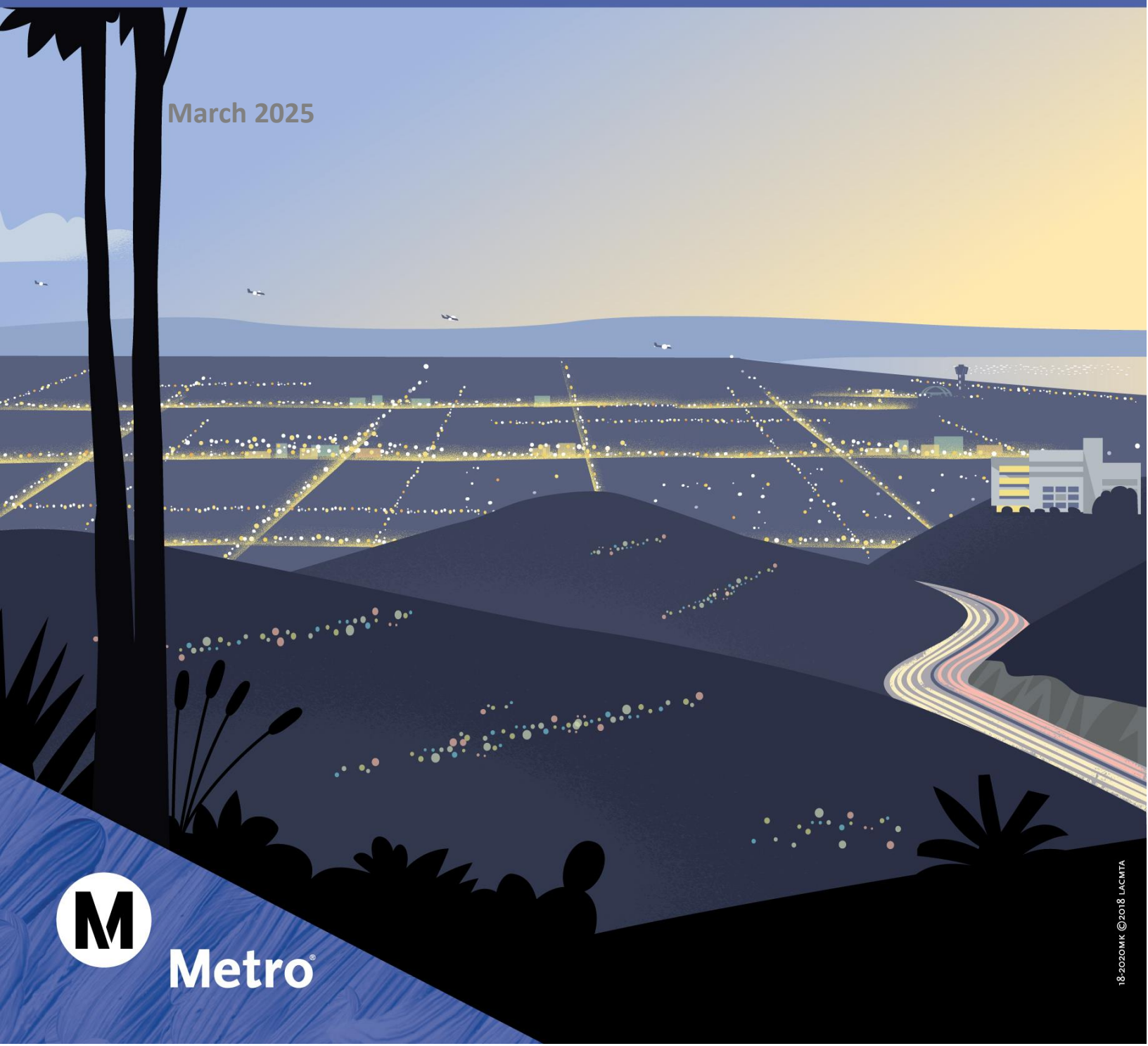
Appendix I. Ecosystems and Biological Resources Technical Report Appendix A with Attachments 1 & 2

SEPULVEDA TRANSIT CORRIDOR PROJECT

Ecosystems and Biological Resources Technical Report Appendix A: Aquatic Resources Delineation

March 2025



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SEPULVEDA TRANSIT CORRIDOR PROJECT

Contract No. AE67085000

Ecosystems and Biological Resources Technical Report: Appendix A: Aquatic Resources Delineation

Task 5.24.11

Prepared for:

Metro

Los Angeles County
Metropolitan Transportation Authority

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March 2025

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Abbreviations and Acronyms

°F	degrees Fahrenheit
amsl	above mean sea level
BTR	Ecosystems and Biological Resources Technical Report
CARCS	California Aquatic Resource Classification System
CARI	California Aquatic Resource Inventory
CDFW	California Department of Fish and Wildlife
CFGC	California Fish and Game Code
CSRL	California Soil Research Lab
CWA	Clean Water Act
CWMW	California Wetland Monitoring Workgroup
ELI	Environmental Law Institute
EPA	U.S. Environmental Protection Agency
ESRI	Environmental Systems Research Institute
FR	Federal Register
GLAC	Greater Los Angeles County
GPS	global positioning system
HTA	HTA Partners
I-405	Interstate 405
JD	Jurisdictional Determination
LADPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water and Power
Metro	Los Angeles County Metropolitan Transportation Authority
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
Project	Sepulveda Transit Corridor Project
RSA	Resource Study Area
RWQCB	Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board

TNW	Traditional Navigable Water
UCLA	University of California, Los Angeles
US-101	U.S. Highway 101
US	United States
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
Valley	San Fernando Valley
WDR	Waste Discharge Requirement
WOTS	waters of the state
WOTUS	Waters of the United States

1 INTRODUCTION

1.1 Project Background

The Sepulveda Transit Corridor Project (Project) is intended to provide a high-capacity rail transit alternative to serve the large and growing travel market and transit needs currently channeled through the Sepulveda Pass and nearby canyon roads between the San Fernando Valley (Valley) and the Westside of Los Angeles. The Project would have a northern terminus with a connection to the Van Nuys Metrolink/Amtrak Station and a southern terminus with a connection to the Los Angeles County Metropolitan Transportation Authority's (Metro) E Line. In addition to providing local and regional connections to the existing and future Metro rail and bus network, the Project is anticipated to improve access to major employment, educational, and cultural centers in the greater Los Angeles area.

In 2019, Metro completed the Sepulveda Transit Corridor Feasibility Study and released the Project's *Final Feasibility Report* (Metro, 2019), which documented the transportation conditions and travel patterns in the Sepulveda corridor; identified mobility problems affecting travel between the Valley and the Westside; and defined the Purpose and Need, goals, and objectives of the Project. Using an iterative evaluation process, the Feasibility Study identified feasible transit solutions that met the Purpose and Need, goals, and objectives of the Project. The Feasibility Study determined that a reliable, high-capacity, fixed guideway transit system connecting the Valley to the Westside could be constructed along several different alignments. Such a transit system, operated as either heavy rail transit or monorail transit, would serve the major travel markets in the Sepulveda Transit corridor and would provide travel times competitive with the automobile.

1.2 Project Alternatives

In November 2021, Metro released a Notice of Preparation (NOP) of an Environmental Impact Report pursuant to the California Environmental Quality Act, for the Project that included six alternatives. Alternatives 1 through 5 included a southern terminus station at the Metro E Line Expo/Sepulveda Station, and Alternative 6 included a southern terminus station at the Metro E Line Expo/Bundy Station. The alternatives were described in the NOP as follows:

- Alternative 1: Monorail with aerial alignment in the Interstate 405 (I-405) corridor and an electric bus connection to the University of California, Los Angeles (UCLA)
- Alternative 2: Monorail with aerial alignment in the I-405 corridor and an aerial automated people mover connection to UCLA
- Alternative 3: Monorail with aerial alignment in the I-405 corridor and underground alignment between the Getty Center and Wilshire Boulevard
- Alternative 4: Heavy rail with underground alignment south of Ventura Boulevard and aerial alignment generally along Sepulveda Boulevard in the San Fernando Valley
- Alternative 5: Heavy rail with underground alignment including along Sepulveda Boulevard in the San Fernando Valley
- Alternative 6: Heavy rail with underground alignment including along Van Nuys Boulevard in the San Fernando Valley and a southern terminus station on Bundy Drive

The NOP also stated that Metro is considering a No Project Alternative that would not include constructing a fixed guideway line. Metro established a public comment period of 74 days, extending from November 30, 2021 through February 11, 2022. Following the public comment period, refinements to the alternatives were made to address comments received. Further refinements to optimize the designs and address technical challenges of the alternatives were made in 2023 following two rounds of community open houses.

In July 2024, following community meetings held in May 2024, Alternative 2 was removed from further consideration in the environmental process because it did not provide advantages over the other alternatives, and the remaining alternatives represent a sufficient range of alternatives for environmental review, inclusive of modes and routes (Metro, 2024). Detailed descriptions of the No Project Alternative and the five remaining "build" alternatives are presented in Sections 4 through 9.

2 REGULATORY AND POLICY SETTING

The following section summarizes federal and state statutes and regulations pertaining to the aquatic resources delineation conducted for the proposed Project.

2.1 Federal Regulation of Waters of the United States

United States Army Corps of Engineers (USACE) and the United States Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into "Waters of the United States (U.S.)" (WOTUS), which includes wetlands, under Clean Water Act (CWA) Section 404. USACE has defined the term "wetlands" as follows: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (40 Code of Federal Regulations 116.3). Some classes of fill activities may be authorized under general permits if specific conditions are met. Projects that would result in the placement of dredged or fill material into WOTUS require a CWA Section 404 permit from USACE.

CWA Section 401 requires the issuance of a water quality certification or waiver thereof for all CWA Section 404 nationwide or individual permits issued by USACE. EPA has deferred water quality certification authority to State Water Resources Control Board (SWRCB). Most projects are regulated by Regional Water Quality Control Boards (RWQCBs). SWRCB directly regulates multi-regional projects and supports and coordinates the program statewide.

The following are WOTUS (88 Federal Register [FR] 61964) (FR, 2023), and, in general, USACE will assert jurisdiction over:

(1) Waters which are:

  (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

  (ii) The territorial seas; or

  (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as WOTUS under this definition, other than impoundments of waters identified under paragraph (5) of this section;

(3) Tributaries of waters identified in paragraph (1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

  (i) Waters identified in paragraph (1) of this section; or

  (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (2) or (3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

The following are not WOTUS (FR, 2023), and, in general, USACE will not assert jurisdiction over:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the CWA

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Waters of the United States – WOTUS are delineated by an ordinary high water mark (OHWM) and extend upstream to the headwaters. The OHWM is defined as the "*line on the shore 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 the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*."

The Los Angeles River is considered a WOTUS because it supports relatively permanent surface flow and is a tributary to the San Pedro Bay/Pacific Ocean (territorial sea). However, impacts to the Los Angeles River are not anticipated, and therefore a CWA permit is not anticipated.

2.2 Section 10 of the Rivers and Harbors Act (33 U.S.C. §322)

Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [U.S.C.] §322) addresses jurisdiction over tidal waters and extends out to the mean high water line; it requires authorization from the Secretary of the Army, acting through the Corps of Engineers, for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States, and applies to all structures, from the smallest floating dock to the largest commercial undertaking. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty,

groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction.

Portions of the Los Angeles River that are considered navigable WOTUS are limited to the mouth of the river at San Pedro Bay to the point of the mean high tide (2.5 feet Mean Sea Level) line which occurs just the Pacific Coast Highway Bridge in Long Beach, California (USACE, 1978). However, impacts to the Los Angeles River are not anticipated, and therefore a Section 10 permit is not anticipated.

2.3 Section 14 of the Rivers and Harbor Act (33 U.S.C. §408; Section 408 Program)

The USACE Section 408 program requires permission for a local government, company, or individual to alter or occupy a USACE civil works project and their associated lands (33 U.S.C. §408). Projects that require Section 408 permission include work on a levee, adding hydropower to a dam, building a bridge across a navigable waterway maintained and surveyed by USACE, or construction within the footprint of the USACE easement for a levee. The Section 408 program verifies that changes to authorized Civil Works projects will not be injurious to the public interest and will not impair the usefulness of the project. This Project may require Section 408 permission following further coordination with, and review from the USACE. Further, when a permit issued by USACE is required for a project, pursuant to the federal ESA and prior to issuance of a permit, USACE would consult with United States Fish and Wildlife Service (USFWS) regarding a project's potential to affect federally listed species. If during consultation it is determined that a project may affect a federally listed species, authorization from USFWS pursuant to the ESA would also be required.

2.4 State Regulation of Waters and Wetlands

2.4.1 Porter-Cologne Water Quality Control Act

Section 13263 of the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) authorizes RWQCB to regulate discharges of waste and fill material to waters of the state (WOTS), including isolated waters and wetlands. The California Water Code Section 13050(e) defines the WOTS separately and uniquely from the federal definition as *"…any surface water or groundwater, including saline waters, within the boundaries of the State."* The state definition places no limitation on the size of stream flow as is implicitly the case for WOTUS. The OHWM concept is indirectly used by the State of California to determine WOTS; however, it is not used by California Department of Fish and Wildlife (CDFW) to delineate stream boundaries for the purpose of determining California Fish and Game Code (CFGC) jurisdiction.

When USACE does not regulate drainages within an isolated watershed (or other non-jurisdictional feature), then RWQCB will authorize the project per Waste Discharge Requirements (WDRs). General WDRs are available if the applicant meets particular requirements; these WDRs represent a much more streamlined process than individual WDRs.

Should the operation or construction of the Project result in the discharge of waste, a Report of Waste Discharge (must be filed and reviewed by the RWQCB, after which they will respond by issuing a WDR.

Waters of the State – WOTS applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes within the State of California, including wetland and/or riparian vegetation and fish and wildlife

resources. As defined in Porter-Cologne (revised in 2004; California Water Code Section 13050), WOTS refers to any surface water or groundwater, including saline waters, within the boundaries of the State of California. This designation includes isolated, depressional wetlands and vernal pools. WOTS is regulated by SWRCB (if across multiple regions) and RWQCBs. In the context of CWA permitting, the term WOTS typically implies waters that USACE has not asserted jurisdiction over. The Statewide Wetland and Riparian Area Protection Policy (2019, effective 2020) contains the new State wetland definition, as well as new permit requirements for Section 401 Water Quality Certifications or WDRs.

The California Wetland Definition states:

> *"An area is wetland if, under normal circumstances, it (1) is saturated by ground water or inundated by shallow surface water for a duration sufficient to cause anaerobic soil conditions within the upper substrate; (2) exhibits hydric substrate conditions indicative of such hydrology; and (3) either lacks vegetation or the vegetation is dominated by hydrophytes."*

2.4.2 California Fish and Game Code (Section 1600 et seq.)

CFGC Sections 1600 through 1617 (Lake and Streambed[1] Alteration Agreement Program) require consultation with CDFW if a proposed activity has the potential to detrimentally affect a stream, and thereby, wildlife resources that depend on a stream for continued viability. All streams present on a site must be identified to characterize the potential for adverse Project-related impacts on the stream and associated wildlife. Under CFGC Sections 1600 et seq., CDFW regulates activities that would result in (1) any potential detrimental impacts associated with the substantial diversion or the obstruction of the natural flow of a stream; (2) substantial changes to the bed, channel, or banks of a stream, or the use of any material from the bed, channel, or banks; and (3) the disposal of debris or waste materials that may pass into a stream. CDFW jurisdiction can be applied only once stream presence is identified and a project design is developed to a level of detail adequate to perform impact analysis.

Per informal guidance and current practice, CDFW may assert its jurisdiction under CFGC Sections 1600 et seq. over activities in stream features laterally to the top of the bank or to the outer edge of the riparian vegetation (also called the "drip line"), whichever is wider. CDFW jurisdiction may also extend to the limits of the 100-year floodplain. Isolated, "non-streambed" wetlands are typically not regulated by CDFW. Riparian habitat and wetlands adjacent to streambeds are additional resources that may be regulated by CDFW.

Riparian habitat refers to areas within and adjacent to rivers, streams, and creeks that support plant species adapted to (or that can tolerate) occasional or permanent flooding and/or saturated soils. Riparian habitat may include areas within the jurisdiction of USACE and/or CDFW. Typically, USACE jurisdictional areas are much smaller than CDFW jurisdictional areas, with lateral extent varying according to watershed position, water availability, and other factors (Larsen, 2007). Riparian vegetation can occur outside of USACE and/or CDFW jurisdiction; however, unique attributes indicate agency jurisdiction and include hydrologic interaction (both laterally and longitudinally) and distinct geomorphic features (e.g., bankfull channel, floodplain, terrace).

[1] The term streambed refers to the bed, bank, and channel geomorphic features associated with streams (in other words, the land beneath a stream).

California Fish and Game Commission defines the term wetland as:

> *Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year. (Cowardin et al., 1979).*

Streambeds – This term refers to the bed, bank, and channel geomorphic features associated with streams (in other words, the land beneath a stream). A streambed may include all or a portion of the riparian zone. The lateral extent of streambeds may reach beyond the OHWM (the extent of USACE jurisdiction) and extend laterally beneath the banks where subsurface hydrologic connectivity exists between the stream and the surrounding land. Jurisdiction extends from top-of-bank to top-of-bank. Per internal guidance and accepted practice, jurisdiction may also extend to the outer edge of the riparian corridor, if present (also called the “drip line”), or the limits of the 100-year floodplain. Streambeds are regulated by CDFW under CFGC Section 1600 et seq.

3 METHODOLOGY

Prior to conducting field work, a review was completed of available mapping of watersheds, streams, wetlands, and soils (i.e., National Hydrography Dataset (NHD) [USGS, 2023]; National Wetlands Inventory (NWI) [USFWS, 2023]; Web Soil Survey [USDA-NRCS, 2023a, 2023b]; and SoilWeb [CSRL and UC-ANR, 2023]). Additionally, accessible aerial photographs of the site from previous years (e.g., Google Earth historical aerials range from 1995 to 2017 [Google Earth, 2023]) were reviewed to observe consistent patterns of stream activity.

For the purposes of analysis, the following terms are defined:

3.1 Project Study Area

The Project Study Area represents the area in which the transit concepts and ancillary facilities are proposed. It generally includes Transportation Analysis Zones from Metro's travel demand model that are within 1 mile of the alignments of the four "Valley-Westside" alternatives from the *Sepulveda Transit Corridor Project Final Feasibility Report* (Metro, 2019).

The Project Study Area was assessed with desktop analysis for water resources and local conditions that affect hydrology and water availability for the region, including watershed context, drainage, climate, and topography, through review of the NHD (USGS, 2023), NWI (USFWS, 2023), and monthly precipitation records (NOAA, 2023). The Project Study Area is consistent between alternatives and is shown on Figure 4-1 in Section 4-1.

3.2 Resource Study Area

Within the Project Study Area, a Resource Study Area (RSA) exists for each alternative. Each alternative's RSA includes the impact footprint, composed of all underground, surface, and aerial Project components, plus a 500-foot radius buffer around areas subject to temporary or permanent ground disturbance.

Each Alternative's RSA (excluding the underground tunnel) was inventoried for indirect surface impacts to aquatic resources through desktop analysis of vegetation community mapping.

3.3 Ground Disturbance Area

The Ground Disturbance Area is one component of the RSA; it includes aboveground Project components that would require surface-disturbance activities. It is comprised of both temporary and permanent impacts, including surface impacts associated with aerial and underground components (e.g., access points, staging locations, cut-and-cover station construction, aerial alignment support structures and guideway, etc.). Specifically, aerial and underground components were classified as temporary or permanent ground disturbance as follows:

- Aerial guideways and associated footings are considered permanent ground disturbance for the length of the aerial guideway.
- Underground configurations consist of two components: surface impacts that were categorized as either permanent or temporary ground disturbance (e.g., staging locations, launch sites for the boring machine, etc.) and underground features (e.g., the tunnel, traction power station substations built into tunnel-adjacent caverns) that were excluded from the Ground Disturbance Area.

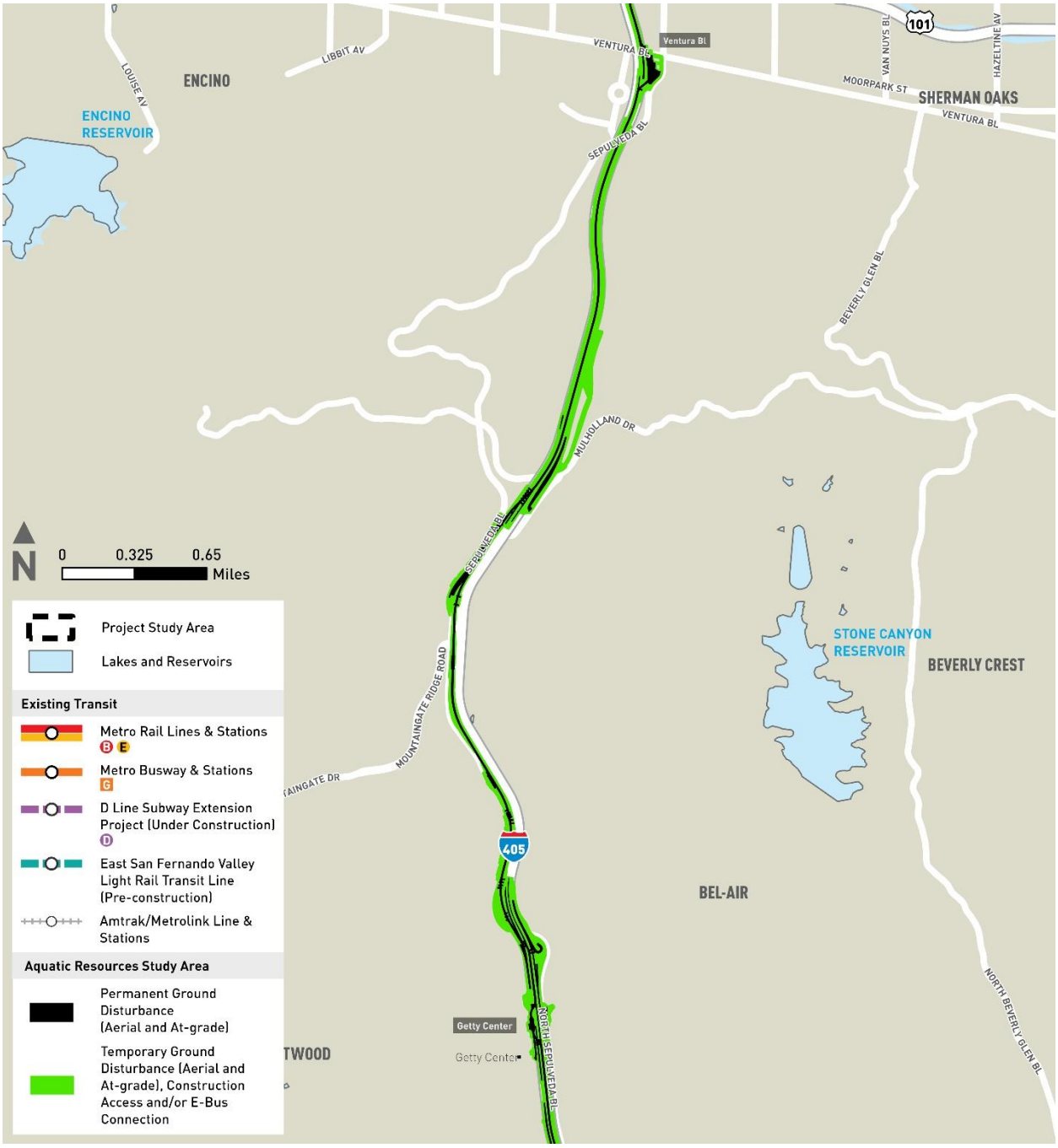
Impacts are anticipated from project construction activities such as clearing, grading, excavating, drilling, and/or vegetation removal. The Ground Disturbance Area is displayed for each alternative on Figure 3-1 through Figure 3-15.

The Ground Disturbance Area was used to assess potential for direct surface impacts to jurisdictional aquatic resources. Additionally, a desktop analysis of soils was conducted for the Ground Disturbance Area.

Figure 3-1. Alternative 1: Ground Disturbance Area – South

Source: HTA, 2024

Figure 3-2. Alternative 1: Ground Disturbance Area – Central



Source: HTA, 2024

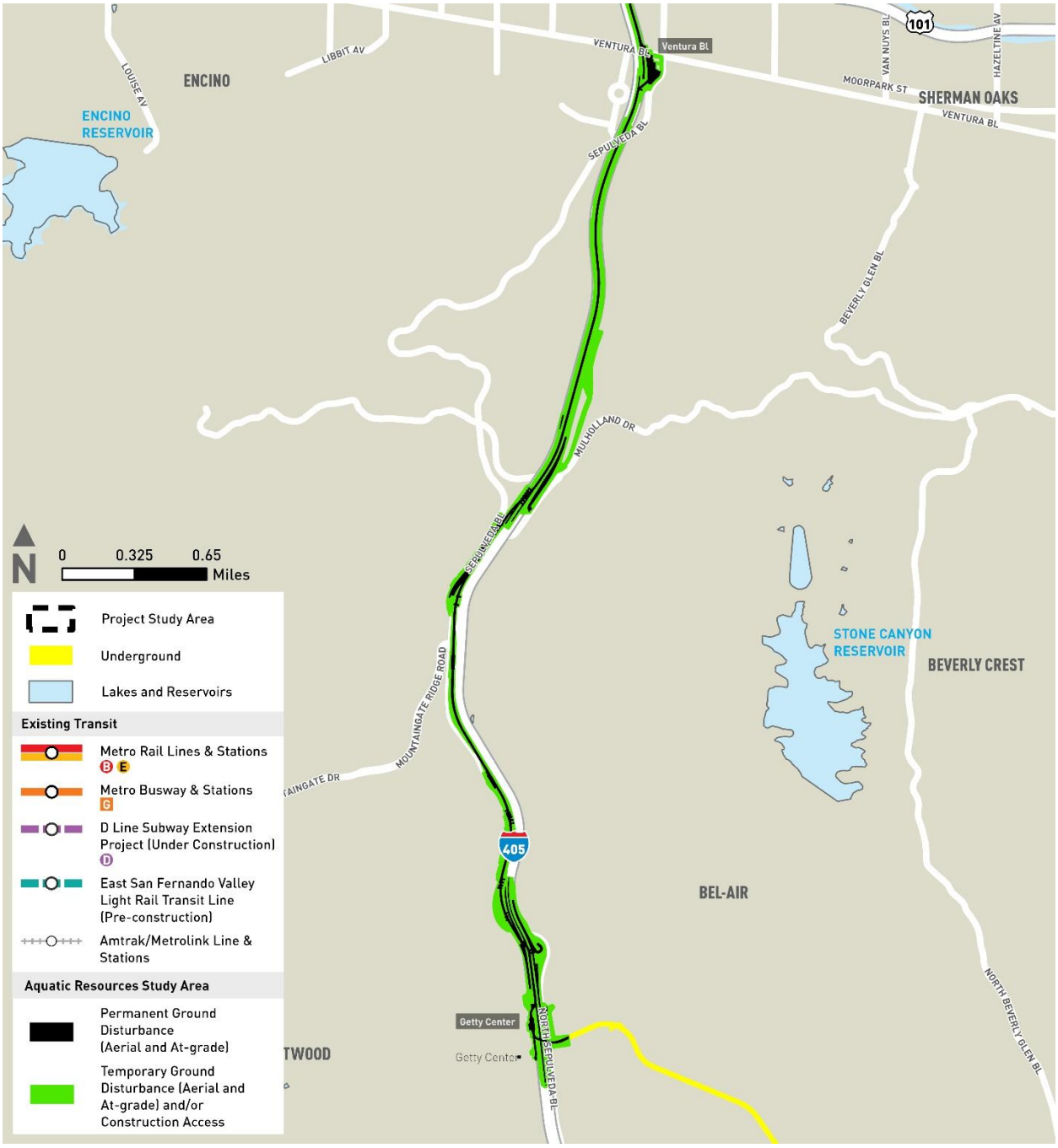
Figure 3-3. Alternative 1: Ground Disturbance Area – North

Source: HTA, 2024

Figure 3-4. Alternative 3: Ground Disturbance Area – South

Source: HTA, 2024

Figure 3-5. Alternative 3: Ground Disturbance Area – Central



Source: HTA, 2024

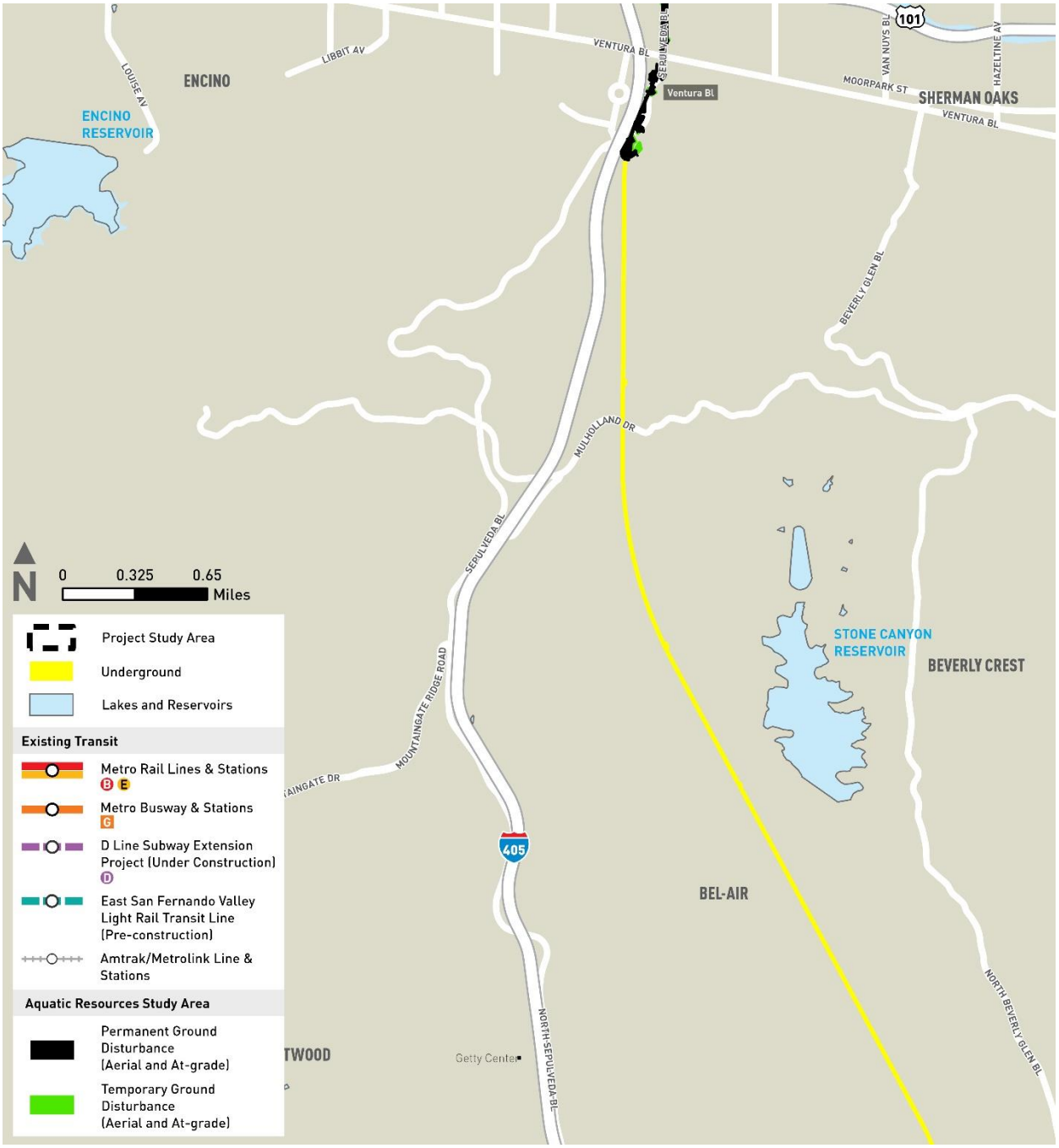
Figure 3-6. Alternative 3: Ground Disturbance Area – North

Source: HTA, 2024

Figure 3-7. Alternative 4: Ground Disturbance Area – South

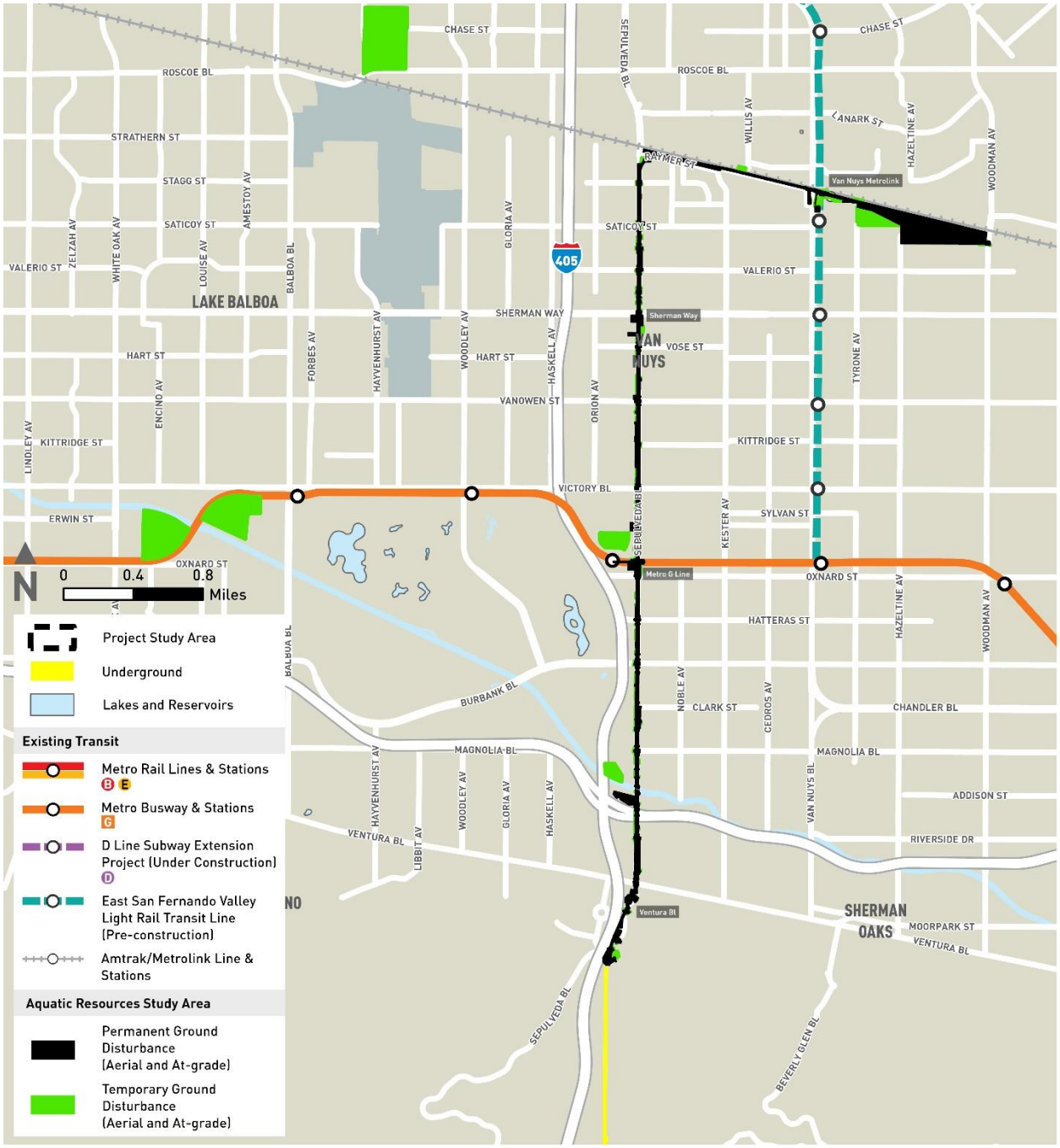
Source: HTA, 2024

Figure 3-8. Alternative 4: Ground Disturbance Area – Central



Source: HTA, 2024

Figure 3-9. Alternative 4: Ground Disturbance Area – North

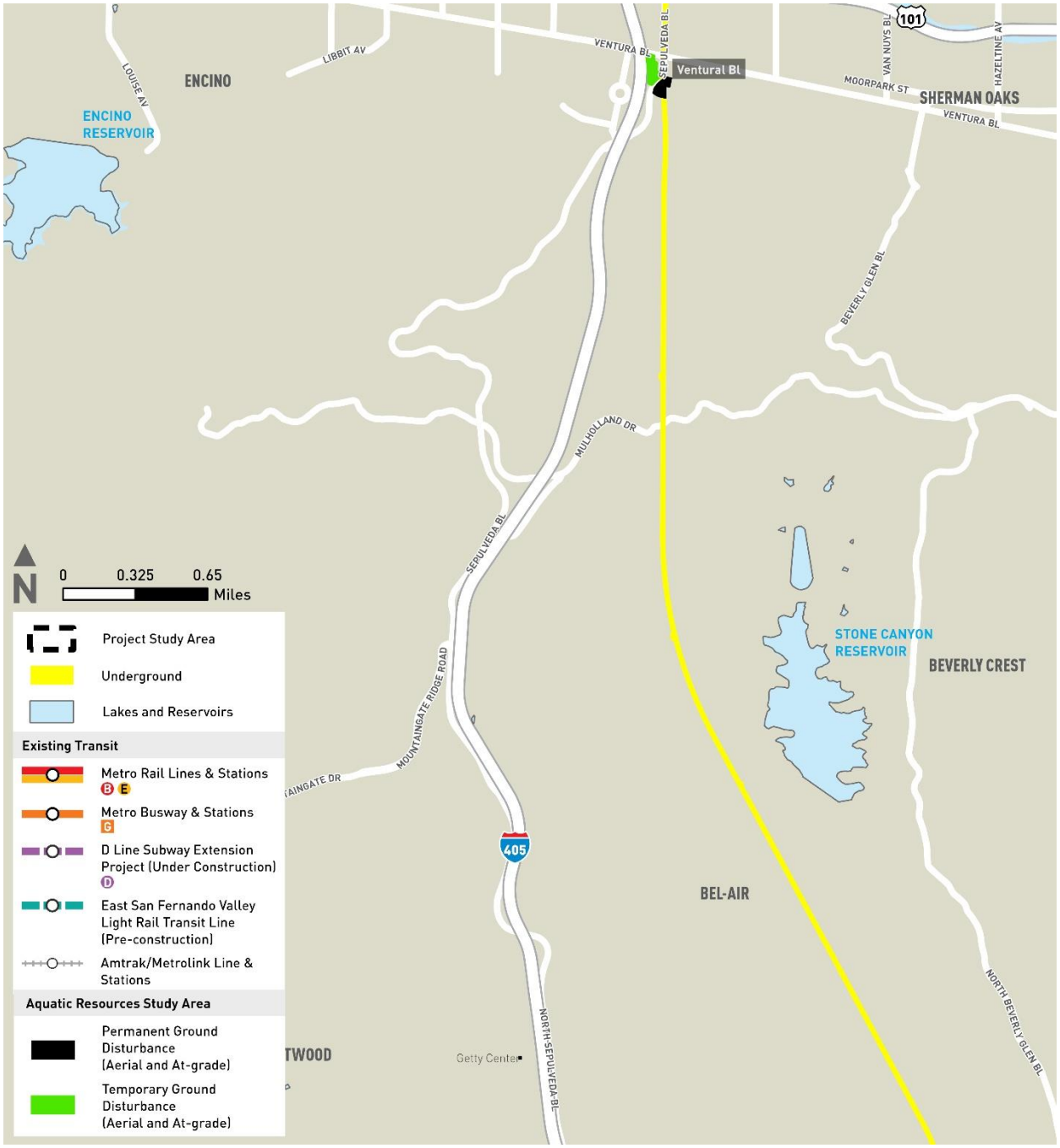


Source: HTA, 2024

Figure 3-10. Alternative 5: Ground Disturbance Area – South

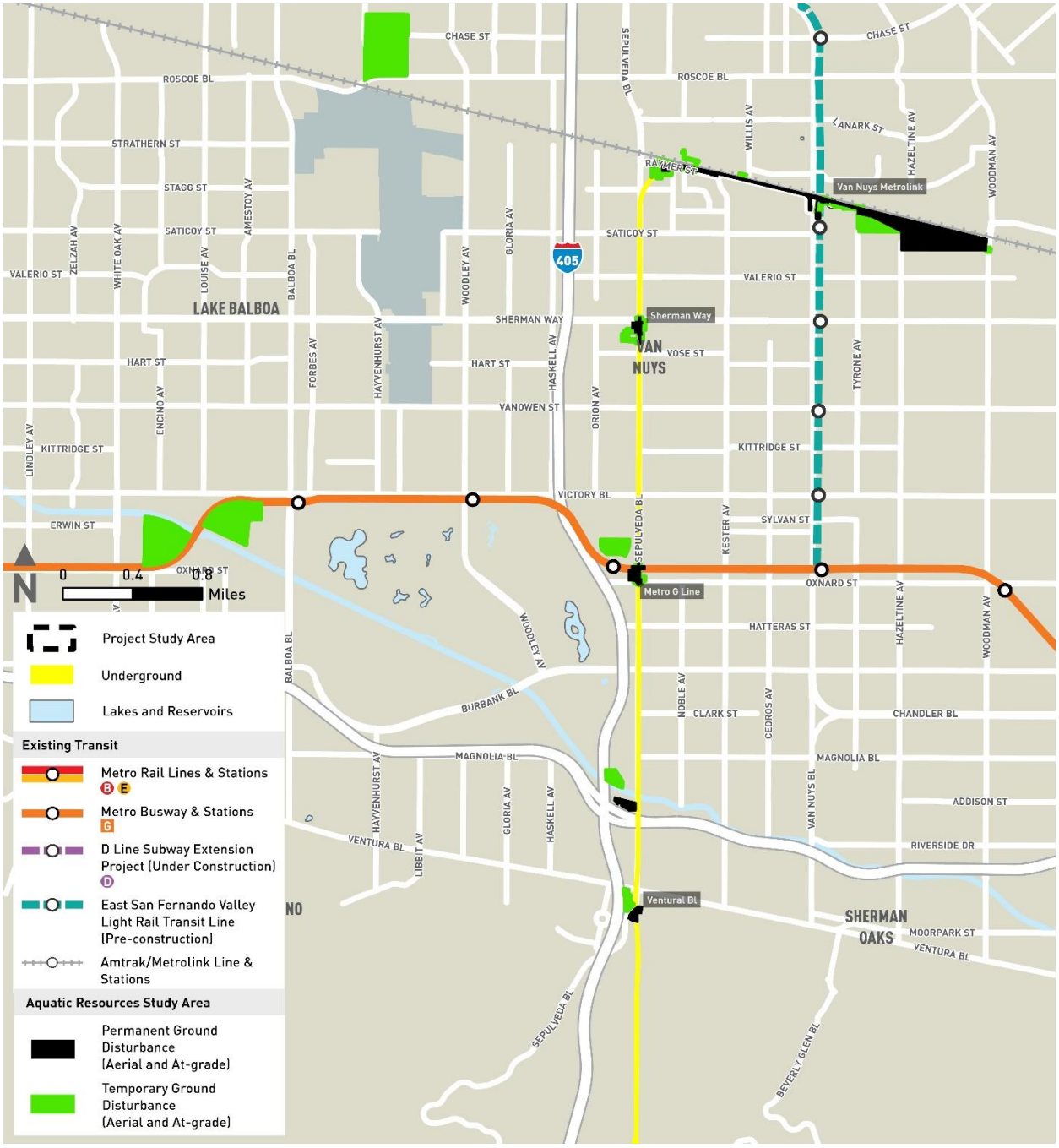
Source: HTA, 2024

Figure 3-11. Alternative 5: Ground Disturbance Area – Central



Source: HTA, 2024

Figure 3-12. Alternative 5: Ground Disturbance Area – North

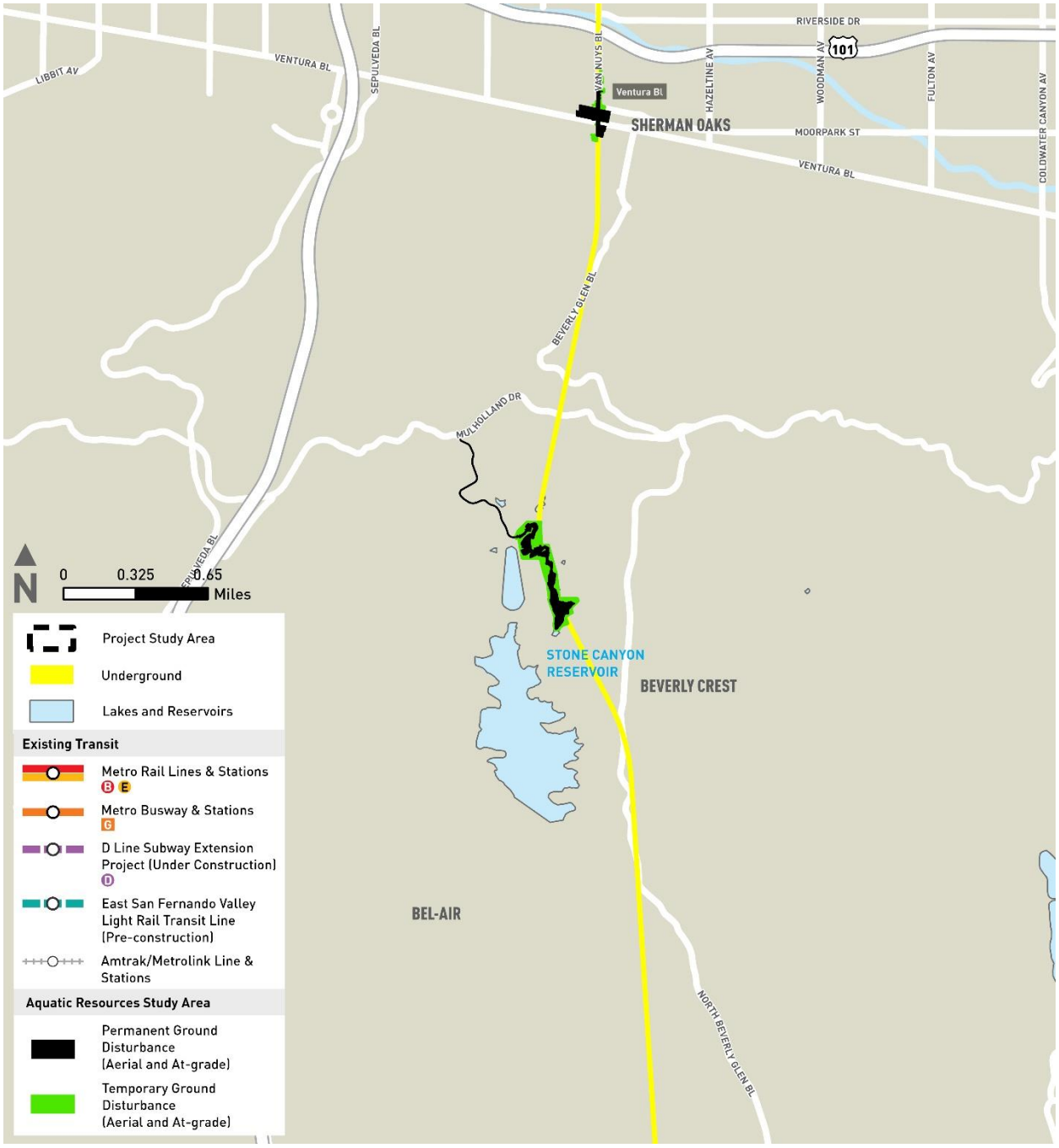


Source: HTA, 2024

Figure 3-13. Alternative 6: Ground Disturbance Area – South

Source: HTA, 2024

Figure 3-14. Alternative 6: Ground Disturbance Area – Central



Source: HTA, 2024

Figure 3-15. Alternative 6: Ground Disturbance Area – North

Source: HTA, 2024

3.4 Survey Protocol

An aquatic resources delineation was conducted by HTA Partners biologists Andrew Borcher and Natasha Foti in spring 2023 to determine the limits of (1) USACE jurisdiction pursuant to CWA Section 404, (2) RWQCB jurisdiction pursuant to Porter-Cologne and (3) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the CFGC.

A field survey was conducted to evaluate the presence of USACE/RWQCB-jurisdictional WOTUS and CDFW-jurisdictional streambeds (and any associated riparian habitat) utilizing the methods as discussed in this section. Staff surveyed the Ground Disturbance Area on April 12 and 13, 2023. The field investigation included documenting existing surface water conditions and jurisdictional resources within the Ground Disturbance Area (Figure 3-1through Figure 3-15). Biologists also assessed vegetation within the Ground Disturbance Area for hydrophytic and riparian plant species, as presence can be an indicator of aquatic resources nearby and changes in vegetation communities can aid in delineating boundaries of aquatic resources or complexes. The field investigation included non-jurisdictional aquatics features, including swales, concrete ditches, storm drains, roadside ditches, brow-ditches, and other runoff conveyance features. Non-jurisdictional features were not included in the figures.

Potential jurisdictional features were delineated and mapped pursuant to the following standard methods and guidance:

- Aquatic Resources Delineation: USACE Wetland Delineation Manual (Environmental Laboratory, 1987); Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008); Hydric Soils Information (USDA-NRCS, 2017); Wetland Vegetation (Lichvar et al., 2012; Lichvar et al., 2016; USACE, 2020)
- Delineation of WOTUS: A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE, 2021); guidance related to *Sackett versus the EPA* (88, FR 61964) (FR, 2023); other applicable resources (e.g., Environmental Law Institute [ELI, 2012])
- Wetland/Riparian Classification and Mapping: California Aquatic Resource Classification System (CARCS, 2023); California Aquatic Resource Inventory (CARI, 2023); California Wetland Monitoring Workgroup (CWMW, 2014; CWMW, 2023); Cowardin et al. (1979); Environmental Systems Research Institute (ESRI) (2023); Google Earth (2023); United States Fish and Wildlife Service (USFWS, 2023)

The Jurisdictional Determination (JD) Guidebook (USACE, 2007) was utilized to classify aquatic features observed within the Ground Disturbance Area with respect to the following terms: Traditional Navigable Water (TNW), Non-Navigable Tributary, Relatively Permanent Water, and Non-Relatively Permanent Water, as applicable.

Scientists recorded spatial and attribute data in the field using the ESRI ArcCollector application running on Apple (iPad, iPhone) devices. Potential jurisdictional areas were mapped using a Dual XGPS150A receiver connected to the Apple device through a Bluetooth connection. Global positioning system (GPS)-collected spatial data were imported into ArcMap software for post-field processing. A Trimble GeoXH sub-meter GPS was also brought to the site and used for more detailed data collection as necessary.

A soil analysis was conducted for each Ground Disturbance Area through a desktop review of the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soils Report for Los Angeles County, California. The purpose of the analysis was to evaluate presence or absence of soils

that may be considered hydric because they typically form under anerobic conditions that occur in wetlands.

Potential for indirect impacts to aquatic resources was assessed through desktop analysis of vegetation mapping within the RSA; specifically, areas with riparian habitat or open water were evaluated for potential Project impacts. Desktop analysis was conducted utilizing a combination of publicly available mapping (from the National Park Service's Santa Monica National Recreation Area; NPS, 2004-2019) where available and high-quality aerial imagery elsewhere. Vegetation mapping is based on *A Manual of California Vegetation*, 2nd Edition (Sawyer et al., 2009). Details of the vegetation mapping process and full results per alternative can be found in the *Sepulveda Transit Corridor Project Ecosystems and Biological Resources Technical Report* (BTR; Metro, 2025) (Section 3.3, Section 5.2.5.2, Section 6.2.5.2, Section 7.2.5.2, Section 8.2.5.2, and Section 9.2.5.2).

4 RESULTS

4.1 Project Study Area

Within the Project Study Area, a desktop assessment was completed for variables that remain consistent across each alternative, including watershed presence and elevation and topography that affects drainage.

4.1.1 Water Resources

An overview of the variety of creeks, rivers, man-made reservoirs, and concrete channels that exist within the Project Study Area is presented in Figure 4-1. Based on United States Geological Survey NHD named aquatic resources within the Project Study Area include the Los Angeles River, Pacoima Wash, Encino Creek, Ballona Creek, Centinela Creek Channel, and the Sepulveda Channel (USGS, 2023). Additionally, several underground, ephemeral and unnamed drainages occur within the Project Study Area.

4.1.2 Watershed Context and Hydrology

The Project Study Area includes the Upper Los Angeles River, Ballona Creek Watershed, and Garapito Creek Frontal Santa Monica Bay Watersheds (Figure 4-1) with the ridgetop of the Santa Monica Mountains serving as their delineation (Hydrologic Unit Code 10). However, only the Upper Los Angeles River and Ballona Creek Watersheds receive waters that occur within the Project Study Area. Therefore, discussion in this section is limited to these two watersheds. The receiving waters from the Project Study Area include the Los Angeles River and Ballona Creek with their respective tributaries. The Los Angeles River crosses the Project Study Area from west to east, roughly parallel, and adjacent to the U.S. Highway 101 (US-101), while Ballona Creek is approximately 2 miles to the south of the Project Study Area.

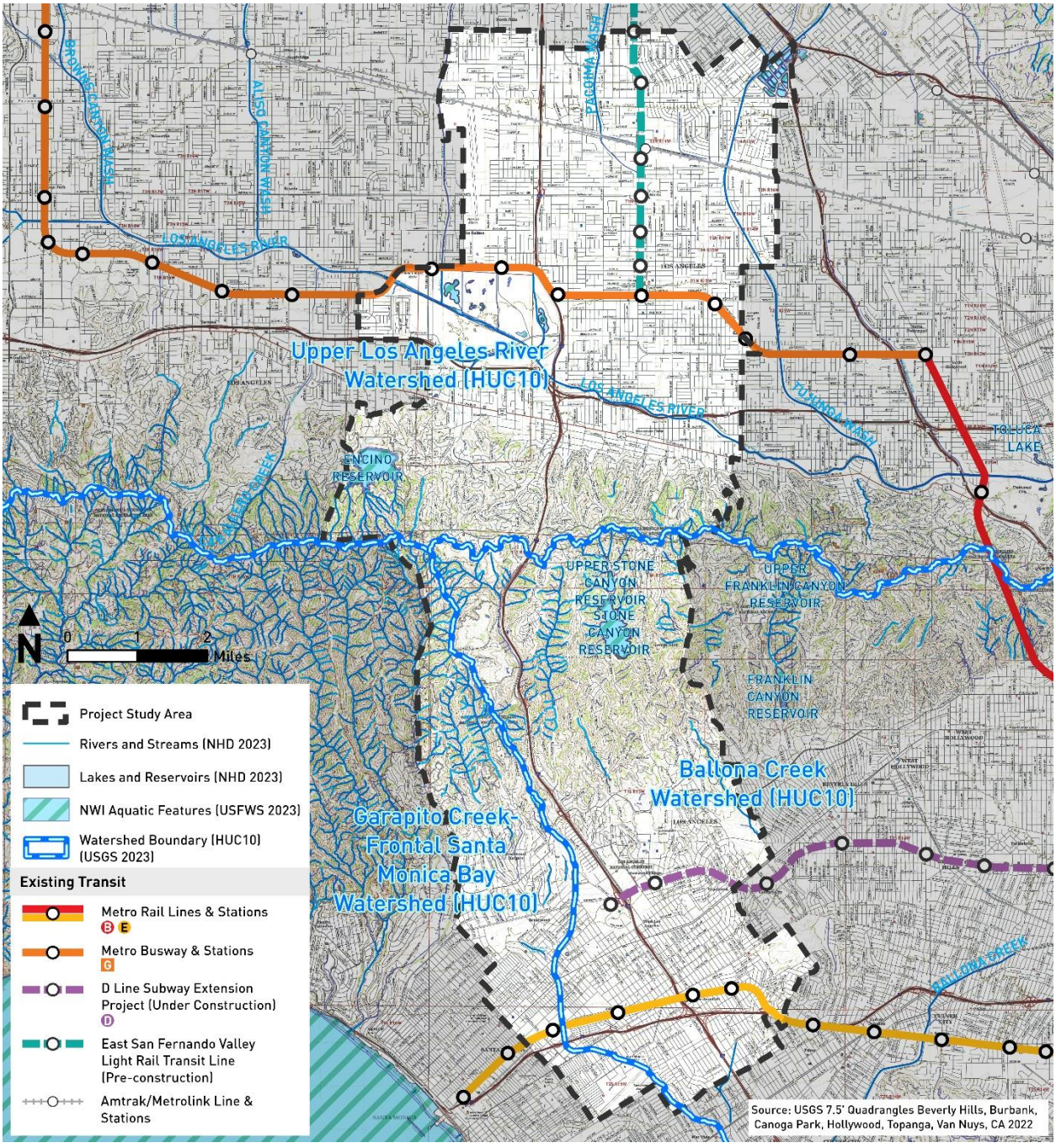
4.1.2.1 Upper Los Angeles River Watershed

The Upper Los Angeles River Watershed is located in the northwest portion of Los Angeles County and covers an area of over 613 square miles. This watershed includes the San Fernando Valley and portions of the San Gabriel and Santa Susana Mountains. The six major tributaries along the river include Tujunga Wash, Burbank Western Storm Drain, Verdugo Wash, Arroyo Secco, Rio Hondo, and Compton Creek. The primary source of input into the Los Angeles River watershed is wet weather runoff originating from direct precipitation, dry weather inputs from urban runoff, and groundwater upwelling (LADPW, 2022).

The northern portion of the Project Study Area crosses the Los Angeles River in Reach 5, where the river flows west to east, at the base of the Santa Monica Mountains in the San Fernando Valley. Reach 5 of the Los Angeles River runs through low density residential neighborhoods, the Sepulveda Basin, other commercial developed areas, and under I-405, Sepulveda Boulevard, and Van Nuys Boulevard.

Topography throughout the coastal plain area of Upper Los Angeles River Watershed is generally defined by gradually sloping land from the foothills of the San Gabriel Mountains to the Pacific Ocean. Ground elevations range from 10,000 feet in the San Gabriel Mountains approximately 15 miles east of the RSA, to mean sea level at the mouth of the Los Angeles River approximately 22 miles south of the RSA. The majority of the coastal plain is less than 1,000 feet in elevation (GLAC, 2014), while the upper portion of the watershed is covered by forest and open space. The majority of land in the Upper Los Angeles River Watershed is developed with urban uses, including the portion of the river that traverses the Project Study Area (LA County, 2023).

Figure 4-1. National Hydrography Dataset Streams, National Wetlands Inventory Wetlands, and Watersheds



Source: HTA, 2024

4.1.2.2 Ballona Creek Watershed

Ballona Creek consists of a 9-mile-long flood protection channel that drains the Los Angeles Basin south of the RSAs. The Ballona Creek Watershed covers approximately 130 square miles located in the western portion of the Los Angeles Basin and is made up by the Culver City, Wilshire, and Hollywood subwatersheds. The headwaters of the watershed are located in the Santa Monica Mountains, including

a portion in the Project Study Area, and Baldwin Hills to the southeast of the Project Study Area. Most of the Ballona Creek drainage network consists of storm drains, underground culverts, and open concrete channels. However, Ballona Creek does not traverse the Project Study Area. Ballona Creek is an open channel located between Venice Boulevard and Pickford Street and its confluence with Santa Monica Bay (a length of approximately 9 miles), approximately 4 miles south of the Project Study Area. A few natural channels remain in the Santa Monica Mountains and Baldwin Hills. The Sepulveda Channel (partially underground), which runs parallel to I-405, is a major tributary to the Ballona Creek Watershed.

4.1.3 Drainage

Land in Los Angeles County and cities within the Project Study Area is urbanized and largely covered with impervious surfaces associated with areas of asphalt, concrete, buildings, and other land uses which concentrate storm runoff. Stormwater and other surface water runoff are conveyed to municipal storm drains. Most local drainage networks are controlled by structural flood control measures. Figure 4-1 shows the NHD Streams, NWI Wetlands and Watersheds within the Project Study Area.

4.1.4 Climate, Topography, and Soils

4.1.4.1 Precipitation and Climate

The Project Study Area is located within a Mediterranean climate zone, characterized by dry, warm summers and mild, wet winters. The mean temperature range for the months of November through April is 41 degrees Fahrenheit (°F) to 73°F. The mean temperature range for the months of May through October is 58°F to 79°F.

Precipitation recorded from October 2022 through April 2023 at Los Angeles National Airport was 23.55 inches (NOAA, 2023). Annual rainfall to-date at the time of the field survey (April 2023) was approximately 193 percent of normal.

4.1.4.2 Description of Topographical Features

The general topography of the Project Study Area includes coastal and inland valleys separated by the Santa Monica Mountains. The Santa Monica Mountains, including the Sepulveda Pass, is interspersed with steep slopes. Elevations ranges from approximately 800 feet above mean sea level (amsl) at Sepulveda Blvd in the Valley (northern portion of Project Study Area), 1600 feet amsl in the Santa Monica Mountains, and approximately 160 feet amsl at the Exposition Boulevard in West Los Angeles (southern portion of the Project Study Area).

4.2 Ground Disturbance Area

Prior to field surveys, a desktop analysis of soils was conducted to verify if hydric soils were present within each alternative's Ground Disturbance Area. Since hydric soils typically form under anerobic conditions that occur in wetlands, their presence would identify locations that potentially contained aquatic resources.

During field surveys, the Ground Disturbance Area for each alternative was assessed for jurisdictional aquatic resources that could be subject to direct impacts from project construction activities such as clearing, grading, excavating, drilling, and/or vegetation removal.

4.2.1 Description of Soil

4.2.1.1 Alternative 1

The following includes soils mapped within the Ground Disturbance Area for Alternative 1 by the USDA NRCS Soils Report for Los Angeles County. Mapped soils throughout the Project Study Area are shown on Figure 5-11 and listed in the legend shown on Figure 5-12 in the BTR (Metro, 2025).

- Adamatt-Domehill-Willowak association
- Clallam family, very deep, 9 to 70 percent slopes
- Cropley-Urban land complex, 0 to 5 percent slopes
- Deetz family, 2 to 15 percent slopes
- Frostvalley-Mulecreek complex, 2 to 9 percent slopes
- Rock outcrop, dioritic-Wapal family, moderately deep association, 45 to 75 percent slopes
- Surpur-Mettah complex, 9 to 30 percent slopes
- Urban land-Anthraltic Xerorthents, loamy substratum-Grommet complex, 0 to 5 percent slopes
- Urban land-Balcom-Xerorthents, landscaped complex, 10 to 60 percent slopes
- Urban land, frequently flooded, 0 to 5 percent slopes
- Urban land-Grommet-Ballona complex, 0 to 5 percent slopes
- Urban land-Sepulveda-Pierview complex, 2 to 12 percent slopes
- Urban land-Xerorthents, landscaped, complex, rarely flooded, 0 to 5 percent slopes

None of the soils mapped within the Alternative 1 RSA are listed on the State Soil Data Access List as hydric soils in Los Angeles County (USDA-NRCS, 2023c).

4.2.1.2 Alternative 3

The following includes soils mapped within the Ground Disturbance Area for Alternative 3 by the USDA NRCS Soils Report for Los Angeles County. Mapped soils throughout the Project Study Area are shown on Figure 6-11 and listed in the legend shown on Figure 6-12 in the BTR (Metro, 2025).

- Clallam family, very deep, 9 to 70 percent slopes
- Cropley-Urban land complex, 0 to 5 percent slopes
- Deetz family, 2 to 15 percent slopes
- Endlich-Buell families association, 15 to 70 percent slopes
- Frostvalley-Mulecreek complex, 2 to 9 percent slopes
- Rock outcrop, dioritic-Wapal family, moderately deep association, 45 to 75 percent slopes
- Surpur-Mettah complex, 9 to 30 percent slopes
- Urban land-Anthraltic Xerorthents, loamy substratum-Grommet complex, 0 to 5 percent slopes
- Urban land-Balcom-Xerorthents, landscaped complex, 10 to 60 percent slopes
- Urban land, frequently flooded, 0 to 5 percent slopes
- Urban land-Grommet-Ballona complex, 0 to 5 percent slopes
- Urban land-Sepulveda-Pierview complex, 2 to 12 percent slopes
- Urban land-Xerorthents, landscaped, complex, rarely flooded, 0 to 5 percent slopes

None of the soils mapped within the Alternative 3 Ground Disturbance Area are listed on the State Soil Data Access List as hydric soils in Los Angeles County (USDA-NRCS, 2023c).

4.2.1.3 Alternative 4

The following includes soils mapped within the Ground Disturbance Area for Alternative 4 by the USDA NRCS Soils Report for Los Angeles County. Mapped soils throughout the Project Study Area are shown on Figure 7-12 and listed in the legend shown on Figure 7-13 in the BTR (Metro, 2025).

- Aiken family, 15 to 50 percent slopes
- Clallam family, very deep, 9 to 70 percent slopes
- Cropley-Urban land complex, 0 to 5 percent slopes
- Endlich-Buell families association, 15 to 70 percent slopes
- Frostvalley-Mulecreek complex, 2 to 9 percent slopes
- Surpur-Mettah complex, 9 to 30 percent slopes
- Urban land-Anthraltic Xerorthents, loamy substratum-Grommet complex, 0 to 5 percent slopes
- Urban land, frequently flooded, 0 to 5 percent slopes
- Urban land-Grommet-Ballona complex, 0 to 5 percent slopes
- Urban land-Sepulveda complex, 2 to 12 percent slopes
- Urban land-Xerorthents, landscaped, complex, rarely flooded, 0 to 5 percent slopes

None of the soils mapped within the Alternative 4 Ground Disturbance Area are listed on the State Soil Data Access List as hydric soils in Los Angeles County (USDA-NRCS, 2023c).

4.2.1.4 Alternative 5

The following includes soils mapped within the Ground Disturbance Area for Alternative 5 by the USDA NRCS Soils Report for Los Angeles County. Mapped soils throughout the Project Study Area are shown on Figure 8-10 and listed in the legend shown on Figure 8-11 in the BTR (Metro, 2025).

- Aiken family, 15 to 50 percent slopes
- Clallam family, very deep, 9 to 70 percent slopes
- Cropley-Urban land complex, 0 to 5 percent slopes
- Endlich-Buell families association, 15 to 70 percent slopes
- Frostvalley-Mulecreek complex, 2 to 9 percent slopes
- Urban land-Anthraltic Xerorthents, loamy substratum-Grommet complex, 0 to 5 percent slopes
- Urban land-Grommet-Ballona complex, 0 to 5 percent slopes
- Urban land Marina complex, 0 to 5 percent slopes
- Urban land-Sepulveda complex, 2 to 12 percent slopes

None of the soils mapped within the Alternative 5 Ground Disturbance Area are listed on the State Soil Data Access List as hydric soils in Los Angeles County (USDA-NRCS, 2023c).

4.2.1.5 Alternative 6

The following includes soils mapped within the Ground Disturbance Area for Alternative 6 by the USDA NRCS Soils Report for Los Angeles County. Mapped soils throughout the Project Study Area are shown on Figure 9-6 and listed in the legend shown on Figure 9-7 in the BTR (Metro, 2025).

- Frostvalley-Mulecreek complex, 2 to 9 percent slopes
- Oreset sandy loam, 0 to 9 percent slopes
- Surpur-Mettah complex, 9 to 30 percent slopes
- Urban land-Anthraltic Xerorthents, loamy substratum-Grommet complex, 0 to 5 percent slopes
- Urban land-Sepulveda complex, 2 to 12 percent slopes

None of the soils mapped within the Alternative 6 Ground Disturbance Area are listed on the State Soil Data Access List as hydric soils in Los Angeles County (USDA-NRCS, 2023c).

4.2.2 Vegetation Communities and Land Cover

No wetland or riparian vegetation communities were observed in the Ground Disturbance Area. The following includes vegetation communities and other land cover types present in Ground Disturbance Area by project alternative, which are discussed further and shown in figures in the BTR (Metro, 2025).

4.2.2.1 Alternative 1

- Developed
- Ruderal
- Developed and Ruderal Total
- Post Fire Shrub Regeneration and Undifferentiated Categories including Artificial Cuts/Embankments and Exotic Vegetation
- Ceanothus Chaparral
- Laurel Sumac Shrubland
- Mexican Elderberry Shrubland
- California Sycamore Woodland
- Sugar Bush Shrubland
- California Walnut Woodland
- Toyon Shrubland
- Black Sage Shrubland
- Cleared Land
- California Sagebrush Shrubland

4.2.2.2 Alternative 3

- Developed
- Ruderal
- Developed and Ruderal Total
- Post Fire Shrub Regeneration and Undifferentiated Categories including Artificial Cuts/Embankments and Exotic Vegetation
- Ceanothus Chaparral
- Laurel Sumac Shrubland
- Mexican Elderberry Shrubland
- California Sycamore Woodland
- Sugar Bush Shrubland
- California Walnut Woodland
- Toyon Shrubland
- Black Sage Shrubland
- Cleared Land
- California Sagebrush Shrubland

4.2.2.3 Alternative 4

- Developed
- Agricultural Land
- Ruderal
- California Annual Grassland
- Coyote Brush Shrubland
- Coast Live Oak Woodland

4.2.2.4 Alternative 5

- Developed
- Agricultural Land
- Ruderal
- California Annual Grassland
- Coyote Brush Shrubland

4.2.2.5 Alternative 6

- Developed
- California Walnut Woodland
- California Annual Grassland
- Black Sage Shrubland
- Undifferentiated Vegetation - Artificial cuts/Embankments, Chaparral Shrubland
- Ceanothus Chaparral
- California Sagebrush-California Buckwheat Shrubland
- Coast Live Oak Woodland
- Coyote Brush Shrubland
- Chamise-Black Sage Shrubland
- California Encelia Shrubland

4.2.3 Drainage Features

4.2.3.1 Alternative 1

Alternative 1 will traverse the Los Angeles River north of US-101. The Project includes an aerial alignment that will cross over the river adjacent to and east of I-405. The Los Angeles River is concrete-lined and devoid of riparian or herbaceous wetland vegetation where Alternative 1 will traverse the river. The Los Angeles River is a TNW from the confluence of Arroyo Calabasas and Bell Creek, located northwest of Alternative 1's Ground Disturbance Area, to the river's outlet in San Pedro Bay outside, and south of Alternative 1 (USACE, 2023). However, the river is only considered a Navigable Water[2] from the river's outlet into San Pedro Bay to San Pedro Highway Bridge and/or up to 2.5 feet amsl, and not within the Ground Disturbance Area for Alternative 1. The Los Angeles River is under the jurisdiction of USACE, CDFW and RWQCB.

An ephemeral drainage (D-1) under the jurisdiction of CDFW and RWQCB was observed adjacent to I-405 within the Alternative 1 Ground Disturbance Area (refer to Attachment 1 Site Photographs, and

[2] The term "Traditional Navigable Water" is used in reference to Section 404 of the Clean Water Act, while the term "Navigable Water" is used to refer to Section 10 of the Rivers and Harbors Act. The entire stretch of the Los Angeles River is considered a Traditional Navigable Water, but only the portion in proximity to its outlet into San Pedro Bay is considered a Navigable Water.

Attachment 2 OHWM Data Form). This ephemeral non-wetland drainage flows into an underground storm drain within the Ground Disturbance Area.

No potential wetlands or riparian areas were observed within the Ground Disturbance Area. Therefore, no wetland determination data forms were required.

Non-wetland jurisdictional features mapped within the Alternative 1 Ground Disturbance Area are summarized as follows and listed in Table 4-1 and Table 4-2, and shown on Figure 4-2 and Figure 4-3.

- 0.11 acre (4,943 square feet [sq. ft.]) of non-wetland WOTUS, CDFW streambed and RWQCB waters of the state within Los Angeles River within the Ground Disturbance Area
- 0.02 acre (837 sq. ft.) of non-wetland RWQCB waters of the state adjacent to I-405 within the Ground Disturbance Area for Alternative 1
- 0.03 acre (1,183 sq. ft.) of non-wetland CDFW streambed adjacent to I-405 within the Ground Disturbance Area for Alternative 1

Table 4-1. Alternative 1: Acreage of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	USACE WOTUS (sq. ft./acres)	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)
Los Angeles River	4,943/0.11	4,943/0.11	4,943/0.11
Ephemeral Drainage (D-1)	—	837/0.02	1,183/0.03

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = waters of the state
WOTUS = Waters of the United States
— = no data

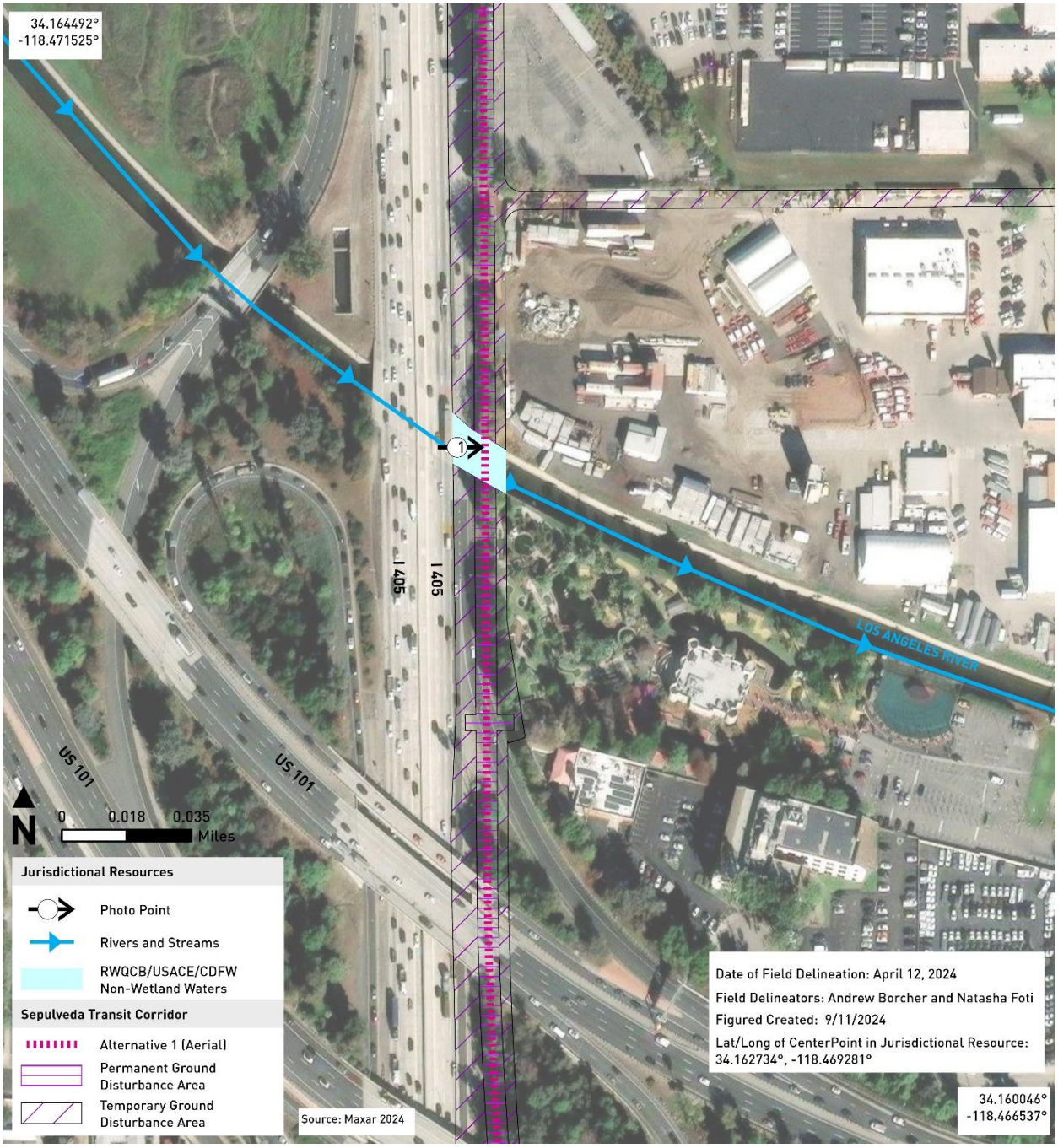
Table 4-2. Alternative 1: Summary of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	Lat/Long	Cowardian Class	Jurisdiction Type
Los Angeles River	34.162734, -118.469281	Riverine, perennial, artificial	Non-wetland WOTUS, WOTS, CDFW Streambed
Ephemeral Drainage (D-1)	34.106107, -118.479128	Riverine, ephemeral, streambed	Non-wetland WOTS, CDFW Streambed

Source: HTA, 2024

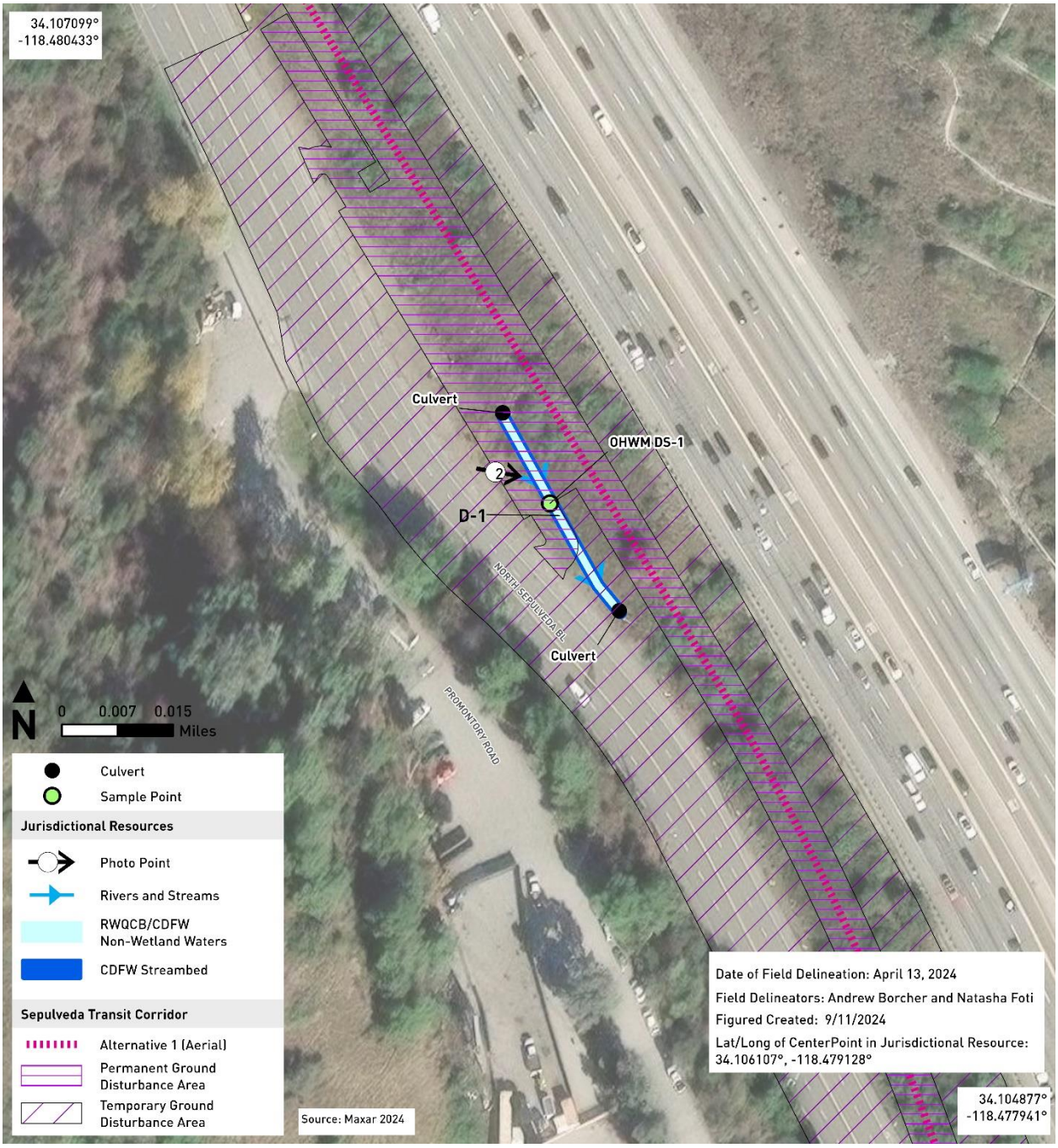
CDFW = California Department of Fish and Wildlife
Lat/Long = Latitude/Longitude
WOTS = waters of the state
WOTUS = Waters of the United States

Figure 4-2. Alternative 1: Jurisdictional Resources and Ground Disturbance Area page 1



Source: HTA, 2024

Figure 4-3. Alternative 1: Jurisdictional Resources and Ground Disturbance Area page 2



Source: HTA, 2024

4.2.3.2 Alternative 3

Alternative 3 would traverse the Los Angeles River north of US-101. Alternative 3 includes an aerial alignment that would cross over the river adjacent to and east of I-405. The Los Angeles River is concrete-lined and devoid of riparian or herbaceous wetland vegetation where Alternative 3 would traverse the river. The Los Angeles River is a TNW from the confluence of Arroyo Calabasas and Bell Creek, located northwest of Alternative 3's Ground Disturbance Area, to the river's outlet in San Pedro Bay south of Alternative 3 (USACE, 2023). However, the river is only considered a Navigable Water[3] from the river's outlet into San Pedro Bay to San Pedro Highway Bridge and/or up to 2.5 feet amsl, and not in the Ground Disturbance Area for Alternative 3. The Los Angeles River is under the jurisdiction of USACE, CDFW and RWQCB.

An ephemeral drainage (D-1) under the jurisdiction of CDFW and RWQCB was observed adjacent to I-405 within the Alternative 3 Ground Disturbance Area (refer to Attachment 1 Site Photographs, and Attachment 2 OHWM Data Form). This ephemeral non-wetland drainage flows into an underground storm drain within the Ground Disturbance Area.

No potential wetlands or riparian areas were observed throughout the Ground Disturbance Area. Therefore, no wetland determination data forms were required.

Non-wetland jurisdictional features mapped within the Ground Disturbance Area for Alternative 3 are summarized as follows and listed in Table 4-3 and Table 4-4, and shown on Figure 4-4 and Figure 4-5.

- 0.11 acre (4,943 sq. ft.) of non-wetland WOTUS, CDFW streambed and RWQCB waters of the state within Los Angeles River within the Alternative 3 Ground Disturbance Area
- 0.02 acre (837 sq. ft.) of non-wetland RWQCB waters of the state adjacent to I-405 within the Alternative 3 Ground Disturbance Area
- 0.033 Sacre (1,183 sq. ft.) of non-wetland CDFW streambed adjacent to I-405 within the Alternative 3 Ground Disturbance Area

Table 4-3. Alternative 3: Acreage of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	USACE WOTUS (sq. ft./acres)	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)
Los Angeles River	4,943/0.11	4,943/0.11	4,943/0.11
Ephemeral Drainage (D-1)	—	837/0.02	1,183/0.03

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = waters of the state
WOTUS = Waters of the United States
— = no data

[3] The term "Traditional Navigable Water" is used in reference to Section 404 of the Clean Water Act, while the term "Navigable Water" is used in reference to Section 10 of the Rivers and Harbors Act. The entire stretch of the Los Angeles River is considered a Traditional Navigable Water, but only the portion in proximity to its outlet into San Pedro Bay is considered a Navigable Water.

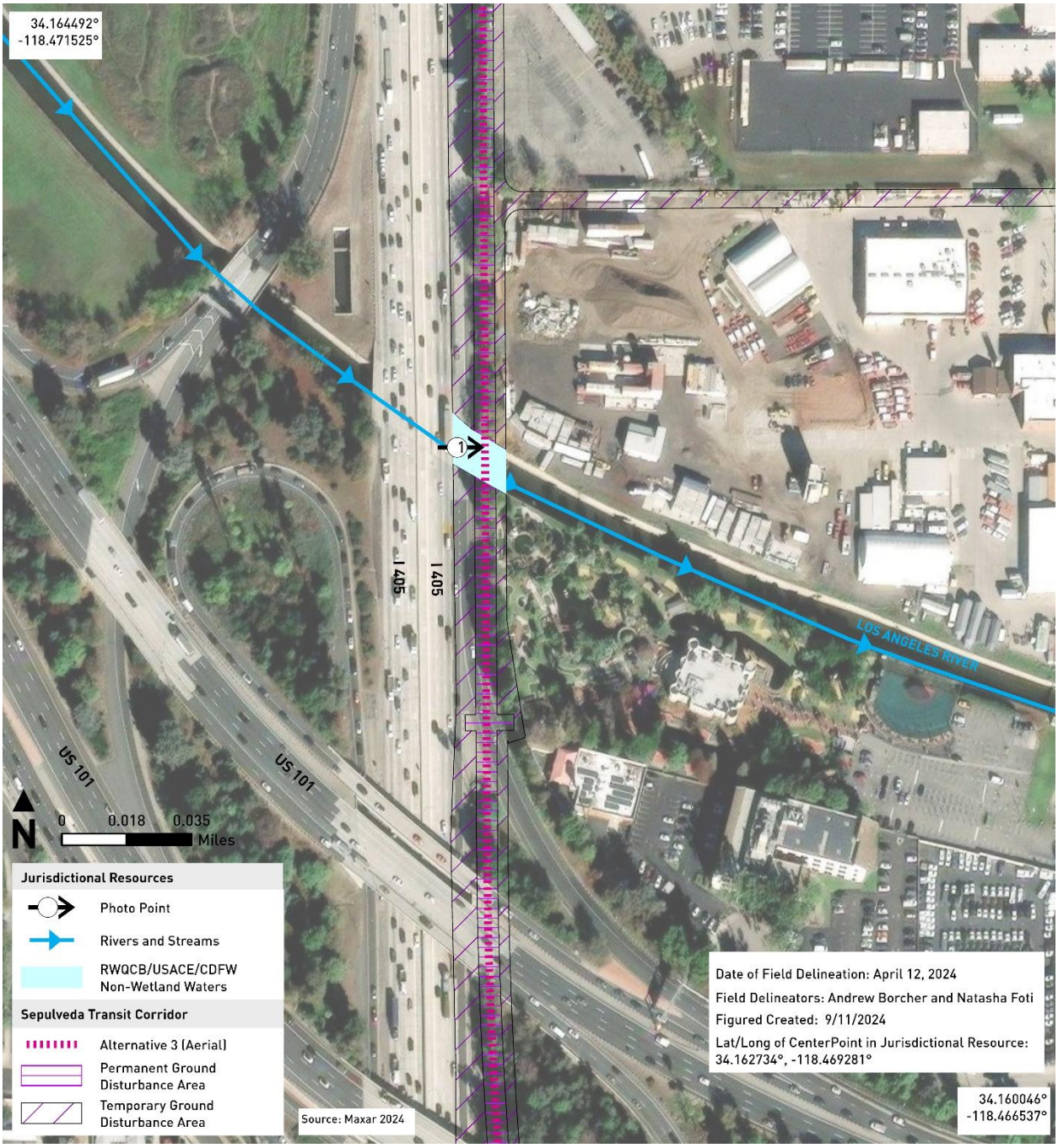
Table 4-4. Alternative 3: Summary of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	Lat/Long	Cowardian Class	Jurisdiction Type
Los Angeles River	34.162734, -118.469281	Riverine, perennial, artificial	Non-wetland WOTUS, WOTS, CDFW Streambed
Ephemeral Drainage (D-1)	34.106107, -118.479128	Riverine, ephemeral, streambed	Non-wetland WOTS, CDFW Streambed

Source: HTA, 2024

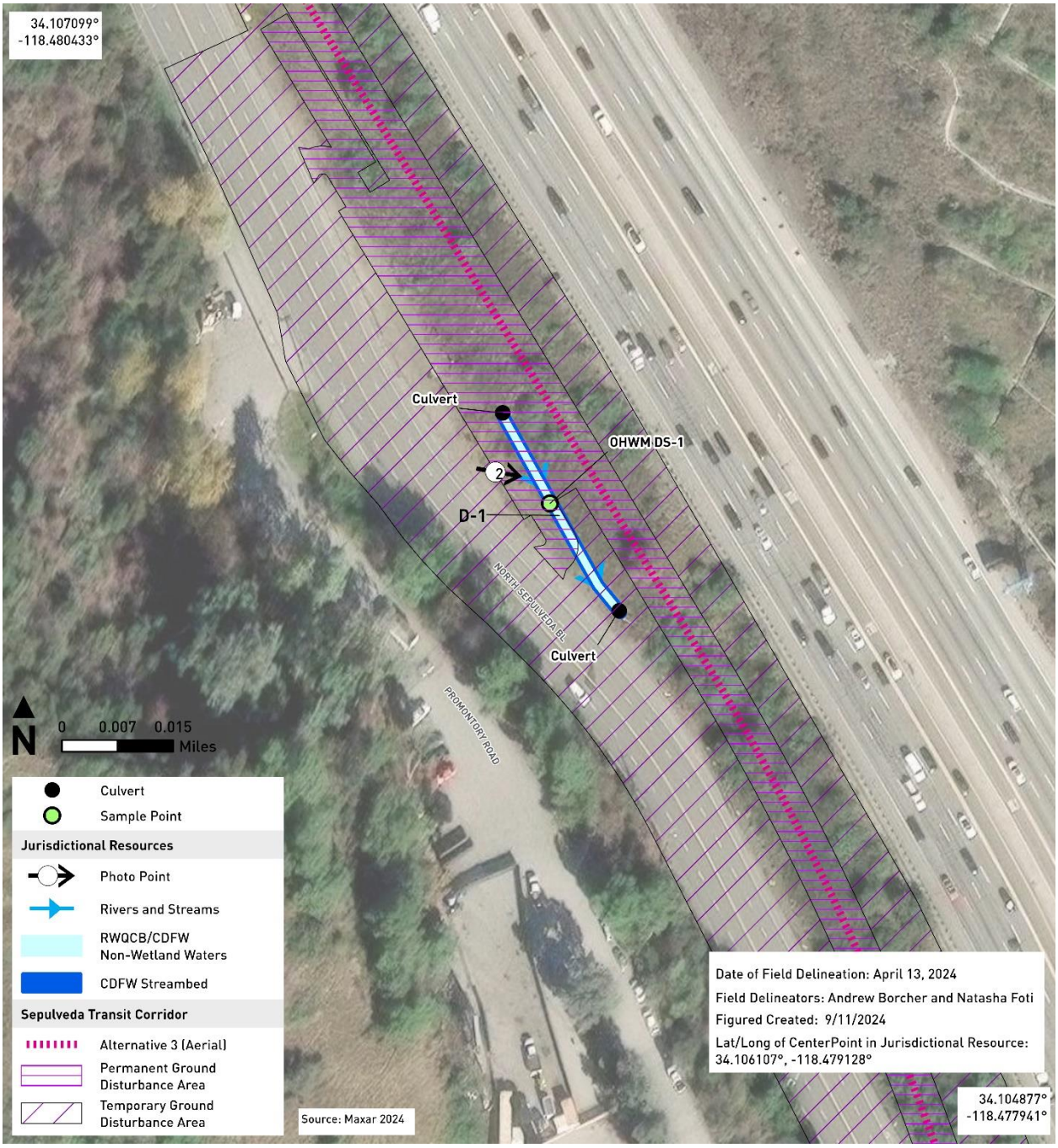
CDFW = California Department of Fish and Wildlife
Lat/Long = Latitude/Longitude
WOTS = waters of the state
WOTUS = Waters of the United States

Figure 4-4. Alternative 3: Jurisdictional Resources and Ground Disturbance Area page 1



Source: HTA, 2024

Figure 4-5. Alternative 3: Jurisdictional Resources and Ground Disturbance Area page 2



Source: HTA, 2024

4.2.3.3 Alternative 4

Alternative 4 will traverse the Los Angeles River north of US-101. Alternative 4 includes an aerial alignment that will cross over the river adjacent to Sepulveda Boulevard north of US-101 (refer to Figure 3-9 and Attachment 1 Site Photographs). The Los Angeles River is concrete-lined and devoid of riparian or herbaceous wetland vegetation where Alternative 4 will traverse the river. The Los Angeles River is a TNW from the confluence of Arroyo Calabasas and Bell Creek, located northwest of Alternative 4's

Ground Disturbance Area, to the river's outlet in San Pedro Bay south of Alternative 4 (USACE, 2023). However, the river is only considered a Navigable Water[4] from the river's outlet into San Pedro Bay to San Pedro Highway Bridge and/or up to 2.5 feet amsl, and not in the Ground Disturbance Area for Alternative 4. The Los Angeles River is under the jurisdiction of USACE, CDFW and RWQCB.

No potential wetlands or riparian areas were observed throughout the Alternative 4 Ground Disturbance Area. Therefore, no wetland determination data forms were required.

Non-wetland jurisdictional features mapped within the Ground Disturbance Area for Alternative 4 are summarized as follows and listed in Table 4-5 and Table 4-6, and shown on Figure 4-6.

0.13 acre (5,681 sq. ft.) of non-wetland WOTUS, CDFW streambed and RWQCB waters of the state within Los Angeles River No other jurisdictional wetlands or waters were observed within the Ground Disturbance Area for Alternative 4.

Table 4-5. Alternative 4: Acreage of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	USACE WOTUS (sq. ft./acres)	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)
Los Angeles River	5,681/0.13	5,681/0.13	5,681/0.13

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = waters of the state
WOTUS = Waters of the United States

Table 4-6. Alternative 4: Summary of Jurisdictional Features Mapped within the Ground Disturbance Area

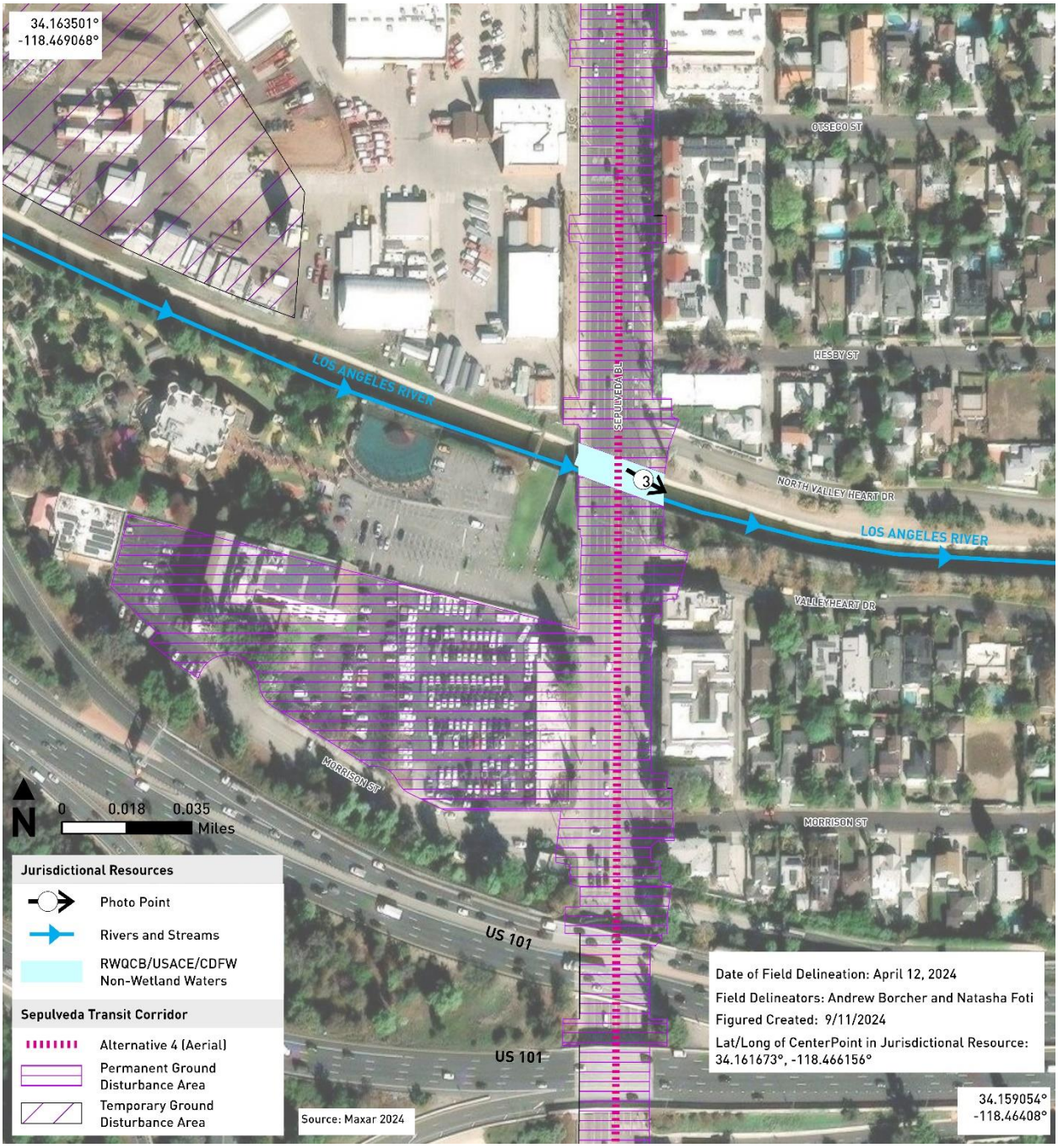
Aquatic Feature	Lat/Long	Cowardian Class	Jurisdiction Type
Los Angeles River	34.161673, -118.466156	Riverine, perennial, artificial	Non-wetland WOTUS, WOTS, CDFW Streambed

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
Lat/Long = Latitude/Longitude
WOTS = waters of the state
WOTUS = Waters of the United States

[4] The term "Traditional Navigable Water" is used in reference to Section 404 of the Clean Water Act, while the term "Navigable Water" is used in reference to Section 10 of the Rivers and Harbors Act. The entire stretch of the Los Angeles River is considered a Traditional Navigable Water, but only the portion in proximity to its outlet into San Pedro Bay is considered a Navigable Water.

Figure 4-6. Alternative 4: Jurisdictional Resources and Ground Disturbance Area



Source: HTA, 2024

4.2.3.4 Alternative 5

Alternative 5 will traverse the Los Angeles River north of US-101. Alternative 5 includes an underground alignment that will cross under the river via tunnel, and under Sepulveda Boulevard north of US-101 (refer to Figure 3-12 and Attachment 1 Site Photographs). The Los Angeles River is concrete-lined and devoid of riparian or herbaceous wetland vegetation where Alternative 5 will traverse the river. The Los Angeles River is a TNW from the confluence of Arroyo Calabasas and Bell Creek outside, located northwest of the Alternative 5 Ground Disturbance Area to the river's outlet in San Pedro Bay south of Alternative 5 (USACE, 2023). However, the river is only considered a Navigable Water[5] from the river's outlet into San Pedro Bay to San Pedro Highway Bridge and/or up to 2.5 feet amsl, and not in the Ground Disturbance Area for Alternative 5. The Los Angeles River is under the jurisdiction of USACE, CDFW and RWQCB.

No potential wetlands or riparian areas were observed throughout the Ground Disturbance Area. Therefore, no wetland determination data forms were required.

Non-wetland jurisdictional features mapped within the RSA for Alternative 5 are summarized as follows and listed in Table 4-7 and Table 4-8, and shown on Figure 4-7.

- 0.06 acre (2,745 square feet) of non-wetland WOTUS, CDFW streambed and RWQCB waters of the state within Los Angeles River within the Alternative 5 Ground Disturbance Area

No other jurisdictional wetlands or waters were observed within the RSA for Alternative 5.

Table 4-7. Alternative 5: Acreage of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	USACE WOTUS (sq. ft./acres)	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)
Los Angeles River	2,745/0.06	2,745/0.06	2,745/0.06

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = waters of the state
WOTUS = Waters of the United States

Table 4-8. Alternative 5: Summary of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	Lat/Long	Cowardian Class	Jurisdiction Type
Los Angeles River	34.161660, -118.466111	Riverine, perennial, artificial	Non-wetland WOTUS, WOTS, CDFW Streambed

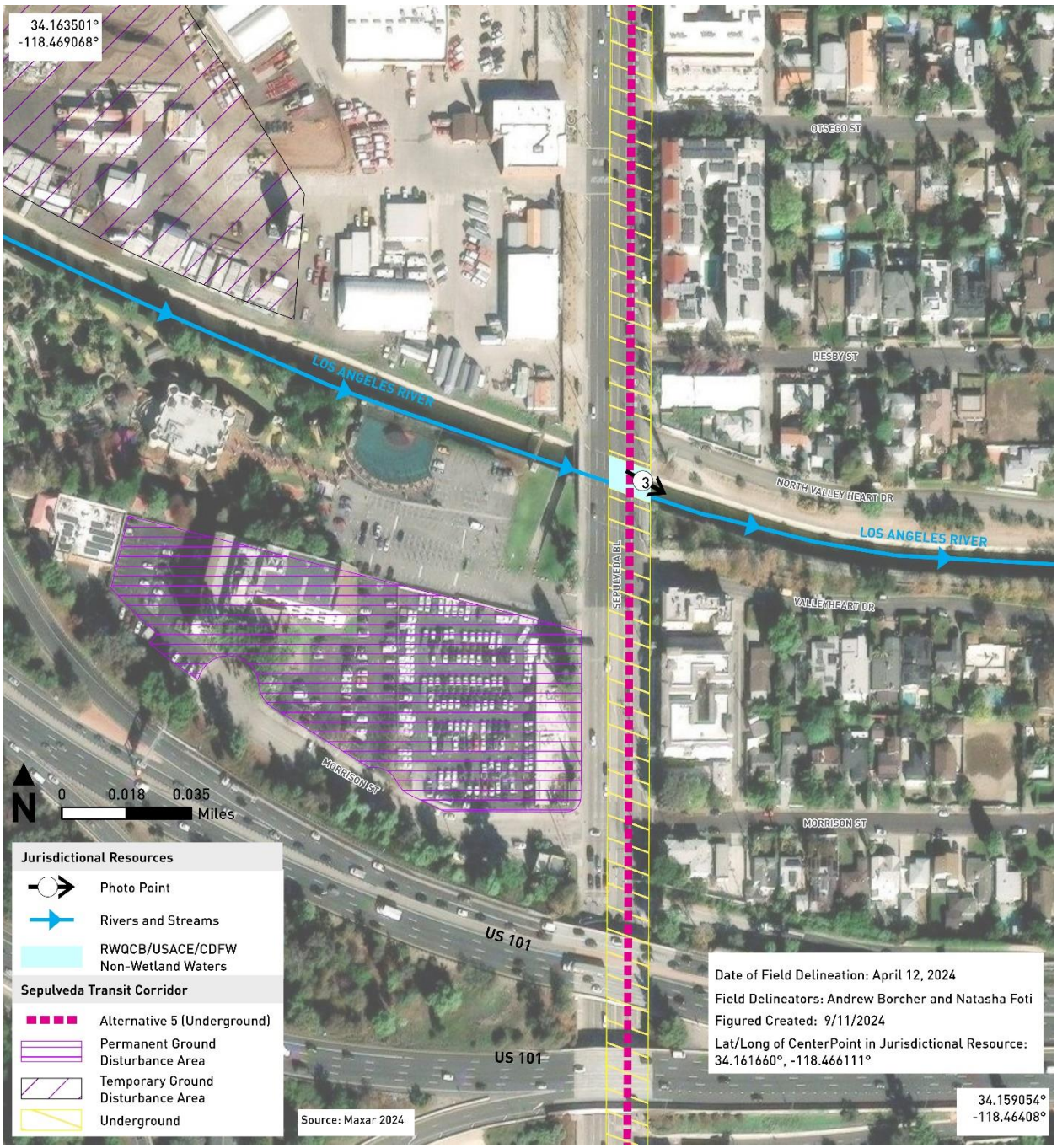
Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = waters of the state

[5] The term "Traditional Navigable Water" is used in reference to Section 404 of the Clean Water Act, while the term "Navigable Water" is used in reference to Section 10 of the Rivers and Harbors Act. The entire stretch of the Los Angeles River is considered a Traditional Navigable Water, but only the portion in proximity to its outlet into San Pedro Bay is considered a Navigable Water.

WOTUS = Waters of the United States
Lat/Long = Latitude/Longitude

Figure 4-7. Alternative 5: Jurisdictional Resources and Ground Disturbance Area



Source: HTA, 2024

4.2.3.5 Alternative 6

Alternative 6 will traverse the Los Angeles River north of US-101. Alternative 6 will cross under the river via tunnel, and under Van Nuys Boulevard, north of US-101. The Los Angeles River is concrete-lined and

devoid of riparian or herbaceous wetland vegetation where Alternative 6 will traverse the river. The Los Angeles River is a TNW from the confluence of Arroyo Calabasas and Bell Creek, located northwest of Alternative 6's Ground Disturbance Area, to the river's outlet in San Pedro Bay south of Alternative 6 (USACE, 2023). However, the river is only considered a Navigable Water[6] from the river's outlet into San Pedro Bay to San Pedro Highway Bridge and/or up to 2.5 feet amsl, and not in the Ground Disturbance Area for Alternative 6. The Los Angeles River is under the jurisdiction of USACE, CDFW and RWQCB.

Access was not granted by the Los Angeles Department of Water and Power (LADWP) to the mid-mountain shaft work area in the undeveloped area within Stone Canyon Reservoir open space area for Alternative 6 (refer to Figure 4-2, Attachment 1 Site Photographs, and Attachment 2 OHWM Data Form). This area likely contains additional non-wetland ephemeral drainages that drain into the Stone Canyon Reservoir to the west (D-2 and D-3). Potentially jurisdictional drainages in this area were not measured in the field or photographed. Instead, estimations are provided of jurisdictional areas within the Ground Disturbance Area based on aerial interpretation. Jurisdictional estimations for these areas are included in Table 4-9 and Table 4-10 and shown on Figure 4-8 and Figure 4-9.

No potential wetlands or riparian areas were observed throughout the Ground Disturbance Area. Therefore, no wetland determination data forms were required.

Non-wetland jurisdictional features mapped within the Ground Disturbance Area for Alternative 6 are summarized as follows and listed in Table 4-9 and Table 4-10 and shown on Figure 4-8 and Figure 4-9.

- 0.07 acre (3,092 square feet) of non-wetland WOTUS, CDFW streambed and RWQCB waters of the state within Los Angeles River within the Alternative 6 Ground Disturbance Area
- 0.11 acre (4,698 square feet) of non-wetland RWQCB waters of the state within the Ground Disturbance Area within the mid-mountain shaft in Stone Canyon Reservoir open space preserve for Alternative 6
- 0.22 acre (9,415 square feet) of non-wetland CDFW streambed within the Ground Disturbance Area within the mid-mountain shaft in Stone Canyon Reservoir open space preserve for Alternative 6

Table 4-9. Alternative 6: Acreage of Jurisdictional Features Mapped within Ground Disturbance Area

Aquatic Feature	USACE WOTUS (sq. ft./acres)	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)
Los Angeles River	3,092/0.07	3,092/0.07	3,092/0.07
Ephemeral Drainages (D-2 and D-3) (estimated)	—	4,698/0.11	9,415/0.22

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = United States Army Corps of Engineers
WOTS = waters of the state
WOTUS = Waters of the United States
— = no data

[6] The term "Traditional Navigable Water" is used in reference to Section 404 of the Clean Water Act, while the term "Navigable Water" is used in reference to Section 10 of the Rivers and Harbors Act. The entire stretch of the Los Angeles River is considered a Traditional Navigable Water, but only the portion in proximity to its outlet into San Pedro Bay is considered a Navigable Water.

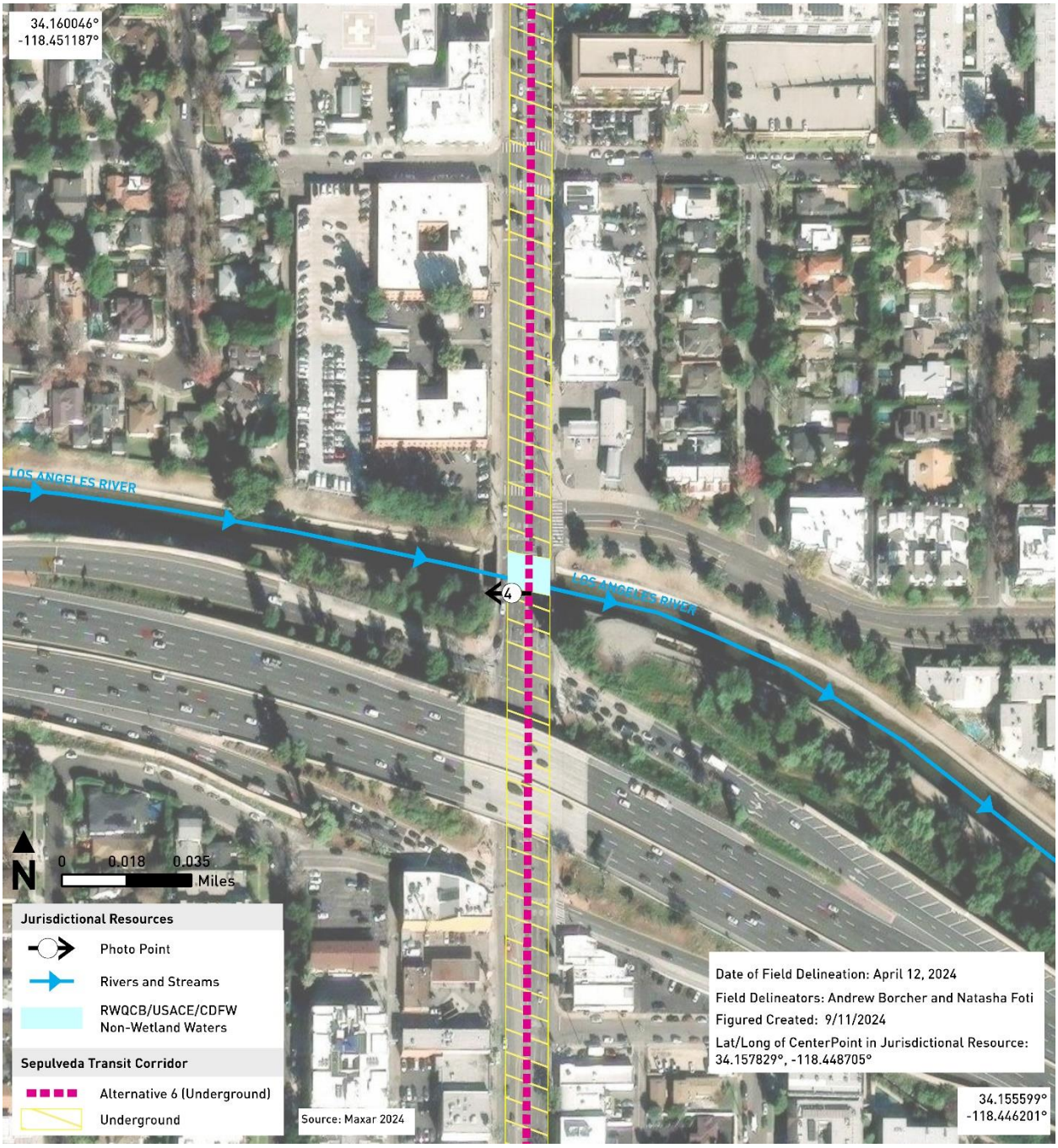
Table 4-10. Alternative 6: Summary of Jurisdictional Features Mapped within the Ground Disturbance Area

Aquatic Feature	Lat/Long	Cowardian Class	Jurisdiction Type
Los Angeles River	34.157829, -118.448705	Riverine, perennial, artificial	Non-wetland WOTUS, WOTS, CDFW Streambed
Ephemeral Drainage (D-2)	34.120572, -118.452464	Riverine, ephemeral, streambed	Non-wetland WOTS, CDFW Streambed
Ephemeral Drainage (D-3)	34.119166, -118.451496	Riverine, ephemeral, streambed	Non-wetland WOTS, CDFW Streambed

Source: HTA, 2024

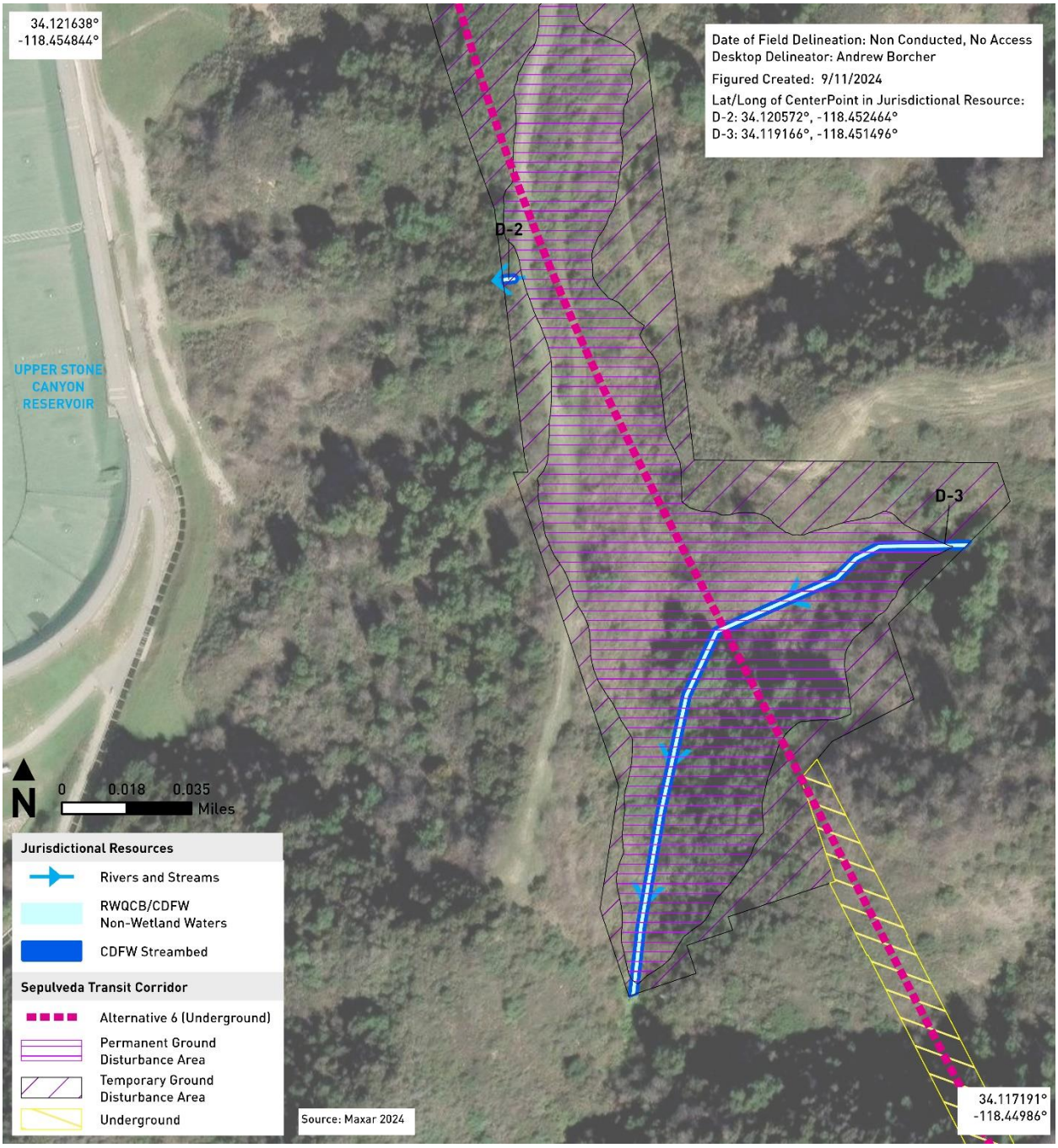
CDFW = California Department of Fish and Wildlife
Lat/Long = Latitude/Longitude
WOTS = waters of the state
WOTUS = Waters of the United States

Figure 4-8. Alternative 6 Jurisdictional Resources and Ground Disturbance Area page 1



Source: HTA, 2024

Figure 4-9. Alternative 6: Jurisdictional Resources and Ground Disturbance Area page 2



Source: HTA, 2024

5 IMPACTS

5.1 Project Impacts

This section details potential impacts to jurisdictional aquatic resources within the Ground Disturbance Area for each alternative. These impacts will require permits from state and federal agencies. Specifically, a Section 1602 Streambed Alteration Agreement from CDFW and 401 Water Quality Certification from RWQCB are anticipated to be required.

Direct impacts to the Los Angeles River are not expected from construction of proposed structures that will span the river since support structures will be constructed and installed outside jurisdictional areas. Given that the Los Angeles River is a concrete-lined open channel in the Ground Disturbance Area, indirect impacts such as shading are considered negligible. Additionally, tunneling under the river will not affect jurisdictional areas. Temporary work areas associated with the construction of the support structures and tunnels will also be positioned outside of the jurisdictional area. A Rivers and Harbors Act Section 10 Permit from USACE is not required since the Project is outside of the tidal waters of the Los Angeles River; however, a Section 408 permission under Rivers and Harbors Act Section 14 may be required.

5.1.1 Alternative 1

Aquatic resources under the jurisdiction of RWQCB and CDFW present within the Ground Disturbance Area of Alternative 1 are summarized as follows, listed in Table 5-1 and shown on Figure 4-2 and Figure 4-3.

- 0.02 acre (837 square feet) of temporary impacts to non-wetland RWQCB waters of the state adjacent to I-405 within the Ground Disturbance Area for Alternative 1 (D-1)
- 0.03 acre (1,183 square feet) of temporary impacts to non-wetland CDFW streambed adjacent to I-405 within the Ground Disturbance Area for Alternative 1 (D-1)

Table 5-1. Alternative 1: Summary of Potential Impacts to Jurisdictional Features within the Ground Disturbance Area

Aquatic Feature	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)	Linear Feet
Unnamed Ephemeral Channel (D-1)	837/0.02	1,183/0.03	164

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board

5.1.2 Alternative 3

Aquatic resources under the jurisdiction of RWQCB and CDFW that are present within the Ground Disturbance Area of Alternative 3 are summarized as follows, listed in Table 5-2 and shown on Figure 4-4 and Figure 4-5.

- 0.02 acre (837 sq. ft.) of temporary impacts to non-wetland RWQCB waters of the state adjacent to I-405 within the Ground Disturbance Area for Alternative 3 (D-1)
- 0.03 acre (1,183 sq. ft.) of temporary impacts to non-wetland CDFW streambed adjacent to I-405 within the Ground Disturbance Area for Alternative 3 (D-1)

Table 5-2. Alternative 3: Summary of Potential Impacts to Jurisdictional Features within the Ground Disturbance Area

Aquatic Feature	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)	Linear Feet
Unnamed Ephemeral Channel (D-1)	837/0.02	1,183/0.03	164

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board

5.1.3 Alternative 4

No direct impacts are expected to jurisdictional aquatic resources from construction of Alternative 4. Indirect impacts to jurisdictional aquatic resources and riparian habitat could result from dust associated with vegetation clearing and grading activities at the potential off-site staging yards N1 and N2 (refer to BTR, Figure 7-9 [Metro, 2025]), located in the western portion of the Sepulveda Basin (refer to BTR, Figure 7-20). Construction related dust could impact the overall quality of habitat present; for example, dust deposition on vegetation can result in reduced photosynthesis and an increase in leaf temperature, making vegetation more susceptible to drought (Farmer, 1993).

5.1.4 Alternative 5

No direct impacts are expected to jurisdictional aquatic resources from construction of Alternative 5. Indirect impacts to jurisdictional aquatic resources and riparian habitat could result from dust associated with vegetation clearing and grading activities at the potential off-site staging yards N1 and N2 (refer to BTR, Figure 8-8 [Metro, 2025]), located in the western portion of the Sepulveda Basin (refer BTR, Figure 8-18). Construction-related dust could impact the overall quality of habitat present; for example, dust deposition on vegetation can result in reduced photosynthesis and an increase in leaf temperature, making vegetation more susceptible to drought (Farmer, 1993).

5.1.5 Alternative 6

Aquatic resources under the jurisdiction of RWQCB and CDFW that are present within the Ground Disturbance Area of Alternative 6 are summarized as follows, listed in Table 5-3 and shown on Figure 4-8 and Figure 4-9, and are as follows:

- 0.11 acre (4,698 sq. ft.) of permanent impacts to non-wetland RWQCB waters of the state within the Alternative 6 RSA at the mid-mountain shaft work area in Stone Canyon Reservoir open space preserve (within Ground Disturbance Area) (D-2 and D-3)
- 0.22 acre (9,415 sq. ft.) of permanent impacts to non-wetland CDFW streambed mid-mountain shaft Project area in Stone Canyon Reservoir open space preserve for Alternative 6 (within Ground Disturbance Area)

Table 5-3. Alternative 6: Summary of Potential Impacts to Jurisdictional Features within the Ground Disturbance Area

Aquatic Feature	RWQCB WOTS (sq. ft./acres)	CDFW Streambed (sq. ft./acres)	Linear Feet
Ephemeral Drainages (D-2 and D-3)	4,698/0.11	9,415/0.22	938

Source: HTA, 2024

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board

5.2 Avoidance, Minimization, and Mitigation Measures for Alternatives

Mitigation measures are recommended as precautionary measures relevant to the protection of regulated aquatic resources and are required to offset potentially significant adverse project impacts. A reporting mechanism will be associated with the measures to document mitigation completion and performance.

5.2.1 Wetland and Waters Permitting

Prior to approval of the Project plans and specifications for the locally preferred alternative, Metro will coordinate with USACE to confirm CWA regulatory compliance and integrate permit conditions into the plans and specifications. A Section 10 Permit under the Rivers and Harbors Act from USACE will not be required for work or structures over or under the Los Angeles River since the permit is only required for tidal waters; the Project is not located in the tidal waters of the Los Angeles River. Section 408 permission may be required under Section 14 of the River and Harbors Act. RWQCB may authorize the Project per a Section 401 Water Quality Certification. CDFW may authorize the Project per a Streambed Alteration Agreement pursuant to CFGC Section 1602. If issued, wetlands and waters permits may require additional avoidance and minimization measures in addition to those listed in Section 5.2.2. Regulatory requirements, including acquiring necessary permits for aquatic resources, is addressed in Section 1.5, *Project Measures* of the BTR (PM BIO-2) (Metro, 2025).

5.2.2 Avoidance Minimization and Mitigation Measures

Because the Project would impact USACE, RWQCB, and CDFW jurisdictional areas, construction activity avoidance and minimization measures would be applicable. These measures would be incorporated into the Project design and would therefore minimize potential impacts to areas under USACE, RWQCB, and CDFW jurisdiction. In addition, any permits required, per regulations and policies previously discussed (Section 2, *Regulatory and Policy Setting*), could include measures for the Project that are not included in this section.

Potential impacts to drainages will be avoided, minimized, and/or mitigated through the regulatory approach to permitting (addressed in the BTR, Section 2.4 [Metro, 2025]) and incorporation of project-specific mitigation measures (addressed in the BTR, Sections 2.4, 5.4, 6.4, 7.4, 8.4 and 9.4).

PM BIO-1: ***Stormwater Pollution Prevention Plan Development***

- *A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared prior to the start of construction. The SWPPP shall identify the design features and best management practices that shall be used:*
  - *To manage drainage-related issues (e.g., erosion, sedimentation, and non-stormwater discharges) during construction activities. Erosion-control measures shall be regularly checked by inspectors, biologist(s), and/or resident engineer. Fencing and erosion-control measures in all construction areas shall be inspected a minimum of once per week.*
  - *To establish material handling and staging areas and prevent discharges or spills from entering waterways, including vehicle fueling practices and waste management as follows:*

- *For refueling guidelines: Fueling of equipment shall occur in designated fueling zones within the construction staging areas. Drip pans, drip cloths, or absorbent pads shall be used during fluid replacements. All equipment used within the approved construction limits shall be maintained to minimize and control fluid and grease leaks. Provisions shall be made to contain and immediately clean up unintentional spills of fuel, oil, or fluid. When handling toxic substances, construction vehicles shall carry a Hazardous Material Spill Kit for use in the event of a spill. All construction personnel working on-site shall be trained in using these kits. Spill containment materials must be on-site or readily available for any equipment maintenance or refueling.*
- *For waste management: Spoils, trash, and any construction-generated debris shall be removed to an approved off-site disposal facility. Trash and food items shall be contained in closed containers and removed daily to prevent discharges or spills from entering waterways. Litter and debris will be cleaned up daily from the site. Hazardous waste shall be stored in appropriately labeled containers in a proper staging area (i.e., with secondary containment or indoors or under cover). Any hazardous spills shall be immediately cleaned up and reported.*

MM BIO-15: ***Avoid and Minimize Construction-Related Impacts to Jurisdictional Aquatic Resources.*** *Potential impacts to drainages shall be avoided and/or minimized when working in or adjacent to aquatic resources as defined in the Aquatic Resources Delineation Report (Appendix A from the Sepulveda Transit Corridor Project, Final Ecosystem and Biological Resources Technical Report) through incorporation of the following:*

- *A Qualified Biologist/Aquatic Specialist shall monitor construction activities adjacent to jurisdictional aquatic resources during vegetation clearing and/or initial ground-disturbance activities. Additionally, they shall support impact avoidance and minimization measures detailed in permits and approvals obtained for the Project.*
- *Limits of the Ground Disturbance Areas shall be designated with lathe staking or a similar method. All equipment and workers shall remain within approved work limits.*
- *Wherever possible, construction personnel shall utilize existing access roads or previously disturbed areas to reach the project area or stage their vehicles and equipment.*
- *Maintenance personnel will also not leave any waste or debris behind which could impact natural habitats.*
- *To protect water quality:*
  - *Appropriate BMPs shall be installed to prevent erosion and guide runoff during rain events.*

- *Equipment and materials shall be staged within the alignment and away from water drainages. Parked equipment shall have secondary containment to prevent any fluid leaks from coming into contact with the ground surface.*
- *Water containing mud, silt, or other pollutants from construction activities shall not be allowed to enter into an aquatic resource.*
- *Disposal or temporary placement of excess fill, brush, or other debris shall not be allowed in Waters of the United States, Waters of the State, and California Department of Fish and Wildlife streambeds or their banks.*

MM BIO-17: *A Qualified Biologist(s) shall monitor project activities during vegetation clearing, grading, and/or construction within or adjacent to areas identified as sensitive habitat and/or jurisdictional aquatic resources. If special-status species and/or sensitive habitats adjacent to the project sites are inadvertently impacted by activities, then the Qualified Biologist(s) shall immediately inform the on-site construction supervisor who shall temporarily halt or redirect work away from the area of impact. If unanticipated impacts occur to occupied habitat for special-status species, the Project shall consult with the appropriate regulatory agencies.*

MM BIO-21: *To prevent unnecessary erosion, runoff, and sedimentation, all construction activities within 100 feet of drainages or wetlands shall cease during Stormwater Pollution Prevention Plan-defined rain events and shall not resume until conditions are suitable for the movement of equipment and materials. Vehicle access along unpaved access routes shall not occur during saturated soil condition to avoid rutting or other soil disturbance.*

MM BIO-24: *Dust suppression measures shall be implemented during construction to minimize the creation of dust clouds and possible degradation of sensitive vegetation communities and special-status species suitable habitat. These measures shall include applying water at least once per day or as determined necessary by the Qualified Biologist(s) to prevent visible dust emissions from exceeding 100 feet in length in any direction. In addition, watering frequency shall be increased to four times per day if winds exceed 25 miles per hour. Nontoxic soil stabilizers may be used on access roads to control fugitive dust, as needed.*

5.2.3 Compensatory Mitigation

Avoidance and minimization efforts would be implemented to avoid, minimize, and mitigate for impacts to USACE non-wetland waters of the U.S., RWQCB waters of the state, and CDFW streambed during Project construction. Any required mitigation will be developed in coordination with the resource agencies through the permitting process. Generally, permanent impacts are mitigated at a 2:1 or 3:1 replacement ratio per acre; actual mitigation will be subject to agency discretion.

Impacts may be mitigated by site restoration, including returning jurisdictional features to original contours and bank stabilization, aquatic resources enhancement, and/or the purchase of mitigation credits in a local and approved mitigation bank.

6 DISCUSSION

This Aquatic Resources Delineation Report is required to be included with applications for state and federal wetland and waters permits. This Aquatic Resources Delineation Report would be submitted to USACE as a Preliminary JD, and assumes the Los Angeles River is a jurisdictional water of the US. However, Section 404 permitting is not required as no impacts are proposed to the Los Angeles River. Therefore, this report will only be used as guidance for RWQCB Section 401 and CDFW Section 1602 permitting, and for USACE Section 408 permission.

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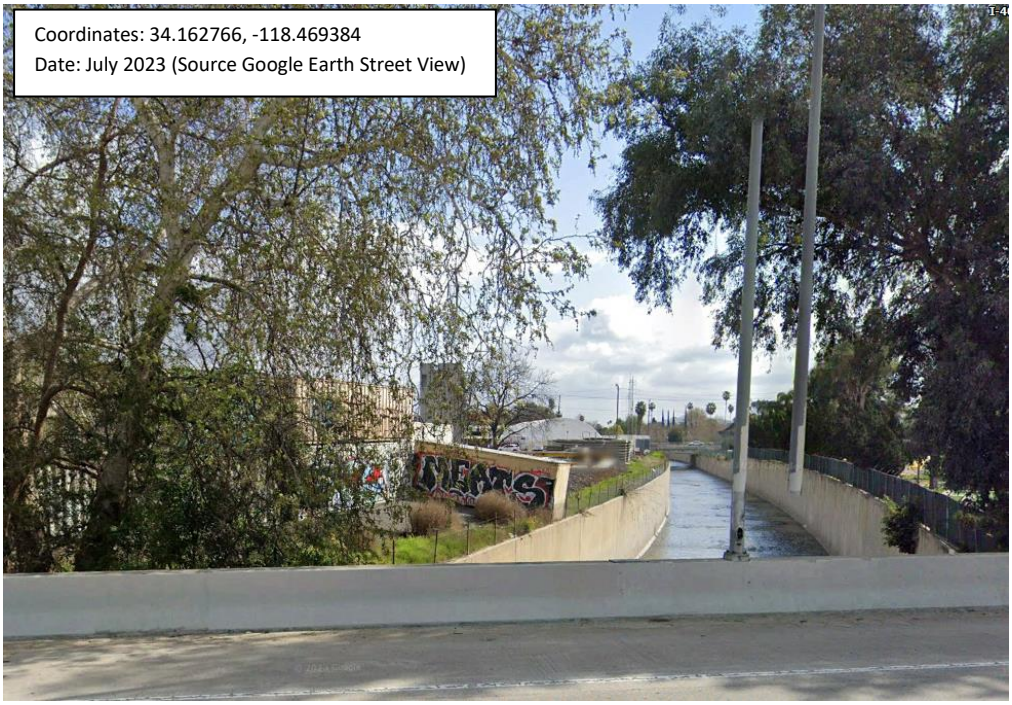
Attachment 1. Site Photographs

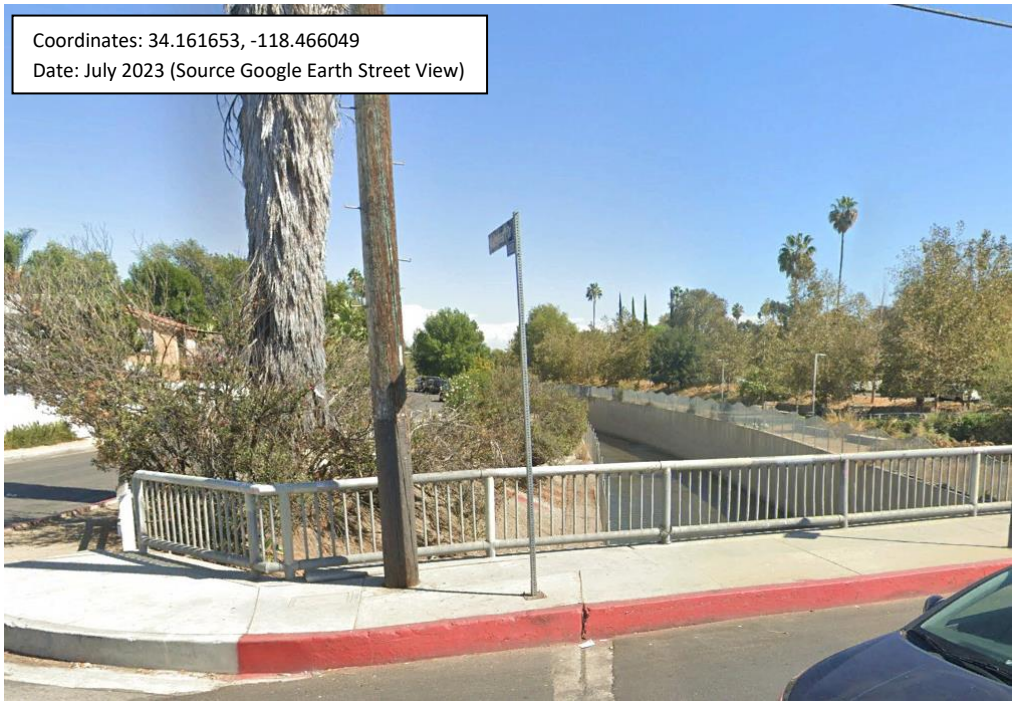
ALTERNATIVES 1 and 3



Photograph 1. Alternatives 1 and 3: View facing east of the Los Angeles River adjacent to Interstate 405 (I-405).

Photograph 2. Alternatives 1 and 3: View facing southeast of the ephemeral channel (D-1) adjacent to and west of I-405.

ALTERNATIVES 4 AND 5



Photograph 3: Alternatives 4 and 5: View facing east of the Los Angeles River adjacent to Sepulveda Boulevard. Alternative 4's proposed alignment goes over the Los Angeles River and Sepulveda Boulevard at this location. Alternative 5's proposed alignment goes under the Los Angeles River at this location.

ALTERNATIVE 6

Photograph 4. Alternative 6: View facing west of the Los Angeles River adjacent to Van Nuys Boulevard. Project alignment proposed under the Los Angeles River and Van Nuys Boulevard.

Attachment 2. OHWM Data Form

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: SEPULVEDA
Project Number:
Stream: DS-1
Investigator(s): N. FOTI

Date: 4/13/23 **Time:** 1230
Town: LOS ANGELES **State:** CA
Photo begin file#: **Photo end file#:**

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

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: BETWEEN N. SEPULVEDA & SOUTHBOUND 405

Projection: 34.106156 **Datum:**
Coordinates: -118.471209 WGS 84

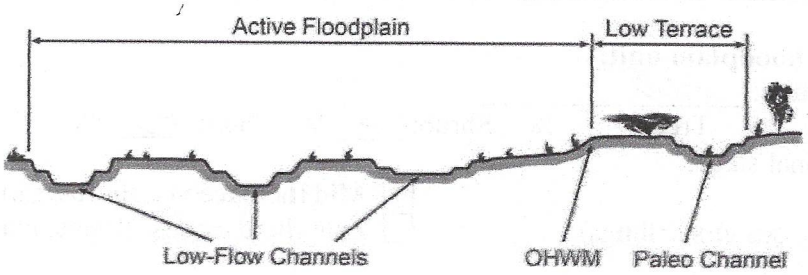
Potential anthropogenic influences on the channel system:
- ADJACENT TO BUSY ROAD AND FREEWAY
- STARTS AT CULVERT AND ENDS AT CULVERT

Brief site description: EPHEMERAL DRAINAGE FLOWS NORTH TO SOUTH BETWEEN TWO CULVERTS, EARTHEN CHANNEL ADJACENT AND PARALLEL TO FREEWAY

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 2022
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

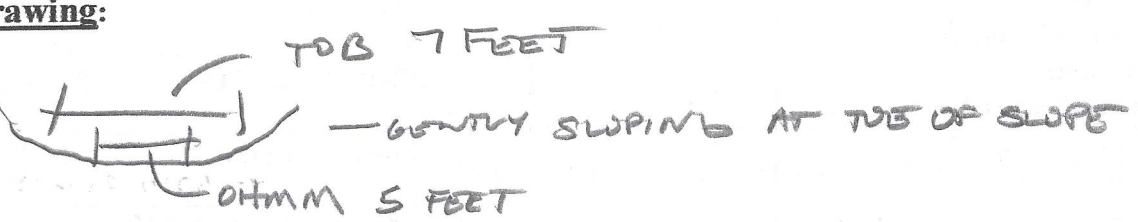


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

Project ID: DS-1 **Cross section ID:** 1 **Date:** 4/13/23 **Time:** 1230

Cross section drawing:



OHWM

GPS point: 34.706105, -118.479160

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: PRESENCE OF SURFACE FLOW
- ☐ Other: _____

Comments:

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: TAKEN AS LINE FEATURE

Characteristics of the floodplain unit:

Average sediment texture: FINE

Total veg cover: 15 % Tree: 0 % Shrub: 0 % Herb: 15 %

Community successional stage:

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

Indicators:

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

Comments: