AQUATIC RESOURCES DELINEATION REPORT

CITY OF SAN DIEGO – SERRA MESA STORM DRAIN & GREEN INFRASTRUCTURE PROJECT (WBS# B-15099)

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ACRONYMS AND ABBREVIATIONS

ARDR	Aquatic Resources Delineation Report
Arid West Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
Biology Guidelines	City of San Diego Biology Guidelines of the San Diego Municipal Code's Land Development Code
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
City	City of San Diego
CWA	Clean Water Act
DCSS	Diegan Coastal Sage Scrub
FAC	Facultative
FACW	Facultative Wetland
ft	Foot/Feet
GIS	Geographic Information System
GPS	global positioning system
JD	Jurisdictional Delineation
Jepson Manual	The Jepson Manual: Vascular Plants of California, Second Edition
MSCP	Multiple Species Conservation Program
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NWS	National Weather Service
OBL	Obligate Wetland
OHWM Datasheet	Arid West Ephemeral and Intermittent Streams OHWM Datasheet
OHWM	Ordinary High Water Mark
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
Project	Serra Mesa Storm Drain & Green Infrastructure Project
RWQCB	Regional Water Quality Control Board
SCOTUS	Supreme Court of the United States
SD	Storm Drain
Sp	Soil Pit
TDI	Tierra Data, Inc.
TNW	Traditional Navigable Waterway
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
WETS	Wetlands Climate Tables
WoUS	Waters of the United States

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1 INTRODUCTION

Tierra Data, Inc. (TDI) is providing the results of several years of formal Aquatic Resources Delineation conducted for the City of San Diego's (City's) Serra Mesa Storm Drain & Green Infrastructure Project (Project) in the Serra Mesa Community of the City.

The purpose of the Aquatic Resources Delineation is to identify areas that may be considered jurisdictional under the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA); the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act); streambed and riparian habitats under California Department of Fish and Wildlife (CDFW) pursuant to California Fish and Game Code (§1602); and wetland resources as defined by the City Municipal Code (§113.0103). This information provided in this Aquatic Resources Delineation Report (ARDR) can be used by the agencies to evaluate jurisdictional impacts and permit requirements associated with the Project, to assess Project conformance with state and federal regulations, and serves as a request for the USACE to complete a Preliminary Jurisdictional Determination based on the information provided in this report. Appendix A provides a checklist of the information in this ARDR in compliance with the *USACE Los Angeles District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2017).

1.1 Project Location

The proposed Project's storm drain alignments and access routes are within an approximately 61.3-acre Study Area located east of Interstate 805, west of Interstate 15, north of Friars Road, and south of Aero Drive in the Serra Mesa Community of the City, a residential neighborhood developed on ridges and mesas north of Mission Valley and the San Diego River (Figure 1). The proposed Project will replace five storm drains at five locations that have failed or are in danger of failing and could threaten homes above on the mesas (Figure 2).

The street locations of the storm drain inlets and access are described below in more detail:

Storm Drain (SD) 1 - Monarch Street west into the canyon between Monarch and Marathon Streets.

Accessed from the eastern terminus of Shawn Avenue and the trail that heads north.

SD 2 - Monarch Street terminal cul-de-sac into the canyon to the south.

Accessed from West Canyon Avenue, the path west of the Stonecrest Community, and through the detention basin west of the path.

SD 3 - Shawn Avenue – from the eastern terminus into the canyon to the east.

Accessed from the eastern terminus of Shawn Avenue.

SD 4 - Larrabee Avenue – south into the canyon.

Required access through a gate at end of Yolanda Ave that needs opening by Kinder Morgan.

SD 5 - Walker Drive – to the east of the street mid-loop from Larkin Place into Ruffin Canyon.

Accessed from the western terminus of Shawn Avenue, the Shawn Canyon and Ruffin Canyon trails.

All storm drain alignments, except for SD 1 are within the Multi-Habitat Planning Area of the City's Multiple Species Conservation Program (MSCP) Subarea Plan (Figure 1), although a portion of the access to SD 1 passes through a portion of the Multi-Habitat Planning Area.

TDI and/or City staff will be glad to assist agency staff in accessing the storm drain locations.

1.2 Project Description

The proposed Project is to replace five existing storm drains (SDs 1-5) that are either failing or prone to failure. The work will replace curb intakes and storm drain pipes that take water from City streets on the developed mesas and direct it through the pipes into the canyons between the developed mesas. A new "green infrastructure" element will also be placed at the eastern end of Shawn Avenue above SD 3 using a modular wetland system to pretreat and infiltrate storm water reducing pollutants entering the canyon. The storm drains will generally be replaced from the street inlets on the public streets, through easements on privately-owned property, then down canyon slopes into the canyon bottoms (Figure 2). Specifically:

- The SD 1 alignment is wholly within private parcels but will be accessed from Shawn Avenue via City-owned open space and through private parcels to the alignment.
- The SD 2 alignment goes from Monarch Street through private residential properties and down the City-owned open space canyon slope to the canyon bottom. Access to the alignment bottom is through the Stonecrest Village community via the extension of West Canyon Avenue at its southern end, around the paved trail from the avenue terminus to the west, then through the City-owned open space to the alignment.
- The SD 3 alignment and access, at the east end of Shawn Avenue, is wholly within the City street or City-owned open space.
- The SD 4 alignment from Larrabee Avenue is within private residential property to the boundary of the residential parcel with the canyon open space parcel owned by the City; however, most of the canyon, including the lower portion of the alignment and the access from Yolanda Avenue is privately owned by Kinder Morgan: Energy Infrastructure & Solutions (Kinder Morgan; https://www.kindermorgan.com) that includes their facility in Murphy Canyon immediately west of Interstate 8 (see Figure 2).
- Lastly, the SD 5 alignment is off Larkin Place on the west side of Ruffin Canyon, passing from Larkin Place through residential parcels to the City-owned Ruffin Canyon slope. Access will occur from west end of Shawn Avenue and passes down the existing maintenance access road/trail that runs east for over 1,600 feet (ft) down the City-owned Shawn Canyon until it meets Ruffin Canyon with its north-south maintenance access road/trail. The alignment is over 350 ft north of this trail junction, west of the trail (see Figure 2).

Storm drain outlets and riprap will be placed at the terminus of the storm drain pipes only for energy dissipation to slow water velocities as the water flows into the drainages in the canyons and not to stabilize creek, tributary, or channel banks. Outfalls and energy dissipation features have purposefully been designed and located to avoid permanent impacts to wetlands and drainages.

Most of the canyon slopes are within the Multi-Habitat Planning Area of the City's MSCP Subarea Plan (Figure 2) outside of the City's coastal zone.

Construction will require temporary vehicular access to the alignments that would include excavators, backhoes, bobcats, dump trucks, concrete trucks, and support vehicles.

Access to the improvements in the streets and between houses will be from the streets. Access to the alignments in the canyons will be from points of public access to the canyons (depicted on Figure 5 for SDs 1 and 3 and on Figure 11 for SD 5) or through gates into Kinder Morgan's parcels that protect utility or facility easements from public vehicular access (depicted on Figure 7 for SD 2 and on Figure 9 for SD 4).

Portions of the access for each storm drain were designed to use existing authorized trails and/or unauthorized trails where present, but all storm drain access routes will also impact sensitive habitat. SDs 1–4 have partial access within fuel modification zones of adjacent homes and along unauthorized pathways and trails which fade out and pass through habitat as the access exits the fuel modification zones prior to reaching the storm drain alignment work areas. SD 2 access is via paved trails from West Canyon Avenue then through an existing detention basin and along a canyon bottom. SD 5 access is via a public trail until it gets close to the storm drain Work Area.

A 16-ft width is assumed to be necessary for temporary access to the base of each alignment to allow for cut and fill on slopes. At SD 2, metal plates shall be placed along the access across the detention basin to reduce compaction of the wetland vegetation. A 40-ft width is assumed to be able to construct the outfall and replace the old drain pipes from the canyon bottoms. Work will entail establishing construction machinery and materials access to the work area, excavating a trench for placement of the drain pipe, and grading for placement of the outfall structure and riprap energy dissipators. Staging areas will be on nearby streets and rights-of-way so that no additional impacts to sensitive biological resources will occur. After storm drain replacement is complete, all areas disturbed by the replacement and temporary access will be graded back to previous contours and revegetated to replace the habitats removed/disturbed.

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2 REGULATORY BACKGROUND AND METHODOLOGY BY AGENCY

2.1 Desktop Research

Before the field delineation began, the resources listed below were reviewed to identify potential aquatic resources in the survey area.

- Serra Mesa Storm Drain & Green Infrastructure Project Aquatic Resources Delineation Report (TDI 2023).
- Serra Mesa Storm Drain & Green Infrastructure Project Biological Technical Report (TDI 2025).
- Aerial imagery from various dates between 1953 and 2025 (Google Earth 2025; Historic Aerials 2025).
- U.S. Geological Survey (USGS) 7.5-minute La Jolla and La Mesa, California, topographic quadrangle map (USGS 2021) (Figure 2).
- National Wetlands Inventory (NWI) (U.S. Fish and Wildlife Service 2025) (Figure 2).
- National Hydrography Dataset (NHD) streams (USGS 2023) (Figure 3).
- Soil Survey Geographic database (Natural Resources Conservation Service [NRCS] 2022) for the survey area (Figure 3).
- Watershed maps from the NHD (USGS 2023) (Figure 4).
- 100-year floodplain maps (Federal Emergency Management Agency 2023).

The above resources were used to reconfirm the locations of potential aquatic resources that would be subject to regulation by the USACE/RWQCB, CDFW, and City within the survey area. Figure 2 depicts NWI aquatic resources and Figure 3 depicts NHD streams but based on the Flood Insurance Rate Map Numbers 06073C1636G and 06073C1636H, the proposed Project locations are not located within any 100-year floodplains or Federal Emergency Management Agency areas.

In addition to the regionally available data (e.g., NWI, NHD, and Federal Emergency Management Agency data), the approximate location and extent of potential aquatic resources were identified on past maps and fieldwork for other purposes.

2.2 Field Investigation and Mapping

To verify and update the previous mapping performed by TDI in 2016, 2017, and 2022, TDI Biologists visited the sites again in June 2025 and updated field maps with updated on-site observations. Table 1 shows the date, delineators, and purpose of all the TDI site visits.

The field investigations were conducted within the approximately 61.3-acre Study Area, composed of developed land on mesas and mostly protected open space in the canyons that drain to the south into Mission Valley.

Table 1. Aquatic Resources Delineation Field Dates.

DATE & TIME	DELINEATORS	PURPOSE	CONDITIONS
November 9, 2016	Derek Langsford Joseph Kean	Field delineation of aquatic resources	N/A
December 5, 2016	Derek Langsford Joseph Kean	Field delineation of aquatic resources	N/A
August 7 and 11, 2017	Derek Langsford Joseph Kean	Additional wetland data points	N/A
August 31 2022	Derek Langsford Diego Uribe	Aquatic resource delineation update	Clear, 77 – 85 degrees Fahrenheit
September 22, 2022	Derek Langsford Diego Uribe	Aquatic resource delineation update	Clear, 69 – 82 degrees Fahrenheit
June 5, 2025	Derek Langsford Diego Uribe	Aquatic resource delineation update	Cloudy, 62 – 66 degrees Fahrenheit
June 9, 2025	Derek Langsford Diego Uribe	Aquatic resource delineation update	Cloudy, 61 – 68 degrees Fahrenheit

The primary aquatic resources within this Study Area are drainages in the canyons that carry stormwater from streets above the canyons ultimately to the San Diego River to the south. One canyon contains three of the five proposed storm drain projects and originates between Marathon Drive and Monarch Street and drains into a detention basin built as part of the construction of the Stonecrest Village community on West Canyon Avenue. A nearby, very small canyon that also drains to the east, southeast of Larrabee Avenue was accessed with help from Kinder Morgan. The last canyon investigated was to the east of the west end of the 1075-ft long Shawn Avenue, heading west down Shawn Canyon to Ruffin Canyon. The eastern canyons containing SDs 1-4 drain towards Murphy Canyon Creek and then to the San Diego River. SD 5 is in Ruffin Canyon which drains south into a culvert in Mission Valley and ultimately into the San Diego River.

During the field efforts, the Study Area was surveyed on foot where access was possible. Aquatic resource limits were recorded using a field measuring tape and field mapping. Common plant species observed were identified by visual characteristics and morphology in the field. Taxonomic nomenclature for plants follows *The Jepson Manual: Vascular Plants of California*, Second Edition (Jepson Manual; Baldwin *et al.* 2012) and the *National Wetland Plant List* (USACE 2020).

At the time of the 2025 investigations, no significant precipitation had fallen in San Diego since March 14, (83 days before the field investigation on June 5), when nearly 0.28 inch fell, after 0.75 inch fell the day before. The March 2025 rainfall total was 3.01 inches but relatively little more fell in April, and May at the San Diego Montgomery Field monitoring station (National Weather Service [NWS] 2025). Representative photos of features in the Study Area were taken to depict existing conditions (Appendix D).

TDI revisited all areas previously identified by TDI as potential jurisdictional features and any other areas with depressions, drainage patterns, and/or wetland vegetation within the Project survey area that could be impacted were evaluated for potential jurisdictional status. In 2016-2017, 2022, and 2025, TDI examined potential jurisdictional wetland areas using the routine determination methods set forth in Part

IV, Section D, Subsection 2 of the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, Version 2.0 (Arid West Supplement; USACE 2008a). Wetland plant indicator status was determined using the *National Wetland Plant List* (USACE 2020) and hydric soils indicators on *Field Indicators of Hydric Soils in the United States*, Version 8.1 (NRCS 2017). Soil chromas were identified in the field according to *Munsell's Soil-Color Charts* (Munsell Color 2015). TDI reassessed the wetland features in 2025 based on those same standards but mostly from visual determination of any changes that had occurred.

Lateral limits of potential non-wetland waters of the U.S./State for USACE and RWQCB were identified using field indicators of an ordinary high water mark (OHWM) as described in *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE 2008b). For each feature exhibiting the potential presence of an OHWM, TDI updated the previous 2010 *Arid West Ephemeral and Intermittent Streams OHWM Datasheet* (OHWM Datasheet) following the guidance provided in the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010).

CDFW potential jurisdictional boundaries were determined based on the presence of streambed, banks, and associated riparian habitat and/or wetland areas. Streambeds considered within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). Riparian habitat refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream.

City Wetlands were determined by applying the definition of City's Municipal Code §113.0103 and the City's Biology Guidelines (City 2018).

While in the field in 2016, 2017, and 2022 potentially jurisdictional features were recorded by TDI using a hand-held global positioning system (GPS) unit with a level of accuracy ranging from 1-3 ft with data processing and refinement occurring in the office to ensure accuracy. The same process was used to add any changes or new features present in 2025. Plants were identified according to the Jepson Manual (Baldwin *et al.* 2012). Vegetation community classifications follow Holland (1986) and Oberbauer *et al.* (2008).

All figures generated for this ARDR follow the *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016).

2.3 Regulatory Background

Several regulations have been established by federal, state, and local agencies to protect and conserve aquatic resources. The descriptions below summarize agency regulations that may apply to the Project. Regulatory agencies make the final determination of whether a project requires authorization pursuant to these regulations.

2.3.1 U.S. Army Corps of Engineers

The USACE regulates activities proposed within navigable waters under Section 10 of the Rivers and Harbors Act and Waters of the United States (WoUS) under Section 404 of the CWA. Section 10 of the Rivers and Harbors Act regulates work, structures, obstructions, and alterations occurring within navigable WoUS, which are defined as waters subject to the ebb and flow of the tide shoreward to the mean high water mark and/or waters presently used to transport interstate or foreign commerce, including those used in the past or susceptible to such use. The survey area does not support navigable waters, so they are not discussed further.

The pre-2015 definition of WoUS, effective on September 3, 2021, established the scope of USACE and U.S. Environmental Protection Agency authority under the CWA. It included seven categories of jurisdictional WoUS (33 Code of Federal Regulations [CFR] 328.3[a][1]-[7]) (USACE and EPA 2022), as follows:

- All waters currently used in interstate or foreign commerce, including those used in the past or susceptible to such use, as well as all waters subject to the ebb and flow of the tide (33 CFR 328.3[a][1]);
- All interstate waters, including interstate wetlands (33 CFR 328.3[a][2]);
- All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce, including (33 CFR 328.3[a][3]):
    - Waters that are or could be used by interstate or foreign travelers for recreational or other purposes (33 CFR 328.3[a][3][i]); or,
    - Waters from which fish or shellfish are or could be taken and sold in interstate or foreign commerce (33 CFR 328.3[a][3][ii]); or,
    - Waters that are used or could be used for industrial purposes by industries in interstate commerce (33 CFR 328.3[a][3][iii]);
- All impoundments of waters otherwise defined as WoUS under the definition (33 CFR 328.3[a][4]);
- Tributaries of waters identified in paragraphs (a)(1) through (4) of this section (33 CFR 328.3[a][5]);
- Territorial seas (33 CFR 328.3[a][6]); and
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section (33 CFR 328.3[a][7]).

Ordinary High Water Mark Delineation

Aquatic resources with a defined OHWM would be considered potential non-wetland WoUS. USACE regulations at 33 CFR 328.3I(7) define the OHWM as “the line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clean 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 areas” (85 Federal Register 22339, April 21, 2020). The lateral limits of non-wetland WoUS were mapped using guidance provided in *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of*

the Western United States: A Determination Manual (USACE 2008b) and Regulatory Guidance Letter 05-05 (USACE 2005). TDI updated the OHWM Datasheets for representative non-wetland water features within the survey area. Completed OHWM Datasheets are provided in Appendix C and the location of each OHWM sample point is depicted in Figure 5 through Figure 9 The OHWM Datasheets followed guidance provided in the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010). Common indicators of the OHWM include changes in average sediment texture, a break in the slope, changes in vegetation species, and/or changes in vegetation cover.

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WoUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

Wetland Delineation

Section 404 wetland WoUS consists of areas inundated or saturated by surface water or groundwater at a frequency and duration adequate to support, and under normal circumstances support a prevalence of vegetation typically adapted for life in saturated soil conditions. Normally, three criteria (parameters) must be satisfied to classify an area as a wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soil saturation, at least seasonally (wetland hydrology).

TDI surveyed the area for areas that exhibited evidence of wetland hydrology and/or hydrophytic vegetation and referred to the previous wetland determination forms to determine if surface conditions had changed. TDI dug wetland soil pits to examine soil color and texture and determine the wetland boundaries during the previous delineation. That wetland delineation was conducted pursuant to the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the Arid West Supplement (USACE 2008a). The *Field Indicators of Hydric Soils in the United States*, Version 8.2 (NRCS 2018), was used to identify hydric soil, vascular plants were identified using Jepson Manual (Baldwin *et al.* 2012), and nomenclature and associated wetland ratings follow *National Wetland Plant List* (USACE 2020). Wetland conditions generally do not change in a few years and apparently have not changed by the time of the field update. The prior wetland determination forms are provided in Appendix C.

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

Supreme Court Decisions

Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States (SCOTUS) issued a decision on *Solid Waste Agency of Northern Cook County v. USACE, et al.* addressing whether the USACE could assert jurisdiction over isolated waters. The SCOTUS ruling stated that the USACE does not have jurisdiction over "non-navigable, isolated, intrastate" waters.

Rapanos/Carabell

In the SCOTUS cases of *Rapanos v. United States* and *Carabell v. United States*, the SCOTUS attempted to clarify the extent of USACE jurisdiction under the CWA. The nine SCOTUS justices issued five opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion representing a majority decision. Considering this situation, the USACE asserts jurisdiction over a traditional navigable waterway (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a "significant nexus" with a TNW: non-navigable tributaries that are not relatively permanent waterways, wetlands adjacent to non-navigable tributaries that are not relatively permanent waterways, and wetlands adjacent to but that do not directly abut a non-navigable relatively permanent waterway.

A significant nexus determination includes an assessment of flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary. This assessment is to indicate whether they significantly affect the chemical, physical, and biological integrity of downstream TNWs. Analysis of potentially jurisdictional streams includes consideration of hydrologic and ecological factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snowpack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

Sackett v. Environmental Protection Agency

On August 29, 2023, the Environmental Protection Agency issued a final rule under the CWA, effective September 8, 2023, revising the long-contested definition of WoUS. This rule conforms to the holding in the May 25, 2023 SCOTUS decision, Sackett v. Environmental Protection Agency (598 U.S. 120).

The majority opinion concluded that the *Rapanos* plurality was correct, and that within the scope of the CWA, "the CWA's use of 'waters' encompasses 'only those relatively permanent, standing or continuously flowing bodies of water forming geographical features' that are described in ordinary parlance as 'streams, oceans, rivers, and lakes.' The Court held that waters are not protected by the CWA unless they have a "continuous surface connection" to key lakes and rivers that affect interstate commerce. In addition, only wetlands directly connected to traditional navigable waters are subject to federal jurisdiction.

2.3.2 Regional Water Quality Control Board

The State Water Resources Control Board through the San Diego RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the state is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter-Cologne Act, the RWQCB asserts jurisdiction over Waters of the State of California, which is generally the same as WoUS, but may also include isolated waterbodies. The Porter-Cologne Act defines Waters of the State of California as "surface water or ground water, including saline waters, within the boundaries of the state."

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act (Water Code Section 13000 et seq.) provides for statewide coordination of water quality regulations. The State Water Resources Control Board was established as the statewide authority and nine RWQCBs were developed to oversee water quality on a day-to-day basis. The RWQCB is the primary agency responsible for protecting water quality in California. A water quality certification or waiver pursuant to Section 401 of the CWA is required for all Section 404 permitted actions. The RWQCB provides oversight of the 401-certification process in California. The RWQCB is required to provide "certification that there is reasonable assurance that an activity that may result in the discharge to [WoUS] will not violate water quality standards." Water Quality Certification must be based on the finding that proposed discharge will comply with applicable water quality standards. In addition, the RWQCB is responsible for administering the Porter-Cologne Act.

Pursuant to the Porter-Cologne Act, the state is given authority to regulate waters of the state, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if Section 404 is not required for the activity. "Waste" is partially defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

2.3.3 California Department of Fish and Wildlife

California Fish and Game Code Sections 1600-1602

Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake that supports fish or wildlife. A Notification of Lake or Streambed Alteration must be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW has jurisdiction over riparian habitats associated with watercourses and wetland habitats supported by a river, lake, or stream. Jurisdictional waters are delineated by the outer edge of riparian vegetation (i.e., drip line) or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources. CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and applicant is the Lake or Streambed Alteration Agreement.

Evaluation of CDFW jurisdiction follows guidance in the California Fish and Game Code and *A Review of Stream Processes and Forms in Dryland Watersheds* (CDFW 2010). In general, under Section 1602 of the California Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape. It has been the practice of CDFW to define a stream as "a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows, or has flowed over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators" (Brady and Vyverberg 2013). Accordingly, a channel is neither defined by a specific flow event, nor by the path of surface water as this path might vary seasonally; rather, it is CDFW's practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point, i.e. the top of the bank of the channel.

2.3.4 City of San Diego Wetland Regulations

The City's *Biology Guidelines of the San Diego Municipal Code's Land Development Code* (Biology Guidelines; City 2018) identify wetlands as a sensitive biological resource since "Many of the species included in the [MSCP]… (i.e., Covered Species) are dependent on wetlands for habitat and foraging."

Wetlands are defined as areas which are defined in the City's Municipal Code §113.0103 and characterized by any of the following conditions:

1. All areas persistently or periodically containing naturally occurring wetland vegetation communities characteristically dominated by hydrophytic vegetation, including but not limited to salt marsh, brackish marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodlands, riparian scrub, and vernal pools;
2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities because human activities have removed the historic wetland vegetation or catastrophic or recurring natural events or processes have acted to preclude the establishment of wetland vegetation as in the case of salt pannes and mudflats;
3. Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands;
4. Areas mapped as wetlands on Map No. C-713 as shown in Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone).

In addition to the Municipal Code definition, the City's Biology Guidelines (City 2018) further clarify City-jurisdictional wetlands as follows:

> Naturally occurring wetland vegetation communities are typically characteristic of wetland areas. Examples of wetland vegetation communities include saltmarsh, brackish marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodland, riparian scrub and vernal pools. Common to all wetland vegetation communities is the predominance of hydrophytic plant species (plants that are adapted for life in anaerobic soils).
>
> …Seasonal drainage patterns that are sufficient enough to etch the landscape (i.e., ephemeral/intermittent drainages) may not be sufficient enough to support wetland dependent vegetation. These types of drainages would not satisfy the City [of San Diego]'s wetland definition unless wetland dependent vegetation is either present in the drainage or lacking due to past human

> activities. Seasonal drainage patterns may constitute "waters of the United States" which are regulated by the [USACE] and/or the [CDFW].
>
> In addition, it is not the intent of the City to regulate artificially created wetlands in historically non-wetland areas unless they have been delineated as wetlands by the USACE, and/or the CDFW.

Impacts to City-jurisdictional wetlands in the coastal zone must be avoided and only those uses identified in Section 143.0130(d) of the Environmentally Sensitive Lands Regulations shall be permitted, which are limited to aquaculture, nature study projects or similar resource dependent uses, wetland restoration projects, and incidental public service projects.

2.3.5 Contact Information

Applicant

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Agency access to the Project site can be coordinated with the applicant and/or agent upon request.

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3 ENVIRONMENTAL SETTING

The Study Area consists of 61.3 acres composed mostly of undeveloped canyons and adjacent developed land on mesas. The following section describes the topography, land use, hydrology, and soils associated with the Study Area.

3.1 Topography

The ridges and mesas of the area are separated by canyons with steep slopes (25-65%) that were previously graded at the time of development or were left in a natural condition (Historic Aerials 2025). The mesas range from about 300 to 400 ft above mean sea level whereas the canyons vary from about 100 to 300 ft above mean sea level depending on the canyon and location (Figure 2; USGS La Mesa and La Jolla quadrangles).

3.2 Land Use

The proposed storm drains occur in semi-natural and natural canyons draining water from the residential development on the mesas above. As the canyons open out into broader, flat-bottomed canyons to the east (Murphy Canyon) and south (Mission Valley), commercial and residential development respectively occur, and drainage water becomes more constrained in culverts before outflowing into the San Diego River that runs east-west to the south.

The area is a mixture of mostly residential areas on the mesas, and mostly Diegan Coastal Sage Scrub (DCSS; Holland 1986; Oberbauer *et al.* 2008) on the slopes including archetypal DCSS supporting a mixture of California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and laurel sumac (*Malosma laurina*). Patches occur of lemonadeberry-dominated DCSS with a predominance of lemonadeberry (*Rhus integrifolia*), as well as disturbed sage scrub that has been degraded and contains weedy non-native species. Natural slopes support a higher diversity DCSS than the DCSS on the previously graded slopes. Areas of baccharis-dominated DCSS dominated by broom baccharis (*Baccharis sarothroides*) or coyote bush (*B. pilularis*) also occur. Patches of non-native vegetation occur in the canyons including areas dominated by Mexican fan palm (*Washingtonia robusta*), Brazilian pepper (*Schinus terebinthifolius*), iceplant (*Carpobrotus edulis*), and arundo (*Arundo donax*). The predominant species in the drainages is Mexican fan palm.

Wetland communities in the Study Area include Riparian woodlands, Riparian scrubs, Freshwater Marsh, and Herbaceous Wetlands, some naturally occurring, others artificially created and maintained through irrigation in a detention basin.

Areas mapped as Freshwater Marsh are areas dominated by cattail (*Typha* sp.) and California bulrush (*Schoenoplectus californicus*) and occur where the two originally graded low areas were graded within the detention basin east of SD 2 and along features at SD 5. Some small Freshwater Marsh areas also occur along the access to SD 5.

Herbaceous Wetland is where herbaceous wetland plants grow but are not typical marsh species. At the detention basin east of SD 2, such areas surrounding the Freshwater Marsh are dominated by

southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) with San Diego marsh-elder (*Iva hayesiana*) both of which were planted at installation of the detention basin.

3.3 Watershed

The proposed Project survey area is within the San Diego River watershed within the San Diego Hydrologic Unit Code 8 (18070304), Lower San Diego River Hydrologic Unit Code 10 (1807030407), and the Mission Valley San Diego River (180703040705) (Figure 4; USGS 2023).

3.4 Hydrology

The U.S. Fish and Wildlife Service's NWI identifies Palustrine Scrub Shrub Temporary Flooded (PSSA) portions and Intermittent Riverine Streambeds Temporary Flooded (R4SBA) in the canyons at SDs 1-3 and 5, and the Palustrine Emergent Persistent Seasonally Flooded Diked/Impounded (PEM1Ch) feature at the detention basin east of SD 2 (Figure 2). The area around SD 4 has no identified wetland feature in the NWI.

The USGS NHD maps (Figure 3) show a "blue-line stream" running north-south in Ruffin Canyon by SD 5 and another near the eastern Study Areas running north-south then heads east towards Murphy Canyon.

Based on aerial imagery (Google Earth 2025), the eastern unnamed canyon drainage drains south then southeast into a detention basin west of West Canyon Avenue and the Stonecrest community. The outlet of the detention basin takes water into a 1,400-ft culvert/pipe that goes around the south end of the Stonecrest Village development and outfalls at the Kinder Morgan Mission Valley Terminal Fuel Depot into a channelized feature that heads west and under Petroleum Street to Murphy Canyon Creek 720 ft to the west. The latter creek runs south in a culvert for 1,850 ft past the Kinder Morgan facility and is open again south of the Interstate 15 south offramp to Friars Road. The creek is channelized for 1,300 ft until South Mission Road but is in a more natural channel from this point until it enters the San Diego River, another 1,775 ft to the south.

The drainage running south in Ruffin Canyon is joined by tributaries from Shawn Canyon and Sandrock Canyon before entering a culvert north of Pompeii Lane that carries the water 4,000 ft south, presumably under Pompeii Lane and Fenton Parkway, to an outfall at the San Diego River.

The San Diego River, into which both Ruffin and Murphy Canyon creeks drain, flows west through Mission Valley and into the San Diego River Flood Control Channel and ultimately to the Pacific Ocean, a TNW.

TDI accessed Wetlands Climate Tables (WETS) data through the NRCS Agricultural Applied Climate Information System database for the Montgomery Field, California NWS station in San Diego County. The proposed Project is about 1.75 miles southeast of the weather station at Montgomery Field which receives an average of 9.7 inches of rain per year (NWS 2025).

WETS tables are used to define the range of normal precipitation and growing season for NWS stations. WETS tables define the "normal" range at the 30th and 70th percentile of all the data in the precipitation record for that station. TDI requested data for the past 30 years (1995-2024) to provide the pertinent pre-site visit precipitation data (Table 2; Appendix B).

Table 2. Precipitation Data (1995-2024).

MONTH	AVG. MAX. TEMP.	AVG. MIN. TEMP.	AVG. MEAN TEMP.	AVG. PRECIP.	30% CHANCE PRECIP. LESS THAN	30% CHANCE PRECIP. MORE THAN	AVG. NO. DAYS PRECIP. 0.10 OR MORE	AVG. SNOWFALL
Jan	67.4	45.8	56.6	1.88	0.49	2.19	3	-
Feb	66.8	46.4	56.6	2.23	0.86	2.62	4	-
Mar	67.6	49.6	58.6	1.32	0.61	1.62	3	-
Apr	69.8	52.5	61.1	0.78	0.23	0.92	2	-
May	70.8	56.8	63.8	0.29	0.06	0.24	1	-
Jun	74.4	60.4	67.4	0.03	0	0.04	0	-
Jul	79.6	64.6	72.1	0.11	0	0	0	-
Aug	81.6	65.7	73.7	0.09	0	0.01	0	-
Sep	81.1	63.9	72.5	0.16	0.04	0.13	0	-
Oct	77.4	58.1	67.7	0.54	0.1	0.45	1	-
Nov	72.4	50.6	61.5	0.86	0.34	1.01	2	-
Dec	66.8	45.7	56.2	1.73	0.55	2.06	3	-
Annual					7.96	11.51		
Average	73	55	64	-	-	-	-	73
Total	-	-	-	10.03			20	-

GROWING SEASON DATES			
Years with missing data:	24 deg = 3	28 deg = 3	32 deg = 4
Years with no occurrence:	24 deg = 27	28 deg = 27	32 deg = 26
Data years used:	24 deg = 27	28 deg = 27	32 deg = 26
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent	No occurrence	No occurrence	No occurrence
70 percent	No occurrence	No occurrence	No occurrence

Source: WETS Station, San Diego Montgomery Field, California; Requested Years 1995-2024.

Note: Percentage chance of the growing season occurring at the Beginning and Ending dates.

Table 2 and Appendix B indicate that the field survey date of June 5, 2025 occurred after two years of higher than normal (10.03 inches) rainfall with 16.97 inches in 2023 and 11.60 inches in 2024, but the rainfall for this past wet season (2024-2025) was quite dry except for February and March 2025 during which 1.46 and 3.01 inches fell, respectively at the Montgomery Field, California NWS station. The total annual precipitation for 2024 of 11.60 inches was within the normal range of annual precipitation for the past 30 years at Montgomery Field, which is 4.76 inches to 20.12 inches. Little rain fell between the middle of March and early June in 2025. The continually running water for SDs 1, 2 and 3, and ponding supporting fish at SD 5 indicates the water has been present for longer than just the last rainfall. The NRCS does not calculate a growing season length for this station since none of the threshold temperatures were recorded throughout the 30-year period.

3.5 Soils

The proposed Project areas are within the Stadium Conglomerate geologic formation characterized by large cobbles in a coarse sandstone matrix overlain by Mission Valley Formation sandstone. The U.S. Department of Agriculture identifies the Study Areas as having Olivenhain, Redding, and Terrace Escarpment Series soils (Figure 3):

- **Olivenhain Cobbly Loam, 9 to 30 Percent Slopes (OhE), 30 to 50 Percent Slopes (OhF):** The Olivenhain series is a member of the clayey-skeletal, kaolinitic, thermic family of Ultic Palexeralfs. Typically, Olivenhain soils have brown and reddish brown, medium acid, very cobbly loam A horizons, reddish brown and red, medium and strongly acid, very cobbly clay B2t horizons, grading to pinkish white cobbly loam C horizons. Olivenhain soils are gently sloping to strongly sloping and are on dissected marine terraces at elevations of 100 to 600 ft. The climate is dry subhumid mesothermal. Summers are warm and dry and winters are cool and moist. Olivenhain cobbly loam soils can be hydric in depressions when ponding occurs.
- **Redding Gravelly Loam 2 to 9 Percent Slopes (RdC):** The Redding series are fine, mixed, active, thermic Abruptic Durixeralfs and consists of moderately deep to duripan, well or moderately well drained soils that formed in alluvium derived from mixed sources. They are on nearly level or dissected and undulating to hilly high terraces. Redding gravelly loam soil can be hydric in depressions when ponding occurs.
- **Redding-Urban Land Complex, 2 to 9 Percent Slopes (RhC):** The Redding-Urban land complex contains components of both Redding series and Urban land series, as those series are further described above. The NRCS does not list Redding-Urban land complex, 2 to 9 percent slopes, as hydric.
- **Terrace Escarpments (TeF)** are undifferentiated soils of variable composition.

3.6 Features Observed

In 2017, 2022, and 2025 TDI assessed two main features and their tributaries that could potentially be impacted and took 11 soil sampling points within and near areas of these features supporting wetland vegetation to determine the potential presence or absence of federally jurisdictional wetlands (Figure 5 through Figure 8; Appendix C). TDI also updated five and created two new OHWM Datasheets in 2022 within each defined aquatic feature in the Project survey area (Figure 5 through Figure 8; Appendix C). In 2025, the extant features had only changed in minor ways since 2022 but some new features had appeared, most of which would not be impacted, so no additional sample points or OHWM forms were created. The descriptions provided below detail the existing characteristics of each feature determined in the field in 2025. Appendix D provides site photographs of the features, and figures within Appendix D provide photo points.

Feature 1

Feature 1 consists of the unnamed drainage feature in the east of the Study Area that begins near the **SD 1** alignment and descends down a canyon, enters a detention basin west of Stonecrest Village, and outflows from the detention basin through a culvert/pipe heading east. It eventually outfalls into a concretized culvert heading east through the Kinder Morgan facility and into Murphy Canyon Creek.

At the proposed **SD 1** alignment (Figure 5) the canyon bottom shows evidence of water but no channel until near the existing storm drain outfall where a narrow, poorly-defined feature of mostly pools, containing what looks like highly polluted ponded water, emerges among the Mexican fan palms upslope. The channel slowly widens and turns, accumulating water, possibly from a spring (water has been present during every visit) and supports Mexican fan palms with an identifiable OHWM (OHWM #1) in the form of water marks and staining above a floor of algae-covered soil. The palms, some of which have been cut or have fallen, have diverted and slowed the water and has allowed cobble material to accumulate which has buried the existing outfall. Water apparently stands year-round near the existing outfall and in pools created by the palms before the topography steepens and water can flow down the canyon. Water squeezes out of the soil beside the pools when walked on, indicating saturation. Combined with presence of algae in the water and a plant cover of Facultative Wetland (FACW) annual rabbitsfoot grass (*Polypogon monspeliensis*), tall flat sedge (*Cyperus eragrostis*), with Mexican fan palms overhead, and young palms growing along the channel and algae being present, these features are indicative of a potential USACE wetland WoUS and CDFW/City wetland. A Soil Pit (Sp) was not dug due to concerns about contact with the apparently polluted water and the observation of saturation of the soil each visit even during the dry season. As Feature 1 turns a sharp corner the topography steepens and it cuts clear banks as it transitions to a more riverine character.

While not delineated along its full length due to access issues (steep slopes and impenetrable vegetation), as Feature 1 flows down the canyon, it passes through palms of varying densities. At the **SD 3** alignment (the next storm drain along Feature 1; Figure 7) the canyon floor has previously been seen to widen and had a low-flow channel on one side of the creek bed containing water with algae, and clear banks with water marks identifying the OHWM (OHWM #3). The soil across the whole channel width was saturated with upland shrub species overhanging, and a lower density of palms. The presence of water and clear bed and bank but lack of in-channel vegetation made this section a potentially intermittent, non-wetland WoUS/CDFW Streambed. Accessing SD 3 to confirm prior observations in 2025 was impossible due to the fallen Mexican fan palm across and in the channel, a high mass of spined Mexican palm fronds as well as Canary Island palm fronds creating an impenetrable mat along the channel, steep slopes on the south side with spiny Fuchsia flowered gooseberry (*Ribes speciosum*), and a wall of lemonadeberry shrubs on the north side of the creek. The area was approached from downstream and only some visibility was possible. Based on what was seen, the channel had not widened further and was not impinging on the flagging that had been placed three years previously to identify the proposed limits of work. More water was flowing than in prior visits but was not across the whole channel width. Changes in the underlying channel were not expected to be significantly different than in 2022 except for some minor erosion of the banks.

As Feature 1 descends to the **SD 2** alignment (which is downstream of both SD 1 and SD 3; Figure 6), water still flowed in a low-flow channel below an incised bank on the north side, with a gentler incline to the south. The Mexican fan palms had grown and obscured the north bank from the south side. Access from the north was precluded by large patch of poison oak (*Toxicodendron diversilobum*). The existing collapsed outfall was still present and had not moved. The continued presence of water and sorted material in the creek bed, combined with clear water marks in the banks, were indicative of an OHWM (OHWM #2) and jurisdiction as a potentially intermittent/perennial non-wetland WoUS/CDFW Streambed. The basic characteristics have not changed other than the palms and adjacent habitat have grown or fallen over to make the section difficult to access.

Feature 1 Wetland

Downstream of SD 2, the canyon bottom widens and flattens as it approaches the detention basin(s) to the east. Sand has been deposited and is kept moist by the low-flow channel that passes through it. Mexican fan palms grow out of the sand with increasing density as the channel flattens and forms a complete canopy. Multiple visits to this location for various surveys identified sand deposition during rain events. With virtually 100% cover of Mexican fan palms being potentially FACW, the presence of flowing water, presence of deposited sand and hydric soil (Sp 1, Sp2, and Sp 3), this portion of the creek was determined to be a potential wetland WoUS/CDFW wetland/City wetland. A soil pit just beyond the edge of the palms (Sp 4) did not show hydric soils. The presence of similar biological resources to those previously at Sp 1 through Sp 3 indicates that little has changed with respect to jurisdiction in these areas.

Feature 1 Detention Basin

Feature 1 Detention Basin was graded and originally vegetated in 1998 for the Stonecrest Village development to the west to capture storm water flows from the canyon that contains Feature 1 plus the tributary canyon that empties into the basin from the north at its western end. The basin starts at the east end of Feature 1 Wetland where Feature 1 opens out into the basin.

Detention Basin Wetland 1

In 2017, water fed from Feature 1 into the detention basin into a cattail (Obligate Wetland [OBL]) patch (Detention Basin Wetland 1). Sand has clearly been deposited since 2017, presumably during storm events, partially blocking the outflow of water from Feature 1, such that water from the palm-dominated wetland WoUS/CDFW wetland/City wetland now feeds into the basin mostly along the north side of the basin (Figure 6 and see below). By 2022 the cattail patch (Detention Basin Wetland 1) had moved and shrunk as water was being diverted along the north of the basin. Some water was also diverted south around the sand accumulation into a secondary channel along the southern edge of the detention basin. In 2025 ice plant (Facultative Upland) and Brazilian peppers (Facultative [FAC]) had proliferated and spread creating a swath of mostly non-native upland vegetation across the basin east of Detention Basin Wetland 1. The southern edge channel now just ends and water infiltrates into the basin soil.

Sample Point 4 (Sp 4) previously within a wetland showed the soil to be hydric but with the lack of hydrophytic vegetation or consistent surface water input and hydrology, it no longer was considered to be within a potential jurisdictional Wetland WoUS, CDFW, or City wetland. Sp 7 did not meet any wetland criteria for any agency.

Detention Basin Wetland 2 and Detention Basin Wetland 3

East of this non-native swath are two patches of cattail and bulrush (both OBL) identified as Detention Basins Wetland 2 and Wetland 3), connected by a 1-2 ft wide potential non-wetland WoUS/CDFW streambed, and both now being invaded by tamarisk (*Tamarix ramosissima;* FAC). These two wetlands are in low basins that were graded as part of the larger detention basin in 1998 and which developed wetland characteristics over the time since. Detention Basin Wetland 2 was previously larger but has been impacted by sediment deposition from the west and growth of upland plants (ice plant and Brazilian pepper trees).

Detention Basin Wetland 3 is larger patch of cattail, bulrush, also has an increasing amount of tamarisk causing the demise of the cattail and bulrush. A test pit (Sp 11) in 2017 showed the soil was hydric, which

together with salt crust and water drainage patterns and cattail being OBL, meant the patch was a potential USACE, CDFW, and City wetland. To determine how far the hydric soil extended from the cattail, another test pit was dug (Sp 10) just outside the cattail in southwestern spiny rush, San Diego marsh-elder, saltmarsh fleabane, and a sedge and was found to also be hydric and a potential USACE/CDFW, and City wetland.

Detention Basin Wetland 4

The two aforementioned low basins (Detention Basin Wetlands 2 and 3) are within an area of planted southwestern spiny rush (FACW) and San Diego marsh-elder (FACW) that extend upslope from the basins to the north, south, and west (Detention Basin Wetland 4). Other species are found in the south including saltmarsh fleabane (*Pluchea odorata*; FACW), San Diego sedge (*Carex spissa*; FAC), and another rush species (*Juncus* sp.; FACW) that have emerged in the more shaded portion of the basin.

Sample Points 5, 6, and 8 in the basin were all affected by deposition of sand or soil from the blow-out of a storm drain to the south in winter 2022/2023 and emergency repair of that storm drain (after the rains of Winter 2024/2025). In visits prior to 2025, none of them were potential USACE jurisdiction, but all were originally CDFW/City. Over time Sp 5 was overwhelmed with ice plant and was not a wetland, then the blow-out of 2022/2023 and repair graded over Sp 8 leaving only an impacted retaining some wetland vegetation and was still considered to be within a potential CDFW/City wetland.

A test pit (Sp 9) south of and upslope of Detention Basin Wetland 3 had more marsh-elder, showed no evidence of hydrology or hydric soil and confirmed the boundary of the potential USACE Wetland WoUS was at the periphery of the cattail/bulrush/tamarisk in Detention Basin Wetland 3. This area of spiny rush between Detention Basin Wetlands 2 and 3 and east of detention basin Wetland 3 contains a channel that drains to the outfall at the southeastern corner of the detention area. The original results are still valid as changes in vegetation have not changed in character, only the presence of wetland invasives.

Results from the test pits showed much of the periphery of the detention basin is absent evidence of hydrology or hydric soil indicating the wetland vegetation in the outer rim of vegetation is mostly maintained by irrigation and is not predominantly wet and therefore does not meet all USACE criteria to be a wetland. As a result of the different areas in the Detention Basin, the cattail patches are potential wetland WoUS and CDFW/City Wetlands; the remainder of the basin is not a potential WoUS but was still a CDFW/City wetland because of the vegetation.

Detention Basin Drainages

Two drainages connect the wetlands within the Detention Basin. The first connects Detention Basin Wetland 2 to Detention Basin Wetland 3. The second takes water from Detention Basin Wetland 3 to the outfall of the Detention Basin at the intake to a pipe in the southeast corner of the Detention Basin (Figure 6). These drainages are wet most of the year as moisture drains out of the wetlands. They were approximately 1 to 2-ft wide between spiny rush with staining of adjacent soil and potential intermittent to permanent non-wetland waters of the U.S.

Feature 2

Feature 2 flows north to south in Ruffin Canyon in the Ruffin Canyon Open Space between the residential streets extending west from Mission Village Drive and the ridge supporting Walker Drive, Larkin Place, and Mobley Street. The canyon drains surface water from north of Gramercy Drive and the adjacent residential areas. As Drainage 2 heads south and reaches the vicinity of SD 5, it wholly forms the access road used by the City to maintain its sewer line in the canyon and is a part of the Ruffin Canyon Trail. The creek bed is cobbly where water flows and stands after winter rains, with pools with debris having been caught by the cobbles and in which algae can grow and insects can breed. The banks of the creek have been cut vertically.

The creek extends south, for just over 200 ft, varying in width from 11 to 14 ft (OHWM #6), before veering west off the road into natural habitat. While the turn had a gentle slope back in 2017, in 2022 the outside of the curve was more deeply cut and a 3-ft vertical drop in the trail was present. In 2025 the cut has been smoothed to a slope but whether that was natural or graded to smooth the trail, is unknown. A patch of mule fat (*Baccharis salicifolia*; FAC) borders Drainage 2 (Feature 2 Wetland 1) as it heads west, away from the access road. The mule fat grows above a section of the boulder-strewn channel which was neither wet nor contained water during surveys. The area likely gets additional water during high flows as it spills out of the channel just upstream. This flooding likely passes through the mule fat and rejoins the channel south of the mule fat.

North of the access into the Work Area for SD 5, heading upstream, Drainage 2 takes a curve east before heading northwest across the trail and into the habitat west of the trail along the canyon floor while the trail rises up a slope to the east of the drainage. In the outside of the curve, water has eroded the bank to the east and the streambed lower, and a small patch of cattails and other marsh plants occurs. It had standing water present during the June 2025 visit (Feature 2 Wetland 2).

Across the trail and into where the drainage veers off the trail, another curve below the rising trail to the east supports another patch of cattails in water which not only had aquatic plants and insects but also mosquitofish (*Gambusia affinis*) and California tree frog (*Pseudacris cadaverina*) tadpoles (Feature 2 Wetland 3). How this non-native fish got into this canyon creek in San Diego is unknown, but the species is used for mosquito control. Its presence indicates that even if water does not flow perennially, it flows long after rains, and pools are sustained for many weeks afterwards, meaning that the feature can be classified as intermittent.

Smaller pools were present in the trail south of the access into the Work Area and were enough to support insects and grow algae.

Feature 2a

A tributary drainage to Feature 2, Feature 2a, coming from the east, off Shawn Ave, joins Feature 2 south of the junction of the Shawn Canyon Trail with the Ruffin Canyon Trail (Figure 9). This tributary has its origins near the western terminus of Shawn Avenue from which access to SD 5 would be taken. Storm water flows directly from Shawn Avenue into the canyon and quickly starts to carve a channel to the south of the east-west Trail. Further down Shawn Canyon, a patch of cattails forming a marsh (Feature 2a Wetland 1), and a swath of cattail and umbrella sedge (*Cyperus* sp.; OBL) forms a second marsh (Feature 2a Wetland 2) and occur parallel but separated from the Trail by a strip of DCSS that dominates the canyon

vegetation. But at approximately 11,000 ft down the Trail from Shawn Avenue, just after that last swath of marsh, the Trail jogs north then south and then back to its east-west direction, and the drainage emerges from Feature 2a Wetland 2 and crosses back and forth across the Trail. While no plants grow in the Trail, and little erosion occurs, there is evidence that water passes over the Trail (water staining of the soil, some sorting of material, OHWM #7) but does not form a OHWM and is not jurisdictional. After less than 100 ft in the Trail, water leaves the trial on the south side and starts eroding a channel again, almost immediately. From this point on, the drainage features do not come back into the Shawn Canyon Trail.

During heavy rainstorms, some water apparently stays within and flows further down the Trail downslope of where it crosses the trail and has eroded the soil over time but jurisdictional features were absent and no evidence of an OHWM was evident. The drainage in Shawn Canyon (Feature 2a) falls under USACE jurisdiction under *Rapanos* because the drainage feature supports wetlands that trap and filter pollutants that helps maintain water quality, and the drainage itself carries flood waters to a TNW. It is also a CDFW streambed. Feature 2a Wetlands 1 and 2 are assumed could be USACE and CDFW/City wetlands as cattails need water present for more than just rainstorms to survive.

3.7 Jurisdictional Resources and Analyses

Table 3-Table 5 provide the approximate acreage and linear feet of potential jurisdictional resources delineated within the Project survey area for each applicable regulating agency, as shown in Figure 5-Figure 9. Table 6 provides the vegetation community acreages within the Project survey area (Figure 10-Figure 13). At SD 4, the start of the ephemeral channel remained far beyond the end of the proposed Project footprint, even with the blow-out of the storm drain above which eroded a lot of material that was deposited down the canyon such that a regular channel was not detected and so was not delineated (Figure 8).

USACE

The USACE takes jurisdiction over non-wetland and wetland WoUS. Feature 1 at SD 2 and SD 3, Detention Basin Drainages, and Feature 2 and 2a, are potential non-wetland WoUS (Figure 6-Figure 7, Figure 9) based on the presence of an OHWM features and/or clear bed and bank. Feature 1 at SD 1, Feature 1 Wetland, and a portion of Feature 1 Detention Basin, plus freshwater marshes on Features 2 and 2a met, or have been assumed to meet, all three wetland parameters per the Arid West Supplement and are therefore potential jurisdictional wetland WoUS by the USACE (Figure 5-Figure 7). Feature 2 Wetland 1 did not meet all criteria to be a wetland WoUS.

RWQCB

No isolated or Rapanos conditions that met the criteria for wetland WoUS were observed in proximity to the proposed storm drain alignments; therefore, the RWQCB follows that of USACE jurisdiction.

CDFW

CDFW jurisdiction potentially occurs in the same locations as USACE and RWQCB jurisdiction but extends beyond the extent of those identified resources up to the top of bank. Feature 1 at SD 2 and SD 3, and Feature 2 and 2a are potential CDFW jurisdictional streambeds. Feature 1 at SD 1, Feature 1 Wetland,

Feature 1 Detention Basin and contained Wetlands, and Feature 2 and 2a Wetlands are all potential CDFW jurisdictional wetlands given the presence of riparian or wetland vegetation (Figure 5-Figure 9).

City

Areas noted as potential City wetland vegetation communities include those areas that are potential CDFW wetlands (Feature 1 at SD 1, Feature 1 Wetland, Feature 1 Detention Basin, and Feature 2 and 2a Wetlands) (Figure 5-Figure 7, Figure 9).

The City also considers natural flood channels to be City Wetlands. At SD 5, Feature 2 is considered a natural flood channel City Wetland that has not been significantly modified by storm drain inputs or exotic species. All other features or drainage areas without riparian or wetland vegetation (i.e., non-wetland WoUS/CDFW Streambeds) as depicted on Figure 6-Figure 9 would be best described as seasonal drainage patterns pursuant to the City's Biology Guidelines and would not satisfy the City's wetland definition. As such, these areas do not qualify as City-jurisdictional wetlands.

Table 3. Potential Jurisdictional Resources delineated within the Project Survey Area: USACE and RWQCB.

FEATURE NAME	LOCATION	ACREAGE	LINEAR FEET	COWARDIN CODE*	PRESENCE OF OHWM	OHWM (WIDTH)	OHWM (INDICATORS)	WETLAND PRESENCE	DOMINANT VEGETATION	LOCATION (LAT, LONG)
Feature 1 (SDs 1-3)										
Feature 1	SD 1	0.008	78	R3AB1	Yes	OHWM #1 1 ft	Bank break water marks	Yes	Disturbed Wetland (Mexican fan palms)	32.797534, -117.123887
	SD 2	0.033	152	R4SB3	Yes	OHWM #2 4 ft	Bank break water marks	No	Primarily Unvegetated channel	32.795635, -117.121103
	SD 3	0.026	124	R4SB3	Yes	OHWM #3 2.5 ft	Bank break water marks	No	Primarily Unvegetated channel	32.795906, -117.122083
Feature 1 Wetland	East of SD 2	0.057	111	R3SB4B	No			Yes	Disturbed Wetland (Mexican fan palms)	32.795555, -117.120758
Detention Basin Wetland 1	East of Feature 1 Wetland	0.010	41	PEM1C	No			Yes	Freshwater Marsh	32.795561, -117.120555
Detention Basin Wetland 2	East of Detention Basin Wetland 1	0.010	40	PEM1C	No			Yes	Freshwater Marsh	32.795537 -117.120294
Detention Basin Wetland 3	East of Detention Basin Wetland 2	0.081	119	PEM1C	No			Yes	Freshwater Marsh	32.79560 -117.119735
Detention Basin Wetland 4	Surrounding Detention Basin Wetlands 2 & 3	NA	NA	NA	No			No	Herbaceous Wetland	32.795596 -117.119815
Detention Basin Drainages	Within Detention Basin Wetland 4	0.005	216	R4SB4B	Yes	1 ft (est.)	Water marks	No	Herbaceous Wetland	32.795657, -117.119549
Feature 2 (Ruffin Canyon SD 5 Access and Work Area)										
Feature 2	SD 5	0.081	412	R4SB3	Yes	OHWM #6 12 ft	Banks, algae, water marks	No	Unvegetated channel	32.793656, -117.131561
Wetland 1	SD 5	NA	NA	NA	No			No	Mule Fat Scrub	32.793401, -117.131512
Wetland 2	SD 5	0.002	24	PEM1F	No			Yes	Freshwater Marsh	32.794039, -117.131542
Wetland 3	SD 5	0.007	34	PEM1F	No			Yes	Freshwater Marsh	32.794207, -117.13162
Feature 2a (Shawn Canyon SD 5 Access)										
Feature 2a	SD 5	0.036	1,569	R6SB1	Assumed Yes	Likely 1-2 ft	Bank break	No	Unvegetated channel	32.79347, -117.12904
Wetland 1	SD 5	0.018	39	PEM1B	No			Yes	Freshwater Marsh	32.793492, -117.128953
Wetland 2	SD 5	0.087	150	PEM1B	NO			Yes	Freshwater Marsh	32.793361, -117.1295
Total		**0.461**	**3,109**	-	-			-	-	-

***** Cowardin *et al.* 1979

Table 4. Potential Jurisdictional Resources delineated within the Project Survey Area: CDFW.

FEATURE NAME	FEATURE TYPE	DOMINANT VEGETATION TYPE	ACREAGE	LINEAR FEET	LOCATION (LAT, LONG)
Feature 1 (SDs 1-3)					
SD 1	Wetland	Disturbed Wetland (Mexican Fan Palm)	0.018	83	32.797534, -117.123887
SD 2	Streambed	Unvegetated channel	0.091	162	32.795635, -117.121103
SD 3	Streambed	Unvegetated channel	0.039	124	32.795906, -117.122083
Wetland	Wetland	Disturbed Wetland (Mexican Fan Palm)	0.057	111	32.795555, -117.120758
Detention Basin Wetland 1	Wetland	Freshwater Marsh, Herbaceous Wetland	0.010	41	32.795561, -117.120555
Detention Basin Wetland 2	Wetland	Freshwater Marsh	0.010	40	32.795537, -117.120294
Detention Basin Wetland 3	Wetland	Freshwater Marsh	0.081	119	32.79560, -117.119735
Detention Basin Wetland 4	Wetland	Herbaceous Wetland	0.592	332	32.795596, -117.119815
Feature 2 (Ruffin Canyon SD 5 Access and Work Area)					
SD 5	Streambed	Unvegetated channel	0.149	412	32.793656, -117.131561
Wetland 1	Riparian	Mule Fat Scrub	0.039	82	32.793401, -117.131512
Wetland 2	Wetland	Freshwater Marsh	0.002	24	32.794039, -117.131542
Wetland3	Wetland	Freshwater Marsh	0.007	34	32.794207, -117.13162
Feature 2a (Shawn Canyon SD 5 Access)					
Feature 2a	Streambed	Unvegetated channel	0.072	1,569	32.79347, -117.12904
Wetland 1	Wetland	Freshwater Marsh	0.018	39	32.793492, -117.128953
Wetland 2	Wetland	Freshwater Marsh	0.087	150	32.793361, -117.1295
Total	**-**	**-**	**1.272**	**3,163**	**-**

Table 5. Potential Jurisdictional Resources delineated within the Project Survey Area: City of San Diego.

FEATURE NAME	DOMINANT VEGETATION TYPE	ACREAGE	LOCATION (LAT, LONG)
Feature 1 (SDs 1-3)			
SD 1	Disturbed Wetland (Mexican Fan Palm)	0.018	32.797534, -117.123887
Wetland	Disturbed Wetland (Mexican Fan Palm)	0.057	32.795555, -117.120758
Detention basin Wetland 1	Wetland (Freshwater Marsh, Herbaceous Wetland)	0.010	32.795561, -117.120555
Detention basin Wetland 2	Wetland (Freshwater Marsh, Herbaceous Wetland)	0.010	32.795537, -117.120294
Detention basin Wetland 3	Wetland (Freshwater Marsh, Herbaceous Wetland)	0.081	32.79560, -117.119735
Detention Basin Wetland 4	Wetland (Freshwater Marsh, Herbaceous Wetland)	0.592	32.795596, -117.119815
Feature 2 (Ruffin Canyon SD 5 Access and Work Area)			
Feature 2	Natural Flood Channel	0.149	32.793676, -117.131575
Wetland 1	Riparian (Mule Fat Scrub)	0.039	32.793401, -117.131512
Wetland 2	Freshwater Marsh	0.002	32.794039, -117.131542
Wetland 3	Freshwater Marsh	0.007	32.794207, -117.13162
Feature 2a (Shawn Canyon SD 5 Access)			
Wetland 1	Freshwater Marsh	0.018	32.793492, -117.128953
Wetland 2	Freshwater Marsh	0.087	32.793361, -117.1295
Total	-	**0.983**	-

Table 6. Vegetation Communities within Project Area.

VEGETATION COMMUNITY/ HABITAT IN THE STUDY AREA (HOLLAND CODE)	CITY MSCP HABITAT TYPE	MSCP TIER	TOTAL AREA MAPPED
Unvegetated Channel (64200)	Natural Flood Channel	Wetland	0.140
Disturbed Wetland (11200)	Disturbed Wetland	Wetland	0.076
Freshwater Marsh (52400)	Freshwater Marsh	Wetland	0.216
Herbaceous Wetland (52510)	Freshwater Marsh	Wetland	0.499
Herbaceous Wetland, Irrigated	Freshwater Marsh	Wetland	0.172
Mule Fat Scrub (63310)	Riparian Scrub	Wetland	0.039
Southern Willow Scrub (63320)	Riparian Scrub	Wetland	0.075
Southern Riparian Woodland (62500)	Riparian Scrub	Wetland	0.130
		Subtotal	***1.349***
Diegan Coastal Sage Scrub (32500)	Coastal Sage Scrub	II	19.63
Diegan Coastal Sage Scrub, Rhus-Dominated	Coastal Sage Scrub /Chaparral	II	15.91
Diegan Coastal Sage Scrub, Rhus-Dominated, Disturbed	Coastal Sage Scrub /Chaparral	II	1.07
Diegan Coastal Sage Scrub, Revegetation	Coastal Sage Scrub /Chaparral	II	0.03
Diegan Coastal Sage Scrub, Baccharis-Dominated (32530)	Coastal Sage Scrub	II	0.99
		Subtotal	***37.64***
Poison Oak Chaparral	Mixed Chaparral	IIIA	0.15
		Subtotal	***0.15***
Non-Native Grassland (42200)	Non-Native Grasslands	IIIB	0.06
		Subtotal	***0.06***
Non-Native Vegetation (11000)	Disturbed Land	IV	11.71
Non-Native Vegetation, Ice Plant-Dominated	Disturbed Land	IV	0.27
Non-Native Vegetation, Palm-Dominated	Disturbed Land	IV	1.09
Disturbed Habitat (11300)	Disturbed Land	IV	3.02
Developed (12000)	Disturbed Land	IV	3.54
Developed, Brow Ditch	Disturbed Land	IV	0.06
Developed, Path	Disturbed Land	IV	0.38
Riprap	Disturbed Land	IV	0.11
Eucalyptus Woodland (79100)	Eucalyptus Woodland	IV	0.65
Ornamental	Ornamental Plantings	IV	1.31
		Subtotal	***22.13***
		TOTAL	**61.33**

MSCP = Multiple Species Conservation Program

*Note some areas of Non-Native Vegetation are identified as potentially jurisdictional wetlands in this ARDR.

4 QUALIFICATIONS AND CERTIFICATIONS

The following individuals contributed to the fieldwork and/or preparation of this ARDR.

Derek H. Langsford	Ph.D., Ecology, UC Davis/San Diego State University, 1996 B.Sc., (Hons.), Ecological Science, University of Edinburgh, 1985 ESA Certified Senior Ecologist, San Diego County Approved Biologist Wetland Delineation Training Class, Richard Chinn Environmental Training, 2017.
Josediego Uribe-Horta	M.S., Biology, Ecological. San Diego State University, 2022 B.A., International Business, San Diego State University, 2009
Elizabeth M Kellogg	M.S. International Agricultural Development with specialization in Range Management. UC Davis, 1981 B.S, Agricultural Science and Management, UC Davis, 1978 Certified Wetland Delineation USACE 1987 Manual, Certified Wetland Delineation Refresher Course, Arid West Supplement 2011

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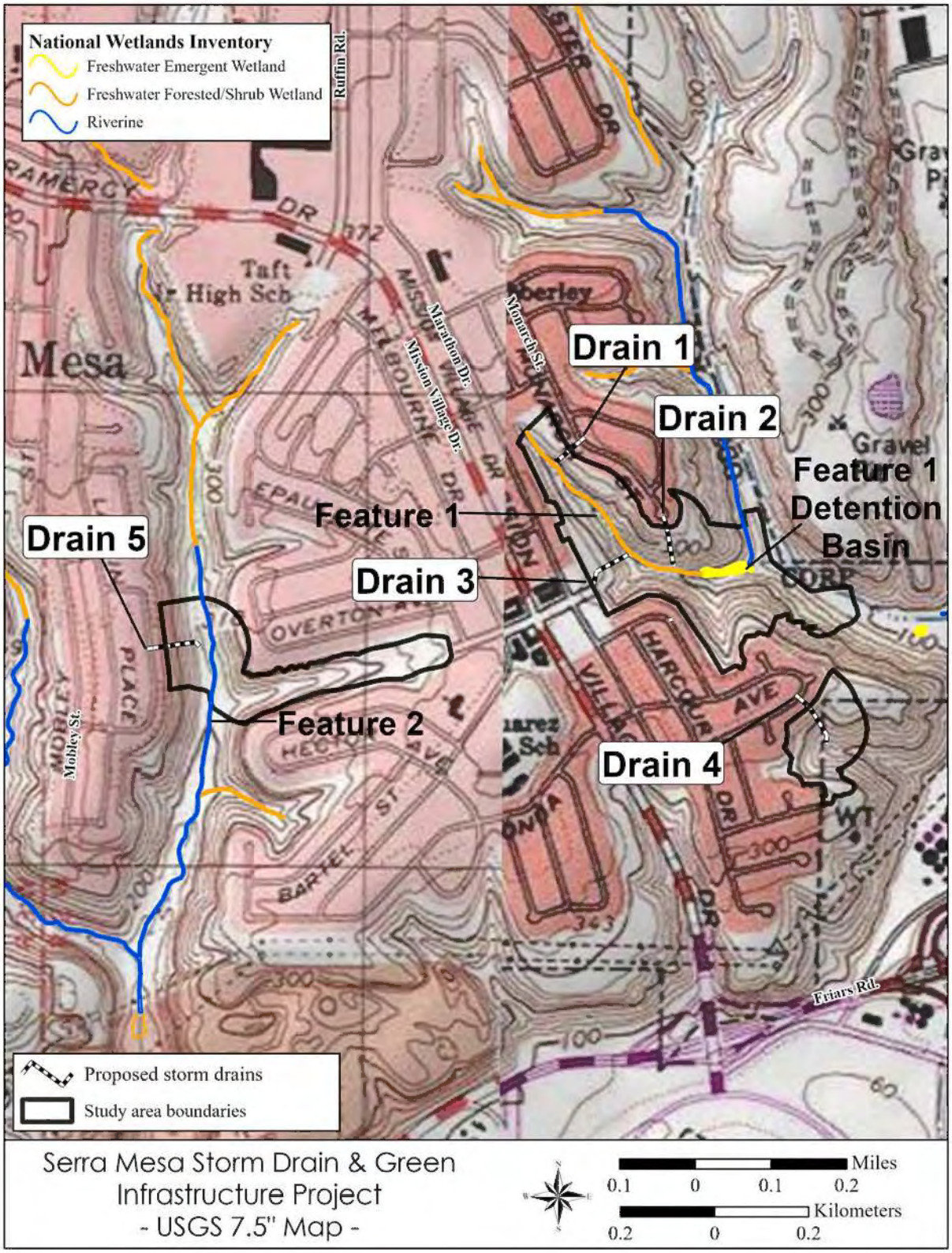
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6 FIGURES



Figure 1. Project Location.



Note: La Jolla (left half) and La Mesa (right half) 7.5 min Quadrangles

Figure 2. USGS Topography and NWI Wetlands.

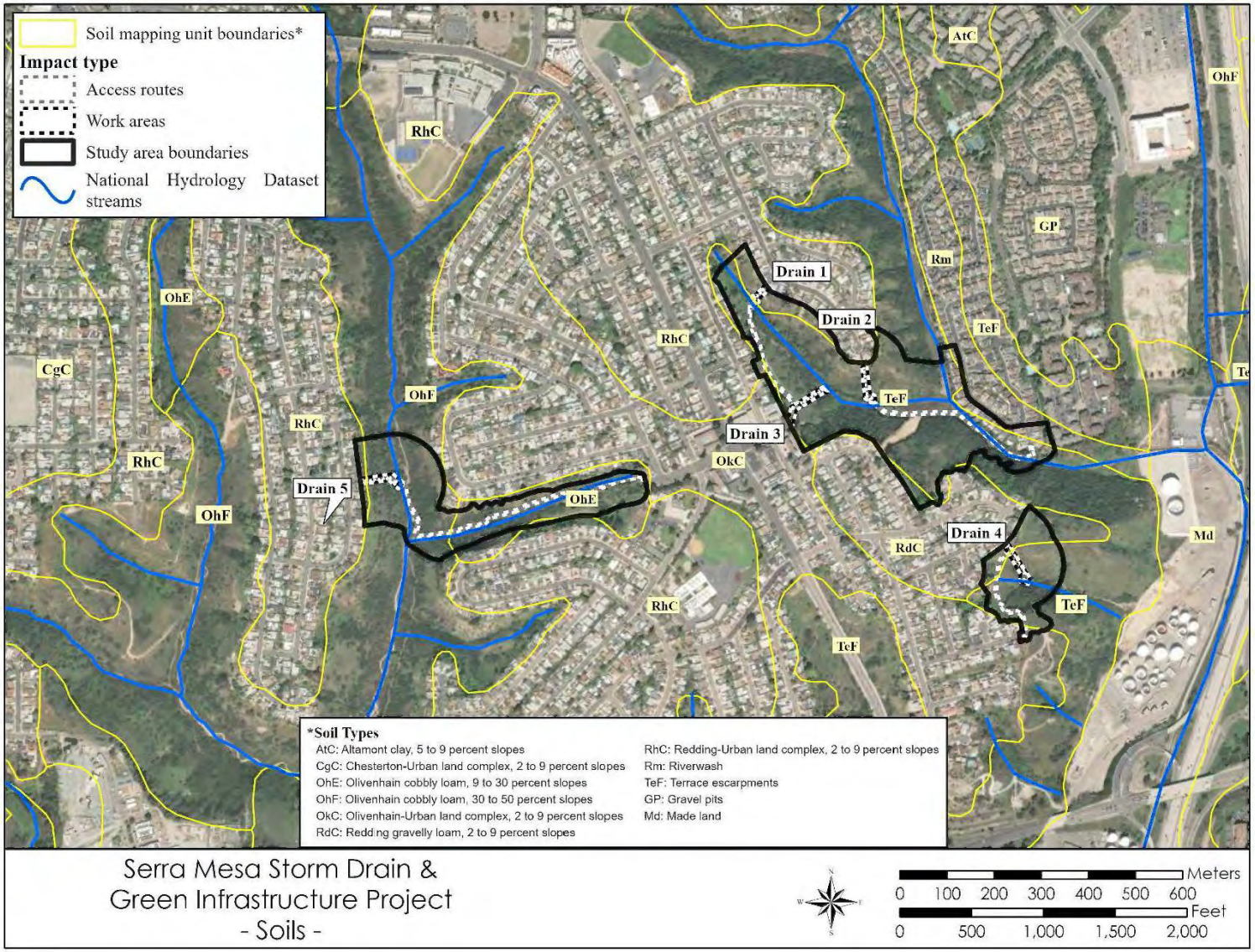


Figure 3. Soils and NHD Streams.

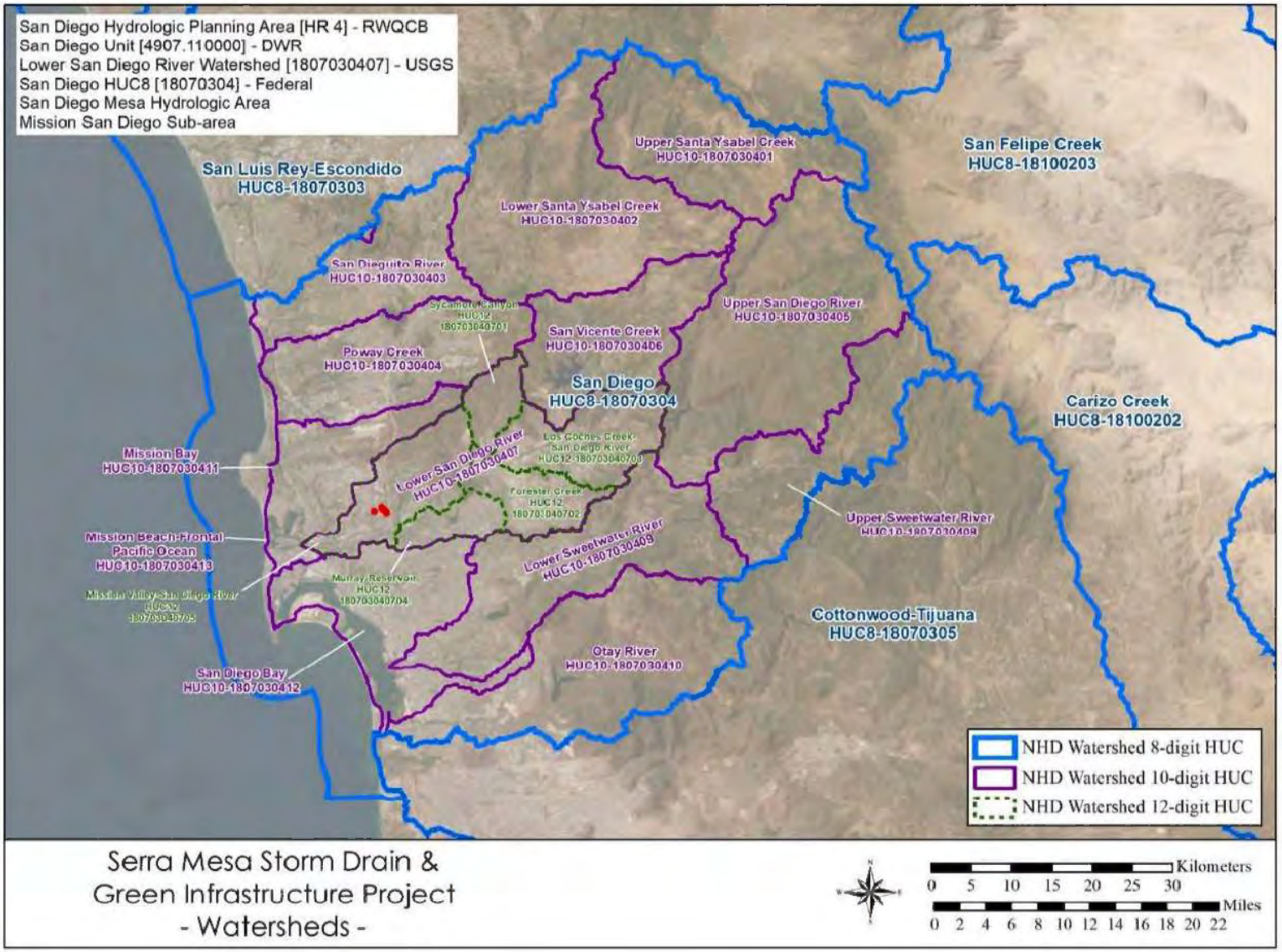


Figure 4. Watersheds.

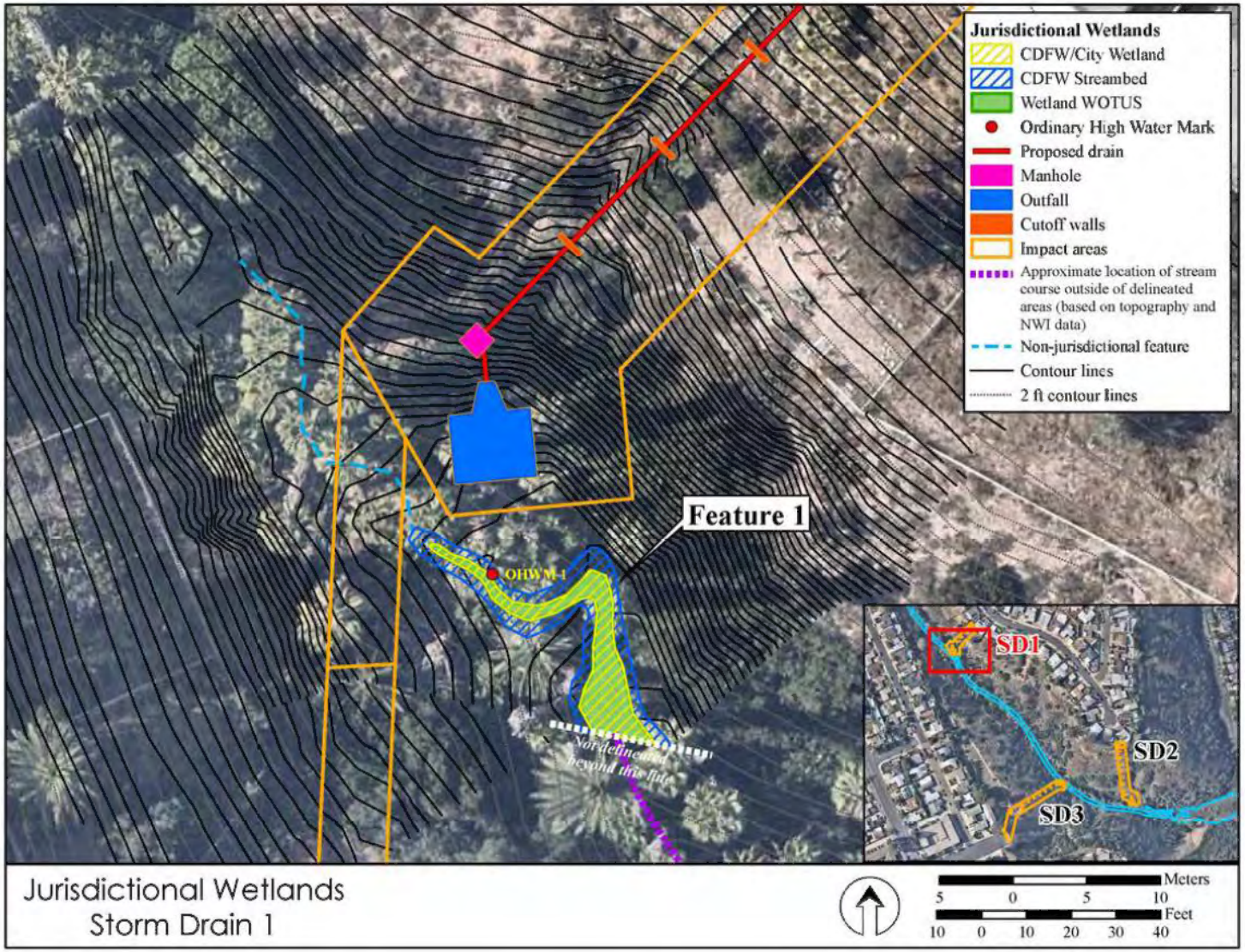


Figure 5. Feature 1 at Location of SD 1.

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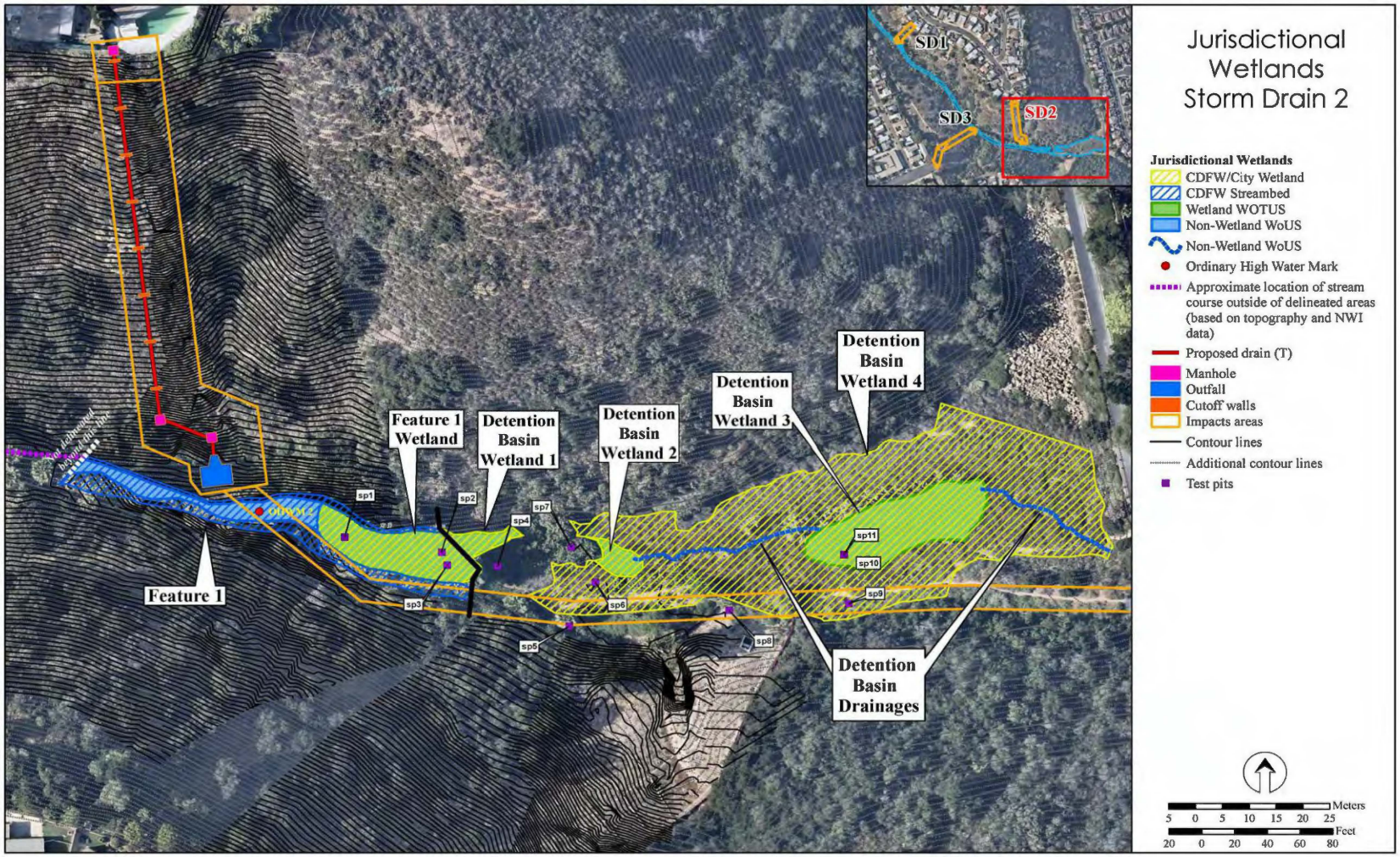


Figure 6. Feature 1, Feature 1 Wetland, and Detention Basin at Location east of SD 2.

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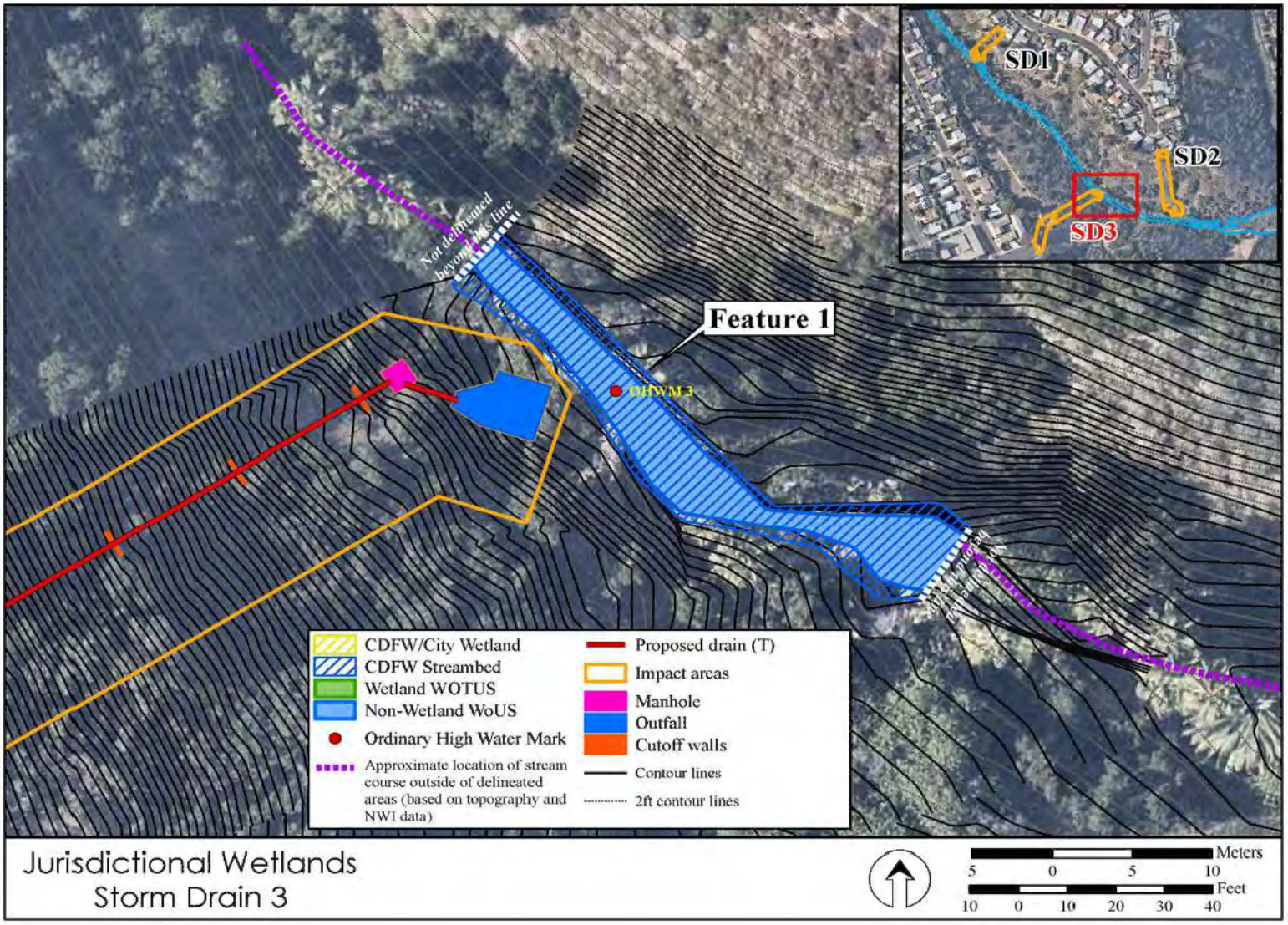


Figure 7. Feature 1 at Location of SD 3

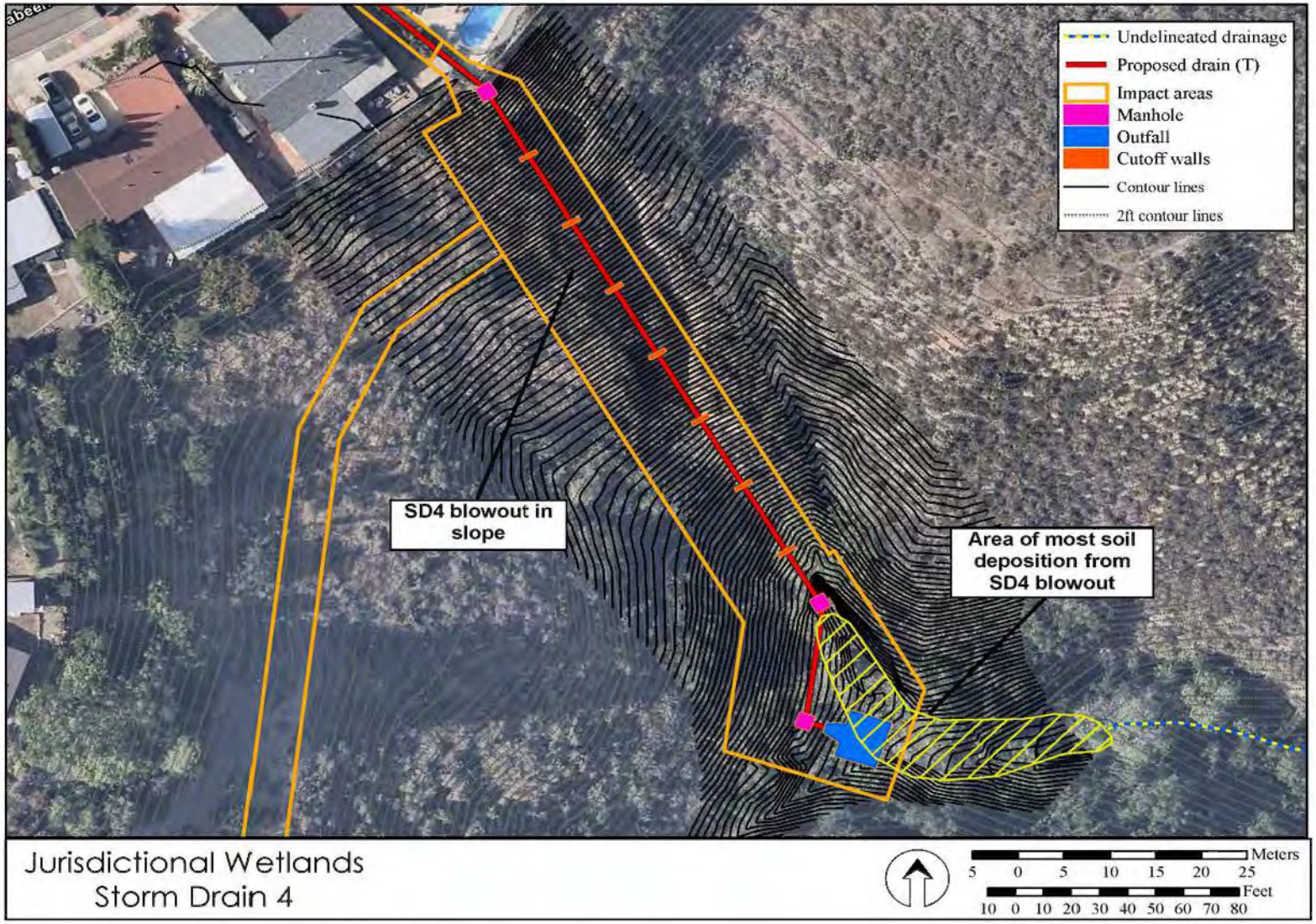


Figure 8. Location of SD 4 (blow-out and erosion)

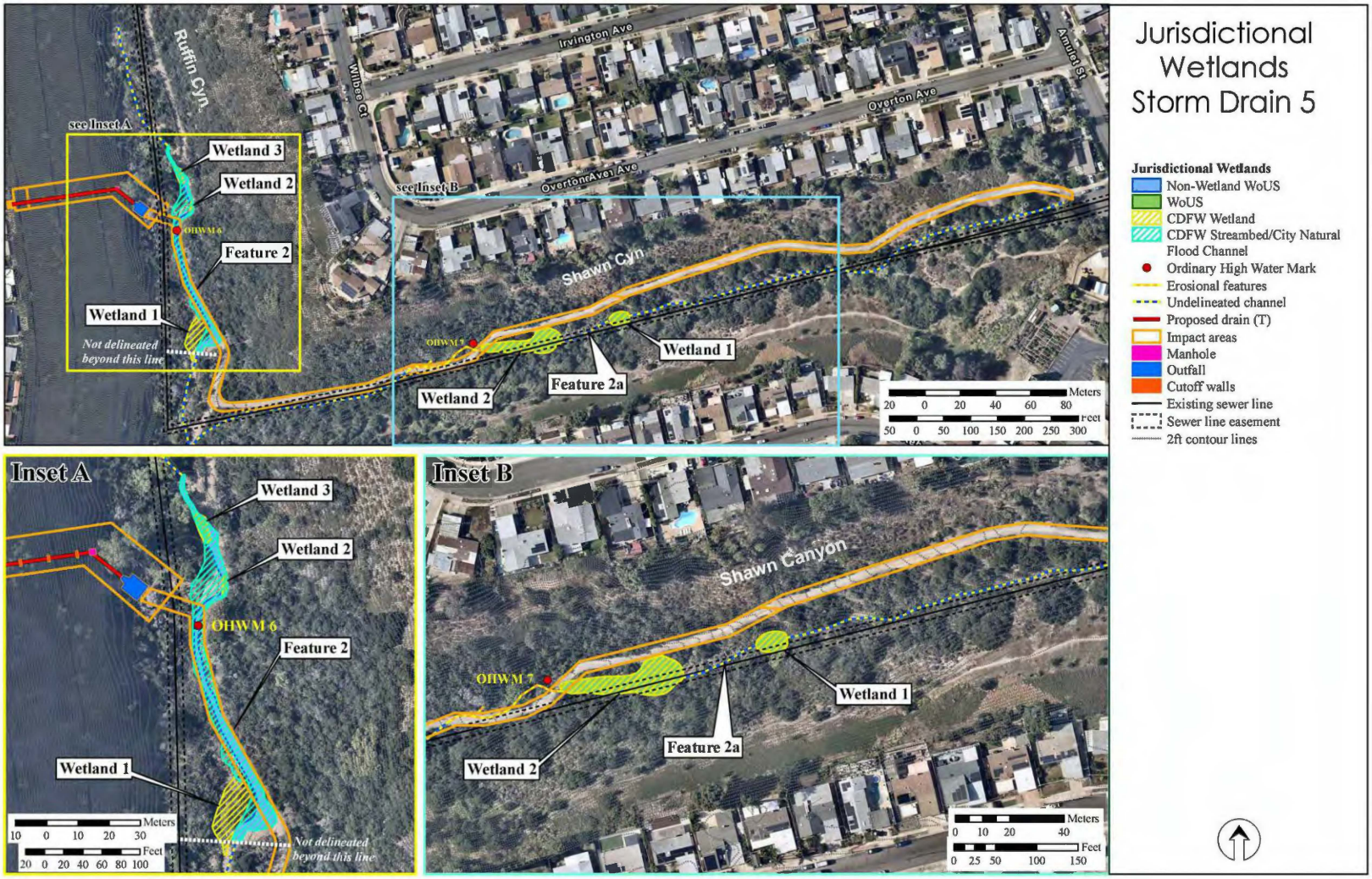


Figure 9. Feature 2 and 2a and Wetlands at Location of SD 5.

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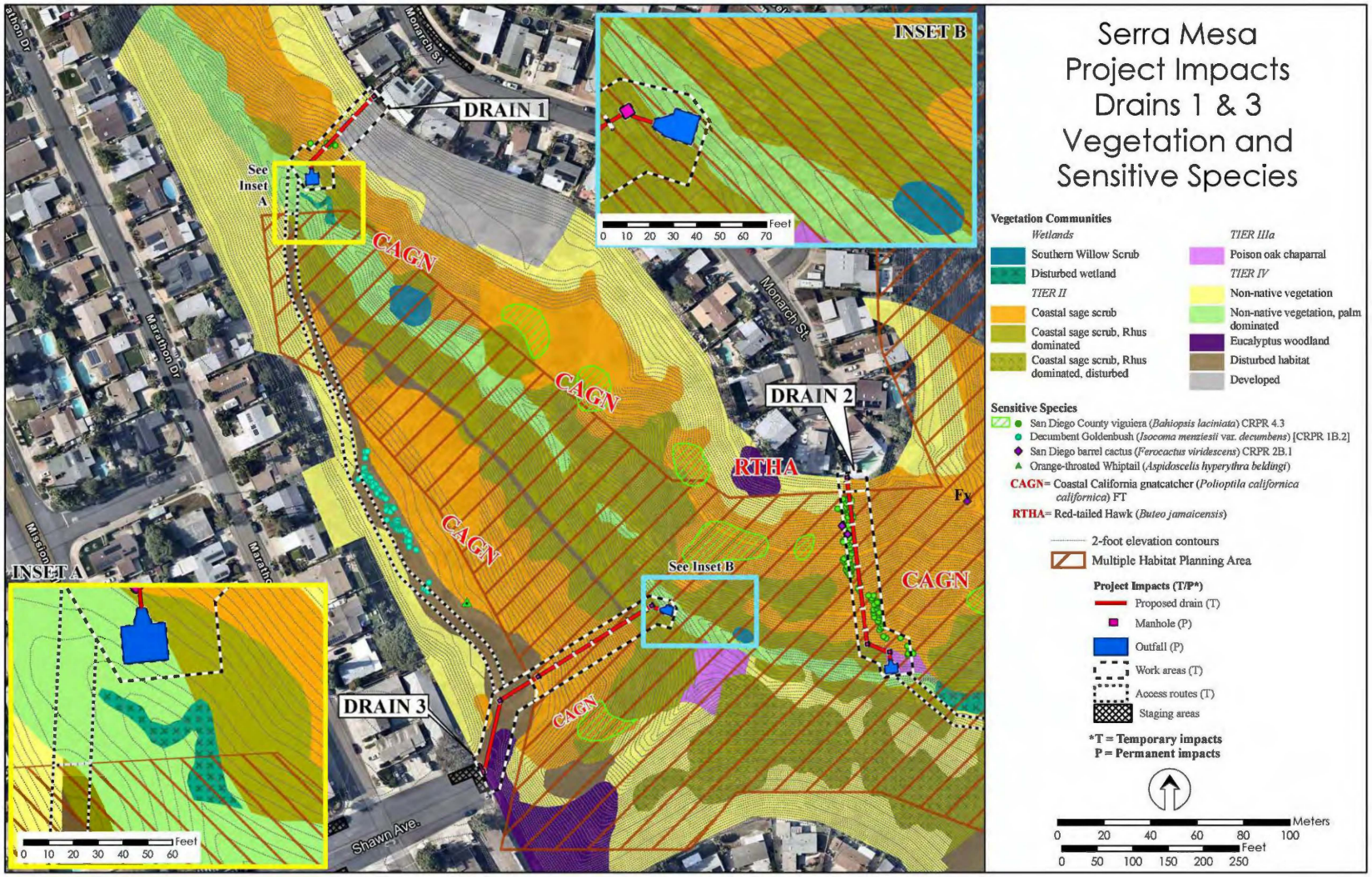


Figure 10. Biological Resource in Vicinity of SDs 1 and 3.

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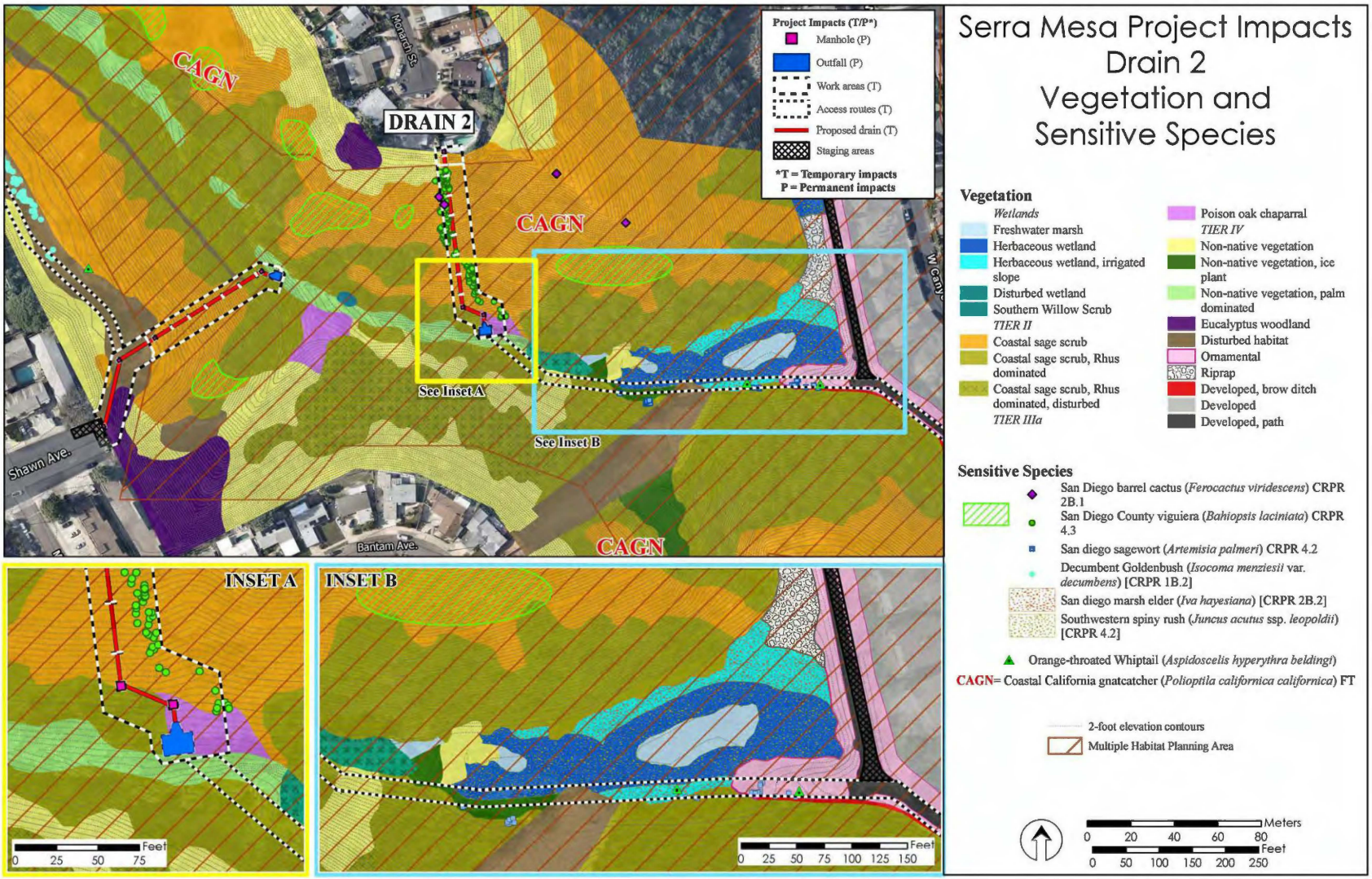


Figure 11. Biological Resource in Vicinity of SD 2 and SD 2 Access.

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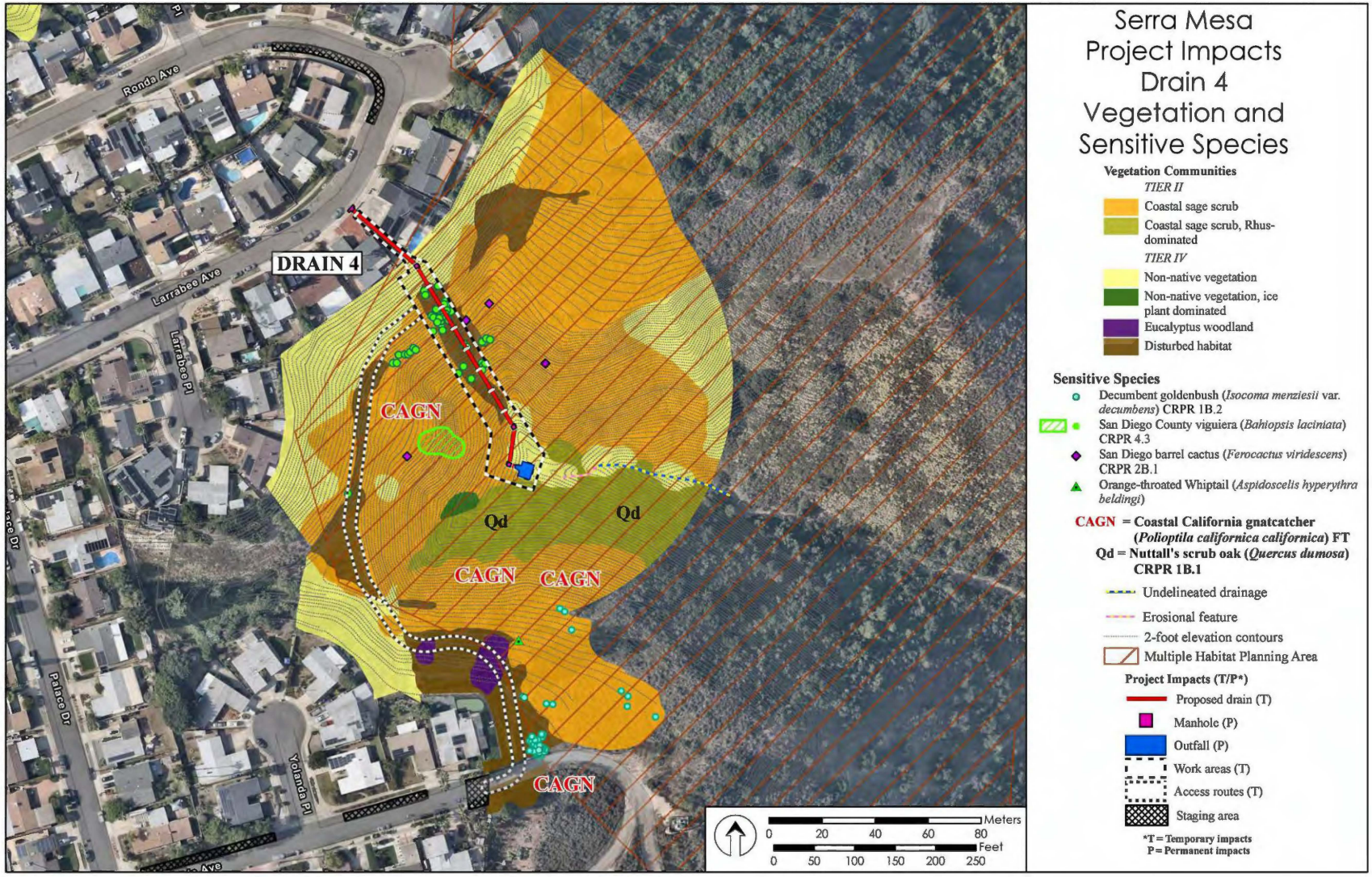


Figure 12. Biological Resource in Vicinity of SD 4.

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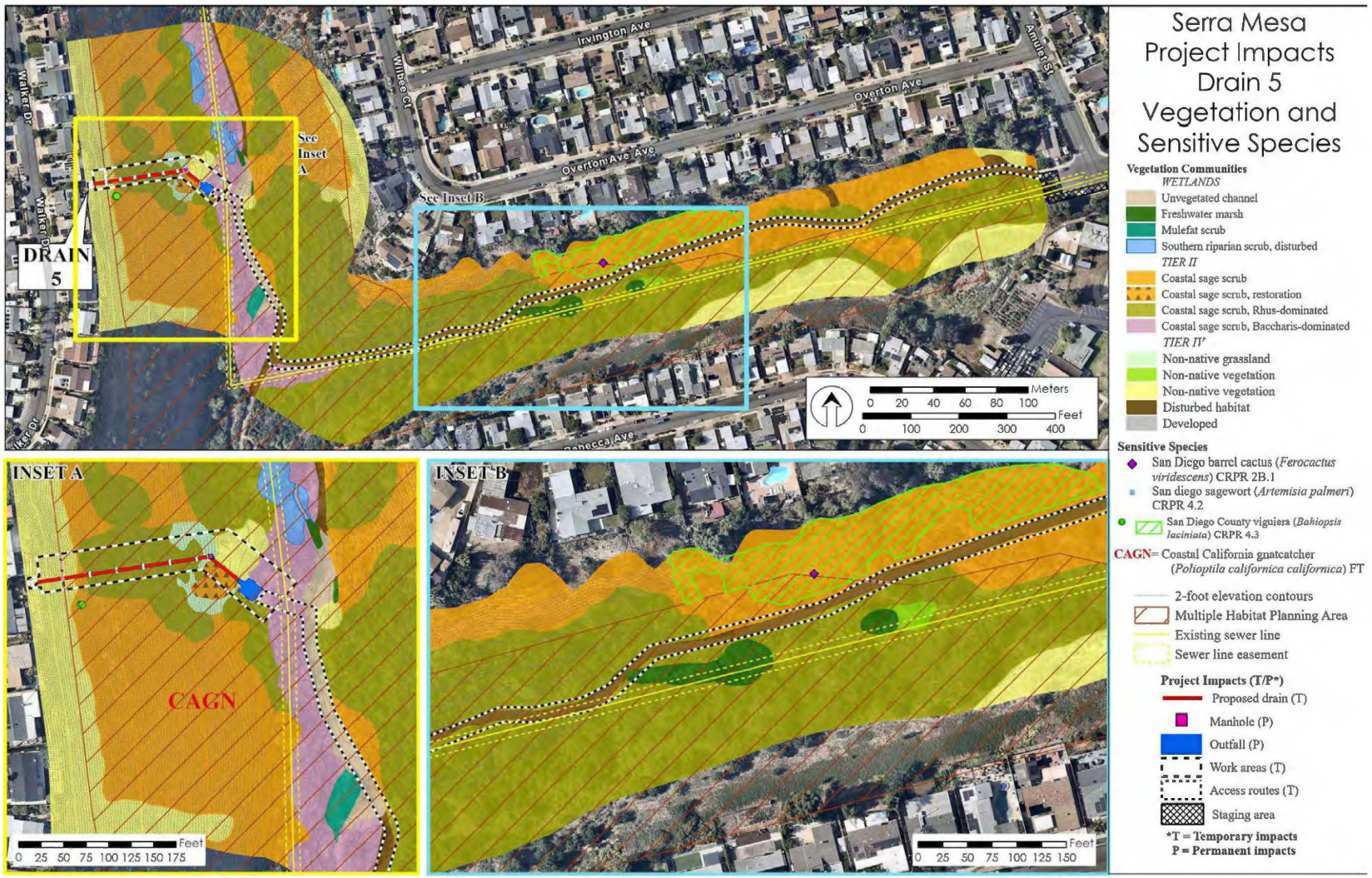


Figure 13. Biological Resource in Vicinity of SD 5 and SD 5 Access.

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APPENDICES

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Appendix A

CHECKLIST: MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS

REPORT SECTION/ PAGE NUMBER	MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS	ADDITIONAL NOTES
Cover Letter	JD REQUEST AND FORMS: A cover letter indicating whether you are requesting a jurisdictional determination (JD). If you are requesting a JD, you must complete, sign, and return the Request for USACE JD sheet. For preliminary jurisdictional determinations, the Preliminary JD Form must be signed and submitted.	
Section 2.3.5	CONTACT INFORMATION: Contact information for the applicant(s), property owner(s), and agent(s).	
N/A	SITE ACCESS: If the property owner or their representatives will not accompany the USACE to the site, a signed statement from the property owner(s) allowing USACE personnel to enter the property and to collect samples during normal business hours. If the property lacks direct access by public roads (in other words, access requires passage through private property not owned by the applicant), the owner or proponent must obtain permission from the adjacent property owner(s) to provide access for USACE personnel.	Property owner and/or representatives will accompany the USACE for a site visit upon request.
Section 1.1	LOCATION: Directions to the survey area, an address (if available) and one or more set of geographic coordinates expressed in decimal degrees.	
Section 2.3.1, page 6	DELINEATION MANUAL CONFIRMATION: A statement confirming the delineation has been conducted in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual* and applicable regional supplement(s). The regional supplement(s) used must be identified. For OHWM delineations, a statement must be included confirming the use of the OHWM field guide or that it is not applicable.	
Section 3.6	AQUATIC RESOURCE(S) DESCRIPTION: A narrative describing all aquatic resources on-site and an explanation of the mapped boundaries and any complex transition zones. If the site contains resources that only meet one or two of the three wetland criteria or do not exhibit a clear OHWM, describe the rationale for their inclusion or exclusion from the delineation. Also explain if any erosional features, upland swales, ditches and other potential aquatic features were considered but not included in the delineation.	
Figure 5 through 9; Tables 3, 4, and 5	AQUATIC RESOURCE MAPPING AND ACREAGE: Map the outside survey boundary, total extent of aquatic and proposed non-aquatic features, type of feature(s) (WoUS or wetland), and include the total acreage for each polygon.	
Table 1	FIELD WORK DATES: Date(s) field work was completed.	
Tables 3, 4, and5	AQUATIC RESOURCE TABLE: A table listing all aquatic resources. The table must include the name of each aquatic resource (actual or arbitrary), its Cowardin type, acreage, summary of OHWM/wetland presence, dominant vegetation for each, and location (latitude/longitude in decimal degrees). For linear features, the table must show both acreage and linear feet as well as channel measurements (active channel width).	

REPORT SECTION/ PAGE NUMBER	MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS	ADDITIONAL NOTES
Sections 1.1, 2, and 3.2; Table 1; Appendix B	FIELD CONDITIONS: A description of existing field conditions, including current land use, normal conditions, flood/drought conditions, irrigation practices, past or recent manipulation to the site, and characteristics considered atypical (for criteria see OHWM and wetland supplement guides). Include WETS tables or pre-site visit precipitation data as appropriate: https://www.wcc.nrcs.usda.gov/climate/wets_doc.html.	
Section 3.4	HYDROLOGY: A discussion of the hydrology at the site, including all known surface or subsurface sources, drainage gradients, downstream connections to the nearest TNW or interstate water, and any influence from manmade water sources such as irrigation.	
N/A	REMOTE SENSING: If remote sensing was used in the delineation, provide an explanation of how it was used and include the name, date and source of the tools and data used and copies of the maps/photographs.	
Section 3.5, Figure 4	SOILS: Soil descriptions, soil map(s), soil photos, and a discussion of hydric soils (for wetland delineations only).	
Figure 2	USGS QUADRANGLE: A site location map on a 7.5-minute USGS quadrangle. The map must provide the name of the USGS quadrangle, Section, Township, Range, and the latitude and longitude in decimal degree format.	
Appendix F	BULK UPLOAD FORM: For sites with three or more separate aquatic features a completed copy of the ORM Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet must be submitted.	
Figure 5-Figure 9	FIGURES: Map(s) of all delineated aquatic resources in accordance with the Final Map and Drawing Standards for the South Pacific Division Regulatory Program, available at: http://www.spd.usace.army.mil/ Missions/Regulatory/Public-Notices-and- References/Article/651327/updated-map-and-drawing-standards.	
Appendix D	SITE PHOTOGRAPHS: Ground photographs showing representative aquatic resource sites (or lack of), as well as an accompanying map of photo points and table of photographic information (see Final Map and Drawing Standards for the South Pacific Division Regulatory Program item no. 8 a-c).	
Appendix C	DATA FORMS: Completed data forms including all essential information to make a jurisdictional determination [e.g. 2006 Wetland Determination Data Form—Arid West Supplement; 2010 Arid West Ephemeral and Intermittent Streams OHWM Datasheet].	
Section 2.1 and 2,2	METHODS: A description of the methods used to survey the aquatic resource boundaries. If GPS data is used, the level of accuracy must be included. Ideally, the GPS equipment should have the capability of sub-meter (<=1 meter) level horizontal accuracy.	

REPORT SECTION/ PAGE NUMBER	MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS	ADDITIONAL NOTES
Appendix G	GIS DATA: Digital data for the site, aquatic resource boundaries, and data point locations must be provided in a geographic information system (GIS) format, preferably either ESRI shapefiles or Geodatabase format, but Google Earth KMZ or KML files may be acceptable non-complex projects. Each GIS data file must be accompanied by a metadata file containing the appropriate geographic coordinate system, projection, datum, and labeling description. If GIS data is unavailable or otherwise cannot be produced and the USACE determines a site visit is necessary, the aquatic resource boundaries should be physically marked with numbered flags or stakes to facilitate verification by the USACE.	

Appendix B

NRCS WETS TABLE

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WETS Table

WETS Station: SAN DIEGO MONTGOMERY FIELD, CA								
Requested years: 1995 - 2024								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	67.4	45.8	56.6	1.88	0.49	2.19	3	-
Feb	66.8	46.4	56.6	2.23	0.86	2.62	4	-
Mar	67.6	49.6	58.6	1.32	0.61	1.62	3	-
Apr	69.8	52.5	61.1	0.78	0.23	0.92	2	-
May	70.8	56.8	63.8	0.29	0.06	0.24	1	-
Jun	74.4	60.4	67.4	0.03	0.00	0.04	0	-
Jul	79.6	64.6	72.1	0.11	0.00	0.00	0	-
Aug	81.6	65.7	73.7	0.09	0.00	0.01	0	-
Sep	81.1	63.9	72.5	0.16	0.04	0.13	0	-
Oct	77.4	58.1	67.7	0.54	0.10	0.45	1	-
Nov	72.4	50.6	61.5	0.86	0.34	1.01	2	-
Dec	66.8	45.7	56.2	1.73	0.55	2.06	3	-
Annual:					7.96	11.51		
Average	73.0	55.0	64.0	-	-	-	-	-
Total	-	-	-	10.03			20	-

GROWING SEASON DATES			
Years with missing data:	24 deg = 3	28 deg = 3	32 deg = 4
Years with no occurrence:	24 deg = 27	28 deg = 27	32 deg = 26
Data years used:	24 deg = 27	28 deg = 27	32 deg = 26
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	No occurrence	No occurrence
70 percent *	No occurrence	No occurrence	No occurrence
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1998				1.60	0.82	0.14	T	0.01	0.10	0.06	1.15	0.88	4.76
1999	2.06	0.69	1.23	1.65	T	0.07	0.03	0.00	0.08	0.01	0.05	0.17	6.04
2000	0.21	3.61	1.17	0.56	0.02	T	T	0.01	0.04	1.12	0.16	0.02	6.92
2001	2.70	2.56	0.75	M0.97	T	T	T	0.00	0.01	0.02	0.87	0.54	8.42
2002	0.47	0.10	0.71	0.72	0.01	0.00	T	0.00	0.37	0.13	1.33	2.41	6.25
2003	0.08	3.55	1.43	1.86	0.58	0.06	0.04	0.02	T	0.05	0.56	0.98	9.21
2004	0.61	2.87	0.27	0.47	T	T	0.00	T	0.01	5.05	0.45	1.76	11.49
2005	5.29	5.72	2.41	0.44	M0.29	T	T	0.00	0.15	0.69	0.17	0.34	15.50
2006	0.64	1.34	2.42	1.69	0.64	0.07	0.26	0.02	T	0.95	0.35	0.86	9.24
2007	0.58	2.53	0.21	0.71	T	0.00	0.00	T	0.09	0.22	1.67	1.38	7.39

2008	3.88	1.81	0.18	0.01	0.26	0.02	T	T	T	0.06	1.65	3.85	11.72
2009	0.14	5.40	0.16	0.16	0.03	0.03	0.00	T	0.00	0.08	0.42	M3.27	9.69
2010	M5.24	2.74	0.50	1.89	T	T	T	0.00	0.21	1.89	1.16	6.49	20.12
2011	0.15	3.47	1.78	0.28	0.45	0.05	T	T	0.11	0.70	3.08	0.61	10.68
2012	0.45	M1.55	1.35	1.16	0.02	0.00	T	0.02	0.00	0.51	0.37	2.93	8.36
2013	1.35	0.65	1.31	0.08	0.35	0.00	T	T	T	0.51	0.29	0.41	4.95
2014	0.04	1.31	0.99	0.35	T	0.00	0.07	0.08	1.08	T	0.55	1.75	6.22
2015	0.09	T	M0.17	0.07	1.81	0.09	2.46	0.01	1.05	0.69	1.97	1.58	9.99
2016	4.47	0.06	1.08	0.88	0.60	T	0.00	0.00	0.38	0.16	0.92	4.81	13.36
2017	4.32	4.96	0.15	0.02	0.59	0.03	T	T	0.11	T	0.02	0.07	10.27
2018	1.94	0.46	1.08	0.05	0.04	0.00	T	0.00	0.00	0.50	1.04	2.69	7.80
2019	M2.09	4.51	1.10	0.35	1.03	0.09	T	0.00	0.06	0.00	M2.47	3.31	15.01
2020	0.34	0.39	M2.65	3.99	0.01	0.21	0.00	0.00	T	T	0.88	0.62	9.09
2021	1.91	0.12	2.12	0.18	0.08	0.02	0.04	0.03	0.03	1.03	0.00	2.99	8.55
2022	0.14	0.87	1.45	0.29	T	T	0.00	0.01	0.41	0.15	0.96	1.39	5.67
2023	6.29	2.10	4.94	0.13	0.14	0.02	T	2.15	0.05	T	0.50	0.65	16.97
2024	3.46	4.66	2.78	0.44	0.11	0.00	T	0.01	0.02	T	0.10	0.02	11.60
2025	0.28	1.46	3.01	0.22	0.19	0.01	0.02	0.05	M0.00				5.24

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2025-09-07

Appendix C

WETLAND DELINEATION DATA FORMS AND ARID WEST EPHEMERAL AND INTERMITTENT ORDINARY HIGH WATER MARK (OHWM) DATA SHEETS

NOTE:

The original Sample Point forms Sp 5, Sp 6, and Sp 8 are included despite significant recent changes caused by the blow-out and repair of an adjacent SD that deposited sand/soil over the Sp 5 and Sp 6 locations and also resulted in the grading fill extended over of Sp 8.

In addition, the OHWM forms are numbered 1, 2, 3, 6, and 7 because OHWM forms 4 and 5 were for the channel that is being reconfigured with the repair of the adjacent SD.

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp1

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): canyon bottom Local relief (concave, convex, none): concave Slope (%): 0-2%

Subregion (LRR): C Lat: 32.795573 Long: -117.120839 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: R4SBA

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Feature mostly under Mexican fan palms in saturated sand in bed of creek. Water was found 3' below surfce and ripples in sanf and some sorting indicated hydrology

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 200 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Washingtonia robusta	90	Y	FACW
2.			
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust _____

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 90	x 2 =	180
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = 180/90=2.0

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Mexican fan palms with no other plant species.

SOIL

Sampling Point: Sp1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 4/6						fsl	fine sandy loam
3+	10 YR 2/1						fsl	fine sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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: Lighter sandy loam on surface but darker sandy loam layer beneath - potential organic masking. But sauration indicative of being hyrdric.

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): 3

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:

Beside low flow channel with perennial/intermittent flow enhanced by storm drain flows.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp2

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): canyon bottom Local relief (concave, convex, none): concave Slope (%): 0-2%

Subregion (LRR): C Lat: 32.795547 Long: -117.120646 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: R4SBA

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 400 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Washingtonia robusta	75	Y	FACW
2.			
3.			
4.			
	75 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust _____

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 75	x 2 =	150
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = 150/75=2.0

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Mexican fan palms in sand with no other plant species.

SOIL

Sampling Point: Sp2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/6						fsl	fine sandy loam no redox
3+	10YR 3/6						csl	coarse sandy loam no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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 sandy soils but no redox characteristics or features. Pit filled with water instantly and walls collapsed quickly.

Saturated sand is considered hydric.

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): 6

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp3

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): canyon bottom Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): C Lat: 32.795525 Long: -117.120635 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: R4SBA

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

Soils problematic because they are sandy and recently deposited, but did not change over time so seems stable conidtion.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 200 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Washingtonia robusta	85	Y	FACW
2.			
3.			
4.			
	85 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust _____

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 85	x 2 = 170
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = 170/85=2.0

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Similar characteristics as Sp 1 and 2.

SOIL

Sampling Point: Sp3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 3/6						ls	loamy sand no redox
2-4	10 YR 3/6						cls	coarse loamy sand no redox
4-6	10 YR 3/4						sl	silty loam no redox
6-16								repeated layers as above
16+	10 YR 2/1							dark with roots

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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 soil being saturated sand but had no redox characteristics. Roots at depth. Higher in elevation thansample Sp2. Cannot check off F3 Depleted Matrix because occurs too deeply to meet criterion.

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): 16

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 1

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp4

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): detention basin Local relief (concave, convex, none): convex Slope (%): 0-5%

Subregion (LRR): C Lat: 32.795524 Long: -117.120534 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Mounded area in storm water detention basin with Carpobrotus dominating, hydric soil though it does not meet veg or hydrology criteria. Past (15 years) and ongoing irrigation allows wetland plants to grow.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 1600 sq ft)			
1. Schinus terebinthifolius	5	N	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 1600 sq ft)			
1. Carpobrotus edulis	60	Y	UPL
2. Typha sp.	20	Y	OBL
3. Juncus acutus ssp. leopoldii	15	N	FACW
4.			
5.			
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 20	x 1 = 20
FACW species 15	x 2 = 30
FAC species 5	x 3 = 15
FACU species _____	x 4 = _____
UPL species 60	x 5 = 300
Column Totals: 100 (A)	365 (B)

Prevalence Index = B/A = 365/100=3.7

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.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Carpobrotus carpets ground with Typha and Juncus popping through , and one shrubby looking Schinus.

SOIL

Sampling Point: Sp4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 3/4						ls	loamy sand
3 +	10 YR 3/1						cl	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

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): 24

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 20

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

Upland plants taking over area potentially after deposition of sediment from upstream raising surface out of former graded basin elevation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp5

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): detention basin Local relief (concave, convex, none): concave Slope (%): 0-2%

Subregion (LRR): C Lat: 32.79542 Long: -117.120392 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Point is in periphery of the detention basin that is irrigated.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Washingtonia robusta	20	Y	FACW
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 100 sq ft)			
1. Juncus acutus ssp. leopoldii	30	Y	FACW
2. Iva hayessiana	10		FACW
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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 60	x 2 =	120
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = 120/60=2.0

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

plants within irrigation zone

SOIL

Sampling Point: Sp5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 4/6						sl	sandy loam no redox
3-10	10 YR 4/6						csl	coarse sandy loam no redox
10+	10 YR 3/2						cl	clay loam no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

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? (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:

Area likely reliant on irrigation. Sprinkler head was adjacent to area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp6

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): detention basin Local relief (concave, convex, none): concave Slope (%): 0-5%

Subregion (LRR): C Lat: 32.795497 Long: -117.120341 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 No, 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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Typha patch on raised sandy area in a constructed detention basin

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 100 sq ft)			
1. Typha sp.	80	Y	FACW
2. Heliotropium curvassicum	5	N	FACU
3. Iva hayesesiana	5	N	FACW
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

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 85	x 2 = 170
FAC species _____	x 3 = _____
FACU species 5	x 4 = 20
UPL species _____	x 5 = _____
Column Totals: 90 (A)	190 (B)

Prevalence Index = B/A = 190/90=2.1

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: Sp6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 4/6						s	sand no redox
6-10	10 YR 4/6						cs	coarse no redox
10-12	10 YR 3/2						cl	clay loam no redox
12+	10 YR 3/3						sl	sandy loam no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

Sand layer (deposited) over graded detention basin surface.

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? (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:

Area likely reliant on irrigation supplemented by storm flood flows.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp7

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): detention basin Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): C Lat: 32.795558 Long: -117.120389 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Not normal circumstance because sample point is within a constructed impoundment which is irrigated

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Schinus terebinthifolius	100	Y	FAC
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: 100 sq ft)			
1. Juncus acutus ssp. leopoldii	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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 30	x 2 = 60
FAC species 100	x 3 = 300
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 130 (A)	360 (B)

Prevalence Index = B/A = 360/130= 2.77

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Brazilian pepper trees have overwhelmed the planted monoculture of Juncus acutus

SOIL

Sampling Point: Sp7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 4/6						s	sand
6-10	10 YR 4/6						cs	coarse sand
10-12	10 YR 3/2						cl	clay loam, no redox features
12+	10 YR 3/3						sl	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

dark layer at depth.

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? (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:

Surface evidence likely result of irrigation, as soil profile shows little effect of water despite planted Juncus. Area has since become overgrown by non native Brazilian pepper.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 12/15/16

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp8

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Detention basin Local relief (concave, convex, none): none Slope (%): 0%

Subregion (LRR): C Lat: 32.795453 Long: -117.12006 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Not normal circumstance because sample point is within impoundment and has been irrigated for several years. Irrigation is ongoing.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 400 sq ft)			
1. Juncus acutus ssp. leopoldii	50	Y	FACW
2. Iva hayesiana	20	Y	FACW
3. Cortadera jubata	10	N	FACU
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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 70	x 2 =	140
FAC species	x 3 =	
FACU species 10	x 4 =	40
UPL species	x 5 =	
Column Totals: 80 (A)		180 (B)

Prevalence Index = B/A = 180/80 = 2.25

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: Sp8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	N/A						sl	sandy loam. No sandy redox
3-6	10 YR 3/2						csl	coarse sandy loam. No redox
6-18	10 YR 5/2						cl	clay loam with cobbles. No redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

Layers may be from initial creation of basin. Within sprinkler range.

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? (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:

Soil moist but water did not collect in pit.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp9

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Detention basin Local relief (concave, convex, none): concave Slope (%): 0-5%

Subregion (LRR): C Lat: 32.795463 Long: -117.119836 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Not normal circumstance because sample point is within a constructed impoundment and has been irrigated for several years. Foreman on site confirms irrigation is ongoing.

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: 100 sq ft)			
1. Juncus acutus ssp leopoldii	30	Y	FACW
2. Iva hayesiana	30	Y	FACW
3. Carex spissa	10	N	FAC
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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 60	x 2 = 120
FAC species 10	x 3 = 30
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 70 (A)	150 (B)

Prevalence Index = B/A = 150/70=2.14

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: Sp9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 4/2						loam	No redox features
4+	10 YR 4/2						cob loam	cobbly loam, no redox features

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

Soil showed no signs of inundation and was higher in elevation than area with cracked soil (Sp10)

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? (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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp10

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: T16S, R2W

Landform (hillslope, terrace, etc.): Detention basin Local relief (concave, convex, none): none Slope (%): 0-2%

Subregion (LRR): C Lat: 32.795522 Long: -117.119843 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Not normal circumstance because sample point is within a constructed impoundment and has been irrigated for 15 years. Wetland soil features have developed in place and the constructed wetland appears self-sustaining.

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: 150 sq ft)			
1. Juncus acutus ssp leopoldii	30	Y	FACW
2. Iva hayesiana	30	Y	FACW
3. Carex sp.	20	Y	OBL
4. Pluchea odorata	5	N	FACW
5. Heliotropium curvassicum	5	N	OBL
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	90 = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 25	x 1 =	20
FACW species 65	x 2 =	145
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: 90 (A)		165 (B)

Prevalence Index = B/A = 1.83

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

At edge of lower basin with greater diversity of plants because of available water.

SOIL

Sampling Point: Sp10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 3/2						cl	clay loam - cracked
3-12	10 YR 3/1						scl	sandy clay loam
12+	10 YR 3/2						scl	sandy clay loam with cobbles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

Surface layer very different - very hard - indication of surface water deposition.

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? (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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Serra Mesa Storm Drain & Green Infrastructure City/County: San Diego/San Diego Sampling Date: 8/7/17

Applicant/Owner: City of San Diego State: CA Sampling Point: Sp11

Investigator(s): Derek Langsford/Joseph Kean/Liz Kellogg Section, Township, Range: T16S, R2W

Landform (hillslope, terrace, etc.): Detention basin Local relief (concave, convex, none): concave Slope (%): 0-5%

Subregion (LRR): C Lat: 32.795549 Long: -117.119846 Datum: WGS84

Soil Map Unit Name: Terrace Escarpments NWI classification: PEM1Ch

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Not normal circumstance because sample point is within a constructed impoundment, and because the planted basin is irrigated. This point has experienced irrigation runoff for 15 years. Wetland status is the "new normal" circumstance.

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: 100 sq ft)			
1. Typha sp.	95	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

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	95	x 1 =	95
FACW species	_____	x 2 =	_____
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	95 (A)		95 (B)

Prevalence Index = B/A = 1.0

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

All Typha was dead, perhaps due to recent 7-year drought.

SOIL

Sampling Point: Sp11

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/2						cl	clay loam
2-5	10 YR 3/1						sc	silty clay
5-8	10 YR 3/1						cl	clay loam with roots
8-14	10 YR 4/1						scl	sandy clay loam with cobbles
14+								cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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 Soils[3]:

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

[3]Indicators 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:

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? (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:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Serra Mesa Storm Drain & Green Infrastrucure
Project Number:
Stream: Feature 1 - SD 1 location
Investigator(s): Derek Langsford, Diego Uribe

Date: 8/30/22
Town: San Diego
Photo begin file#:

Time: 12:50
State: California
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Canyon between Monarch and Marathon Streets

Projection: **Datum:** WGS 1984
Coordinates: 32.797498, -117.123844

Potential anthropogenic influences on the channel system:

Storm drain runoff, urban seepage

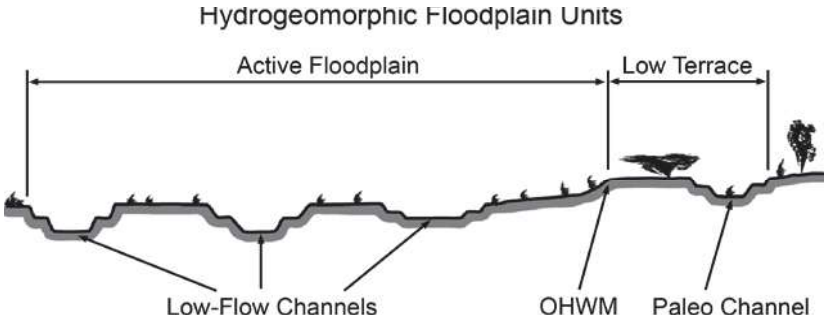
Brief site description:

Canyon bottom at upper end of Feature 1. Mexican fan palms overhead with lots of Debris on ground. Erosional features feeding into area from neighboring properties cause beginning of OHWM..

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: July 2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

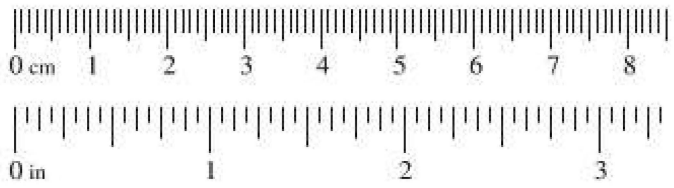


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

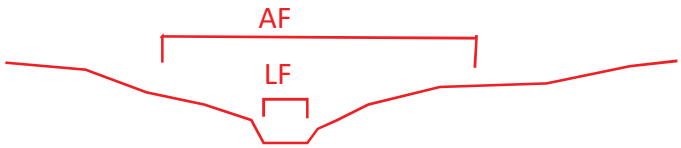
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Serra Mesa GI **Cross section ID:** OHWM #1 **Date:** 8/30/22 **Time:** 12:50

Cross section drawing:



OHWM

GPS point: 32.797498, -117.123844

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: water marks
- ☐ Other: _____

Comments:

Water marks on banks, plus biotic crust, saturated soil, debris.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: water looked too polluted to risk contact

Total veg cover: _____ % Tree: 60 % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: water present in sections
- ☐ Other: _____
- ☐ Other: _____

Comments:

Water oozed out of soil when stepped beside low flow channel/standing water. No other plants but Mexican fan palms.

Project ID: **Cross section ID:** **Date:** 8/11/17 **Time:** 9:00 AM

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 90 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Algae covering had dried

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: __% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Serra Mesa Storm Drain & GI
Project Number: SD #2
Stream: Feature 2 ; SD2 2
Investigator(s): Derek Langsford, Diego Uribe

Date: 8/22/22
Town: San Diego
Photo begin file#:

Time: 13:10
State: California
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Prop SD outfall #2

Projection: **Datum:** WGS 1984
Coordinates: 32.795638, -117.121057

Potential anthropogenic influences on the channel system:

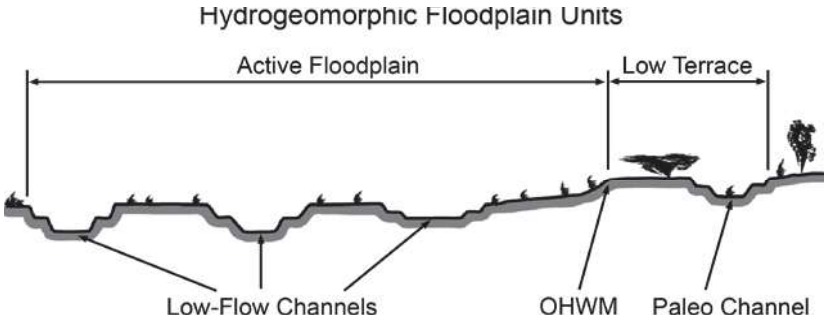
Large storm flows because of SD drainage of development; channel choked with non-native species and Washingtonia robusta near site, Schinus terebinthifolia upstream.

Brief site description:

Canyon bottom with slopes 50%, eroded bank on N side, 4-5 ft high, S bank terraced

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: Google Maps 2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

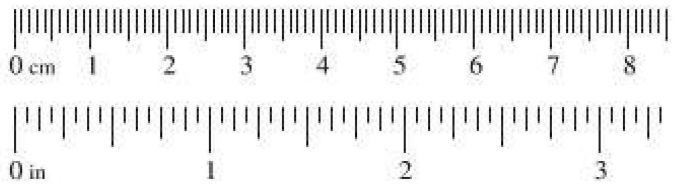


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

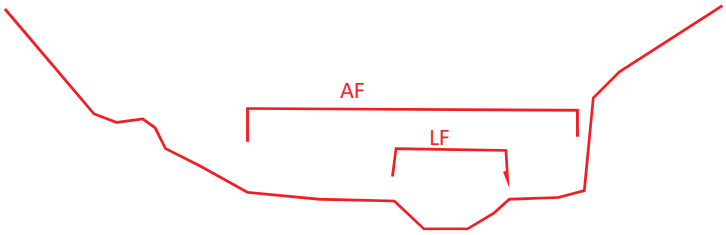
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Serra Mesa **Cross section ID:** SD #2 **Date:** 9/22/22 **Time:** 13.10

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: water marks
- ☐ Other: _____

Comments:

Terrace and water marks on vertical bank showed OHWM.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 50 % Tree: 45 % Shrub: 5 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: water
- ☐ Other: _____
- ☐ Other: _____

Comments:

Water flowing, algae present in low flow channel.

Project ID: Serra Mesa GI **Cross section ID:** SD #2 **Date:** 9/22/22 **Time:** 13:10

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: cobble N, sand S

Total veg cover: 100 % Tree: 0/0 % Shrub: 0/0 % Herb: 100 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: cobble - N, sand - S
- ☐ Other: _____
- ☐ Other: _____

Comments:

gap in palm trees though canopies of palms were overhead with herbaceous layer on south side.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Serra Mesa Storm Drain & Green Infrastructure
Project Number: SD #3
Stream: Feature 1; SD #3
Investigator(s): Derek Langsford, Diego Uribe

Date: 9/22/22
Town: San Diego
Photo begin file#:

Time: 10:15
State: Calfornia
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: At location of proposoed Storm Drain 3 outfall

Projection: **Datum:** WGS 1984
Coordinates: 32.795909, -117.122075

Potential anthropogenic influences on the channel system:

Storm drain flows create a wide channel, urban runoff/spring maintains low flow through summer.

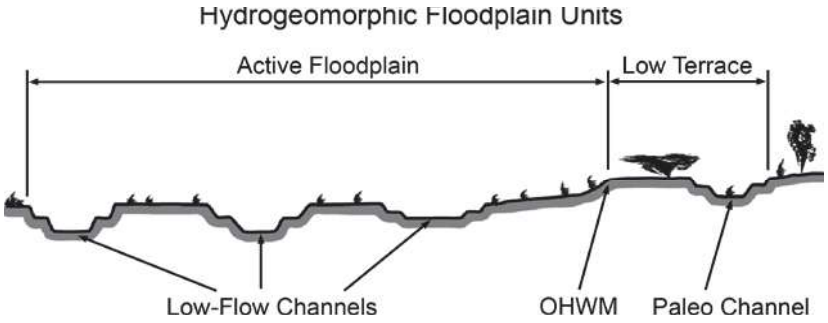
Brief site description:

Cobble in channel, a few palms growing

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

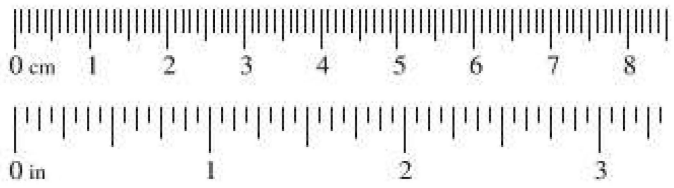


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☒ Other: Tape

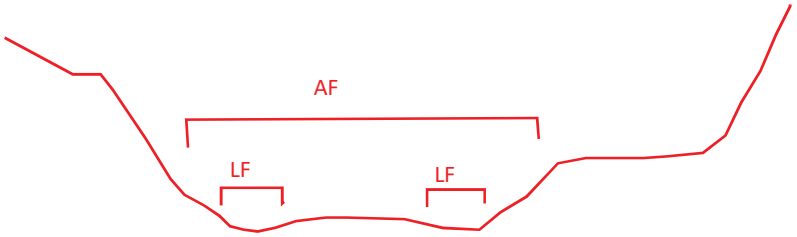
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Serra Mesa GI **Cross section ID:** OHWM #3 **Date:** 9/22/22 **Time:** 10:15

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: water marks
- ☐ Other: moist soil across both LF channels

Comments:

Upland shrubs on terrace and above bank on south.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 60 % Tree: 40 % Shrub: 20 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Water present, algae in water. Shaded by palms, and upland shrubs.

Project ID: Serra Mesa GI **Cross section ID:** OHWM #3 **Date:** 9/22/22 **Time:** 10:15

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: 80 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Evidence of water flow indicated it flooded previous winter.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: 100 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Cobbles exposed. Upland shrubs on terrace above OHWM

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Serra Mesa Storm Drain & Green Infrastructure Project
Project Number:
Stream: Feature 2; Storm Drain 6 access to work area
Investigator(s): Derek Langsford, Diego Uribe

Date: 8/30/22
Town: San Diego
Photo begin file#:

Time: 15:30
State: California
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Shawn Avenue Trail, approx 1,100 ft west of street

Projection: **Datum:** WGS 1984
Coordinates: 32.793930, -117.131638

Potential anthropogenic influences on the channel system: Deep cut and wide Creek bed show effect of storm water influx from surrounding neighborhood.

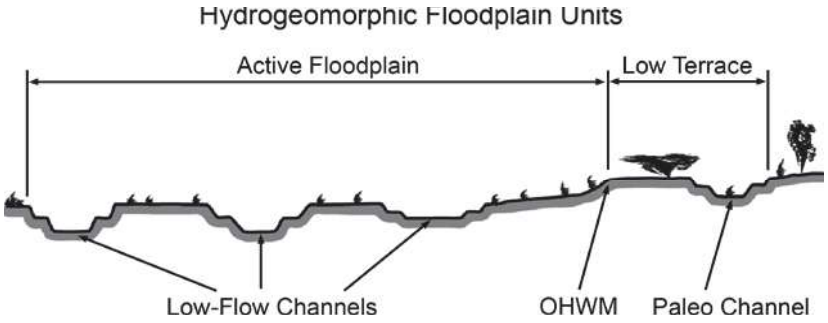
Brief site description:

Ruffin Canyon Trail north of Shawn Canyon Trail. Creek bed is used as access road and trail. Vertical banks cut, cobble bottom.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

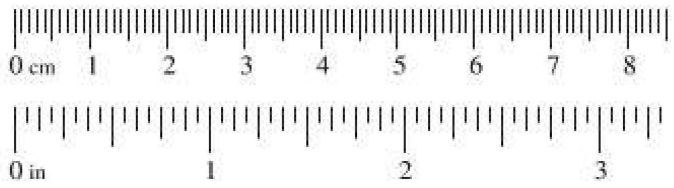


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☒ Other: tape

Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Serra Mesa SD **Cross section ID:** OHWM #6 **Date:** 8/30/22 **Time:** 15:30

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: water marks
- ☒ Other: biotic crust in places

Comments:

OHWM part way up sides of vertical banks as identified by discoloration.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Algae present in 2017
- ☐ Other: _____
- ☐ Other: _____

Comments:

While in 2017 pockets of moisture among cobbles were along east side of channel, approximately 2 feet wide, none were present in 2022 primarily because of lack of recent rain and use as a trail.

Project ID: Serra Mesa SD **Cross section ID:** OHWM #6 **Date:** 8/30/22 **Time:** 12:00 PM

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ponded areas with algae in 2017
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: 100 % Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: cobble surface
- ☐ Other: _____
- ☐ Other: _____

Comments:

Terrace relief suggests that water flows on occasion.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Serra Mesa Storm Drains & GI
Project Number: SD #6
Stream: first crossing
Investigator(s): Derek Langsford, Diego Uribe

Date: 8/30/22
Town: San Diego
Photo begin file#:

Time: 14:45
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Shawn Avenue Trail, approx 1,100 ft west of street

Projection: **Datum:** WGS 1984
Coordinates: 32.793342, -117.129826

Potential anthropogenic influences on the channel system:

Trail/access road across channel, water is mostly runoff from Shawn Avenue

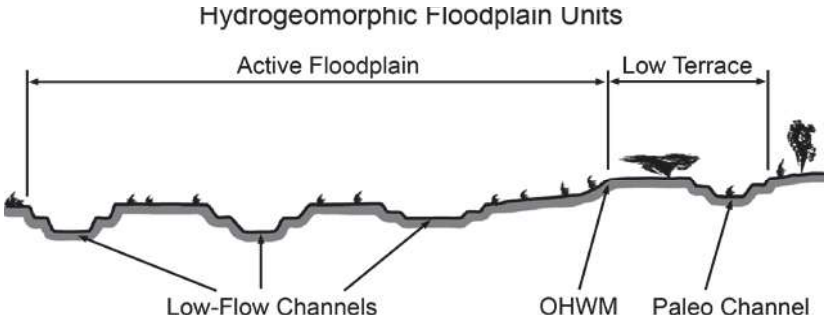
Brief site description:

Access crosses flow line, no veg. in trail. Typha and Picris echioides upstream, a single Baccharis salicifolia downstream.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: July 2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

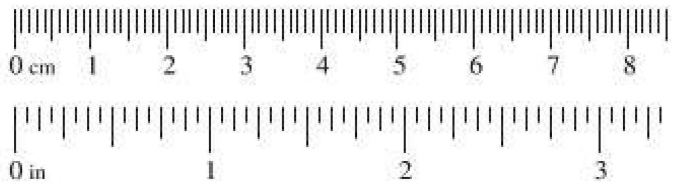


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☒ Other: tape

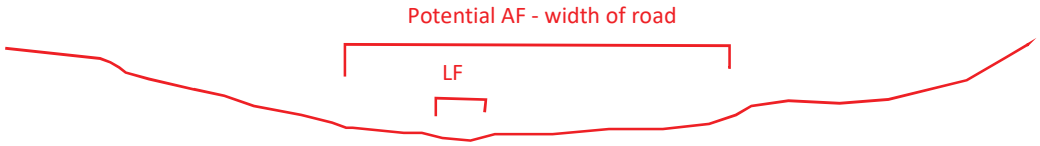
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Serra Mesa SD **Cross section ID:** OHWM #7 **Date:** 8/30/22 **Time:** 14:45

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: water staining
- ☐ Other: _____

Comments:

Surface staining confined by very slight topography differences.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: Surface discoloration
- ☐ Other: biotic crust
- ☐ Other: _____

Comments:

Low flow across trail/road

Project ID: Serra Mesa SD **Cross section ID:** OHWM #7 **Date:** 8/30/22 **Time:** 14:45

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: surface discoloration
- ☐ Other: _____
- ☐ Other: _____

Comments:

confined by topo and trail.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Appendix D

SITE PHOTOGRAPHS

Feature 1: SD 1

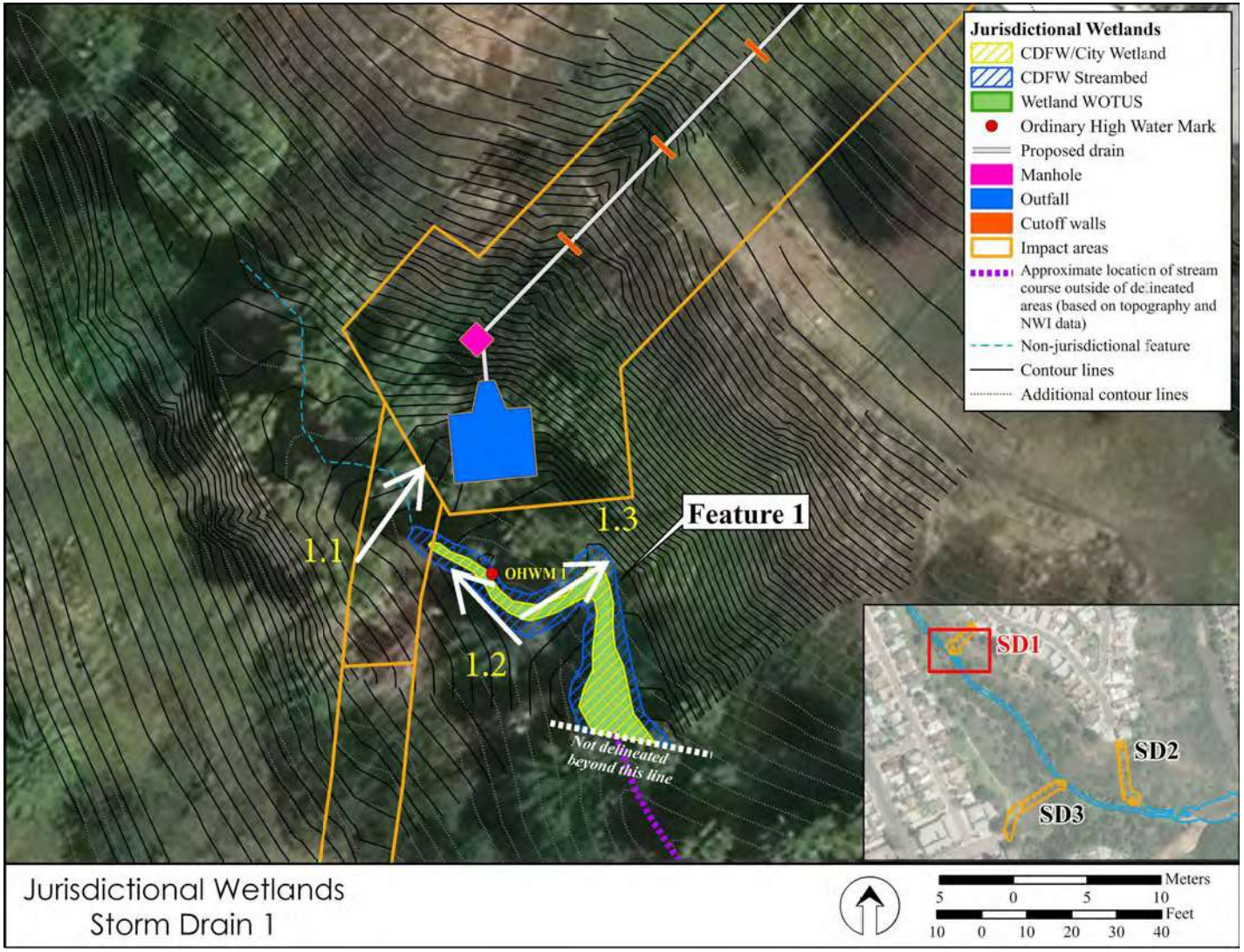


Figure 1: Photo Guide – SD 1.



Photo 1.1.1: Looking northeast at the outfall that will be replaced but which is mostly buried and barely functional and well above the start of jurisdictional portion of Feature 1. Palm debris and no evidence of a channel, hydrology, or features that would be an OHWM. Photos taken 8/30/22 and 6/5/2025.



Photo 1.1.2. Looking northwest at the start of Feature 1 where ponding in the landscape starts and standing water occurs trickles down. Mexican fan palms growing in the channel on left with a biotic crust saturated soil and green plants on the left on 8/30/22. Water, water marks, and a change in relief identified the headwaters of Drainage 1. Photo on right taken 6/5/25.



Photo 1.1.3: Looking southeast (downstream) at the same location as Photo 1.2. Feature 1 turns (to left) and supports a crop of young Mexican fan palms giving it the third parameter to be classified as a wetland. Photo on left taken 8/30/22, photo on right 6/5/25.

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Feature 1: SD 2

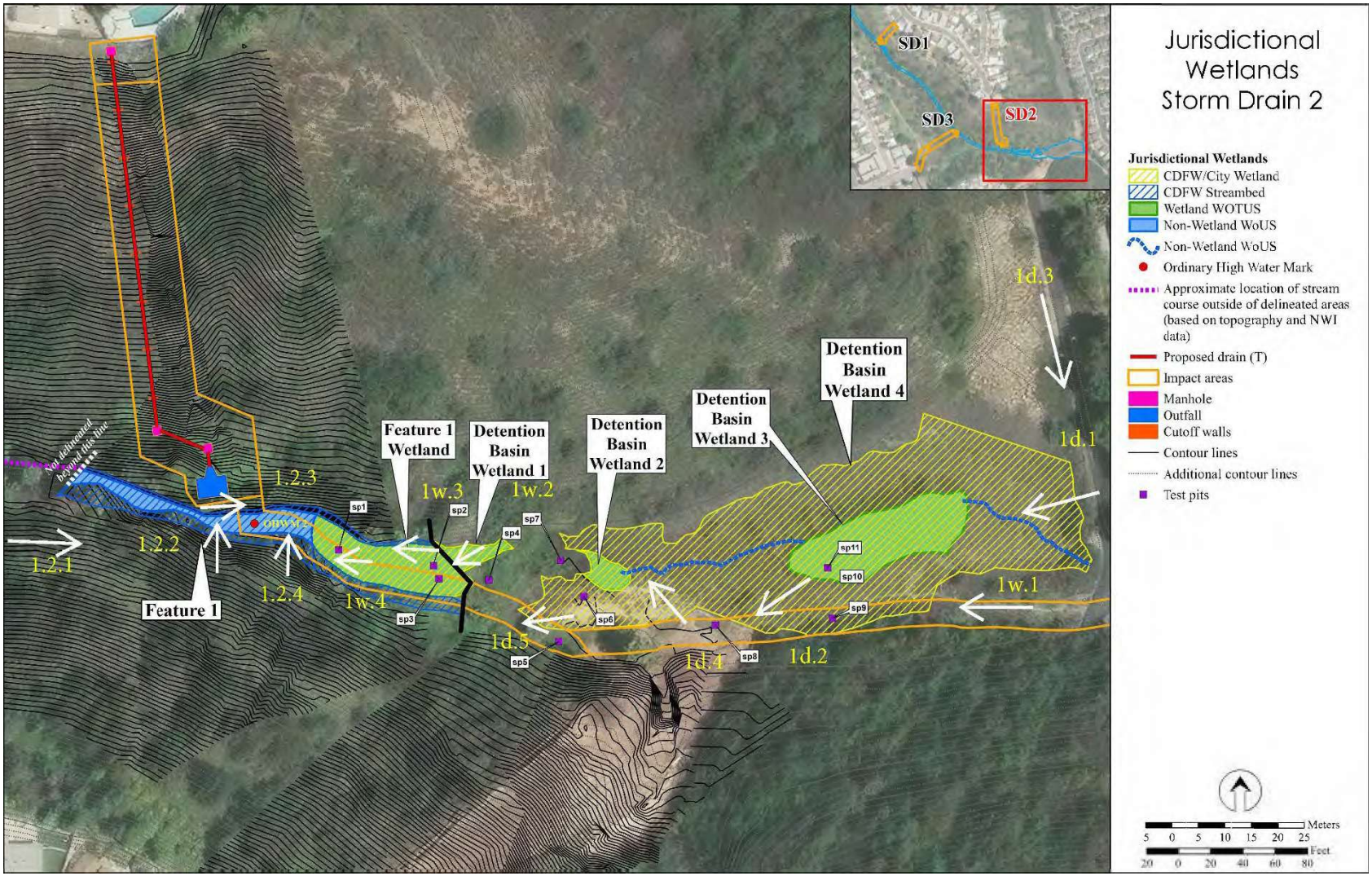


Figure 2: Photo Guide – SD 2.



Photo 1.2.1: overview of canyon looking from near the end of Shawn Ave downstream towards location of SD 3 (left near Canary Island palms) and SD 2 (the four palms downstream on the upper right-middle). SD 2 Comes down the steep canyon slope on the left. Photo taken 6/5/25.



Photo 1.2.2: Looking north across Feature 1 at existing SD outfall that is broken and not functioning with water flowing over it. Photo taken 6/9/25.



Photo 1.2.3: Looking southeast along Feature 1 at SD 2 area on north side of Feature 1. Water flows along the bed at the edge of the northern side of the palms. Photo taken 6/5/25.

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Photo 1.2.4: Looking north across Feature 1 with exotics dominating the channel (Mexican fan palms, ice plant, and Brazilian pepper). Photo taken 6/5/25.

Drainage 1: SD 3

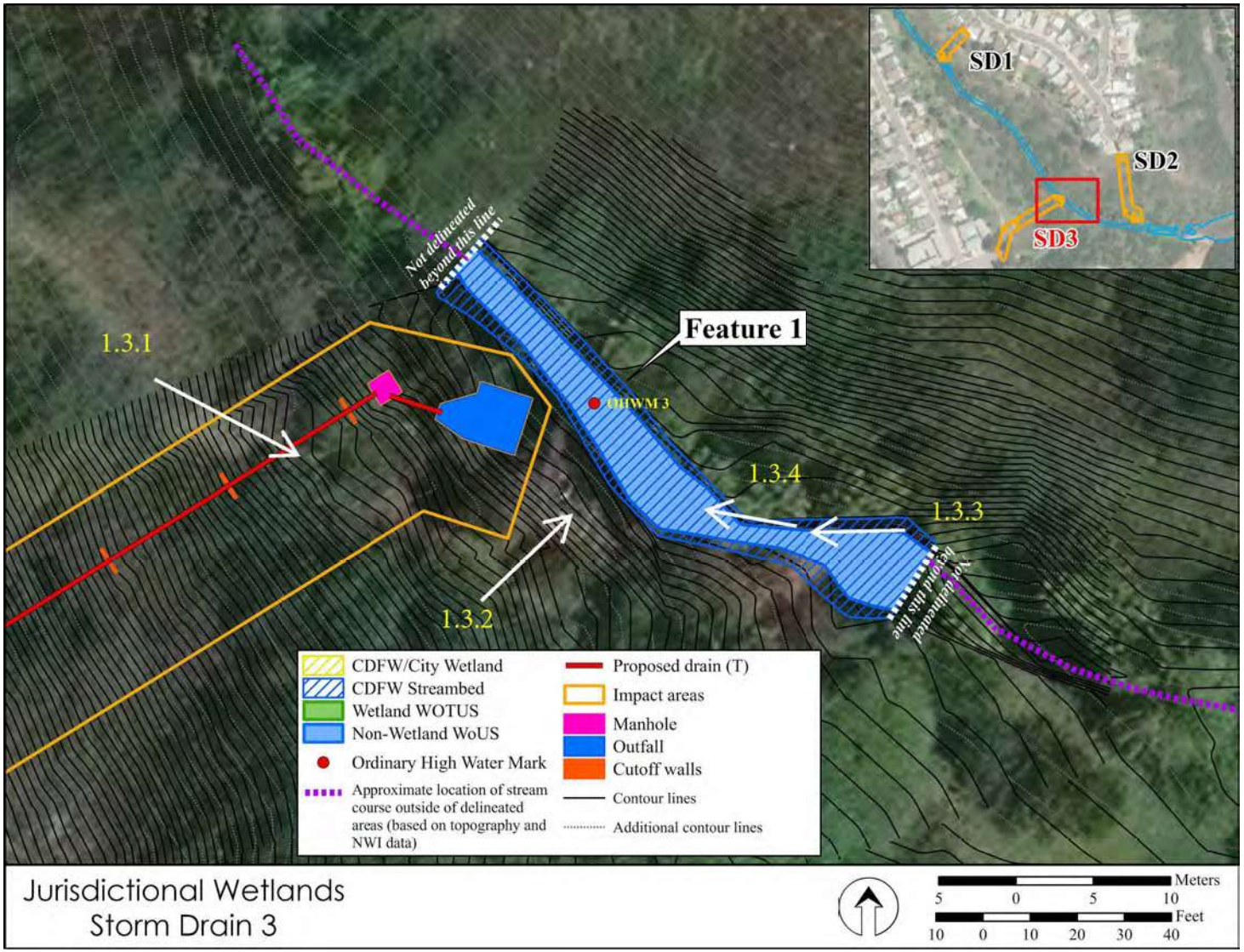


Figure 3: Photo Guide – SD 3.



Photo 1.3.1: Trail that runs down canyon passes over where cobbles and material have been deposited from the blow-out of SD 3 up slope. Photo taken 6/5/25.



Photo 1.3.2: Looking north down to section of channel below the proposed SD 3 outfall. Palm debris prevented access to the drainage from above. Photo taken 6/5/25.



Photo 1.3.3: Access from below SD 3 portion of Feature 1, allowed viewing of the southern portion of the channel. with water flowing along north bank. Photo taken 6/5/25.



Photo 1.3.4: Looking upstream into mass of palm debris covering Feature 1 and dead Canary Island palm at SD 3. Photo taken 6/5/25.

Feature 1: Wetland and Detention Basin

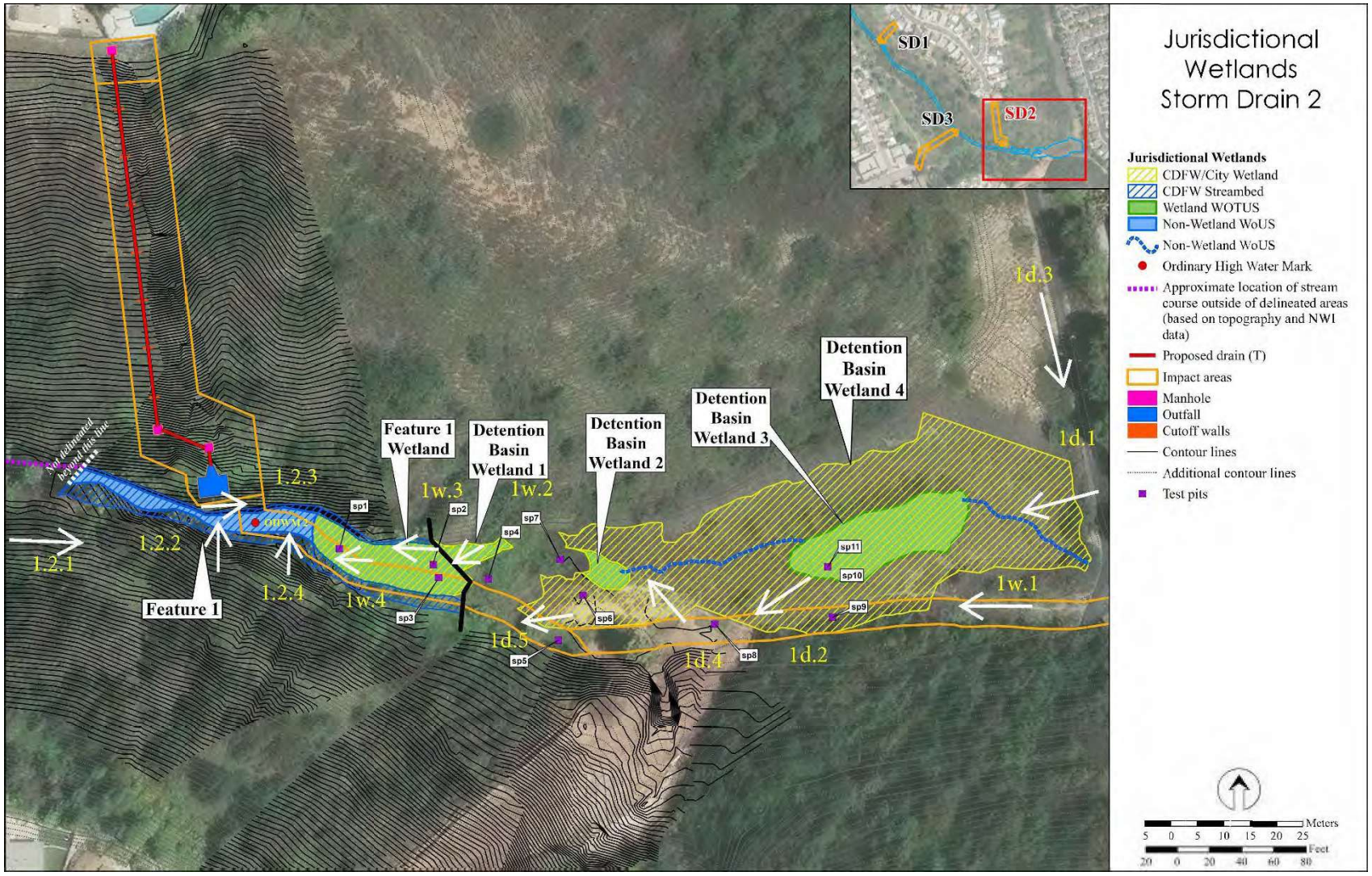


Figure 4: Photo Guide – Wetland and Detention Basin.

Feature 1: Wetland



Photo 1W.1: Looking west from the ramp down into the Feature 1 Detention Basin, towards Feature 1 Wetland (the cluster of palms at the center the photo where the drainage in the canyon enters the basin). Photo taken 6/9/25.



Photo 1W.2: Dense shade, saturated sand and palm roots throughout the sand. Photo taken 6/9/25.

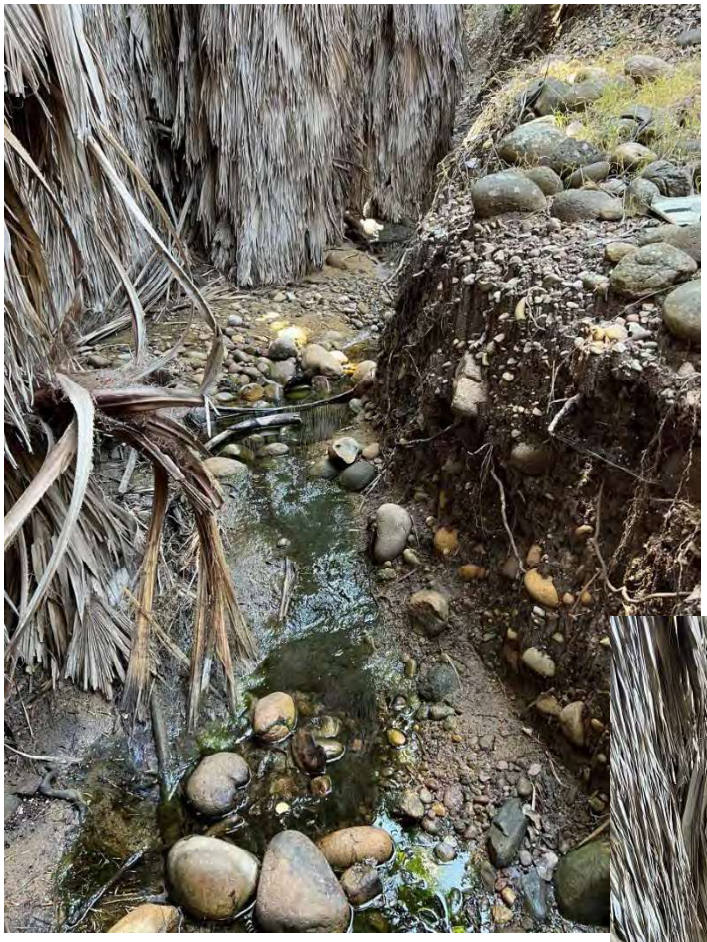


Photo 1W.3: Looking west at water flowing along the north side of the channel. Photo taken 6/9/25.

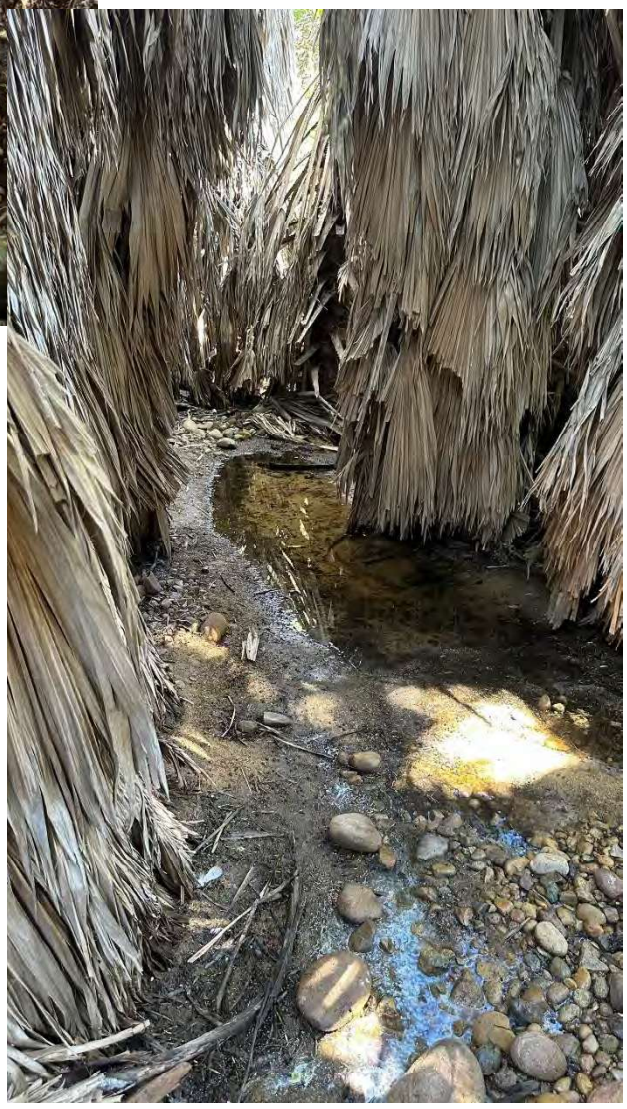


Photo 1W.4: Inside Feature 1 Wetland with standing and flowing water and saturated sand substrate indicating hydric soil. Photo taken 9/22/22.

Feature 1: Detention Basin



Photo 1d.1: Looking across the detention basin at the end of Feature 1 from the trail along the western side the Stonecrest neighborhood. The Feature 1 Wetland can be seen center right and the canyon containing Feature 1 goes northwest from the wetland (to the right). At center is the marsh patch with cattail, bulrush, and tamarisk that is a potential Wetland WoUS and CDFW/City wetland. Photo taken 6/9/25.



Photo 1d.2: Emergency work, replacing an SD that drains into the basin impinges on the detention basin.

Photo 1d.3: slopes of the Stonecrest walkway, like those on the ramp into the Basin are maintained as landscaping (irrigated, trimmed) despite being native species. Photo taken 8/1/17 and has not changed.

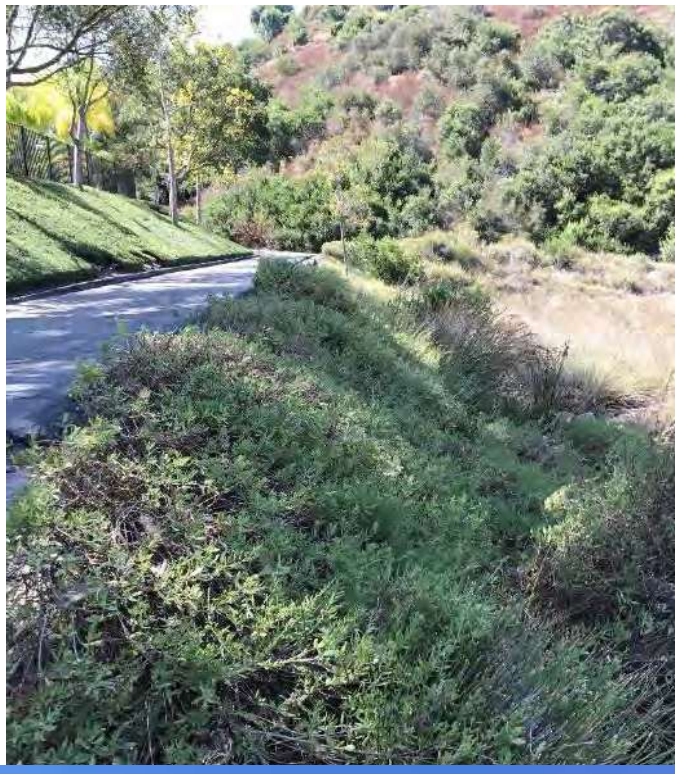




Photo 1d.4: looking northwest from the edge of Feature 1 Wetland across the Feature 1 Detention Basin past the western basin where tamarisk is overwhelming the bulrush/cattail marsh. Tamarisk is also prevalent in the eastern basin.



Photo 1d.5: A small drainage feature that emerged from the south side of Feature 1 Wetland now dissipates into the detention basin because most flow from Feature 1 is not diverted to the north, illustrating the dynamic nature of flow patterns int the basin.

Feature 2: SD 5

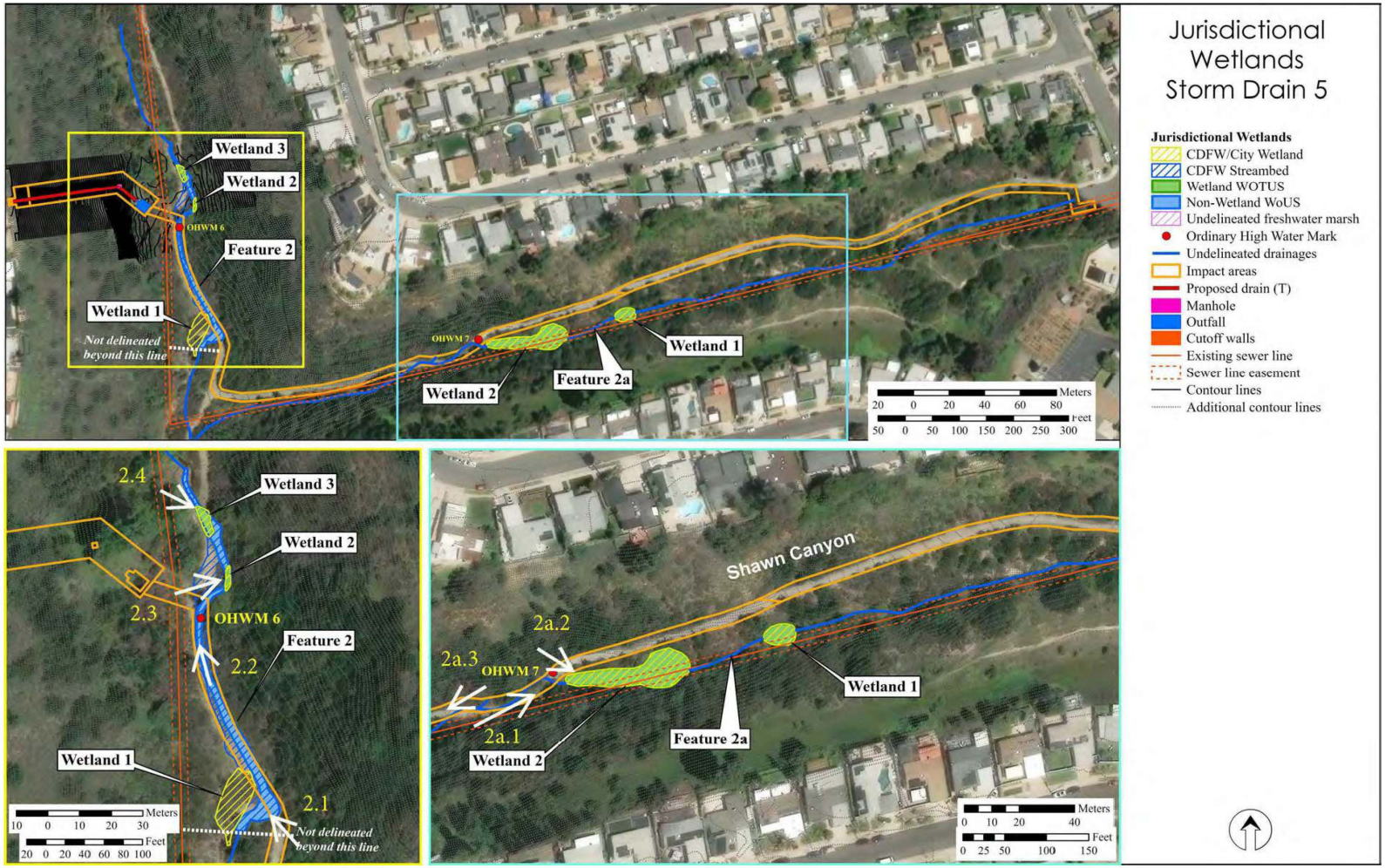


Figure 5: Photo Guide – SD 5.

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Photo 2a.1: The access road to SD 5 is along the Shawn Canyon Trail from the west end of Shawn Ave to the Ruffin canyon. This is a service road to the sewer lines within the canyons. Water crosses the trail as it runs down the canyon and was identified as a break in the drainage feature that is regularly traversed by hikers and utility vehicles preventing development of an OHWM. Photo taken 6/5/25.



Photo 2a.2: Looking due east at the Freshwater Marsh that is off the trail and which is upstream of the drainage crossing the trail. Photo taken 6/5/25.



Photo 2a.3: After recrossing the trail the Shawn Canyon drainage heads into the habitat and cuts a channel away from the trail. Photo taken 6/5/25.



Photo 2.1: The Ruffin Canyon Trail (right) is a potential non-wetland WoUS/CDFW streambed (Feature 2a). The streambed turns west (left) then south again, off the trail that continues south (behind photographer). Mule fat at the turn (Feature 2a Wetland 1, center) is a potential CDFW/City wetland but not under USACE jurisdiction. Photo taken 6/5/25.



Photo 2.2: Looking north along the Ruffin Canyon Trail showing algae and some water on the right. The full width was considered a CDFW streambed but only the right side was a USACE non-wetland WoUS. Photo taken 6/5/25.



Photo 2.3: Feature 2 Wetland 2 (a sliver Freshwater Marsh) north of the SD 5 project off Ruffin Canyon Trail. The drainage enters the trail from the west as the trail descends from a slope to the north. Photo taken looking south on 6/5/25.



Photo 2.4: Feature 2 Wetland 3 (Freshwater Marsh and pool) Looking south at where the drainage (left) comes into the trail (to the right). Photo taken 8/30/22.

Appendix E

JD REQUEST FORMS

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Appendix F

BULK UPLOAD FORM

To Be Provided

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Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Feature 1	CALIFORNIA	R3AB	RIVERINE	Linear	364	FOOT	A3.TRIB-404	32.79590600	-117.12110300	unnamed tributary to Murphy Cyn Creek
Feature 1 Wetland	CALIFORNIA	R4SB	RIVERINE	Area	0.057	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79555500	-117.12075800	unnamed tributary to Murphy Cyn Creek
Detention Basin Wetland 1	CALIFORNIA	PEM	RIVERINE	Area	0.01	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79556100	-117.12055500	unnamed tributary to Murphy Cyn Creek
Detention Basin Wetland 2	CALIFORNIA	PEM	RIVERINE	Area	0.01	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79553700	-117.12029400	unnamed tributary to Murphy Cyn Creek
Detention Basin Wetland 3	CALIFORNIA	PEM	RIVERINE	Area	0.081	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79560000	-117.11973500	unnamed tributary to Murphy Cyn Creek
Detention Basin Wetland 4	CALIFORNIA	PEM	RIVERINE	Area	0.592	ACRE	NON-WOTUS-WET.NEGATIVE.A4	32.79559600	-117.11981500	unnamed tributary to Murphy Cyn Creek
Detention Basin Drainages	CALIFORNIA	R4SB	RIVERINE	Linear	216	FOOT	A3.TRIB-404	32.79565700	-117.11954900	unnamed tributary to Murphy Cyn Creek
Feature 2	CALIFORNIA	R4SB	RIVERINE	Linear	414	FOOT	A3.TRIB-404	32.79365600	-117.13156100	Ruffin Cyn Creek
Feature 2 Wetland 1	CALIFORNIA	PEM	RIVERINE	Area	0.039	ACRE	NON-WOTUS-WET.NEGATIVE.A4	32.79340100	-117.13151200	Ruffin Cyn Creek
Feature 2 Wetland 2	CALIFORNIA	PEM	RIVERINE	Area	0.002	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79403900	117.13154200	Ruffin Cyn Creek
Feature 2 Wetland 3	CALIFORNIA	PEM	RIVERINE	Area	0.007	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79420700	-117.13162000	Ruffin Cyn Creek
Feature 2a	CALIFORNIA	R6	RIVERINE	Linear	1569	FOOT	A3.TRIB-404	32.79347000	-117.12904000	Shawn Cyn Creek
Feature 2a Wetland 1	CALIFORNIA	PEM	RIVERINE	Area	0.018	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79349200	-117.12895300	Shawn Cyn Creek
Feature 2a Wetland 2	CALIFORNIA	PEM	RIVERINE	Area	0.87	ACRE	A4-2.ADJ.WET.A2&A3-404	32.79336100	-117.12950000	Shawn Cyn Creek

Appendix G

GIS DATA

To be Provided

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