AQUATIC RESOURCES DELINEATION REPORT FOR EL MONTE WATER TRANSMISSION PIPELINE REHABILITATION PROJECT CITY OF SAN DIEGO, CALIFORNIA

PROJECT NO.: 20203585.001A

FEBRUARY 2026

A Report Prepared for:

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EL MONTE WATER TRANSMISSION PIPELINE REHABILITATION PROJECT
CITY OF SAN DIEGO, CALIFORNIA

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TABLE OF CONTENTS

1.0 INTRODUCTION

The City of San Diego proposes rehabilitation and improvements to the El Monte Water Transmission Pipeline, an existing 12.2-mile raw-water pipeline in San Diego County, California (Figure 1). The pipeline is a critical raw water transmission facility, which delivers water from two reservoirs, San Vicente and El Capitan; it is also the San Diego County Water Authority's first aqueduct to the Alvarado Water Treatment Plant. Originally constructed between 1942 and 1948, the pipeline plays a key role in the region's water distribution system. The Project includes excavation, vault access, and infrastructure repairs at various locations within the pipeline alignment and will involve temporary disturbance within areas that may contain waters potentially subject to federal or state jurisdiction.

To support regulatory compliance, this Aquatic Resources Delineation Report (ARDR) was prepared to characterize and map potentially jurisdictional waters of the U.S. within the study areas. Specifically, the delineation identifies aquatic features that may fall under U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to the Clean Water Act (CWA) Section 404, and Regional Water Quality Control Board (RWQCB) jurisdiction under Section 401. USACE, RWQCB, and CDFW permits may be required for any temporary or permanent impacts to jurisdictional aquatic resources identified within the project area.

Recent field investigations conducted across the distributed work areas along the pipeline alignment identified a total of eight aquatic features across seven work sites within the project corridor. These features occur at Stations 40+29/40+29, 345+20/345+20, 380+15/380+12, 382+78/382+75, 439+20/439+17, 555+79/555+76, and 644+21/644+18, and include a combination of ephemeral, intermittent, and perennial drainages. The identified aquatic features are anticipated to fall under the jurisdiction of one or more regulatory agencies, including the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW). City-defined wetlands are addressed separately in the project Biological Technical Report and are not evaluated further in this ARDR. Collectively, the features represent a mix of naturalized drainages, stormwater conveyance channels, and modified or partially engineered waterways exhibiting defined beds, banks, and Ordinary High-Water Mark (OHWM) indicators.

This investigation followed the routine wetland delineation methods described in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987), supplemented with guidance as directed by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and *Regulatory Guidance Letter No. 05-05 Ordinary High Water Mark Identification* (USACE 2005).

Dudek biologists Anna Touchstone and Shana Carey conducted a formal aquatic resources delineation on October 28, 2025, during which OHWM, top-of-bank, and representative data points were mapped using Field Maps with sub-meter GPS accuracy across 28 field survey locations. Eight aquatic features were identified and evaluated as potentially jurisdictional under the U.S. Army Corps of Engineers (USACE),

Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). A preliminary assessment of potential jurisdiction was completed in accordance with Sections 404 and 401 of the Clean Water Act (CWA).

OHWM transect forms were taken at eight locations to document eight instances of OHWM indicators, which were compared to aerial imagery and site topography. The delineated aquatic features are illustrated in Appendix A and summarized in Table 2. Supporting documentation, including OHWM data sheets, Streamflow Duration Assessment Method (SDAM) Field Forms, photographs, and the aquatic resources summary spreadsheet are provided in Appendices C, D, and E, respectively.

2.0 ENVIRONMENTAL SETTING

2.1 Location and Study Area

The delineation study area includes multiple discrete work locations along the El Monte Water Transmission Pipeline in the City of El Cajon, San Diego County, California. The seven delineation sites occur at Stations 40+29, 345+20, 380+15, 382+78, 439+20, 555+79, and 644+21, spanning a mixture of developed, landscaped, disturbed, and naturalized areas within the pipeline corridor. The project alignment lies within the El Cajon and San Diego 7.5-minute USGS topographic quadrangles.

Access to the eight delineated aquatic resource locations, each classified as a Non-Wetland Water (NWW) for the purposes of this ARDR, is gained via a combination of public roadways and existing unpaved maintenance roads used for pipeline operations. One of the primary access points is located near the Grossmont Tunnel entrance along West Main Street, adjacent to the Kaiser Permanente El Cajon Medical Offices (approx. 32.79496°, –116.98219°). The nearest physical address is 1425 W. Main Street, El Cajon, CA 92020. City staff and/or representatives will accompany agency staff for a site visit upon request.

Access to each of the eight delineated aquatic features in the seven delineated locations is as follows:

- Work Location 345+20 (NWW-ALT-01):
    - From I-8, exit at Fletcher Parkway and travel east. Turn right onto West Bradley Avenue. Continue to Floyd Smith Drive, where the pipeline maintenance access road is located. The constructed canal/ditch is situated immediately north of the roadway.
- Work Locations 382+78/382+75 and 380+15/380+12 (NWW-ALT-02):
    - From I-8, exit at Magnolia Avenue and travel north. Turn right onto Broadway and proceed east. Turn left onto Forester Creek Road. Access the concrete-lined Forester Creek segment via the adjacent maintenance path paralleling the channel.
- Work Location 40+29/40+29 (NWW-ALT-03):
    - From I-8, exit at Los Coches Road and travel north. Turn right onto Lakeview Rd and proceed east. Turn right onto Julian Ave. Access the site segment near the corner of Julian Ave and Choisser Ln.
- Work Location 439+20/439+17 (NWW-ALT-04 & NWW-ALT-05):
    - From I-8 westbound, exit at West Main Street. Travel west for 0.3 mile. The Grossmont Tunnel access road is located on the south side of West Main Street, opposite the Kaiser Permanente facility. The intermittent and ephemeral drainages occur along the unpaved access road leading to the tunnel.
- Work Location 555+79/555+76 (NWW-ALT-06 & NWW-ALT-07):

  - From I-8, exit at Fletcher Parkway and travel east. Turn left onto Amarillo Avenue. The intermittent and perennial drainages are located near the culvert crossing beneath Amarillo Avenue and continue downstream toward Fletcher Parkway.
- Work Location 644+21/644+18 (NWW-ALT-08):
  - From I-8, exit at Lake Murray Boulevard and travel north. Turn right onto Lake Park Way. The intermittent drainage is located immediately south of 5540 Lake Park Way, accessed via a short unpaved pull-off and maintenance path adjacent to the culvert inlet.

The survey areas consist of gently sloping to level terrain bordered by developed, landscaped, and disturbed habitats. Several work locations contain drainage features that exhibit evidence of episodic or sustained surface flow, including ephemeral, intermittent, and perennial channels. These drainages occur adjacent to or within the maintenance access routes and, in some locations, support riparian vegetation. Field surveys were conducted within and adjacent to these features to assess aquatic resource boundaries and hydrologic characteristics.

2.2 Vegetation and Land Cover Types

The study area lies within the South Coast Subregion of the California Floristic Province. Vegetation communities are assemblages of plant species that occur together in similar environmental conditions and are defined by species composition and relative abundance. Based on field assessments, the study area is composed mostly of disturbed and developed land. Small portions of the study area comprise scrub and riparian vegetation. The vegetation communities in the study area were mapped during the field survey in accordance with *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), which is based on the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986).

Developed

This community/land cover type is common throughout the study area. Developed lands refer to areas that have been constructed on or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). Developed areas within the work locations include paved roads and walkways, driveways, and buildings.

Disturbed Habitat

This community is also common throughout the study area. Disturbed habitat refers to areas that have been physically disturbed and are no longer recognizable as any natural vegetation association, though they may have retained soil substrates and minimal presence of non-native vegetation. Areas typically described as disturbed habitat include graded landscaped areas, graded firebreaks, temporary construction staging areas, areas repeatedly cleared for fuel management, and other areas repeatedly used in a way that prevent revegetation (Oberbauer et al. 2008).

Coastal Sage Scrub

This community is located in the study area at work location 439+20. Coastal sage scrub refers to a native vegetation community composed of soft, low, and aromatic shrubs. Species characteristic of this community includes coastal sagebrush, California buckwheat, sages (Salvia spp.), lemonade berry *(Rhus integrifolia)*, and laurel sumac (*Malosma laurina*) (Oberbauer et al. 2008). Coastal sage scrub communities within the work locations are dominated by coastal sagebrush and California encelia and additionally

include California buckwheat, broom baccharis, laurel sumac, ice plant, black sage (*Salva mellifera*), and sticky monkeyflower.

Non-Native Woodland

This community is common throughout the study area. Non-native woodland refers to stands of non-native trees that are typically intentionally planted but are not maintained or artificially irrigated. Species characteristic of this community include eucalyptus (Eucalyptus spp.) or tamarisk (Tamarix spp.), but other exotic tree species may also be representative (Oberbauer et al. 2008). Stands of this vegetation community within the work locations are generally dominated by eucalyptus species and pepper trees (Schinus spp.).

Non-Native Riparian

This community is located at work locations 439+20, 555+79, and 644+21. Non-native riparian refers to habitat consisting of densely vegetated riparian thickets dominated by non-native, invasive species. Characteristic species of this community typically include giant reed (*Arundo donax;* FACW), tamarisk (*Tamarix ramosissima;* FACW), eucalyptus (*Eucalyptus spp*.; UPL), palms (*Phoenix spp.* and *Washingtonia spp*.; FACW), castor bean, and pampas grass (*Cortaderia spp*.; UPL) (Oberbauer et al. 2008). The dominant species of this community within the work locations include eucalyptus species and Mexican fan palm (*Washingtonia robusta*; FACW).

Coast Live Oak Woodland

This community is located at work location 439+20. Coast live oak woodland refers to a community dominated by stands of coast live oak (*Quercus agrifolia*, FACU) with a canopy height between approximately 10 to 25 meters. The herbaceous cover in this community consists of a variety of introduced species, and the shrub layer is typically less developed and may include toyon (*Heteromeles arbutifolia;* FACU), gooseberry (*Ribes spp*.; FACU), laurel sumac (*Malosma laurina*, UPL), and blue elderberry (*Sambucus nigra;* FAC) (Oberbauer et al. 2008). The dominant species of this community within the study area includes coast live oak and various non-native grasses.

Southern Riparian Forest

This community is located at work location 439+20. Southern riparian forests are moderately dense riparian woodlands dominated by small trees or shrubs with scattered taller riparian trees. Stands of this community occur within major river systems where flood scour occurs as well as smaller major tributaries (Oberbauer et al. 2008). Species characteristic to southern riparian forests include baccharis (*Baccharis spp*.; FAC), western sycamore (*Platanus racemosa*, FACW), western cottonwood (*Populus spp.;* FACW*)*, willows (*Salix spp*., FACW), and elderberry species (*Sambucus spp*.; FAC). The dominant species within the study area is western cottonwood.

Emergent Wetland

This community is located at work location 555+79. Emergent wetland refers to freshwater or alkaline perpetually wet areas supporting perennial wetland plants, which are typically low-growing species. Vegetation that is characteristic of this community may include sedges (*Carex spp*.; FACW-OBL), spike rush (*Eleocharis spp*.; OBL), rushes (*Juncus spp*., FACW), docks (*Rumex spp.*; FAC-FACW*),* and broad-fruit bur-weed (*Sparganium eurycarpum;* OBL) (Oberbauer et al. 2008). Emergent wetland present in the work location includes cattail species as the dominant species. These areas appeared to have been mowed or trimmed at the time of the field survey.

Non-Vegetated Channel or Floodway

This community is located at work locations 40+29, 345+20, 382+78, and 439+20. Non-vegetated channel or floodway refers to the sandy, gravelly, or rocky fringe of waterways or flood channels that are unvegetated on a relatively permanent basis. Minimal vegetation may be present along the outer edge of the channel (Oberbauer et al. 2008).

2.3 Hydrology

The Study Area lies within the Lower San Diego River watershed (907.10) (HUC 1807030407), which encompasses approximately 162 square miles in central San Diego County and supports two reservoirs, Lake Murray and Lake Jennings. The San Diego River flows approximately 52 miles from its headwaters in the Cuyamaca Mountains westward through El Cajon, Mission Valley, and ultimately into the Pacific Ocean at Mission Bay. Numerous tributaries—ranging from perennial and intermittent channels to ephemeral stormwater conveyance features—drain toward the San Diego River throughout the watershed, several of which occur within the delineation work locations evaluated for this Project.

Drainage features mapped during the delineation displayed evidence of surface flow and OHWM indicators to varying degrees, including bed and bank formation, scour, sediment sorting, litter and debris deposition, and vegetation transitions. Portions of certain channels also exhibited stabilization measures such as geogrid, riprap, or concrete lining, reflecting past erosion control or flood infrastructure improvements. These observations are consistent with the mixed hydrologic conditions typical of the Lower San Diego River watershed, where surface flows occur in response to precipitation, urban runoff, and upstream hydrology conveyed through culverts and roadside drainage networks.

2.4 Soils

Soil types in the study area were identified using the Web Soil Survey, a resource provided by the USDA Natural Resources Conservation Service (NRCS 2025). The following soil units were identified within the delineation areas:

- Diablo-Urban land complex, 5 to 15 percent slopes (DcD)
- Diablo clay, 2 to 9 percent slopes
- Greenfield sandy loam, 2 to 5 percent slopes (GrB)
- Placentia sandy loam, thick surface, 2 to 9 percent slopes
- Redding-Urban land complex, 9 to 30 percent slopes (RhE)
- Redding cobbly loam, dissected, 15 to 50 percent slopes (RfF)
- Riverwash (Rm)

Diablo soil series are well drained and have slow runoff when the soils are dry, medium to rapid when soils are moist with slow permeability. The soils occur on complex undulating, rolling to steep uplands with slopes of 5 to 50 percent and elevations from 25 to 3,000 feet. They are extensive in central and southern Coast Ranges of California. These soils form in residuum weathered from shale, sandstone, and consolidated sediments with minor areas of tuffaceous material. The climate is dry, subhumid mesothermal with warm, dry summers and cool, moist winters. The mean annual precipitation is 10 to 35 inches. The soils are used for grazing and for production of dry farmed grain and uncultivated areas have a cover of annual grasses and forbs.

Greenfield series consist of deep, well drained soils with slow to medium run-off and are generally on alluvial fans and terraces. The soils formed in moderately coarse and coarse textured alluvium or some wind deposited material derived from granitic and mixed sources. The climate is dry subhumid mesothermal with hot, dry summers and cool, moist winters. The mean annual precipitation is 9 to 20 inches. The soils are used for irrigated fields, forage, and fruit crops and also for growing dryland grain and pasture. Vegetation on uncultivated areas consists of annual grass, forbs, some shrubs and scattered oak trees.

Placentia sandy loam is a soil type found in coastal southern California that is well-drained with slow to rapid run-off with very slow permeability. Placentia soils are nearly level to moderately sloping and are on fans and terraces at elevations of 50 to 2,500 feet. They form in alluvium from granite and other rocks of similar composition and texture. The climate is dry, subhumid mesothermal with long, dry, and warm summers and cool moist winters. The mean annual precipitation is about 12 to 18 inches. It is suitable for agriculture, including citrus, small grains, and truck crops, and its thick surface layer indicates a significant amount of topsoil. The soils are used to produce citrus, truck crops, small grains, hay, and forage, and uncultivated areas have a cover of annual grasses and forbs.

Redding soil series are well-drained, with very high runoff potential and very low to moderately low permeability. These soils occur on dissected terrace backslopes at elevations ranging from approximately 130 to 1,000 feet, with mean annual precipitation between 14 and 25 inches, and an average frost-free period of 260 to 280 days. The parent material is alluvium derived from mixed sources, and the profile includes cobbly loam and cobbly clay layers underlain by an indurated duripan (see Appendix B for soil reports, soil descriptions, and mapping). The Redding series is classified as non-hydric and is not considered prime farmland. Vegetation within areas mapped as Redding cobbly loam typically includes annual grasses, forbs, and sparse shrub or woodland species.

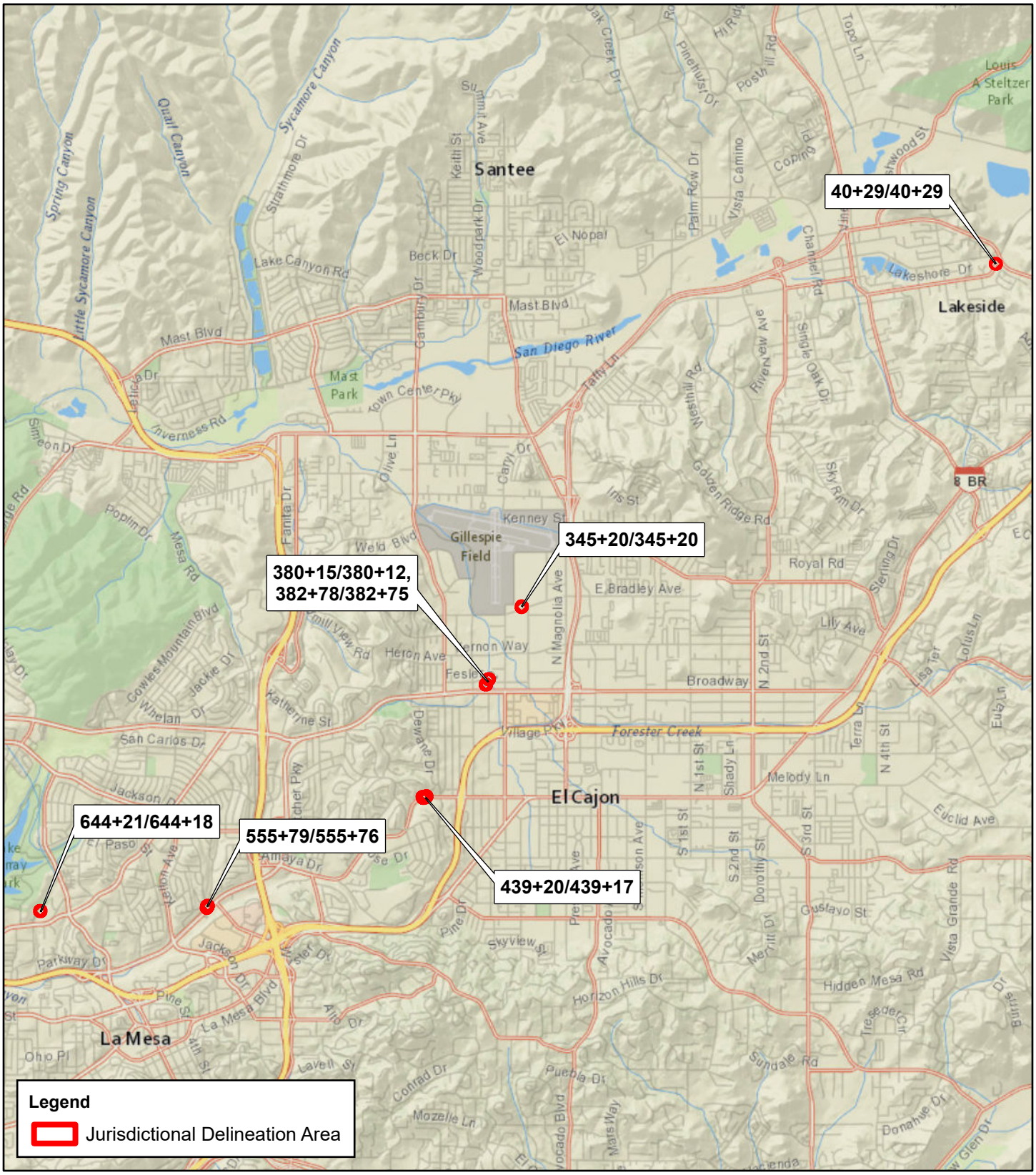
Riverwash soil series are not a single, officially recognized soil series but are used in some informal contexts to describe soils found in areas often inundated by rivers including floodplains.

2.5 Climate and Precipitation Data

The project area has a semi-arid Mediterranean climate, characterized by hot, dry summers and mild, wetter winters. Average annual precipitation at the nearby El Cajon rain station is 12.40 inches (Western Regional Climate Center [WRCC] for El Cajon 2025), with most rainfall occurring between November and March. The average maximum annual temperature is approximately 78 degrees Fahrenheit, while the average minimum is approximately 52 degrees Fahrenheit. During summer months, daytime temperatures can reach up to 89 degrees Fahrenheit, while winters in the area can be as low as 41 degrees Fahrenheit.

Precipitation and drought data are necessary components in establishing baseline hydrology conditions for the study area, including whether conditions during the delineation field survey were within the normal precipitation range. The Antecedent Precipitation Tool (APT) is a tool that the USACE developed to facilitate comparison of recent precipitation conditions for a given location to the range of normal precipitation conditions that occurred during the preceding 30 years (U.S. Environmental Protection Agency [EPA] 2025). In addition to evaluating normal precipitation conditions, the APT can assess the presence of drought conditions and the approximate dates of the wet and dry seasons for a given location (EPA 2025).

Figure 3 depicts the single point summary output provided by the APT for October 28, 2025, the date of the field visit. The Field Palmer Drought Index indicated moderate drought at the time of the survey during the dry season, and the Antecedent Precipitation Condition was classified as Wetter than Normal due to notable late October 2025 Pacific storms with heavy rains.



USGS 7.5' Quad: El Cajon (1975) and La Mesa (1994)
Legal Description: T16S, R01W Section 3, 9, 17
T16S, R02W Section 13
T15S, R01E Section 20

0 3,000 6,000 Feet

0 900 1,800 Meters

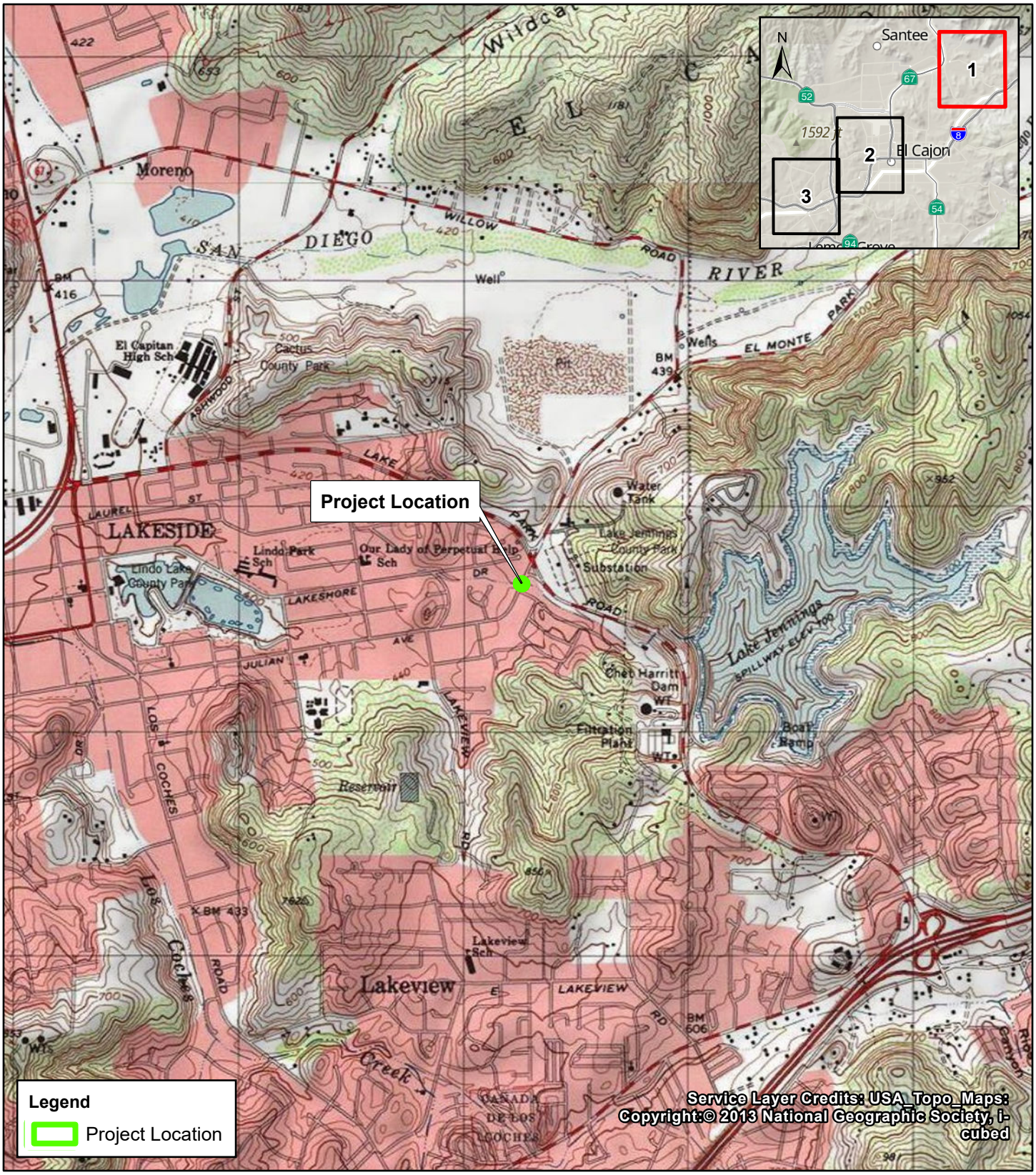
N

Scale 1:72,000
1 inch = 6,000 feet

Figure 1: Project Locality
El Monte Water
Transmission Pipeline
San Diego County, California

Map Created:
December 18, 2025

KLEINFELDER
Bright People. Right Solutions.



USGS 7.5' Quad: El Cajon (1975) and La Mesa (1994)
Legal Description: T16S, R01W Section 3, 9, 17
T16S, R02W Section 13
T15S, R01E Section 20

N

0 1,000 2,000 Feet

0 300 600 Meters

Scale 1:24,000
1 inch = 2,000 feet

Figure 2: Project Location
Page 1 of 3
El Monte Water
Transmission Pipeline
San Diego County, California

Map Created:
December 18, 2025

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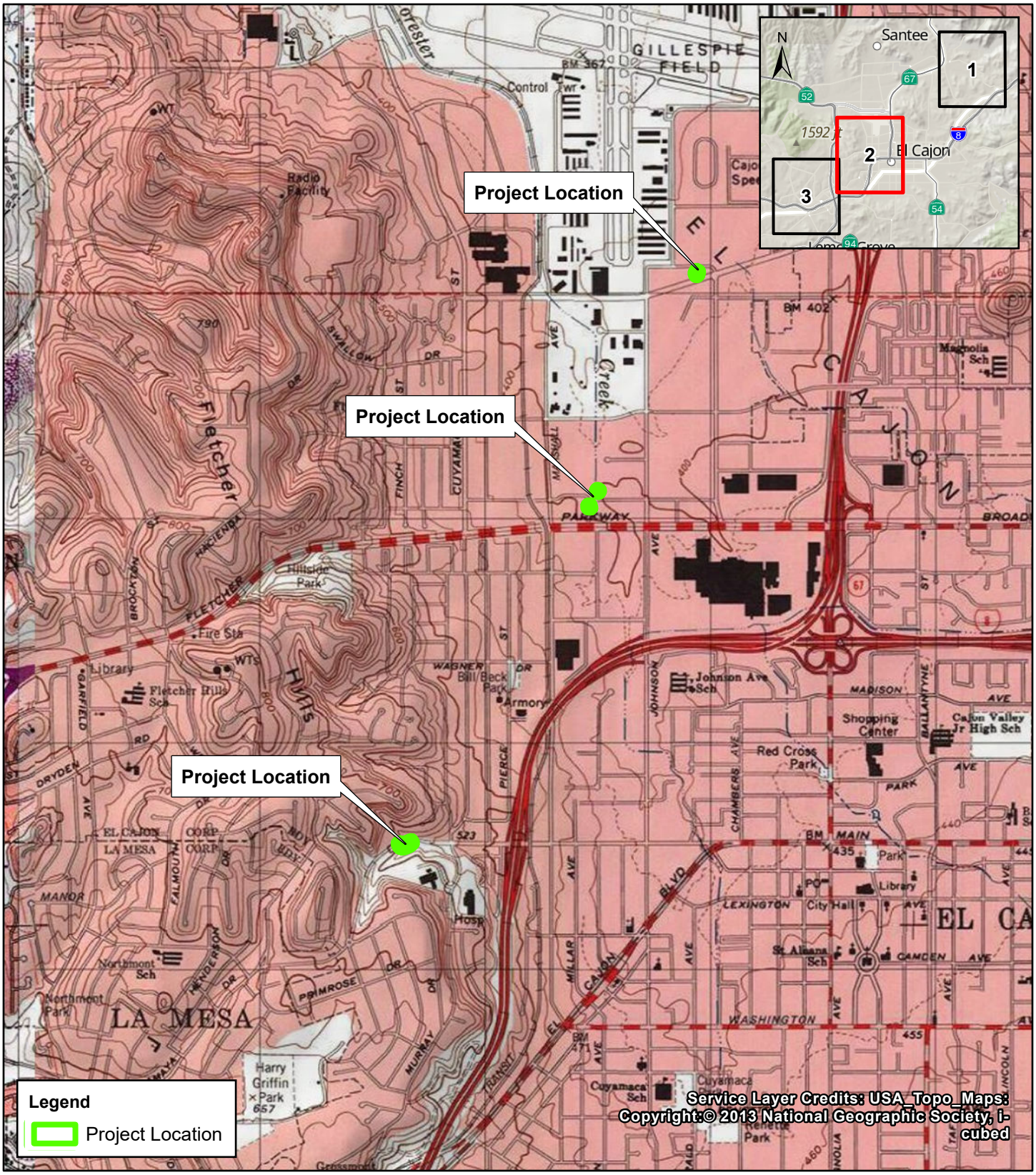
Bright People. Right Solutions.



USGS 7.5' Quad: El Cajon (1975) and La Mesa (1994)
Legal Description: T16S, R01W Section 3, 9, 17
T16S, R02W Section 13
T15S, R01E Section 20

N

0 1,000 2,000 Feet

0 300 600 Meters

Scale 1:24,000
1 inch = 2,000 feet

Figure 2: Project Location
Page 2 of 3
El Monte Water
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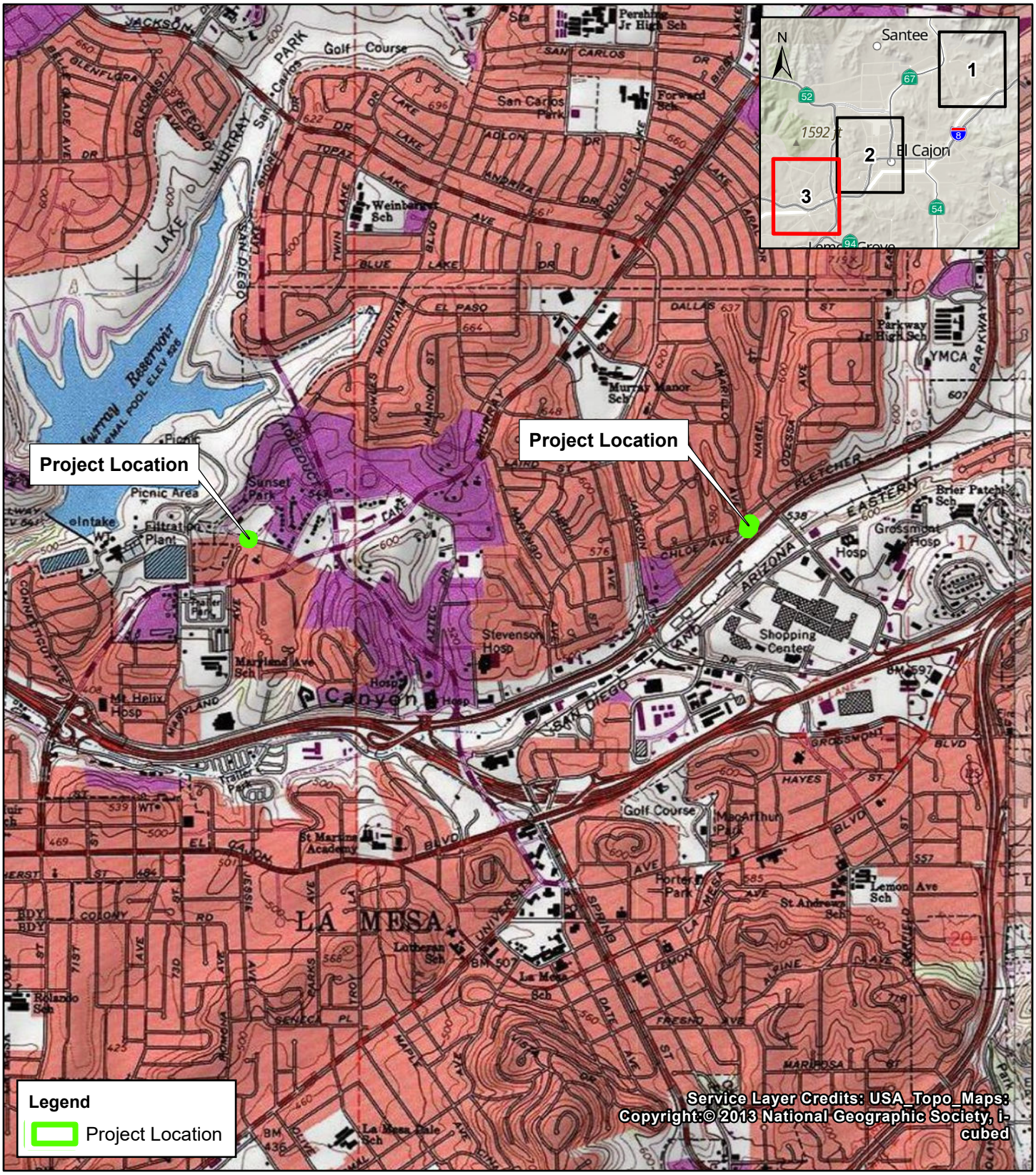

USGS 7.5' Quad: El Cajon (1975) and La Mesa (1994)
Legal Description: T16S, R01W Section 3, 9, 17
T16S, R02W Section 13
T15S, R01E Section 20

N

0 1,000 2,000 Feet

0 300 600 Meters

Scale 1:24,000
1 inch = 2,000 feet

Figure 2: Project Location
Page 3 of 3
El Monte Water
Transmission Pipeline
San Diego County, California

Map Created:
December 18, 2025

KLEINFELDER
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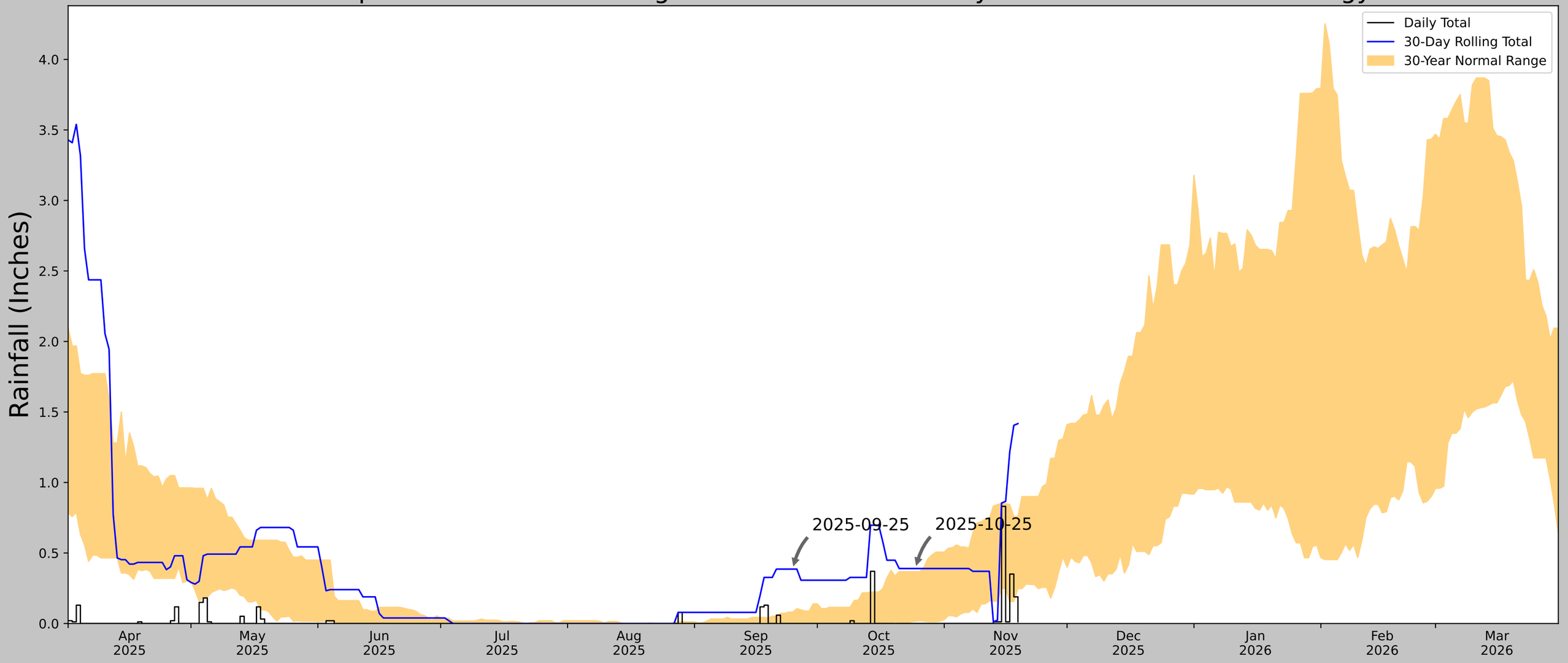

Coordinates	32.79492, -116.98205
Observation Date	2025-10-25
Elevation (ft)	549.805
Drought Index (PDSI)	Moderate drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-10-25	0.017323	0.36811	0.389764	Wet	3	3	9
2025-09-25	0.0	0.080709	0.385827	Wet	3	2	6
2025-08-26	0.0	0.0	0.0	Normal	2	1	2
Result							Wetter than Normal - 17

Figures and tables made by the Antecedent Precipitation Tool Version 3.0

US Army Corps of Engineers

ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EL CAJON 1.5WSW	32.7907, -116.987	727.034	0.409	177.229	0.257	6117	90
LA MESA 1.2 E	32.7722, -116.998	674.869	1.429	52.165	0.718	36	0
EL CAJON 2.3 S	32.7698, -116.9593	737.861	2.162	10.827	0.996	14	0
LA MESA 2.6E	32.7698, -116.9788	1014.108	1.521	287.074	1.121	10	0
LA MESA	32.7675, -117.0233	529.856	2.649	197.178	1.714	3763	0
EL CAJON 2.3ENE	32.8112, -116.9254	609.908	3.848	117.126	2.182	9	0
EL CAJON	32.8006, -116.9281	495.079	3.489	231.955	2.379	986	0
LAKESIDE 2 E	32.8536, -116.8947	689.961	6.9	37.073	3.361	387	0
SAN DIEGO MONTGOMERY FLD	32.8144, -117.1375	417.979	8.893	309.055	6.75	31	0

3.0 APPLIED METHODS

This investigation followed the methods described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987), supplemented with guidance as directed by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and *Regulatory Guidance Letter No. 05-05 Ordinary High Water Mark Identification* (USACE 2005).

These methods included a preliminary review of available information and on-site field inspections of the delineation areas to determine the presence or absence of 1) hydrophytic vegetation, 2) hydric soils, and/or 3) wetland hydrology. Sample points are assessed at paired plots on the lateral edge of sampled wetlands to record the vegetation, soils, and hydrology present. Areas with a dominance or prevalence of hydric vegetation, hydric soil, and/or wetland hydrology indicators are mapped as wetlands. The following discussion describes how these methods and related reference materials were applied to the on-site features.

3.1 Preliminary Data Gathering and Review of Existing Materials

Prior to field investigations, available aerial imagery, topographical maps, and soil maps of the study area were reviewed to characterize the vegetation, soils, topography, and hydrology in the area. Existing materials reviewed included geospatial wetlands information provided online by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2024) and aerial photography of the study areas and vicinity. The USGS 7.5-minute San Diego and El Cajon topographic quad was also reviewed (USGS 2025). Review of the NWI mapping indicated that mapped NWI wetlands intersect the project corridor at three locations, at Stations 40+29, 380+12, and 382+75, in the vicinity of Feature NWW-ALT-02 and NWW-ALT-03. All mapped features are classified as Riverine, Upper Perennial, Streambed, Unconsolidated Bottom (R4SBC).

3.2 Field Investigation

A formal aquatic resources delineation was conducted on October 28, 2025 by Dudek biologists Anna Touchstone and Shana Carey. The survey commenced at approximately 8:00 a.m. and concluded at 4:00 p.m. Weather conditions for the survey were warmer than normal for eastern San Diego County in late October, with temperatures during the survey ranging from 60°F to 88 °F. Skies were clear, and winds ranged from 0 to 5 mph. The delineation focused on identifying the extent and characteristics of aquatic features across the project's 28 field survey locations. Surveyors examined vegetation, soils, and hydrology for wetland indicators and assessed channel morphology, geomorphic features, and hydrologic signatures to identify Ordinary High-Water Mark (OHWM) boundaries.

Transect locations, OHWM, and top-of-bank were mapped in the field using Field Maps on an Apple iPad with sub-meter GPS accuracy. The biologists walked transects along and across each drainage feature to document indicators such as bed and bank formation, scour, sediment sorting, debris deposition, and vegetation transitions. These indicators were used to classify each feature as ephemeral, intermittent, perennial, or wetland. Seven of the 28 field survey locations contained aquatic features that met the criteria for potential jurisdiction under USACE, RWQCB, and/or the CDFW.

3.3.1 Vegetation

Hydrophytic vegetation is identified based on corresponding wetland indicator status. The size of the sample plots represents the vegetation community and size in the feature and excludes sampling vegetation from adjacent communities.

The percent cover of each plant species in the field is visually estimated. The "50/20" rule is used to select dominant species from each stratum (tree, shrub, and herb) of the community, as defined in the *Arid West Regional Supplement* (USACE 2008a). Plants are identified according to *Jepson eFlora* (Jepson Flora Project 2025). The indicator status of each species is determined based on *The National Wetland Plant List: 2020 wetland ratings* (USACE 2025).

Wetland indicator species include those listed as obligate (OBL), facultative wetland (FACW), or facultative (FAC) in the *National List for the Arid West Region*. Upland indicator categories include facultative upland (FACU), or upland (UPL). Species not listed in the *National List* are designated as Upland (UPL). Wetland indicator status categories are described in Table 1.

Table 1: Wetland Indicator Categories

Indicator Category	Wetland Occurrence
Obligate wetland plants (OBL)	Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.
Facultative wetland plants (FACW)	Usually occur in a wetland but may occur in non-wetlands. These plants predominantly occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
Facultative plants (FAC)	Occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitat. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and they have a wide tolerance of soil moisture conditions.
Facultative upland plants (FACU)	Usually occur in non-wetlands but may occur in wetlands. These plants predominantly occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface at least seasonally
Upland plants (UPL)	Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth includes herbaceous, shrubs, woody vines, and trees.
Source: Lichvar et al. 2012	

3.3.2 Hydrology

Hydrology is characterized in the field using the methods provided in the *Arid West Supplement* (USACE 2008a).

3.3.3 Soils

Soils are characterized in the field using the methods provided in the *Arid West Supplement* (USACE 2008a).

3.4 Mapping of Other Waters

3.4.1 Delineating Section 404 Jurisdiction

If adjacent or bordering, neighboring, or contiguous "waters" are present above the OHWM, then USACE jurisdiction extends to the limit of the adjacent feature. Potential wetlands must meet the three parameter criteria as outlined in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987). Areas that support more than five percent cover of vegetation are classified as wetlands, and areas that have standing water and/or support less than five percent vegetation cover are classified as waters (USACE 1987).

The lateral edges of the nontidal creek within the delineation area were mapped at the locations of the OHWM. The OHWM is defined as "[...]the line on the [watercourse banks] established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 Code of Federal Regulations [CFR] 328). The location of the OHWM for non-tidal water bodies under the Clean Water Act (CWA) includes evaluating physical characteristics of the area that are determined to be reliable indications of the OHWM (USACE 2005). Physical evidence to be evaluated includes those items listed in 33 CFR 329.11 (a)(1) including, but not limited to:

- Shelving
- Natural line impressed on the bank
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Change in plant community
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and bank
- Water staining

4.0 RESULTS

Eight aquatic features were identified during the field delineation, including ephemeral, intermittent, and perennial drainages, as well as wetlands, that are anticipated to be under the jurisdiction of the USACE, RWQCB, and/or the CDFW. While not all features meet the federal criteria for waters of the United States, they exhibit characteristics such as defined bed and bank morphology, Ordinary High Water Mark (OHWM) indicators, riparian vegetation, and/or hydrologic function that may qualify them as Waters of the State or other regulated aquatic resources and are therefore regulated by RWQCB and/or the CDFW. Accordingly, all eight aquatic features are documented and summarized in Table 2 and described below.

NWW-ALT-01 (Work Location 345+20)

One drainage ditch/canal (NWW-ALT-01) was identified at work location 345+20. This intermittent feature supported disturbed, ruderal vegetation and contained areas of standing water and saturation at the time of the field survey. This feature originates at a concrete culvert under West Bradley Avenue and flows north through the site into another concrete culvert under Floyd Smith Drive and into Broadway Channel. Broadway Channel has downstream connectivity to Forester Creek and the San Diego River. Therefore, this drainage ditch/canal is anticipated to be under the jurisdiction of USACE, RWQCB, and CDFW below OHWM, and under the jurisdiction of CDFW to the top-of-bank (TOB) or edge of riparian, whichever is greater.

NWW-ALT-02 (Work Location 380+15/380+12 and 382+78/382+75)

One modified, perennial channel (NWW-ALT-02) was identified at work locations 380+15/380+12 and 382+78/382+75. This is a channelized, concrete-lined portion of Forester Creek. There was flowing water present at the time of the survey, and vegetation within the channel was absent. Forester Creek flows north off site into the San Diego River. Therefore, this modified channel is anticipated to be under the jurisdiction of USACE, RWQCB, and CDFW below OHWM, and under the jurisdiction of CDFW to the TOB or edge of riparian, whichever is greater.

NWW-ALT-03 (Work Location 40+29)

One modified, intermittent channel (NWW-ALT-03) was identified at work location 40+29. This feature was saturated at the time of the survey and supported mostly ruderal, disturbed vegetation. Sparse arroyo willow shrubs were present within the drainage off site to the northeast. This drainage was mapped by the NWI mapper, which shows downstream connectivity to Lake Jennings approximately 0.5 miles to the east. This modified channel is anticipated to be under the jurisdiction of RWQCB and CDFW below OHWM, and under the jurisdiction of CDFW to the TOB.

NWW-ALT-04 and NWW-ALT-05 (Work Location 439+20/439+17)

One intermittent drainage (NWW-ALT-04) and one tributary ephemeral drainage (NWW-ALT-05) were identified at work location 439+20/439+17. The drainages were dry at the time of the field survey. Based on site observations documented on the OHWM data sheet, NWW-ALT-05 was classified as ephemeral due to the absence of continuous surface flow indicators, limited channel development, and its origin as localized drainage from adjacent developed areas that flows through a culvert only in direct response to precipitation events. These observations are consistent with field notes indicating that the channel lacks evidence of sustained baseflow and exhibits flow only during or immediately following storm events.

A Stream Duration Assessment Method (SDAM) form was recorded within the main drainage (NWW-ALT-04), which functioned as the benchmark reach and was determined to be intermittent. Both drainages

contained in-stream bank stabilization features including geogrid and river rock, and the intermittent drainage supported a canopy of southern riparian forest dominated by western cottonwood and non-native riparian dominated by Mexican fan palm. Portions of the riparian canopy associated with NWW-ALT-04 overlap NWW-ALT-05, but NWW-ALT-05 does not support its own riparian canopy. The intermittent drainage originates off-site to the west and flows east along West Main Street, terminating into a concrete culvert off site. The ephemeral drainage originated off site to the north and flows through a concrete culvert under West Main Street into the intermittent drainage. Downstream connectivity of the intermittent drainage is unknown, but is it assumed to have relatively permanent, continuous downstream connectivity to a Traditional Navigable Water. Therefore, the intermittent drainage (NWW-ALT-04) is anticipated to be under the jurisdiction of USACE, RWQCB, and CDFW below OHWM, and under the jurisdiction of CDFW to the TOB or edge of riparian, whichever is greater. The ephemeral drainage (NWW-ALT-05) does not meet the relative permanence standard and therefore does not meet the current definition of a water of the United States. However, the ephemeral drainage is anticipated to be under the jurisdiction of RWQCB and the CDFW.

NWW-ALT-06 and NWW-ALT-07 (Work Location 555+79/555+76)

One perennial drainage (NWW-ALT-06) and one tributary intermittent drainage (NWW-ALT-07) were identified at work location 555+79/555+76. The perennial drainage supported a non-native riparian corridor, and both drainages supported emergent wetland vegetation that appeared to have been recently mowed or trimmed. Both drainages had flowing water present at the time of the survey. There was an exposed culvert observed within the intermittent drainage that may have been originally intended to underground the drainage under an unpaved access road. However, the culvert appears to have been washed out and the drainage currently flows aboveground. The perennial drainage originates off site to the northeast and continues off site to the south via a large, concrete culvert under Fletcher Parkway. The intermittent drainage originates at a concrete culvert under Amarillo Avenue and flows southeast into the perennial drainage. Downstream connectivity of these features is unknown, but they are assumed to have relatively permanent, continuous downstream connectivity to a Traditional Navigable Water. Therefore, these features are anticipated to be under the jurisdiction of USACE, RWQCB, and CDFW below OHWM, and under the jurisdiction of CDFW to the TOB or edge of riparian, whichever is greater.

NWW-ALT-08 (Work Location 644+21/644+18)

An intermittent drainage (NWW-ALT-08) and associated non-native riparian corridor was identified at work location 644+21/644+18. The earthen drainage originates off site to the north and flows under Lake Park Way via a concrete culvert, continuing off site to the south. The drainage was saturated at the time of the field survey, and evidence of an OHWM included bed and bank, break in slope, undercut banks, exposed roots, sediment sorting, and an absence of vegetation within the streambed. Downstream connectivity of this feature is unknown, but it is assumed to have relatively permanent, continuous downstream connectivity to the San Diego River, a Traditional Navigable Water (TNW). Therefore, this feature is anticipated to be under the jurisdiction of USACE, RWQCB, and CDFW below OHWM, and under the jurisdiction of CDFW to the TOB or edge of riparian, whichever is greater.

Non-Jurisdictional Aquatic Features

Three stormwater control features identified at work locations 632+33/632+30, 530+10/530+07, and 254+20/254+17 are not anticipated to be under the jurisdiction of USACE, RWQCB, or CDFW, as these features are constructed in upland and do not replace or connect to another natural feature. The primary purpose of these constructed features is to channel surface runoff away from surrounding developed

areas. Additionally, two erosional features were identified at work location 439+20/439+17. Neither of these erosional features are anticipated to be under the jurisdiction of USACE, RWQCB, or CDFW due to their lack of defined bed and bank and other OHWM indicators.

Table 2 summarizes each aquatic features evaluated as potentially jurisdictional under the USACE, including aquatic resource type, Cowardin classification, geographic coordinates, OHWM indicators, total area (acres), linear extent (feet), and representative OHWM channel width. Aquatic features evaluated under RWQCB and CDFW jurisdiction are summarized separately in Table 3 and 4, respectively.

Table 2: Aquatic Resources Potentially Subject to U.S. Army Corps of Engineers (USACE) Jurisdiction

Feature ID	Aquatic Resource Type	Cowardin Type	Latitude/ Longitude	OHWM Indicators	Acres WOTUS	Linear Feet	OHWM Width (Feet)
Non-Wetland Waters of the United States							
NWW-ALT-01	Constructed canal/ditch	R4	32.817895°, -116.968495°	*Break in slope on bank; mud cracks; vegetation absent to graminoids/ forbs; wracking/ presence of organic litter*	0.007	78.056	4
NWW-ALT-02	Channel – natural, modified	R5	32.808428°, - 116.973703°	*Break in slope on bank; water staining*	0.029	96.185	15
NWW-ALT-03	Channel – natural, modified	R4	32.85901°, -116.900865°	*Break in slope on bank; vegetation absent to graminoids/ forbs*	0.003	17.220	7
NWW-ALT-04	Channel – natural, intermittent	R4	32.794786°, - 116.982317°	*Break in slope on bank; shelf at top of bank; channel: shelving on bar; erosional bedload indicators; transition from silt to cobble; vegetation absent to riparian*	0.022	225.238	4
NWW-ALT-06	Channel – natural, perennial	R5	32.781856°, -117.013361°	*Break in slope on bank; shelf at top of bank; deposition bedload indicators; transition from silt to cobble; vegetation absent to non-native riparian; exposed roots below intact soil layer*	0.005	76.446	3
NWW-ALT-07	Channel – natural, intermittent	R4	32.781774°, -117.013369°	*Break in slope on bank; vegetation change from emergent wetland to upland*	0.001	39.757	1
NWW-ALT-08	Channel – natural, intermittent	R4	32.781086 °, -117.037164 °	*Break in slope on undercut bank; transition from silt to cobble; vegetation absent to disturbed riparian; exposed roots below intact soil layer*	0.009	96.028	6
				USACE water totals	0.076	648.336	34

Table 3: Aquatic Resources Potentially Subject to Regional Water Quality Control Board (RWQCB) Jurisdiction

Feature ID	Aquatic Resource Type	Cowardin Type	Latitude/ Longitude	OHWM Indicators	Acres WOTUS	Linear Feet	OHWM Width (Feet)
Non-Wetland Waters of the United States							
NWW-ALT-01	Constructed canal/ditch	R4	32.817895°, -116.968495°	*Break in slope on bank; mud cracks; vegetation absent to graminoids/ forbs; wracking/ presence of organic litter*	0.007	78.056	4
NWW-ALT-02	Channel – natural, modified	R5	32.808428°, - 116.973703°	*Break in slope on bank; water staining*	0.029	96.185	15
NWW-ALT-03	Channel – natural, modified	R6	32.85901°, -116.900865°	*Break in slope on bank; vegetation absent to graminoids/ forbs*	0.003	17.220	7
NWW-ALT-04	Channel – natural, intermittent	R4	32.794786°, - 116.982317°	*Break in slope on bank; shelf at top of bank; channel: shelving on bar; erosional bedload indicators; transition from silt to cobble; vegetation absent to riparian*	0.022	225.238	4
NWW-ALT-05	Channel – natural, ephemeral	R6	32.794935°, -116.982292°	*Break in slope on bank; transition from silt to cobble*	0.002	36.626	2
NWW-ALT-06	Channel – natural, perennial	R5	32.781856°, -117.013361°	*Break in slope on bank; shelf at top of bank; deposition bedload indicators; transition from silt to cobble; vegetation absent to non-native riparian; exposed roots below intact soil layer*	0.005	76.446	3
NWW-ALT-07	Channel – natural, intermittent	R4	32.781774°, -117.013369°	*Break in slope on bank; vegetation change from emergent wetland to upland*	0.001	39.757	1
NWW-ALT-08	Channel – natural, intermittent	R4	32.781086 °, -117.037164 °	*Break in slope on undercut bank; transition from silt to cobble; vegetation absent to disturbed riparian; exposed roots below intact soil layer*	0.009	96.028	6
				RWQCB Water Totals	0.078	665.556	43

Table 4: Aquatic Resources Potentially Subject to California Department of Fish and Wildlife (CDFW) Jurisdiction

Feature ID	Aquatic Resource Type	Cowardin Type	Latitude/ Longitude	Acres	Linear Feet	Top of Bank Width (Feet)
Riparian						
N/A	Riparian	N/A	32.794899, -117.01321	0.206	N/A	N/A
			Riparian Subtotal	0.206	N/A	N/A
Streambed						
NWW-ALT-01	Constructed canal/ditch	R4	32.817895°, -116.968495°	0.018	78.056	10
NWW-ALT-02	Channel – natural, modified	R5	32.808428°, - 116.973703°	0.100	122.016	40
NWW-ALT-03	Channel – natural, modified	R6	32.85901°, -116.900865°	0.007	17.571	20
NWW-ALT-04	Channel – natural, intermittent	R4	32.794786°, - 116.982317°	0.033	243.441	6
NWW-ALT-05	Channel – natural, ephemeral	R6	32.794935°, -116.982292°	0.003	36.626	3
NWW-ALT-06	Channel – natural, perennial	R5	32.781856°, -117.013361°	0.017	68.776	`10
NWW-ALT-07	Channel – natural, intermittent	R4	32.781774°, -117.013369°	0.004	39.757	4
NWW-ALT-08	Channel – natural, intermittent	R4	32.781086 °, -117.037164 °	0.019	100.783	10
			Streambed Subtotal	0.201	707.026	55
			CDFW Water Totals	0.407		

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APPENDIX A

AQUATIC RESOURCES DELINEATION MAP

116°54'6"W 116°54'6"W 116°54'5"W 116°54'5"W 116°54'4"W 116°54'4"W 116°54'4"W 116°54'3"W 116°54'3"W 116°54'2"W 116°54'1"W 116°54'1"W

32°51'34"N 32°51'33"N 32°51'33"N 32°51'32"N 32°51'32"N 32°51'31"N 32°51'31"N

Julian Ave
Julian Ave
Julian Ave
Julian Ave
Park Rd
Lake Jennings Park
Choisser Ln
Choisser Ln

Streambed (CDFW)
NWW-ALT-03
(0.0024 acres)

Photo 6
Photo 7
T-03
40+29

Streambed (CDFW)
NWW-ALT-03
(0.0006 acres)

Non-Wetland Water/Streambed
(RWQCB/CDFW)
NWW-ALT-03
(0.003 acres)

N
0 20 40 Feet
1:480
1 inch equals 40 feet

Appendix A:
Aquatic Resources
El Monte Water Transmission Pipeline

Page 1 of 6

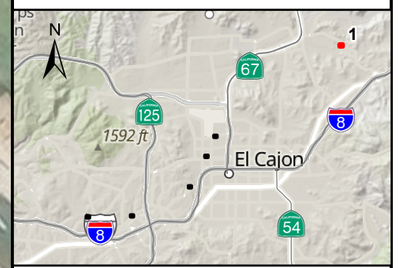
40+29/40+29

San Diego County, California
November 2025

- Work Area 50-foot Buffer
- Work Area
- Photo Points
- Culvert
- OHWM Transect
- Pipeline
- Access Path
- 10-foot Contour
- Jurisdictional Delineation

Potential Jurisdictional Aquatic Resources

- Non-Wetland Water/Streambed (RWQCB/CDFW)
- Streambed (CDFW)



Notes:
1. ESRI World Imagery (4/12/2025)
2. Projection: UTM NAD 83 Z11N
3. Vertical datum NAVD 88
4. Topographic elevation in feet

Prepared by: Kleinfelder Group
Delineated by: DUDEK
Delineation Survey Date: 10/28/2025
Drawn By: Dominika Moore

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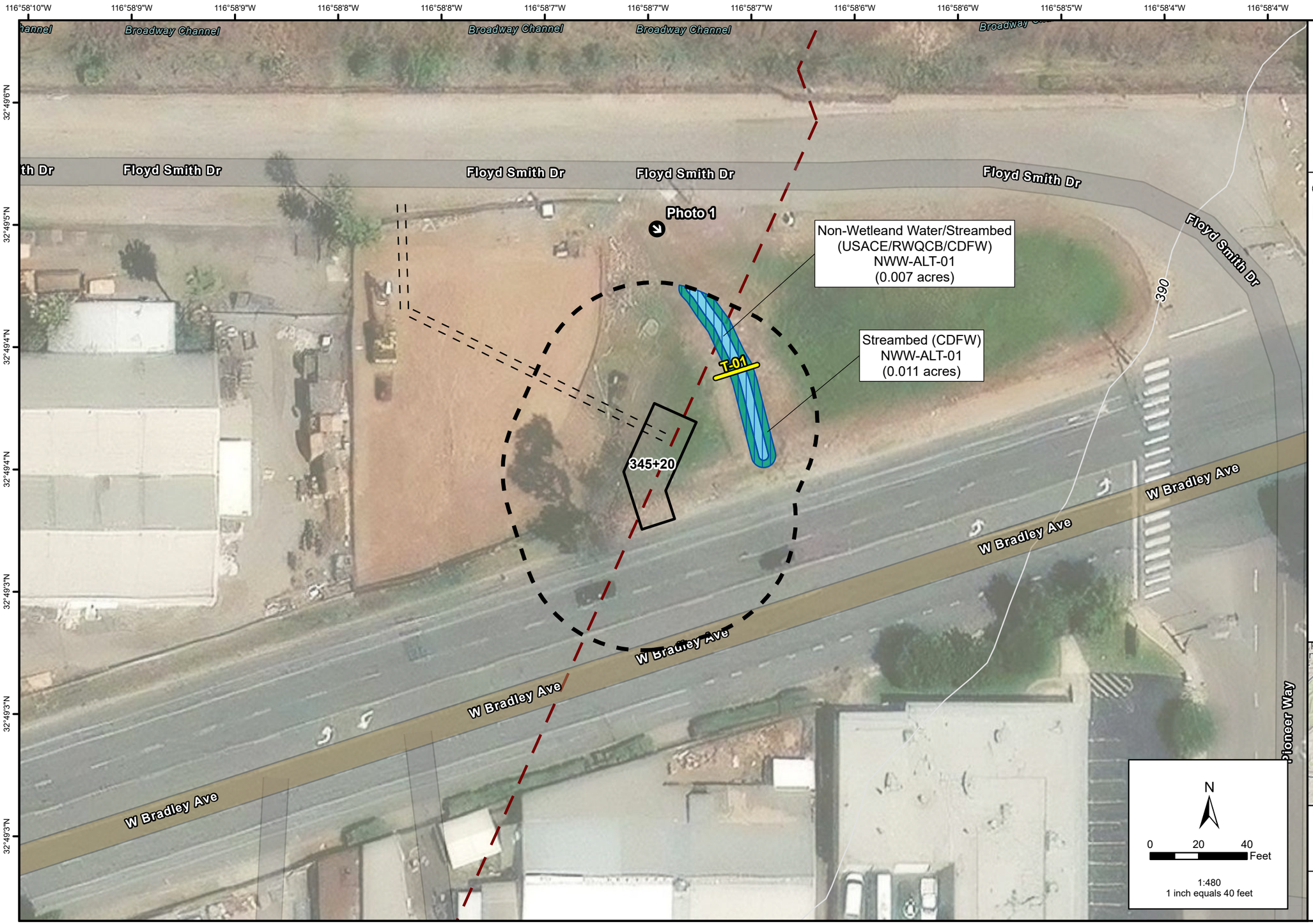


Appendix A:
Aquatic Resources
El Monte Water Transmission Pipeline

Page 2 of 6

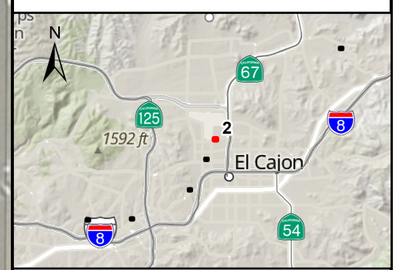
345+20/345+20

San Diego County, California
November 2025

- Work Area 50-foot Buffer
- Work Area
- Photo Points
- OHWM Transect
- Pipeline
- Access Path
- 10-foot Contour
- Jurisdictional Delineation

Potential Jurisdictional Aquatic Resources

- Non-Wetland Water/Streambed (USACE/RWQCB/CDFW)
- Streambed (CDFW)



Notes:
1. ESRI World Imagery (4/12/2025)
2. Projection: UTM NAD 83 Z11N
3. Vertical datum NAVD 88
4. Topographic elevation in feet

Prepared by: Kleinfelder Group
Delineated by: DUDEK
Delineation Survey Date: 10/28/2025
Drawn By: Dominika Moore

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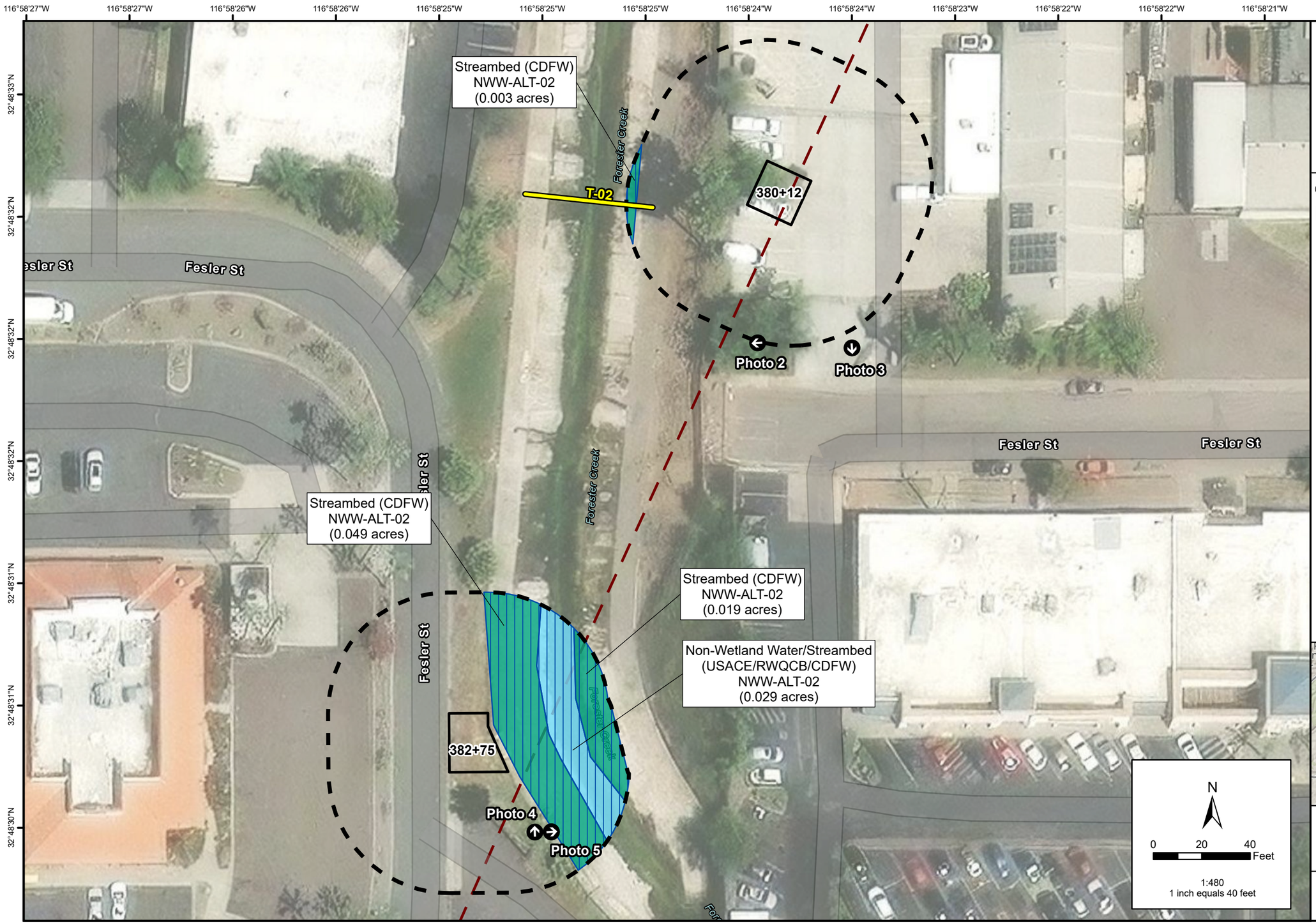
Created By:dlmoore Document Path: G:\Other_Cult\2020\585_El_Monte_PH1\El_Monte_2025_PH1.aprx



Appendix A:
Aquatic Resources
El Monte Water Transmission Pipeline

Page 3 of 6

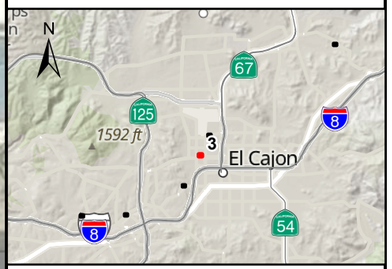
380+15/380+12, 382+78/382+75

San Diego County, California
November 2025

- Work Area 50-foot Buffer
- Work Area
- Photo Points
- OHWM Transect
- Pipeline
- Access Path
- 10-foot Contour
- Jurisdictional Delineation

Potential Jurisdictional Aquatic Resources

- Non-Wetland Water/Streambed (USACE/RWQCB/CDFW)
- Streambed (CDFW)



Notes:
1. ESRI World Imagery (4/12/2025)
2. Projection: UTM NAD 83 Z11N
3. Vertical datum NAVD 88
4. Topographic elevation in feet

Prepared by: Kleinfelder Group
Delineated by: DUDEK
Delineation Survey Date: 10/28/2025
Drawn By: Dominika Moore

Created By: dmoore Document Path: G:\Other_Cult\20203585_El_Monte_PH1\El_Monte_2025_PH1.aprx

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116°58'59"W 116°58'58"W 116°58'58"W 116°58'57"W 116°58'57"W 116°58'57"W 116°58'56"W 116°58'56"W 116°58'55"W 116°58'54"W 116°58'54"W 116°58'53"W

32°47'43"N 32°47'42"N 32°47'42"N 32°47'42"N 32°47'41"N 32°47'41"N 32°47'40"N

610 600 590 580 570 560 560

W Main St W Main St W Main St W Main St W Main St

Non-Wetland Water/Streambed
(RWQCB/CDFW)
NWW-ALT-05
(0.002 acres)

Streambed (CDFW)
NWW-ALT-05
(0.001 acres)

Photo 10

Photo 9

Photo 8

T-05

T-04

439+17

Photo 11

Streambed (CDFW)
NWW-ALT-04
(0.011 acres)

SDAM-01

Non-Wetland Water/Streambed
(USACE/RWQCB/CDFW)
NWW-ALT-04
(0.021 acres)

N

0 20 40 Feet

1:480
1 inch equals 40 feet

Appendix A:
Aquatic Resources
El Monte Water Transmission Pipeline

Page 4 of 6

439+20/439+17

San Diego County, California
November 2025

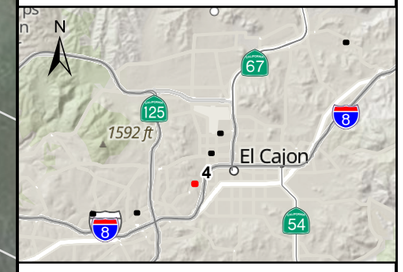
- Work Area 50-foot Buffer
- Work Area
- Photo Points
- Culvert
- OHWM Transect
- SDAM Transect
- Pipeline
- Access Path
- 10-foot Contour
- Jurisdictional Delineation

Potential Jurisdictional Aquatic Resources

- Non-Wetland Water/Streambed (RWQCB/CDFW)
- Non-Wetland Water/Streambed (USACE/RWQCB/CDFW)
- Streambed (CDFW)
- Riparian (CDFW) (0.21 acres)

Non-Jurisdictional Resources

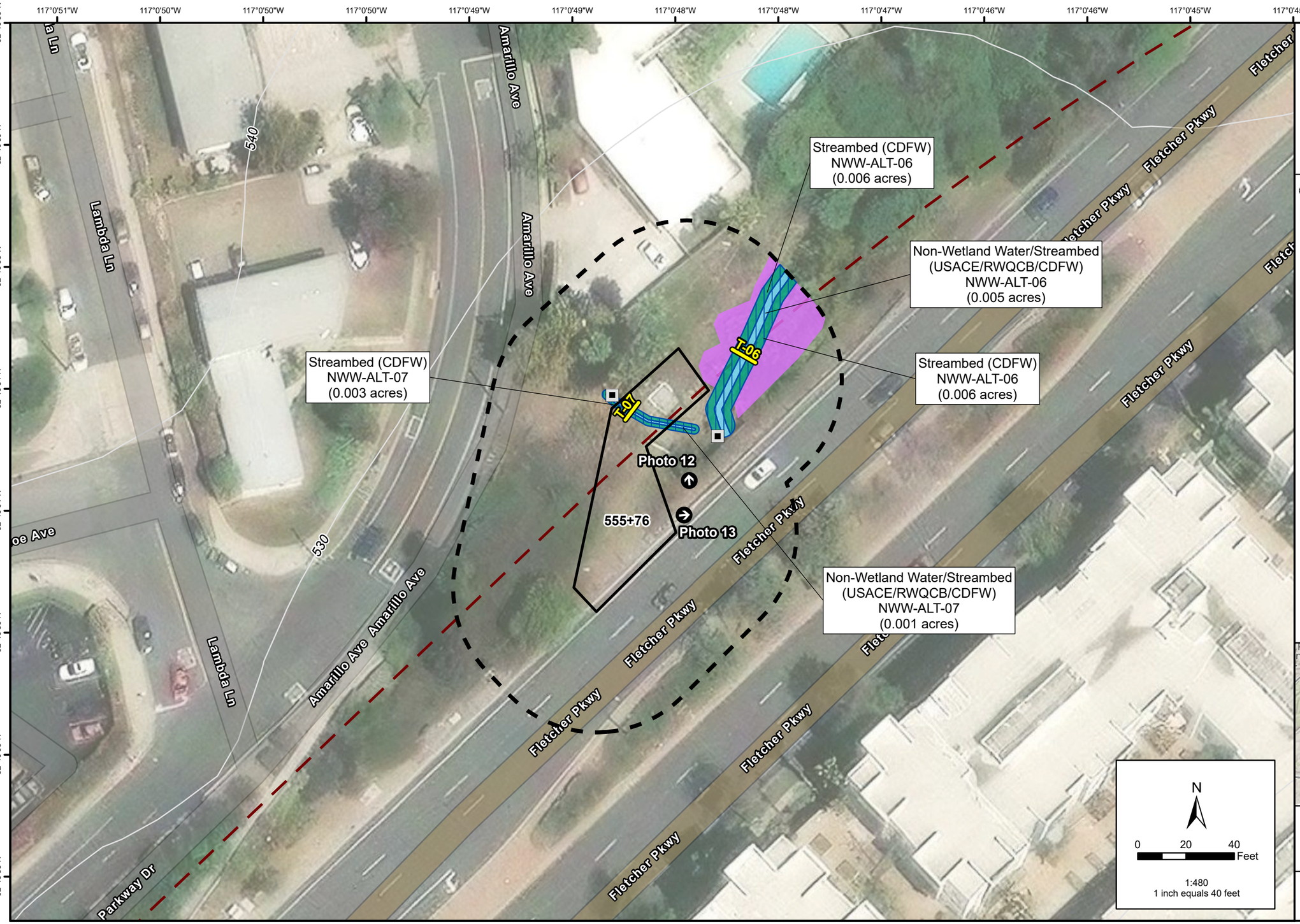
- Erosional Feature



Notes:
1. ESRI World Imagery (4/12/2025)
2. Projection: UTM NAD 83 Z11N
3. Vertical datum NAVD 88
4. Topographic elevation in feet

Prepared by: Kleinfelder Group
Delineated by: DUDEK
Delineation Survey Date: 10/28/2025
Drawn By: Dominika Moore

KLEINFELDER
Bright People. Right Solutions.



Appendix A:
Aquatic Resources
El Monte Water Transmission Pipeline

Page 5 of 6

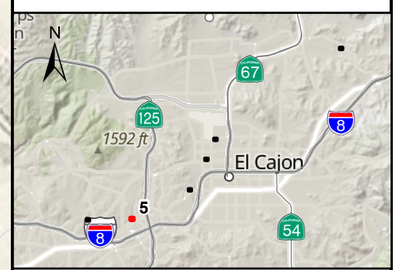
555+79/555+76

San Diego County, California
November 2025

- Work Area 50-foot Buffer
- Work Area
- Photo Points
- Culvert
- OHWM Transect
- Pipeline
- Access Path
- 10-foot Contour
- Jurisdictional Delineation

Potential Jurisdictional Aquatic Resources

- Non-Wetland Water/Streambed (USACE/RWQCB/CDFW)
- Streambed (CDFW)
- Riparian (CDFW) (0.21 acres)



Notes:
1. ESRI World Imagery (4/12/2025)
2. Projection: UTM NAD 83 Z11N
3. Vertical datum NAVD 88
4. Topographic elevation in feet

Prepared by: Kleinfelder Group
Delineated by: DUDEK
Delineation Survey Date: 10/28/2025
Drawn By: Dominika Moore

KLEINFELDER
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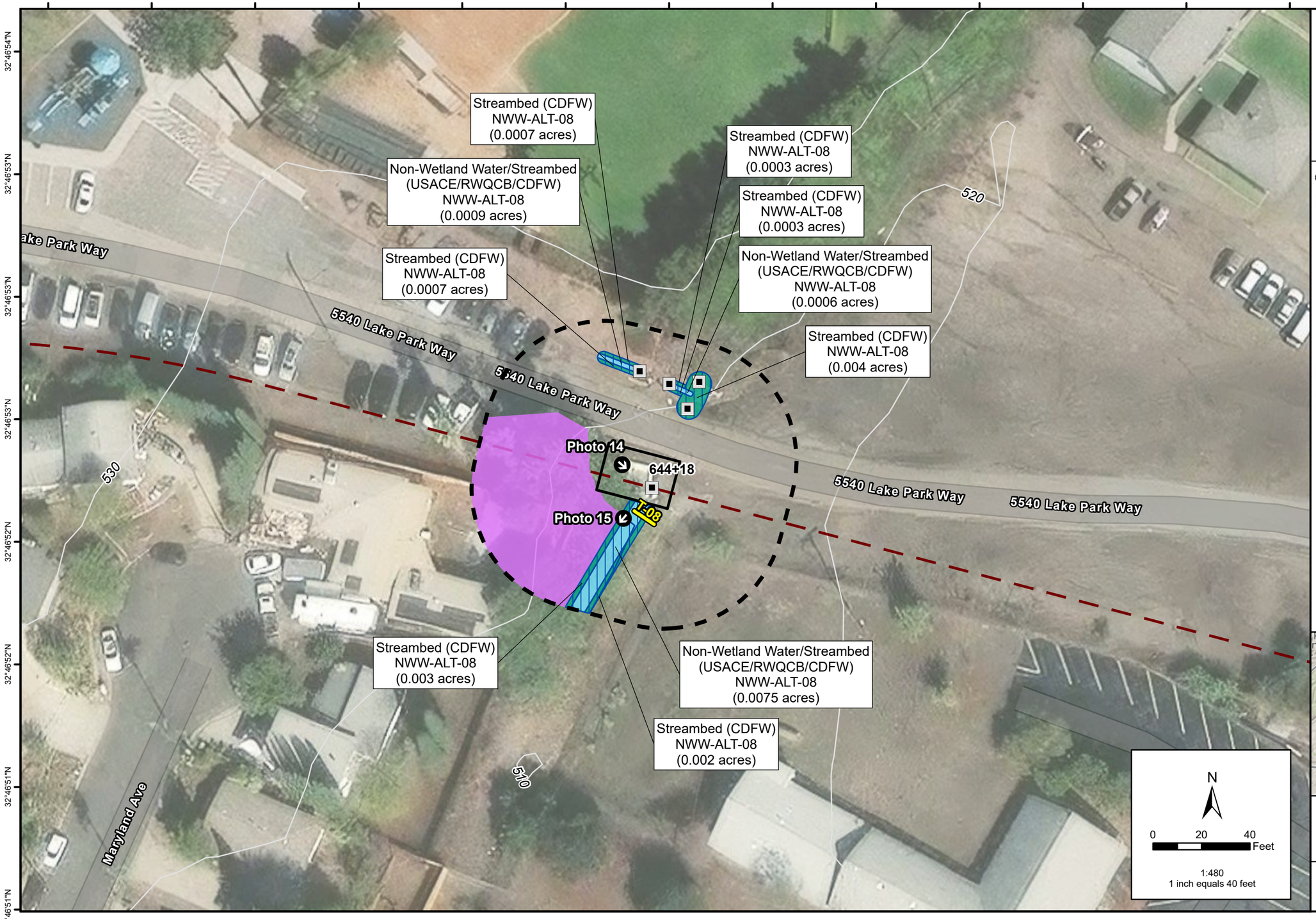

Appendix A:
Aquatic Resources
El Monte Water Transmission Pipeline

Page 6 of 6

644+21/644+18

San Diego County, California
November 2025

- Work Area 50-foot Buffer
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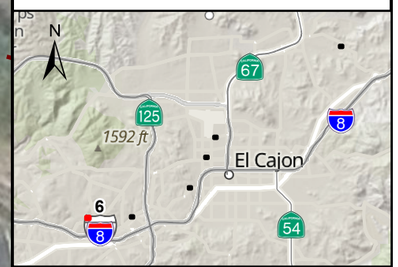

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Prepared by: Kleinfelder Group
Delineated by: DUDEK
Delineation Survey Date: 10/28/2025
Drawn By: Dominika Moore

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APPENDIX B

SOILS REPORT

United States Department of Agriculture

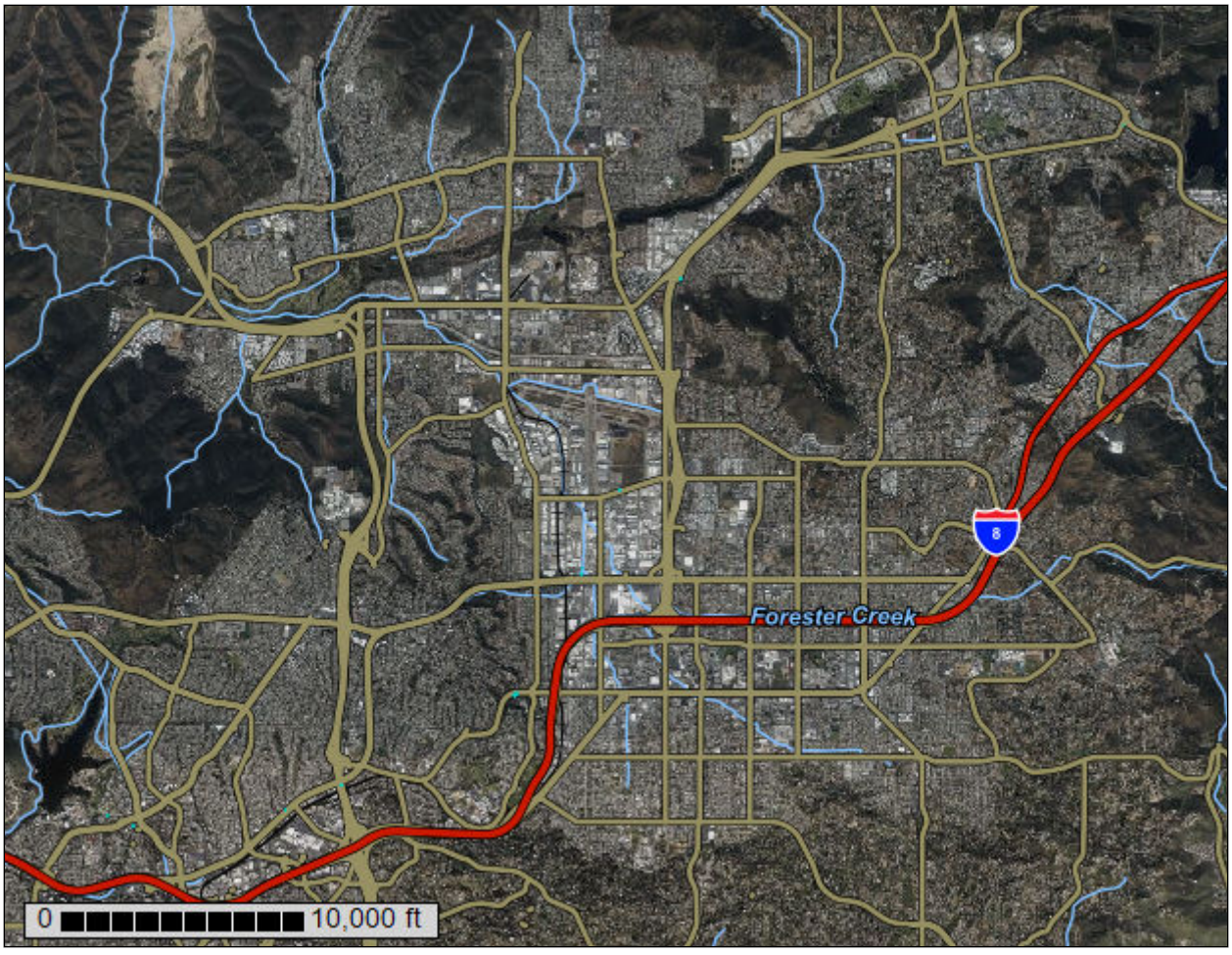
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Diego County Area, California

El Monte Water Transmission Pipeline Rehabilitation Project



November 21, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

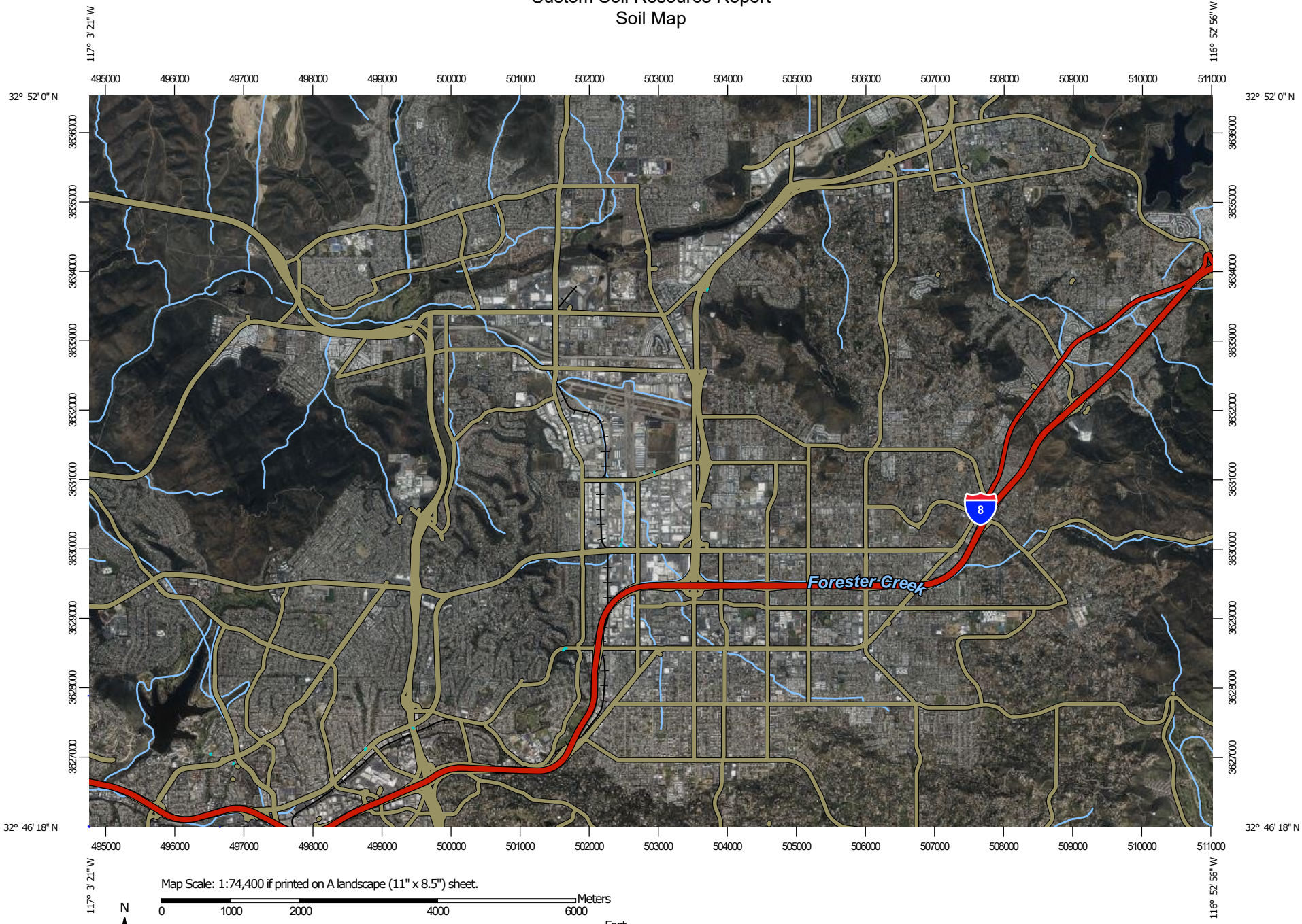
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 21, Sep 8, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 24, 2022—Sep 1, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DaC	Diablo clay, 2 to 9 percent slopes	0.1	20.9%
DcD	Diablo-Urban land complex, 5 to 15 percent slopes	0.1	18.7%
GrB	Greenfield sandy loam, 2 to 5 percent slopes	0.0	1.0%
PeC2	Placentia sandy loam, 5 to 9 percent slopes, eroded	0.0	0.3%
PfC	Placentia sandy loam, thick surface, 2 to 9 percent slo pes	0.0	3.8%
RaB	Ramona sandy loam, 2 to 5 percent slopes	0.0	1.4%
RfF	Redding cobbly loam, dissected, 15 to 50 percent slopes	0.1	27.7%
RhC	Redding-Urban land complex, 2 to 9 percent slopes	0.1	14.0%
RhE	Redding-Urban land complex, 9 to 30 percent slopes	0.1	11.1%
Rm	Riverwash	0.0	0.9%
Totals for Area of Interest		**0.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Diego County Area, California

DaC—Diablo clay, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hbb8
Elevation: 30 to 3,000 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 200 to 320 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Diablo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Diablo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous sandstone and shale

Typical profile

H1 - 0 to 15 inches: clay
H2 - 15 to 32 inches: clay
H3 - 32 to 36 inches: weathered bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 24 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F019XG913CA - Loamy Hills <30"ppt
Hydric soil rating: No

Minor Components

Altamont

Percent of map unit: 10 percent

Hydric soil rating: No

Linne

Percent of map unit: 3 percent
Hydric soil rating: No

Olivenhain

Percent of map unit: 2 percent
Hydric soil rating: No

DcD—Diablo-Urban land complex, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hbbf
Elevation: 30 to 3,000 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 200 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition

Diablo and similar soils: 50 percent
Urban land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Diablo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous sandstone and shale

Typical profile

H1 - 0 to 15 inches: clay
H2 - 15 to 32 inches: clay
H3 - 32 to 36 inches: weathered bedrock

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 24 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F019XG913CA - Loamy Hills <30"ppt
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

GrB—Greenfield sandy loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: hbcb
Elevation: 100 to 1,500 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Greenfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenfield

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 6 inches: sandy loam
H2 - 6 to 34 inches: sandy loam
H3 - 34 to 66 inches: stratified loamy coarse sand to sandy loam

Properties and qualities

Slope: 2 to 5 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: No

Minor Components

Visalia

Percent of map unit: 5 percent
Hydric soil rating: No

Ramona

Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga

Percent of map unit: 5 percent
Hydric soil rating: No

PeC2—Placentia sandy loam, 5 to 9 percent slopes, eroded

Map Unit Setting

National map unit symbol: hbfk
Elevation: 50 to 2,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Placentia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placentia

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: sandy loam
H2 - 10 to 32 inches: sandy clay
H3 - 32 to 63 inches: clay loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R019XD061CA - CLAYPAN
Hydric soil rating: No

Minor Components

Bonsall

Percent of map unit: 5 percent
Hydric soil rating: No

Fallbrook

Percent of map unit: 5 percent
Hydric soil rating: No

Ramona

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

PfC—Placentia sandy loam, thick surface, 2 to 9 percent slo pes

Map Unit Setting

National map unit symbol: hbfn
Elevation: 50 to 2,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Placentia and similar soils: 85 percent
Minor components: 11 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placentia

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 13 inches: sandy loam
H2 - 13 to 34 inches: clay

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R019XD061CA - CLAYPAN
Hydric soil rating: No

Minor Components

Bonsall
Percent of map unit: 5 percent
Hydric soil rating: No

Ramona
Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed, ponded
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

RaB—Ramona sandy loam, 2 to 5 percent slopes

Map Unit Setting
National map unit symbol: hbfr
Elevation: 250 to 3,500 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Ramona and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 17 inches: sandy loam
H2 - 17 to 60 inches: sandy clay loam
H3 - 60 to 74 inches: fine sandy loam

Properties and qualities
Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: No

Minor Components

Greenfield

Percent of map unit: 10 percent
Hydric soil rating: No

Plecentia

Percent of map unit: 5 percent
Hydric soil rating: No

RfF—Redding cobbly loam, dissected, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: hbg0
Elevation: 130 to 1,000 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 260 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Redding and similar soils: 85 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Redding

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 10 inches: cobbly loam

H2 - 10 to 20 inches: cobbly clay
H3 - 20 to 30 inches: indurated

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R019XD062CA - ACID CLAYPAN
Hydric soil rating: No

Minor Components

Oliventain

Percent of map unit: 10 percent
Hydric soil rating: No

RhC—Redding-Urban land complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hbg1
Elevation: 100 to 1,500 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition

Redding and similar soils: 50 percent
Urban land: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Redding

Setting

Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 15 inches: gravelly loam
H2 - 15 to 30 inches: gravelly clay
H3 - 30 to 45 inches: indurated

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches; 20 to 45 inches to duripan
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R019XG909CA - Terrace
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Oliventain

Percent of map unit: 5 percent
Hydric soil rating: No

RhE—Redding-Urban land complex, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: hbg2
Elevation: 100 to 1,500 feet
Mean annual precipitation: 14 to 25 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition

Redding and similar soils: 50 percent
Urban land: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Redding

Setting

Landform: Marine terraces
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 15 inches: gravelly loam
H2 - 15 to 30 inches: gravelly clay
H3 - 30 to 45 inches: indurated

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R019XG909CA - Terrace
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Oliventain

Percent of map unit: 5 percent
Hydric soil rating: No

Rm—Riverwash

Map Unit Setting

National map unit symbol: 2zwsk
Elevation: 700 to 2,900 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Drainageways
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy, gravelly, or cobbly alluvium derived from mixed sources

Typical profile

A - 0 to 6 inches: gravelly coarse sand
C - 6 to 60 inches: stratified very gravelly coarse sand to gravelly sand

Properties and qualities

Slope: 0 to 4 percent
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 60 to 72 inches
Frequency of flooding: Occasional
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: R019XG905CA - Riparian

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APPENDIX C

AQUATIC RESOURCES DELINEATION FIELD DATA FORMS

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #:	Site Name: NWW-ALT-C1	Date and Time:
Location (lat/long): 345+20/345+20	Investigator(s):	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Ditch/canal w/ standing water + saturation

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Appears to be constructed in upland. Water source unknown
Earthen w/ disturbed ruderal veg

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* x
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [x] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids/ forbs
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [x] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

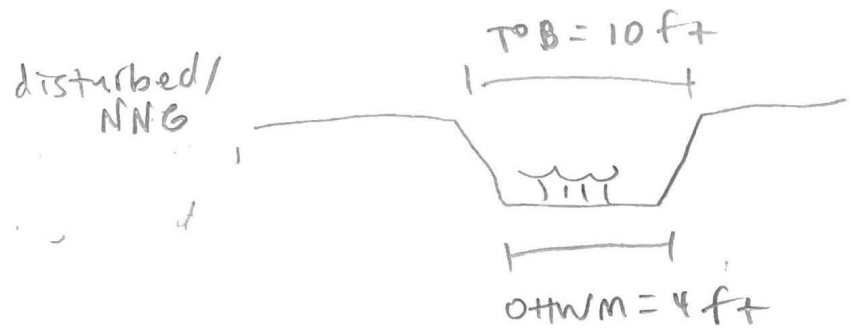
Print Form | Save As | E-mail

Project ID #: _____

Step 5 Describe rationale for location of OHWM

clearly defined bed + bank, change in veg, saturation.

Additional observations or notes



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	see photo apperdix T-01

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #: El Monte Pipeline | Site Name: NWW-ALT-02 | Date and Time: 10/28/25

Location (lat/long): 345+20/345+20 | Investigator(s):

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

concrete-lined channel w/ flowing water. Surrounded by urban/dev. R4SBCx

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

channelized portion of forester Creek

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** ▼
  - [x] *on the bank:* x ▼
  - [ ] *undercut bank:* ▼
  - [ ] *valley bottom:* ▼
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [ ] **Change in vegetation type and/or density:**

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [ ] *vegetation absent to:*
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [x] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

Print Form | Save As | E-mail

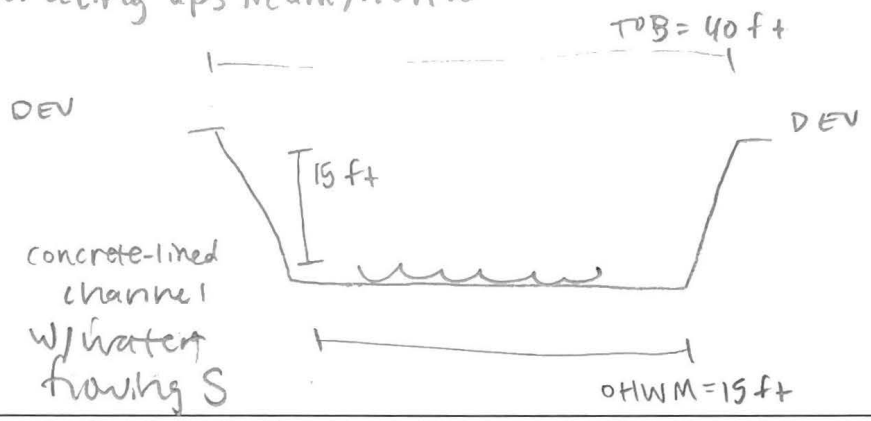
Project ID #: _____

Step 5 Describe rationale for location of OHWM

clear bed + bank, water flowing

Additional observations or notes

View facing upstream/north



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: see photo appendix

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description

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U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #:	Site Name: NWW-ALT-03	Date and Time:
Location (lat/long): 40+29 / 40+29	Investigator(s):	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

ditch/canal

R4SBC

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Appears to be constructed in upland but mapped by NWI as natural drainage flowing east into Lake Jennings. Farmen

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* x
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids / forbs
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

Print Form | Save As | E-mail

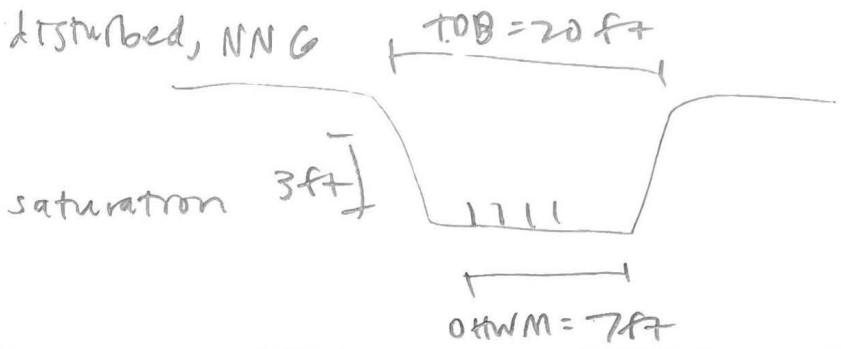
Project ID #: _____

Step 5 Describe rationale for location of OHWM

clearly defined bed and bank, change in veg.

Additional observations or notes

looking west upstream



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	See photo appendix T-03

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #:	Site Name: NWW-ALT-04	Date and Time:
Location (lat/long): 439+20 / 439+17	Investigator(s):	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Dry at time of survey

SDAM = intermittent

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Drainage has in-stream bank stabilization grids for erosion control. Receives flows from 2 erosional features and epremeral channel.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* x
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [x] **Shelving:**
  - [x] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [x] **Channel bar:**
  - [x] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [x] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [x] **Changes in particle-sized distribution:**
  - [ ] *transition from* silt to cobble
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* riparian
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

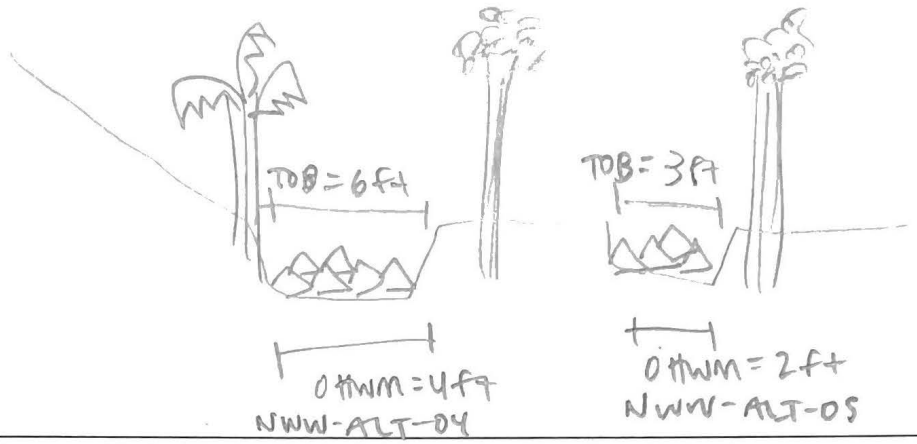
Print Form | Save As | E-mail

Project ID #: _____

Step 5 Describe rationale for location of OHWM

well defined bed + bank

Additional observations or notes



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	See photo appendix T-04

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #:

Site Name: NWW-ALT-05

Date and Time: 10/28/25

Location (lat/long): 439+20/439+17

Investigator(s): Anna Touchstone

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Dry at time of survey, some recent rain

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Drainage originates off-site to north, likely channels runoff from adjacent development. Flows under W main st via culvert and flows south into NWW-ALT-04

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** ▼
  - [x] *on the bank:* x ▼
  - [ ] *undercut bank:* ▼
  - [ ] *valley bottom:* ▼
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [x] **Changes in particle-sized distribution:**
  - [x] *transition from* silt to cobble
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [ ] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [ ] *vegetation absent to:*
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

Print Form | Save As | E-mail

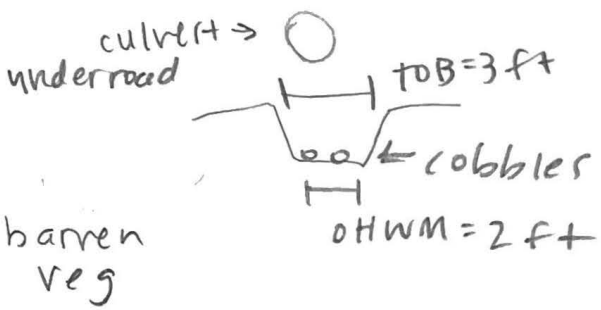
Project ID #: _____

Step 5 Describe rationale for location of OHWM

well defined bed + bank. some exposed cobbles at bottom

Additional observations or notes

facing N



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	see photo appendix for T-04

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX

Approval Expires:

Project ID #:	Site Name: NWW-ALT-06	Date and Time:
Location (lat/long): 555+79 / 555+76	Investigator(s):	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

flowing water at time of survey

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

perennial channel flows from NE to SW across site. Supports non-native riparian corridor and emergent vegetation

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** ▼
  - [x] *on the bank:* x ▼
  - [ ] *undercut bank:* ▼
  - [ ] *valley bottom:* ▼
  - [ ] Other: _____
- [x] **Shelving:**
  - [x] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [x] **Instream bedforms and other bedload transport evidence:**
  - [x] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [x] **Changes in particle-sized distribution:**
  - [ ] *transition from* silt to cobble
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* non-native riparian
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [x] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

Print Form | Save As | E-mail

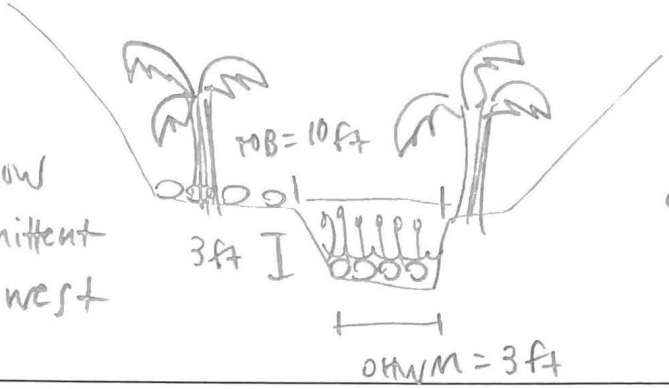
Project ID #: _____

Step 5 Describe rationale for location of OHWM

well defined bed and bank.

Additional observations or notes

looking NE upstream



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	see photo appendix T-06

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #:	Site Name: NWW-ALT-07	Date and Time: 10/28/25
Location (lat/long):	Investigator(s):	

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?

inundated at time of field survey

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

originates from culvert under Amarillo ave, flows south into another culvert under Fletcher Pkwy. Contains washed out pipe/culvert under access road

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [x] **Break in slope**
  - [x] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: _____
- [ ] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [ ] *human-made berms or levees*
  - [ ] *other berms:* _____
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [x] **Change in vegetation type from** emergent wetland (mowed) **to** upland
- [ ] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [ ] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [ ] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe:

Project ID #: ~

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

OHWM mapped as low flow channel within emergent veg Approx. 1ft wide. Looks like feature was culverted under unpared access route at some point but the culvert has washed out.

Additional observations or notes

Attach an imagery log of the site.

Imagery log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
	see photo appendix

Print Form | Save As | E-mail

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

OMB Control No. 0710-XXXX
Approval Expires:

Project ID #: El Monte Pipeline | Site Name: NWW-ALT-08 | Date and Time: 10/28/25

Location (lat/long): 644+21/644+18 | Investigator(s): Anna Touchstone

Step 1 Site overview from remote and online resources
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?

intermittent channel

Step 2 Site conditions during field assessment

First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Channel originates off-site to the north and flows through concrete culverts. Some standing water and saturation.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

OHWM. Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** x
  - [ ] *on the bank:*
  - [x] *undercut bank:* x
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., poofs, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [x] **Changes in particle-sized distribution:**
  - [x] *transition from* silt *to* cobble
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* disturbed riparian
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [x] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators?

Describe:

Step 4 Is additional information needed to support this determination?

- [ ] Yes
- [x] No

If yes, describe and attach information to datasheet:

Print Form | Save As | E-mail

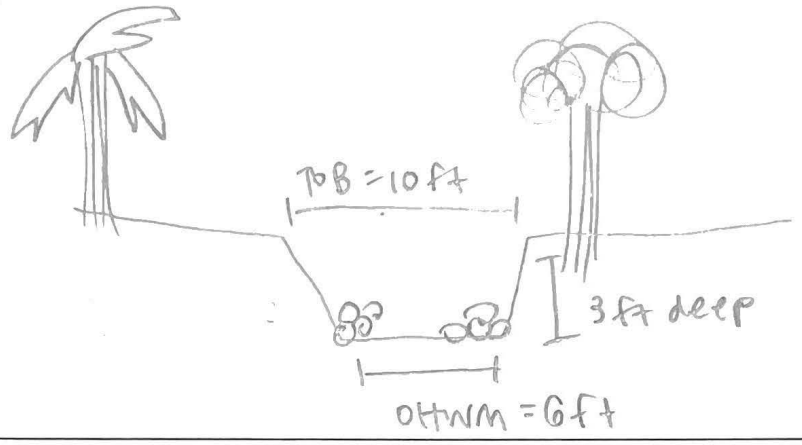
Project ID #: _____

Step 5 Describe rationale for location of OHWM

clearly defined bed and bank. Sediment sorting and veg absent within streambed. Disturbed riparian corridor comprised of Schinus terebinthifolia and Washingtonia filifera.

Additional observations or notes

looking W downstream



Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	see photo appendix - T-08

Arid West Streamflow Duration Assessment Method

General site information

Project name or number: El Monte Pipeline

Site code or identifier: 439+20/439+17

Assessor(s): Anna Touchstone

Waterway name: NWW-ALT-04

Visit date: 10/28/25

Current weather conditions (check one):
- ☐ Storm/heavy rain
- ☐ Steady rain
- ☐ Intermittent rain
- ☐ Snowing
- ☐ Cloudy (___ % cover)
- ☑ Clear/sunny

Notes on current or recent weather conditions (e.g., precipitation in prior week):

Coordinates at downstream end (decimal degrees):

Lat (N): 32.7949173

Long (E): -116.98204 68

Datum: WGS 84

Surrounding land-use within 100 m (check one or two):
- ☑ Urban/industrial/residential
- ☐ Agricultural (farmland, crops, vineyards, pasture)
- ☐ Developed open-space (e.g., golf course)
- ☐ Forested
- ☑ Other natural
- ☐ Other: _____

Describe reach boundaries:

Reach is dry within rewew area. Recieves stormwater flows from side channel and erosional feature

Mean bankfull channel width (m): 1.5 (Indicator 1)

_____ _____ _____

Reach length (m): 70m
40x width
min 40 m
max 200 m

Site photographs:
Enter photo ID or check if completed.

Top down: ✓ Mid down: ✓

Mid up: ✓ Bottom up: ✓

Disturbed or difficult conditions (check all that apply):
- ☐ Recent flood or debris flow
- ☐ Stream modifications (e.g., channelization)
- ☐ Diversions
- ☐ Discharges
- ☐ Drought
- ☐ Vegetation removal/limitations
- ☐ Other (explain in notes)
- ☐ None

Notes on disturbances or difficult site conditions:

. in-stream bank stabilization grids
. unhoused encampment

Observed hydrology:

0 % of reach with surface flow

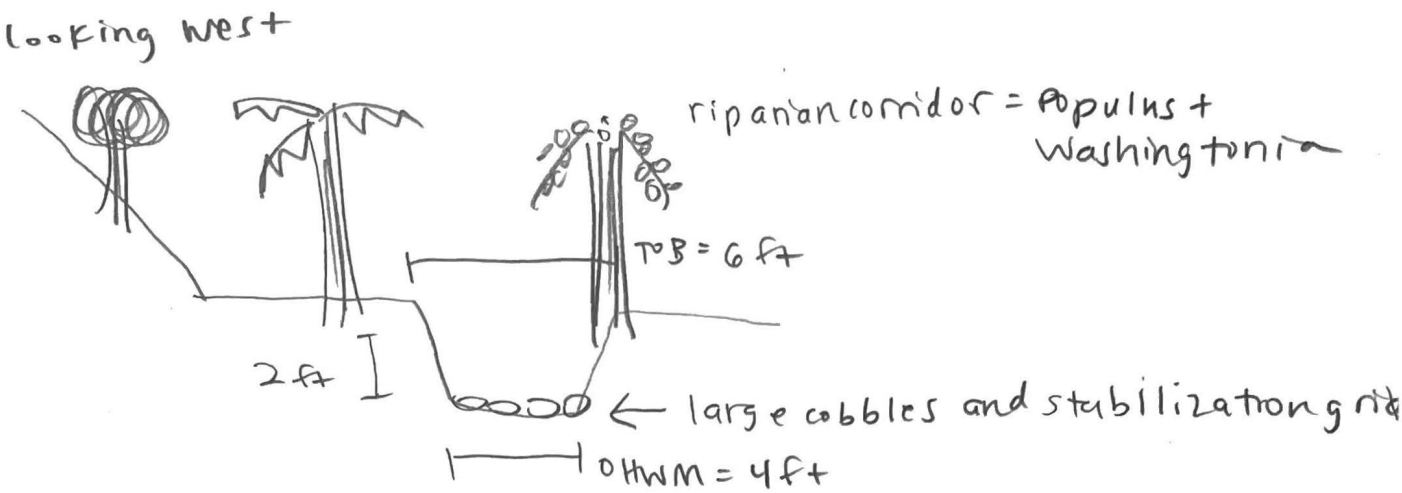
0 % of reach with sub-surface or surface flow

0 # of isolated pools

Comments on observed hydrology:

OHWM indicators included shelfing, sediment sorting, exposed roots, bed + bank, break in slope, change in veg cover/composition

Site sketch:



1. Mean bankfull channel width (m) (nearest 0.1 m, copy from first page of field form)

1.5

Notes about mean bankfull channel width:

2. Aquatic macroinvertebrates: Abundance of perennial indicator taxa

Collect aquatic macroinvertebrates from at least 6 locations in the assessment reach, searching all suitable habitats on the streambed (including dry habitats, if present). Determine total abundance of individuals in perennial indicator families listed below, such that no one family counts for more than 11 individuals in the total.

Ephemeroptera	Plecoptera	Trichoptera	Coleoptera
Ephemerellidae (spiny crawler mayflies)	Chloroperlidae (green stoneflies)	Brachycentridae (humpless casemakers)	Elmidae (riffle beetles)
Heptageniidae (flathead mayflies)	Perlidae (common stoneflies)	Glossosomatidae (saddle casemakers)	
Leptohyphyidae (little stout crawler mayflies)		Hydropsychidae (common netspinners)	
Leptophlebiidae (prong-gilled mayflies)		Rhyacophilidae (free-living caddisflies)	

Mark the appropriate box for the number of perennial indicator individuals observed.

- ☑ No perennial indicator taxa detected
- ☐ 1 to 4 perennial indicator individuals
- ☐ 5 to 9 perennial indicator individuals
- ☐ 10 to 19 perennial indicator individuals
- ☐ 20 or more perennial indicator individuals

Check if applicable: ☑ No aquatic macroinvertebrates in assessment area

Notes on perennial indicator taxa:

3. Slope

Using a clinometer or other device, record the slope as a percent, up to the nearest half-percent.

approx 1 %

Notes about slope:

4. Number of hydrophytic plant species

Record up to 6 hydrophytic plant species (FACW or OBL in the appropriate regional wetland plant list, depending on location) within the assessment area: **within the channel or up to one half-channel width outside the channel**. Explain in notes if species has an odd distribution (e.g., one individual or small patch, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID or check if photos are taken.

2 Number of hydrophytic plant species identified from the assessment reach without odd distribution. Enter zero if none were found.

Check if applicable: ☐ No vegetation in assessment area

Species	Odd distribution?	Notes	Photo ID
Populus fremontii			
Washingtonia ~~filifera~~ robusta			

Notes on hydrophytic vegetation:

5. Prevalence of rooted upland plants in the streambed

2.5 **(0-3)**

Half-scores (0.5, 1.5, and 2.5) are allowed.

Evaluate the prevalence of rooted upland plants (i.e., plants rated as FAC, FACU, UPL, NI, or not listed in the regionally appropriate National Wetland Plant List) in the streambed.

0 (Poor) Rooted upland plants are *prevalent* within the streambed/thalweg.
1 (Weak) Rooted upland plants are *consistently dispersed* throughout the streambed/thalweg.
2 (Moderate) There are *a few* rooted upland plants present within the streambed/thalweg.
3 (Strong) Rooted upland plants are *absent* from the streambed/thalweg.

Upland Species	Notes	Photo ID
Schinus terebinthifolia		
Quercus agrifolia		
Acacia spp.		

Notes on rooted upland plants:

6. Algal cover

Mark the appropriate box for the percent of the streambed covered by live or dead algae on the streambed.

- ☑ Not detected
- ☐ ≤2% cover
- ☐ 2 to 10% cover
- ☐ 10 to 40% cover
- ☐ >40% cover
- ☐ Check here if algae *exclusively* appears to have been deposited from an upstream source, and *no* local growth is evident.

Notes on algal cover on the streambed:

7. Differences in vegetation

2 **(0-3)** *Half-scores (0.5, 1.5, 2.5) are allowed.*	Compare the composition and density of plants growing on the banks and riparian areas to plants in the adjacent uplands. For this indicator, an upland species is not defined by its wetland indicator status, but rather by its location relative to the channel. 0 (Poor) No compositional or density differences in vegetation are present between the banks and the adjacent uplands. 1 (Weak) Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. 2 (Moderate) A distinct riparian corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. 3 (Strong) Dramatic compositional differences in vegetation are present between the banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach. Riparian, aquatic, or wetland species dominate the length of the reach.
Notes on differences in vegetation:	

8. Riffle-pool sequence

0 (0-3) *Half-scores (0.5, 1.5, 2.5) are allowed.*	Evaluate the prevalence of riffles, pools, and other microhabitats in the streambed. 0 (Poor) No riffle-pool sequences observed. 1 (Weak) Mostly has areas of pools or riffles. 2 (Moderate) Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult to observe. 3 (Strong) Demonstrated by a frequent number of structural transitions (e.g., riffles followed by pools) along the entire reach. There is an obvious transition between riffles and pools.
Notes about riffle-pool sequence:	

Photo log

Indicate if any other photographs taken during the assessment:

Photo ID	Description
See photo appendix	

Additional notes about the assessment:

Model classification:

- ☐ Ephemeral
- ☐ At least intermittent
- ☑ Intermittent
- ☐ Less than perennial
- ☐ Perennial
- ☐ Needs more information

APPENDIX D

PHOTOGRAPHS

Photo 1. Work Location 345+20 and a view of NWW-ALT-01, a canal constructed between W Bradley Avenue and Floyd Smith Drive; facing southeast. October 28, 2025.

Photo 2. Work Location 380+15 and a view of NWW-ALT-02, a channelized waterway; facing west. October 28, 2025.

Photo 3. Work Location 380+15, facing south, away from NWW-ALT-02. October 28, 2025.

Photo 4. Work Location 382+78 and a view of NWW-ALT-02; facing north. October 28, 2025.

Photo 5. Work Location 382+78 and a view of NWW-ALT-02; facing east. October 28, 2025.

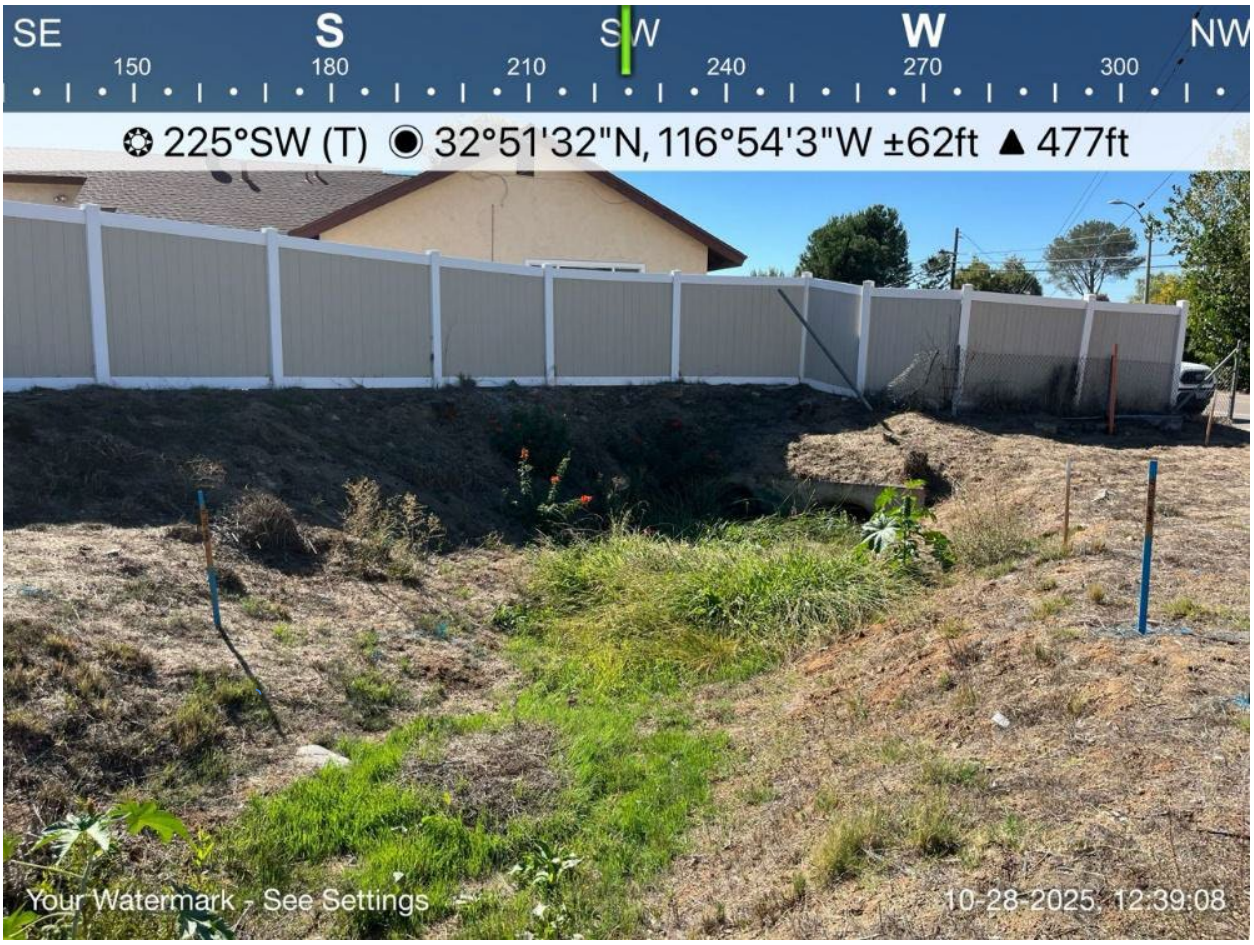


Photo 6. Adjacent to work location at 40+29, NWW-ALT-03 is a drainage feature with soil substrate. View facing southwest. October 28, 2025

Photo 7. Work Location 40+29, with NWW-ALT-03 behind the photographer. View facing west. October 28, 2025.

Photo 8. Work Location 439+20, NWW-ALT-04; view of culvert inlet that directs water from both NWW-ALT-04 and -05 into an underground stormwater system of pipes that are assumed to flow 0.75-miles to a channelized reach of Forester Creek; View facing east. October 28, 2025.

Photo 9. Work Location 439+20. Convergence of intermittent channel NWW-ALT-04 and ephemeral channel NWW-ALT-05; both provide surface flow connections to stormwater culverts. Note existing geogrid and rock installed to reduce erosion. View facing west. October 28, 2025.

Photo 10. Work Location 439+20. NWW-ALT-04 is an intermittent channel aligned along a hillside between a culvert outfall under West Main Street and another stormwater culvert (Photo 9). View facing west by southwest. October 28, 2025.

Photo 11. Work Location 439+20, NWW-ALT-05, an ephemeral channel aligned between culvert outfall under West Main Street and flowing toward NWW-ALT-04; facing north. October 28, 2025.

Photo 12. Work Location 555+79 is to the left of the photo of NWW-ALT-06, a channel associated with a culvert under Fletcher Parkway. View facing north. October 28, 2025.

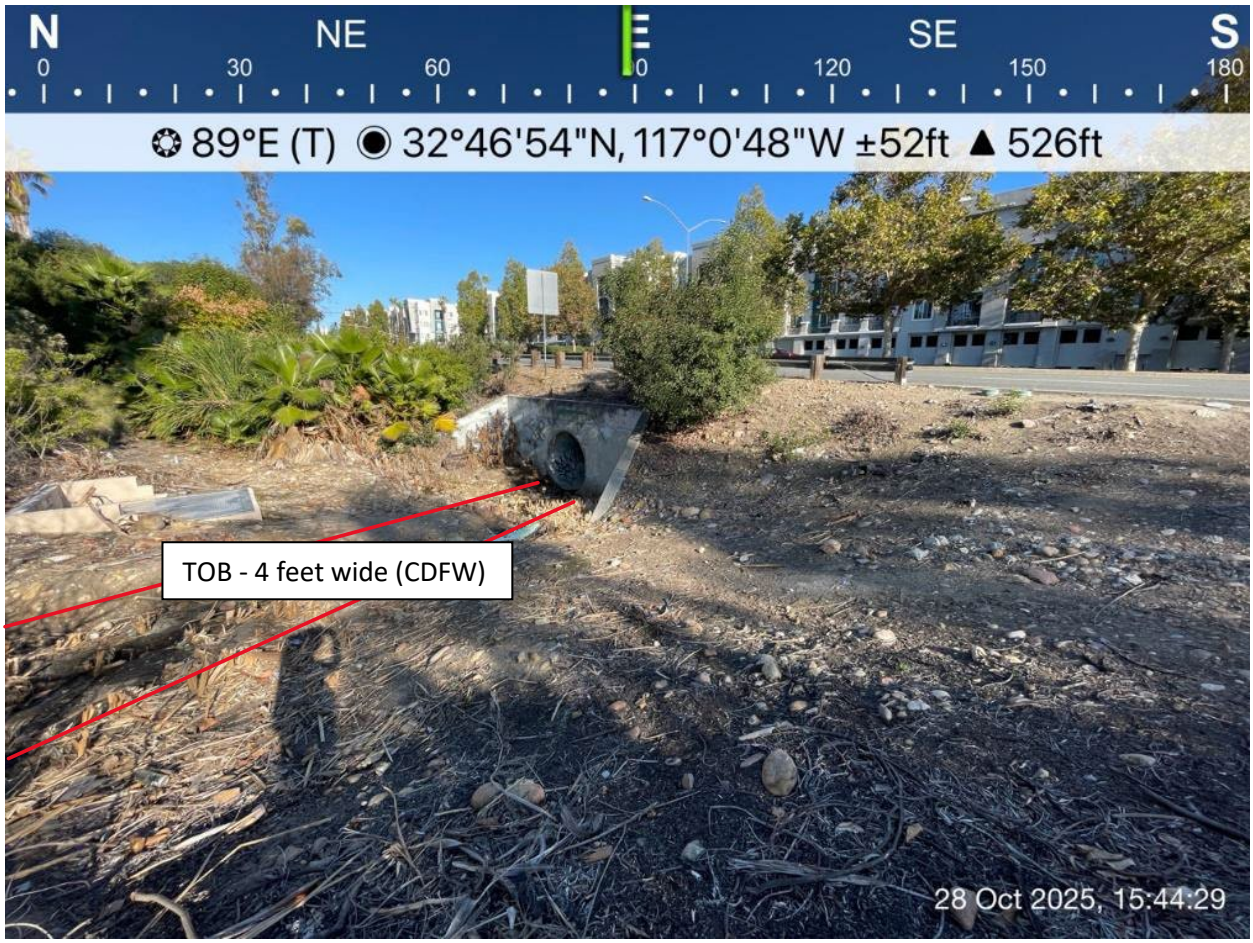


Photo 13. Work Location 555+79 and NWW-ALT-07, an intermittent channel providing stormwater drainage from Parkway Drive toward Fletcher Parkway. View toward Fletcher Parkway of the headwall for culvert associated with features NWW-ALT-06 and -07 (Photo 13); facing east. October 28, 2025.

Photo 14. Work Location 644+21 and view of NWW-ALT-08; facing southeast. October 28, 2025.

Photo 15. Work Location 644+21 and view downstream of NWW-ALT-08, facing southwest. October 28, 2025.

APPENDIX E

AQUATIC RESOURCES DATA SPREADSHEET

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
NWW-ALT-01	CALIFORNIA	R4	RIVERINE	Area	0.007	ACRE	DELIN.PJD-404	32.81789500	-116.96849500	
NWW-ALT-02	CALIFORNIA	R5	RIVERINE	Area	0.029	ACRE	DELIN.PJD-404	32.80842800	-116.97370300	
NWW-ALT-03	CALIFORNIA	R4	RIVERINE	Area	0.003	ACRE	DELIN.PJD-404	32.85901000	-116.90086500	
NWW-ALT-04	CALIFORNIA	R4	RIVERINE	Area	0.021	ACRE	DELIN.PJD-404	32.79478600	-116.98231700	
NWW-ALT-06	CALIFORNIA	R5	RIVERINE	Area	0.005	ACRE	DELIN.PJD-404	32.78185600	-117.01336100	
NWW-ALT-07	CALIFORNIA	R4	RIVERINE	Area	0.003	ACRE	DELIN.PJD-404	32.78176700	116.98204680	
NWW-ALT-08	CALIFORNIA	R4	RIVERINE	Area	0.0096	ACRE	DELIN.PJD-404	32.78108600	117.03716400	