists of a constructed basin and swale that overflow into a natural creek that approximately parallels Hwy. 68 (Appendix A, Figure 4. 21). The basin was dry during the site visits but currently supports hydrophytic vegetation. In the basin bottom, some patches of tule and cattail are present along with jubata grass (*Cortaderia jubata*), rabbitsfoot grass, and blackberry. The upper banks and surrounding uplands support coast live oak woodlands. The basin was previously delineated by Denise Duffy and Associates (2017). The swale is a constructed overflow and is not a jurisdictional feature.

The natural stream south of the basin supports willow riparian woodland. It flows northward and ultimately joins the Canyon Del Rey creek, which flows into Laguna Grande and Roberts Lake. Roberts Lake joins the Pacific Ocean downstream. USACE jurisdiction of the feature was mapped to OHWM during a previous delineation by Denise Duffy and Associates (2017), which covered 0.17 acres. CDFW jurisdiction was mapped at TOB, at 0.210 acres (Table 5).

The swale is a constructed overflow and is not a jurisdictional feature. It was mapped as a constructed swale for reference.

28 Lower Ragsdale Detention Basin

The Study Area has a series of two stormwater detention and infiltration basins near Highway 68 (Appendix A, Figure 4. 22). The area is highly erodible. In a recent wet winter, the hillside above the basin was substantially eroded and a large fan of sediment was deposited above and in the first basin and onto the access road to its south. This fan deposit is on the slope to the north of the basins.

A stream channel also flows into the basins from the east. This channel has been previously modified, and rock gabions were noted near the upstream end of the Study Area.

Both Basins are constructed but support hydrophytic vegetation. The upper basin supports tule and willow; the lower basin supports umbrella sedge, spreading rush, brown-headed rush, and Mexican rush. Wetland determination data points were evaluated to confirm the extent of the area with wetland indicators. Two additional test pits were reviewed to confirm soil conditions at the edges of the basin. The berm was not sampled - the soil appears to be imported /compacted, not native soil condition. USACE jurisdiction of the upper basin was previously delineated to OHWM by Denise Duffy and Associates (2017). Combined USACE jurisdictional areas cover 1.093 acres at this site. CDFW jurisdiction was mapped at TOB, at 1.658 acres (Table 5).

Table 4 Summary of Potentially Jurisdictional Aquatic Resources Calculated to OHWM/Edge of Wetland

Site	Type	Potentially Jurisdictional Area		
		Acres	Linear Feet	Map Figure
CWA Section 404/401 Potential Jurisdiction				
Point Pinos Subwatershed				
1, unnamed stream	Ephemeral/ Intermittent Stream	0.024	170.96	4.1
	Freshwater Emergent Wetland	0.011	60.52	
2, Hartnell Creek	Ephemeral/ Intermittent Stream	0.025	267.81	4.2
3, Hartnell Creek	Ephemeral/ Intermittent Stream	0.016	109.97	4.3
5, Hartnell Creek	Ephemeral/ Intermittent Stream	0.052	166.70	4.4
6, tributary to Hartnell Creek	Ephemeral/ Intermittent Stream	0.02	126.74	4.5
8, tributary to Hartnell Creek	Ephemeral/ Intermittent Stream	0.70	490	4.6
9, unnamed stream	Ephemeral/ Intermittent Stream	0.059	283.85	4.7
	In Stream Basin	0.021	0	
10, unnamed stream	Ephemeral/ Intermittent Stream	0.037	235.56	4.8
11, unnamed stream	Ephemeral/ Intermittent Stream	0.006	81.89	4.9
12, unnamed stream	Ephemeral/ Intermittent Stream	0.039	321.77	4.10
15, unnamed stream	Ephemeral/ Intermittent Stream	0.019	130.77	4.11
16, unnamed stream	Ephemeral/ Intermittent Stream	0.025	188.67	4.12
17, unnamed stream	Ephemeral/ Intermittent Stream	0.077	277.99	4.13
18, unnamed stream	Ephemeral/ Intermittent Stream	0.017	77.39	4.14
19, unnamed stream	Ephemeral/ Intermittent Stream	0.119	848.26	4.15

Site	Type	Potentially Jurisdictional Area		
		Acres	Linear Feet	Map Figure
20, Major Sherman Creek	Ephemeral/ Intermittent Stream	0.044	179.28	4.16
	Freshwater Emergent Wetland	0.148	479.37	
21, Major Sherman Creek	Ephemeral/ Intermittent Stream	0.022	167.34	4.17
22, Major Sherman Creek	Ephemeral/ Intermittent Stream	0.037	241.86	4.18
23, Iris Canyon Creek	Ephemeral/ Intermittent Stream	0.126	601.23	4.19, 4.20
36, Hartnell Creek	Ephemeral/ Intermittent Stream	0.02	178.77	4.28
37, Iris Canyon Creek	Ephemeral/ Intermittent Stream	0.045	214.33	4.29
38, unnamed stream	Ephemeral/ Intermittent Stream	0.094	731.03	4.30
Seaside Subwatershed				
29, Laguna Grande – Swale (Non-Jurisdictional)	Riparian	0	0	4.23
30, Laguna Grande - Outfall	Freshwater Emergent Wetland	0.042	0	4.24
31, Roberts Lake - Outfall	Freshwater Emergent Wetland	0.198	0	4.25
	Open Water	0.115	0	
33, Garden Court Stormwater Basin (Non-Jurisdictional)	Stormwater Basin	0	0	4.26
34. Encina Ave./Myers St. Swale	Forested Wetlands	0.049	0	4.27
Undefined Subwatershed				
27, Wilson Rd Basin	Constructed Basin	0.17	0	4.21
28, Lower Ragsdale Basin	Constructed Basin	1.093	0	4.22
	Ephemeral/ Intermittent Stream	0.001	0	
Total		2.841	6,632.6	

Table 5 Summary of Aquatic Resources Calculated to Top of Bank/Edge of Riparian

Site	Type	Potentially Jurisdictional Area	Linear Feet	Map Figure
Potential CDFW 1600 Jurisdiction				
Point Pinos Subwatershed				
1, <i>unnamed stream</i>	Top of Bank	0.132	170.96	4.1
2, <i>Hartnell Creek</i>	Top of Bank	0.108	60.52	4.2
3, <i>Hartnell Creek</i>	Top of Bank	0.041	267.81	4.3
5, <i>Hartnell Creek</i>	Top of Bank/Edge of Riparian	0.297	109.97	4.4
6, <i>tributary to Hartnell Creek</i>	Top of Bank	0.087	166.70	4.5
8, <i>tributary to Hartnell Creek</i>	Top of Bank/Edge of Riparian	0.215	126.74	4.6
9, <i>unnamed stream</i>	Top of Bank	0.222	490	4.7
10, <i>unnamed stream</i>	Top of Bank	0.197	283.85	4.8
11, <i>unnamed stream</i>	Top of Bank	0.031	0	4.9
12, <i>unnamed stream</i>	Top of Bank	0.177	235.56	4.10
15, <i>unnamed stream</i>	Top of Bank/Edge of Riparian	0.096	81.89	4.11
16, <i>unnamed stream</i>	Top of Bank	0.065	321.77	4.12
17, <i>unnamed stream</i>	Top of Bank/Edge of Riparian	0.199	130.77	4.13
18, <i>unnamed stream</i>	Top of Bank	0.073	188.67	4.14
19, <i>unnamed stream</i>	Top of Bank	0.320	277.99	4.15
20, <i>Major Sherman Creek</i>	Top of Bank/Edge of Riparian	0.742	77.39	4.16
21, <i>Major Sherman Creek</i>	Top of Bank/Edge of Riparian	0.127	848.26	4.17
22, <i>Major Sherman Creek</i>	Top of Bank/Edge of Riparian	0.366	179.28	4.18
23, <i>Iris Canyon Creek</i>	Top of Bank/Edge of Riparian	0.908	479.37	4.19, 4.20
36, <i>Hartnell Creek</i>	Top of Bank/Edge of Riparian	0.118	167.34	4.28
37, <i>Iris Canyon Creek</i>	Top of Bank	0.248	184.33	4.29
38, <i>unnamed stream</i>	Top of Bank	0.239	601.23	4.30
Seaside Subwatershed				
29, <i>Virgin/Grant St. Swale</i>	Riparian/Lake	0.190	0	4.23
30, <i>Laguna Grande - Outfall</i>	Riparian/Lake	0.100	0	4.24
31, <i>Roberts Lake - Outfall</i>	Riparian/Lake	0.421	0	4.25
33, <i>Garden Court Stormwater Basin (Non-Jurisdictional)</i>	Stormwater Basin	0	0	4.26
34, <i>Encina Ave./Myers St. Swale</i>	Riparian/Lake	0.113	0	4.27
Undefined Subwatershed				
27, <i>Wilson Rd Basin</i>	Stormwater Basin	0.210	0	4.21
28, <i>Lower Ragsdale Basin</i>	Stormwater Basin	1.658	0	4.22
Total		7.701	6,601.98	

4.2 Conclusion

The Study Areas contain lakes, perennial, intermittent and ephemeral streams, and in-channel wetlands that meet the definition of federal waters that would be regulated by the USACE and RWQCB under sections 404 and 401 of the CWA and may also be regulated by the RWQCB under Porter-Cologne. Streambed and streambank habitats up to the top of bank, as well as riparian vegetation to the outer dripline of the riparian community is subject to the jurisdiction of the CDFW pursuant to Sections 1600 et seq. of the CFGC. Complete avoidance of these Jurisdictional features during maintenance activities is likely unavoidable, permits from these agencies should be sought prior to impacting waters.

5 Limitations, Assumptions, and Use Reliance

This delineation has been performed in accordance with professionally accepted delineation practices in use at this time and in this geographic area. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from approved methodologies, review of specified database and literature sources and four site visits. This report identifies all potentially jurisdictional aquatic resources observed in the Study Area at the time of field work completed between July and October 2017; however, we note that the Study Areas are within a highly modified system that is part of a working landscape, and conditions may change rapidly with changes in land use and management.

Final jurisdictional determinations of the boundaries of aquatic resources and their jurisdictional status are made by each agency, typically at the time that authorizations to impact such features are requested.

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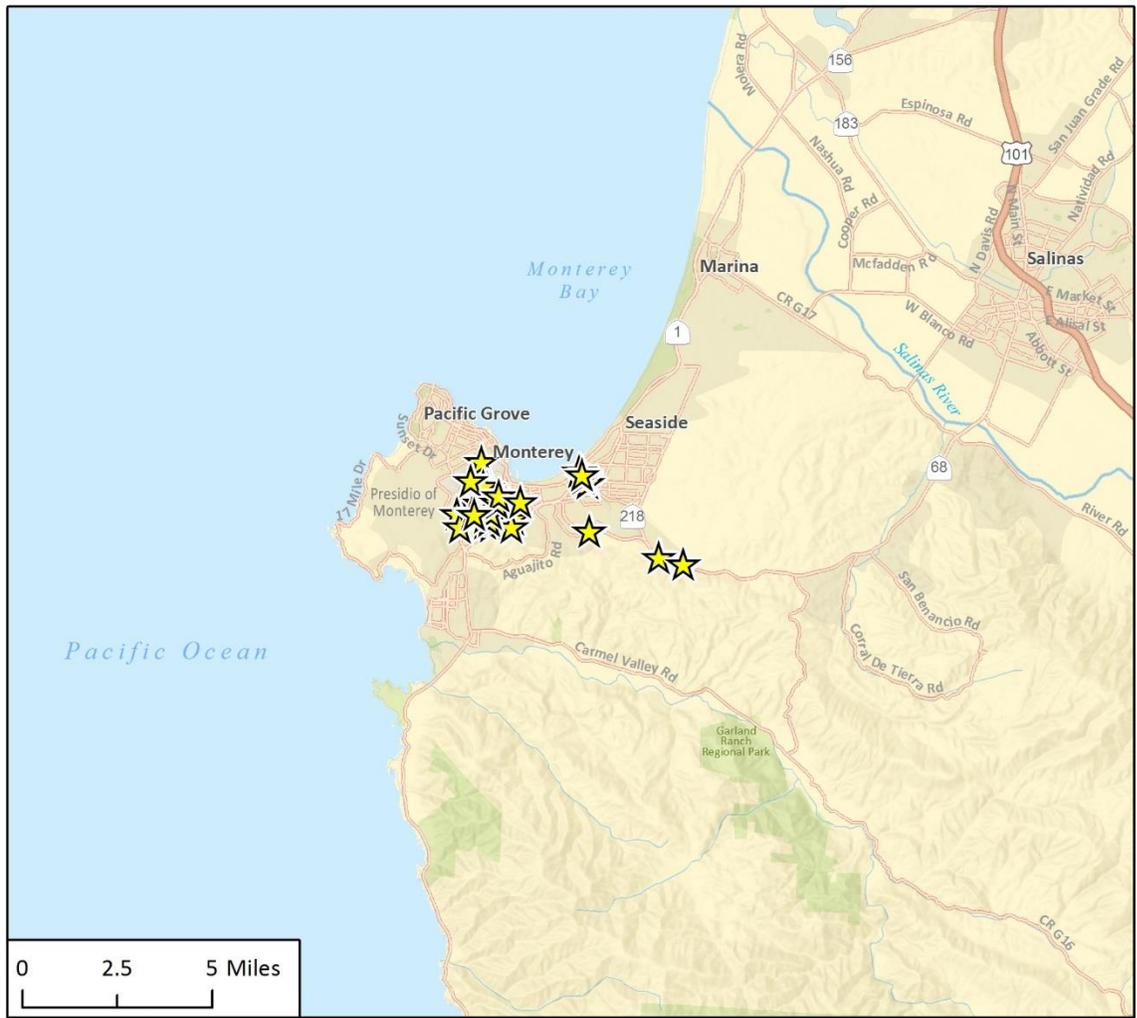
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Appendix A

Figures

Figure 1 Regional Location



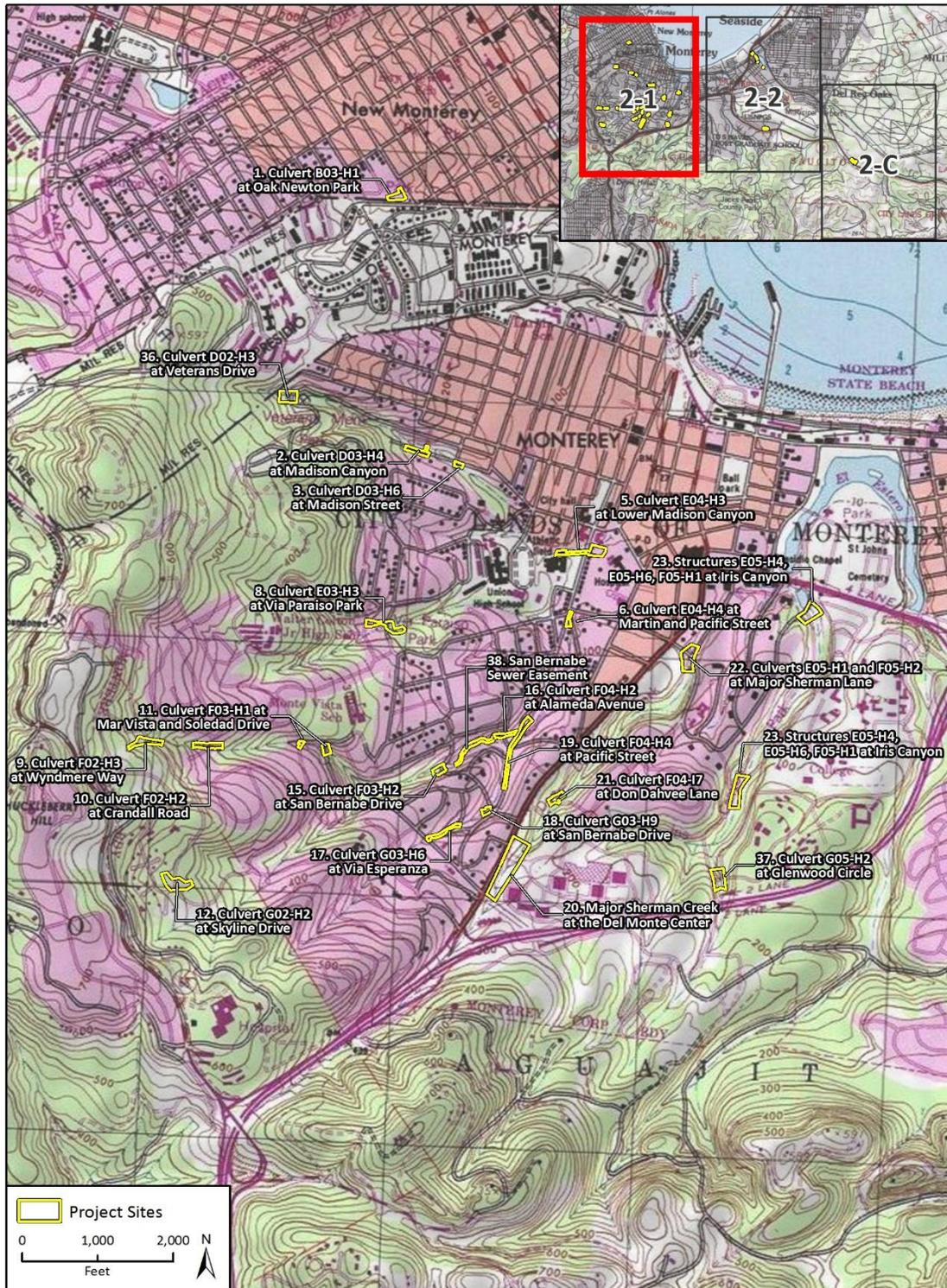
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★ Project Location



03 Fig. 1 Regional Location

Figure 2.1 Project Location



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10 Fig. 2.1open

Figure 2.2 Project Location

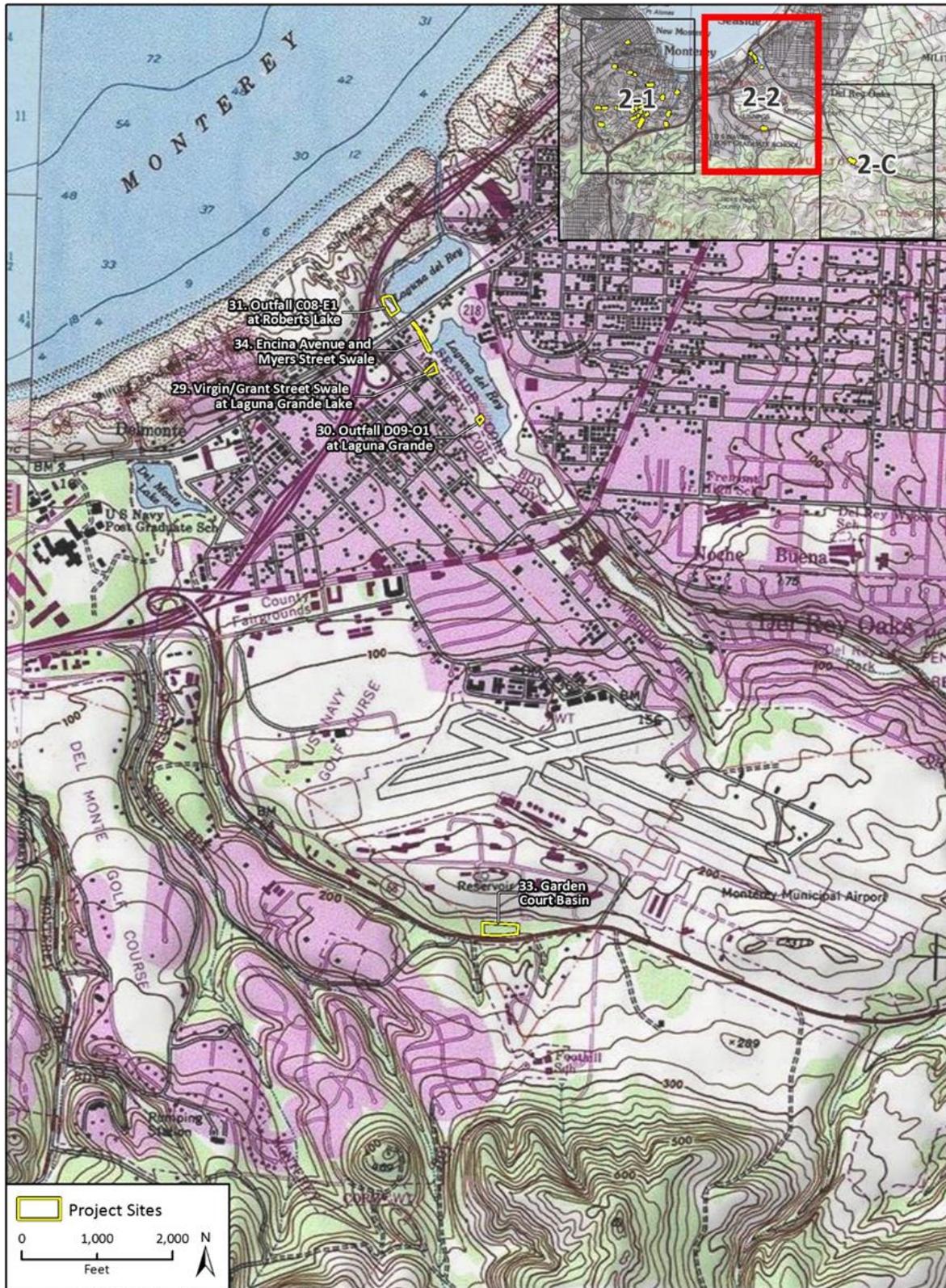
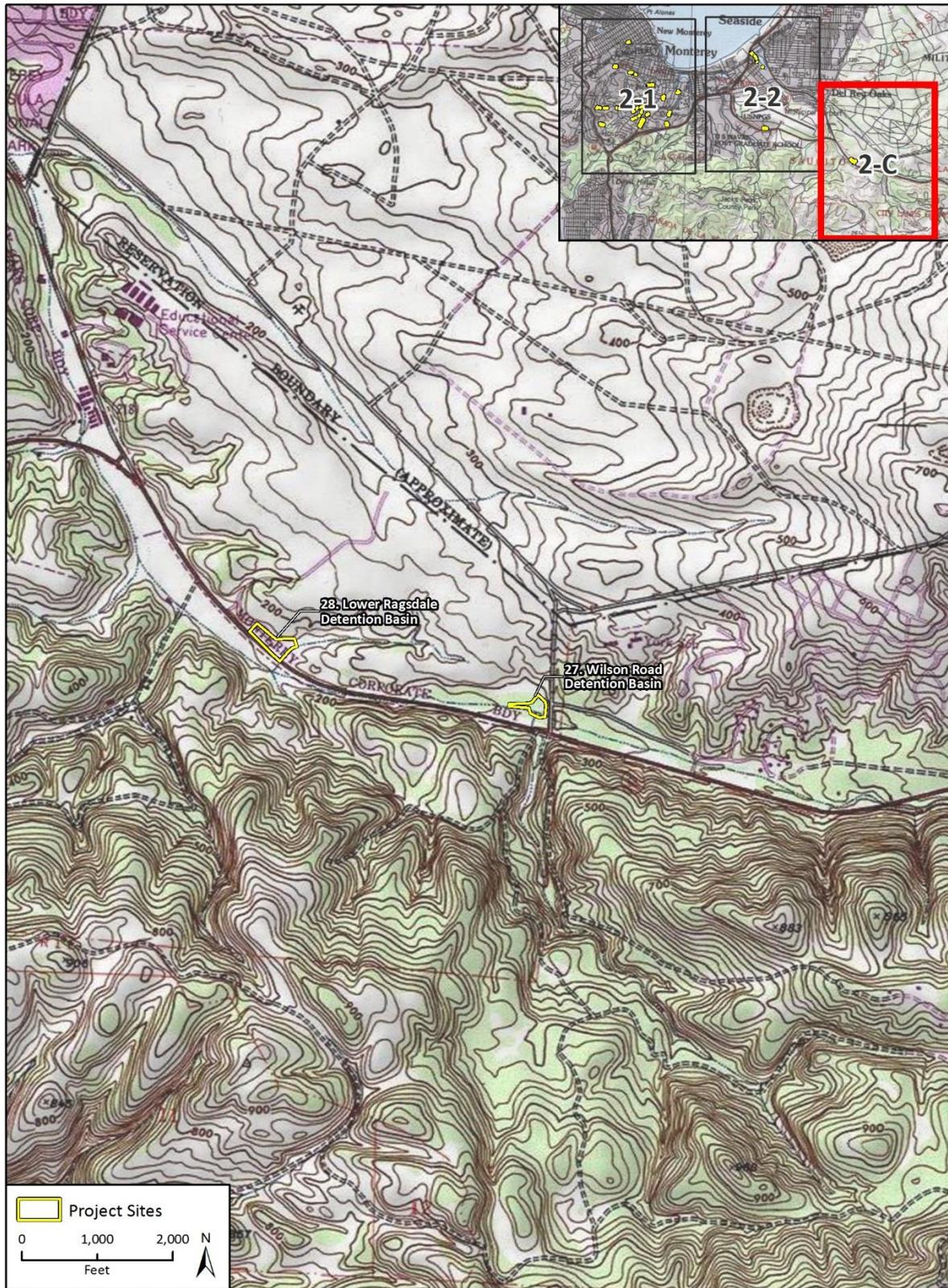


Figure 2.3 Project Location



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3D Fig 2. Topo

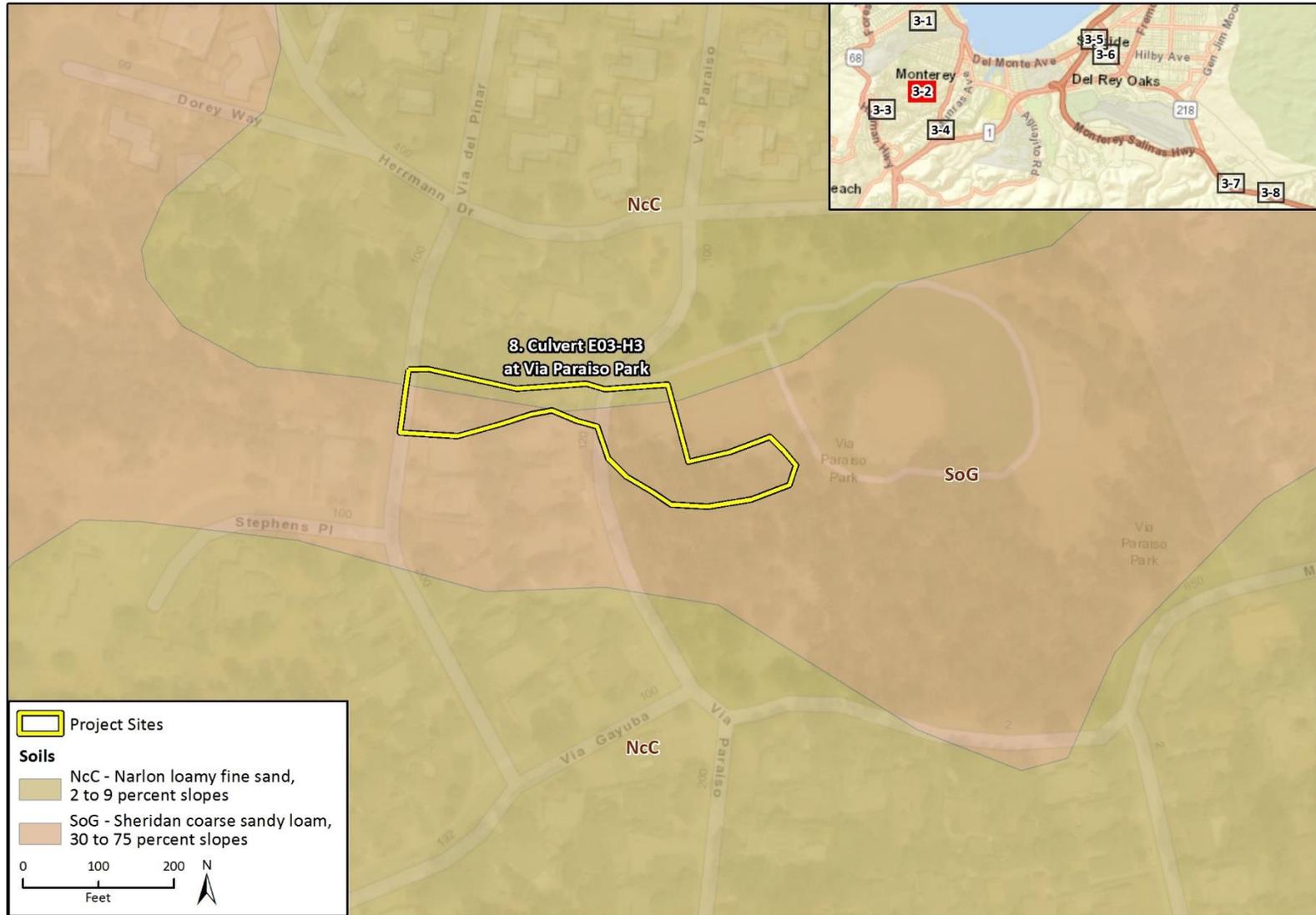
Figure 3.1 Soil Map



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 Additional data provided by USDA NRCS SSURGO, 2018.

JD Fig 3. Soils DDP

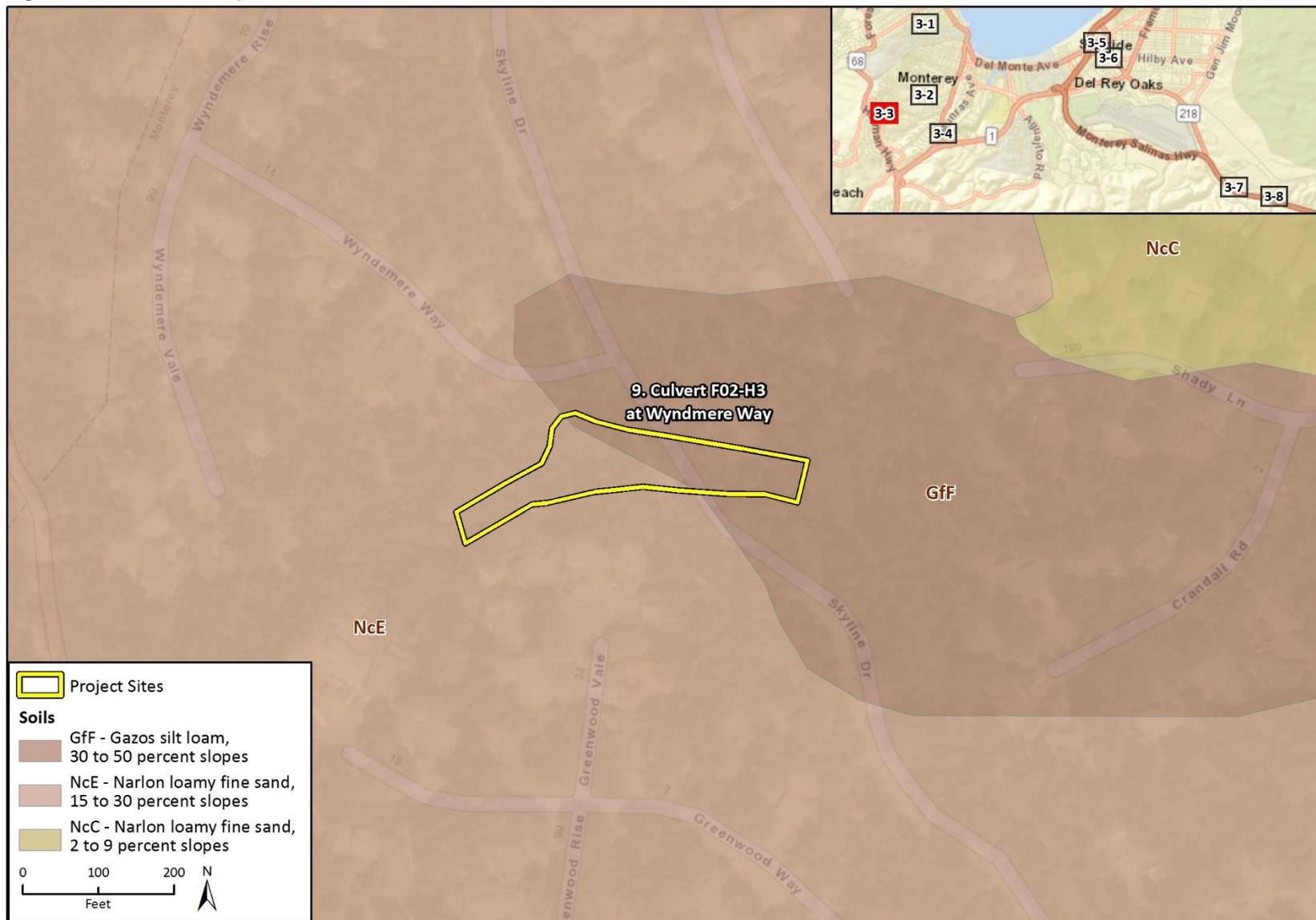
Figure 3.2 Soil Map



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Additional data provided by USDA NRCS SSURGO, 2018.

10 Fig 3 Soils DDP

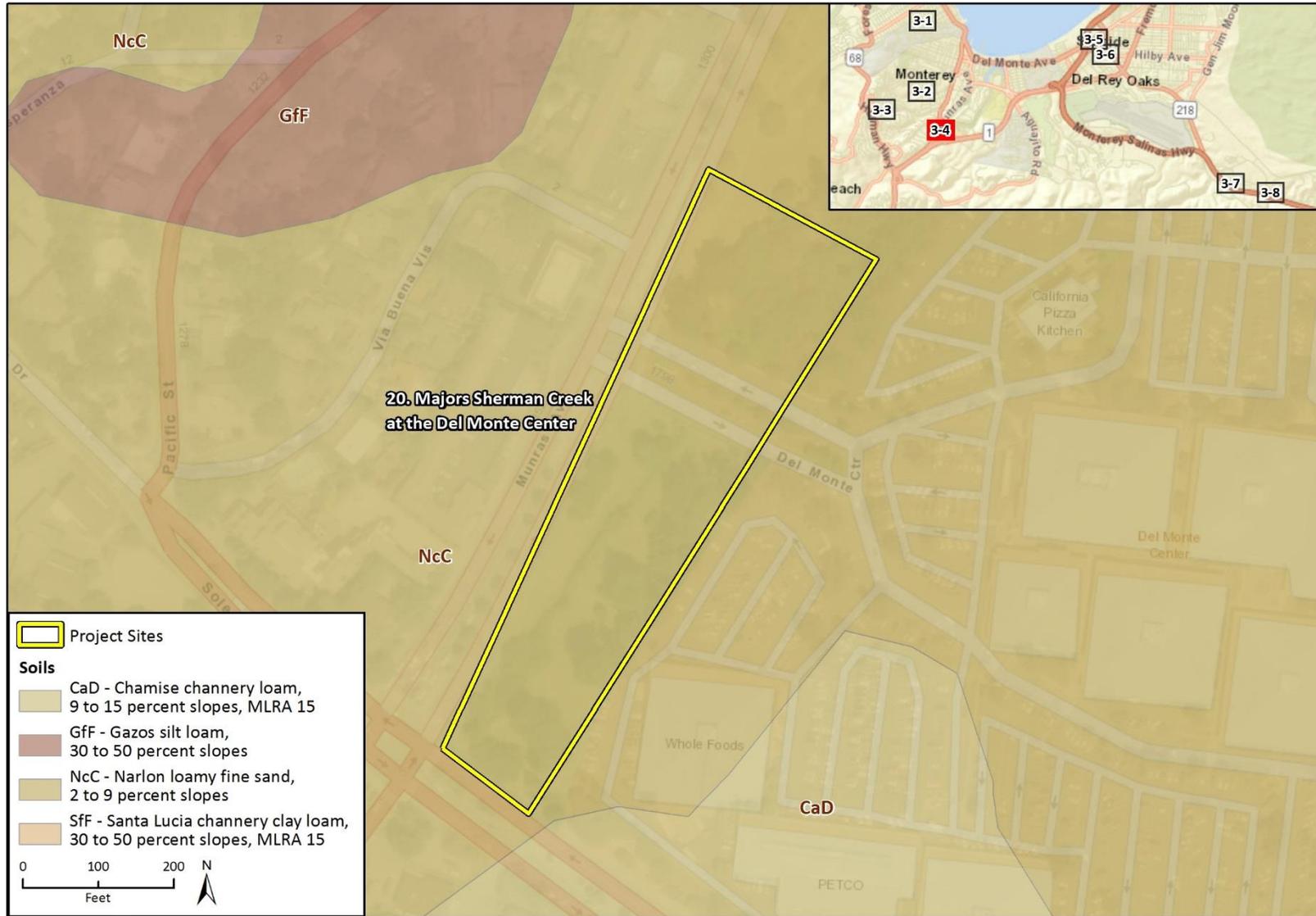
Figure 3.3 Soil Map



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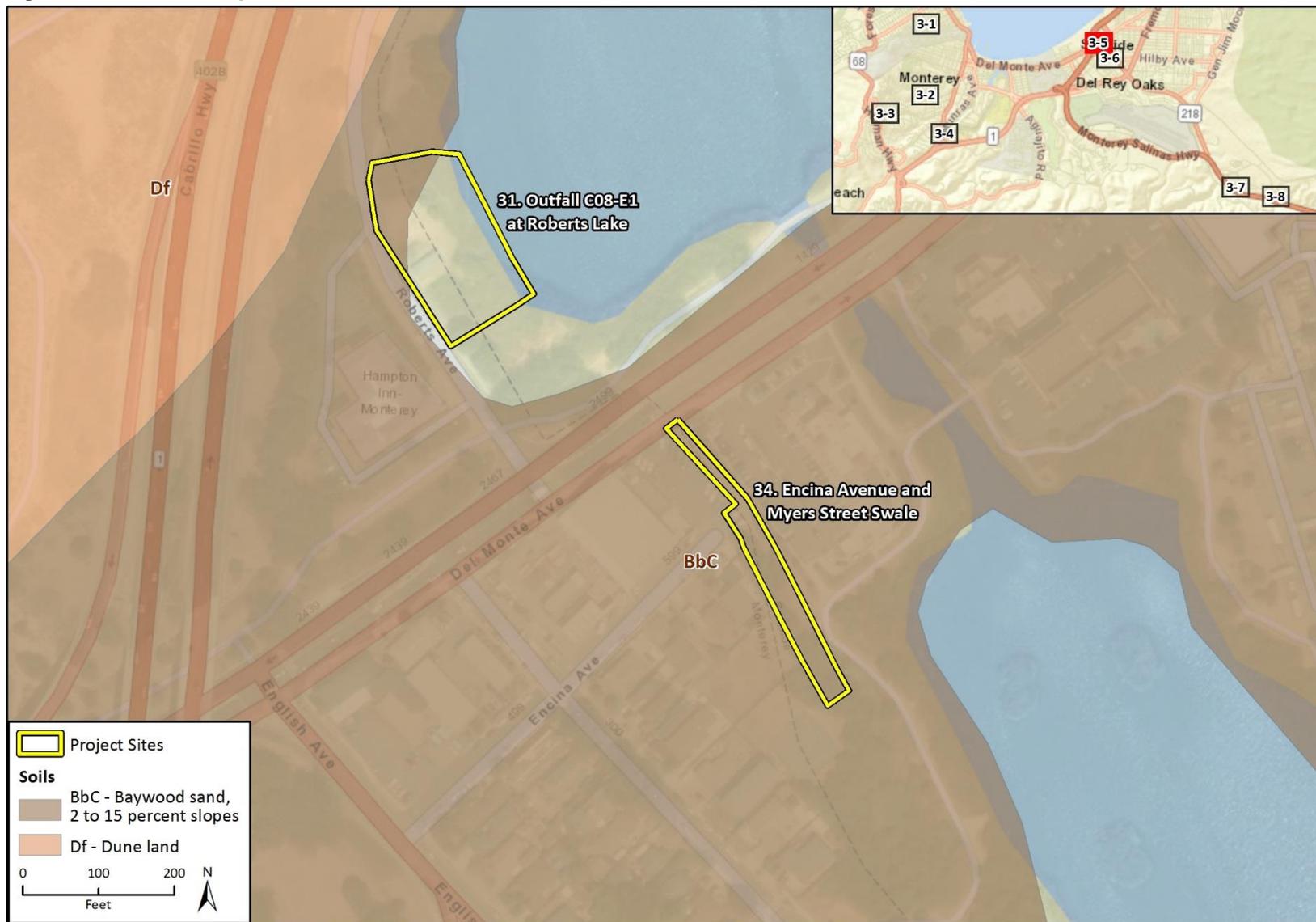
Figure 3.4 Soil Map



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JD Fig 3 Soils DDP

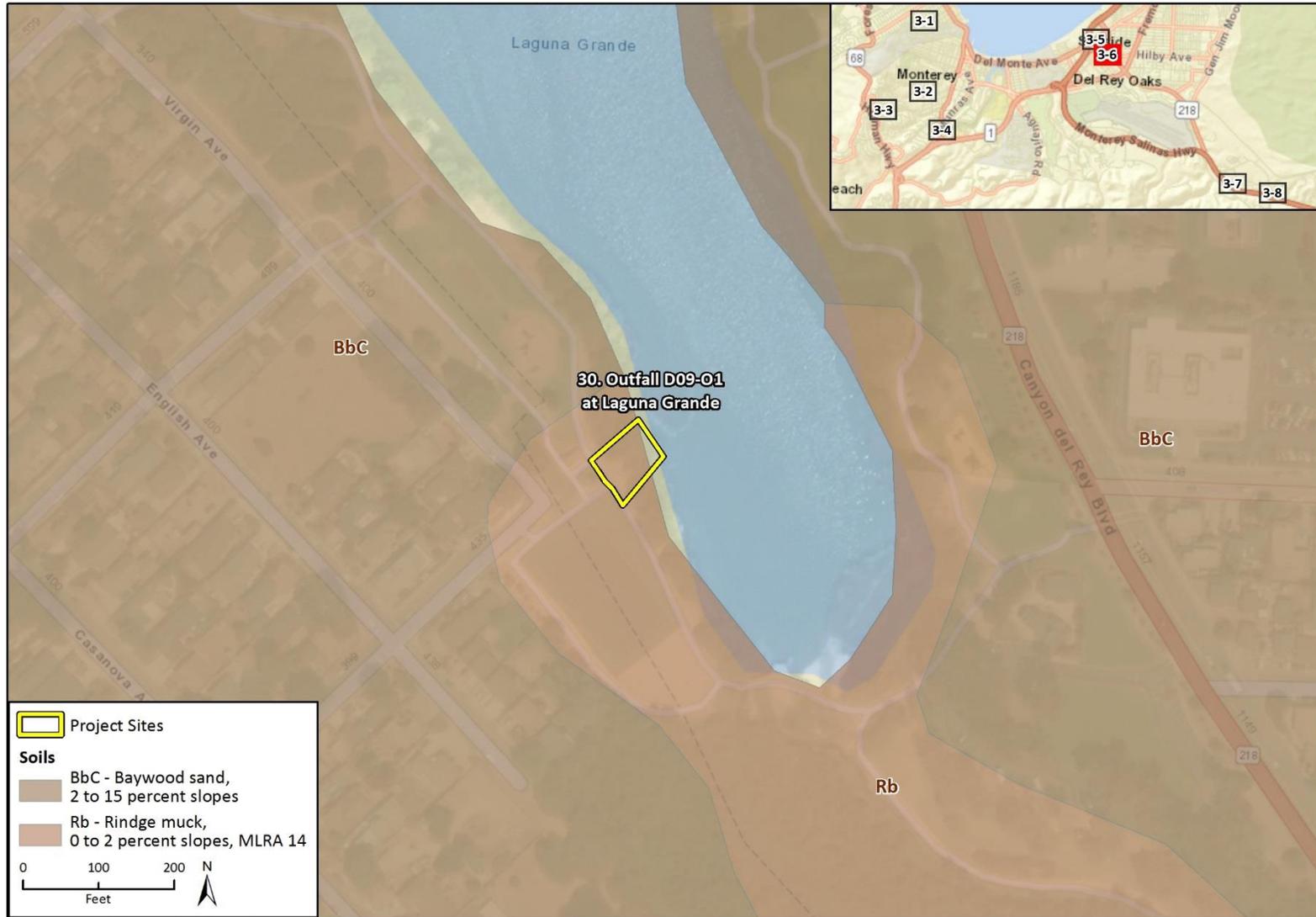
Figure 3.5 Soil Map



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 Additional data provided by USDA NRCS SSURGO, 2018.

JD Fig.3 Soils DDP

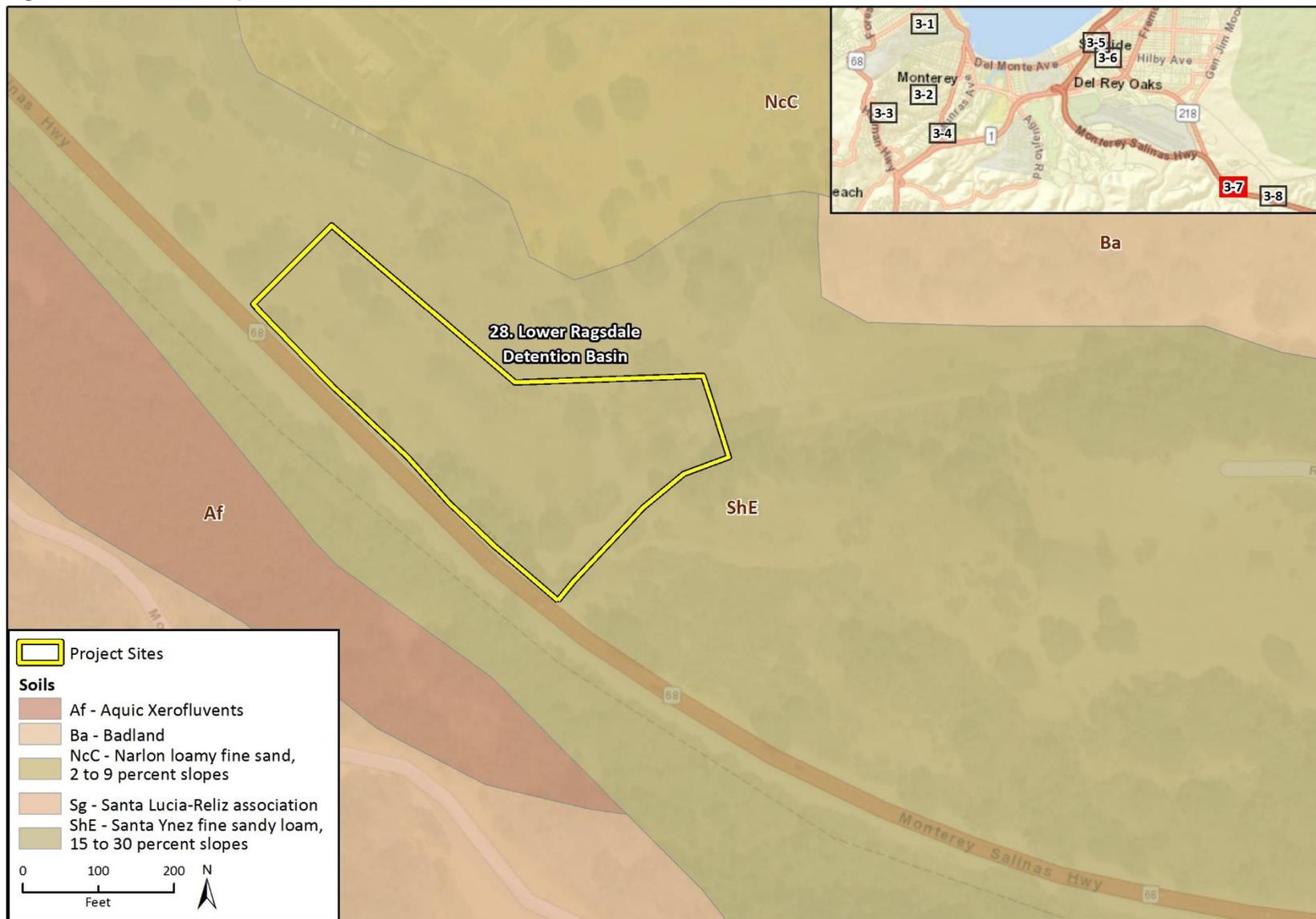
Figure 3.6 Soil Map



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Additional data provided by USDA NRCS SSURGO, 2018.

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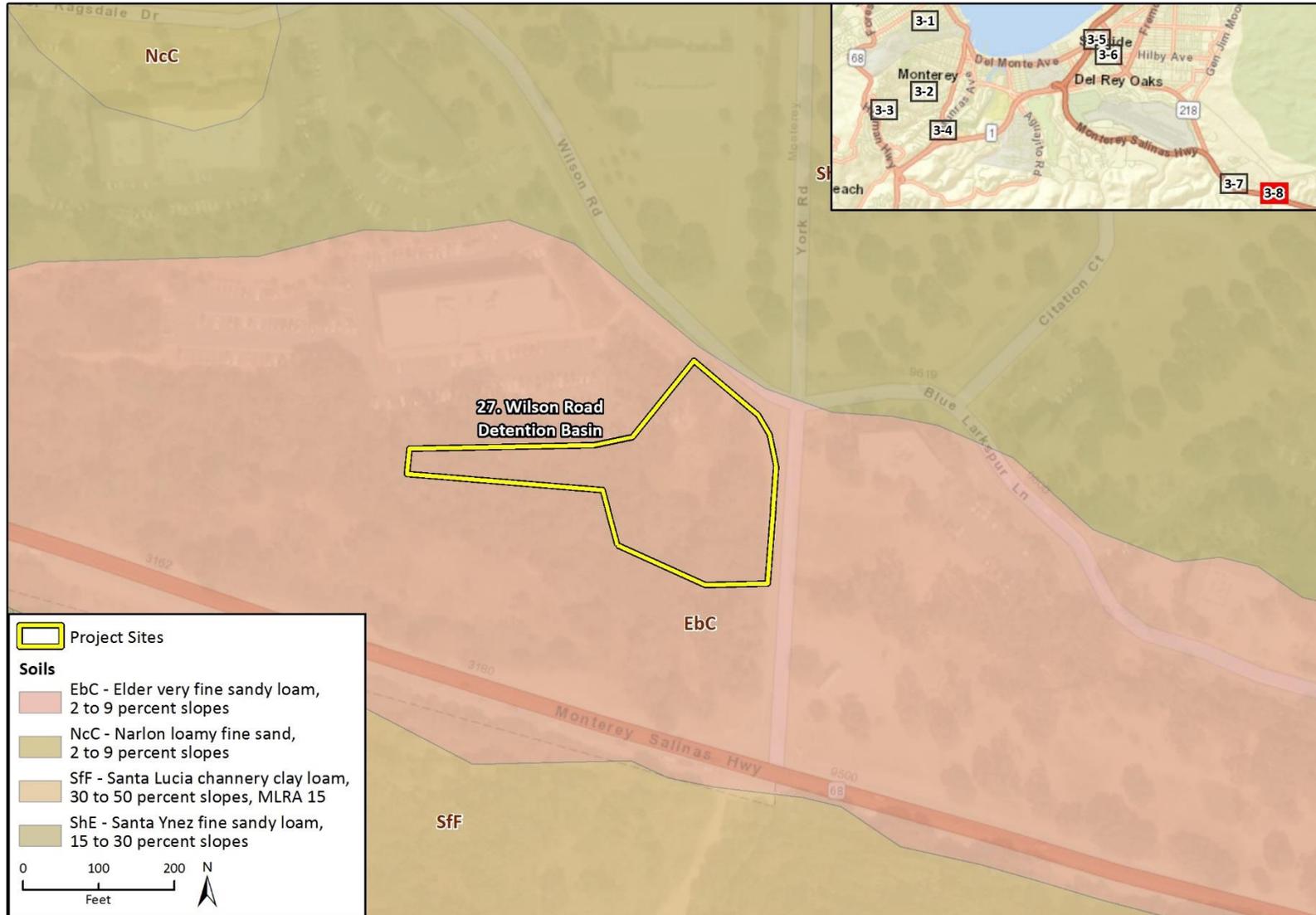
Figure 3.7 Soil Map



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 Additional data provided by USDA NRCS SSURGO, 2018.

JD Fig 3 Soils DDP

Figure 3.8 Soil Map



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 Additional data provided by USDA NRCS SSURGO, 2018.

ID Fig 3. Soils DDP

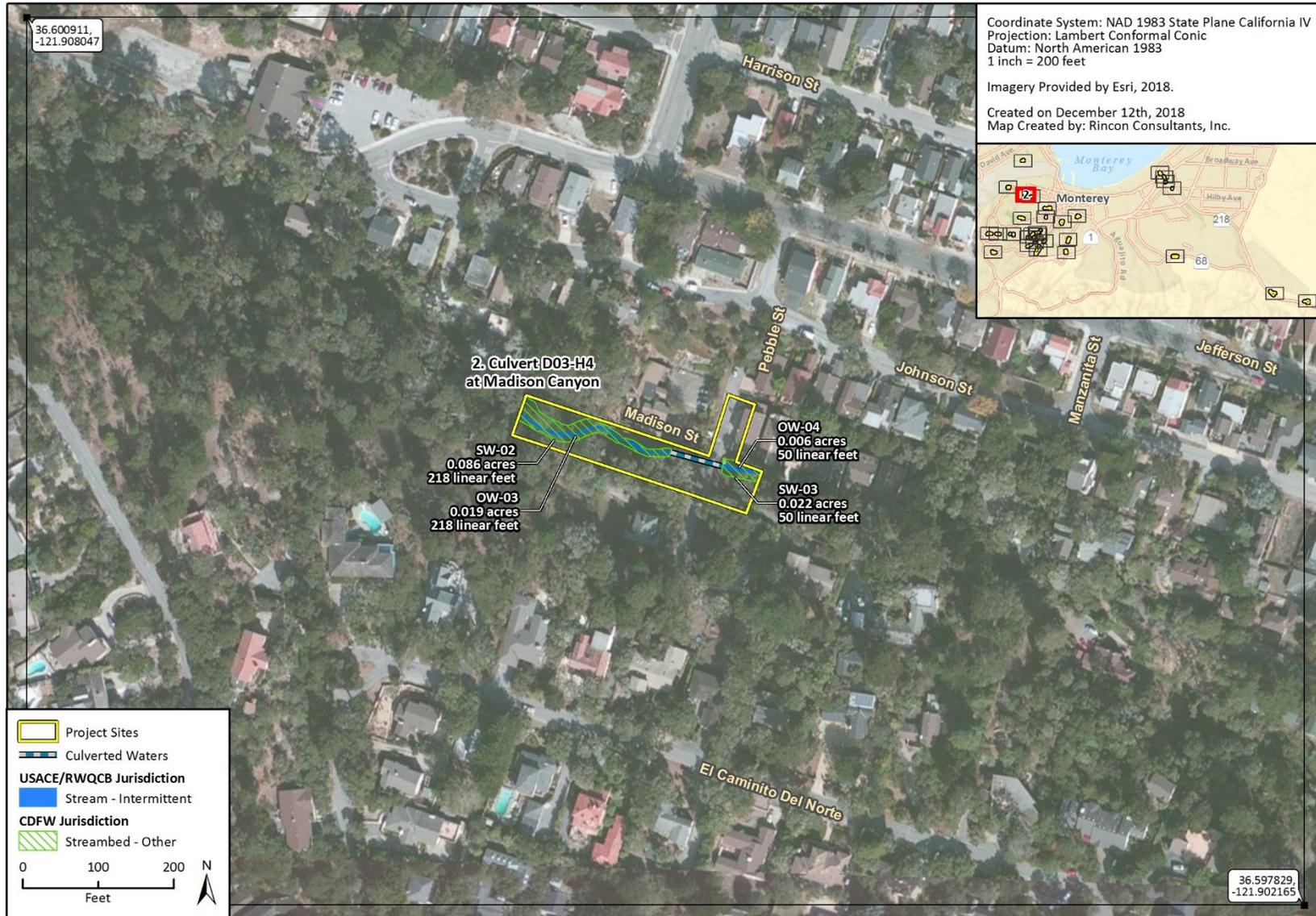
Figure 4.1 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

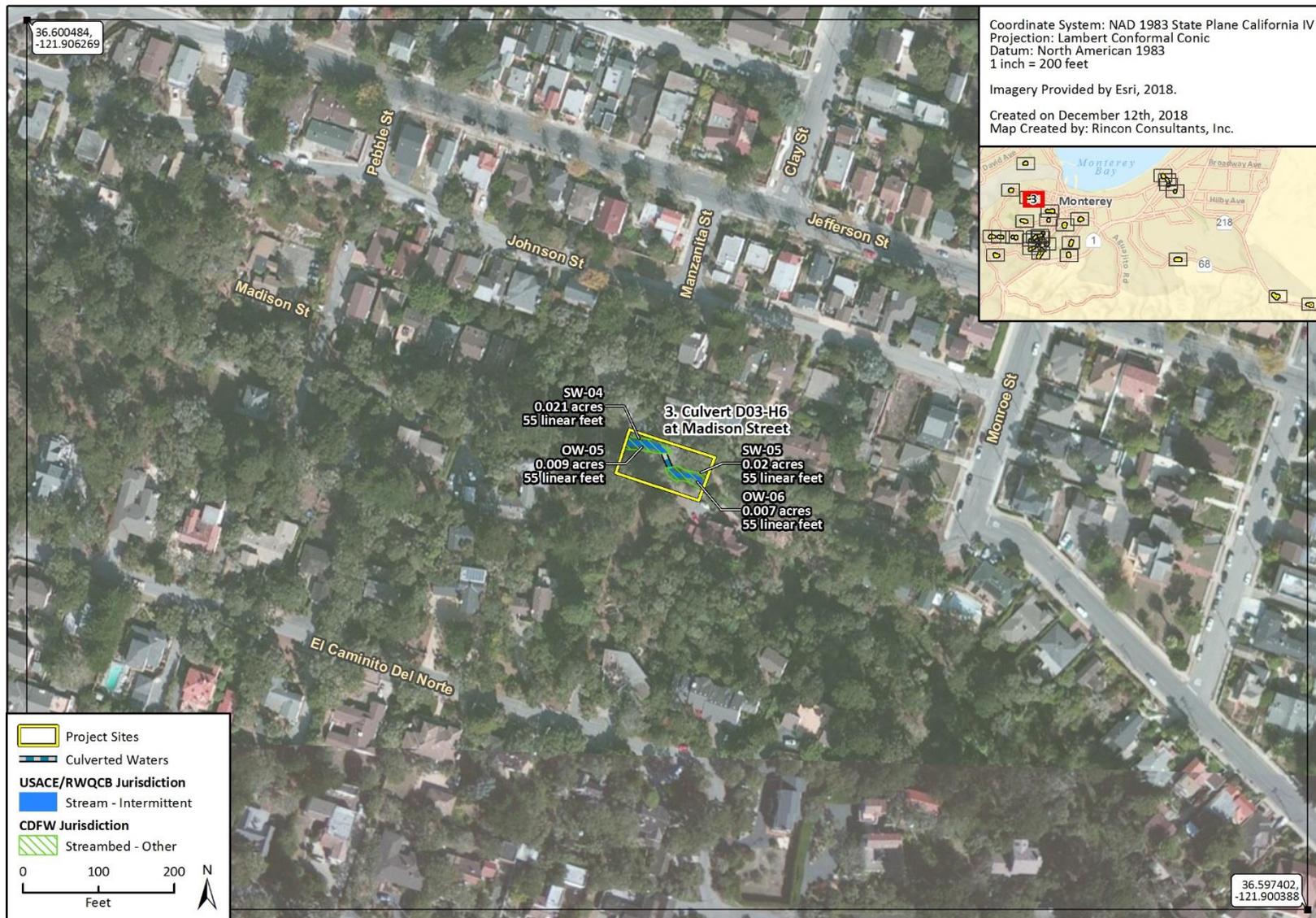
Figure 4.2 Aquatic Resources



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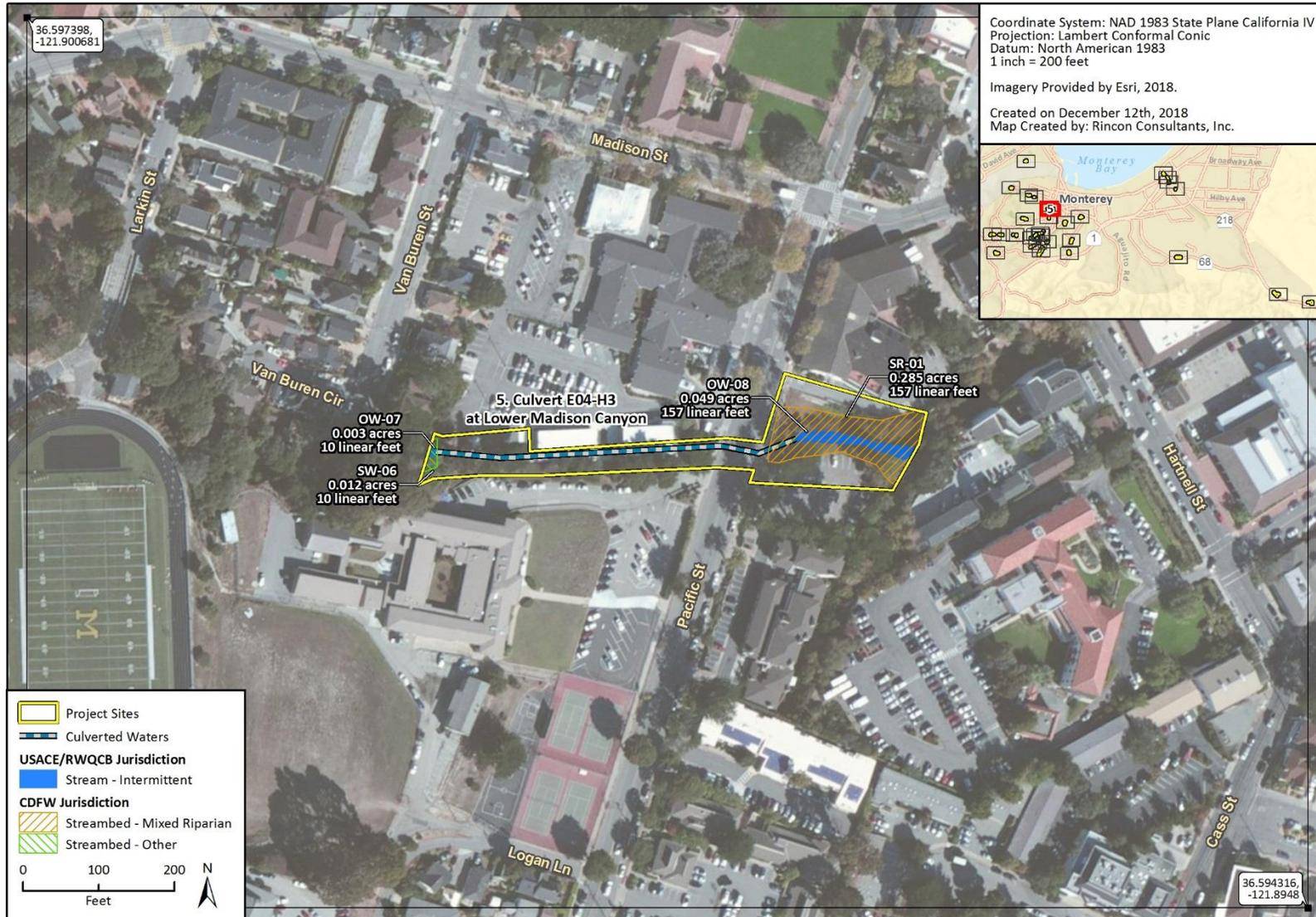
Figure 4.3 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

Figure 4.4 Aquatic Resources



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Figure 4.5 Aquatic Resources



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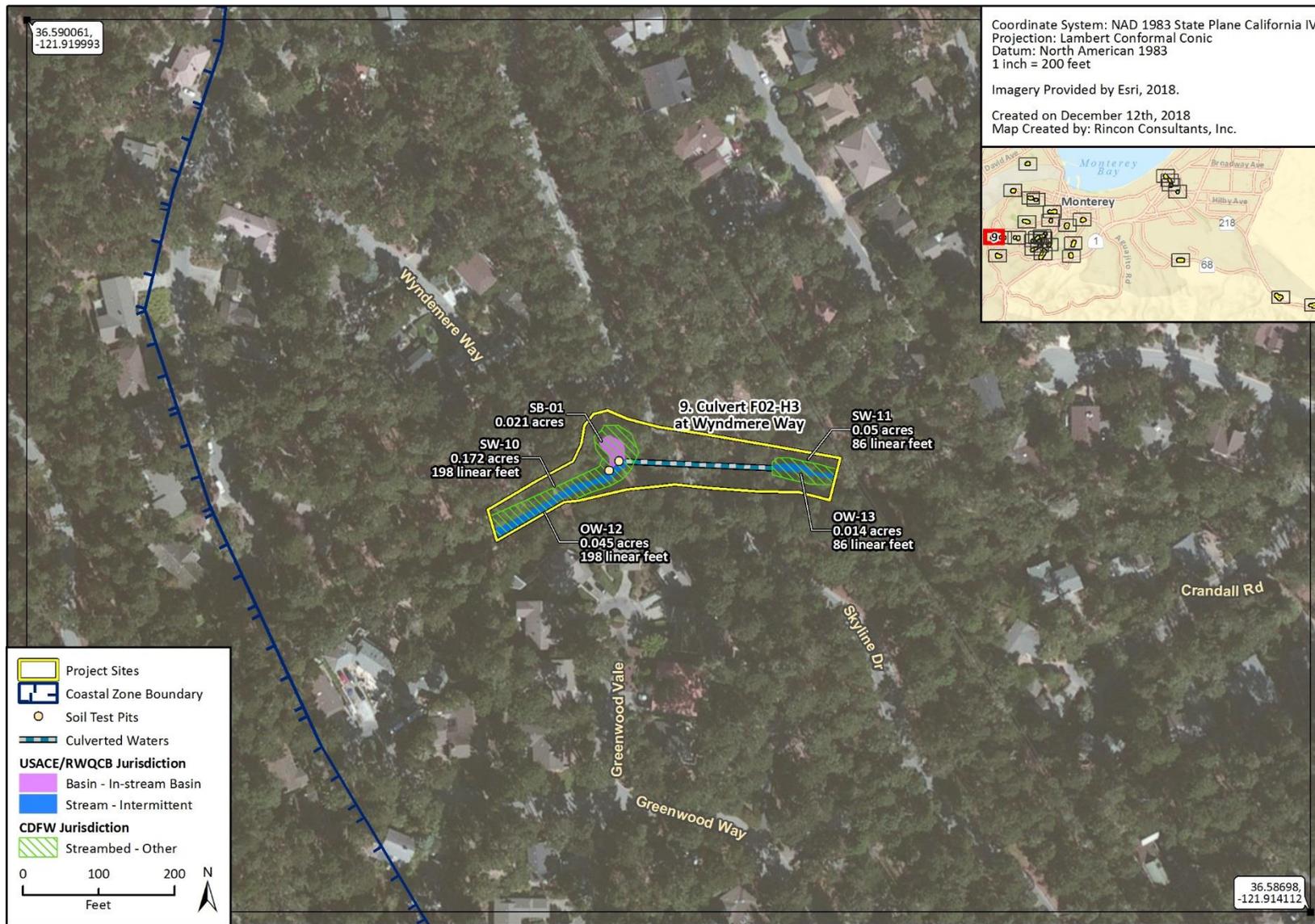
Figure 4.6 Aquatic Resources



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JD Fig-4 Aquatic Resources DDP

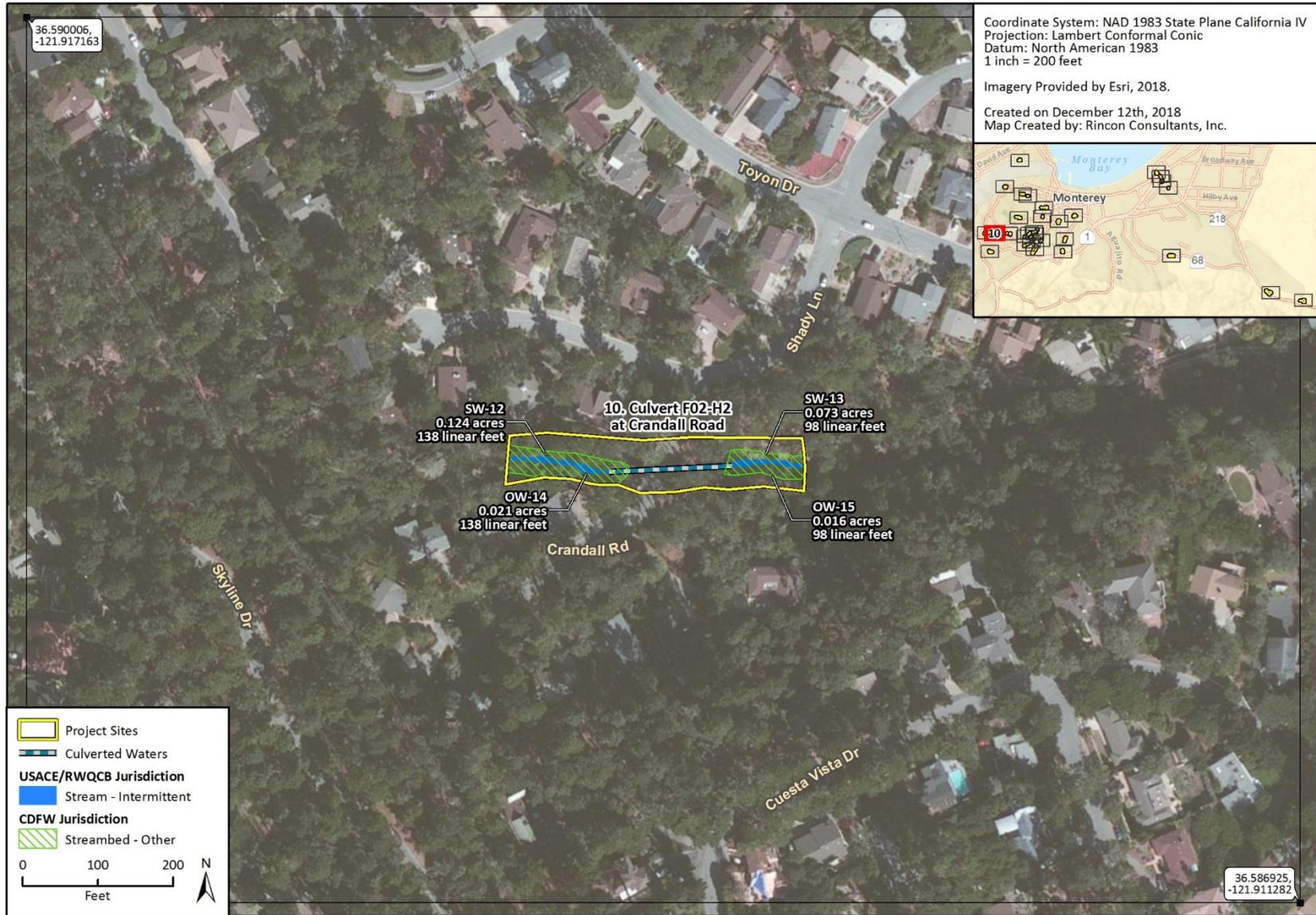
Figure 4.7 Aquatic Resources



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00 Fig 4 Aquatic Resources DDP

Figure 4.8 Aquatic Resources



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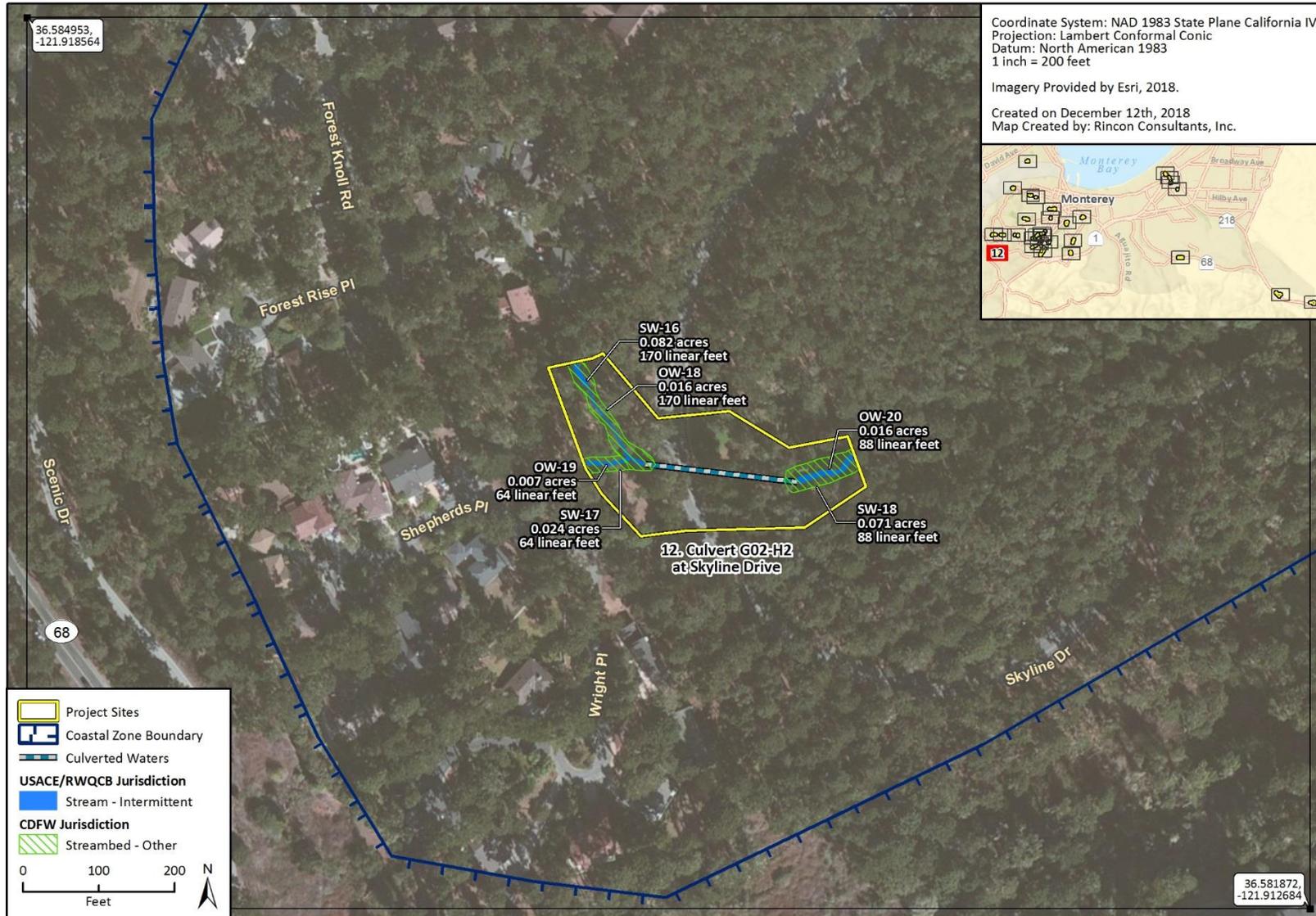
Figure 4.9 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

Figure 4.10 Aquatic Resources



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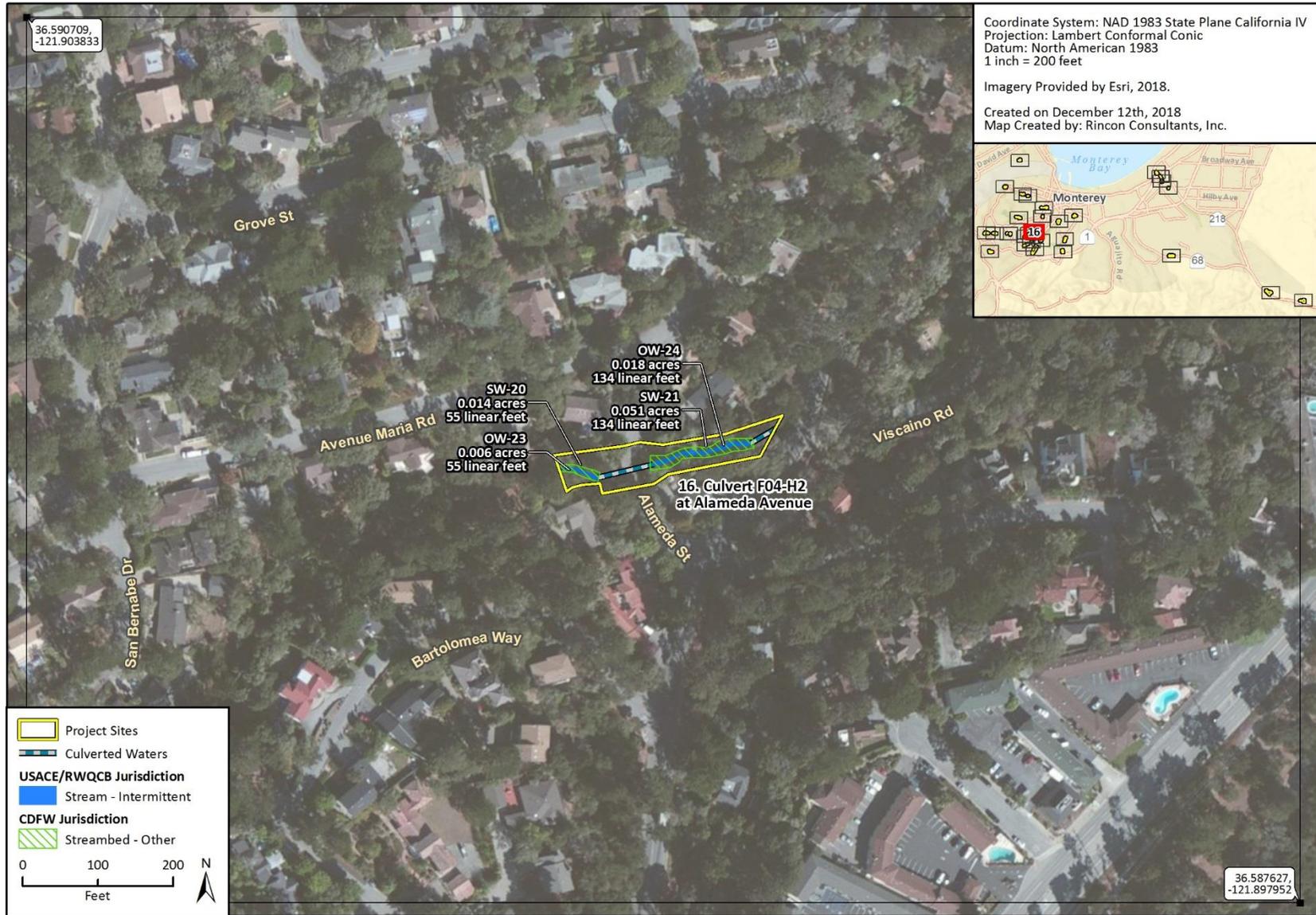
Figure 4.11 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

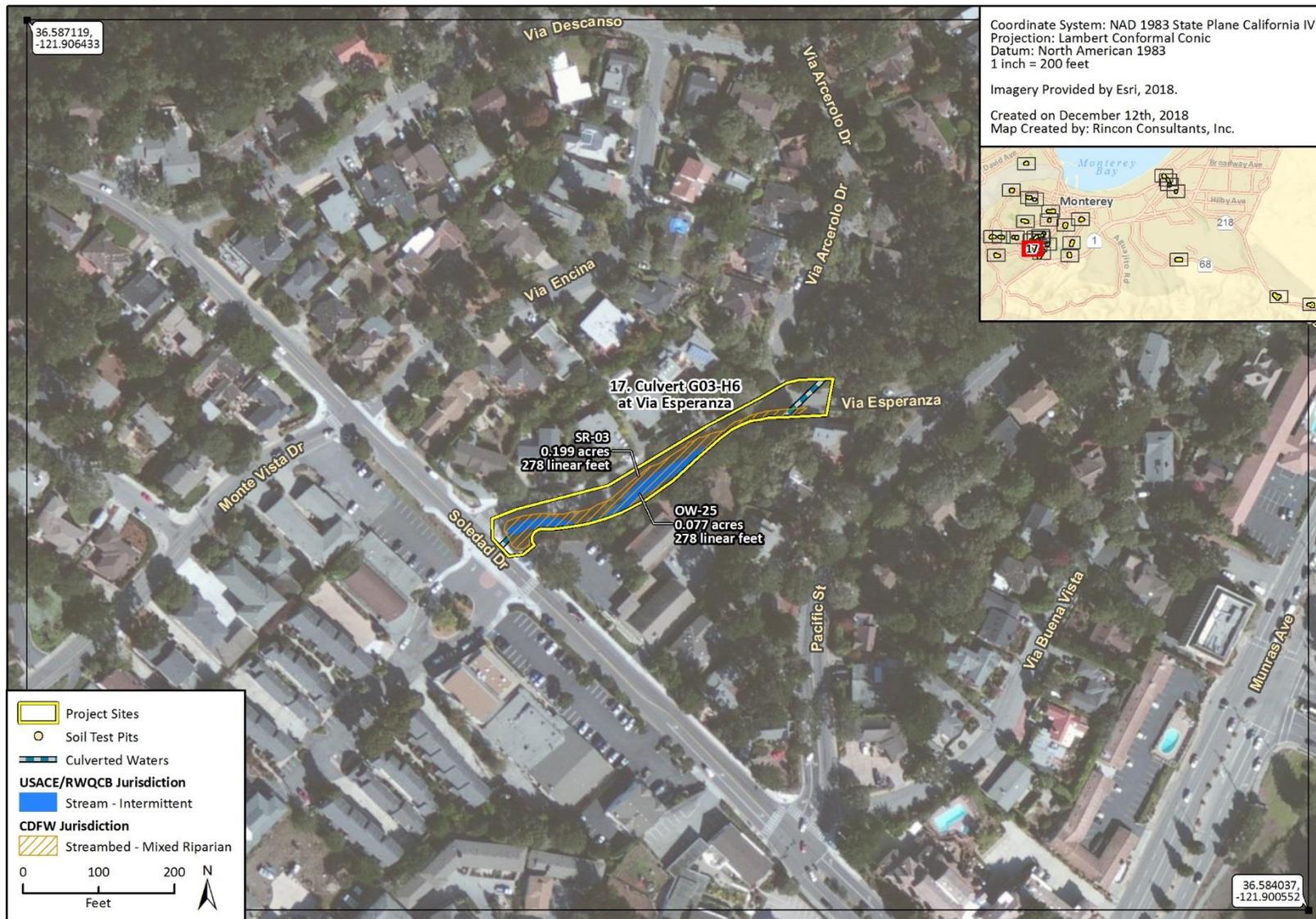
Figure 4.12 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

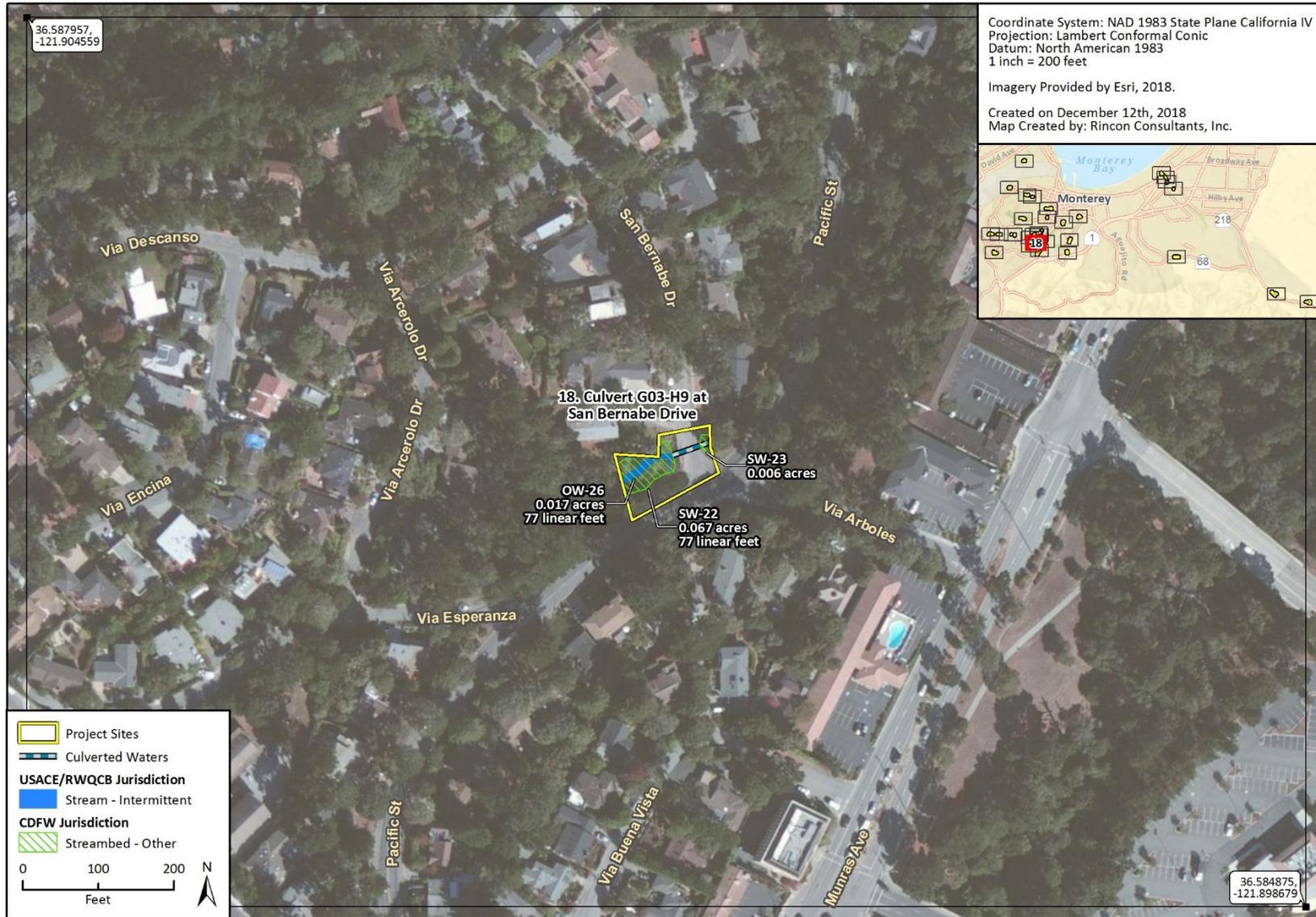
Figure 4.13 Aquatic Resources



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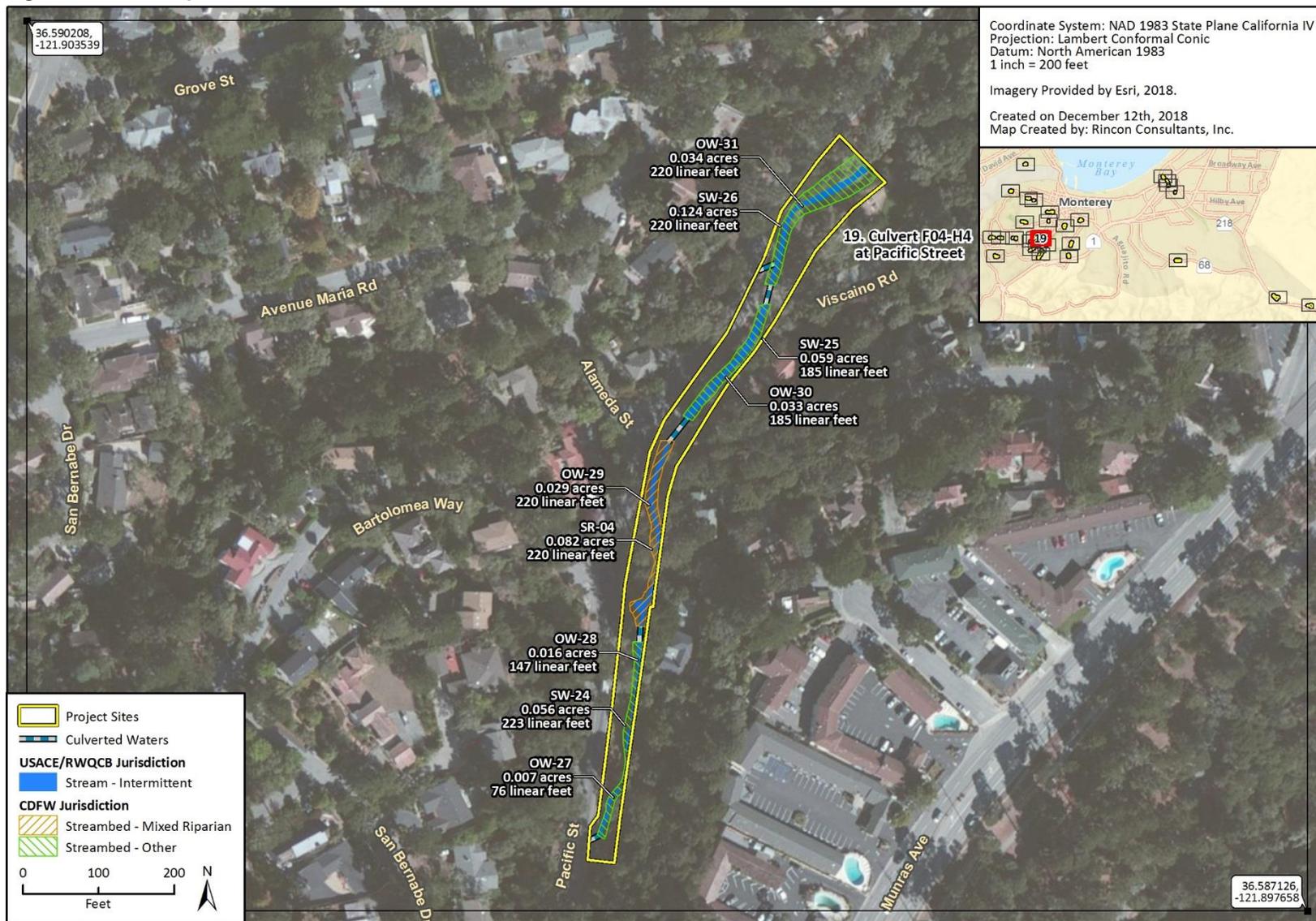
ID Fig 4 Aquatic Resources DDP

Figure 4.14 Aquatic Resources



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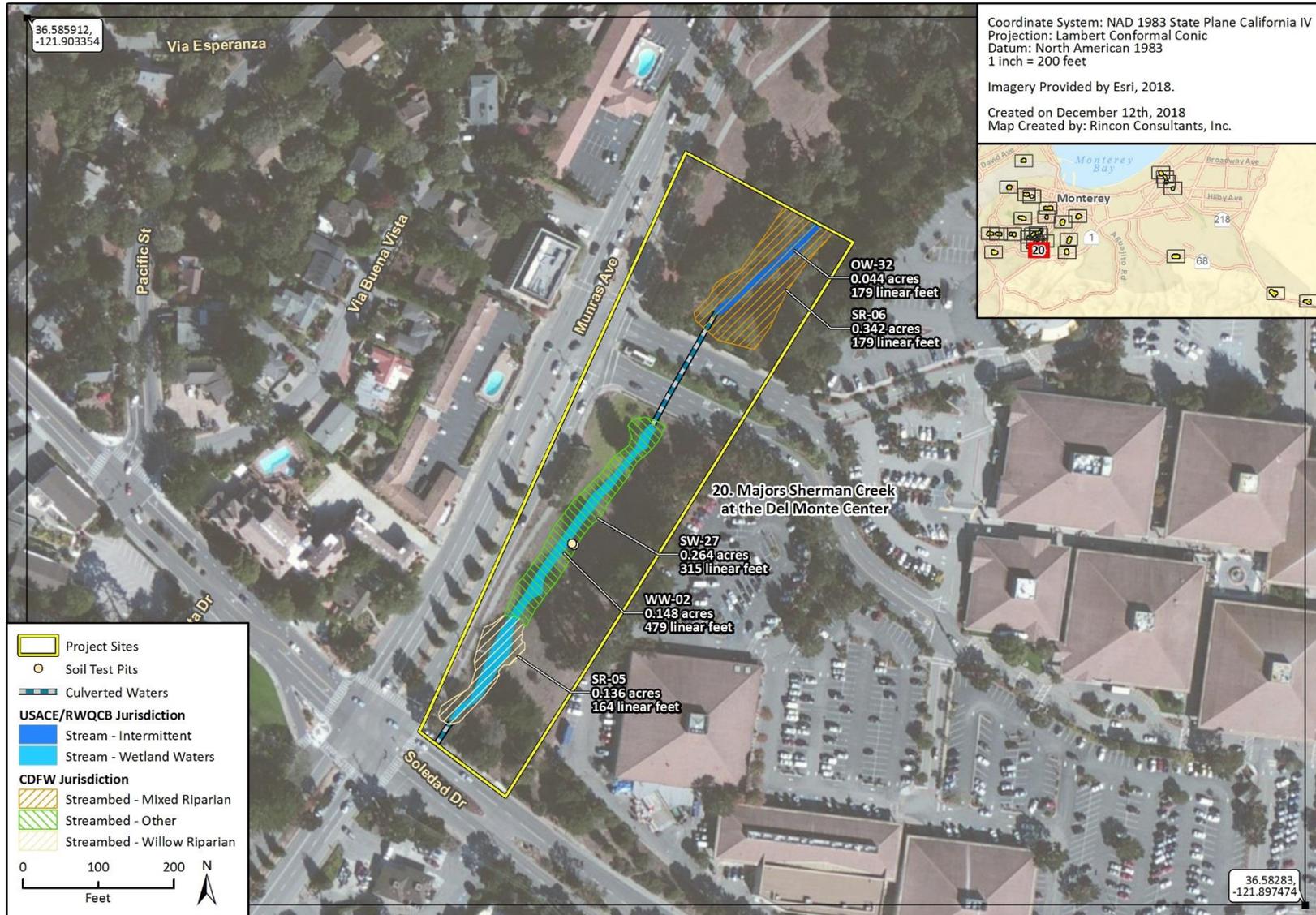
Figure 4.15 Aquatic Resources



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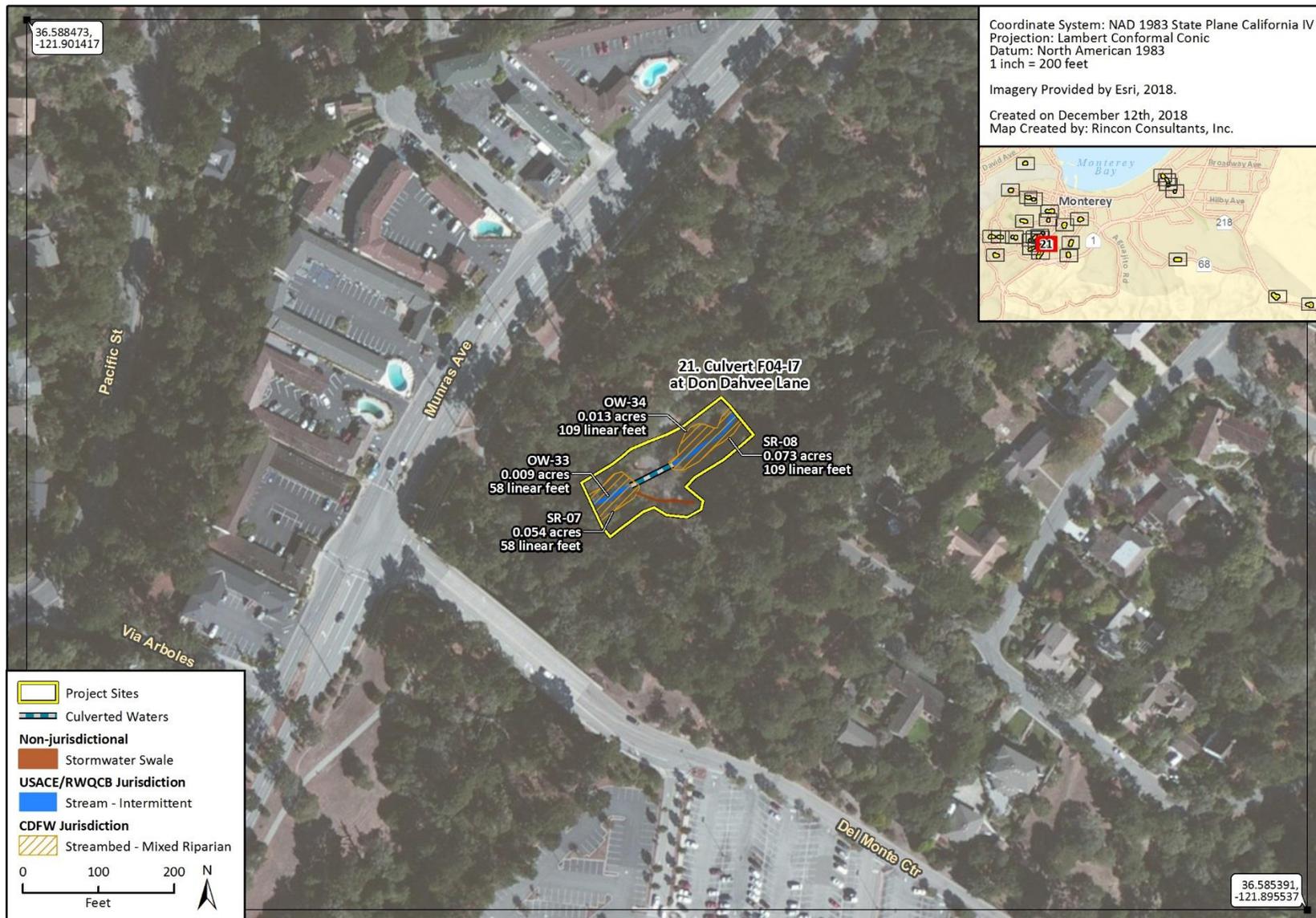
ID Fig 4 Aquatic Resources DDP

Figure 4.16 Aquatic Resources



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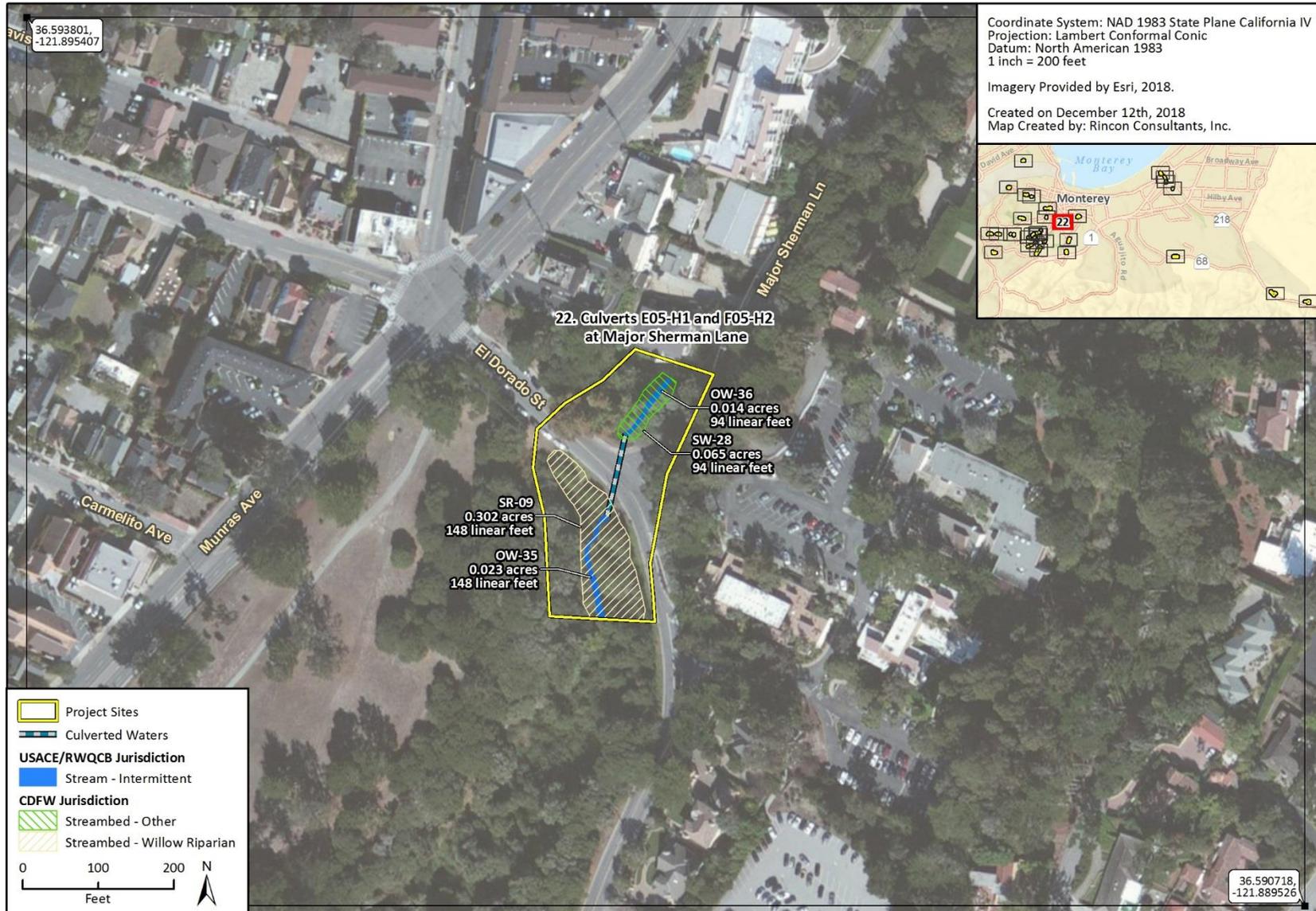
Figure 4.17 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

Figure 4.18 Aquatic Resources



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Figure 4.19 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

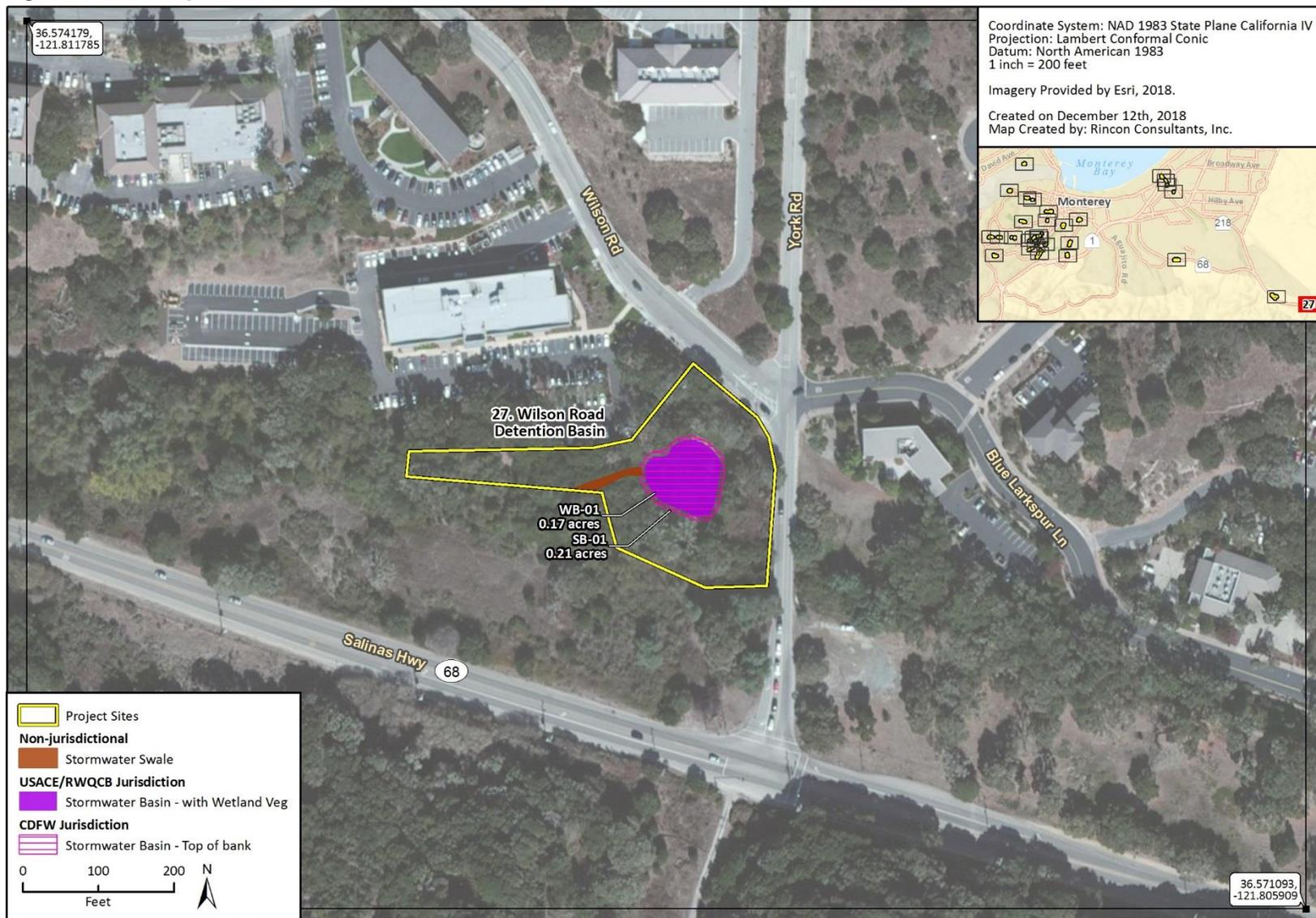
Figure 4.20 Aquatic Resources



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 Additional data provided by Denise Duffy and Associates, 2018.

RD Fig 4 Aquatic Resources DDP

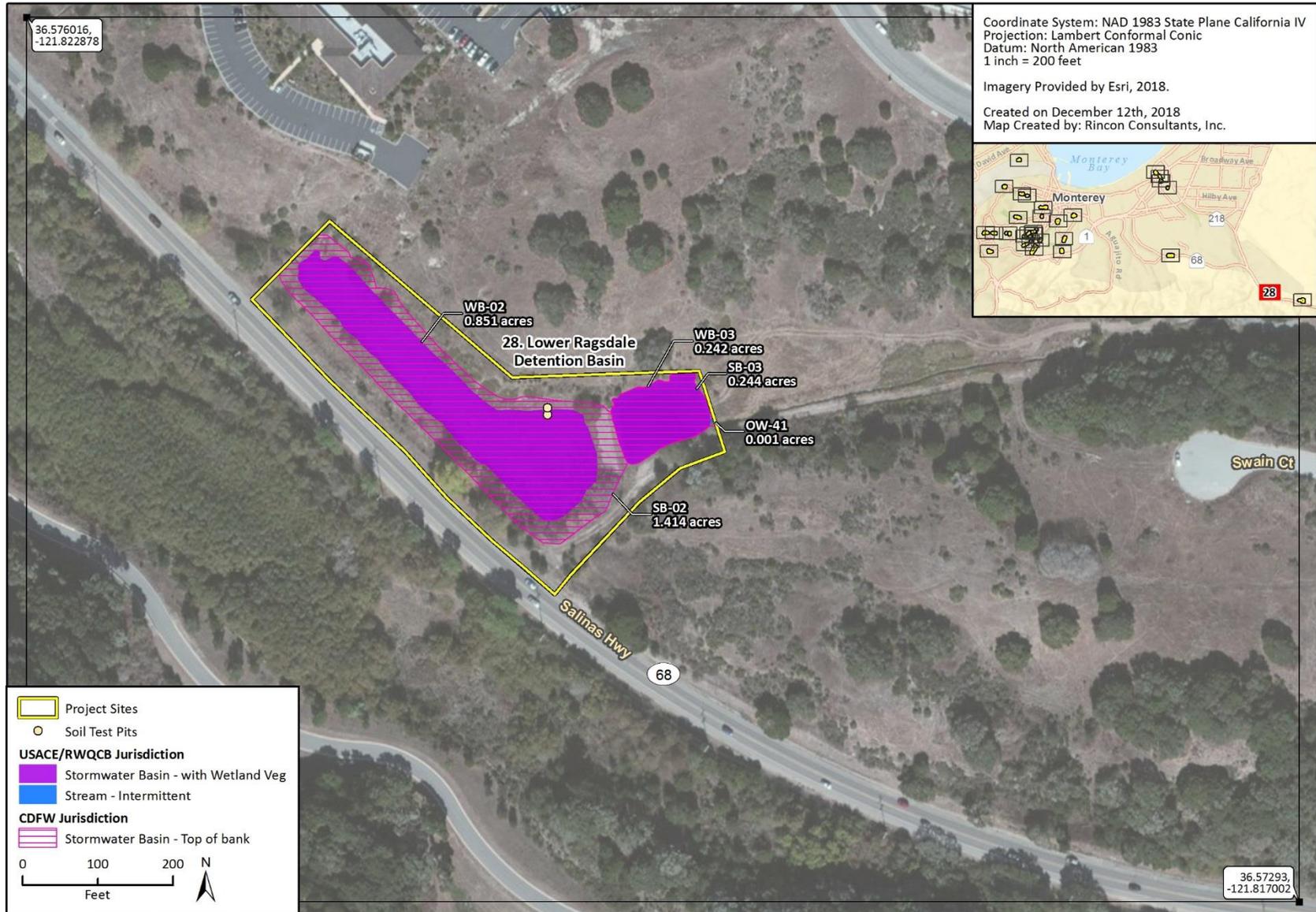
Figure 4.21 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

Figure 4.22 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

Figure 4.23 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

Figure 4.24 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

Figure 4.25 Aquatic Resources



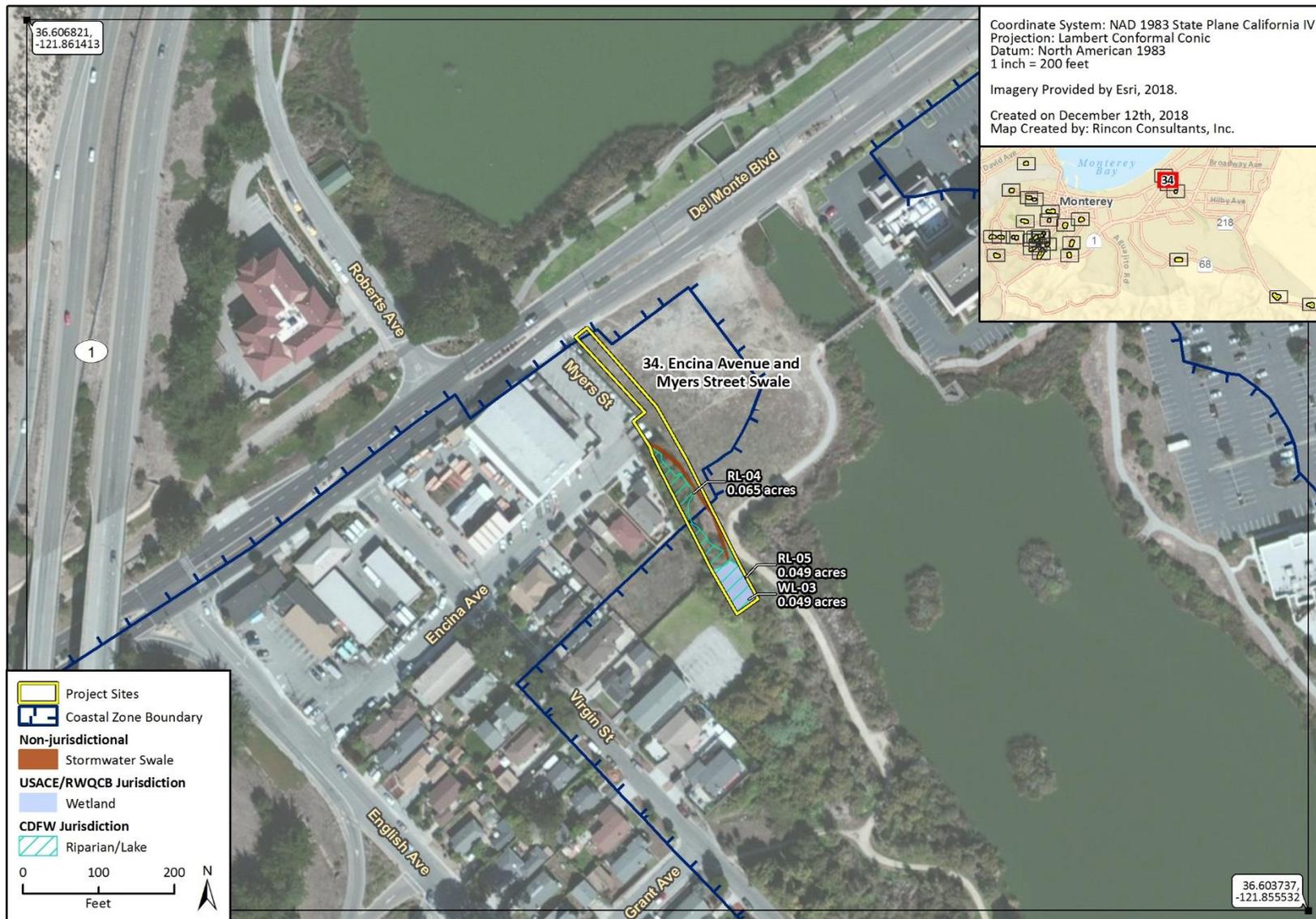
Figure 4.26 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

Figure 4.27 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

Figure 4.28 Aquatic Resources



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JD Fig 4 Aquatic Resources DDP

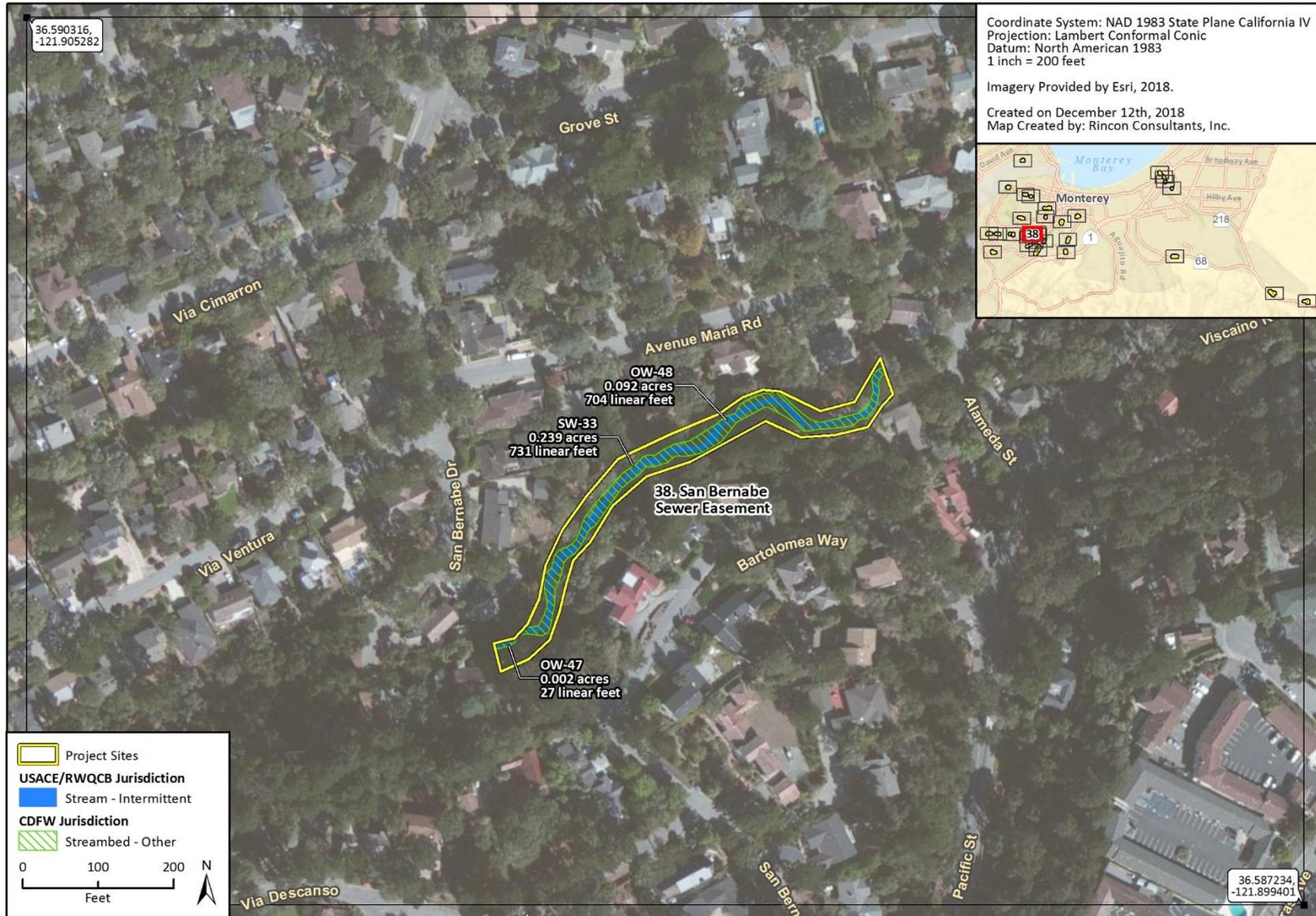
Figure 4.29 Aquatic Resources



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ID Fig 4 Aquatic Resources DDP

Figure 4.30 Aquatic Resources



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Appendix B

Regulatory Overview and Definitions

USACE Jurisdiction

The USACE, under provisions of Section 404 of the Clean Water Act and USACE implementing regulations, has jurisdiction over the placement of dredged or fill material into “waters of the United States.” Congress enacted the CWA “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” In practice, the boundaries of certain waters subject to USACE jurisdiction under Section 404 have not been fully defined. Previous regulations codified in 1986 defined “waters of the United States” as traditional navigable waters, interstate waters, all other waters that could affect interstate or foreign commerce, impoundments of waters of the United States, tributaries, the territorial seas, and adjacent wetlands.

The Supreme Court has issued three decisions that provide context in determining the scope of “waters of the United States” covered by the CWA. In *United States v. Riverside Bayview Homes*, the Court, in a unanimous opinion, deferred to the Corps’ ecological judgment that adjacent wetlands are “inseparably bound up” with the waters to which they are adjacent, and upheld the inclusion of adjacent wetlands in the regulatory definition of “waters of the United States. In *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, (SWANCC), the Supreme Court held that the use of “isolated” non-navigable intrastate ponds by migratory birds was not by itself a sufficient basis for the exercise of federal regulatory authority under the CWA. The majority opinion in SWANCC introduced the concept that it was a “significant nexus” that informed the Court’s reading of CWA jurisdiction over waters that are not navigable in fact. In *Rapanos v. United States*, (Rapanos), the Court agreed that the term “waters of the United States” encompasses some waters that are not navigable in the traditional sense. Justice Kennedy’s opinion indicated that the critical factor in determining the CWA’s coverage is whether a water has a “significant nexus” to downstream traditional navigable waters such that the water is important to protecting the chemical, physical, or biological integrity of the navigable water. Whether a significant nexus exists in any given situation had to be decided on a case-by-case basis, depending on site-specific circumstances.

In 2015, the *Clean Water Rule: Definition of “Waters of the United States”* was issued by the USACE and USEPA. This rule sought to clarify the scope of waters of the United States that are protected under the Clean Water Act (CWA), using text of the statute, Supreme Court decisions, and best available peer reviewed science as the basis for defining waters of the United States in an effort to make the process of identifying such waters easier to understand, more predictable, and consistent. The rule also clarifies regulatory exclusions from the definition of waters of the United States to make it clear that the rule does not add permitting requirements on agricultural operations or attempt to regulate features that were not previously covered, such as shallow subsurface connections, groundwater, erosional features, or land uses. The rule went into effect in California on August 16, 2018.

As amended, “waters of the United States” (33 CFR Part 328.3(a)) are defined as:

- (1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (2) All interstate waters, including interstate wetlands;

- (3) The territorial seas;
- (4) All impoundments of waters otherwise identified as waters of the United States under this section;
- (5) All tributaries, as defined in paragraph (c)(3) of this section, of waters identified in paragraphs (a)(1) through (3) of this section;
- (6) All waters adjacent to a water identified in paragraphs (a)(1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
- (7) All waters in paragraphs (a)(7)(i) through (v) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. The waters identified in each of paragraphs (a)(7)(i) through (v) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.
 - (i) Prairie potholes. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
 - (ii) Carolina bays and Delmarva bays. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.
 - (iii) Pocosins. Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
 - (iv) Western vernal pools. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.
 - (v) Texas coastal prairie wetlands. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.
- (8) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.

Tributaries are defined as waters “that contribute flow, either directly or through another water (including an impoundment ...), to a water identified in 33 CFR 328.3(a)(1) through (3) of this section that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man- altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded under 33CFR 328.3(b). A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break.

The term adjacent means “bordering, contiguous, or neighboring a water identified in 33 CFR 328.3 (a)(1) through (5), including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified above. Adjacent waters also include all waters that connect segments of a water identified above or are located at the head of a jurisdictional water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent.”

The term neighboring means:

- “(i) All waters located within 100 feet of the ordinary high water mark of a water identified in 33 CFR 328.3 (a)(1) through (5). The entire water is neighboring if a portion is located within 100 feet of the ordinary high water mark;
- (ii) All waters located within the 100-year floodplain of a water identified in 33 CFR 328.3 (a)(1) through (5) and not more than 1,500 feet from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain...”

USACE jurisdictional limits are typically identified by the presence of an Ordinary High Water Mark (OHWM) or a wetland. The OHWM is the line on the shore or banks of a water course established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area. The USACE defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands are identified through the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology (see next section).

For those cases requiring a case by case evaluation, a significant nexus is present if a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in 33 CFR 328.3 (a)(1) through (3), e.g. a traditional navigable water, interstate water, or territorial sea. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in

affecting downstream waters. The significant nexus evaluation considers the volume, duration, and frequency of water flow and evaluates the following aquatic functions: sediment trapping; nutrient cycling; pollutant trapping, transformation, filtering, and transport; runoff storage; contribution of flow; export of organic matter; export of food resources; and provision of life cycle-dependent habitat for species in downstream waters.

Areas not considered to be jurisdictional waters even where they otherwise meet the terms of paragraphs 33CFR 328.3(a)(4) through (8) include:

- (1) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.
- (2) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.
- (3) The following ditches:
 - (i) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
 - (ii) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
 - (iii) Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section.
- (4) The following features:
 - (i) Artificially irrigated areas that would revert to dry land should application of water to that area cease;
 - (ii) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
 - (iii) Artificial reflecting pools or swimming pools created in dry land;
 - (iv) Small ornamental waters created in dry land;
 - (v) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
 - (vi) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and
 - (vii) Puddles.
- (5) Groundwater, including groundwater drained through subsurface drainage systems.
- (6) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.
- (7) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling (33 CFR 328.3(b)).

RWQCB Jurisdiction

The State Water Resources Control Board (SWRCB) and local RWQCB have jurisdiction over “waters of the State,” which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the USACE to be Outside of Federal Jurisdiction). The local RWQCB enforces actions under this general order, and is also responsible for Clean Water Act Section 401 certification determinations over USACE defined jurisdictional waters.

The Porter-Cologne Act provides the State with very broad authority to regulate “waters of the State” (which are defined as any surface water or groundwater, including saline waters). The Porter-Cologne Act has become an important tool in the post-SWANCC and Rapanos era with respect to the State’s authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a “Report of Waste Discharge” (ROWD) when there is no federal nexus, such as under Section 401 of the CWA. Although “waste” is partially defined as any waste substance associated with human habitation, the RWQCB interprets this to include fill discharge into water bodies.

It should be noted that the RWQCB shares USACE jurisdiction unless isolated conditions are present. If isolated waters conditions are present, the RWQCB takes jurisdiction using the USACE’s definition of the OHWM and/or the three-parameter wetlands methodology pursuant to the 1987 Wetlands Manual. The CDFW’s jurisdiction is defined as the top of the bank to the top of the bank of the stream, channel, or basin or to the outer limit of riparian vegetation located within or immediately adjacent to the river, stream, creek, pond, or lake or other impoundment, whichever is greater.

CDFW Jurisdiction

Section 1602 of the California Fish and Game Code requires an entity to notify the CDFW before conducting any activity that would divert obstruct, or substantially alter a streambed. Once notified, the CDFW may require that a Streambed Alteration Agreement (SAA) be executed before the activity may proceed. The CDFW has not defined the term “stream” for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. Considering this, four sources of information were reviewed and considered in determining the appropriate limits of CDFW jurisdiction within the site, as discussed below. The principles presented in these materials were used to guide the delineation of on-site streams, with consideration given to the relevance (i.e., jurisdiction, applicability) of each source to the project and resources at hand.

The plain language of Section 1602 of the California Fish and Game Code establishes the following general concepts:

References “river,” “stream,” and “lake”

- References “natural flow”
- References “bed,” “bank,” and “channel”

Applicable court decisions, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987)), which interpreted Section 1602’s use of “stream” to be as defined in common law. The Court indicated that a “stream” is commonly understood to:

- Have a source and a terminus
- Have banks and a channel
- Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
- Represent the depression between the banks worn by the regular and usual flow of the water
- Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
- Include the land that is covered by the water in its ordinary low stage
- Include lands below the OHWM

CDFW regulations defining “stream” for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:

- Flows at least periodically or intermittently
- Flows through a bed or channel having banks
- Supports fish or aquatic life
- Can be dry for a period of time

- Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation

Guidance documents, including A Field Guide to Lake and Streambed Alteration Agreements (CDFG 1994) and Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants (Brady and Vyverberg 2013), which suggest the following:

- A stream may flow perennially or episodically
- A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
- Width of a stream course can reasonably be identified by physical or biological indicators
- A stream may have one or more channels (single-thread vs. compound form)
- Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
- Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
- Biologic components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
- The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, were applied within the Study Area in an attempt to determine the limits of on-site streams. The Study Area is not in a desert, and the on-site resources are typical of well-defined, temperate coastal drainages rather than episodic streams on arid landscapes. Because the Study Area is dominated by artificial fill, there is a significant topographical difference between higher-elevation portions of the site (graded, and used for industrial purposes) and the lower areas (generally undeveloped) that that receive flow. As a result, streams were delineated predominately based on the following factors:

- Areas that exhibited evidence of hydrologic activity, such as scour, formation of banks, and/or deposition of sediment or material; and,
- Areas where the vegetation community was adapted to the presence of elevated soil moisture levels (i.e., contained hydrophytic species).

Wetlands

The USACE defines wetlands as containing three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE *Arid West 2016 Regional Wetland Plant List* used in determining the wetland status of the examined vegetation uses the following indicator status categories:

- **OBL (Obligate Wetland Plants)** — Almost always occur in wetlands.
- **FACW (Facultative Wetland Plants)** — Usually occur in wetlands, but may occur in non-wetlands.
- **FAC (Facultative Plants)** — Occur in wetlands and non-wetlands.
- **FACU (Facultative Upland Plants)** — Usually occur in non-wetlands, but may occur in wetlands.
- **UPL (Upland Plants)** — Almost never occur in wetlands.

The ACOE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the USFWS list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, or saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying, which indicates reducing conditions by a blue-grey color, or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of

wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

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Appendix C

Wetland Determination Data Forms with Full Field Data Point Set

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 303-H1 = site #1 City/County: _____ Sampling Date: 7/31/17
 Applicant/Owner: City of Monterey State: _____ Sampling Point: #1
 Investigator(s): Perry / Kehr Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Remarks: <u>Sampled at edge of a small channel w/in of standing water</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
= Total Cover					
Sapling/Shrub Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
Herb Stratum (Plot size: <u>5x5'</u>)					
1. <u>Scirpus microcarpus</u>	<u>60</u>	<u>Y</u>	<u>obl</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Velvet grass</u>	<u>5</u>	<u>N</u>	<u>UPL</u>		
3. <u>Velvet grass (E. brecker)</u>	<u>5</u>	<u>N</u>	<u>FAC</u>		
4. <u>Kuhner grass</u>	_____	_____	_____		
5. <u>Holcus lanatus</u>	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
= Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum <u>30</u>	% Cover of Biotic Crust _____				
Remarks:					

SOIL

Sampling Point: #1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR/2/2	100					SL	lots of leaves/organic matter
3-8.5+	10YR 2/1		N 4/1	5%	D		SL	Cobbles at Depth
	10YR 3/4		10YR 3/4	2%	C			

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes No Depth (inches): 3

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 surface water in channel adjacent to pit

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: B03-H1 = Site #1 City/County: _____ Sampling Date: 7/31/17
 Applicant/Owner: City of Monterey State: _____ Sampling Point: #2
 Investigator(s): Perry / Kehring Section, Township, Range: _____
 Landform (hillslope, terrace/etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u>	(A)		
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u>	(B)		
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u>	(A/B)		
4. _____							
_____ = Total Cover							
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:			
1. _____						Total % Cover of: _____ Multiply by: _____	
2. _____						OBL species <u>0</u> x 1 = _____	
3. _____						FACW species <u>0</u> x 2 = _____	
4. _____						FAC species <u>5</u> x 3 = <u>15</u>	
5. _____				FACU species <u>20</u> x 4 = <u>80</u>			
_____ = Total Cover				UPL species <u>31</u> x 5 = <u>155</u>			
_____ = Total Cover				Column Totals: <u>56</u> (A) <u>250</u> (B)			
_____ = Total Cover				Prevalence Index = B/A = <u>4.46</u>			
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:			
1. <u>Kikuyu = P. clandestinum</u>						___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)	
2. <u>Kuku grass</u>	<u>20</u>	<u>X</u>	<u>FACU</u>				
3. <u>Velt grass = Holcus lanatus</u>	<u>30</u>	<u>X</u>	<u>UPL</u>				
4. <u>Cal. Blackberry</u>	<u>5</u>	<u>N</u>	<u>FAC</u>				
5. <u>Bromus diandrus</u>	<u>1</u>	<u>N</u>	<u>UPL</u>				
6. _____							
7. _____							
8. _____							
<u>56</u> <u>60</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status				
1. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>			
2. _____							
_____ = Total Cover							
% Bare Ground in Herb Stratum <u>40</u>		% Cover of Biotic Crust _____					
Remarks: <u>oak & pine canopy</u>							

SOIL

Sampling Point: #2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10yR 3/2	100	—				SL	
5-12.5	10yR 3/5						CSL	
12.5+								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:
Boulders at 12.5+

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site # 16

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E03-H3 ds City/County: Monterey Sampling Date: 9/1/17
 Applicant/Owner: City State: CA Sampling Point: #3
 Investigator(s): Perry / Kehr Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): stream channel Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>sampled edge of channel</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
_____ = Total Cover			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
_____ = Total Cover			
Herb Stratum (Plot size: _____)			
1. <u>Pennisetum clandestinum</u>	<u>Y</u>	<u>70</u>	<u>FACU</u>
2. <u>Holcus lanatus</u>	<u>N</u>	<u>5</u>	<u>FAC</u>
3. <u>Polypogon monspeliensis</u>	<u>N</u>	<u>5</u>	<u>FACW</u>
4. <u>Festuca perennis</u>	<u>N</u>	<u>2</u>	<u>FAC</u>
5. _____			
6. _____			
7. _____			
8. _____			
<u>82</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
_____ = Total Cover			
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>7</u>	x 3 = <u>21</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species _____	x 5 = _____
Column Totals: <u>82</u> (A)	<u>311</u> (B)
Prevalence Index = B/A = <u>3.79</u>	

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0¹

___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: low canopy overlap

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR ←	2/2	10Y	—	—	—	SL	organic deposits gravel
6-11	↑							
11+	N4/1	90	10YR 3/2	10	C	PL	S	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

saturated, almost sulfide soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 2 1/2"
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

most of channel bed not vegetated

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: FD2-H3 Site #9 City/County: _____ Sampling Date: 8/1/17
 Applicant/Owner: City of Monterey State: _____ Sampling Point: #9
 Investigator(s): Perry / Hehr Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): basin @ channel edge Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>in a constructed basin @ channel edge</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
_____ = Total Cover			
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
_____ = Total Cover			
Herb Stratum (Plot size: <u>5' x 5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Leucurus c. cynosuroides echin.</u>	<u>80</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Polygonum mon.</u>	<u>1</u>	<u>No</u>	<u>FACW</u>
3. <u>Holcus lanatus</u>	<u>3</u>	<u>↓</u>	<u>FAC</u>
4. <u>Polygonum viridis</u>	<u>1</u>	<u>↓</u>	<u>FACW</u>
5. <u>Vicia sativa</u>	<u>1</u>	<u>↓</u>	<u>FACU</u>
6. <u>Euphorbia pepus</u>	<u>1</u>	<u>↓</u>	<u>UPL</u>
7. _____			
8. _____			
<u>87</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
_____ = Total Cover			
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust _____	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>3</u>	x 3 = <u>9</u>
FACU species <u>81</u>	x 4 = <u>324</u>
UPL species <u>1</u>	x 5 = <u>5</u>
Column Totals: <u>87</u> (A)	<u>342</u> (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0¹

___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: _____

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%					
0-5	10YR 4/2		7.5YR 4/6	5	C	PLM	CL		
5-10.5	10YR 5/3		7.5YR 4/6	7	C	PLM	LACoS		
10.5-15	10YR 5/1		10YR 6/4	2			SiCL		
15+								Cobbles at base	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/>	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
evidence of deposition from up stream

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ <small>(includes capillary fringe)</small>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
basin at the bottom of a drainage

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: F2-H3 Site #9 City/County: _____ Sampling Date: 8/1/17
 Applicant/Owner: City of Monterey State: _____ Sampling Point: #5
 Investigator(s): Perry/Kelso Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): tree slope Local relief (concave, convex, none): convex Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No _____		
Wetland Hydrology Present?	Yes _____ No _____		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus radiata</u>	<u>15</u>	<u>Y</u>		Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	<u>15</u>		= Total Cover	
2. _____				
3. _____				
4. _____				
5. _____				
Herb Stratum (Plot size: <u>Cynosurus echinatus</u>)				
1. <u>Cyperus sp</u>	<u>30</u>	<u>Y</u>		
2. <u>Horridula</u>				
3. <u>Briza maxima</u>	<u>10</u>	<u>Y</u>		
4. <u>Lysimachia arvensis</u>	<u>1</u>	<u>N</u>		
5. <u>Hypochaeris rad.</u>	<u>2</u>	<u>N</u>		
6. <u>Bromus caryophyllus</u>	<u>1</u>	<u>N</u>		
7. _____				
8. _____				
Woody Vine Stratum (Plot size: _____)				
1. <u>Toxicodendron</u>	<u>5</u>	<u>Y</u>		
2. _____				
<u>5</u> = Total Cover				
% Bare Ground in Herb Stratum <u>55</u>		% Cover of Biotic Crust _____		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across All Strata: _____ (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
lots of fine weathered drift

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of Indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2						SL	
6-13	2.5Y 4/3						CoSL	
13-15+	2.5Y 4/3						CoSL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histic Sol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:
6-10.5" Granitic gravel intermixed (fill?)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
 Water Table Present? Yes _____ No _____ Depth (inches): _____
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Comparison w/point #4

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: City of Monterey → Del Monte Center City/County: Monterey Sampling Date: 9/3/2012
 Applicant/Owner: _____ State: _____ Sampling Point: 6156
 Investigator(s): Perry Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Stream channel Local relief (concave, convex, none): Concave Slope (%): 3-5
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			
Remarks: <u>per city site was maintained annually in past to control cattails + allow water to flow through. has not been maintained in several years surrounding fence is mowed.</u>					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>01</u> (A)		
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)		
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)		
4. _____	_____	_____	_____	Prevalence Index worksheet:			
= Total Cover						Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)						OBL species <u>85</u> x 1 = <u>85</u>	
1. _____	_____	_____	_____			FACW species <u>2</u> x 2 = <u>4</u>	
2. _____	_____	_____	_____			FAC species _____ x 3 = _____	
3. _____	_____	_____	_____	FACU species _____ x 4 = _____			
4. _____	_____	_____	_____	UPL species _____ x 5 = _____			
5. _____	_____	_____	_____	Column Totals: <u>87</u> (A) <u>89</u> (B)			
= Total Cover				Prevalence Index = B/A = _____			
Herb Stratum (Plot size: <u>5x5'</u>)				Hydrophytic Vegetation Indicators:			
1. <u>Typha latifolia</u>	<u>85</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance Test is >50%			
2. <u>Epilobium ciliatum</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹			
3. _____	_____	_____	_____	____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
4. _____	_____	_____	_____	____ Problematic Hydrophytic Vegetation ¹ (Explain)			
5. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
6. _____	_____	_____	_____	Hydrophytic Vegetation Present?			
7. _____	_____	_____	_____	Yes <input checked="" type="checkbox"/>	No _____		
8. _____	_____	_____	_____				
<u>87</u> = Total Cover							
Woody Vine Stratum (Plot size: _____)							
1. _____	_____	_____	_____				
2. _____	_____	_____	_____				
= Total Cover							
% Bare Ground in Herb Stratum <u>13</u> % Cover of Biotic Crust _____							
Remarks: <u>at edge of flowing water - in channel bottom</u>							

SOIL

Sampling Point: WD 06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	N 2.5/1	100	organic matter stains				Peaty sand	organic matter + sand
3-6	N 2.5/1	100	organic matter ↑				L-CoS	
6-9+	WVR 2/1	9.3	7.5YR 4/4		C	PL	SCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pools (F9)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: *hydric soils assumed based on flowing water + saturated soil when sampled*

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input checked="" type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 1"

Water Table Present? Yes No Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes No Depth (inches): 0"

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: *flowing water when sampled*

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Del Monte City/County: Monterey State: CA Sampling Date: 8/3/17
 Applicant/Owner: City Sampling Point: 7
 Investigator(s): Pedry Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): <2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Yes _____ No _____
 Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>on terrace / toe slope adjacent to stream channel.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species <u>0</u> x 1 = _____
3. _____	_____	_____	_____	FACW species <u>0</u> x 2 = _____
4. _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>1</u>
5. _____	_____	_____	_____	FACU species <u>55</u> x 4 = <u>220</u>
= Total Cover				UPL species <u>37</u> x 5 = <u>185</u>
				Column Totals: <u>92</u> (A) <u>405</u> (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: <u>5x5</u>)				Hydrophytic Vegetation Indicators:
1. <u>Phalaris aquatica</u>	<u>45</u>	<u>Y</u>	<u>FACU</u>	___ Dominance Test is >50%
2. <u>Hirschfeldia incana</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	___ Prevalence Index is ≤3.0 ¹
3. <u>Gemista monosperma</u>	<u>2</u>	<u>N</u>	<u>UPL</u>	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Hypochaeris radicata</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>Avena barbata</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>92</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>28%</u>	% Cover of Biotic Crust <u>0</u>			
Remarks: <u>annual grass. Mowed. Thatch in herb layer</u>				

WD
0.7

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 2/2	100	—	—			✓	
5-9.5	10R 3/2	100	—	—			CL	
9.5-15+	10R 2/1	100	—	—			C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: *field condition - AD 1st 2 horizons moist - 3rd horizon (not wet)*

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____

Water Table Present? Yes _____ No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: *adj to but outside channel (~ 12" from edge of top of bank) stream entrenched - abrupt steep bank ~ 24" deep to bed.*

Site # 31

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Grade/Roberts west City/County: Monterey Sampling Date: 8/3/17
 Applicant/Owner: City Monterey State: CA Sampling Point: 8
 Investigator(s): Perry Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): lake margin Local relief (concave, convex, none): concave Slope (%): —
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <u>per city, maintained periodically @ drain outlet</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5x5</u>) 1. <u>Schroepelia cali</u> 50 2. <u>Epil cali</u> 62 3. <u>Potentilla anserina</u> 10 4. <u>Polypogon mon</u> 1 5. <u>Cyperus lanuginosus</u> 2 6. <u>Salix lasio seedling</u> 1 7. <u>Chenopodium hookeri</u> 1 8. <u>Typha latifolia</u> 30 _____ = Total Cover	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>5x5</u>) 1. <u>Rubus coccineus</u> 1 _____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u><3?</u> % Cover of Biotic Crust _____	_____	_____	_____	
Hydrophytic Vegetation Present? Yes _____ No _____				
Remarks:				

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR5/2	95	7.5YR5/1	3	C	CS	S	
1-2.5	N 2.5/1		decomposing OM				organic	
2.5-4	N 2.5/1	100	decomposing OM				S	J POM
4-5	N 2.5/1		leaves decomposing				organic	
5-6	5Y4/1	90	7.5YR 4/1	2	C	CS/A	S	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Excavation stopped @ B⁴

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input checked="" type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>0.5</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: at edge of lake at immediate shoreline

Site #31

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Grande @ Roberts City/County: Monterey Sampling Date: 8/7/17
 Applicant/Owner: City of Monterey State: CA Sampling Point: P9
 Investigator(s): PLM Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace @ Lake edge Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>12' from edge of lake</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Potentilla anserina</u> 2. <u>Demothera hookeri</u> 3. <u>Festuca sp.</u> 4. <u>Avena sp.</u> 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. <u>Rubus ursinus</u> <u>2</u> 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
Hydrophytic Vegetation Present? Yes _____ No _____				
Remarks: _____				

SOIL

Sampling Point: 09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5.5	10YR 9/3	100					VS	hydrophobic
5.5-11	10YR 2/1	98	10YR 4/4	2	C PL		mucky sand	high atm
11-18+	10YR 4/3	98	7.5YR 4/6	2	C CS			

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: *cone in h2 appear old - sharp edges may be fill / mixed layer*

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: *just outside area w hydrology indicators (see pt # 8)*

Site # 26

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ragsdale retention basin City/County: Monterey Sampling Date: 10/26/2017
 Applicant/Owner: City of Monterey State: CA Sampling Point: 10-11A (Was 10-3 on sample)
 Investigator(s): M. Perry Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): basin floor Local relief (concave, convex, none): concave Slope (%): < 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Hydric Soil Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Wetland Hydrology Present? Yes _____ No _____		
Remarks: <u>Site is in a constructed retention basin, downslope of a constructed sediment basin (delineated by others)</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>Ø</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				
2. _____				
3. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>2</u> x 3 = <u>6</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>92</u> (A) <u>146</u> (B) Prevalence Index = B/A = <u>1.58</u> 146
Sapling/Shrub Stratum (Plot size: <u>Ø</u>)				
1. _____				
2. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' x 5'</u>)				
1. <u>Juncus phaeocephalus</u>	<u>45</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Cyperus eragrostis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. <u>Elymus triticoides</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
4. <u>Eleocharis [macrostachya] palustris</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	
= Total Cover				
Woody Vine Stratum (Plot size: <u>Ø</u>)				
1. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>~10</u> % Cover of Biotic Crust <u>Ø</u>				

leymus

Remarks: vegetation had dried and was decumbent at time of survey, however, fruits were present and positive IDs could be made.
Very little bare ground apparent

SOIL

Sampling Point: 10-110

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%					
0-4	10YR3/2	98	7.5YR4/4	2		C	PL	VFSL	many roots, hydrophobic
4-10	10YR3/2	95	7.5YR4/6	5		C	PL,M	VFSL	also 7.5YR4/4 conc.
10-16	10YR4/2	90	7.5YR4/4	10		C	PL,M	VFSL	also 7.5YR 3/4 + 4/6 C
16-20	5.10YR4/1	85	7.5YR3/4	5	}	C	PL,M	CL	
	2.10YR3/1	5	7.5YR4/4	5					

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: 15 clay/abrupt textural change
 Depth (inches): 15

Hydric Soil Present? Yes No

Remarks: stratified clay deposits begin @ 15"
boundaries wavy but thicknesses fairly consistent
soil moist @ 5" and below

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: site visit conducted late in the dry season - other indicators may be present earlier in the growing season

Site # 28

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Monterey-Pajaro Retention basin City/County: Monterey Sampling Date: 10/26/17
 Applicant/Owner: City of Monterey State: CA Sampling Point: 11
 Investigator(s): M. Perry Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Convex Slope (%): 3-5%
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Cons 10-4 a. Amble

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Hydic Soil Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks: <u>site on slope of constructed retention basin</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
_____ = Total Cover			
Sapling/Shrub Stratum (Plot size: _____)			
1. <input checked="" type="checkbox"/>			
2. _____			
3. _____			
4. _____			
5. _____			
_____ = Total Cover			
Herb Stratum (Plot size: <u>5x5'</u>)			
1. <u>Lemna (Lemna) triticoides</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
2. <u>Pectinat myurus</u>	<u>3</u>	<u>N</u>	<u>FACU</u>
3. <u>Bromus hordeaceus</u>	<u>2</u>	<u>N</u>	<u>FACU</u>
4. <u>Carpobrotus chilensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
5. <u>Muhlenbergia or Distichlis</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>
6. <u>↓</u>			
7. <u>FACU</u>			
8. _____			
<u>80</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
_____ = Total Cover			
% Bare Ground in Herb Stratum <u>~25%</u>	% Cover of Biotic Crust <u>0</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species <u>70</u>	x 3 = <u>210</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species _____	x 5 = _____
Column Totals: <u>80</u> (A)	<u>250</u> (B)

Prevalence Index = B/A = 73

2.0
4.0
250/30

Hydrophytic Vegetation Indicators:

Dominance Test is >50%

Prevalence Index is ≤3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: facultative (D. spicata) dominant

Vulpia

SOIL

Sampling Point: MAA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR3/1+	100					LVS	abundant w/ roots, hydro phobic
1-4	10YR3/2	100	-	-	-	-	LFS	common roots
4-10	10YR3/2	100	-	-	-	-	LFS	
10-13+	10YR4/2	100	-	-	-	-	LFS	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: dry to bottom on 10/26/17

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: site @ edge of basin on slope, just above pt 10-3

Appendix D

Plant List

Table D-1 Observed Plant List

Scientific Name	Common Name	Wetland Indicator Status (WMVC)
<i>Acacia dealbata</i>	Silver wattle	UPL (NL)
<i>Acacia melanoxylon</i>	blackwood acacia	UPL
<i>Acer negundo</i>	box elder	FACW
<i>Aesculus californica</i>	Buckeye	UPL (NL)
<i>Agave</i> sp.	agave	(TBD)
<i>Agrostis</i> sp.	bent grass	(TBD)
<i>Amaryllis belladonna</i>	naked ladies	UPL (NL)
<i>Arctostaphylos</i> sp.	manzanita	(TBD)
<i>Artemisia californica</i>	California sagebrush	UPL (NL)
<i>Artemisia douglasiana</i>	Mugwort	FAC
<i>Arundo donax</i>	giant reed	FACW
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	lady fern	FAC
<i>Avena barbata</i>	slender wild oat	UPL
<i>Avena fatua</i>	wild oat	UPL
<i>Baccharis douglasii</i>	marsh baccharis	FACW
<i>Baccharis pilularis</i>	coyote brush	UPL
<i>Berula erecta</i>	water parsnip	OBL
<i>Briza maxima</i>	Rattlesnake grass	UPL (NL)
<i>Briza minor</i>	small quaking grass	FAC
<i>Bromus carinatus</i>	California brome	UPL (NL)
<i>Bromus catharticus</i>	Rescue Grass	UPL (NL)
<i>Bromus diandrus</i>	ripgut brome	UPL
<i>Bromus hordeaceus</i>	soft chess	FACU
<i>Bromus madritensis</i> subsp. <i>rubens</i>	red brome	UPL
<i>Calocedrus decurrens</i>	incense cedar	UPL (NL)
<i>Calystegia macrostegia</i> ssp. <i>cyclostegia</i>	morning glory	UPL (NL)
<i>Cardamine oligosperma</i>	bittercress	FAC
<i>Carduus pycnocephalus</i>	Italian thistle	UPL
<i>Carex barbaea</i>	Santa Barbara sedge	FAC
<i>Carex</i> sp.	sedge	(TBD)
<i>Carpobrotus chilensis</i>	Chilean sea fig	FACU
<i>Ceanothus</i> sp.	Ceanothus	UPL
<i>Cercis occidentalis</i>	redbud	UPL (NL)
<i>Cirsium vulgare</i>	bull thistle	FACU
<i>Clinopodium douglasii</i>	yerba buena	FACU
<i>Conium maculatum</i>	poison hemlock	FACW
<i>Convolvulus arvensis</i>	bindweed	UPL (NL)
<i>Cornus sericea</i>	American dogwood	UPL (NL)
<i>Cortaderia jubata</i>	jubata grass	FACU

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Scientific Name	Common Name	Wetland Indicator Status (WMVC)
<i>Cotoneaster lacteus</i>	Cotoneaster	UPL (NL)
<i>Cotula coronopifolia</i>	brass buttons	OBL
<i>Crocsmia x crocosmiiflora</i>	montbretia	FACU
<i>Cupressus</i> sp.	Cypress	(TBD)
<i>Cynosurus echinatus</i>	hedgehog dogtail	UPL (NL)
<i>Cyperus eragrostis</i>	flat sedge	FACW
<i>Cyperus papyrus</i>	Papyrus reed	OBL
<i>Dactylis glomerata</i>	orchard grass	FACU
<i>Delairea odorata</i>	Cape-ivy	UPL (NL)
<i>Dipsacus fullonum</i>	common teasel	FAC
<i>Distichlis spicata</i>	saltgrass	FAC
<i>Dittrichia graveolens</i>	Stinkwort	UPL (NL)
<i>Dryopteris arguta</i>	wood fern	UPL (NL)
<i>Echium candicans</i>	pride-of-Madeira	UPL (NL)
<i>Ehrharta erecta</i>	panic veldtgrass	UPL (NL)
<i>Eleocharis macrostachya</i>	spikerush	OBL
<i>Elymus condensatus</i>	giant wild rye	FACU
<i>Elymus glaucus</i>	blue wild rye	FACU
<i>Elymus triticoides</i>	creeping wild rye	FAC
<i>Epilobium brachycarpum</i>	willow-herb	UPL (NL)
<i>Epilobium ciliatum</i>	willow-herb	FACW
<i>Epipactis helleborine</i>	broad-leaved helleborine	UPL (NL)
<i>Equisetum arvense</i>	common horsetail	FAC
<i>Erigeron bonariensis</i>	flax-leaved horseweed	FACU
<i>Erigeron canadensis</i>	horseweed	FACU
<i>Erigeron</i> sp.	(TBD)	(TBD)
<i>Erodium cicutarium</i>	redstem filaree	UPL (NL)
<i>Eschscholzia californica</i>	California poppy	UPL
<i>Eucalyptus globulus</i>	blue gum	UPL (NL)
<i>Euphorbia peplus</i>	petty spurge	UPL (NL)
<i>Euphorbia</i> sp.	spurge	(TBD)
<i>Festuca arundinacea</i>	tall fescue	FACU
<i>Festuca elmeri</i>	Elmer's fescue	UPL (NL)
<i>Festuca myuros</i>	rattail fescue	FACU
<i>Festuca perennis</i>	Ryegrass	FAC
<i>Festuca</i> sp.	fescue	(TBD)
<i>Foeniculum vulgare</i>	fennel	UPL
<i>Fragaria vesca</i>	woodland strawberry	UPL
<i>Frangula californica</i>	coffeeberry	UPL (NL)
<i>Fremontodendron californicum</i>	flannel bush	UPL (NL)

Scientific Name	Common Name	Wetland Indicator Status (WMVC)
<i>Galium aparine</i>	Goose grass	FACU
<i>Galium</i> sp.	bedstraw	(TBD)
<i>Garrya elliptica</i>	silk tassel	UPL (NL)
<i>Gastridium ventricosum</i>	nit grass	FACU
<i>Genista monspessulana</i>	French broom	UPL
<i>Geranium molle</i>	dovefoot geranium	UPL
<i>Geranium</i> sp.	geranium	(TBD)
<i>Grevillea</i> sp.	grevillea shrub	UPL (NL)
<i>Hedera helix</i>	English ivy	FACU
<i>Helenium puberulum</i>	sneezeweed	FACW
<i>Heliotropium curassavicum</i>	heliotrope	FACU
<i>Helminthotheca echioides</i>	bristly ox-tongue	FAC
<i>Heracleum maximum</i>	cow parsnip	FACW
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	UPL (NL)
<i>Hesperocyparis</i> sp.	Cypress	UPL (NL)
<i>Heteromeles arbutifolia</i>	toyon	UPL (NL)
<i>Hirschfeldia incana</i>	perennial mustard	UPL
<i>Holcus lanatus</i>	common velvet grass	FAC
<i>Hordeum murinum</i>	wall barley	FACU
<i>Hydrocotyle ranunculoides</i>	pennywort	OBL
<i>Hypochaeris glabra</i>	smooth cat's ear	UPL (NL)
<i>Hypochaeris radicata</i>	hairy cat's ear	FACU
<i>Ilex aquifolium</i>	English holly	FACU
<i>Ipomoea</i> sp.	white morning glory	(TBD)
<i>Iris pseudacorus</i>	yellowflag iris	OBL
<i>Iris germanica</i>	bearded iris	UPL (NL)
<i>Iris</i> sp.	Iris	(TBD)
<i>Isolepis cernua</i>	Low bulrush	OBL
<i>Juncus effusus</i>	soft rush	FACW
<i>Juncus mexicanus</i>	curly rush	FACW
<i>Juncus patens</i>	spreading rush	FACW
<i>Juncus phaeocephalus</i>	brown-headed rush	FACW
<i>Lactuca serriola</i>	prickly lettuce	FACU
<i>Lathyrus</i> sp.	wild pea	(TBD)
<i>Lemna</i> sp.	duckweed	(TBD)
<i>Lepidium didymum</i>	swinecress	UPL (NL)
<i>Lonicera japonica</i>	honeysuckle	FACU
<i>Lonicera hispidula</i>	honeysuckle	FACU
<i>Lupinus albifrons</i>	bush lupine	UPL (NL)
<i>Lupinus chamissonis</i>	silver bush lupine	UPL (NL)

City of Monterey
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Scientific Name	Common Name	Wetland Indicator Status (WMVC)
<i>Lysimachia arvensis</i>	scarlet pimpernel	FAC
<i>Lythrum hyssopifolium</i>	hyssop loosestrife	OBL
<i>Madia sativa</i>	coast tarweed	UPL (NL)
<i>Malus</i> sp.	crabapple	(TBD)
<i>Malva nicaeensis</i>	bull mallow	UPL
<i>Marah fabacea</i>	man-root	UPL (NL)
<i>Marrubium vulgare</i>	horehound	FACU
<i>Medicago polymorpha</i>	bur clover	FACU
<i>Melica</i> sp.	melic grass	(TBD)
<i>Mimulus aurantiacus</i>	sticky monkeyflower	FACU
<i>Morella californica</i>	wax myrtle	FACW
<i>Muehlenbeckia complexa</i>	maidenhair vine	UPL (NL)
<i>Myoporum laetum</i>	Lollipop tree	FACU
<i>Myosotis latifolia</i>	common forget-me-not	UPL (NL)
<i>Nasturtium officinale</i>	water cress	OBL
<i>Nerium oleander</i>	common oleander	UPL (NL)
<i>Oenothera elata</i> subsp. <i>hookeri</i>	Hooker's coast evening primrose	FACW
<i>Oxalis corniculata</i>	sorrel	FACU
<i>Parietaria judaica</i>	pellitory	UPL (NL)
<i>Pelargonium</i> sp.	garden geranium	UPL (NL)
<i>Pennisetum clandestinum</i>	Kikuyu grass	FACU
<i>Persicaria amphibia</i>	water smartweed	OBL
<i>Phacelia</i> sp.	phacelia	(TBD)
<i>Phalaris aquatica</i>	Harding grass	FACU
<i>Phoenix canariensis</i>	Canary Island palm	UPL
<i>Pinus radiata</i>	Monterey pine	(TBD)
<i>Pinus</i> sp.	pine	(TBD)
<i>Pittosporum undulatum</i>	Victorian box	UPL (NL)
<i>Plantago coronopus</i>	plantain	FAC
<i>Plantago lanceolata</i>	English plantain	FAC
<i>Plantago major</i>	common plantain	FAC
<i>Platanus racemosa</i>	sycamore	FAC
<i>Polycarpon tetraphyllum</i>	fourleaf allseed	UPL (NL)
<i>Polygonum aviculare</i>	common knot weed	FAC
<i>Polypogon interruptus</i>	beardgrass	FACW
<i>Polypogon monspeliensis</i>	rabbitsfoot grass	FACW
<i>Polypogon viridis</i>	water beard grass	FACW
<i>Polystichum munitum</i>	western sword fern	FACU
<i>Populus fremontii</i>	Fremont's cottonwood	FAC

Scientific Name	Common Name	Wetland Indicator Status (WMVC)
<i>Populus trichocarpa</i>	black cottonwood	FAC
<i>Potentilla anserina</i>	Pacific silverweed	OBL
<i>Prunus cerasifera</i>	cherry plum	UPL (NL)
<i>Prunus ilicifolia</i>	holly-leaf cherry	UPL (NL)
<i>Pseudognaphalium luteoalbum</i>	cudweed	FAC
<i>Pteridium aquilinum</i>	bracken fern	FACU
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak	UPL
<i>Raphanus sativus</i>	Wild radish	UPL
<i>Rhus integrifolia</i>	lemonade berry	UPL (NL)
<i>Ribes sanguineum</i>	pink-flowered gooseberry	UPL
<i>Ribes speciosum</i>	fuchsia-flowered gooseberry	UPL (NL)
<i>Rosa californica</i>	California wild rose	FAC
<i>Rosa</i> sp.	rose	(TBD)
<i>Rubus armeniacus</i>	himalayan blackberry	FAC
<i>Rubus leucodermis</i>	white bark raspberry	FACU
<i>Rubus ursinus</i>	California blackberry	FAC
<i>Rumex acetosella</i>	sheep sorrel	FACU
<i>Rumex crispus</i>	curly dock	FAC
<i>Rumex</i> sp.	dock	(TBD)
<i>Salix laevigata</i>	red willow	FACW
<i>Salix lasiolepis</i>	arroyo willow	FACW
<i>Salvia mellifera</i>	black sage	UPL (NL)
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	FACU
<i>Schoenoplectus californicus</i>	Southern bulrush	OBL
<i>Scirpus microcarpus</i>	small-seeded rush	OBL
<i>Scrophularia californica</i>	California figwort	FAC
<i>Senecio glomeratus</i>	cutleaf burnweed	UPL (NL)
<i>Senecio</i> sp.	ragwort	(TBD)
<i>Sequoia sempervirens</i>	coast redwood	UPL (NL)
<i>Solanum americanum</i>	American nightshade	FACU
<i>Solanum douglasii</i>	Douglas' nightshade	FAC
<i>Sonchus asper</i>	prickly sow thistle	FAC
<i>Sonchus oleraceus</i>	common sow thistle	UPL
<i>Sparganium eurycarpum</i>	bur reed	OBL
<i>Spergularia rubra</i>	sand spurrey	FAC
<i>Stachys bullata</i>	wood mint; hedge nettle	UPL (NL)
<i>Stellaria media</i>	common chickweed	FACU
<i>Stipa pulchra</i>	purple needlegrass	UPL
<i>Symphoricarpos mollis</i>	snowberry	FACU
<i>Tagetes lemmonii</i>	Mexican marigold	UPL (NL)

City of Monterey
Storm Drain Maintenance Plan

Scientific Name	Common Name	Wetland Indicator Status (WMVC)
<i>Taraxacum officinale</i>	Dandelion	FACU
<i>Tetragonia tetragonioides</i>	New Zealand spinach	UPL (NL)
<i>Torilis arvensis</i>	hedge parsley	UPL (NL)
<i>Toxicodendron diversilobum</i>	western poison oak	FACU
<i>Triteleia laxa</i>	Ithuriel's spear	UPL (NL)
<i>Tropaeolum majus</i>	garden nasturtium	UPL
<i>Typha latifolia</i>	broad-leaved cattail	OBL
<i>Ulmus sp.</i>	elm	(TBD)
<i>Umbellularia californica</i>	California bay laurel	FAC
<i>Urtica dioica</i>	stinging nettle	FAC
<i>Vaccinium ovatum</i>	California huckleberry	UPL
<i>Vicia sativa ssp. sativa</i>	winter vetch	FACU
<i>Vinca major</i>	periwinkle	UPL (NL)
<i>Woodwardia fimbriata</i>	giant chain fern	FACW
<i>Yucca sp.</i>	ornamental yucca	(TBD)
<i>Zantedeschia aethiopica</i>	calla lily	OBL

*Wetland Indicator Status WMVC refers to the indicator status given in the current National Wetland Plant List for the Arid West Region:

- OBL = occurs in aquatic resources > 99% of time
- FACW = occurs in aquatic resources 67-99% of time
- FAC = occurs in aquatic resources 34-66% of time
- FACU = occurs in aquatic resources 1-33% of time
- TBD = to be determined, has not been identified to species
- UPL = occurs in uplands > 99% of time
- NL = indicator status not known in this region

Appendix E

Site Photographs



Photograph 1. Site 1, View from inlet culvert looking upstream (west) at Oak Newton Park



Photograph 2. Site 1, Sample Point 1 on the edge of the wetland



Photograph 3. Site 1, Sample Point 2 on uplands at the edge of the lawn, facing southwest.



Photograph 4. Site 2, Upstream reach, facing upstream (west), from culvert. North bank (right side in photo) adjoins private property.



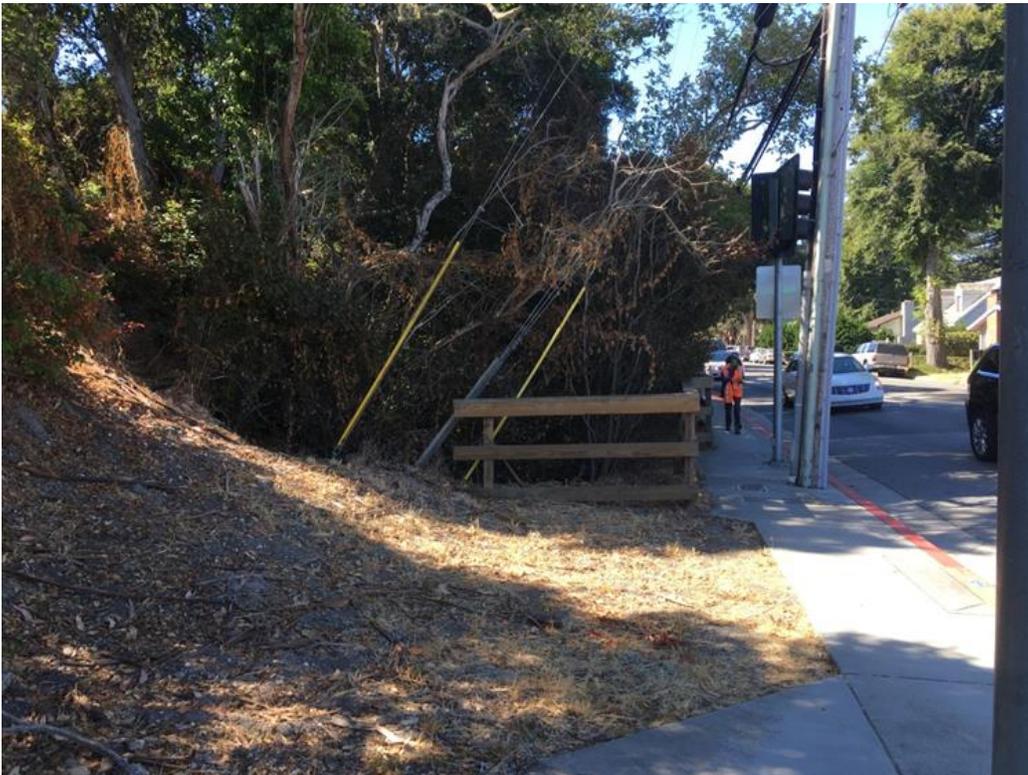
Photograph 5. Site 3, Culvert outlet, facing upstream (west).



Photograph 6. Site 5, Culvert E04-H3 inlet, viewed facing downstream (east).



Photograph 7. Site 5, Armored culvert outlet east of Pacific St, facing northwest.



Photograph 8. Site 6, View facing toward inlet of E04-H4 from sidewalk at Pacific near Martin and just up from El Dorado, facing south.



Photograph 9. Site 8, Outfall and downstream reach of stream below the culvert under Via Paraiso, facing upstream toward the road, facing west.



Photograph 10. Site 8, Existing log drops and gabions in upstream reach of the channel above Culvert E03-H3, facing west.



Photograph 11. Site 8, Sample point 3 downstream of the culvert under Via Paraiso, facing west.



Photograph 12. Site 9, Upstream reach looking upstream from Culvert F02-H3, facing west



Photograph 13. Site 9, Sample Point 5 on uplands at the edge of the basin



Photograph 14. Site 10, Downstream reach of stream downstream of Crandall Road, viewed from hillside above channel, facing east.



Photograph 15. Site 11, Inlet at F03-H1, facing northeast.



Photograph 16. Site 12, Both tributary channels viewed from culvert under Skyline Drive near Forest Knoll Road.



Photograph 17. Site 15, Channel condition upstream of culvert F03-H2 inlet, facing upstream (southwest).



Photograph 18. Site 16, Culvert inlet on upstream side of Alameda Road, facing east.



Photograph 19. Site 17, Channel condition just upstream of G03-H6, looking upstream, facing northwest.



Photograph 20. Site 18, Upstream reach facing downstream at culvert under San Bernabe, facing west.



Photograph 21. Site 19, Channel below outlet of Structure F04-H4 facing downstream, facing northeast.



Photograph 22. Site 19, Channel at Whispering Pines Park facing upstream (southwest)..



Photograph 23. Site 20, The southern reach of Major Sherman Creek at Del Monte Center supports wetland vegetation. Viewed facing north.



Photograph 24. Site 20, sample points 6 and 7 at Major Sherman Creek.



Photograph 25. Site 21, Downstream reach, just below the road, looking downstream (east).



Photograph 26. Site 2, Upstream channel at F05-H2, facing southwest.



Photograph 27. Site 23, Reach upstream of Via Mirada, looking upstream from Structure E05-H6, facing southeast.



Photograph 28. Site 27, Wilson Road basin, looking northeast toward corner of York and Wilson Roads, facing northwest.



Photograph 29. Site 28, Lower Ragsdale basin - lower of two basins. Wetland vegetation is dominant in the floor, facing northeast.



Photograph 30. Site 28, sample point 10 on the basin floor, facing west.



Photograph 31. Site 28, sample point 11 on the edge of the basin, facing west.



Photograph 32. Site 29, Stormwater swale near Virgin and Grant Streets, facing east.



Photograph 33. Site 30, Outfall D09-O1 at the edge of Laguna Grande Lake, facing east.



Photograph 34. Site 31, Dense emergent vegetation at outfall C08-E1, facing east.



Photograph 35. Site 31, sample points 8 and 9 at Roberts lake, facing north.



Photograph 36. Site 33, Garden Ct. Basin - looking toward Hwy 68, facing south.



Photograph 37. Site 34, Swale, looking toward Laguna Grande, facing south.



Photograph 38. Site 36, Downstream reach looking upstream at culvert outlet, which is partially obscured by vegetation, facing west.



Photograph 39. Site 37, Downstream channel, partially obscured by vegetation, facing south.



Photograph 40. Site 38, Stream channel near the upper end of the site, facing downstream (northeast).

Appendix F

ORM Workbook

City of Monterey
Storm Drain Maintenance Plan

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway	Similarly_Situated	Sim_Situated	Adjacent_Waters_Subjct_33USC1344	OHWM_Chg_In_Plant_Community	OHWM_Bed_And_Banks	OHWM_Break_In_S
1. Culvert B03-H1 a	CALIFORNIA	R4SB	RIVERINE	Area	0.024	ACRE	A5	36.60861300	-121.90645600				YES	YES		
1. Culvert B03-H1 b	CALIFORNIA	PEM	RIVERINE	Area	0.011	ACRE	A6BOHWM	36.60861300	-121.90645600			YES	YES			
2. Culvert D03-H4	CALIFORNIA	R4SB	RIVERINE	Area	0.025	ACRE	A5	36.59934500	-121.90510500				YES	YES		
3. Culvert D03-H6	CALIFORNIA	R4SB	RIVERINE	Area	0.016	ACRE	A5	36.59893400	-121.90335600				YES	YES		
5. Culvert E04-H3	CALIFORNIA	R4SB	RIVERINE	Area	0.052	ACRE	A5	36.59584500	-121.89772600				YES	YES		
6. Culvert E04-H4	CALIFORNIA	R4SB	RIVERINE	Area	0.02	ACRE	A5	36.59343200	-121.89819500				YES	YES		
8. Culvert E03-H3	CALIFORNIA	R4SB	RIVERINE	Area	0.07	ACRE	A5	36.59308500	-121.90649400				YES	YES		
9. Culvert F02-H3 a	CALIFORNIA	R4SB	RIVERINE	Area	0.059	ACRE	A5	36.58852200	-121.91723800				YES	YES		
9. Culvert F02-H3 b	CALIFORNIA	R4SB	RIVERINE	Area	0.021	ACRE	EXCLDB6	36.58852200	-121.91723800			YES	NO	YES		
10. Culvert F02-H2	CALIFORNIA	R4SB	RIVERINE	Area	0.037	ACRE	A5	36.58842200	-121.91427900				YES	YES		
11. Culvert F03-H1	CALIFORNIA	R4SB	RIVERINE	Area	0.006	ACRE	A5	36.58860200	-121.91009500				YES	YES		
12. Culvert G02-H2	CALIFORNIA	R4SB	RIVERINE	Area	0.039	ACRE	A5	36.58337100	-121.91555800				YES	YES		
15. Culvert F03-H2	CALIFORNIA	R4SB	RIVERINE	Area	0.019	ACRE	A5	36.58777900	-121.903868				YES	YES		
16. Culvert F04-H2	CALIFORNIA	R4SB	RIVERINE	Area	0.025	ACRE	A5	36.58915300	-121.90096800				YES	YES		
17. Culvert G03-H6	CALIFORNIA	R4SB	RIVERINE	Area	0.077	ACRE	A5	36.58557200	-121.90349100				YES	YES		
18. Culvert G03-H9	CALIFORNIA	R4SB	RIVERINE	Area	0.017	ACRE	A5	36.58638300	-121.90159600				YES	YES		
19. Culvert F04-H4	CALIFORNIA	R4SB	RIVERINE	Area	0.119	ACRE	A5	36.58867100	-121.90062900				YES	YES		
20. Majors Creek a	CALIFORNIA	R4SB	RIVERINE	Area	0.044	ACRE	A5	36.58433700	-121.90066600				YES	YES		
20. Majors Creek b	CALIFORNIA	PEM	RIVERINE	Area	0.148	ACRE	A6BOHWM	36.58433700	-121.90066600			YES	YES			
21. Culvert F04-I7 a	CALIFORNIA	R4SB	RIVERINE	Area	0.022	ACRE	A5	36.58688700	-121.89849800				YES	YES		
21. Culvert F04-I7 b swale	CALIFORNIA	U		Area	0.002	ACRE	DRYLAND	36.58688700	-121.89849800				YES	NO		
22. Culverts E05-H1 and F05-H2	CALIFORNIA	R4SB	RIVERINE	Area	0.037	ACRE	A5	36.59217000	-121.89275400				YES	YES		
23. Iris Canyon North	CALIFORNIA	R4SB	RIVERINE	Area	0.072	ACRE	A5	36.59392200	-121.88730800				YES	YES		
23. Iris Canyon South	CALIFORNIA	R4SB	RIVERINE	Area	0.054	ACRE	A5	36.58731900	-121.89040200				YES	YES		
27. Wilson Road Detention Basin	CALIFORNIA	PEM	RIVERINE	Area	0.17	ACRE	EXCLDB6	36.57254100	-121.80896000				YES			
28. Lower Ragsdale Detention Basin	CALIFORNIA	PEM	RIVERINE	Area	1.093	ACRE	EXCLDB6	36.57451600	-121.82073800				YES			
28. Lower Ragsdale Detention Basin	CALIFORNIA	R4SB	RIVERINE	Area	0.001	ACRE	A5	36.57451600	-121.82073800				YES	YES		
29. Virgin/Grant St. Swale	CALIFORNIA	U		Area	0.19	ACRE	DRYLAND	36.60403500	-121.85796900						NO	
30. Outfall D09-O1	CALIFORNIA	PEM	RIVERINE	Area	0.042	ACRE	A6BWB	36.60227700	-121.85575000			YES	YES			
31. Outfall C08-E1 a	CALIFORNIA	PEM	RIVERINE	Area	0.198	ACRE	A6BWB	36.60629500	-121.85995800			YES	YES			
31. Outfall C08-E1 b	CALIFORNIA	L1OW	LACUSTRINF	Area	0.115	ACRE	A1	36.60629500	-121.85995800							
33. Garden Court Basin	CALIFORNIA	U		Area	0.187	ACRE	DRYLAND	36.58375200	-121.85420200					NO	NO	
34. Encina Ave/Myers St. Swale a	CALIFORNIA	U		Area	0.009	ACRE	DRYLAND	36.60629500	-121.85995800					NO	NO	
34. Encina Ave/Myers St. Swale b	CALIFORNIA	PFO		Area	0.049	ACRE	A6BWB	36.60629500	-121.85995800			YES	YES			
36. Culvert D02-H3	CALIFORNIA	R4SB	RIVERINE	Area	0.02	ACRE	A5	36.60118000	-121.91116300				YES	YES		
37. Culvert G05-H2	CALIFORNIA	R4SB	RIVERINE	Area	0.045	ACRE	A5	36.58410000	-121.89105400				YES	YES		
38. San Bernabe to Alameda Sewer	CALIFORNIA	R4SB	RIVERINE	Area	0.094	ACRE	A5	36.58876700	-121.90245400				YES	YES		