



Biological Resources Assessment for the Watson High Desert Logistics Project East & West Sites Town of Apple Valley, California

APNs: 0463-23-202, -03, -04,
-05, -06, -53, -54, -55, -56, and -73 and 0463-231-62

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SECTION 1: INTRODUCTION

This Biological Resources Assessment (BRA) was prepared by FirstCarbon Solutions (FCS) to analyze the biological impacts of the proposed Watson High Desert Logistics Project (proposed project) in the Town of Apple Valley (Town), in San Bernardino County, California. The purpose of this document is to (1) characterize existing and potentially occurring biological resources on the project site and adjacent areas; (2) summarize relevant local, State, and federal regulations; (3) identify any biological constraints to development of the proposed project; (4) analyze potential project-related impacts on regulated biological resources; and (5) recommend appropriate measures to mitigate potential impacts on biological resources to less than significant levels.

1.1 - Project Location and Setting

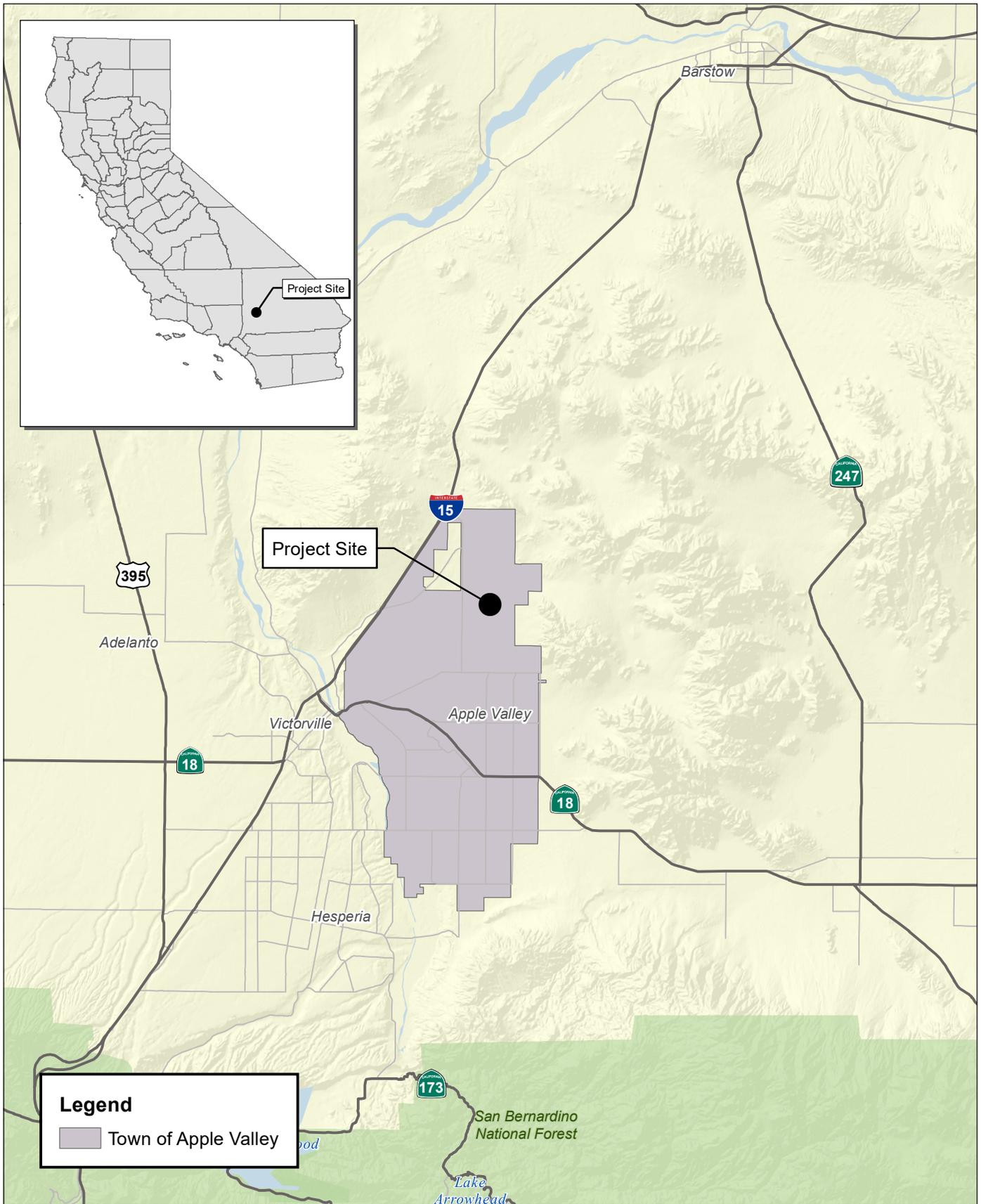
The proposed project includes two sites, the West Project, which is approximately 47 acres, and the East Project, which is approximately 154 acres. The West Project site is bordered by a large warehouse to the north, Los Padres Road to the south, Navajo Road to the east, and undeveloped lands to the west. The East Project site is bordered by Johnson Road to the north, Kensington Street to the south, Central Road to the east, and Navajo Road to the west (Exhibit 1).

The East Project site consists of Assessor's Parcel Numbers (APNs) 0463-23-202, -03, -04, -05, -06, -53, -54, -55, -56, and -73, and the West Project site consists of APN 0463-231-62. Both sites are within Section 22, Township 6 North, Range 3 West on the *Apple Valley North, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map (Exhibit 2).

1.2 - Project Description

Within the East Site, the applicant proposes to develop, construct, and operate two warehouse buildings. Building 1 would be approximately 1,631,800 square feet, with 268 dock doors, 681 auto parking stalls along the west side of the warehouse, and 637 trailer parking stalls on the north and south sides. Building 2 would be approximately 1,200,800 square feet, with 221 dock doors, 571 auto parking stalls on the east side of the warehouse, and 461 trailer parking stalls along the north and south sides. Within the West Site, the applicant proposes an approximately 896,500-square-foot industrial warehouse building, including 112 dock doors along the south side of the warehouse, 603 auto parking stalls on the east and west sides of the warehouse, and 304 trailer parking stalls along the south side of the warehouse building.

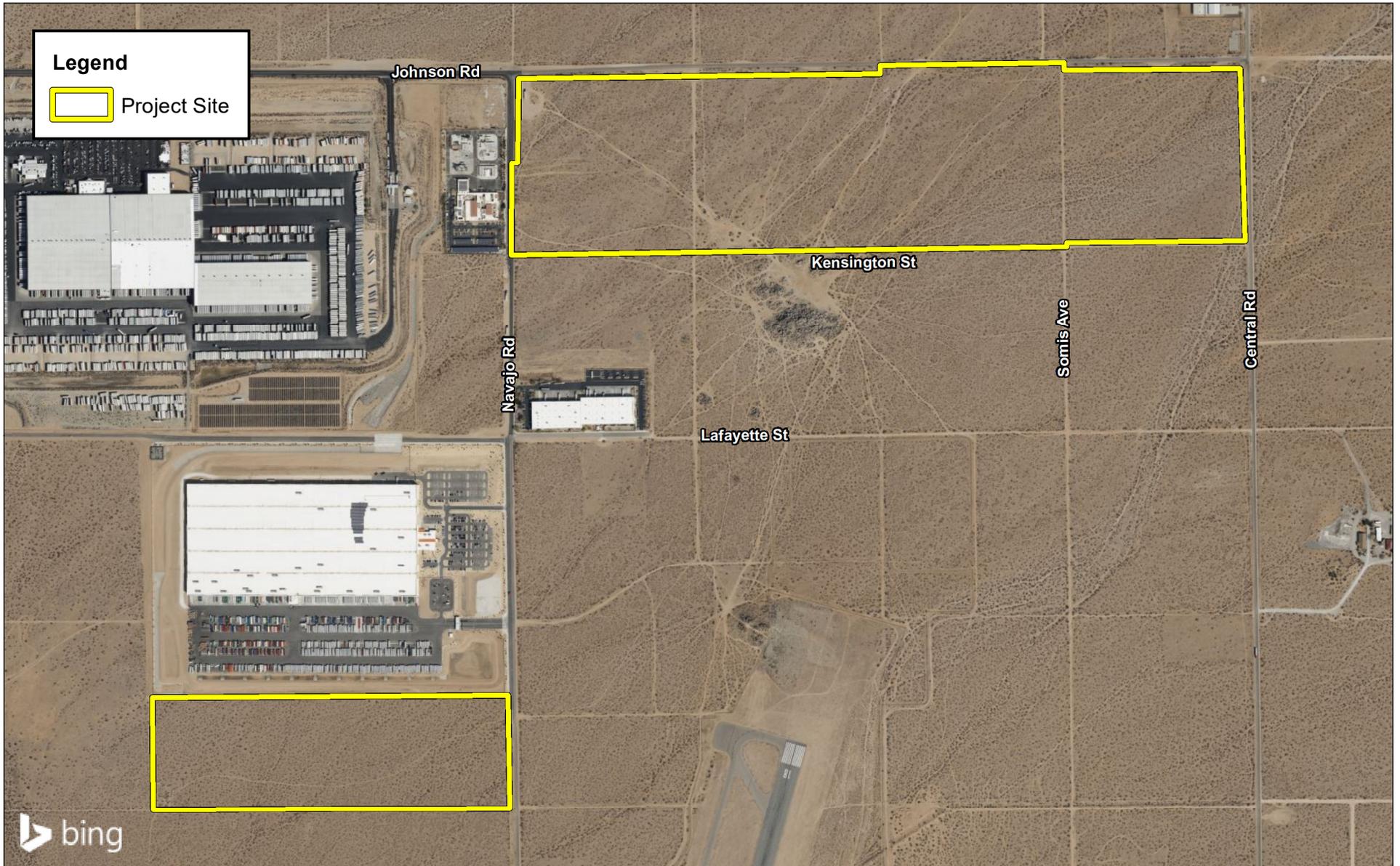
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Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

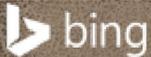


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Legend

 Project Site



Source: Bing Aerial Imagery.



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Exhibit 2 Local Vicinity Map

TOWN OF APPLE VALLEY
WATSON HIGH DESERT LOGISTICS PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

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SECTION 2: REGULATORY SETTING

2.1 - Federal

2.1.1 - Endangered Species Act

The United States Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under the Endangered Species Act. Section 9 of the Endangered Species Act protects listed species from “take,” which is broadly defined as actions taken to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” The Endangered Species Act protects threatened and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were actually listed during the environmental review process.

A proposed project may acquire permission to take listed and candidate species through implementation of sections of the Endangered Species Act. If the proposed project is funded by, authorized by, or otherwise involves a federal agency, Section 7 requires those agencies to consult with the USFWS to ensure that the project does not jeopardize the future existence of any listed species. The consultation results in either a concurrence letter from USFWS stating that the proposed action does not jeopardize the species, or a Biological Opinion issued by USFWS that includes a defined limit of take of listed species that is authorized for the action. When there is no federal nexus to pursue Section 7 permissions, USFWS may authorize take of listed species through Section 10, which allows private landowners, corporations, Native American Tribes, states, cities, and counties to implement projects that could affect listed species. Under this process, the project proponent seeks take permissions through completing and submitting for approval a Habitat Conservation Plan (HCP) approved by the USFWS. The HCP defines the project and potential for “take” of species, and outlines measures to mitigate or compensate for impacts that would occur during implementation of the project. Often a draft Implementing Agreement (IA) is included with the permit application for larger HCPs, such as a regional plan. An IA is a contract that describes the roles and responsibilities of the permit holder, the federal wildlife agency, and any other parties responsible for implementing the HCP.

2.1.2 - Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. All migratory birds and their nests are protected from take and other impacts under the MBTA (16 United States Code [USC] § 703, *et seq.*).

2.1.3 - Bald and Golden Eagle Protection Act

The golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) are afforded additional protection under the Eagle Protection Act, amended in 1973 (16 USC § 669, *et seq.*) and the Bald and Golden Eagle Protection Act (16 USC §§ 668–668d).

2.1.4 - Clean Water Act

Section 404

The agencies are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. In light of this decision, the agencies will interpret the phrase "waters of the United States" consistent with the Supreme Court's decision in the *Sackett* case. In *Sackett*, the Supreme Court adopted the Rapanos plurality's test for adjacent wetlands: only those wetlands with a continuous surface connection to other regulated waters, such that the two are indistinguishable.

The United States Army Corps of Engineers (USACE) administers Section 404 of the federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. The term "waters of the United States" is defined in USACE regulations at 33 Code of Federal Regulations Part 328.3(a) as:

1. Waters which are:
 - a. 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;
 - b. The territorial seas; or
 - c. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
3. Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
 - a. Waters identified in paragraph (a)(1) of this section; or
 - b. Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds 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 "waters of the United States":

1. Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
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 Clean

- Water Act, the final authority regarding Clean Water Act jurisdiction remains with the United States Environmental Protection Agency (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 do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA and/or USACE.

"Wetland" refers to areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and seasonal wetlands. Wetlands are considered jurisdictional if they fall under one of the categories of waters of the United States defined above. The USACE jurisdiction typically extends up to the ordinary high water mark (OHWM).

In general, a USACE permit must be obtained before placing fill in wetlands or other waters of the United States. The type of permit depends on the impacted acreage, the purpose of the proposed fill, and other factors.

Section 401

Section 401 of the CWA states that "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act." Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB).

2.2 - State

2.2.1 - CEQA Guidelines

The Town of Apple Valley has elected to use the following California Environmental Quality Act (CEQA) Guidelines Appendix G checklist questions serve as thresholds of significance when evaluating the potential impacts of a proposed project on biological resources. Impacts are considered significant if a project would:

- A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.
- B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.
- C. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

2.2.2 - California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with the California Department of Fish and Wildlife (CDFW) when preparing CEQA documents to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code [FGC] § 2080). CESA directs agencies to consult with the CDFW on projects or actions that could affect listed species and to determine whether jeopardy would occur and allows the CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. CESA allows the CDFW to authorize exceptions to the State’s prohibition against take of a listed species if the take is incidental to carrying out an otherwise lawful project that has been approved under CEQA (FGC § 2081). Under CESA, the California Fish and Game Commission may authorize taking of candidate species and the CDFW may recommend that the Commission authorize (or not authorize) the taking of listed or candidate species (FGC § 2084).

2.2.3 - California Fish and Game Code

Rare, Threatened, and Endangered Species

Under CESA, the CDFW has the responsibility for maintaining a list of endangered and threatened species (FGC § 2070). Fish and Game Code Sections 2050 through 2098 outline the protection provided to California's rare, endangered, and threatened species. Fish and Game Code Section 2080 prohibits the taking of plants and animals listed under the CESA, and Fish and Game Code Section 2081 established an Incidental Take Permit Program for State-listed species. The CDFW maintains a list of "candidate species" which it formally notices as being under review for addition to the list of endangered or threatened species.

Fully Protected Species

Fish and Game Code Sections 3500–5500 outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Species of Special Concern

In addition to formal listing under the Endangered Species Act and CESA, some species receive additional consideration by the CDFW and local lead agencies during the CEQA process. Species that may be considered for review are those listed as a "Species of Special Concern." The CDFW maintains lists of "Species of Special Concern" that serve as species "watch lists." Species with this status may have limited distributions or limited populations and/or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored and they may receive special attention during environmental review. While Species of Special Concern which are not State-listed do not receive CESA protection, they can be shown to meet the criteria for State listing and thus be protected under CEQA when they meet the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines § 15380). In addition to Species of Special Concern, the CDFW Special Animals List identifies animals that are tracked by the California Natural Diversity Database (CNDDB) and may be potentially vulnerable but warrant no federal interest and no legal protection.

Other Sensitive Species

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society (CNPS) List ranked 1A, 1B, and 2 would typically require evaluation under CEQA Guidelines.

Native Bird Protection

Fish and Game Code Sections 3503, 3503.5, and 3513 protect native birds. Under Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any native bird. Under Fish and Game Code Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird. Under Fish and Game Code Section 3513, it is unlawful to take or possess any native, migratory bird as designated in the MBTA except as provided by rules and provisions of the MBTA. Mitigation for avoidance of impacts to nesting birds is typically included in CEQA and other permitting documents to ensure project compliance with these Fish and Game Code Sections.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (NPPA) (FGC § 1900, *et seq.*) prohibits the taking, possessing, or sale within the State of any plants with a State designation of rare, threatened, or endangered (as defined by the CDFW). An exception to this prohibition in the NPPA allows landowners to take listed plant species under specified circumstances, provided that the owners first notify CDFW and give the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. Fish and Game Code Section 1913 exempts from “take” prohibition “the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right-of-way.” Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

Lake or Streambed Alteration

Fish and Game Code Section 1602 requires any entity to notify the CDFW before beginning any activity that “may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake” or “deposit debris, waste, or other materials that could pass into any river, stream, or lake.” “River, stream, or lake” includes waters that are episodic and perennial and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement will be required if the CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.

Natural Community Conservation Planning Act

Section 2800 of the California Fish and Game Code establishes the Natural Community Conservation Planning Act (NCCP Act), which allows the CDFW to authorize Natural Community Conservation Plans (NCCPs) to allow take of species listed under CESA and other sensitive species and vegetation communities on a regional scale. The primary objective of the NCCP Act is to conserve covered natural communities and species at the ecosystem scale while accommodating compatible land uses, or covered activities. NCCPs must provide conservation and management of natural communities and species in perpetuity within the area covered by permits. Each NCCP provides measures necessary to conserve and manage sensitive biological resources, including natural vegetation communities and the plant and wildlife species they support, within a reserve system, while also allowing compatible

developments and other projects to take species and habitats under special conditions outside of areas targeted for conservation. NCCPs are different from HCPs because the NCCP Act requires that conservation actions improve the long-term conservation of species, whereas HCPs typically only require avoidance of adverse impacts to species. Additionally, while HCPs can be implemented at a project or regional scale, an NCCP must be applied across regional scales to promote the long-term recovery of species, protection of habitats and natural communities, and maintenance of species diversity at the landscape level.

2.2.4 - California Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State” (Water Code § 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the State” (Water Code § 13050(e)).

2.2.5 - Western Joshua Tree Conservation Act

The Western Joshua Tree Conservation Act (WJTCA) prohibits unpermitted killing or removal of Joshua trees and establishes a fund to acquire and manage suitable habitat for the species. Project applicants are required to obtain an Incidental Take Permit (ITP) through CDFW and, on a per-Joshua tree basis, pay an in-lieu mitigation fee to the fund under the WJTCA. In-lieu mitigation fees are assessed based on the height of the western Joshua trees and the area where they occur. In the reduced fee area, as defined in California Fish and Game Code Section 1927.3 (d), the following fees are specified for take of western Joshua trees:

- A. One thousand dollars (\$1,000) for each western Joshua tree 5 meters or greater in height.
- B. Two hundred dollars (\$200) for each western Joshua tree 1 meter or greater but less than 5 meters in height.
- C. One hundred fifty dollars (\$150) for each western Joshua tree less than 1 meter in height.

These in-lieu mitigation fees would be paid to the Western Joshua Tree Mitigation Fund.

2.2.6 - California Oak Woodlands Conservation Act (Assembly Bill 242)

The State of California enacted the California Oak Woodlands Conservation Act in 2001. It established requirements for the preservation and protection of oak woodlands and trees and allocated funding to be managed by the Wildlife Conservation Board that would support a variety of ways to preserve oak woodlands throughout the State. In order to qualify to use these funds, counties were required to adopt an oak woodland conservation management plan. In 2004, Senate Bill (SB) 1334 (Public Resources Code [PRC] § 21083.4) expanded this preservation effort by requiring that a county, “in determining whether CEQA requires an environmental impact report, negative declaration, or mitigated negative declaration, to determine whether a project in its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment, and would require the county, if it determines there may be a significant effect to oak woodlands, to

require one or more of specified mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands.”

2.2.7 - California Native Plant Society Rare Plant Rankings

The CNPS maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Following are the definitions of the CNPS ranks:

- **Rank 1A:** Plants presumed extirpated in California and either rare or extinct elsewhere
- **Rank 1B:** Plants rare, threatened, or endangered in California and elsewhere
- **Rank 2A:** Plants presumed extirpated in California but common elsewhere
- **Rank 2B:** Plants rare, threatened, or endangered in California but more common elsewhere
- **Rank 3:** Plants about which more information is needed
- **Rank 4:** Watch List: Plants of limited distribution

Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. All plants appearing on the CNPS List ranked 1 or 2 are considered to meet the CEQA Guidelines Section 15380 criteria. Rank 3 and 4 plants do not automatically meet this definition. Impacts to Rank 3 plants may warrant consideration under CEQA if sufficient information is available to assess potential impacts to such plants. Rank 4 plants do not clearly meet CEQA standards or the Town’s thresholds for impact considerations but impacts to them may warrant consideration under CEQA if cumulative impacts are significant enough to affect their overall rarity.^{1,2}

2.2.8 - California Desert Native Plant Act

The purpose of the California Desert Native Plant Act is to protect certain California desert native plants from unlawful harvesting on both public and privately-owned lands. The Act applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties. Within these counties, the Act prohibits the harvest, transport, sale, or possession of specific native desert plants under many circumstances unless a person has a valid permit or wood receipt and the required tags and seals.

2.3 - Regional and Local Policies and Ordinances

2.3.1 - San Bernardino County Code of Ordinance Chapter 88.01: Plant Protection and Management

The County of San Bernardino Code of Ordinance Chapter 88.01 includes regulations and guidelines for the management of plant resources to preserve and protect certain plants, including regulated desert native plants, regulated trees, and regulated riparian plants. A tree or plant removal permit

¹ California Native Plant Society (CNPS). 2020. Considerations for Including CRPR 4 Plant Taxa in CEQA Biological Resource Impact Analysis. Sacramento, CA. January 21, 2020.

² California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities.

would be required for the removal of a regulated tree or plant as identified in this ordinance. The following plants and trees are regulated under Chapter 88.01:

- Desert native plants with stems 2 inches or greater in diameter or 6 feet or greater in height: smoketree (*Dalea spinosa*), mesquites (*Prosopis*), all species of the family Agavaceae (century plants, nolin, yuccas), creosote rings 10 feet or greater in diameter, all Joshua trees, desert ironwood (*Olneya tesota*), palos verdes (*Cercidium*);
- Regulated trees, including native trees with a 6-inch or greater stem diameter or 19 inches in circumference measured 4.5 feet above natural grade level and three or more palm trees in linear plantings which are 50 feet or greater in length within established windrows or parkway plantings; or
- Riparian trees within riparian areas or within a stream.

2.3.2 - Town of Apple Valley Municipal Code Chapter 9.76 Plant Protection and Management

The Town of Apple Valley Municipal Code Chapter 9.76 includes regulations to protect and preserve desert native plants including the following:

1. Regulated Desert Native Plants. The following desert native plants or any part thereof, except the fruit, shall not be harvested or removed except under a permit issued by the Town Manager, or designee:
 - a. The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:
 - 1) Smoketree (*Dalea spinosa*)
 - 2) All species of the family Agavaceae (century plants, nolin, yuccas, cacti). Including the following known to Apple Valley:
 - a) Mohave Yucca (*Yucca schidigera*)
 - b) Lords Candle (*Yucca whipplei*)
 - c) Barrel cactus (*Ferocactus acanthodes*)
 - 3) All species of the genus *Prosopis* (mesquites).
 - b. Creosote Rings, ten feet or greater in diameter.
 - c. All Joshua trees (mature or immature), subject to provision of Section 9.76.040.
2. All plants protected or regulated by the State Desert Native Plant Act (i.e., Food and Agricultural Code 80001, *et seq.*) shall be required to comply with the provisions of those statutes prior to the issuance of any county development permit or land use application approval. The Town Manager, or designee, is responsible for the issuance of any required wood tags, seals or permits.

A removal permit issued by the Town Manager shall be required for the removal of any native tree or plant that is subject to the City Ordinance Chapter 9.76.010.

2.3.3 - Town of Apple Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan

The Town of Apple Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan (MSHCP/NCCP) would, if adopted, guide conservation efforts for the Town of Apple Valley and San Bernardino County to allow for take of species and habitats while simultaneously preserving open space and providing protections for covered threatened and endangered species. The plan is currently in review and has not yet been adopted, and while a draft MSHCP/NCCP document is not publicly available for review, there are several planning documents available for public review. The Town of Apple Valley General Plan has a certified Environmental Impact Report (EIR) (State Clearinghouse #2008091077) that was approved on August 11, 2009. The certified EIR analyzed potential environmental impacts as the result of proposed build out of the EIRs planning area (46,948.3± acres within the Town's corporate limits and 3,579.7± acres within the Town's Sphere of Influence that are proposed for annexation). The certified EIR establishes appropriate mitigation measures for environmental impacts from the implementation of the General Plan.

SECTION 3: METHODS

3.1 - Literature and Database Reviews

FCS conducted a literature review to provide a baseline from which to evaluate potential project impacts on biological resources on the project site and in the surrounding area.

3.1.1 - Existing Documentation

As part of the literature review, an FCS Biologist examined existing environmental documentation for the project site and vicinity. This documentation included literature pertaining to the habitat requirements of special-status species with the potential to occur in the project vicinity and federal register listings, protocols, and species data provided by the USFWS and CDFW.

3.1.2 - Topographic Maps and Aerial Photographs

FCS Biologists reviewed current USGS 7.5-minute topographic quadrangle map(s) and aerial photographs as a preliminary analysis of the existing conditions within the project sites and immediate vicinity.³ Information obtained from the topographic maps included elevation, general watershed information, and potential drainage feature locations using Google Earth in conjunction with the United States EPA Watershed Assessment, Tracking & Environmental Results System (WATERS).⁴ Aerial photographs provided a perspective of the current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors.

3.1.3 - Soil Surveys

FCS Biologists also reviewed United States Department of Agriculture (USDA) soil surveys to establish if soil conditions in the project site are suitable for any special-status plant species.⁵ These soil profiles include soil series with similar thickness, arrangement, and other important characteristics. The soil series consist of separate soil mapping units that provide specific information regarding soil characteristics. Many special-status plant species have a limited distribution based exclusively on soil type. To determine the existing soil mapping units within the project site and to establish if soil conditions are suitable for supporting special-status species populations, an FCS Biologist reviewed pertinent USDA soil survey data.

3.1.4 - Special-status Species Database Search

An FCS Biologist compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the project vicinity based on a search of the USFWS Information for

³ United States Geological Survey (USGS). 2023. National Geospatial Program. Website: https://www.usgs.gov/core-science-systems/national-geospatial-program/us-topo-maps-america?qt-science_support_page_related_con=4#qt-science_support_page_related_con. Accessed August 5, 2024.

⁴ United States Environmental Protection Agency (EPA). 2023. Watershed Assessment, Tracking, and Environmental Results System (WATERS). Website: <https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system>. Accessed August 5, 2024.

⁵ Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey (WSS). United States Department of Agriculture (USDA). Website: <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed August 5, 2024.

Planning and Consultation (IPaC) database,⁶ the CNDDDB, and the CNPS Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California.^{7,8} The CNPS search focused on records from the *Apple Valley North, California* USGS 7.5-minute Topographic Quadrangle Map and the eight surrounding quadrangles. The CNDDDB Biogeographic Information and Observation System (BIOS 6) was used to determine distances between species occurrences and the project site.⁹

3.1.5 - Assessment of Potential for Occurrence of Special-status Species

The potential for occurrence on the project site was assessed for each of the special-status species identified in the database searches. The assessment of potential for occurrence was based on conditions on the project site, habitat requirements of special-status species, and number of recent (<20 years old) occurrences in the project vicinity. The occurrence potential for each special-status species was classified into one of the following categories:

No Potential for Occurrence or Absent—There is no suitable habitat for the species on the project site or the project site is located outside of the known range of the species.

Low Potential to Occur—Species is known to occur in the project vicinity (within the nine USGS quadrangle search area); however, there is only poor quality or marginal habitat on the project site.

Moderate Potential to Occur—Species is known to occur in the vicinity of the project site (based on recent [within 20 years] CNDDDB or other records within 10 miles of the project site or based on professional expertise specific to the project site or species) and there is marginally or partially suitable habitat on the project site. Alternatively, there is marginally or partially suitable habitat on the project site and the project site is within the known range of the species.

High Potential to Occur—Species is known to occur in the vicinity of the project site (based on recent [within 20 years] CNDDDB or other records within 5 miles of the project site or based on professional expertise specific to the project site or species), and there is suitable habitat on the project site. Alternatively, there is suitable habitat on the project site and the project site is within the known range of the species.

Present—Species is known to occur on the project site based on recent (within 20 years) CNDDDB or other records, and there is suitable habitat present on the project site or the species was observed on the project site during the field survey(s).

⁶ United States Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation (IPaC). Website: <https://ecos.fws.gov/ipac/>. Accessed August 5, 2024.

⁷ California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://apps.wildlife.ca.gov/myaccount/login?ReturnUrl=%2frarefind%2fview%2fRareFind.aspx>. Accessed August 5, 2024.

⁸ California Native Plant Society (CNPS). 2023. California Native Plant Society Rare and Endangered Plant Inventory. Website: <http://www.rareplants.cnps.org/>. Accessed August 5, 2024.

⁹ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed August 5, 2024.

3.2 - General Biological Survey

A general biological field survey was conducted on the West and East project sites by Colibri Ecological Consulting on May 1 and 2, 2024. The objective of the general biological survey was to ascertain general site conditions and identify whether existing vegetation communities provide suitable habitat for special-status plant or wildlife species. The survey was conducted by driving existing roads along the perimeter of the West and East Project sites and within the East Project site, walking meandering transects through both West and East Project sites, and using binoculars to visually inspect, evaluate, and document the potential for the survey area to support State or federally protected resources.

3.2.1 - Vegetation Communities and Plants

Common plant species observed during the general biological survey were identified by visual characteristics and morphology in the field and recorded in a field notebook and on field maps. Uncommon and fewer familiar plants were identified with the use of taxonomical guides, including Jepson eFlora and Calflora.^{10,11} Taxonomic nomenclature used in this study follows The Jepson Manual: Vascular Plants of California.¹² Vegetation community types and boundaries were noted on aerial photos, verified through field observation, and digitized using Esri ArcGIS software® ArcMap 10.0. By incorporating collected field data and interpreting aerial photography, a map of habitat types, land cover types, and other biological resources within the project site was prepared. Vegetation community and land cover types used to help classify habitat types are based on the Manual of California Vegetation (MCV) and cross-referenced with the CDFW Natural Communities List.^{13,14}

3.2.2 - Wildlife

Wildlife species detected during the general biological survey by sight, calls, tracks, scat, or other signs were recorded. Notations were made regarding suitable habitat for those special-status species determined to have the potential to occur within the project site.¹⁵ Appropriate field guides were

¹⁰ Jepson Flora Project (eds.) 2024. Jepson eFlora, <https://ucjeps.berkeley.edu/eflora/>. Accessed on August 2024.

¹¹ Calflora. 2024. Calflora: Information on California plants for education, research, and conservation. Website: <http://www.calflora.org/>. Accessed on August 5, 2024.

¹² Baldwin, B., et al. 2012. The Jepson Manual: Vascular Plants of California. Berkeley: University of California Press. County of San Bernardino (Bernardino). 2007 (amended 2015).

¹³ Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento.

¹⁴ California Department of Fish and Wildlife (CDFW). 2022. Natural Communities List, Sacramento: California Department of Fish and Wildlife. Website: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>. Accessed August 5, 2024.

¹⁵ California Department of Fish and Wildlife (CDFW). 2023. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://apps.wildlife.ca.gov/myaccount/login?ReturnUrl=%2frarefind%2fview%2fRareFind.aspx>. Accessed August 5, 2024.

used to assist in species identification during surveys, such as Peterson, Reid, and Stebbins.^{16,17,18} Online resources such as eBird and California Herps were also consulted, as necessary.^{19,20}

3.2.3 - Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting fragmentation of open space areas create isolated “islands” of wildlife habitat, forming separated populations. Corridors act as an effective link between populations.

The project site was evaluated for evidence of a wildlife movement corridor during the general biological survey. The scope of the biological resource assessment did not include a formal wildlife movement corridor study utilizing track plates, camera stations, scent stations, or snares. Rather, the focus of this study was to determine whether a change in land use at the project site could have significant impacts on the regional movement of wildlife. Conclusions are based on the information compiled during the literature review, including aerial photographs, USGS topographic maps, and resource maps for the vicinity; the field survey; and professional experience with the desired topography, habitat, and resource requirements of the special-status species potentially utilizing the project site and vicinity.

3.3 - Focused Surveys for Special-status Species

3.3.1 - Rare Plants

Rare plants surveys were conducted by Psomas Biologists in 2022 and 2023 in accordance with CDFW protocols for rare plant surveys.²¹ The survey in 2023 focused on recording cacti on the project site. More detailed methods for the surveys are provided in the rare plant survey report in Appendix A.

3.3.2 - Western Joshua Tree

A western Joshua tree inventory survey and health assessments was conducted by Psomas Biologists in 2022. The search for western Joshua trees was accomplished using meandering pedestrian transects throughout the project site, recording the locations of western Joshua trees, collecting measurements from trees, assessing health of the trees, and photographing the trees. More detailed methods for the survey are provided in the western Joshua tree survey report in Appendix B.

FCS Biologists performed a verification of the western Joshua tree survey results in 2024 and provided an assessment of permitting needs for the WJTC process. The methods used in that assessment are provided in the western Joshua tree assessment memorandum in Appendix C.

¹⁶ Peterson, T.R. 2010. A Field Guide to Birds of Western North America, 4th Edition. Boston: Houghton Mifflin Harcourt.

¹⁷ Reid, F. 2006. A Field Guide to Mammals of North America, Fourth Edition. Boston: Houghton Mifflin Harcourt.

¹⁸ Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Third Edition. Boston: Houghton Mifflin Harcourt.

¹⁹ eBird. 2024. Online bird occurrence database. Website: <http://ebird.org/content/ebird/>. Accessed August 5, 2024.

²⁰ California Herps. 2024. A Guide to the Amphibians and Reptiles of California. Website: <http://www.californiaherps.com/>. Accessed August 5, 2024.

²¹ California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Sensitive Natural Communities. Sacramento, California.

3.3.3 - Desert Tortoise

Focused surveys for desert tortoises were conducted by Leatherman BioConsulting Biologists in 2022 in accordance with USFWS 2009 Desert Tortoise (Mojave Population) Field Manual and the current USFWS presence/absence guidance for small projects within the range of the desert tortoise.^{22,23} Special status species surveys are generally valid for 2–3 years. Pursuant to the survey guidelines, the survey was conducted during favorable climatic conditions when air temperatures were most conducive to desert tortoise activity. More detailed methods for the survey are provided in the desert tortoise survey report in Appendix D.

3.3.4 - Burrowing Owl

Breeding season focused surveys for burrowing owls (*Athene cunicularia*) were conducted by Psomas Biologists in 2022 in accordance with survey guidelines described in the 2012 CDFW Staff Report on Burrowing Owl Mitigation. Special status species surveys are generally valid for 2–3 years. As recommended by the survey guidelines, the survey visits were conducted between morning civil twilight and 10:00 a.m. Weather conditions during the surveys were conducive to a high level of bird activity. Surveys were conducted by walking transects throughout areas of suitable habitat. Transects were spaced between 7 meters to 20 meters apart (22 feet and 65 feet), adjusting for vegetation height and density, in order to provide adequate visual coverage of the survey areas. At the start of each transect, and at least every 100 meters (320 feet) along transects, the survey area was scanned for burrowing owls using binoculars. All suitable burrows were inspected for diagnostic owl sign (e.g., pellets, prey remains, whitewash, feathers, bones, and/or decoration) to identify potentially occupied burrows. More detailed methods for the survey are provided in the burrowing owl survey report in Appendix E.

3.4 - Delineation of Federal and State Jurisdictional Waters

A formal delineation of jurisdictional habitats and waters was conducted by a Psomas Regulatory Specialist in 2022. Prior to conducting the delineation, the Regulatory Specialist reviewed soil data provided by the USDA National Hydric Soils List;²⁴ the National Wetlands Inventory's Wetland Mapper;²⁵ and the Water Quality Control Plan for the Lahontan.²⁶ During the survey, jurisdictional features were delineated on an aerial photograph. Jurisdictional drainage features were mapped as a line and the width of the agency jurisdiction was noted; other waterbodies (basins) were mapped as polygons.

²² United States Fish and Wildlife Service (USFWS). 2009. Desert Tortoise (Mojave Population) Field Manual: (Gopherus agassizii). Region 8, Sacramento, California.

²³ United States Fish and Wildlife Service (USFWS). 2019. Pre-project Field Survey Protocol for Potential Desert Tortoise Habitats.

²⁴ United States Department of Agriculture (USDA). Natural Resources Conservation Service (NRCS). 2024. Web Soil Survey. Website: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed August 5, 2024.

²⁵ United States Fish and Wildlife Service (USFWS). 2024. Wetland Mapper. Website: <http://www.fws.gov/wetlands/Data/Mapper.html>. Accessed August 5, 2024.

²⁶ Lahontan Regional Water Quality Control Board (Lahontan RWQCB). Water Quality Control Plan for the Lahontan Region: North and South Basin. Website: http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml. Accessed August 5, 2024.

The OHWM limits were assessed based on methods contained in A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States, A Delineation Manual and the Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States.^{27,28} More detailed methods for the delineation are provided in the Jurisdictional Delineation Report in Appendix F.

²⁷ United States Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). (J.S. Wakeley, R.W. Lichvar, and C.V. Noble, Eds.). Website: <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA489704&Location=U2&doc=GetTRDoc.pdf>. Accessed August 5, 2024.

²⁸ Curtis, K. E., and R. L. Lichvar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States (ERDC/CRREL TN-10-1). Hanover, NH: USACE Research and Development Center, Cold Regions and Research Engineering Laboratory.

SECTION 4: RESULTS

This section summarizes the results of the literature search, general biological reconnaissance survey, special-status species surveys, and jurisdictional delineation. The results of the sensitive biological resources database reviews and an analysis for the potential for occurrence of these resources on the project site are presented in Section 5.

4.1 - Literature Review

4.1.1 - Topography and Hydrology

The project sites include gently sloping areas with an elevation range of approximately 3,010 feet above mean sea level (AMSL) in the west to approximately 3,1090 feet AMSL in the east. Ephemeral drainages were present throughout the project site, as described further below.

4.1.2 - Soils

The Natural Resource Conservation Service (NRCS) Web Soil Survey (WSS) mapped three soil types (Helendale-Bryman Loamy Sands, 2 to 5 Percent Slopes, Cajon-Arizo Complex, 2 to 15 Percent Slopes, and Rock Outcrop-Lithic Torriothents Complex, 15 to 50 Percent Slopes) on the project site (Exhibit 3).

4.1.3 - USFWS Critical Habitat

The project site is not within any areas mapped as designated or proposed Critical Habitat by the USFWS.²⁹

4.2 - General Biological Survey

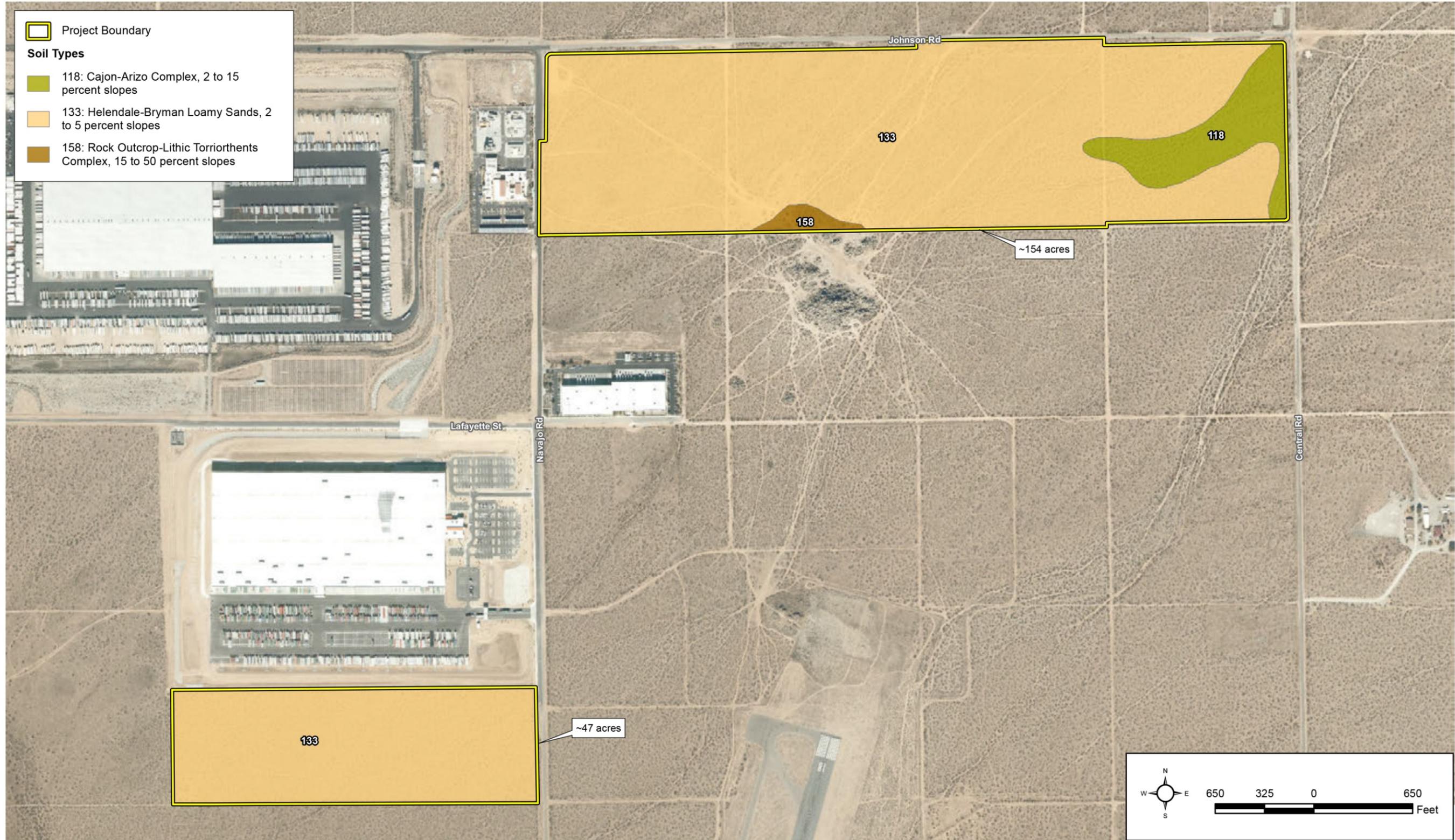
Colibri Staff Scientist Amy Hernandez conducted a field reconnaissance survey of the project site on May 1 and 2, 2024.

4.2.1 - Vegetation Communities and Land Use

The vegetation communities and land cover types recorded on and adjacent to the project site during the general biological survey are described below. A map showing vegetation communities and land cover types is presented in Exhibit 4. Photographs are presented in Appendix G. A complete list of plant species observed on-site is provided in Appendix H. Table 1 provides a summary of vegetation/land use-land cover types and the corresponding acreage within the project sites. In addition to the natural vegetation community, disturbed areas were noted, including roads, off-road vehicle movement, and semi-truck parking throughout the East Project site and a single road along the northern boundary of the West Project site.

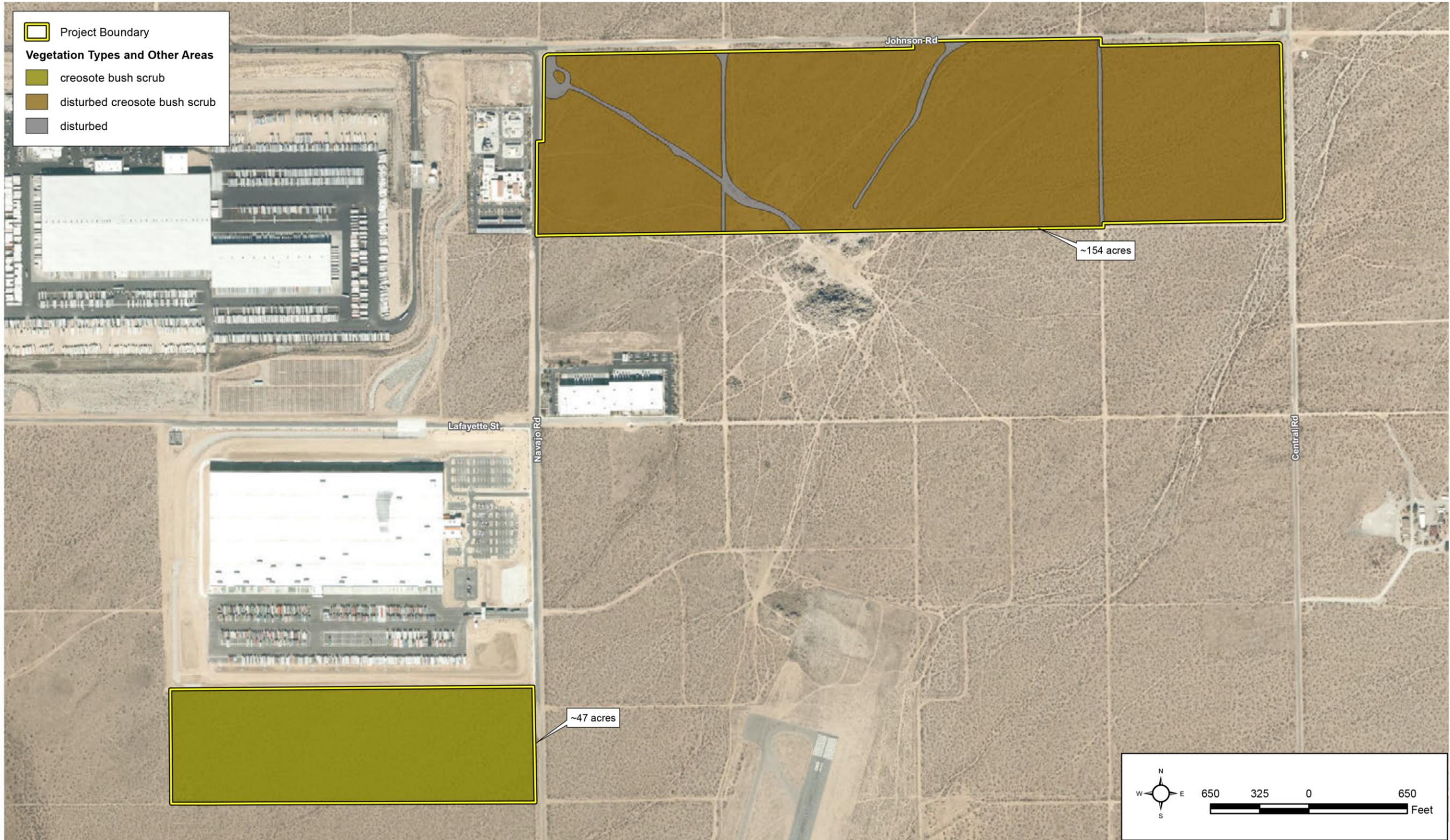
²⁹ United States Fish and Wildlife Service (USFWS). 2024. USFWS Threatened and Endangered Species Active Critical Habitat Report. Critical Habitat ArcGIS Feature Service. Accessed August 5, 2024.

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Table 1: Summary of Vegetation/Land Use Types

Vegetation/Land Use Types	Acres
<i>Larrea tridentata</i> Shrubland Alliance (Creosote Bush Scrub)	199.89
Disturbed	2.04
Total	201.93

Larrea Tridentata Shrubland Alliance (Creosote Bush Scrub)

The project sites contain approximately 199.89 acres of *Larrea tridentata* Shrubland Alliance (Creosote Bush Scrub), which is dominated by creosote bush (*Larrea tridentata*) in the shrub canopy, with cheese bush (*Ambrosia salsola*), white bur-sage (*Ambrosia dumosa*), western Joshua tree, and desert Nevada ephedra (*Ephedra nevadensis*) also present. The canopy is continuous or intermittent and typically less than 3 meters tall. The herbaceous layer is open to intermittent with seasonal annuals or perennial grasses. This alliance is found in alluvial fans, bajadas, upland slopes, and minor intermittent washes on well-drained soils.

Disturbed

The project sites contain approximately 2.04 acres of disturbed areas which includes roads, off-road vehicle movement, and semi-truck parking.

4.2.2 - Wildlife

The vegetation community and land cover types on the project site provide habitat for wildlife species that are tolerant of desert climate. Wildlife species identified during the general biological survey are described below. Wildlife activity during the general biological survey was low and few species were observed. The following discussions regarding the wildlife species observed within the project site are organized by taxonomic group. Each discussion contains representative examples of a particular taxonomic group either observed or expected to occur on-site. Two special-status wildlife species were observed during the surveys including burrowing owl and desert kit fox (*Vulpes macrotis arsipus*). A complete list of wildlife species observed on-site is provided in Appendix H.

Invertebrates

No invertebrate species were observed on-site during the general biological survey.

Amphibians and Fish

No amphibian or fish species were observed on-site during the general biological survey. Because of the desert nature of the project site and vicinity and a lack of permanent or sufficient water sources, fish and amphibians are not expected to occur on-site.

Reptiles

Three reptiles were observed on the project site including long-nosed leopard lizard (*Gambelia wislizenii*), desert horned lizard (*Phrynosoma platyrhinos*), and western side-blotched lizard (*Uta stansburiana elegans*).

Birds

Several avian species were observed during the survey, including common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), black-throated sparrow (*Amphispiza bilineata*), verdin (*Auriparus flaviceps*), burrowing owl, and western kingbird (*Tyrannus verticalis*). Birds may find nesting habitat throughout the project site on bare ground, in grasses, shrubs, and trees, and on buildings adjacent to the site.

Mammals

Three mammal species were observed on-site during the field survey, including white-tailed antelope squirrel (*Ammospermophilus leucurus*), desert cottontail (*Sylvilagus audubonii*), and desert kit fox. Numerous burrows of the white-tailed antelope squirrel were observed throughout the project site.

4.2.3 - Wildlife Movement Corridors and Nursery Sites

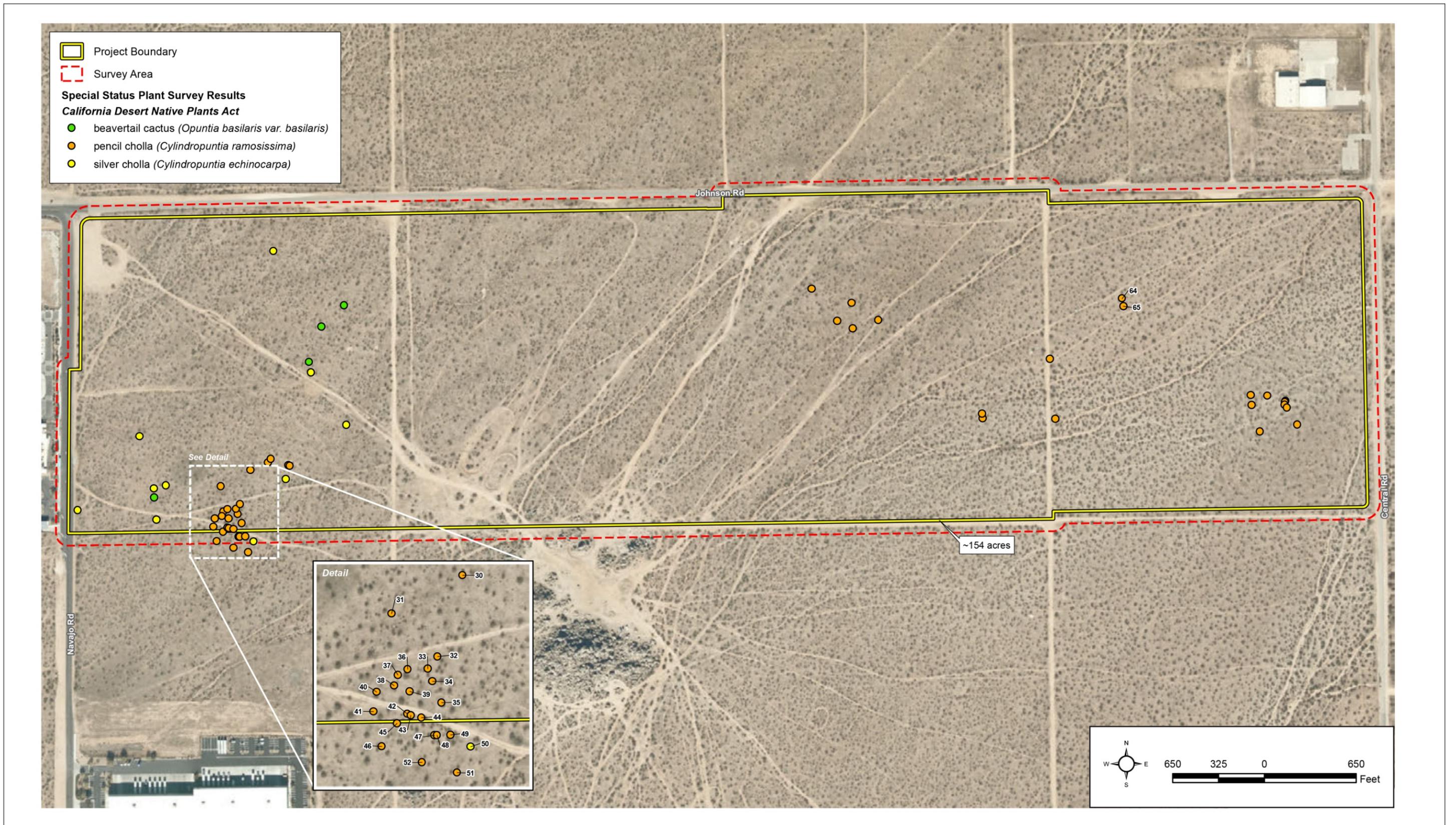
The project site is surrounded by undeveloped land and are not designated or used as a wildlife corridor, linkage, or lands important for movement by various wildlife. Regional wildlife movement was analyzed by the Bureau of Land Management California Desert Connectivity Project.³⁰ The closest linkages identified in the study is located approximately 2.0 miles to the north. In addition, the project site does not support wildlife nursery sites such as bird rookeries and heronries, bat maternity roosts, etc. However, vegetation and surfaces throughout the project site may provide nesting habitat for bird species protected under the MBTA and the Fish and Game Code. These species include burrowing owl, California horned lark, and other native avian species.

4.3 - Special-status Species Surveys

4.3.1 - Rare Plants

Four special-status plant species were documented on the project site, including western Joshua tree, silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), and beavertail cactus (*Opuntia basilaris* var. *basilaris*). The locations of the silver cholla, pencil cholla, and beavertail cacti recorded on the project site are presented in Exhibit 5a and Exhibit 5b. Western Joshua tree is discussed below. More detailed results of the rare plant surveys that were conducted by Psomas are provided in Appendix A. Special-status rare plant surveys are generally valid for 1–2 years. Since only cactus species and western Joshua trees were observed during both 2022 and 2023 surveys, species that can be identified outside of the blooming periods, the special-status rare plant surveys would still be valid.

³⁰ Penrod, K., P. Beier, E. Garding, and C. Cabañero. 2012. A Linkage Network for the California Deserts. Produced for the Bureau of Land Management and the Wildlands Conservancy. Fair Oaks, California, and Flagstaff, Arizona: Science and Collaboration for Connected Wildlands and Northern Arizona University.



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4.3.2 - Western Joshua Tree

Two western Joshua trees were recorded on the project site and a third Joshua tree was recorded approximately 200 feet south of the East Project site. The locations of the western Joshua trees recorded on and adjacent to the project site are presented in Exhibit 6. The western Joshua tree is a candidate for listing under CESA and is covered under the WJTCA. More detailed results of the western Joshua tree inventory and health assessment that were conducted by Psomas are provided in Appendix B. The results of a follow-up western Joshua tree assessment performed by FCS is provided in Appendix C.

4.3.3 - Mojave Desert Tortoise

The desert tortoise survey conducted on the project site by Leatherman BioConsulting in 2022 was negative for desert tortoises or their sign. Special status species surveys are generally valid 2–3 years. The full results of the desert tortoise survey are provided in Appendix D.

4.3.4 - Burrowing Owl

The burrowing owl surveys conducted by Psomas in 2022 identified three active burrow complexes, each occupied by an adult burrowing owl and two inactive burrow complexes (with no owls or owl sign). Two of the active burrow complexes were recorded on the West Site and the third was recorded immediately adjacent to the East Site (Exhibit 7). Special status species surveys are generally valid 2–3 years. The full results of the burrowing owl surveys are provided in Appendix E.

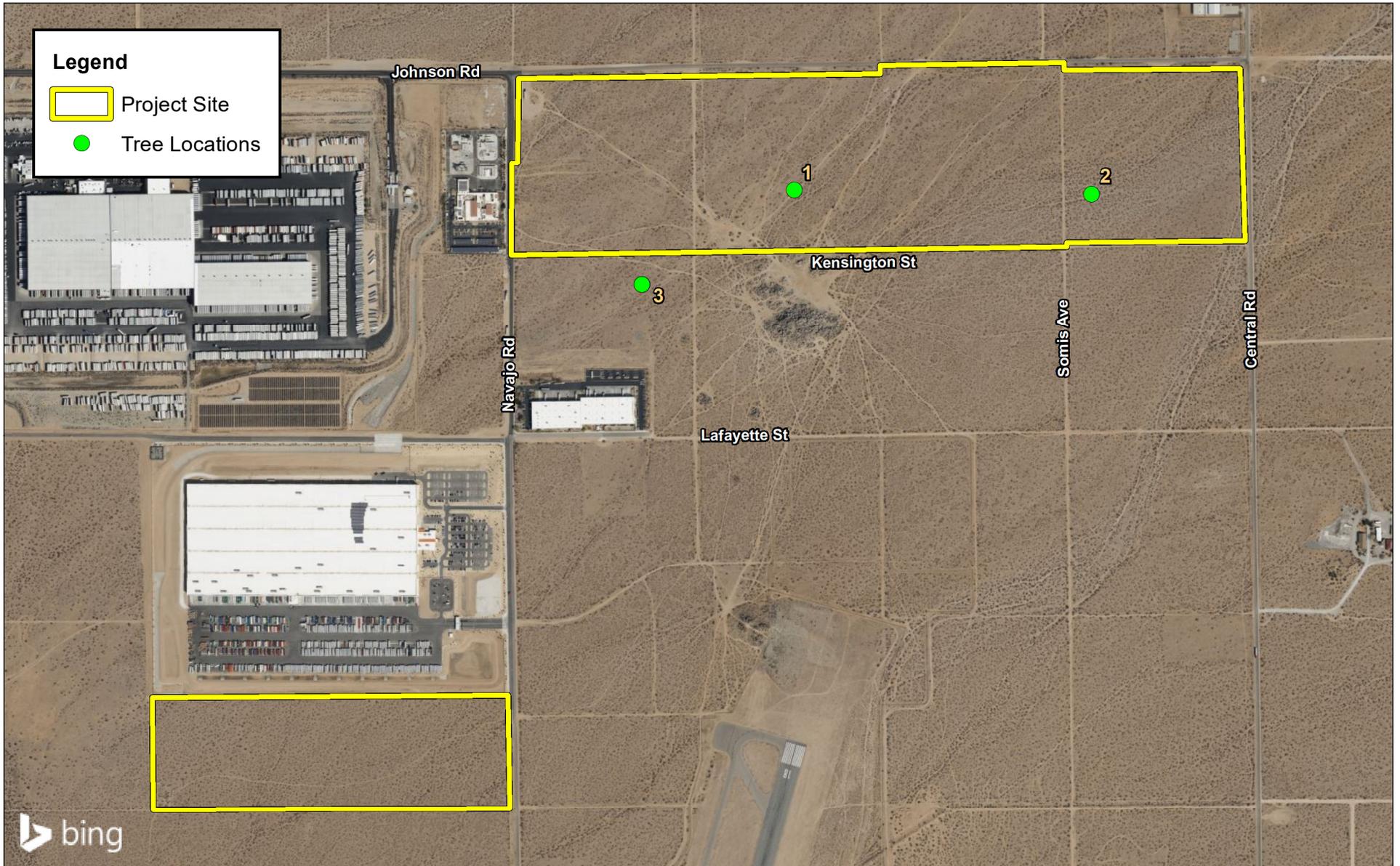
4.4 - Delineation of Federal and State Jurisdictional Waters

During the jurisdictional delineation performed by Psomas in 2022, there were nine ephemeral drainage features recorded on the project site that exhibit a bed and bank, extending in a general northeast to southwest/west flow pattern (Exhibits 8a and 8b). No portion of the drainage features supported riparian or wetland habitat. These features are poorly defined with shallow channels less than 3 inches deep. The drainages are disconnected from the surrounding hydrologic system by roads and development that surround the site parcels. The Jurisdictional Delineation Report provided as Appendix F includes a detailed discussion on each drainage feature. Below is a summary of the jurisdictional issues.

4.4.1 - USACE Jurisdiction

No USACE jurisdiction is present on the project site. Flows associated with Drainages 1 through 9 on the project site do not comprise relatively permanent, standing, or continuously flowing bodies of water and are not connected hydrologically with a water of the United States. Drainages 1 through 9 convey surface water only in direct response to precipitation (e.g., rain) and as such rarely contain surface water. On average there are approximately 33 days of precipitation events in a year for this region, which is not enough precipitation for these to be considered intermittent drainages. No surface water was present at the time of the site visits. Based on the infrequent presence of any surface flows and the lack of connectivity to other waters of the United States (the closest water of the United States is located approximately 7.5 miles to the west) none of the drainage features in the project site are considered under the jurisdiction of the USACE.

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Source: Bing Aerial Imagery. City of Petaluma.

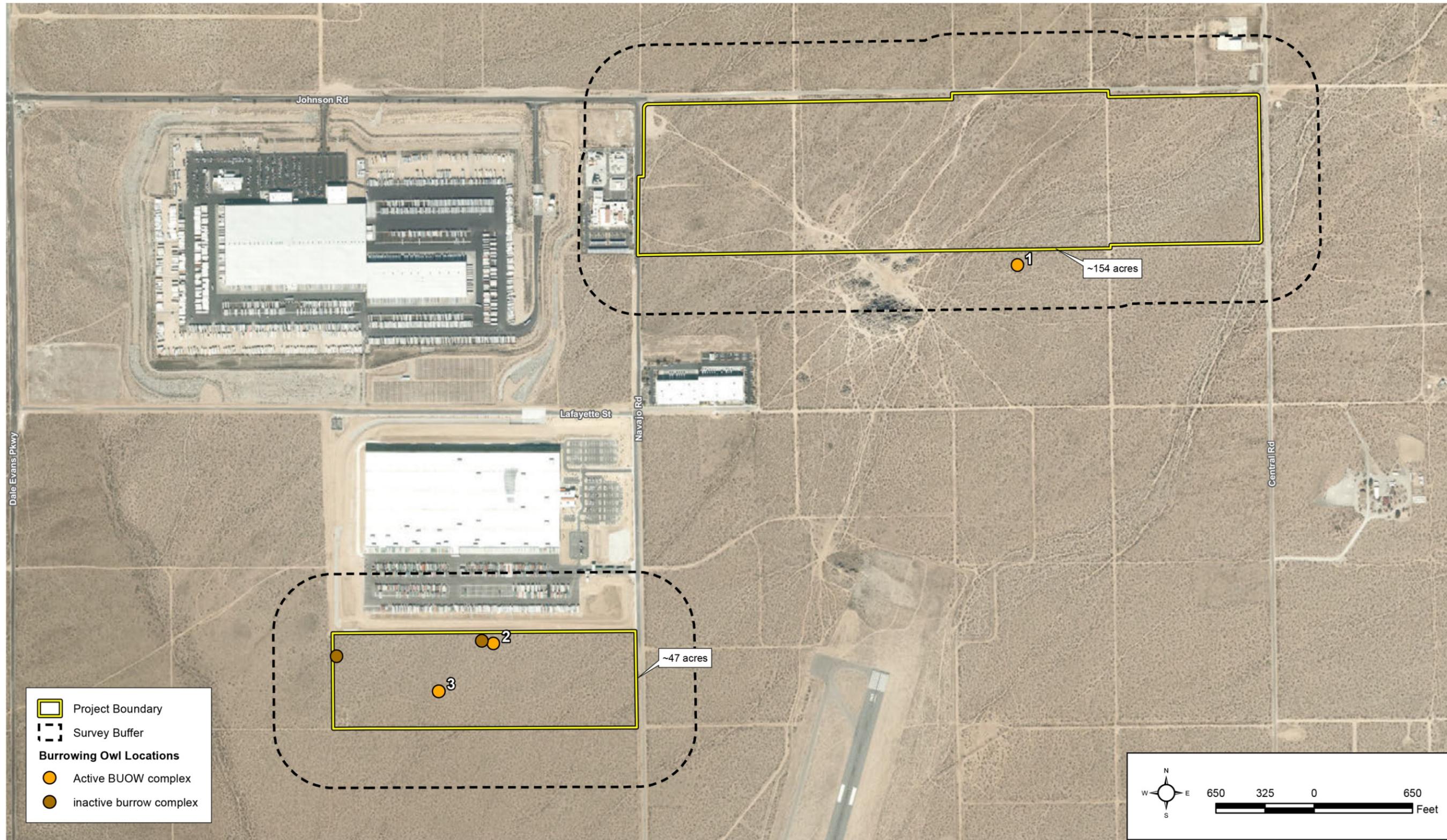


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Exhibit 6 Western Joshua Tree Survey Map

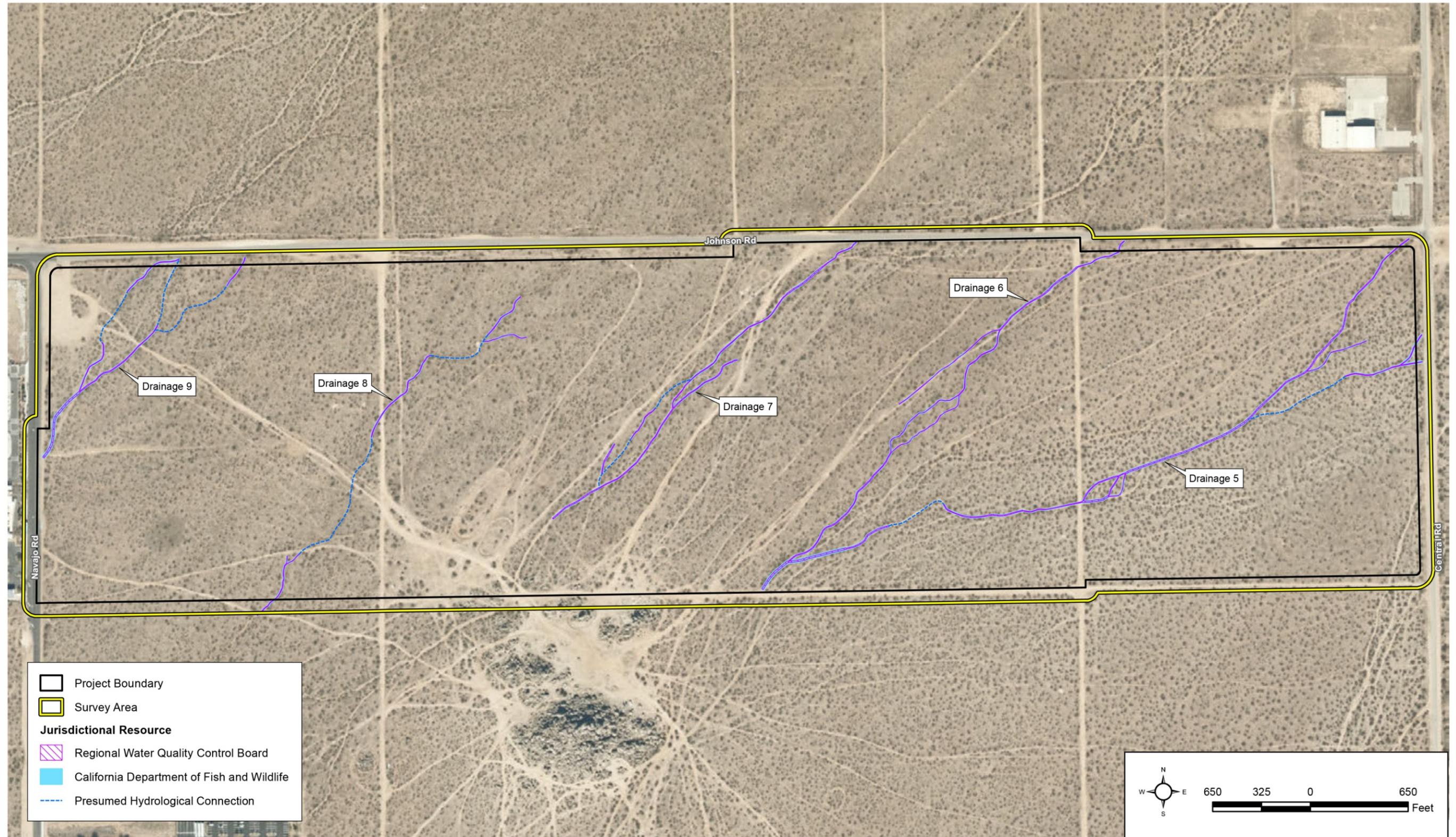
TOWN OF APPLE VALLEY
WATSON HIGH DESERT LOGISTICS PROJECT
BIOLOGICAL RESOURCES ASSESSMENT

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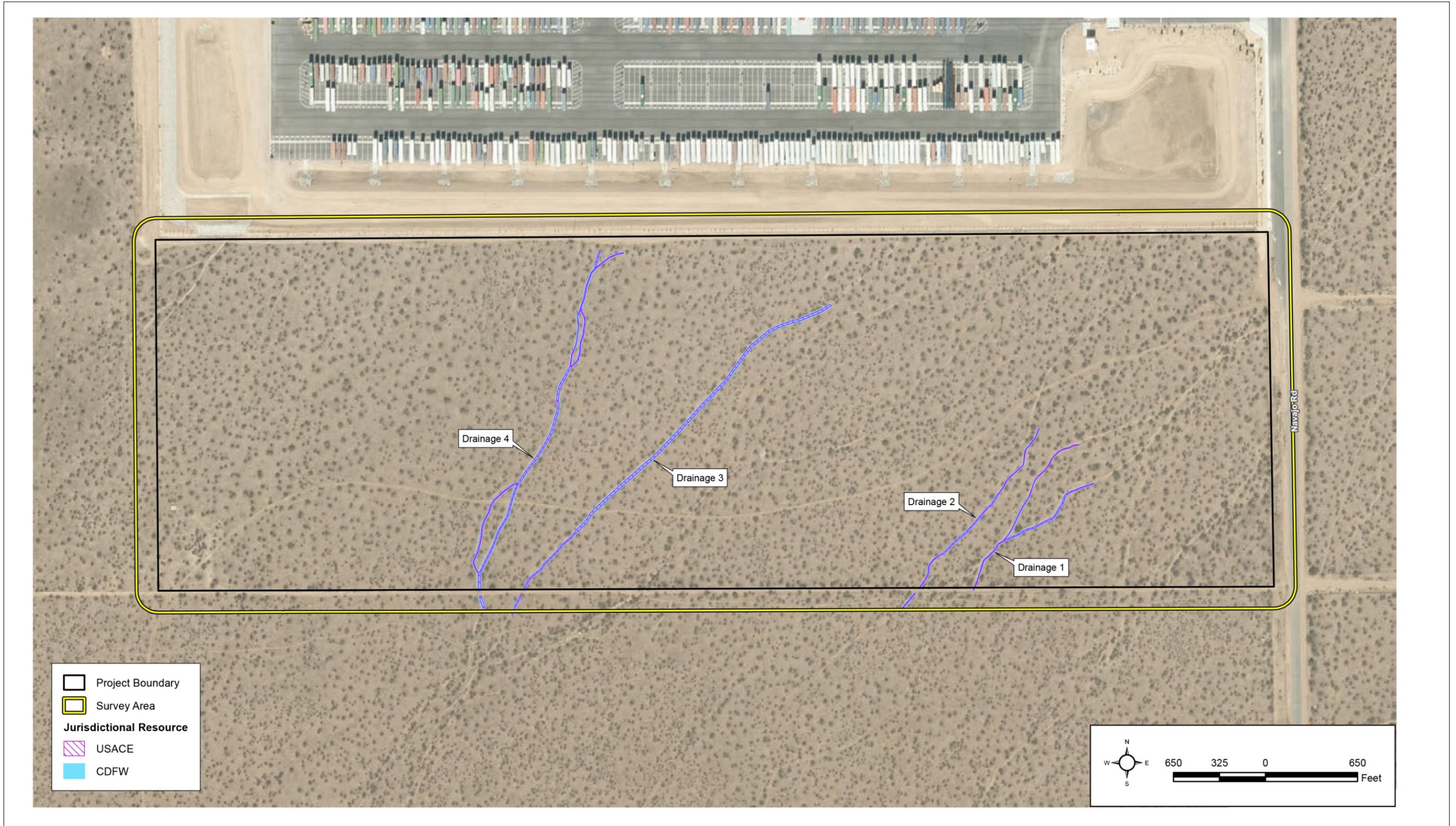
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4.4.2 - RWQCB Jurisdiction

RWQCB jurisdiction is limited to the nine ephemeral drainage features (Drainages 1 through 9) comprising a total of approximately 0.91 acre, none of which consists of State wetlands. The project sites do not contain any soil types that are considered potentially hydric and no areas were observed where surface water would pond. Based on the well-drained soil throughout the project sites and the lack of any hydrophytic vegetation, it is assumed that no wetland conditions exist on the project sites. A total of approximately 14,196 linear feet of ephemeral stream are present. The OHWM of these drainage ranges from 1–6 feet in width. The Jurisdictional Delineation Report provided as Appendix F includes a detailed discussion on RWQCB jurisdiction.

Since Drainages 1 through 9 are not subject to USACE jurisdiction pursuant to Section 404 of the CWA, in turn they would not be subject to RWQCB jurisdiction pursuant to Section 401 of the CWA. However, since these features convey breaks in the streambank slopes and scour marks created by storm flows, they are considered to be waters of the State that would be regulated by the RWQCB pursuant to the Porter-Cologne Act. No riparian or wetland areas were observed within the project sites.

Table 2 below summarizes RWQCB jurisdictional waters within the project site. The boundaries of RWQCB jurisdiction are depicted in Exhibits 8a and 8b.

Table 2: Summary of RWQCB Jurisdiction

Drainage Name	Length (linear feet)	Area of RWQCB Jurisdiction Non-wetland (acres)	Area of RWQCB Jurisdiction Wetland (acres)	Total RWQCB Jurisdiction (acres)
Drainage 1	684	0.03	0.00	0.03
Drainage 2	471	0.03	0.00	0.03
Drainage 3	977	0.10	0.00	0.10
Drainage 4	1,316	0.08	0.00	0.08
Drainage 5	3,561	0.27	0.00	0.27
Drainage 6	2,826	0.14	0.00	0.14
Drainage 7	2,192	0.14	0.00	0.14
Drainage 8	1,008	0.04	0.00	0.04
Drainage 9	1,161	0.09	0.00	0.09
Total	14,196	0.92	0.00	0.92

4.4.3 - CDFW Jurisdiction

The limits of CDFW jurisdiction on the project sites were mapped to the top of the bank of all jurisdictional features. The project sites, including the drainages, do not contain any riparian habitat or hydrophytic vegetation so CDFW jurisdiction is limited to the top of the bank of each feature. Therefore, the total amount of CDFW jurisdictional area is 1.54 acres. Table 3 below summarizes

CDFW jurisdictional waters within the project sites. The boundaries of potential CDFW jurisdiction are depicted in Exhibit 8.

Table 3: Summary of CDFW Jurisdiction

Drainage Name	Length (linear feet)	CDFW Jurisdiction Non-Riparian (acres)	CDFW Jurisdiction Riparian Stream (acres)	Total CDFW Jurisdiction (acres)
Drainage 1	684	0.06	0.00	0.06
Drainage 2	471	0.04	0.00	0.04
Drainage 3	977	0.15	0.00	0.15
Drainage 4	1,316	0.15	0.00	0.15
Drainage 5	3,561	0.43	0.00	0.43
Drainage 6	2,826	0.26	0.00	0.26
Drainage 7	2,192	0.22	0.00	0.22
Drainage 8	1,008	0.08	0.00	0.08
Drainage 9	1,161	0.15	0.00	0.15
Total	14,196	1.54	0.00	1.54

SECTION 5: SENSITIVE BIOLOGICAL RESOURCES DATABASE REVIEWS

The following section discusses the results of the database reviews for sensitive biological resources and an analysis of the potential for these resources to occur within the project site based on existing biological conditions on and adjacent to the site.

5.1 - Sensitive Natural Communities

Sensitive natural communities are vegetation communities or special wildlife habitats that are rare or occur in limited distributions or provide specific habitat requirements for special-status plant or wildlife species. The CDFW maintains a list of natural vegetation communities found in California and ranks them based on rarity. Communities ranked S1–S3 are considered sensitive natural communities.³¹ The CNDDDB did not identify any sensitive natural communities for the Apple Valley North and surrounding quadrangle maps (Exhibit 9).³² In addition, the project site does not contain any sensitive communities. Two western Joshua trees are present on the project site but they would not comprise a *Yucca brevifolia* Woodland Alliance (Joshua tree woodland) since they do not meet the alliance membership rules.

5.2 - Special-status Plant Species

A total of 30 special-status plant species were identified in the vicinity of the project site through queries of the CNDDDB, CNPS Electronic Inventory, and iPaC (Appendix I, Table 1). The locations of records maintained in the CNDDDB are presented in Exhibit 9. Appendix I includes the species status, required habitat, and a summary analysis of the potential for each species to occur on the project site.^{33,34,35} The potential for occurrence of a species was based on current biological conditions on the project site and presence of suitable habitats, soil types, and proximity, recency, and number of occurrences recorded in the CNDDDB.

5.2.1 - Potential for Occurrence of Special-status Plants

Most species with records in the project vicinity were assessed as having no potential to occur because the project site is outside of the known distributional range of the species or because the project site does not support suitable habitat (Appendix I, Table 1). Other species assessed as having moderate to high potential were target species during the rare plant surveys conducted by Psomas in 2022; however, most target special-status plant species were not observed and are considered absent. These species are not discussed further.

³¹ California Department of Fish and Wildlife (CDFW). 2024. Natural Communities List, Sacramento: California Department of Fish and Wildlife. Accessed August 5, 2024.

³² California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed August 5, 2024.

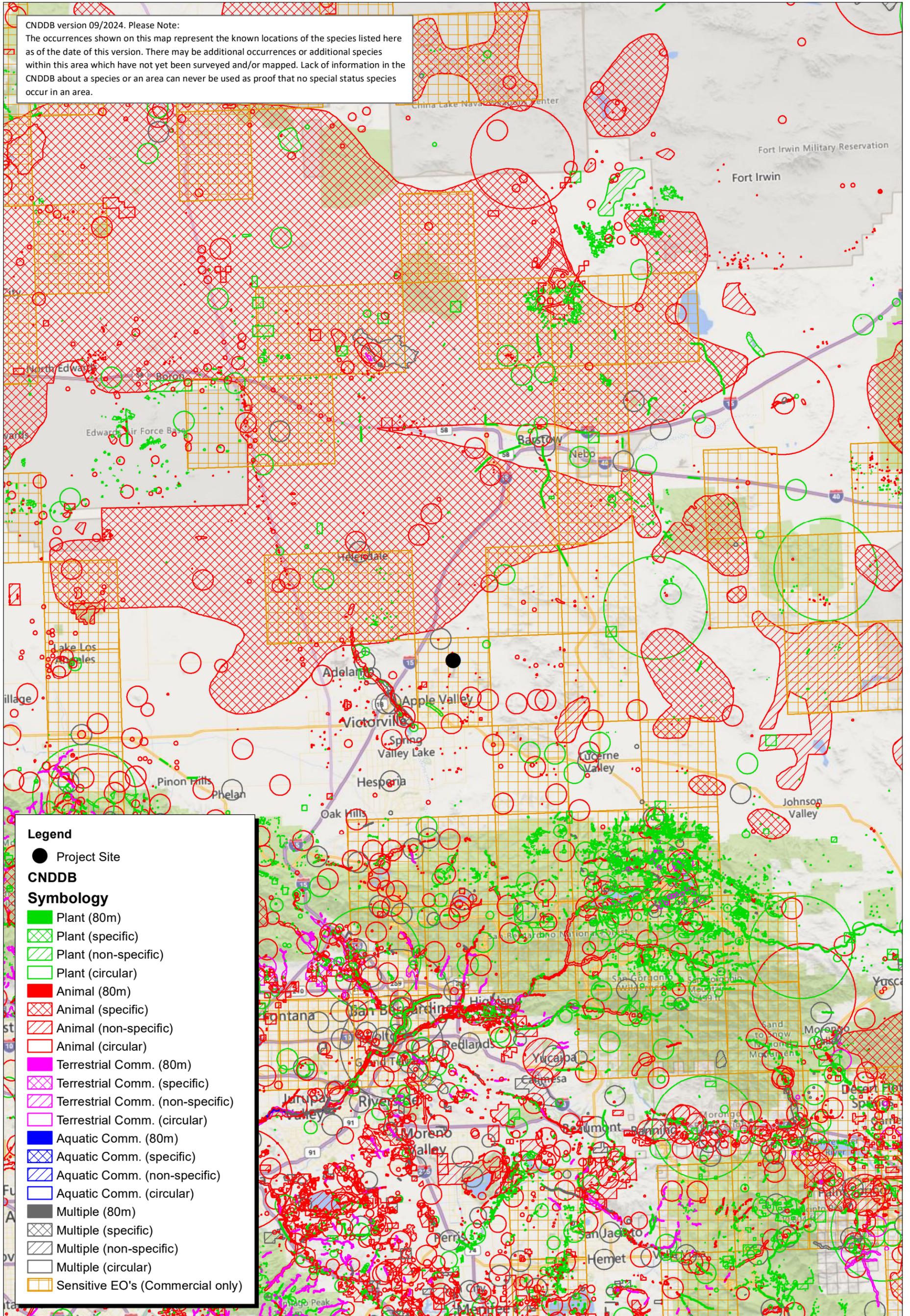
³³ California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: <http://www.rareplants.cnps.org/>. Accessed August 5, 2024.

³⁴ California Department of Fish and Wildlife (CDFW). 2023. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://apps.wildlife.ca.gov/myaccount/login?ReturnUrl=%2frarefind%2fview%2fRareFind.aspx>. Accessed August 5, 2024.

³⁵ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed August 5, 2024.

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CNDDDB version 09/2024. Please Note:
 The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDDB about a species or an area can never be used as proof that no special status species occur in an area.



Legend

● Project Site

CNDDDB

Symbology

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

Source: Bing Street Imagery. California Natural Diversity Database (CNDDDB), September 2024.



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5.2.2 - Special-status Plants Present on the Project Site

The following special-status plant species were observed on the project site:

- Western Joshua tree (*Yucca brevifolia*)

Western Joshua Tree

The western Joshua tree is an evergreen, long-lived, perennial monocot in the family Asparagaceae. The species is a Mojave Desert endemic and may be found in suitable habitats throughout the Mojave Desert in southern Nevada and southeastern California. Western Joshua trees occur in a variety of desert scrub vegetation communities, typically on igneous soils that are silty, loamy, or sandy, and on landforms that include flats, gentle slopes, mesas, and bajadas. The species can tolerate saline and alkaline conditions and can tolerate winter lows of 4°C (degrees Celsius) (39°F [degrees Fahrenheit]) and summer highs of 46°C (110°F).^{36,37} The species is considered morphologically, biologically (pollination), and genetically distinct from the eastern Joshua tree (*Yucca jaegeriana*) and recognized as such by the USFWS.^{38,39,40} The western Joshua trees reproduce sexually through seed production and asexually through rhizomal growth. Seed caching rodents spread cached seeds to about 30 m from the host plant.⁴¹ The western Joshua tree is threatened by fire, drought, climate change, and numerous anthropogenic threats that cause habitat loss, including off-road vehicle use. Western Joshua trees are covered as a candidate species under CESA and are covered under the WJTCA. Western Joshua trees are also protected under the Town of Apple Valley's Interim Local Policy and Procedures on The Western Joshua Tree. The two western Joshua trees were observed within the East Project during focused plant surveys conducted by Psomas on March 31, 2022, and April 10, 2022 (Appendix B). A subsequent western Joshua tree assessment conducted by FCS Biologists in 2024 confirmed that the two western Joshua trees are located on-site (Appendix C). The locations of the western Joshua trees on and adjacent to the project site are presented in Exhibit 6.

5.2.3 - Other Protected Plants Present on the Project Site

The following species are protected under regional and/or local regulations and were observed on the project site:

- Pencil cholla
- Silver cholla
- Beavertail cactus

³⁶ United States Fish and Wildlife Service (USFWS). 2019. 12-Month Findings on Petitions To List Eight Species as Endangered or Threatened Species. Federal Register 84(158): 41694-41699.

³⁷ Lenz, Lee. 2007. Reassessment of *Yucca brevifolia* and recognition of *Y. jaegeriana* as a distinct species. *Aliso: A Journal of Systematic and Evolutionary Botany*. 24(1):97–104. doi:10.5642/aliso.20072401.07. ISSN 0065-6275.

³⁸ Royer, A. M., M.A. Streisfeld, and C.I. Smith. 2016. Population genomics of divergence within an obligate pollination mutualism: Selection maintains differences between Joshua tree species. *American Journal of Botany* 103(10):1730–1741.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Vander Wall, S.B.V., T. Esque, D. Haines, M. Garnett, and B.A. Waitman. 2006. Joshua tree (*Yucca brevifolia*) seeds are dispersed by seed caching rodents. *Ecoscience* 13(4):539-543.

51 pencil chollas, 10 silver chollas, and four beavertail cacti were observed on the project site during focused plant surveys conducted by Psomas on March 31, 2022, and April 10, 2022 (Exhibit 7 and Appendix F).

5.3 - Special-status Wildlife Species

A total of 28 special-status plant species were identified in the vicinity of the project site through queries of the CNDDDB and iPaC (Appendix I, Table 1). The locations of records maintained in the CNDDDB are presented in Exhibit 9. Appendix I includes the legal status of each species, their required habitat types and features, and their potential to occur on the project site.^{42,43} The table also includes special-status wildlife species that have been determined to have no or low potential to occur on-site, primarily based on the project site being situated outside of the range of the species or absence of suitable habitat or the lack of recent records in the project vicinity, along with other justification(s) for their exclusion from further discussion. Special-status wildlife species with moderate to high potential to occur on-site are analyzed further below. The potential for wildlife to occur on the project site was based on presence of suitable habitats and proximity, recency, and number of occurrences recorded in the CNDDDB.

5.3.1 - Potential for Occurrence of Special-status Wildlife

Most species with records in the project vicinity were assessed as having no or low potential to occur because the project site is outside of the known distributional range of the species or because the project site does not support suitable habitat (Appendix I, Table 2). These species are not discussed further. The following species were either observed on the project sites or were assessed as having moderate or high potential to occur on or adjacent to the project site. These species are discussed further below.

- Crotch's bumble bee (*Bombus crotchii*)
- Burrowing owl
- Loggerhead shrike (*Lanius ludovicianus*)
- Bendire's thrasher (*Toxostoma bendirei*)
- LeConte's thrasher (*Toxostoma lecontei*)
- Desert kit fox
- Mohave ground squirrel (*Xerospermophilus mohavensis*)
- Desert tortoise (*Gopherus agassizii*)

Crotch's Bumble Bee

Crotch bumble bee occurs primarily in California, including coastal habitats, the western Mojave Desert, the San Joaquin Valley, and adjacent foothills through most of southwestern California. It inhabits arid grasslands and shrublands, and its food sources include milkweeds, pincushions,

⁴² California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: <https://apps.wildlife.ca.gov/myaccount/login?ReturnUrl=%2frarefind%2fview%2fRareFind.aspx>. Accessed August 5, 2024.

⁴³ California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: <https://wildlife.ca.gov/Data/BIOS>. Accessed August 5, 2024.

lupines, clovers, phacelias, sages, clarkias, poppies, and buck wheats. This species is a candidate for listing under CESA. There is one recent and one historical record in the CNDDDB between 5 and 10 miles from the project site (Exhibit 9). Suitable foraging and nesting habitat for this species is present on the project site, and there is moderate potential for this species to occur there.

Burrowing Owl

The burrowing owl is found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species is a subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*). This species is designated as a State Species of Special Concern (SSC) by the CDFW. There are 47 CNDDDB records for this species in the nine-quadrangle search area encompassing the project site (Exhibit 9). This species was observed on-site during the focused burrowing owl surveys conducted on the project site in 2022 and the species is considered present. Three active burrow complexes and two inactive burrow complexes (no owls or owl sign) were recorded during the surveys. One adult owl was observed at each of the active complexes during focused surveys and fresh signs (whitewash, pellets, feathers) was observed at each complex (Exhibit 7; Appendix E).

On October 10, 2024, the California Fish and Game Commission designated the burrowing owl as a Candidate for listing under CESA. As a Candidate species, burrowing owls receive full protections under CESA, and any projects or activities that could result in take would need to avoid project impacts to avoid taking burrowing owls. CDFW may require that project owners obtain an ITP if a project has the potential to take burrowing owls. The nesting burrows of burrowing owls are protected by the MBTA and California Fish and Game Code pertaining to native nesting avian species, and take permissions are never provided for take of nests.

Loggerhead Shrike

The loggerhead shrike is found in broken woodlands, savannas, pinyon-junipers, Joshua trees, riparian woodlands, desert oases, scrub, and washes. This species prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting. This species is designated as a State SSC by the CDFW. There are four recent records in the CNDDDB between 5 and 10 miles from the project site (Exhibit 9). There is moderate potential for this species to occur (nesting and foraging) on the project sites.

Bendire's Thrasher

The Bendire's thrasher is found in the desert, especially in areas of tall vegetation, cholla cactus, creosote bush, and yucca and in juniper woodland. This species is designated as an SSC by the CDFW. There are one recent and three historical records in the CNDDDB between 5 and 10 miles from the project site (Exhibit 9). There is moderate potential for this species to occur (nesting and foraging) on the project site.

LeConte's Thrasher

The LeConte's thrasher is found primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. This species commonly nests in a dense, spiny shrub or densely

branched cactus in desert wash habitat, usually 2–8 feet aboveground. This species is designated as a State SSC by the CDFW. There are one recent and 25 historical records in the CNDDDB between 5 and 10 miles from the project site (Exhibit 9). There is moderate potential for this species to occur (nesting and foraging) on the project site.

Desert Kit Fox

The desert kit fox is broadly distributed across the California desert and located in sparsely vegetated scrub habitats such as creosote scrub communities with abundant rodent populations. This species is not designated as special-status by the State or federal agencies but is included due to it being protected under existing state regulations (California Code of Regulations [CCR], Title 14 § 460). This species was observed approximately 90 feet south of the East Project during the general biological survey conducted for the project site. There is moderate potential for this species to occur (denning and foraging) on the project site.

Mohave Ground Squirrel

The Mohave ground squirrel is found in Mojave creosote scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland. This species is designated as a State Threatened species by the CDFW. There is one recent and 25 historical records in the CNDDDB between 5 and 10 miles from the project site (Exhibit 9). There is moderate potential for this species to occur on the project site.

Desert Tortoise

The desert tortoise is found in arid sandy or gravelly locations along riverbanks, washes, sandy dunes, alluvial fans, canyon bottoms, desert oases, rocky hillsides, creosote flats and hillsides. They excavate burrows in friable soils but also seek shelter in caliche caves and rock shelters. This species is designated as federally threatened under the Endangered Species Act and was recently elevated to Endangered under CESA. There is moderate potential for this species to occur on the project sites; however, no desert tortoises or diagnostic tortoise sign (e.g., live tortoises, shell, bones, scutes, limbs, scats, burrows, pallets, tracks, eggshell fragments, courtship rings, drinking sites, mineral licks, etc.) were observed during focused desert tortoise surveys conducted in 2022 (Appendix D). There are 13 CNDDDB records for this species in the nine-quadrangle search area encompassing the project site (Exhibit 9). This species is presumed absent from the project site.

SECTION 6: IMPACT ANALYSIS AND RECOMMENDATIONS

The following discussion addresses potential project impacts on regulated biological resources, including special-status species, and recommends measures to avoid and/or mitigate impacts to a less than significant level under CEQA. The Town of Apple Valley uses the following CEQA Guidelines Appendix G checklist questions as thresholds of significance when evaluating the potential impacts of a proposed project on biological resources. Impacts are considered significant if a project would:

- A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.
- B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.
- C. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

6.1 - Impact Analysis

6.1.1 - Impacts to Special-status Species

Appendix G(a) of the CEQA Guidelines considers whether a project is likely to “have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.”

Impacts to Special-status Plant Species

Two western Joshua trees were detected on the East Project site and would be removed by the proposed project. Accordingly, impacts to this species would be considered potentially significant prior to mitigation under CEQA. Compensatory mitigation would be achieved through payment of an in-lieu mitigation fee pursuant to the WJTCA, which allows in-lieu fees to be collected for the take of western Joshua trees. A tree removal permit would also be required pursuant to the Town of Apple

Valley Municipal Code Chapter 9.76. A measure is identified in Section 6.2 of this report to offset impacts to western Joshua trees.

Impacts to Special-status Animals

The project site has the potential to support the following species: Crotch's bumble bee, burrowing owl, desert tortoise, Mohave ground squirrel, LeConte's thrasher, Bendire's thrasher, loggerhead shrike, and desert kit fox.

LeConte's Thrasher, Bendire's Thrasher, and Loggerhead Shrike

The proposed project would result in the loss of habitat that has the potential to support special-status avian species, including LeConte's thrasher, Bendire's thrasher, and loggerhead shrike. Impacts to these species would be considered potentially significant prior to mitigation under CEQA. However, based on the relatively low sensitivity ranking of these species, their broad distribution, surrounding suitable habitat in adjacent vacant lands, and the inclusion of a pre-construction nesting bird survey included in Section 6.2, impacts to the LeConte's thrasher, Bendire's thrasher, and loggerhead shrike would be less than significant with implementation of required mitigation measures in the 2009 Town of Apple Valley General Plan certified EIR (State Clearinghouse # 2008091077) that was certified on August 11, 2009.

Desert Kit Fox

The proposed project would result in the loss of habitat that has the potential to support desert kit foxes. Impacts to this species would be considered potentially significant prior to mitigation under CEQA. However, based on the relatively low sensitivity ranking of this species, its broad distribution, surrounding suitable habitat in adjacent vacant lands, and the inclusion of a pre-construction survey included in Section 6.2, impacts to desert kit fox would be less than significant through compliance with existing state regulations (CCR Title 14 § 460).

Desert Tortoise

Focused protocol surveys conducted for the desert tortoise were negative for this species and the species is considered absent from the project site. Implementation of the proposed project would not impact desert tortoises. Although desert tortoises were not observed during the focused surveys conducted for the proposed project, measures are identified in Section 6.2 of this report, which include pre-construction surveys and are consistent with the certified EIR, that would avoid any potential impacts to this species should they colonize the project site after the completion of any additional focused surveys and prior to the start of construction activities. With implementation of the Mitigation Measures in the 2009 Town of Apple Valley General Plan certified EIR (State Clearinghouse # 2008091077) that was certified on August 11, 2009, impacts to desert tortoise would be less than significant with mitigation.

Burrowing Owl

Burrowing owls were observed on-site during focused surveys on the project site. Impacts to this species would be considered potentially significant prior to mitigation under CEQA. Measures identified in Section 6.2 of this report would avoid and minimize impacts to these species. With implementation of the Mitigation Measures in the 2009 Town of Apple Valley General Plan certified

EIR (State Clearinghouse # 2008091077) that was certified on August 11, 2009, impacts to burrowing owls would be less than significant with mitigation.

Crotch's Bumble Bee and Mohave Ground Squirrel

The proposed project would result in loss of habitat for Crotch's bumble bee and Mohave ground squirrel and has a potential to result in mortality from ground-disturbing activities. Impacts to these species would be considered potentially significant prior to mitigation. Measures are identified in Section 6.2 of this report to avoid and minimize impacts to these species. With the implementation of the Mitigation Measures in the certified 2009 Town of Apple Valley General Plan certified EIR (State Clearinghouse # 2008091077) that was certified on August 11, 2009, impacts to the Crotch's bumble bee and Mohave ground squirrel would be less than significant with mitigation under CEQA Guidelines.

6.1.2 - Impacts to Riparian Habitat and Sensitive Natural Communities

Appendix G of the CEQA Guidelines considers whether a project is likely to “have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.”

The project site does not contain riparian habitat or sensitive natural communities. The only native vegetation community on-site, *Larrea tridentata* Shrubland Alliance (Creosote Bush Scrub), is not considered special-status. Therefore, the proposed project would have no impact on riparian habitat or other sensitive natural communities.

6.1.3 - Impacts to Protected Wetlands

Appendix G of the CEQA Guidelines considers whether a project is likely to “have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.”

The project site does not contain any State or federally protected wetlands. Therefore, the proposed project would have no impact on State or federally protected wetlands.

6.1.4 - Impacts to Wildlife Movement Corridors and Wildlife Nursery Sites

Appendix G of the CEQA Guidelines considers whether a project is likely to “interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.”

Wildlife Movement Corridors

The project site is not designated as a wildlife corridor, linkage, or lands important for movement by various wildlife, nor does it function in a manner that connects separated natural areas. Therefore, the proposed project would not interfere with or impact the movement of native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors and

implementation of the proposed project would not be considered a significant impact pursuant to CEQA Guidelines.

Migratory Bird Treaty Act and Nesting Birds

The project site does not support wildlife nursery sites such as bird rookeries and heronries or bat maternity roosts, but the proposed project has the potential to support native bird nest sites. The project site and adjacent lands support vegetation communities, land cover types, trees, and other habitat features that provide nesting habitat for avian species covered under the MBTA and Fish and Game Code, including special-status species such as Le Conte’s thrasher, Bendire’s thrasher, and loggerhead shrike. Construction of the proposed project could disturb native or migratory birds that breed and nest in shrubs or on the ground surface on and adjacent to the project site if ground-disturbing or vegetation-removing construction activities are initiated or conducted during the avian breeding season (February 1 through September 15). Potential impacts on special-status and migratory birds that could result from construction and operation of the proposed project include destruction of eggs or occupied nests, mortality of young, and abandonment of nests with eggs or young birds prior to fledging. Impacts are prohibited by MBTA and California Fish and Game Code and destruction of nests, eggs, or young would be considered a significant impact under CEQA Guidelines. A measure is identified in Section 6.2 to avoid and minimize impacts to nesting birds.

6.1.5 - Conflicts with Regional and Local Policies and Ordinances

Appendix G of the CEQA Guidelines considers whether a project is likely to “conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.”

The proposed project would remove two western Joshua trees, which are regulated under the Town of Apple Valley Municipal Code Chapter 9.76. To comply with these local ordinances, a measure is identified in Section 6.2 that would offset any impacts to this species, which will satisfy the requirements for the Town of Apple Valley Municipal codes. Pursuant to the Town of Apple Valley Interim Local Policy and Procedures on the Western Joshua Tree, “No additional approvals are required by the Town if an ITP is obtained from CDFW.” Since the project would acquire an ITP from CDFW, no other actions are required to comply with the Town of Apple Valley local policies and regulations.

The proposed project would remove 51 pencil chollas, 10 silver chollas, and four beavertail cacti, which are regulated under the California Desert Native Plant Act and the Town of Apple Valley Municipal Code Chapter 9.76. A removal permit pursuant to the Town of Apple Valley Municipal Code Chapter 9.76 would be required for the removal of pencil cholla, silver cholla, and beavertail cactus. To comply with these local ordinances, a measure is identified in Section 6.2 that would offset any impacts to these species.

Through compliance with measures identified in Section 6.2, impacts to western Joshua tree, pencil cholla, silver cholla, and beavertail cactus would be less than significant therefore and would not conflict with local policies and ordinances.

6.1.6 - Habitat Conservation Plans

Appendix G of the CEQA Guidelines considers whether a project is likely to “conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.”

The project site is in the planning area for the proposed Town of Apple Valley MSHCP/NCCP. However, the MSHCP/NCCP has not yet been adopted and, as such, there is no requirement under CEQA to analyze project consistency with this plan. If the NCCP/HCP is approved before project approval, the biological report prepared for the proposed project would be revised and reviewed to be consistent with the MSHCP/NCCP.

6.2 - Applicable EIR Mitigation Measures

6.2.1 - Burrowing Owls

The following Mitigation Measure from the certified EIR is applicable to the proposed project and would reduce impacts to burrowing owl:

MM 5 Biological surveys for Burrowing Owls and Prairie Falcons shall be performed for any site proposed for development wherever sufficient open space and suitable habitat is present. Coordination with California Department of Fish and Game is required when survey results are positive.

To demonstrate compliance with MM 5 from the certified EIR, the following implementation measure (IM) would be followed:

IM 1 Focused surveys for burrowing owls shall be performed according to California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation, which requires a series of four visits during the breeding season or four visits during the non-breeding season. If survey results are positive, meaning there are burrowing owl(s) occupying burrow(s), including nest burrows with eggs or fledglings, the project proponent shall retain a qualified Biologist to develop and implement a Burrowing Owl Mitigation Plan, which shall be approved by the Town of Apple Valley. The Burrowing Owl Mitigation Plan shall contain the following elements at a minimum:

- Avoidance of burrowing owls during construction, including establishment of a 160-foot radius around occupied burrows during the non-breeding season (September 1 through January 31) or a 200 to 500 meter radius around occupied burrows during the breeding season (February 1 through August 31), within which construction activities may not occur until a qualified Biologist has determined that (1) nonbreeding season owl(s) have dispersed from the area; or (2) breeding owls have fledged their juveniles from the nesting burrows and the juveniles are foraging independently and are capable of independent survival or have dispersed from the area.

- A plan for implementing a passive relocation program for nonbreeding owls, should it be needed. The passive relocation plan shall include a plan for monitoring for burrowing owls at occupied and unoccupied burrows, closure of unoccupied burrow(s) after they have been determined not to be occupied by burrowing owl(s), eviction of the burrowing owl(s) from the occupied burrow(s), and closure of the formerly occupied burrow(s). Closures of both occupied and unoccupied burrows shall include the use of one-way doors at the burrow entrance(s) for at least 3 days prior to closure to ensure that the burrowing owl(s) or other wildlife have time to exit the burrow(s), followed by careful excavation of the burrow(s) by a qualified Biologist using hand tools and refilling the burrow after the tunnel(s) and chamber(s) have been fully excavated.

Whether the focused surveys are positive or negative for burrowing owls, the project applicant shall implement IM 2 below.

IM 2 The project applicant shall retain a qualified Biologist to perform a pre-construction burrowing owl survey to determine whether burrowing owls are present on-site within 30 days prior to construction activities, according to the California Department of Fish and Wildlife (CDFW) 2012 guidelines. If construction is delayed or suspended for more than 30 days after the survey, the area shall be resurveyed. The pre-construction survey shall be completed on the project site and areas within 500 feet from the project boundary (where possible and appropriate based on habitat). All occupied burrows shall be mapped on an aerial photo. The applicant shall provide a burrowing owl survey report and mapping to the Town City at least 30 days prior to the expected start of any project-related ground disturbance activities or restart of activities. If the survey is positive for burrowing owls, the project applicant shall implement a Burrowing Owl Mitigation Plan as detailed in MM BIO-1a. If no burrowing owls are detected during the pre-construction survey, no further action is necessary.

6.2.2 - Nesting Birds

The following Mitigation Measure from the certified EIR is applicable to the proposed project and would reduce impacts to migratory nesting birds:

MM 4 The Town shall ensure that land actions require site-specific nest surveys for the presence of migratory birds in accordance with established protocols and requirements of the Migratory Bird Treaty Act, prior to site disturbance. If protected migratory birds and/or raptors are found to be nesting on-site, construction activities will not be allowed within a radius of the nest determined by a qualified biologist, until the young have fledged and left the nest.

To demonstrate compliance with MM 4 from the certified EIR, the following implementation measures would be followed:

- IM 4** If ground-disturbing or vegetation-removing construction activities or tree removal is proposed during the breeding/nesting season for migratory birds (typically February 1 through September 15), a qualified Biologist shall conduct pre-construction surveys for special-status birds and other migratory birds within the construction area, including a 300-foot survey buffer, no more than 3 days prior to the start of ground-disturbing activities in the construction area.
- IM 5** If an active nest (i.e., a nest with eggs or fledglings) is located during pre-construction surveys or at any point during the construction phase of the proposed project, the Town shall be notified regarding the status of the nest. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned or a qualified Biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and a 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.

6.2.3 - Desert Tortoise

The following Mitigation Measure from the certified EIR is applicable to the proposed project and would reduce impacts related to the desert tortoise:

- MM 3(a)** The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.

To demonstrate compliance with MM 3(a) from the certified EIR, the following implementation measure would be followed:

- IM 6** A qualified Biologist shall conduct a pre-disturbance desert tortoise clearance survey within 3 days of site ground-disturbing activities (e.g., clearing and grubbing, grading, etc.). If desert tortoises are not detected during the pre-disturbance desert tortoise clearance survey, then no additional action is required. If desert tortoises are detected on-site, the project applicant would be required to obtain take authorization under the Endangered Species Act and the California Endangered Species Act (CESA), likely in the form of an Incidental Take Permit (ITP) issued by the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) prior to conducting any ground-disturbing activities, or would need to avoid conducting any project-related ground-disturbing activities within the portions of the project site deemed to be occupied by desert tortoise by a qualified Biologist.

6.2.4 - Western Joshua Tree

The following Mitigation Measures from the certified EIR are applicable to the proposed project and would reduce impacts related to the western Joshua tree:

MM 3(a) The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.

MM 15 The Town shall require developers to recover, preserve, or utilize native vegetation within their project or shall require that viable vegetation is transplanted to other appropriate sites in conformance with its Native Plant Ordinance. The Town shall make information on salvaging and transplanting native species available to developers.

To demonstrate compliance with MM 3(a) and MM 15 from the certified EIR, the following implementation measure would be followed:

IM 7 The western Joshua tree is a State candidate threatened species and as such an Incidental Take Permit (ITP) shall be obtained from the California Department of Fish and Wildlife (CDFW) prior to project activities through the provisions outlined in the Western Joshua Tree Conservation Act (WJTCA). Pursuant to the WJTCA, mitigation for the western Joshua tree can be acquired through payment of an in lieu mitigation fee on a per tree basis. Monetary amounts for each removed western Joshua tree include: (1) One thousand dollars (\$1000) for each western Joshua tree 5 meters (16.40 feet) or greater in height, (2) Two hundred dollars (\$200) for each western Joshua tree 1 meter (3.28 feet) or greater but less than 5 meters (16.4 feet) in height, and (3) One hundred twenty-five dollars (\$125) for each western Joshua tree less than 1 meter (3.28 feet) in height.

6.2.5 - Regional and Local Ordinance Plants and Desert Native Plants

The following Mitigation Measure from the certified EIR is applicable to the proposed project and would reduce impacts related to the desert native plant protected under the Town of Apple Valley Municipal Code Chapter 9.76:

MM 15 The Town shall require developers to recover, preserve, or utilize native vegetation within their project or shall require that viable vegetation is transplanted to other appropriate sites in conformance with its Native Plant Ordinance. The Town shall make information on salvaging and transplanting native species available to developers.

To demonstrate compliance with MM 15 from the certified EIR, the following implementation measure would be followed:

IM 8 Pursuant to Town of Apple Valley Municipal Code Chapter 9.76 the project applicant shall submit an application to the Town for removal or relocation of protected native desert plants protected under Municipal Code Chapter 9.76. No further mitigation is required. The land use application and/or development permit approved for the proposed project, which would constitute the removal permit for the pencil cholla, silver cholla, and beavertail cactus, may include permit conditions such as salvaging or incorporating the plant into the landscape plan of the proposed project. The project applicant would comply with final conditions of the land use application and/or development permit when it is approved by the Town of Apple Valley.

6.2.6 - Jurisdictional Waters

The following Mitigation Measure from the certified EIR is applicable to the proposed project and would reduce impacts related to jurisdictional waters:

MM 13 Development projects proposing to alter or impact major drainages (blueline streams) including ephemeral streams, shall consult with the appropriate state and/or federal regulatory agency. Such alteration may require permits from the U.S. Army Corps of Engineers, Lahonton Regional Water Quality Control Board, and/or the California Department of Fish and Game. Compliance with such permits will ensure that impacts to riparian habitat are mitigated by either restoration or replacement, and that impacts to water quality are avoided by compliance with Section 401 of the Clean Water Act requirements.

To demonstrate compliance with MM 13 from the certified EIR, the following implementation measure would be followed:

IM 9 The project applicant shall coordinate with the appropriate state and/or federal regulatory agency prior to impacting any jurisdictional waters. Regulatory permits, including a RWQCB Waste Discharge Requirement and a CDFW Section 1602 Streambed Alteration Agreement, would need to be acquired prior to impacts. The project applicant shall comply with the mitigation measures to be approved through consultation with the regulatory agencies and included in the appropriate agency permit.

6.2.7 - Crotch's Bumble Bee

The following Mitigation Measures from the certified EIR is applicable and would reduce impacts related to Crotch's bumble bee:

MM 3(a) The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.

To demonstrate compliance with MM 3(a) from the certified EIR, the following implementation measure would be followed:

- IM 10** Focused Crotch’s bumble bee surveys, in accordance with survey guidelines described in the 2023 California Department of Fish and Wildlife (CDFW) Survey Considerations for California Endangered Species Act (CESA) candidate Bumble Bee Species, shall be conducted within 1 year of initiation of ground-disturbing activities (i.e., grubbing, grading, disking, etc.). If the focused surveys are positive for Crotch’s bumblebee, the project applicant shall obtain take authorization under CESA in the form of an Incidental Take Permit (ITP) issued by CDFW prior to conducting any ground-disturbing activities. Mitigation measures outlined in the ITP shall be used to offset impacts to this species.

6.2.8 - Mohave Ground Squirrel

The following Mitigation Measure from the certified EIR is applicable and would reduce impacts related to Mohave ground squirrel:

- MM 3(a)** The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.

To demonstrate compliance with MM 3(a) from the certified EIR, the following implementation measure would be followed:

- IM 11** Focused Mohave ground squirrel surveys and trapping, in accordance with survey guidelines described in the 2023 California Department of Fish and Wildlife (CDFW) Mohave Ground Squirrel Survey Guidelines, shall be conducted within 1 year of initiation of ground-disturbing activities (i.e., grubbing, grading, disking, etc.). If the focused surveys are positive for Mohave ground squirrel, the project proponent shall obtain take authorization under the California Endangered Species Act (CESA) in the form of an Incidental Take Permit (ITP) issued by CDFW prior to conducting any ground-disturbing activities. Requirements outlined in the ITP shall be used to offset impacts to this species.

6.2.9 - Desert Kit Fox

The following Mitigation Measure from the certified EIR is applicable and would reduce impacts related to Desert kit fox:

- MM 3(a)** The Town shall require that biological resources evaluations be performed prior to development actions, including site-specific surveys utilizing specified survey parameters as required for all special status species in identified habitat areas, and especially within or adjacent to linkage corridors or special survey areas and potential jurisdictional areas.

To demonstrate compliance with MM 3(a) from the certified EIR and compliance with existing State regulations (CCR Title 14 § 460), the following implementation measure would be followed:

- IM 12** A qualified Biologist shall conduct pre-disturbance clearance survey for the desert kit fox within 7 days of initiation of ground-disturbing activities (i.e., grubbing, grading, disking, etc.) and within 300 feet of the project site. If the desert kit fox is not detected during the pre-disturbance clearance survey in an active den, then no additional action is required. If the desert kit fox is detected on-site in an active den, then the project applicant would be required to coordinate with the California Department of Fish and Wildlife (CDFW) prior to conducting any ground-disturbing activities associated with the proposed project and create a relocation plan to avoid/minimize impacts to this species. An avoidance buffer of 300 feet shall be implemented around the active den until the den is determined to be inactive.

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SECTION 7: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this Biological Resources Assessment and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: January 17, 2025

Signed: _____



Joseph Vu, Senior Biologist
FirstCarbon Solutions
967 Kendall Drive, #A-537
San Bernardino, CA 92407

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**Appendix A:
Rare Plant/Desert Native Plant Survey**

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April 12, 2023

Nicole Morse, Esq.
Principal
T&B Planning, Inc.
3200 El Camino Real, Suite 100
Irvine, CA 92602

VIA EMAIL
nmorse@tbplanning.com

Subject: Results of the Focused Special Status Plant/Desert Native Plant Survey Conducted for the Apple Valley Project in the Town of Apple Valley, San Bernardino County, California

Dear Ms. Morse:

This Letter Report presents the findings of special status plant/desert native plant surveys conducted for the Apple Valley Project located in the Town of Apple Valley, San Bernardino County, California (Exhibit 1).

PROJECT LOCATION

The Proposed Project is located on two separate properties measuring 154-acres and 47-acres (201-acres total), separated by approximately 0.60 mile, in the northeastern portion of Victor Valley in the Town of Apple Valley (Exhibit 1). The Project site's 154-acre parcel is bordered on three sides by the 2-lane paved roads: Navajo Road to the west, Johnson Road to the north, Central Road to the east; and one dirt road, Kensington Street, to the south. The 47-acre parcel is bound by Navajo Road to the east, Los Padres dirt road to the south, an unnamed dirt road to the north, and open desert to the west (Exhibit 1). The Project site is located on the Apple Valley North U.S. Geologic Survey 7.5-minute quadrangle map (Exhibit 2).

METHODS

Botanical surveys were floristic in nature and consistent with the protocols created by the California Department of Fish and Wildlife (CDFW) (CDFW 2018). The purpose of the survey was to document all special status plant species including those plant and tree species regulated by the Town of Apple Valley Municipal Code Section 9.76.020 (Desert Native Plant Protection) and the California Desert Native Plants Act (Chapter 3, Sections 80071 - 80075). Prior to the field surveys, a literature search was conducted to identify special status plant species reported from the vicinity of the proposed Project site. Sources reviewed include the USGS's Helendale, Turtle Valley, Stoddard Well, Fairview Valley, Fifteen Mile Valley, Apple Valley South, Hesperia, Victorville, Apple Valley North 7.5-minute quadrangles in the California Native Plant Society's Locational Inventory of Rare and Endangered Vascular Plants of California (CNPS 2023) and the CDFW's California Natural Diversity Database (CDFW 2023a).

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April 12, 2023
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Plants regulated by the Town of Apple Valley and the California Desert Native Plants Act include the following:

- *Juniperus californica* (California juniper);
- All species of Burseraceae family (elephant tree);
- *Carnegiea gigantea* (sahuaro cactus);
- *Ferocactus acanthodes* (barrel cactus);
- *Castela emoryi* (crucifixion thorn);
- *Dudleya saxosa* (Panamint dudleya);
- *Pinus longaeva* (bristlecone pine);
- *Washingtonia filifera* (fan palm);
- All species of the family Agavaceae (century plants, nolinās, yuccas);
- All species of the family Cactaceae (cacti), except for the plants listed in subdivisions (b) and (c) of Section 80072 which may be harvested under a permit obtained pursuant to that section;
- All species of the family Fouquieriaceae (ocotillo, candlewood);
- All species of the genus *Prosopis* (mesquites);
- All species of the genus *Cercidium* (palos verdes);
- *Acacia greggii* (catclaw);
- *Atriplex hymenelytra* (desert-holly);
- *Dalea spinosa* (smoke tree);
- *Olneya tesota* (desert ironwood), including dead; and
- Creosote Rings, ten feet or greater in diameter

According to the National Weather Service, the nearest Barstow-Daggett Airport (approximately 27 miles northeast) received 2.52 inches of precipitation for Water Year 2022 to date (i.e., October 1, 2021, through August 31, 2022), which is about 70 percent of the normal average (National Weather Service 2023). Where available, reference populations were monitored for annual and difficult-to-detect target species to ensure that the scheduled surveys were comprehensive. This is especially relevant during periods of unusual rainfall patterns or below-average rainfall. If conditions at a nearby reference population are suitable for germination and growth, then it can be inferred that conditions would also be suitable in the survey area. Reference populations were not monitored for species with a California Rare Plant Rank (CRPR) of 4; perennials (e.g., *Atriplex* species) which would be identifiable throughout the year; or for species with no extant, publicly accessible reference population in the Project region.

Psomas Biologist Allison Rudalevige, Sarah Thomas, and Erin Ruckman; and Psomas Consulting Biologists Sandy Leatherman and Taylor Beulac conducted special status plant surveys on the approximately 201-acre Project site on March 31, and April 19, 2022. On March 9, 2023, a 9-acre portion of the survey area bordering Johnson Road was surveyed for cactus only. The 2022 plant survey covered this 9-acre parcel, however no documentation of cactus occurred here due to it not technically being part of the survey area at that time. The surveys comprised 60 total person-hours. The potentially suitable habitats for special status plants within the survey area were systematically surveyed to the extent

Nicole Morse
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possible during the site visits. A 50-foot buffer from the Project boundary was surveyed by walking 10 to 20 meter transects depending on shrub cover and habitat. All plant species observed were recorded in field notes. Plants were identified using taxonomic keys, descriptions, and illustrations in Jepson Flora Project (2022), Baldwin et al. (2012), Hickman (1993), and Munz (1974). Nomenclature of plant taxa conform to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2023b) for special status species and the Jepson eFlora (Jepson Flora Project 2022) for all other taxa.

Any special status plant or tree species observed in the survey area were mapped with a handheld Garmin Global Positioning System unit. Data were collected on the number and phenology of individuals and microsite characteristics (e.g., slope, aspect, soil texture, surrounding habitat, and associated species).

SITE DESCRIPTION

Elevations range from approximately 3,016 feet above mean sea level (msl) in the southwestern portion of the 47-acre parcel to approximately 3,155 feet above msl in the northeastern portion of the 154-acre parcel. The Project site is currently undeveloped with dirt access roads and off-road vehicle tracks traversing each parcel. The off-road vehicle disturbances are much greater in the 154-acre parcel as is the presence of trash and debris. The vegetation on site is comprised of creosote bush scrub, disturbed creosote bush scrub, and disturbed (e.g., access roads) (Exhibit 3). A large rock outcrop occurs just south of the 154-acre parcel, which ~~is~~ shows evidence of periodic paintball shooting activity. A few small and medium sized boulders associated with this outcrop occur on the Project site.

Major land uses in the vicinity of the Project site include recreation, Big Lots and Walmart distribution centers, Limestone quarries, transportation (e.g., the Apple Valley Airport, Interstate 15), and low-density residential housing. Soil types in the survey area include Cajon-Arizo complex, 2 to 15 percent slopes; Helendale-Bryman loamy sands, 2 to 5 percent slopes; and rock outcrop-lithic torriorthents complex, 15 to 50 percent slopes. Exhibit 4 shows a map of soil types throughout the survey area.

SURVEY RESULTS

Four special status species were documented in the survey area: western Joshua tree (*Yucca brevifolia*), silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), and beavertail cactus (*Opuntia basilaris* var. *basilaris*) (Exhibit 5¹). Silver cholla, pencil cholla, and beavertail cactus are regulated by the Town of Apple Valley and the California Desert Native Plants Act and Native Desert Vegetation Preservation Ordinance. A full detailed description of the location of Joshua trees in the survey area can be found under separate cover in the Joshua Tree Focused Survey Report prepared by Psomas for the proposed Project (Psomas 2023). Table 1 contains survey data for the cactus observations.

¹ Exhibit 5 does not depict locations for the western Joshua tree. Refer to the Joshua Tree Focused Survey Report for those locations (Psomas 2023).

**TABLE 1
 CACTUS SURVEY DATA**

ID #	Plant Species		Health ^a	Approximate Height (ft)
	Common Name	Botanical Name		
1	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2
2	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	4.5
3	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
4	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
5	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2.5
6	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2
7	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
8	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
9	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
10	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	<1
11	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	<1
12	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
13	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
14	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
15	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
16	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	<1
17	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
18	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
19	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	2
20	beavertail cactus	<i>Opuntia basilaris</i> var. <i>basilaris</i>	4	<1
21	beavertail cactus	<i>Opuntia basilaris</i> var. <i>basilaris</i>	2	<1
22	beavertail cactus	<i>Opuntia basilaris</i> var. <i>basilaris</i>	5	<1
23	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	2
24	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	3
25	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
26	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
27	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	2
28	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2
29	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2
30	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2
31	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
32	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
33	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
34	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2.5
35	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	3
36	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	4
37	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
38	pencil cholla	<i>Cylindropuntia ramosissima</i>	2	4.5
39	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
40	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	5.5
41	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	5

**TABLE 1
 CACTUS SURVEY DATA**

ID #	Plant Species		Health ^a	Approximate Height (ft)
	Common Name	Botanical Name		
42	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
43	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	4
44	pencil cholla	<i>Cylindropuntia ramosissima</i>	2	<1
45	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	6
46	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	5.5
47	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1.5
48	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2
49	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
50	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	1
51	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
52	pencil cholla	<i>Cylindropuntia ramosissima</i>	2	1
53	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	3.5
54	silver cholla	<i>Cylindropuntia echinocarpa</i>	2	2.5
55	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	2.5
56	beavertail cactus	<i>Opuntia basilaris</i> var. <i>basilaris</i>	2	1
57	silver cholla	<i>Cylindropuntia echinocarpa</i>	1	3
58	silver cholla	<i>Cylindropuntia echinocarpa</i>	3	1
59	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	2.5
60	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	3
61	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
62	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
63	pencil cholla	<i>Cylindropuntia ramosissima</i>	3	1
64	pencil cholla	<i>Cylindropuntia ramosissima</i>	1	<1
65	pencil cholla	<i>Cylindropuntia ramosissima</i>	1	1.5

^a Health/Aesthetics Ratings: 1=Very Poor, 2=Poor, 3=Fair, 4=Good, and 5=Excellent; ft: feet

A compendium of all plant species observed within the survey area during the focused plant surveys can be found in Attachment A. Table 2 below lists the special status plant species known to occur in the vicinity of the Project site along with habitat suitability within the survey area and survey results.

**TABLE 2
 SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR
 IN THE SURVEY AREA VICINITY**

Scientific Name	Common Name	CDFW	CRPR	Species Background	Potential
<i>Androsace elongata</i> ssp. <i>acuta</i>	California androsace		4.2	Annual herb. Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon- juniper woodland, and grassland; 492–3,937 ft. Southern California County Distribution: Kern, Los Angeles, Riverside, San Bernardino, San Diego. Blooming period: March–June	Not expected to occur, no suitable habitat present. Not observed during focused surveys.
<i>Canbya candida</i>	white pygmy-poppy		4.2	Annual herb. Gravelly, sandy, or granitic soils in Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland; 1,968–4,789 ft. Southern California County Distribution: Imperial, Kern, Los Angeles, San Bernardino. Blooming period: March–June	Potentially suitable habitat present. Not observed during focused surveys.
<i>Castilleja plagiotoma</i>	Mojave paintbrush		4.3	Hemiparasitic perennial herb. Dry sagebrush scrub, pinyon woodland. Great basin scrub (alluvial soils), lower montane coniferous forests, Joshua tree, pinyon-juniper woodland; 984–8,200 ft. Southern California County Distribution: Kern, Los Angeles, San Bernardino. Blooming period: April–June	Not expected to occur, no suitable habitat present. Not observed during focused surveys.
<i>Chorizanthe spinosa</i>	Mojave spineflower		4.2	Annual herb. Sometimes alkaline soils in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and playas; 20–4,264 ft. Southern California County Distribution: Kern, Los Angeles, San Bernardino. Blooming period: March–July	Potentially suitable habitat present. Not observed during focused surveys.
<i>Cymopterus deserticola</i>	desert cymopterus		1B.2	Perennial herb. Sandy soil in Joshua tree woodland and Mojavean desert scrub; 2,066–4,920 ft. Southern California County Distribution: Kern, Los Angeles, San Bernardino. Blooming period: March–May	Marginally suitable habitat present. Not observed during focused surveys.
<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose		2B.3	Annual herb. Joshua tree, pinyon, and juniper woodland; 2,673–7,872 ft. Southern California County Distribution: Riverside, San Bernardino. Blooming period: April–September	Potentially suitable habitat present. Not observed during focused surveys.
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower		1B.2	Annual herb. Chenopod scrub, Mojavean desert scrub, and playas; 1,640–3,149 ft. Southern California County Distribution: Kern, Los Angeles, San Bernardino. Blooming period: March–May	Not expected to occur, no suitable habitat present. Not observed during focused surveys.
<i>Lycium torreyi</i>	Torrey's box-thorn		4.2	Perennial shrub. Coastal scrub and Sonoran desert scrub; 10–3,660 ft. Southern California County Distribution: Imperial, Riverside, San Bernardino, San Diego. Blooming period: January–November	Potentially suitable habitat present. Not observed during focused surveys.
<i>Muilla coronata</i>	crowned muilla		4.2	Perennial cormous herb. Chenopod scrub, Mojavean desert scrub, Joshua tree and pinyon-juniper woodland; 2,509–6,429 ft. Southern California County Distribution: Kern, Los Angeles, San Bernardino. Blooming period: March–April (May)	Potentially suitable habitat present. Not observed during focused surveys.
<i>Pediomelum castoreum</i>	Beaver Dam breadroot		1B.2	Perennial herb. Sandy washes and roadcuts in Joshua tree woodland and Mojavean desert scrub; 2,001–5,003 ft. Southern California County Distribution: San Bernardino. Blooming period: April–May	Marginally suitable habitat present. Not observed during focused surveys.
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	southern mountains skullcap		1B.2	Perennial rhizomatous herb. Moist embankments of montane creeks, mesic chaparral, mesic cismontane woodland, and mesic lower montane coniferous forest; 1,394–6,562 ft. Southern California County Distribution: Los Angeles (Presumed extirpated; Occurrence confirmed, but possibly extirpated), Riverside, San Bernardino, San Diego. Blooming period: June–August	Not expected to occur, no suitable habitat present. Not observed during focused surveys.
<i>Symphotrichum defoliatum</i>	San Bernardino aster		1B.2	Perennial rhizomatous herb. Near ditches, streams, and springs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and vernally mesic grassland; 7–6,693 ft. Southern California County Distribution: Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego. Blooming period: July–November	Not expected to occur, no suitable habitat present. Not observed during focused surveys.
<i>Yucca brevifolia</i>	western Joshua tree	CST		Perennial herb. Desert flats, slopes; 1,312–7,546 ft. Southern California County Distribution: Kern, Los Angeles, San Bernardino, Riverside. Blooming period: March–June	Suitable habitat. Observed.

CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank

Species Status:

State (CDFW)

CST Candidate State Threatened

CRPR

- 1B Plants Rare, Threatened, or Endangered in California and elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere
- 4 Plants of limited distribution - watch list
- .2 Moderately threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)
- .3 Not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

Species that were observed on site are shown in **boldface type**. For blooming period, months included in parentheses are uncommon.

Sources include CDFW 2022a, CNPS 2022, and Jepson Flora Project 2022.

Nicole Morse
April 12, 2023
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CONCLUSIONS

A total of 65 cactus (4 beavertail cactus, 51 pencil cholla, 10 silver cholla) were documented in the survey area. The cactus are regulated by the Town of Apple Valley and the California Desert Native Plants Act. Any impacts to cactus would require compliance with both the City and State Ordinances.

Additionally, three Joshua trees were documented by a certified Arborist during a Joshua tree survey, and details on these trees can be found in the Joshua Tree Focused Survey Report prepared by Psomas for the proposed Project (Psomas 2023).

Psomas appreciates the opportunity to assist on this Project. If you have any comments or questions, please call Marc Blain at 626.351.2000.

Sincerely,

P S O M A S



Marc T. Blain
Senior Project Manager



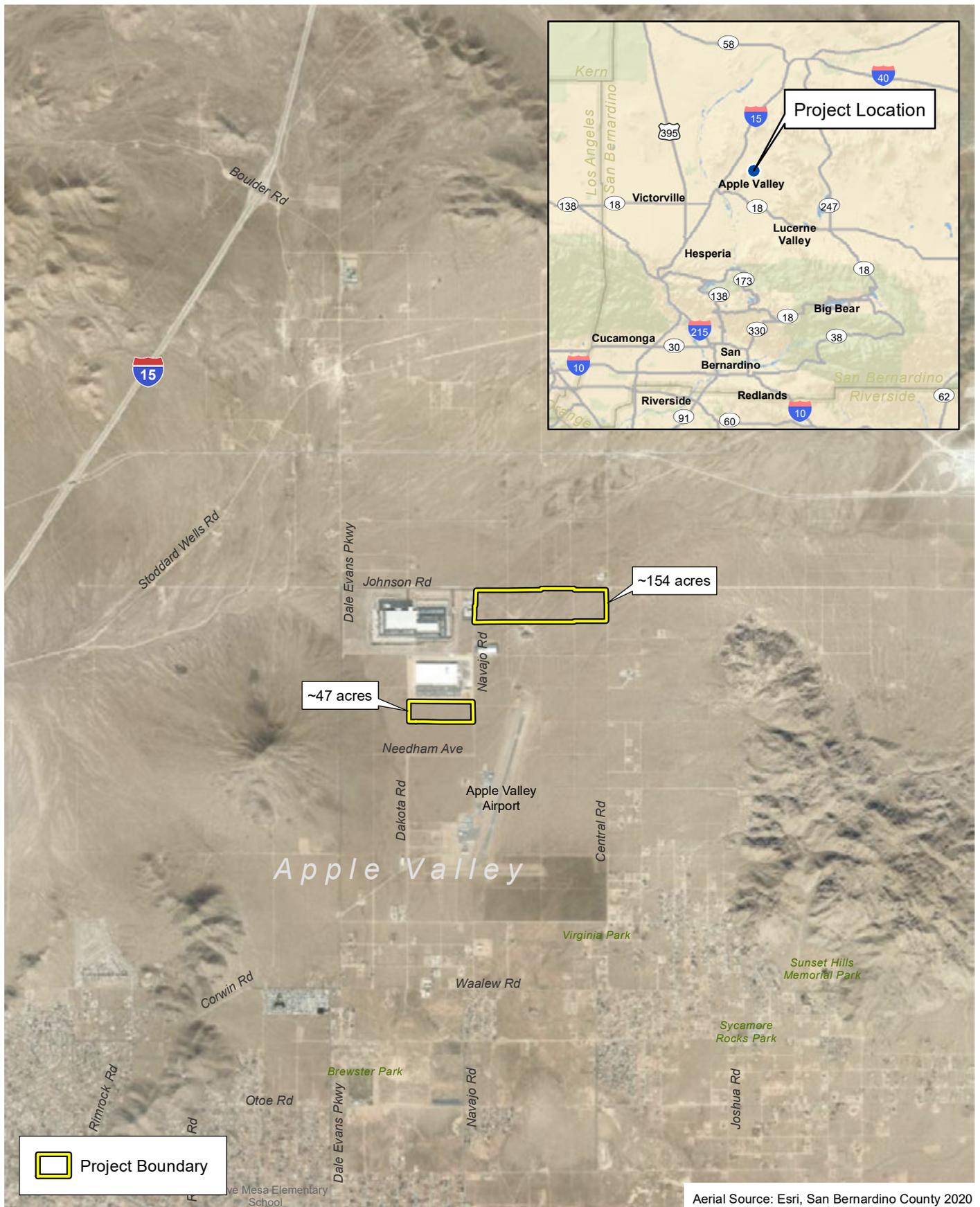
Sarah Thomas
Biologist

Enclosures: Exhibit 1 – Project Location
 Exhibit 2 – USGS Quadrangle Map
 Exhibit 3 – Vegetation Types and Other Areas
 Exhibit 4 – Soils Map
 Exhibit 5 – Survey Results
 Attachment A – Plant Compendium

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April 12, 2023
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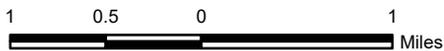
 Project Boundary

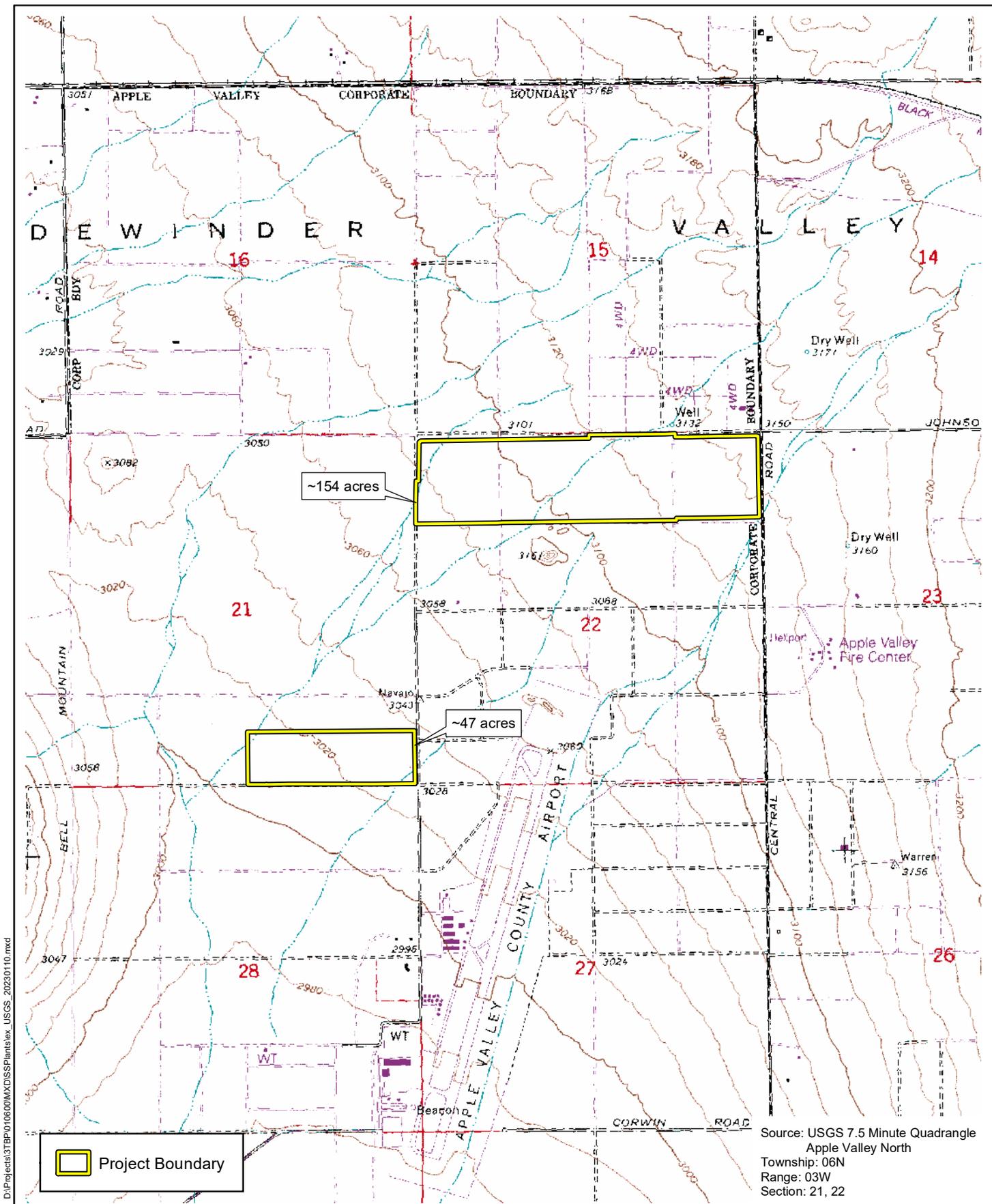
Aerial Source: Esri, San Bernardino County 2020

Regional Location and Local Vicinity

Exhibit 1

Apple Valley Project





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 Project Boundary

Source: USGS 7.5 Minute Quadrangle
 Apple Valley North
 Township: 06N
 Range: 03W
 Section: 21, 22

USGS 7.5-Minute Digital Quadrangle

Apple Valley Project

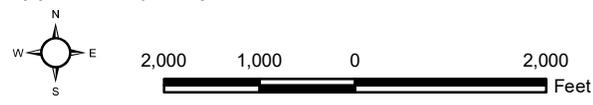


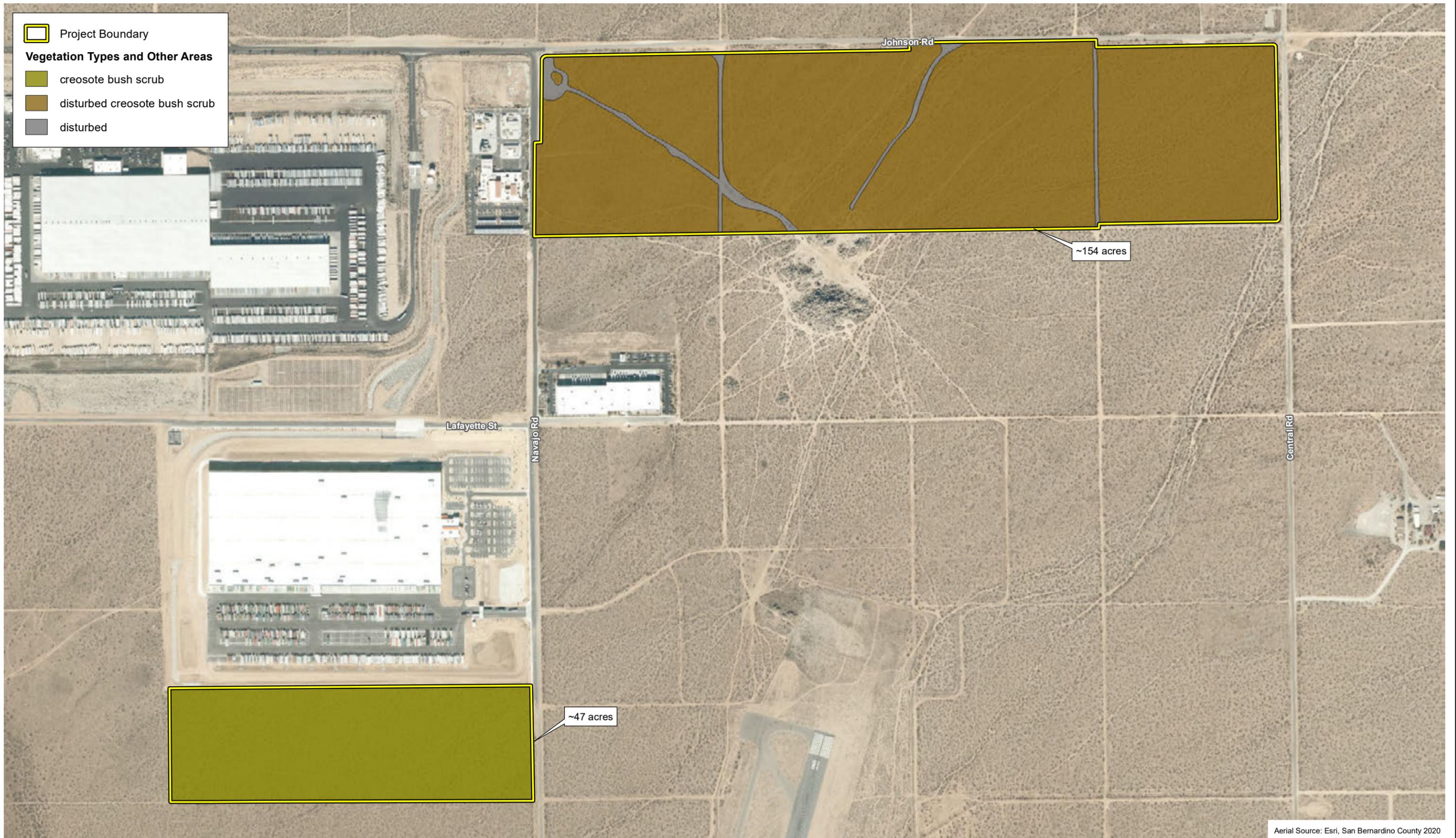
Exhibit 2



Project Boundary

Vegetation Types and Other Areas

- creosote bush scrub
- disturbed creosote bush scrub
- disturbed



Aerial Source: Esri, San Bernardino County 2020

Vegetation Types and Other Areas

Apple Valley Project



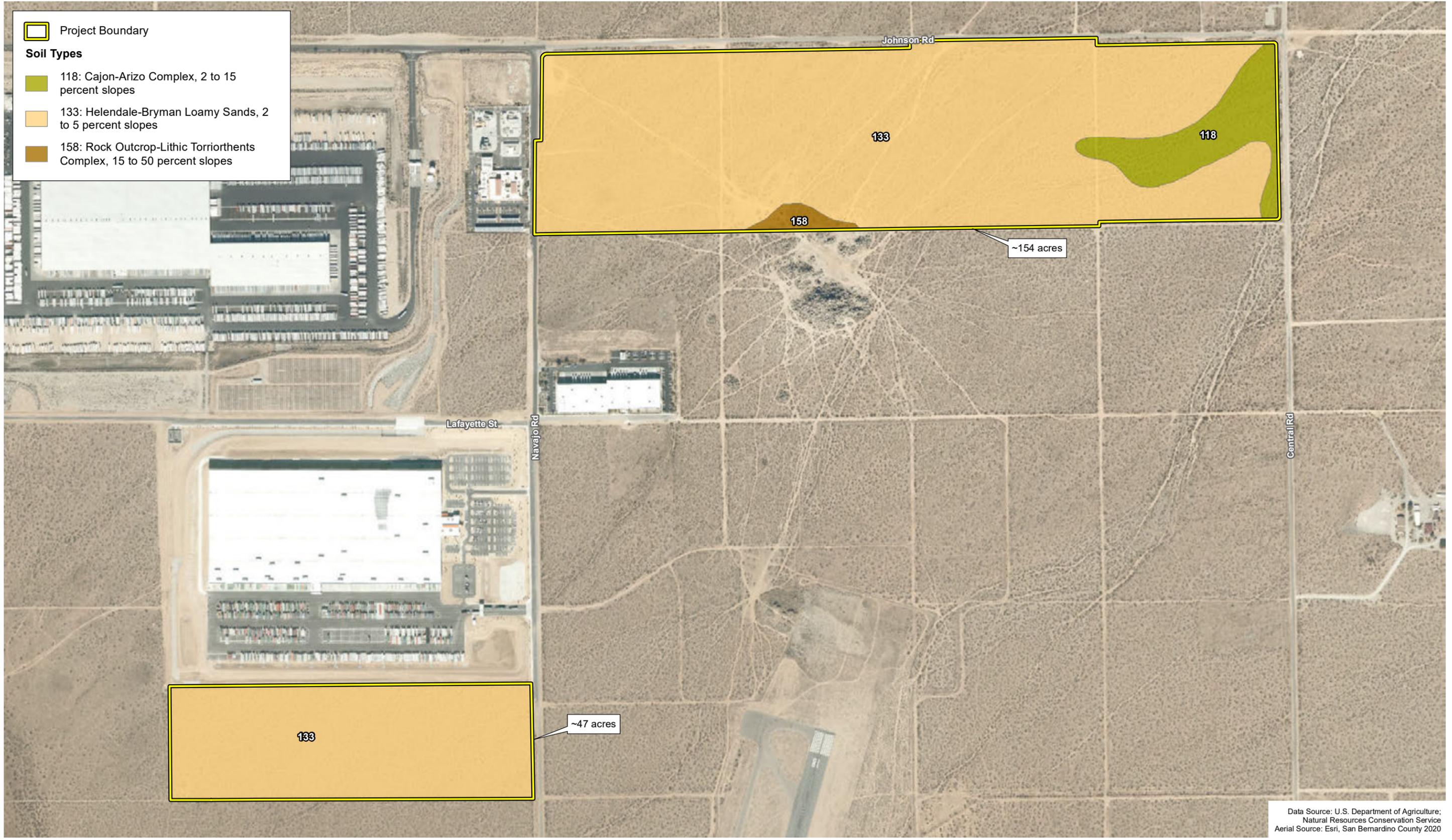
Exhibit 3



Project Boundary

Soil Types

- 118: Cajon-Arizo Complex, 2 to 15 percent slopes
- 133: Helendale-Bryman Loamy Sands, 2 to 5 percent slopes
- 158: Rock Outcrop-Lithic Torriorthents Complex, 15 to 50 percent slopes



Data Source: U.S. Department of Agriculture;
 Natural Resources Conservation Service
 Aerial Source: Esri, San Bernardino County 2020

Soils Map

Apple Valley Project



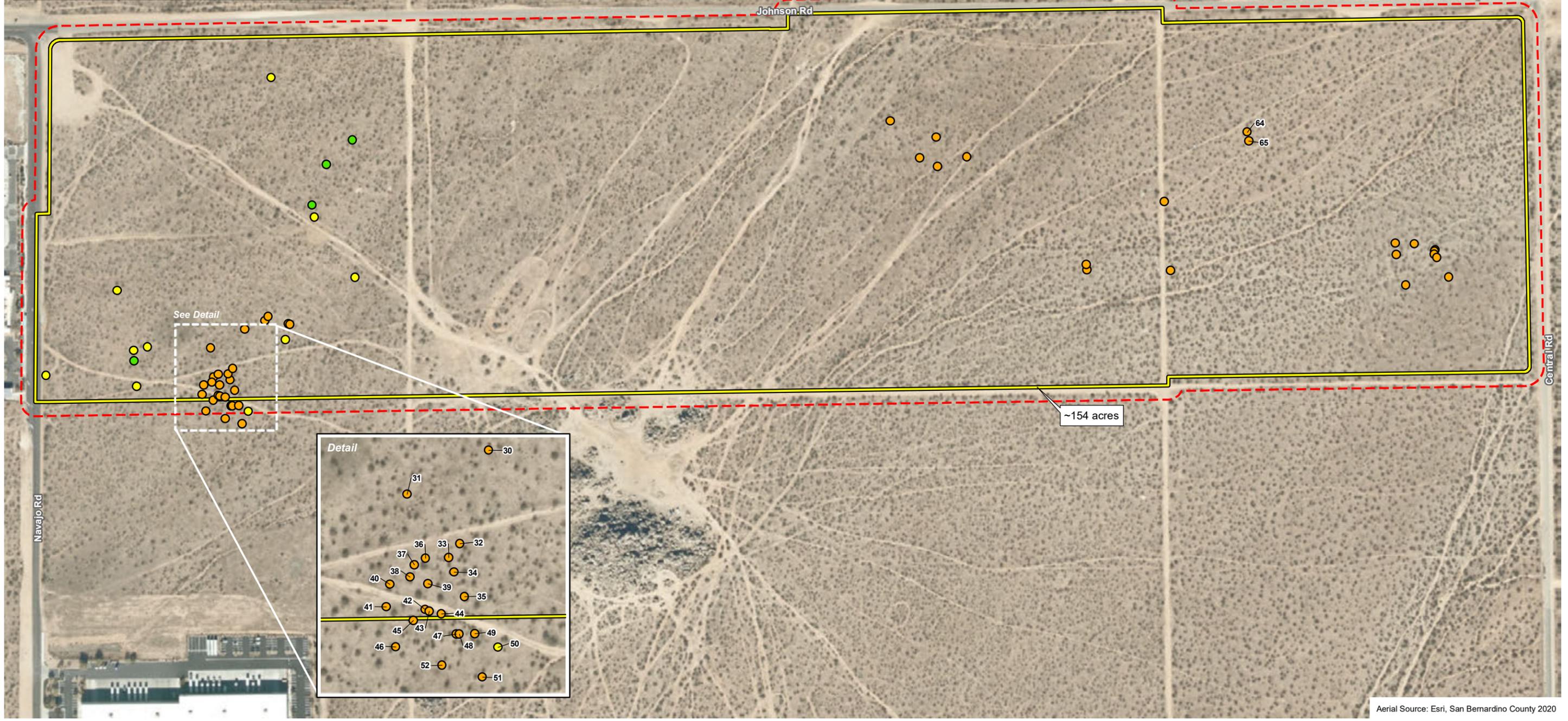
Exhibit 4



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 Project Boundary
 Survey Area
Special Status Plant Survey Results
California Desert Native Plants Act
 beavertail cactus (*Opuntia basilaris* var. *basilaris*)
 pencil cholla (*Cylindropuntia ramosissima*)
 silver cholla (*Cylindropuntia echinocarpa*)



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Survey Results
Apple Valley Project

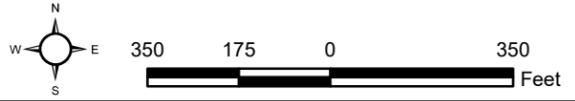


Exhibit 5a



 Project Boundary
 Survey Area
Special Status Plant Survey Results
California Desert Native Plants Act
 pencil cholla (*Cylindropuntia ramosissima*)



Aerial Source: Esri, San Bernardino County 2020

Survey Results
Apple Valley Project

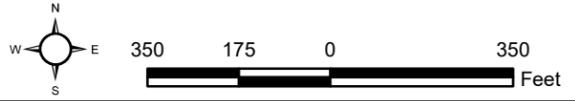


Exhibit 5b



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ATTACHMENT A
PLANT COMPENDIUM

**PLANT SPECIES OBSERVED WITHIN THE SURVEY AREA
DURING FOCUSED PLANT SURVEYS**

Species		Special Status
Scientific Name	Common Name	
GYMNOSPERMS		
EPHEDRACEAE – EPHEDRA FAMILY		
<i>Ephedra nevadensis</i>	Nevada ephedra	
EUDICOTS		
APIACEAE – CARROT FAMILY		
<i>Lomatium mohavense</i>	Mojave lomatium	
ASTERACEAE – SUNFLOWER FAMILY		
<i>Adenophyllum cooperi</i>	Cooper's adenophyllum	
<i>Ambrosia acanthicarpa</i>	annual bur-sage	
<i>Ambrosia dumosa</i>	white bur-sage	
<i>Ambrosia salsola</i>	common burrobrush	
<i>Baileya multiradiata</i>	many-rayed desert-marigold	
<i>Ericameria cooperi</i> var. <i>cooperi</i>	Cooper's goldenbush	
<i>Ericameria nauseosa</i>	rubber rabbitbrush	
<i>Lasthenia gracilis</i>	common goldfields	
<i>Malacothrix glabrata</i>	desert dandelion	
<i>Nicolletia occidentalis</i>	hole-in-the-sand plant	
<i>Palafoxia arida</i> var. <i>arida</i>	Spanish-needle	
<i>Tetradymia axillaris</i>	axillary cottonthorn	
<i>Tetradymia stenolepis</i>	narrow-scaled cottonthorn	
BORAGINACEAE – BORAGE FAMILY		
<i>Amsinckia tessellata</i>	tessellated fiddleneck	
<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	narrow-toothed pectocarya	
BRASSICACEAE – MUSTARD FAMILY		
<i>Caulanthus lasiophyllus</i>	California mustard	
<i>Descurainia sophia</i> *	wise tansy mustard	
<i>Hirschfeldia incana</i> *	grayish shortpod mustard	
<i>Sisymbrium altissimum</i> *	tumble mustard	
<i>Sisymbrium orientale</i> *	eastern sisymbrium	
CACTACEAE – CACTUS FAMILY		
<i>Cylindropuntia echinocarpa</i>	silver cholla	
<i>Cylindropuntia ramosissima</i>	diamond cholla (pencil cholla)	
<i>Opuntia basilaris</i> var. <i>basilaris</i>	beavertail	
CONVOLVULACEAE – MORNING-GLORY FAMILY		
<i>Cuscuta</i> sp.	dodder	
EUPHORBIACEAE – SPURGE FAMILY		
<i>Euphorbia albomarginata</i>	rattlesnake sandmat	
FABACEAE – LEGUME FAMILY		
<i>Astragalus</i> sp.	milkvetch	
<i>Lupinus concinnus</i>	bajada lupine	
GERANIACEAE – GERANIUM FAMILY		
<i>Erodium cicutarium</i> *	redstem filaree	
LAMIACEAE – MINT FAMILY		
<i>Scutellaria mexicana</i>	bladder-sage	

**PLANT SPECIES OBSERVED WITHIN THE SURVEY AREA
DURING FOCUSED PLANT SURVEYS**

Species		Special Status
Scientific Name	Common Name	
LOASACEAE – BLAZING STAR FAMILY		
<i>Petalonyx thurberi</i> ssp. <i>thurberi</i>	Thurber's sandpaper-plant	
MALVACEAE – MALLOW FAMILY		
<i>Sphaeralcea ambigua</i>	apricot mallow	
ONAGRACEAE – EVENING PRIMROSE FAMILY		
<i>Camissoniopsis</i> sp.	camissoniopsis	
POLYGONACEAE – BUCKWHEAT FAMILY		
<i>Eriogonum fasciculatum</i>	California buckwheat	
<i>Eriogonum</i> sp.	wild buckwheat	
RUTACEAE – CITRUS FAMILY		
<i>Thamnosma montana</i>	mountain turpentine-broom	
SOLANACEAE – NIGHTSHADE FAMILY		
<i>Lycium andersonii</i>	Anderson's box-thorn	
<i>Lycium cooperi</i>	Cooper's box-thorn	
ZYGOPHYLLACEAE – CALTROP FAMILY		
<i>Larrea tridentata</i>	creosote bush	
MONOCOTS		
AGAVACEAE – AGAVE FAMILY		
<i>Yucca brevifolia</i>	western Joshua tree	SC
POACEAE – GRASS FAMILY		
<i>Bromus rubens</i> *	red brome	
<i>Bromus tectorum</i> *	cheat grass	
<i>Elymus elymoides</i>	squirreltail	
<i>Schismus barbatus</i> *	barbed Mediterranean grass	
<i>Stipa speciosa</i>	desert needle grass	
* Non-native or invasive species		
State (CDFW)		
SCT State Candidate for listing as Threatened		

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**Appendix B:
Western Joshua Tree Inventory Report**

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April 12, 2023

Nicole Morse, Esq.
Principal
T&B Planning, Inc.
3200 El Camino Real, Suite 100
Irvine, CA 92602

VIA EMAIL
nmorse@tbplanning.com

Subject: Results of a Focused Survey for Western Joshua Tree for the Apple Valley Project, Town of Apple Valley, San Bernardino County, California

Dear Ms. Morse:

This Letter Report presents the findings of a Joshua tree survey conducted for the for the Apple Valley Project (hereinafter referred to as the “proposed Project”) located in the Town of Apple Valley, San Bernardino County, California (Exhibit 1). The purpose of this report is to document all western Joshua trees (*Yucca brevifolia*) occurring in the survey area of the proposed Project site in order to satisfy the requirements of the Town of Apple Valley Municipal Code Section 9.76.040 and the California Endangered Species Act (CESA). The western Joshua tree is currently listed as a California Candidate Threatened species (CDFW 2022) and therefore requires an Incidental Take Permit prior to Project disturbance.

PROJECT LOCATION

The Proposed Project is located on two separate properties measuring 154-acres and 47-acres, separated by approximately 0.60 mile, in the northeastern portion of Victor Valley in the Town of Apple Valley (Exhibit 1). The Project site’s 154-acre parcel is bordered on three sides by the 2-lane paved roads: Navajo Road in the west, Johnson Road in the north, Central Road in the east; and one dirt road, Kensington Street, in the south. The 47-acre parcel is bound by Navajo Road in the east, Los Padres dirt road in the south, an unnamed dirt road in the north, and open desert in the west (Exhibit 1). The Project site is located on the Apple Valley North U.S. Geologic Survey 7.5-minute quadrangle map (Exhibit 2).

SITE DESCRIPTION

Elevations range from approximately 3,016 feet above mean sea level (msl) in the southwestern portion of the 47-acre parcel to approximately 3,155 feet above msl in the northeastern portion of the 154-acre parcel. The Project site is currently undeveloped with dirt access roads and off-road vehicle tracks traversing each parcel. The off-road vehicle disturbances are much greater in the 154-acre parcel as is the presence of trash. The vegetation on site comprised of creosote bush scrub, disturbed creosote bush scrub, and disturbed (e.g., access roads) (Exhibit 3).

Land uses in the project vicinity include a Big Lots distribution center which occurs directly north of the 47-acre parcel; a Walmart distribution center which occurs directly west of the 154-acre parcel; White Mountain Quarry which occurs approximately 3.5 miles northeast; the Apple Valley Airport which occurs approximately 0.27-mile east of the 47-acre parcel and

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April 12, 2023
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0.50-mile south of the 154-acre parcel; Interstate 15 occurs approximately 3 miles west, and low-density residential structures occur to the south.

BACKGROUND

The Joshua tree is an important keystone species, and its range defines the biological extent of the Mojave Desert (Thomas et al. 2004). Literature published in 2007 by Lee W. Lenz contended that what was previously widely accepted as the Joshua tree (*Y. brevifolia* var. *brevifolia*) and Jaeger's Joshua tree (*Y. brevifolia* var. *jaegeriana*) is two distinct species – the western Joshua tree (*Y. brevifolia*) and eastern Joshua tree (*Y. jaegeriana*). In addition to Lenz's research, genetic research conducted on the Joshua tree in 2016 found evidence for strong genome-wide patterns of divergence between the Joshua tree species (Royer et al. 2016), further validating the separation at the species level. The two species are separated geographically and only occur at higher elevations (e.g., 1,300 feet – 6,560 feet) (Hess 2012) and prefer flat and gently sloping aspects. The western Joshua tree's western extent occurs near Gorman, California; the southern extent occurs in Joshua Tree National Park; the eastern extent in Tikaboo Valley, Nevada; and the northern extent near Alkali, Nevada (Lenz 2007). The western Joshua tree is arborescent (tree-like) with a distinct trunk, and it branches only after a flower is produced on the main stalk.

Individual Joshua trees do not flower every year but instead tend to produce flowers during wet years, and usually all at once. Joshua tree pollen is too sticky to be carried by the wind and therefore requires the assistance of pollinators, namely the yucca moth (*Tegeticula synthetica*). Blooming typically occurs from January to mid-April and coincides with the flight of yucca moths (Cornett 2018). Waitman and Esque found through radioactive tracers that rodents such as the white-tailed Antelope squirrel (*Ammospermophilus leucurus*) were responsible for most of the successful germination in the Joshua trees they studied. The white-tailed Antelope squirrel was shown to climb the trees and remove the fruit directly from the tree canopy during peak ripeness, then bury the seeds under a shallow layer of soil, greatly aiding in germination (Waitman and Esque 2012).

Joshua trees are monocots in the family Agavaceae and therefore do not have thick woody roots but instead numerous small fibrous roots about as thick as a pencil. The roots of Joshua trees spread out horizontally just under the ground surface (approximately as far as the tree canopy) to capture water from light rains, as well as deep (10 to 30 feet) vertically to capture seasonally pooled underground water. Some Joshua trees, usually those at higher elevations, those at the edges of the range, or areas more prone to disturbance such as wildfires, contain rhizomes – a method of asexual reproduction whereby a new stem develops from the rhizome, shoots up above ground, and eventually grows into an adult tree. Clonal Joshua trees are usually shorter stature and contain less branching (Simpson 1975).

REGULATORY AUTHORITY

On October 21, 2019, the California Fish and Game Commission (CFGC) received a petition from the Center for Biological Diversity to list the western Joshua tree as 'Threatened' under CESA. On September 22, 2020, the CFGC accepted the petition to list the western Joshua tree as a Candidate Threatened species, which became official upon publication in the California Regulatory Notice Register on October 9, 2020. The California Department of Fish and Wildlife (CDFW) conducted a Status Review and released a conclusion in April 2022 indicating listing of the species was not warranted. Subsequently, the CFGC voted to postpone a decision and extend the review period until October 2022. During the review period, the CFGC has issued Approved Emergency Regulatory Language (pursuant to Section 749.12 Title 14) of the California Code of Regulations to provide guidance on applying for an Incidental Take Permit for impacts to the western Joshua tree. The western Joshua tree is currently listed as a California Candidate Threatened species and is therefore covered under CESA.

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 April 12, 2023
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On July 21, 2021, The Town of Apple Valley issued a memo entitled *Interim Local Policy and Procedures on The Western Joshua Tree* to provide helpful direction and clarify the requirements relating to the potential removal, relocation or trimming of a western Joshua tree associated with grading conducted on a site that may contain the western Joshua tree (Town of Apple Valley 2021).

METHODS

On June 26, 2022, Psomas Certified Arborist David Hughes (International Society of Arboriculture Certificate No. WE-7752A), walked meandering transects throughout the site to document Joshua trees in the Project boundary plus a 186-foot buffer (survey area) (Exhibit 3). The location of each tree was given a unique ID number and was mapped using an iPad Mini 6. Individual Joshua trees were measured for diameter at breast height (dbh) (4.5 feet above natural grade), and height. Total branching, spread, number of fresh panicles, and the presence and number of clones was also counted. Whether the tree was flowering or had any lean (e.g., no lean, slight lean, lean, extreme lean not touching ground, extreme lean touching ground) was noted. An overall assessment of health was made on a grading system: excellent, good, fair, poor, critical, dead standing, dead freshly fallen, dead moderately aged, dead severely aged. See Table 1 for a description of each health rating. A photograph was taken of each tree and can be found in Attachment A.

Following the field survey, each tree was assessed for its suitability for transplantation/relocation based on a general health assessment and size threshold (height and minimal branching). Only trees less than or equal to 15 feet in height, and in good condition are recommended for transplanting. Those trees in close proximity to other trees (e.g., clonal) were not selected due to difficulties presented from underground root systems.

**TABLE 1
 JOSHUA TREE HEALTH ASSESSMENT RATINGS**

Health Rating	Description
Excellent	Tree has excellent health and strong vigor. No damage. Flowering and fruiting expected. Typically, only given to large, high quality specimens (>13 feet in height). Transplanting generally not recommended due to size. Avoidance recommended.
Good	Tree has good health and vigor. All branches are alive and healthy. Damage is very localized and minimal. Flowering and fruiting likely. Tree is transplantable.
Fair	Tree health average. Some stressors or damage possible, however any damage is minimal to moderate (e.g., rodent grazing, or insect damage). No dead/broken branches. Tree is transplantable.
Poor	Tree under stress, and overall health in decline, or tree has taken significant damage. Mortality likely unless stressors relieved, and/or conditions change. Broken/dead limbs likely present. Tree is generally not transplantable.
Critical	Tree in extreme decline. One or more branches dead. One or more branches dying. Physical damage likely present. Damage is significant and extensive. Mortality expected within 2 to 4 years. Tree is not transplantable.
Dead – Standing	Tree is dead (no green leaves) but still standing.
Dead – Freshly Fallen	Tree is dead and fallen but appears freshly fallen based on intact branches and leaves. Can likely record other data for these trees such as height.
Dead – Moderately Aged	Tree is dead and fallen and appears to have been on the ground a while, portions of the inner system exposed, plants growing up between branches, etc. May not be possible to record any other data.
Dead – Severely Aged	Tree is dead and fallen and is broken into many smaller pieces, few/no leaves left on the dead specimen. Not possible to record any other data.

Nicole Morse
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SURVEY RESULTS

A total of three western Joshua trees were documented in the survey area. All three trees are living, no dead trees were documented. A map of the tree locations can be found on Exhibit 3. A detailed table of each tree and corresponding attributes, as well as those trees potentially suitable for transplantation, can be found in Attachment B.

CONCLUSIONS

The Town of Apple Valley requires avoidance of Joshua trees to the maximum extent practicable. Any Project impacts occurring within 186-feet of a Joshua tree may be considered “take” per CDFW guidelines for the species, and the applicant would be required to obtain an Incidental Take Permit (ITP) from CDFW before the project can proceed. No additional approvals are required by the Town if an ITP is obtained from CDFW.

Psomas appreciates the opportunity to assist on this project. If you have any comments or questions, please call Marc Blain at (626) 351-2000.

Sincerely,

P S O M A S



Marc T. Blain
Senior Project Manager/Biologist



Sarah Thomas
Biologist

Enclosures: Exhibit 1 – Regional Location and Local Vicinity
 Exhibits 2 – USGS Quadrangle Map
 Exhibits 3 – Survey Results Map
 Attachment A – Joshua Tree Photographs
 Attachment B – Joshua Tree Survey Data Table

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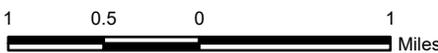


 Project Boundary

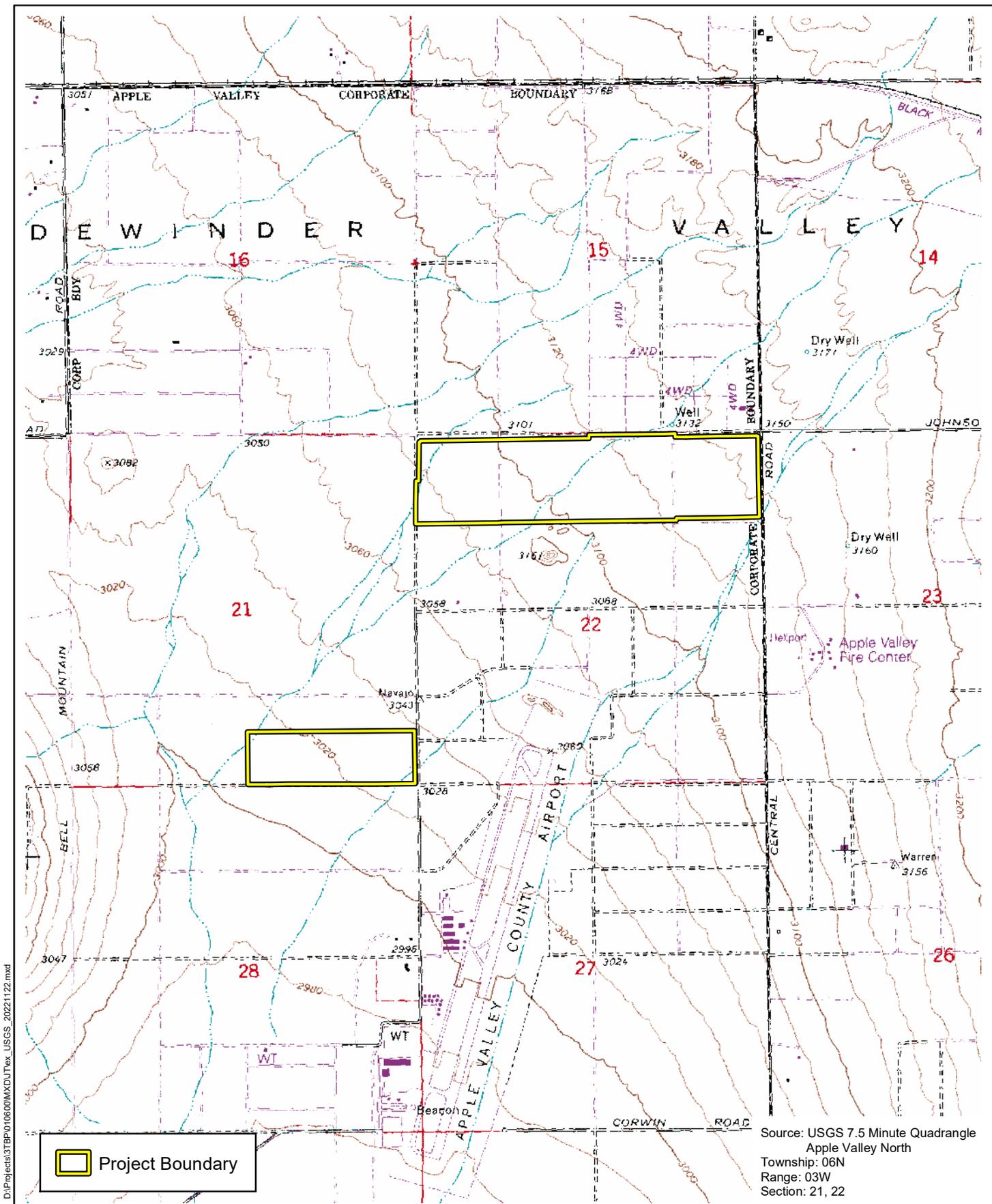
Regional Location and Local Vicinity

Exhibit 1

Apple Valley Project



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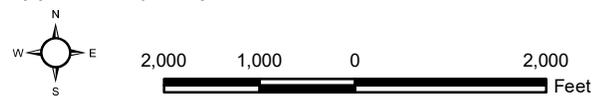
 Project Boundary

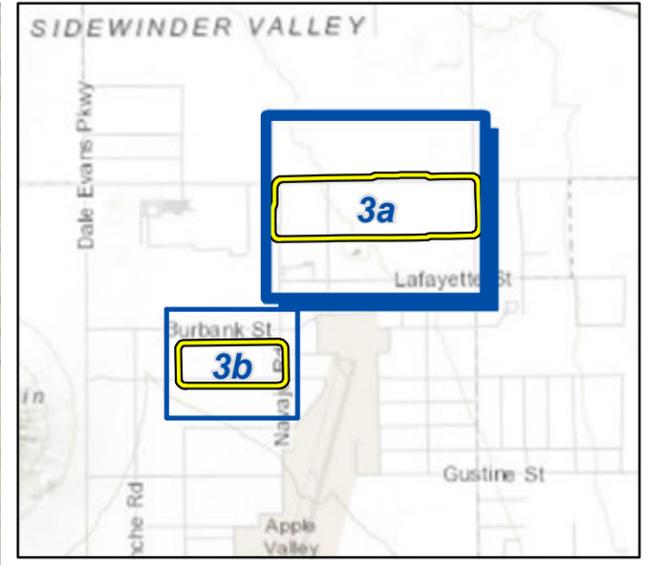
Source: USGS 7.5 Minute Quadrangle
 Apple Valley North
 Township: 06N
 Range: 03W
 Section: 21, 22

USGS 7.5-Minute Digital Quadrangle

Apple Valley Project

Exhibit 2



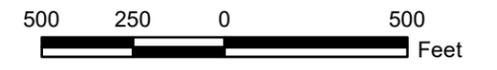
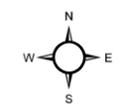


-  Project Boundary
-  186-foot Survey Buffer

Joshua Tree Survey Results

-  Joshua tree

Note: Trees documented on private property within the buffer area (1 total) are not reflected on the map, but are included in Attachment B.



Aerial Source: Esri, San Bernardino County 2020

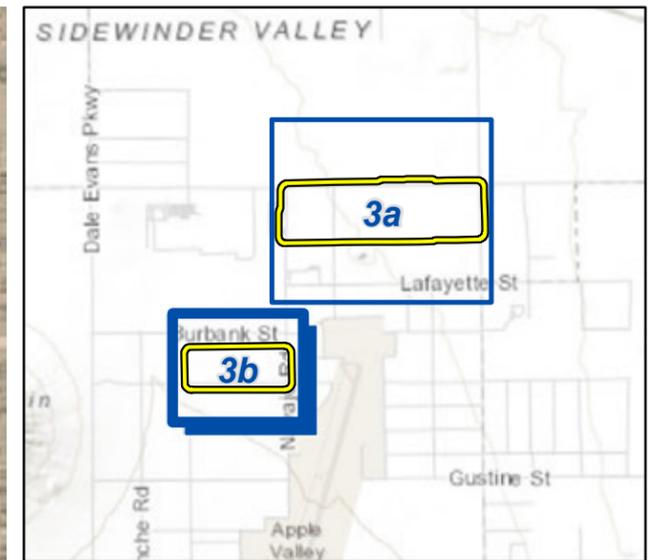
Survey Results **Exhibit 3a**

Apple Valley Project



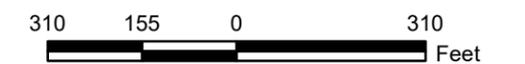
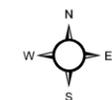
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- Project Boundary
- 186-foot Survey Buffer

Note: Trees documented on private property within the buffer area (1 total) are not reflected on the map, but are included in Attachment B.



Aerial Source: Esri, San Bernardino County 2020

Survey Results
Apple Valley Project

Exhibit 3b



ATTACHMENT A
JOSHUA TREE PHOTOGRAPHS



Joshua Tree Tag ID #1



Joshua Tree Tag ID #2

Joshua Tree Photographs

Apple Valley Project

Attachment A-1



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Joshua Tree Tag ID #3

Joshua Tree Photographs

Apple Valley Project

Attachment A-2



ATTACHMENT B

JOSHUA TREE SURVEY DATA TABLE

JOSHUA TREE SURVEY DATA TABLE

Tree ID	Common Name	Scientific Name	Date Collected	Observer	Tree Tagged	Clonal	DBH	Height (ft.)	Spread (ft.)	No. of Panicles	No. of Branches	Health	Phenology	Transplantation
1	western Joshua tree	<i>Yucca brevifolia</i>	6/26/2022	Hughes	No	no	n/a	4	1	0	1	good	vegetative	yes
2	western Joshua tree	<i>Yucca brevifolia</i>	6/26/2022	Hughes	No	No	11	8	6	0	4	good	vegetative	yes
3	western Joshua tree	<i>Yucca brevifolia</i>	6/26/2022	Hughes	No	yes	7	7	2	0	1	good	vegetative	no

DBH: diameter at breast height; ft: feet
a Spread refers to the width of the crown of the tree at the widest point.
b Refer to Table 1 of the Joshua Tree Survey Report for a description of health ratings.

**Appendix C:
Western Joshua Tree Assessment Memorandum**

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Memorandum

Date: September 20, 2024

To: Matt Rexroth, Director, Strategic Planning and Development, Watson Land Company

From: Michael W. Tuma, PhD, Principal Biologist
Kelly Evans, Arborist

Subject: Joshua Tree Assessment for the High Desert Logistics Project

At the request of Watson Land Company, FirstCarbon Solutions (FCS) conducted an assessment of western Joshua trees (*Yucca brevifolia*) on the proposed High Desert Logistics Project site (proposed project) located in the Town of Apple Valley, in San Bernardino County, California. The assessment included a review of a previous Western Joshua Tree Survey Report, a visit to the project site to verify the locations of the western Joshua trees recorded by Psomas and record stem lengths, and to provide a review of permitting needs for the Western Joshua Tree Conservation Act Incidental Take Permit (ITP) process.

The California Game and Fish Commission received a petition from the Center for Biological Diversity to list the western Joshua tree under the California Endangered Species Act (CESA) on October 21, 2019. The Commission voted to accept the petition for consideration on September 22, 2020, thereby elevating the conservation status of the species to a Candidate for listing under CESA. As a Candidate species, it is afforded the same protections as species that are listed under CESA, including prohibitions of take. Project applicants are required to obtain an ITP from the California Department of Fish and Wildlife (CDFW) under CESA for impacts to western Joshua trees and their seedbanks.

Subsequently (in July 2023), the Western Joshua Tree Conservation Act (WJTCA) was signed into law, which prohibits unpermitted killing or removal of Joshua trees and establishes a fund to acquire and manage suitable habitat for the species. Project applicants are required to obtain an ITP through CDFW and, on a per-Joshua tree basis, pay an in-lieu mitigation fee to the fund under the WJTCA. In-lieu mitigation fees are assessed based on the height of the western Joshua trees and the area where they occur. Project applicants that obtain an ITP through the WJTCA are not required to obtain an ITP through CESA.

Project Location and Description

The proposed project is located in the north portion of the Town of Apple Valley. The project site consists of the East Site (approximately 142 acres) and the West Site (about 45 acres), separated by 0.60 mile

(Exhibit 1). The West Project site is bordered by Burbank Avenue north, Los Padres Road to the south, Navajo Road to the east, and undeveloped lands to the west. The East Project site is bordered by Johnson Road to the north, Kensington Street to the south, Central Road to the east, and Navajo Road to the west.

The project applicant proposes to develop three warehouse buildings on the project site. Within the East Site, the applicant proposes to install two warehouse buildings. Building 1 will be 1,631,800 square feet, with 268 dock doors, 681 auto parking stalls along the west side of the warehouse, and 637 trailer parking stalls on the north and south sides. Building 2 will be 1,200,800 square feet, with 221 dock doors, 571 auto parking stalls on the east side of the warehouse, and 461 trailer parking stalls along the north and south sides. Within the West Site, the applicant proposes an 896,500-square-foot industrial warehouse building, including 112 dock doors along the south side of the warehouse, 603 auto parking stalls on the east and west sides of the warehouse, and 304 trailer parking stalls along the south side of the warehouse building.

Review of Previous Western Joshua Tree Survey

Psomas Biologists surveyed the project site on June 26, 2022, and recorded three western Joshua trees, including two on the East Site and one at an off-site location south of and within 200 feet of the East Site. In a report submitted on April 12, 2023, Psomas evaluated project needs with respect to compliance with the California Endangered Species Act, including recommendations that the project applicant obtain an ITP from CDFW through CESA processes.

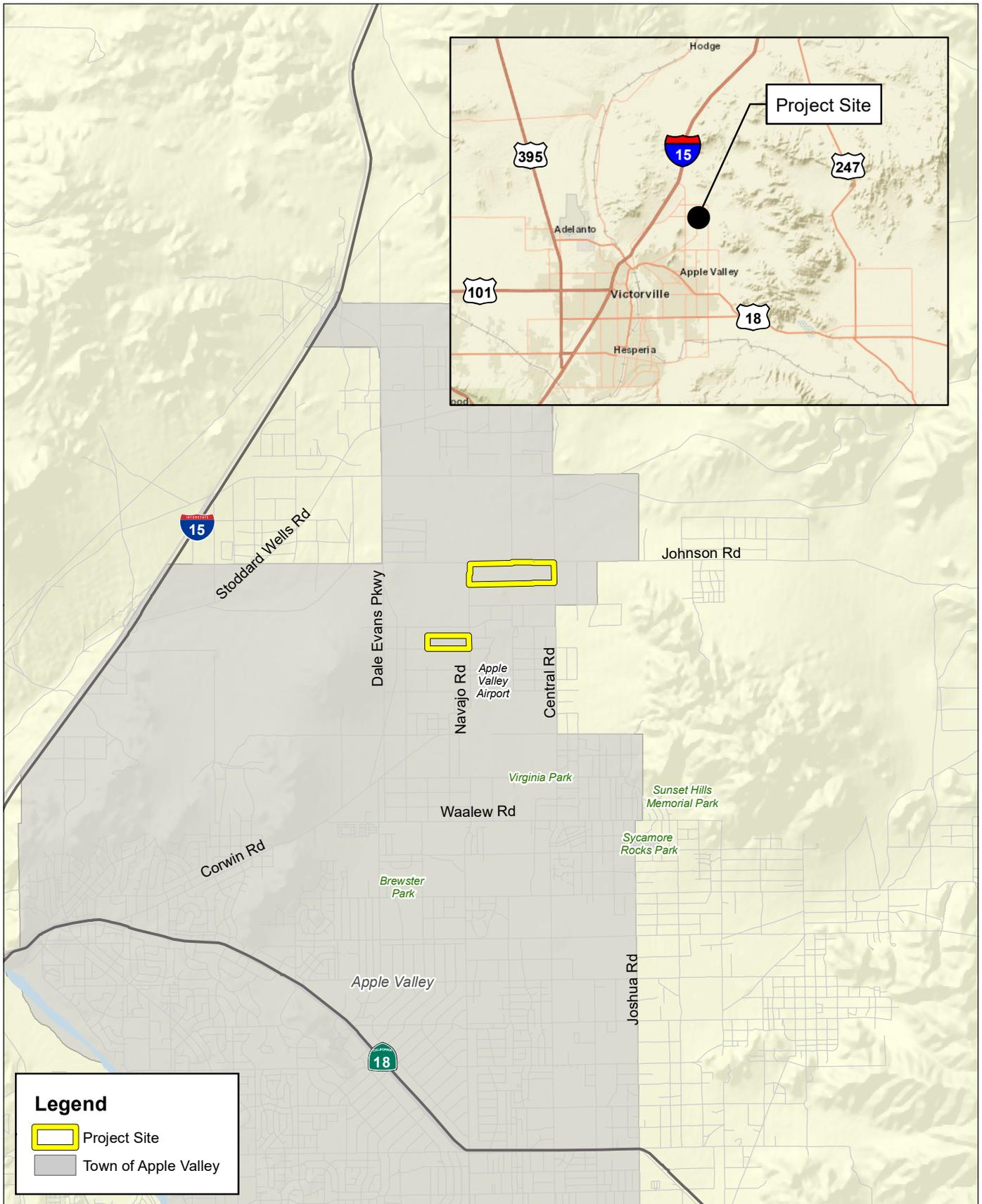
Site Visit

FCS Biologists Kelly Evans and Hannah Carney visited the project site on June 11, 2024. During the visit, the Biologists visited each of the western Joshua trees recorded by Psomas, counted trunks, and recorded tree height (stem length).

The FCS Biologists confirmed that the three western Joshua trees recorded by Psomas are located on and adjacent to the project site (Exhibit 2). The data recorded from each western Joshua tree are as follows:

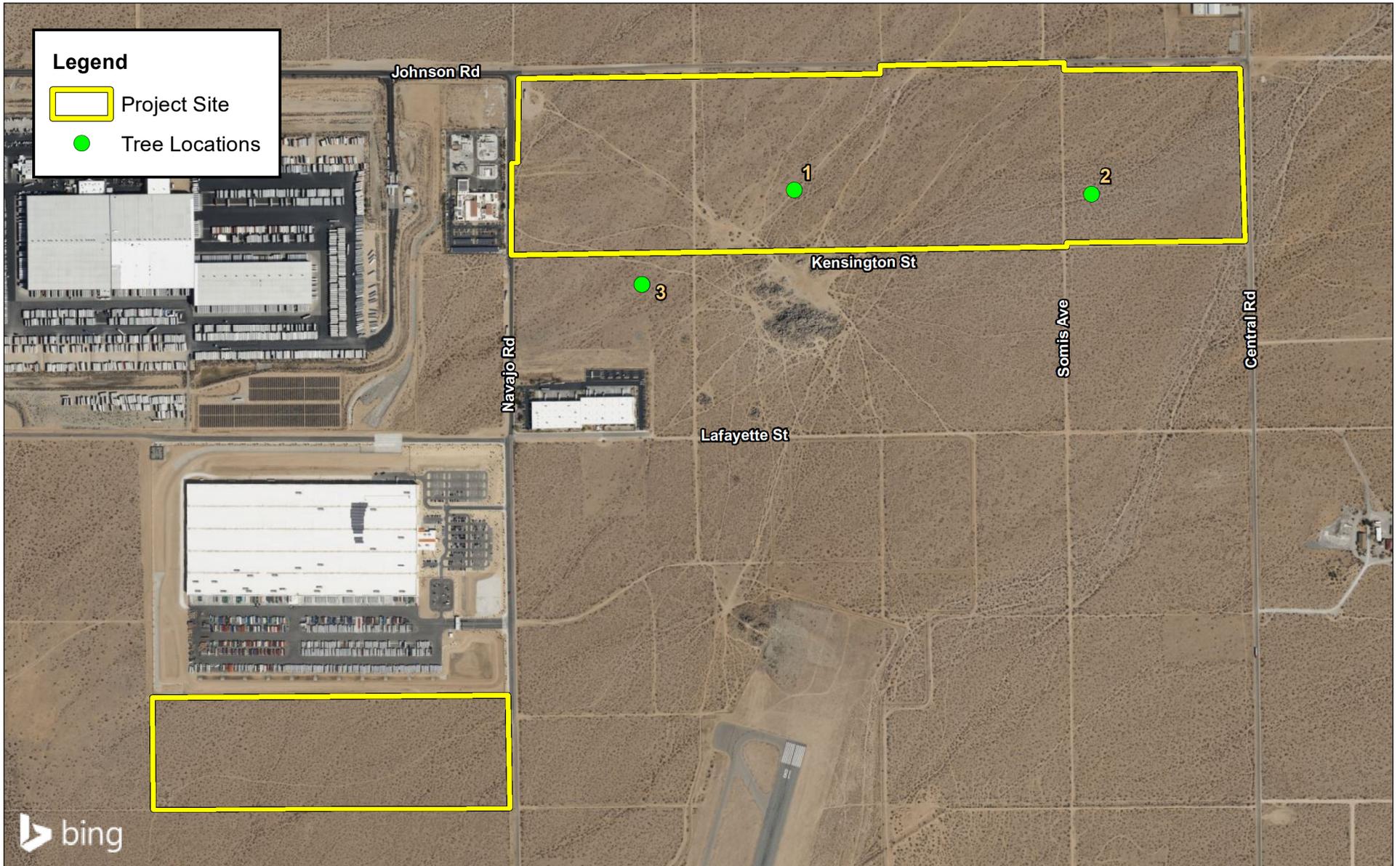
- Western Joshua tree No. 1: This mature, single trunk tree is located on the East Site and measures approximately 3.0 meters in height.
- Western Joshua tree No. 2: This immature, single trunk tree is located on the East Site and measures approximately 1.0 meter in height.
- Western Joshua tree No. 3: This mature, single trunk tree is located off-site and south of the East Site. It consists of a mature main trunk that measures approximately 2.2 meters in height and two associated rhizomes that are approximately 20 to 30 centimeters in height.

Photographs of the western Joshua trees recorded on-site and off-site are presented in Attachment 1.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).





Source: City of Petaluma.



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Exhibit 2 Joshua Tree Locations

WATSON LAND COMPANY
APPLE VALLEY WAREHOUSE PROJECT
APPLE VALLEY JOSHUA TREE MEMO

Recommendations for Permitting

The project applicant would be required to obtain an ITP from CDFW through the WJTCA process. The proposed project is located in the reduced fee area as defined in California Fish and Game Code Section 1927.3 (d), which specifies the following fees for take of western Joshua trees:

- A. One thousand dollars (\$1,000) for each western Joshua tree 5 meters or greater in height.
- B. Two hundred dollars (\$200) for each western Joshua tree 1 meter or greater but less than 5 meters in height.
- C. One hundred fifty dollars (\$150) for each western Joshua tree less than 1 meter in height.

These in lieu mitigation fees would be paid to the Western Joshua Tree Mitigation Fund. For the proposed project, FCS estimates that the in lieu mitigation fee would be \$350 for take of western Joshua trees Nos. 1 and 2. Because western Joshua tree No. 3 is located off-site, there would be no required mitigation for this tree. Prior to the CDFW assessing the in lieu mitigation fees, the project applicant would be required to submit an ITP application form. The application form includes data that would be collected by a Certified Arborist or a Biologist with expertise in western Joshua tree data recording. Though CDFW would process the ITP applications “as expeditiously as possible,” FCS estimates that the approval process could take as long as 6-12 months. When the application is approved, CDFW will invoice the project applicant, with instructions for mailing a check for the in lieu mitigation fee to the corresponding CDFW Regional Office.



**Attachment A:
Photographs**



Photograph 1: Tree ID #1 located on the East Site.



Photograph 2: Tree ID #2 located on the East Site.



Photograph 3: Tree ID #3 located approximately 200 feet south of the East Site.

**Appendix D:
Desert Tortoise Survey Report**

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December 12, 2022
Revised April 12, 2023

Mr. Marc T. Blain
Psomas
225 South Lake Ave., Suite 1000
Pasadena, California 91101

Re: Results of presence/absence surveys of Desert Tortoise in Apple Valley, San Bernardino County, California

Dear Mr. Blain:

This letter report presents the results of a presence/absence surveys for the desert tortoise (*Gopherus agassizii*) on two separate properties that total approximately 201 acres in Apple Valley, San Bernardino County, California. The purpose of the survey was to evaluate the presence or absence of the desert tortoise on the properties, hereafter referred to as the Project.

PROJECT LOCATION AND DESCRIPTION

The Project consists of two sites in close proximity to each other, including a 154-acre plot and a 47-acre plot, located in Apple Valley, San Bernardino County, California. The 47-acre plot is located south of the Big Lots Distribution Center, east of Dale Evans Parkway, west of Navajo Road, and north of Los Padres Road. The 154-acre plot is located south of Johnson road, east of Navajo road, west of Central road, and north of Kensington Street. The Project site is located on the Apple Valley North U.S. Geologic Survey 7.5 quadrangle map. The survey area included all habitat within both Project sites plus a 50-foot buffer.

The substrate in the survey areas consist of stabilized sandy loams with some loose sands on both plots of the Project. A few small drainage features run through the site where loose soils provide suitable burrow habitat for the desert tortoise. Vegetation on the Project consists of Mormon tea scrub (*Ephedra nevadensis*), pencil cactus (*Cylindropuntia ramosissima*), beavertail (*Opuntia basilaris* var. *basilaris*), creosote bush scrub (*Larrea tridentata*), and a few scattered Joshua tree's (*Yucca brevifolia*).

A moderate level of human disturbance is present within the Project area, including OHV trails, dirt roads, and scattered trash and dumping sites. The 154-acre plot is considerably more disturbed than the 47-acre plot with multiple OHV trails, dirt roads, and dumping sites. The 47-acre plot is less disturbed but is immediately adjacent to a large Big Lots distribution center.

SPECIES BACKGROUND

The desert tortoise occurs in the Mojave and Sonoran deserts in southern California, southern Nevada, Arizona, and the southwestern tip of Utah in the U.S., as well as Sonora and northern Sinaloa in Mexico. The designated Mojave population of the desert tortoise is listed as federally and State Threatened and includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran (Colorado) Desert in California (USFWS 1994). The Revised Recovery Plan for the Desert Tortoise (USFWS 2011) identifies six Recovery Units for the tortoise: Upper Virgin River, Northeastern Mojave, Eastern Mojave, Western Mojave, Eastern Colorado, and Northern Colorado. The survey area is located in the Western Mojave Recovery Unit.

Within the western Mojave range, tortoises typically occur in creosote bush, cactus (*Opuntia* spp.), shadscale (*Atriplex confertifolia*) scrub habitats, and Joshua tree (*Yucca brevifolia*) woodland below 4,000 feet above msl (Berry 1990). Soils must be friable (easily crumbled) enough for digging burrows, but firm enough so that burrows do not collapse (USFWS 1994). During the winter, tortoises will opportunistically use burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover (Bury and Germano 1994).

Desert tortoises have unique characteristics that enable them to survive in a desert environment. Elephantine limbs and well-developed claws enable tortoises to burrow into desert soils to escape the heat of the day. Burrows may be over nine feet long, with the tortoise emerging in the morning or late afternoon to forage from March through October. By November, most tortoises have begun hibernation until the following March, only emerging during winter storms to replenish water stores. However, the desert tortoise may go for many years without drinking, ingesting most of its water from plants and then storing it in its bladder (Stebbins 2003).

Desert tortoises generally emerge from their burrows during mid-March to feed on annual plants. During a six-week period, fresh green grass and spring wildflowers are their primary nutritional source. Dry stems of grass and cactus pads provide sustenance in drier times (Stebbins 2003). Introduced plant species have greatly encroached upon native plant species in the desert tortoise's natural range, degrading the existing natural ecosystem. Desert tortoises have, however, adapted to eating filaree (*Erodium* spp.) and other non-native species (Brooks 1999).

Desert tortoises have delayed maturity (14–20 years) and long life spans. Their reproduction/generation cycle is 25 years, with individuals having life spans that last well over 50 years. However, desert tortoise reproductive potential is low. They lay relatively few eggs (3–14) in each clutch, and juveniles have a high mortality rate. Slow growth (one inch per year) and soft, flexible shells make them particularly vulnerable to predators at the juvenile stage of life.

The desert tortoise's range in California has been reduced by 50–60 percent since the 1920s and is now highly fragmented. Much of the tortoise's habitat is degraded by a combination of human related activities, including livestock grazing, energy and mineral development, and OHV use. In addition, illegal shooting and collecting (for pets) directly reduced the tortoise population. The desert tortoise continues to suffer from severe population losses due to disease and predation on juvenile tortoises, particularly by ravens (*Corvus corax*) (Boarman and Kristan 2003). Upper respiratory tract disease is the most important infectious disease affecting the desert tortoise (USFWS 2011). The most severe outbreaks have occurred in California's West Mojave Desert,

where long-term study plots have found population declines reaching up to 70 percent (Schumacher et al. 1993). The USFWS, the CDFW, the Biological Resources Division of the USGS, and the Bureau of Land Management are coordinating research on this disease. Other tortoise diseases have shown up in several parts of the Southern California deserts, including cutaneous dyskeratosis, urolithiasis, and shell necrosis (Homer et al. 1998).

Studies indicate that raven predation has caused serious localized reductions in the number of young tortoises surviving to adulthood (Boarman and Kristan 2003). Predation pressure by ravens is increased through elevated raven populations as a result of resource subsidies associated with human activities (USFWS 2011).

In 1994, the USFWS designated approximately 6.4 million acres as critical habitat for the Mojave population of the desert tortoise (USFWS 1994b). There are eight critical habitat units in California that total 4,754,000 acres. The Project is not located within designated critical habitat for this species.

SURVEY METHODS

Survey methods followed the Desert Tortoise (Mojave Population) Field Manual (USFWS 2009) and the current USFWS presence/absence guidance for small projects within the range of the desert tortoise (USFWS 2019). Small project surveys can be conducted year around, although the survey was conducted within the fall activity window required for larger projects (September through October).

The survey on the approximately 154-acre site was conducted by LBC Principal Biologist Brian Leatherman, Project Biologist Adam DeLuna, and Staff Biologists John Simon-Parent and Taylor Beaulac, on October 27, 2022, from approximately 8:00 a.m. to 14:45 p.m. Survey conditions consisted of clear skies and mild temperatures that ranged from 50 to 70 degrees Fahrenheit with winds that ranged from one to eight miles per hour. The survey on the 47-acre plot was conducted by Mr. DeLuna and Mr. Simon-Parent and took place on October 28, 2022, from 7:15 a.m. to 11:00 a.m. The survey conditions consisted of clear skies and temperatures that ranged from 41 degrees Fahrenheit to 74 degrees Fahrenheit with winds ranging from zero to three miles per hour.

The survey consisted of walking 10-meter wide parallel belt transects along the longer axis of the properties in an east-west direction to obtain 100 percent coverage of the survey area. Transect widths were maintained at 10 meters apart with the aid of Garmin handheld GPS units which allowed for 100 percent visual coverage of the ground surface. The focus of the survey was on the detection of desert tortoise and their diagnostic sign. All natural or artificial (man-made) burrows suitable for use by the desert tortoise were investigated as the surveys were conducted, and all wildlife observed or detected incidentally were documented in field notes.

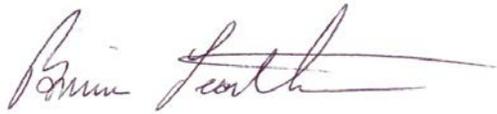
SURVEY RESULTS

A presence/absence survey for desert tortoise was conducted on approximately 201-acres for a Project in Apple Valley, California. No desert tortoise or diagnostic sign (carcasses, bones, scutes, scats, shelter sites, tracks, egg shell fragments, courtship rings, drinking depressions, etc.) to indicate their presence was observed during the survey.

Most of the Project area represents poor quality habitat for the desert tortoise. The Project sites are highly disturbed by the development and/or operation of nearby industrial facilities and distribution centers. The proximity to well-traveled paved roads and presence of dirt roads within and along the boundary of the Project areas further contribute to the lowered quality of the habitat. Based on the negative results of the survey reported here, disturbed habitat, and lack of diagnostic tortoise sign, the desert tortoise is likely absent from the Project at this time.

The Project area is not within USFWS critical habitat. FWS designated critical habitat areas for the desert tortoise in 1994 (USFWS 1994) and prescribed management actions to aid recovery, with critical habitat providing legal protection. The closest critical habitat unit to the survey area is the Ord-Rodman Critical Habitat Unit, approximately 14 miles to the east.

LEATHERMAN BIOCONSULTING, INC.

A handwritten signature in dark ink, appearing to read "Brian Leatherman", with a long horizontal flourish extending to the right.

Brian Leatherman
Principal Biologist

REFERENCES

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**Appendix E:
Burrowing Owl Survey Report**

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January 11, 2023
Revised April 12, 2023

Nicole Morse, Esq.
Principal
T&B Planning, Inc.
3200 El Camino Real, Suite 100
Irvine, CA 92602

VIA EMAIL
nmorse@tbplanning.com

Subject: Results of a Focused Survey for Burrowing Owl for the Apple Valley Project, Town of Apple Valley, San Bernardino County, California

Dear Ms. Morse:

This Letter Report presents the results of focused surveys for the western burrowing owl (*Athene cunicularia hypugaea*) for the Apple Valley Project (hereinafter referred to as “the Proposed Project”) in the Town of Apple Valley, San Bernardino County, California (Exhibit 1). The purpose of the survey was to determine the presence or absence of the western burrowing owl during its breeding period (i.e., March 1 to August 31) on or immediately adjacent to the Project site. The habitat assessment determined that potentially suitable habitat for the western burrowing owl was present and, as a result, focused surveys were required. The surveys were completed in accordance with the California Department of Fish and Wildlife’s (CDFW’s) *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) by Psomas biologists who have the necessary training and experience to conduct surveys for burrowing owl.

PROJECT LOCATION AND SETTING

The Proposed Project is located on two separate properties measuring 154-acres and 47-acres (approximately 201-acres total), separated by approximately 0.60 mile, in the northeastern portion of Victor Valley in the Town of Apple Valley (Exhibit 1). The Project site’s 154-acre parcel is bordered on three sides by the 2-lane paved roads: Navajo Road to the west, Johnson Road to the north, Central Road to the east; and one dirt road, Kensington Street, to the south. The 47-acre parcel is bound by Navajo Road to the east, Los Padres dirt road to the south, an unnamed dirt road to the north, and open desert to the west (Exhibit 1). The Project site is located on the Apple Valley North U.S. Geologic Survey 7.5-minute quadrangle map (Exhibit 2). Elevations range from approximately 3,016 feet above mean sea level (msl) in the southwestern portion of the 47-acre parcel to approximately 3,155 feet above msl in the northeastern portion of the 154-acre parcel. The Project site is currently undeveloped with dirt access roads and off-road vehicle tracks traversing each parcel. The off-road vehicle disturbances are much greater in the 154-acre parcel as is the presence of waste and debris. The vegetation on site, on both parcels, is comprised of creosote bush scrub, disturbed creosote bush scrub, and disturbed (e.g., access roads).

225 South Lake Avenue
Suite 1000
Pasadena, CA 91101

Tel 626.351.2000
Fax 626.351.2030
www.Psomas.com

Nicole Morse
January 11, 2023
Revised April 12, 2023
Page 2

Land uses in the project vicinity include a Big Lots distribution center which occurs directly north of the 47-acre parcel; a Walmart distribution center which occurs directly west of the 154-acre parcel; White Mountain Quarry which occurs approximately 3.5 miles northeast; the Apple Valley Airport which occurs approximately 0.27-mile east of the 47-acre parcel and 0.50-mile south of the 154-acre parcel; Interstate 15 occurs approximately 3 miles west, and low-density residential structures occur to the south.

BACKGROUND

The western burrowing owl is a grassland specialist distributed throughout western North America, where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments, with well-drained, level to gently sloping areas characterized by sparse vegetation and bare ground (Poulin et al. 2020; Shaffer et al. 2022). Burrowing owls in Florida excavate their own burrows, but western burrowing owls depend upon the presence of burrowing mammals whose burrows are used for roosting and nesting (Poulin et al. 2020). The presence or absence of colonial fossorial mammal burrows (e.g., California ground squirrels [*Spermophilus beecheyi*]) is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drainpipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks; debris; or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Burrowing owls often use “satellite”, or non-nesting burrows, moving chicks into them from the nesting burrow, presumably to reduce the risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Shaffer et al. 2022). One pair may use up to ten satellite burrows (James and Seabloom 1968). Individual burrowing owls have a moderate to high site fidelity to previously used burrow complexes and often use the same burrows for nesting year after year.

The western burrowing owl was once abundant and widely distributed within coastal Southern California, but it has declined precipitously in Los Angeles, Orange, San Diego, Riverside, and San Bernardino Counties. Although a petition was submitted to list the California population of the western burrowing owl as an Endangered or Threatened species, the CDFW declined to list the burrowing owl as either Threatened or Endangered in consideration of its overall population throughout the state. However, the CDFW considers the burrowing owl to be a California Species of Special Concern (CDFW 2022).

SURVEY METHODOLOGY

Focused surveys for the burrowing owl were conducted during the breeding season, which extends from March 1 to August 31. The CDFW protocol follows a sequence of surveys that are separated in three phases: (1) habitat assessment; (2) burrow surveys; and (3) crepuscular (dawn or dusk) owl surveys. The CDFW guidelines specify time periods in which the four focused crepuscular surveys should be conducted during the breeding season: at least one survey between February 15 and April 15; three surveys between April 15 and July 15; with at least one survey after June 15. Surveys should be conducted at least three weeks apart.

During the initial reconnaissance-level wildlife survey conducted on March 30, 2022, it was determined that potentially suitable habitat for burrowing owl was present on the Project site and immediately adjacent. The burrow survey was conducted concurrent with the first round of plant surveys on March 31, 2022, by Psomas Biologists Sarah Thomas and Allison Rudalevige; and consulting Biologists Sandy Leatherman and Taylor Beulac. The burrow survey was conducted by walking the Project site in 10- to

Nicole Morse
 January 11, 2023
 Revised April 12, 2023
 Page 3

20-meter (approximately 33 feet to 65 feet) belt transects (depending on shrub coverage) to achieve 100 percent visual coverage. Potentially suitable burrows were marked with Garmin Global Positional System (GPS) units. Any natural or man-made cavities large enough to allow a burrowing owl to enter were inspected for evidence of occupation. Evidence of occupation may include prey remains, cast pellets, white-wash, feathers, and observations of owls adjacent to burrows. The burrow survey was conducted at least five days after rain, which could have washed away potential sign. Areas containing potentially suitable habitat within 500 feet of the Project site were surveyed with binoculars.

The CDFW guidelines specify time periods in which the four focused crepuscular surveys should be conducted during the breeding season: at least one survey between February 15 and April 15; three surveys between April 15 and July 15; with at least one survey after June 15. Surveys should be conducted at least three weeks apart. Ms. Thomas and Jack Underwood conducted the focused crepuscular surveys on April 6; May 12; June 14 and July 7, 2022. These surveys were conducted from either one hour before sunrise to two hours after, or from two hours before sunset to one hour after. The surveys were conducted when light conditions were sufficient to observe burrowing owl flights. All potential habitat (e.g., areas where potentially suitable burrows were located) within the Project site and adjacent buffer was surveyed by walking in meandering transects to allow 100 percent visual coverage of the survey area. The transects were spaced no more than approximately 65 feet apart in order to ensure 100 percent visual coverage of the ground surface. At the start of each transect and, at least, every 300 feet, the survey area was scanned for burrowing owls or burrowing owl sign (e.g., pellets, prey remains, whitewash, or decoration) using binoculars. Periodically, binoculars were used to inspect holes; crevices; and potential perches such as rocks, fence posts, and other elevated structures for the presence of owls while listening for owl calls. All wildlife observed were recorded in field notes (Attachment B). Survey times and weather conditions are summarized in Table 1 below.

**TABLE 1
 SUMMARY OF BURROWING OWL SURVEYS**

Survey Number	Date	Time (Start/End)	Surveyor(s)	Weather Conditions		
				Temperature (°F) (Start/End)	Wind (mph) (Start/End)	Cloud Cover (%) (Start/End)
Habitat Assessment	3/30/2022	2:00 PM–3:00 PM	Thomas	65/66	0–3/0–3	Clear/Clear
Burrow Survey	3/31/2022	8:10 AM – 4:20 PM	Thomas, Rudalevige, Leatherman, Beaulac	46/70	1-3/8-10	Clear/Clear
Crepuscular Survey 1	4/6/2022	6:35 PM–8:20 PM	Thomas, Underwood	47/59	0–1/0–1	Clear/Clear
Crepuscular Survey 2	5/12/2022	8:00 AM–9:30 AM	Thomas, Underwood	50/65	0–1/0–1	Clear/Clear
Crepuscular Survey 3	6/14/2022	8:30 AM–9:40 AM	Thomas	70/74	0/0–1	Clear/Clear
Crepuscular Survey 4	7/7/2022	8:10 AM–9:45 AM	Thomas	76/84	0–1/0–1	Clear/Clear

°F: Fahrenheit; mph: miles per hour; %: percent

Nicole Morse
January 11, 2023
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SURVEY RESULTS

Three active burrow complexes, and two inactive burrow complexes (no owls or owl sign) were observed during the surveys (Exhibit 3). One adult owl was observed at each of the active complexes during one or more surveys, and fresh sign (white-wash, pellets, feathers) was observed at each complex (Attachment A). A description of each active complex can be found below.

Burrow Complex #1

Burrow complex #1 is located in the north-central portion of the 47-acre parcel, approximately 91 feet south of the unnamed access road that runs along the northern edge of the parcel. This complex contains two active entrances and one inactive entrance (trash and plant material present). One adult owl was observed standing guard at this complex on March 31, April 6, May 12. Fresh sign was observed during these visits. After the May 12 visit, no owls and no fresh sign was observed. This burrow complex may be a satellite complex along with burrow complex #2.

Burrow Complex #2

Burrow complex #2 is located in the western-central portion of the 47-acre parcel approximately 308 feet from Los Padres Road (dirt access road) which runs along the southern border of the parcel. One adult owl was flushed during the burrow survey on March 31, and one adult burrowing owl was observed standing guard at this complex on April 6, 2022. Fresh sign observed during these visits. After the April 6 visit, no owls and no fresh sign was observed. This burrow complex may be a satellite complex along with burrow complex #1.

Burrow Complex #3

Burrow complex #3 is located in the survey buffer of the 154-acre parcel, approximately 120 feet south of the parcel's southern boundary. This complex has approximately eight entrances. One adult owl was observed standing guard on the complex on May 12, 2022. Fresh owl sign was also observed at that time. No owls or fresh sign were observed on any of the following surveys.

Representative photographs are included in Attachment A. A complete list of all wildlife species observed during the surveys is provided in Attachment B of this report.

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Psomas appreciates the opportunity to assist on this Project. If you have any comments or questions, please call Marc Blain at 626.351.2000.

Sincerely,

P S O M A S



Marc T. Blain
Senior Project Manager/Biologist



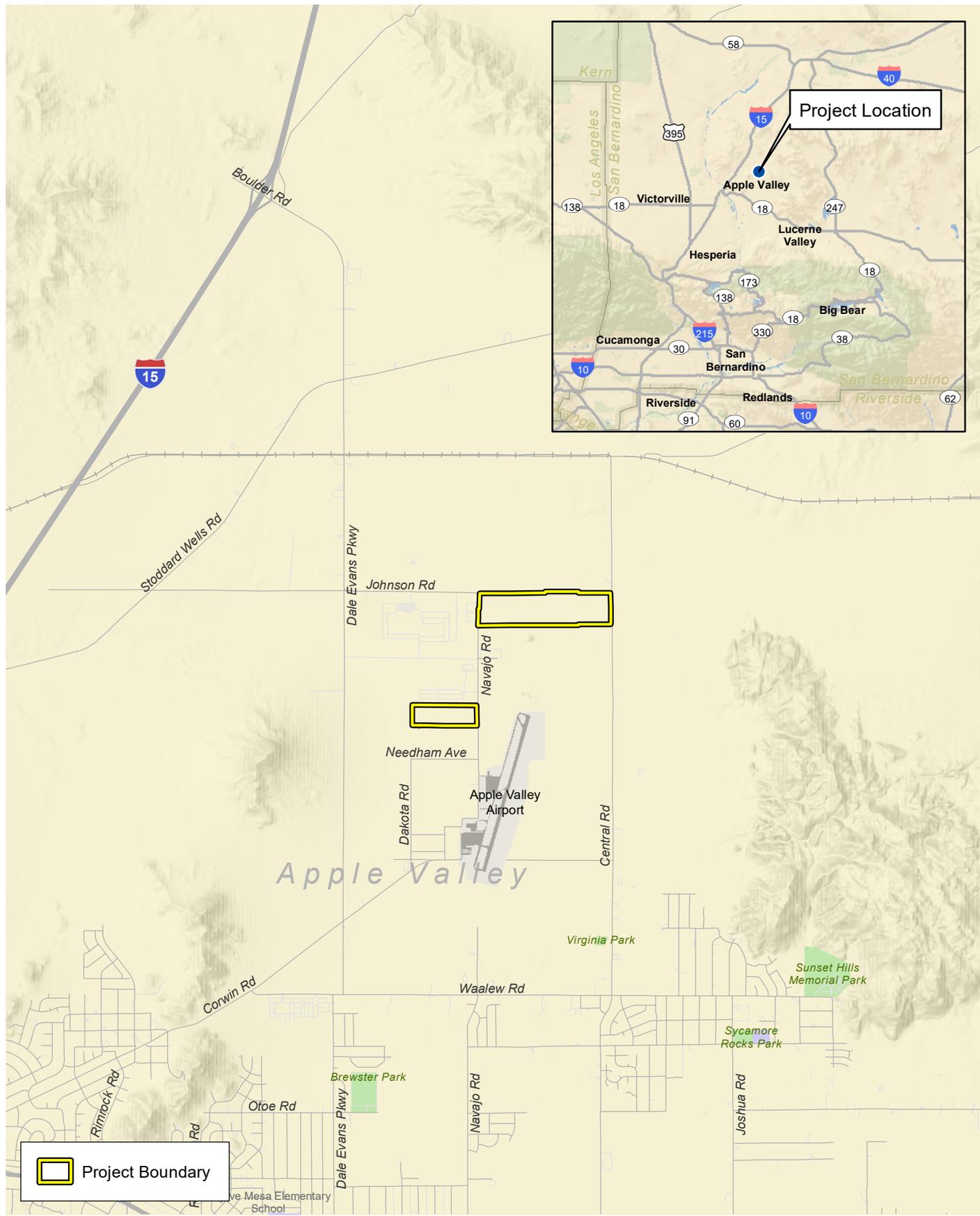
Sarah Thomas
Biologist

Exhibits: Exhibit 1 – Project Location
 Exhibit 2 – U.S. Geological Survey 7.5-Minute Quadrangle
 Exhibit 3 – Survey Results
Attachments: Attachment A – Representative Site Photographs
 Attachment B – Wildlife Compendium

Nicole Morse
 January 11, 2023
Revised April 12, 2023
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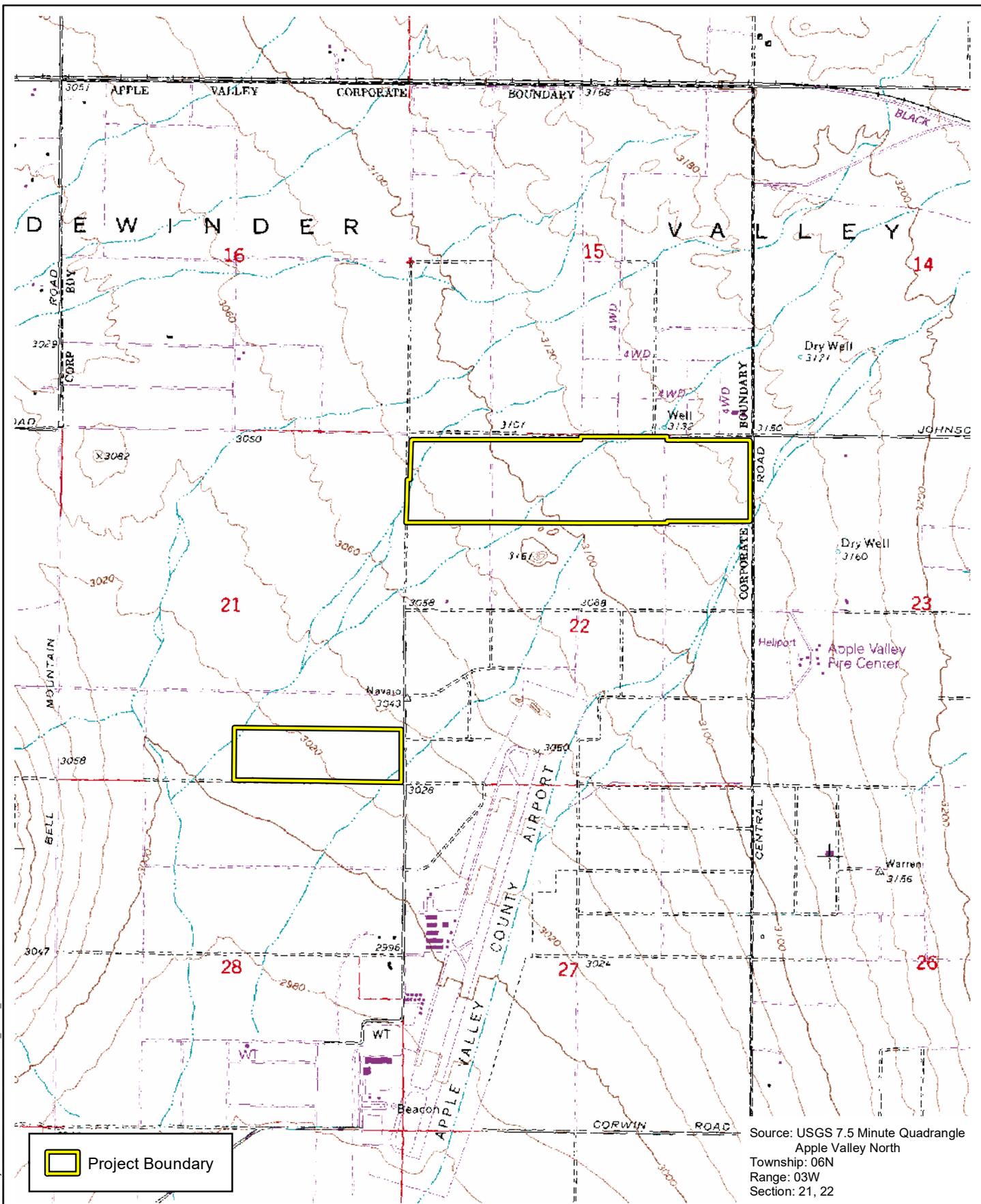
Regional Location and Local Vicinity

Exhibit 1

Apple Valley Project



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 Project Boundary

Source: USGS 7.5 Minute Quadrangle
 Apple Valley North
 Township: 06N
 Range: 03W
 Section: 21, 22

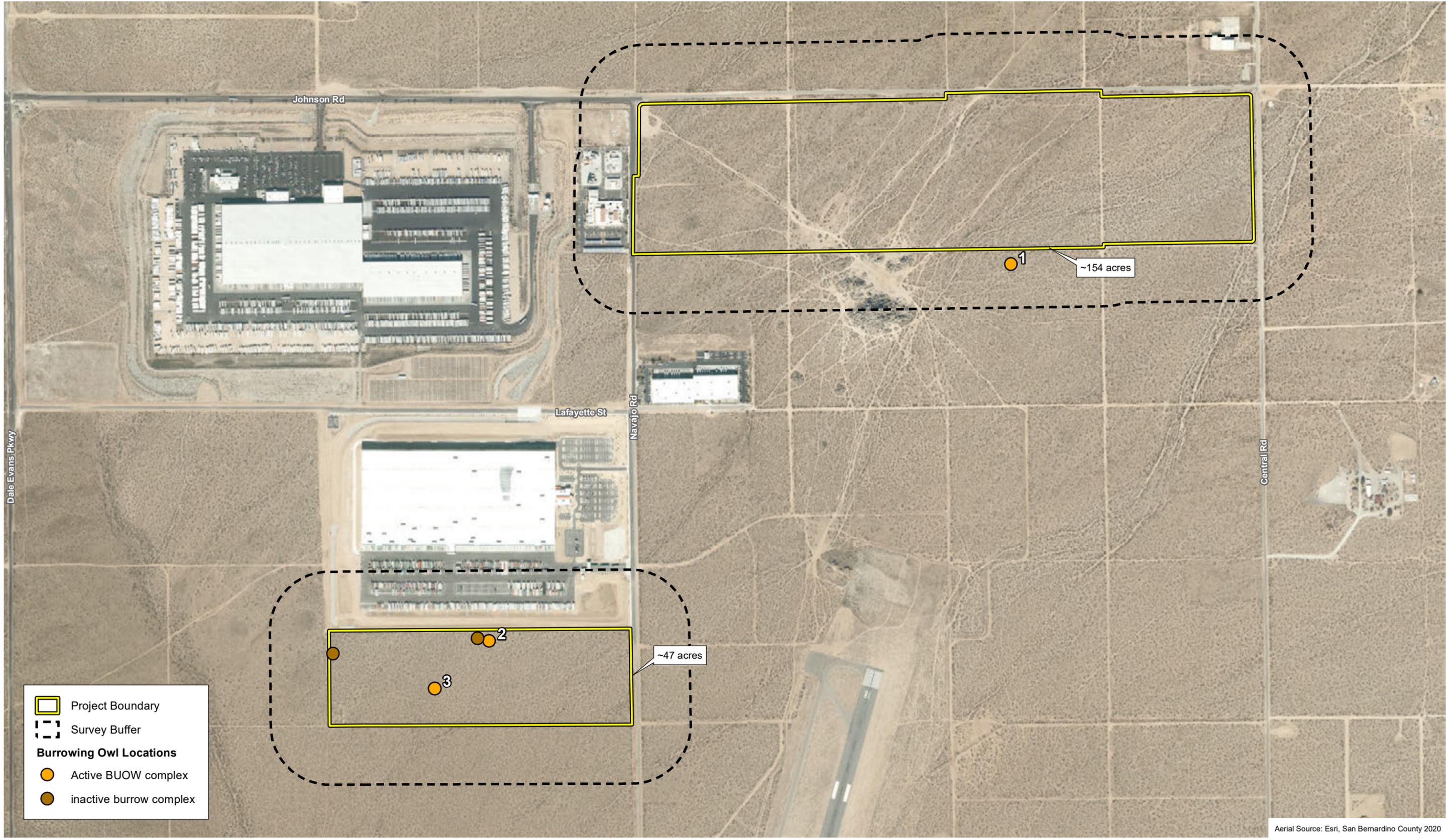
USGS 7.5-Minute Digital Quadrangle

Apple Valley Project



Exhibit 2





Project Boundary
 Survey Buffer
Burrowing Owl Locations
● Active BUOW complex
● inactive burrow complex

Aerial Source: Esri, San Bernardino County 2020

Survey Results

Apple Valley Project

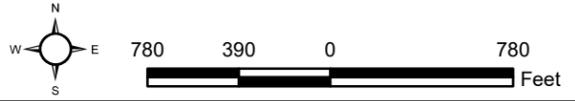


Exhibit 3



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ATTACHMENT A
REPRESENTATIVE SITE PHOTOGRAPHS



Representative photo of active burrowing owl complex (complex #1).



Close-up view of active burrow opening in burrow complex #1

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Representative Photos

Apple Valley Project

Attachment A-1





Photo showing fresh white wash, pellets, and feathers collectively known as "sign", helps to determine burrow complex status (active/inactive).



Close-up of a fresh burrowing owl pellet containing small mammal bones.

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Representative Photos

Apple Valley Project

Attachment A-2



ATTACHMENT B
WILDLIFE COMPENDIUM

WILDLIFE SPECIES OBSERVED DURING THE SURVEYS

Species		Special Status
Scientific Name	Common Name	
BIRDS		
COLUMBIDAE – PIGEON AND DOVE FAMILY		
<i>Zenaida macroura</i>	mourning dove	
STRIGIDAE – TYPICAL OWL FAMILY		
<i>Athene cunicularia</i>	burrowing owl	SSC
TYRANNIDAE – TYRANT FLYCATCHER FAMILY		
<i>Sayornis saya</i>	Say's phoebe	
CORVIDAE – JAY AND CROW FAMILY		
<i>Corvus corax</i>	common raven	
ALAUDIDAE – LARK FAMILY		
<i>Eremophila alpestris</i>	horned lark	
AEGITHALIDAE – BUSHTIT FAMILY		
<i>Psaltriparus minimus</i>	bushtit	
PASSERIDAE – OLD WORLD SPARROW FAMILY		
<i>Passer domesticus</i> *	house sparrow*	
FRINGILLIDAE – FINCH FAMILY		
<i>Haemorhous mexicanus</i>	house finch	
PASSERELLIDAE – NEW WORLD SPARROW FAMILY		
<i>Amphispiza bilineata</i>	black-throated sparrow	
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	
CARDINALIDAE – CARDINALS AND ALLIES		
<i>Piranga ludoviciana</i>	western tanager	
MAMMALS		
LEPORIDAE – HARE AND RABBIT FAMILY		
<i>Lepus californicus</i>	black-tailed jackrabbit	
* Non-native species CDFW: California Department of Fish and Wildlife Species Status: State (CDFW) SSC Species of Special Concern		

**Appendix F:
Jurisdictional Delineation Report**

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Jurisdictional Delineation Report

Apple Valley Project Site Apple Valley, California

Prepared for | T&B Planning, Inc.
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Contact: Nicole Morse

Prepared by | Psomas
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Pasadena, California 91101
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April 12, 2023

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ATTACHMENTS

Attachment

- A Summary of Regulatory Authority
- B Ordinary High Water Mark Datasheets
- C Literature Review Details
- D Site Photographs

EXECUTIVE SUMMARY

The purpose of this Jurisdictional Delineation Report is to provide baseline data concerning the type and extent of jurisdictional resources that occur at the Apple Valley Project Site in the city of Apple Valley, San Bernardino County, California. Jurisdictional resources considered for this report include wetlands and non-wetland “waters of the United States” (WOTUS) regulated by the U.S. Army Corps of Engineers (USACE); “waters of the State” regulated by the Lahontan Regional Water Quality Control Board (RWQCB); and the bed, bank, and channel of all lakes, rivers, and/or streams (and associated riparian vegetation), as regulated by the California Department of Fish and Wildlife (CDFW).

The Project site is separated into two discontinuous parcels, a 47-acre southern parcel that is west of Navajo Road and a 154-acre northern parcel that is located 0.6 mile to the northeast.

The jurisdictional delineation work was performed by Psomas Regulatory Specialist David Hughes on June 26, 2022. Based on the results of the jurisdictional delineation field work, it was determined that the total amount of jurisdictional resources on the Project site are as follows:

- **USACE Jurisdictional “waters of the U.S.”:**
 - Wetlands: 0.00 acre
 - Non-wetland waters: 0.00 acre

- **RWQCB Jurisdictional “waters of the State”:**
 - Wetlands: 0.00 acre
 - Non-wetland waters: 0.91 acres

- **CDFW Jurisdictional Streambeds:**
 - Streambeds/Riparian Habitat: 1.54 acres

1.0 INTRODUCTION

This Jurisdictional Delineation Report has been prepared to provide baseline data concerning the type and extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Lahontan Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) for the Apple Valley Project site located in the city of Apple Valley, California (hereinafter referred to as the “Project site”) (Exhibit 1).

1.1 PROJECT LOCATION

The Project site is comprised of two separate parcels, (hereinafter referred to as the southern parcel and the northern parcel) in Sidewinder Valley, a sparsely populated area in northern Apple Valley. The southern parcel, measuring approximately 47 acres, is bordered to the west by Navajo Road and to the south by Los Padres Road (currently a narrow dirt path that is undeveloped). A Big Lots distribution center is located immediately to the north whose address is 18880 Navajo Road (Exhibit 2).

The northern parcel, measuring approximately 154 acres, is located approximately 0.6 mile north of the southern parcel. The northern parcel is located east of Navajo Road, south of Johnson Road, west of Central Road, and north of Kensington Street. To the west of the northern parcel is the Victor Valley College Regional Public Safety Training Center at 19190 Navajo Road.

The southern parcel consists of Assessor’s Parcel Number (APN) 0463-231-62, in Township 6 North, Range 3 West, Section 21.

The northern parcel consists of APNs 0463-23-202 through 0463-23-206; 0463-23-253 through 0463-23-256; and 0463-23-273, in Township 6 North, Range 3 West, Section 22.

Both parcels occur on the U.S. Geological Survey’s (USGS’) Apple Valley North 7.5-minute topographic quadrangle of the San Bernardino Meridian (Exhibit 3). Regionally, the Project site is located approximately 4 miles east of Interstate 15 approximately 0.5 mile from the Apple Valley County Airport.

1.2 EXISTING CONDITIONS

The Project site consists of undeveloped parcels that are dominated by creosote scrub. Creosote (*Larrea tridentata*) is the principal species in the area, widely spaced with few other species present. The terrain in the area is generally flat and slopes gradually from north to south. There are no major drainage features in the vicinity of the Project site; water that flows through the area moves through shallow drainage features across the desert plain, so that the drainage patterns can readily change during extreme rain events. Off-road vehicle (ORV) use is prevalent in the area as vehicle tracks were observed throughout both the southern and northern parcels.

Surrounding land generally consists of undeveloped open space of a similar nature to the Project site. Aside from the Big Lots distribution center and the Victor Valley College Regional Public Safety Training Center (and a Walmart Distribution Center to the east of the training center), there is very little development in the area (Exhibit 4).

1.3 REGULATORY AUTHORITY

This section summarizes the federal and State agencies’ regulatory jurisdiction over activities that have a potential to impact jurisdictional resources. A detailed explanation of each agency’s regulatory authority is provided in Attachment A.

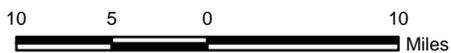


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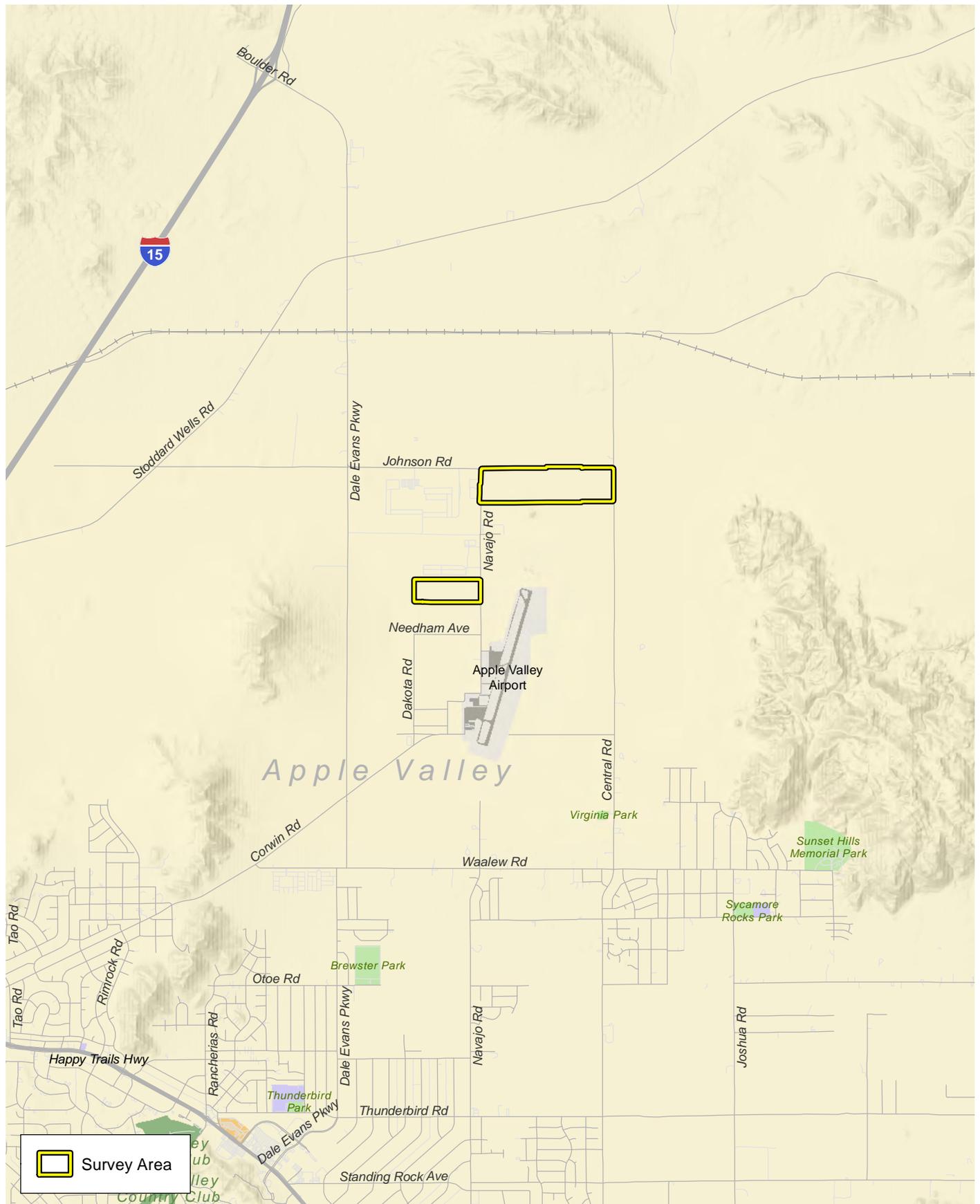
Regional Location

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit 1



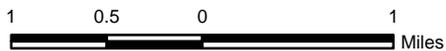
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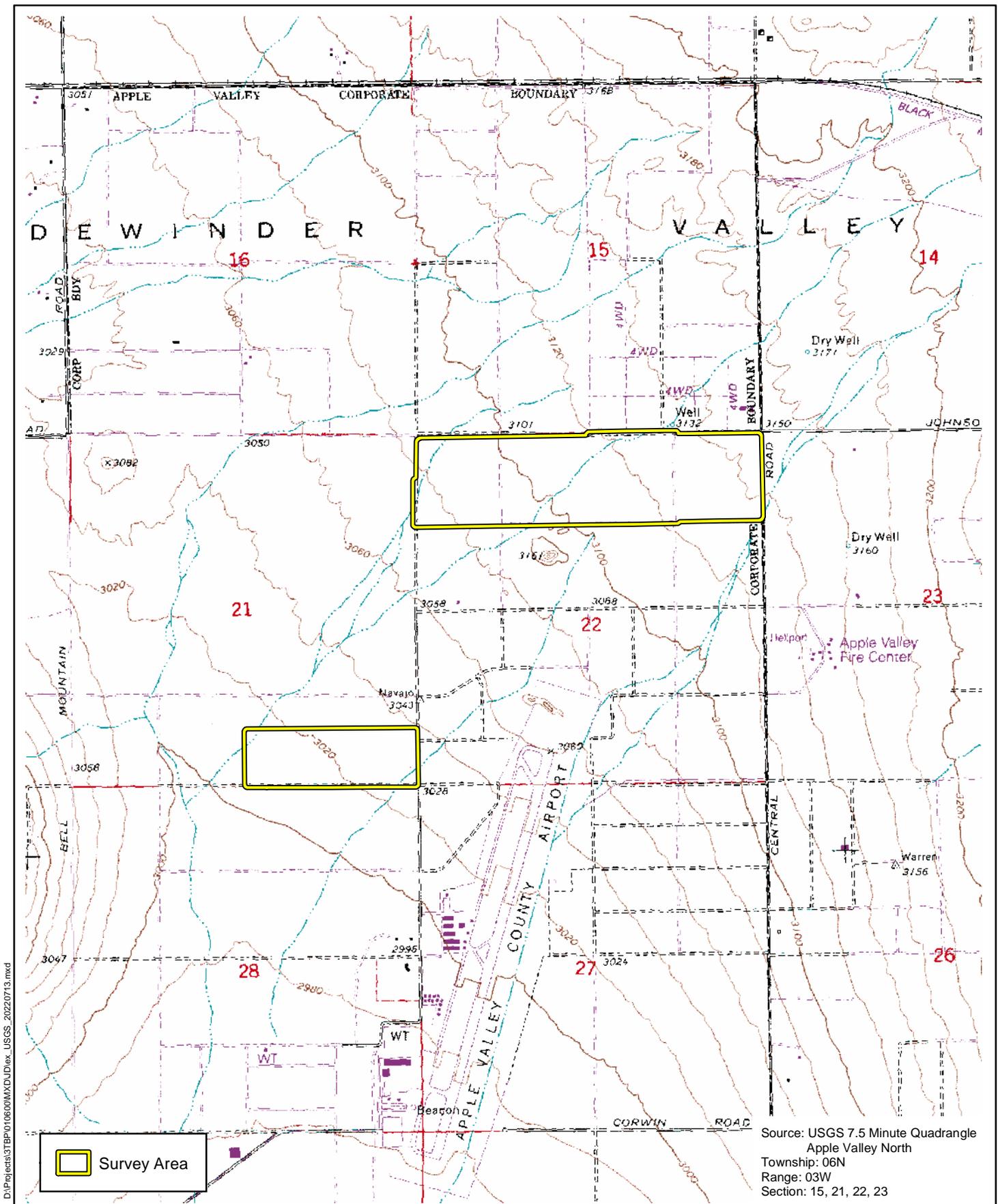


Local Vicinity

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit 2





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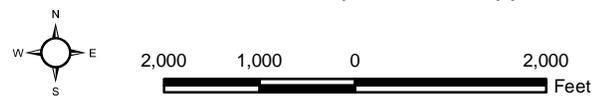
Survey Area

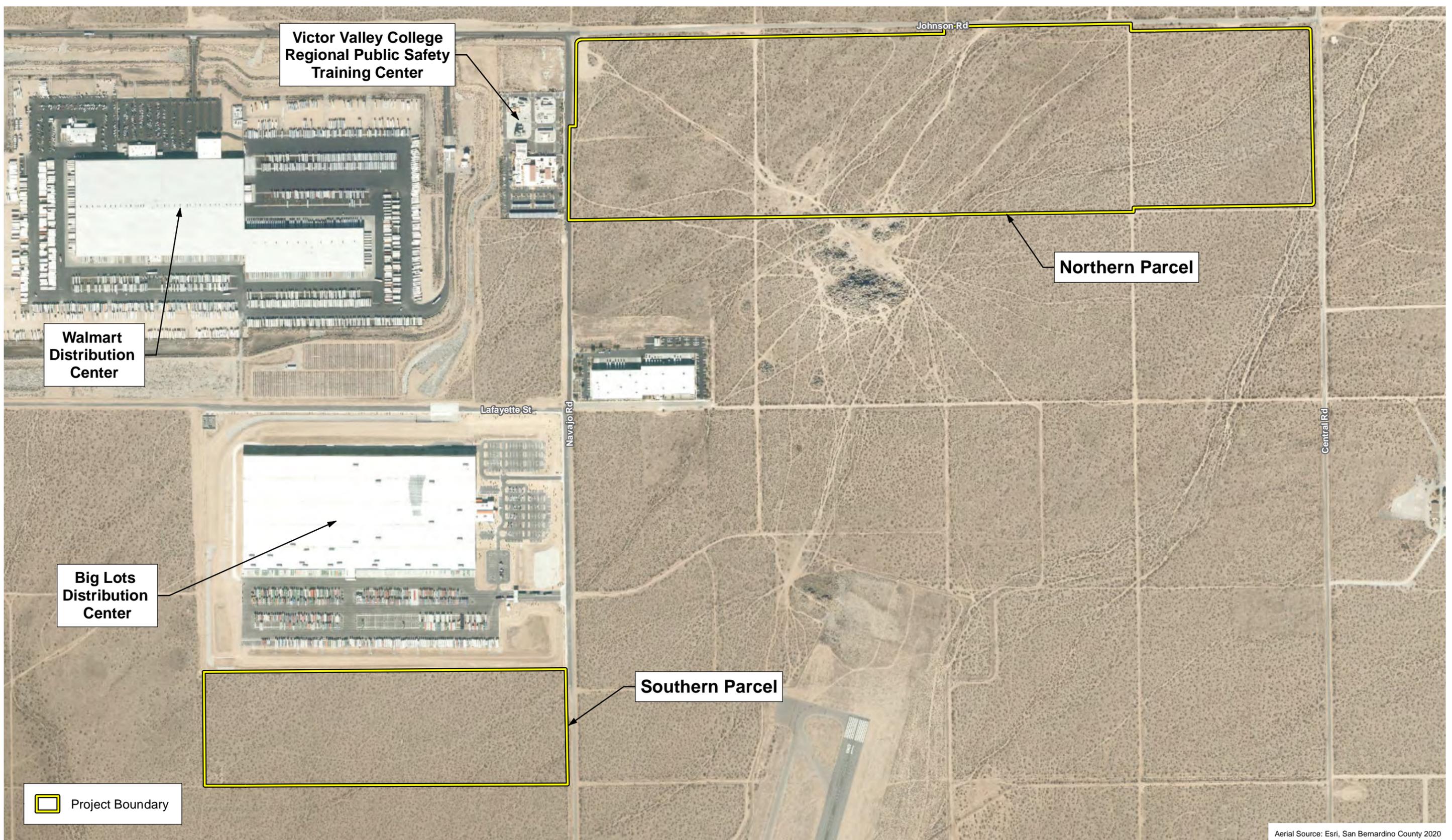
Source: USGS 7.5 Minute Quadrangle
 Apple Valley North
 Township: 06N
 Range: 03W
 Section: 15, 21, 22, 23

USGS 7.5-Minute Digital Quadrangle

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit 3





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Aerial Source: Esri, San Bernardino County 2020

Project Site

Jurisdictional Delineation Report for the Apple Valley Project Site



Exhibit 4



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1.3.1 U.S. Army Corps of Engineers

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into “waters of the United States” (WOTUS) under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Its authority applies to all WOTUS where the material (1) replaces any portion of a WOTUS with dry land or (2) changes the bottom elevation of any portion of any WOTUS. Activities that result in fill or dredge of WOTUS require a permit from the USACE.

Recently, the definition of WOTUS has been the subject of shifting regulations. Recent federal revisions to regulations address the extent of USACE jurisdiction and the definition of WOTUS have been issued by the Obama Administration in 2015 and the Trump Administration in 2020. On January 18, 2023, the United States Environmental Protection Agency (USEPA) published a final Water Rule in the Federal Register that took effect on March 20, 2023. This new Water Rule defines WOTUS as:

1. Traditional Navigable Waters (TNWs), the territorial seas, and interstate waters (“paragraph (a)(1) waters”);
2. Impoundments of “waters of the United States” (“paragraph (a)(2) impoundments”);
3. Tributaries to TNWs, the territorial seas, interstate waters, or paragraph (a)(2) impoundments when the tributaries meet either the relatively permanent standard or the significant nexus standard (i.e., “jurisdictional tributaries”);
4. Wetlands adjacent to paragraph (a)(1) waters, wetlands adjacent to and with a continuous surface connection to relatively permanent paragraph (a)(2) impoundments, wetlands adjacent to tributaries that meet the relatively permanent standard, and wetlands adjacent to paragraph (a)(2) impoundments or jurisdictional tributaries when the wetlands meet the significant nexus standard (“jurisdictional adjacent wetlands”); and
5. Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) that meet either the relatively permanent standard or the significant nexus standard (“paragraph (a)(5) waters”).

1.3.2 Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB), in conjunction with the nine RWQCBs, is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The SWRCB’s and RWQCBs’ jurisdictions extend to all “waters of the State” and to all WOTUS, including wetlands (isolated and non-isolated).

The Porter-Cologne Act broadly defines “waters of the State” as any surface water or groundwater, including saline waters, within the boundaries of the State.” On August 28, 2019, the Office of Administrative Law approved the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to “waters of the State”, which went into effect on May 28, 2020. Under these new regulations, the SWRCB and its nine RWQCBs will assert jurisdiction over all existing WOTUS, and all waters that have been considered WOTUS under any historical definition.

Impacts to WOTUS are authorized by the RWQCBs through a Water Quality Certification per Section 401 of the CWA. Impacts to “waters of the State” that are not considered WOTUS would be authorized by Waste Discharge Requirements issued by the RWQCB, pursuant to California’s Porter-Cologne Water Quality Control Act.

On April 6, 2022, the U.S. Supreme Court issued a stay of the October 2021 order by the U.S. District Court for the Northern District of California that vacated EPA's 2020 Clean Water Act Section 401 Certification Rule (2020). The stay of the vacatur applies nationwide. Therefore, the CWA section 401 certification process is once again governed by the CWA section 401 certification regulations promulgated by USEPA in 2020, codified at 40 CFR 121. This 2020 rule requires all project proponents to request a pre-filing meeting with the RWQCB at least 30 days prior to filing a 401 "Certification Request". The filing procedure has been simplified to require the filing of a "Certification Request", rather than the acceptance of a "complete application".

There is a mandatory 30-day wait period between a pre-filing meeting request and the filing of a Certification Request. A Certification Request must be filed with the RWQCB and the USACE concurrently. USACE reviews the Certification Request for the nine required components. The USACE has 15 days to review the Certification Request. The USACE then notifies the RWQCB that request is complete. And concurrently notifies the RWQCB of the reasonable time period to act on the Certification Request. The reasonable time period is not to exceed 1 year. Within 15 days of receipt of the Certification Request the RWQCB must provide the applicant with the following: (1) date of receipt; (2) applicable reasonable period of time to act on the Certification Request; and (3) date upon which waiver will occur if the certifying authority fails or refuses to act on the Certification Request. It should be noted that the RWQCB may require that the findings of the Jurisdictional Delineation Report be certified by the USACE prior to issuing a Section 401 Water Quality Certification.

Once the RWQCB issues the 401 Certification, the USACE has 5 days to notify the USEPA that the 401 Certification has been issued. The USEPA then has 30 days to notify neighboring jurisdictions of the 401 Certification. Neighboring jurisdictions have 60 days to respond. If there are no objections to the 401 Certification, then the USACE issues the 404 permit. It should be noted that the RWQCB may require that the findings of the Jurisdictional Delineation Report be certified by the USACE prior to issuing a Section 401 Water Quality Certification.

1.3.3 California Department of Fish and Wildlife

The CDFW regulates activities that may affect rivers, streams, and lakes pursuant to the *California Fish and Game Code* (§§1600–1616). According to Section 1602 of the *California Fish and Game Code*, the CDFW has jurisdictional authority and would require a Lake or Streambed Alteration Agreement (LSAA) for any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

2.0 **METHODS**

2.1 **LITERATURE REVIEW**

Prior to conducting the delineation and during the course of report preparation, Psomas reviewed the following documents to identify areas that may fall under agency jurisdiction: the USGS' Apple Valley North 7.5-minute topographic quadrangle map; color aerial photography provided by Google Earth; soil data provided by the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA NRCS 2022a); the National Hydric Soils List (USDA NRCS 2022b); the National Wetlands Inventory's Wetland Mapper (USFWS 2022); and the Water Quality Control Plan for the Lahontan Region (Lahontan RWQCB 1995).

2.2 **FIELD SURVEY**

The analysis contained in this report uses the results of a field survey conducted by Psomas Regulatory Specialist David Hughes on June 26, 2022. Jurisdictional features were delineated using a 1 inch equals 100 feet (1" = 100') scale aerial photograph. Jurisdictional drainage features were mapped as a line and the width of the agency jurisdiction was noted; other waterbodies (basins) were mapped as polygons.

2.3 **JURISDICTIONAL DELINEATION**

2.3.1 **Non-Wetlands**

Non-wetland WOTUS are delineated based on the limits of the Ordinary High Water Mark (OHWM), which can be determined by a number of factors, including the presence of a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and the presence of litter and debris. The OHWM limits (i.e., active floodplain) occurring on the Project site as based on methods contained in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual* (Lichvar and McColley 2008) and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010).

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

Information on the OHWM was recorded on the Arid West Ephemeral and Intermittent Streams OHWM Datasheet in Attachment B.

2.3.2 **Wetlands**

Technical methods and guidelines to determine the presence and extent of wetlands is described by the USACE in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). The presence of wetlands is determined by a three-parameter approach requiring evidence of (1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils.

Wetland hydrology is determined by the presence of indicators such as observed surface water; presence of past surface flow; and the depth to saturated soils or free water in soil test pits.

Procedures for determining whether the hydrophytic vegetation criterion is met is based three potential indicators as described in *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). These include the “Dominance Test”, using the “50/20 Rule”; the “Prevalence Index”; or the presence of “Morphological Adaptation” of vegetation that is present. These indicators are based on determining the presence and relative abundance of plant species that are categorized as Obligate Wetland (typically associated with wetland conditions); Facultative Wetland (predominantly present in wetland conditions); Facultative (equally likely to occur in wetland or non-wetland areas); Facultative Upland (predominantly found in non-wetland areas); or Upland (typically found in mesic to xeric non-wetland habitats). Plant species are categorized in the National Wetland Plant List, created by the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture.

Soils are determined to be hydric when they form under conditions of saturation, flooding, or ponding that occurs long enough during the growing season to develop anaerobic conditions (or conditions of limited oxygen) at or near the soil surface and that favor the establishment of hydrophytic vegetation (USDA NRCS 2022c). The presence of hydric soil conditions is determined where various indicators are observed by digging soil test pits to a depth of approximately 20 inches. Common hydric soil indicators include presence of redoximorphic features (i.e., areas where iron is reduced under anaerobic conditions and oxidized following a return to aerobic conditions); buried organic matter; organic streaking; reduced soil conditions; or sulfuric odor.

3.0 LITERATURE REVIEW

This section provides a summary of literature review results that were reviewed prior to the field survey and during report preparation that have helped inform the analysis provided in this report.

3.1 USGS TOPOGRAPHIC QUADRANGLE

The USGS topographic quadrangle maps show geological formations and their characteristics; they describe the physical settings of an area through topographic contour lines and other major surface features. These features include lakes, streams, rivers, buildings, roadways, landmarks, and other features that may fall under the jurisdiction of one or more regulatory agencies. In addition, the USGS maps provide topographic information that is useful in determining elevations, latitude and longitude, and Universal Transverse Mercator (UTM) Grid coordinates.

The Project site occurs on the USGS' Apple Valley North 7.5-minute topographic quadrangle map. The USGS map shows the Project site located in Sidewinder Valley, a broad flat desert plain situated between several small mountains included Bell Mountain to the west, Fairview Mountain to the east, and Turtle Mountain to the north. Several small blue-line channels are shown on the USGS map draining from north to south. Elevations in the Project area range from approximately 3,160 feet above mean sea level (in the northeast corner of the northern parcel) to 3,010 feet above mean sea level (in the southwest corner of the southern parcel).

3.2 SOIL SURVEY

The presence of hydric soils is one of the chief indicators of jurisdictional wetlands. Psomas reviewed the USDA's soil data for the Project site (Exhibit 5) and determined that the Project site is located in the West San Fernando Valley Soil Survey area and that the following soil types are present in the survey area:

- **Helendale-Bryman loamy sands, 2 to 5 percent slopes.** This is the only soil type found in the southern parcel and is the dominant soil type in the northern parcel. It is characterized by deep loamy sand and sandy loam that extends to a depth of 99 inches. This soil is described as well-drained and generally does not support ponded conditions. The depth to the water table is more than 80 inches. It is not listed as a hydric soil on the National Hydric Soils List (USDA NRCS 2020c).
- **Cajon-Arizo Complex, 2 to 15 percent slopes.** This soil type consists of gravelly sand to a depth of approximately 60 inches. The depth of a restrictive feature is generally more than 80 inches. It is described as somewhat excessively drained and the depth to the water table is more than 80 inches. It generally does not support ponding. It is not listed as a hydric soil on the National Hydric Soils List.
- **Rock Outcrop-Lithic Torriorthents Complex, 15 to 50 percent slopes.** This soil type is associated with a large rock outcrop that mostly occurs just south of the northern parcel. It generally consists of unweathered bedrock and is described as excessively drained. It does not support ponding and is not listed as a hydric soil on the National Hydric Soils List.

A detailed description of these soils is provided in Attachment C of this report.

3.3 NATIONAL WETLANDS INVENTORY

The U.S. Fish and Wildlife Service's Wetland Mapper (USFWS 2022) shows wetland resources available from the Wetlands Spatial Data Layer of the National Spatial Data Infrastructure. This

Project Boundary
 Survey Area
Soil Types
 118: Cajon-Arizo Complex, 2 to 15 percent slopes
 133: Helendale-Bryman Loamy Sands, 2 to 5 percent slopes
 158: Rock Outcrop-Lithic Torriorthents Complex, 15 to 50 percent slopes



Northern Parcel

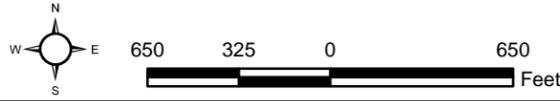


Southern Parcel

Data Source: U.S. Department of Agriculture;
 Natural Resources Conservation Service
 Aerial Source: Esri, San Bernardino County 2020

Soil Map

Jurisdictional Delineation Report for the Apple Valley Project Site



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resource provides the classification of known wetlands following the Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013). This classification system is arranged in a hierarchy of (1) Systems that share the influence of similar hydrologic, geomorphologic, chemical, or biological factors (i.e., Marine Estuarine, Riverine, Lacustrine, and Palustrine); (2) Subsystems (i.e., Subtidal and Intertidal; Tidal, Lower Perennial, Upper Perennial, and Intermittent; or Littoral and Limnetic); (3) Classes, which are based on substrate material and flooding regime or on vegetative life forms; (4) Subclasses; and (5) Dominance Types, which are named for the dominant plant or wildlife forms. In addition, there are modifying terms applied to Classes or Subclasses.

Several unnamed drainage features cross through the Project site in a north-south direction on the National Wetland Inventory. Each of these narrow drainages is listed as R4SBJ (Riverine, Intermittent Streambed, Intermittently Flooded) (Exhibit 6). This wetland classification is described as follows:

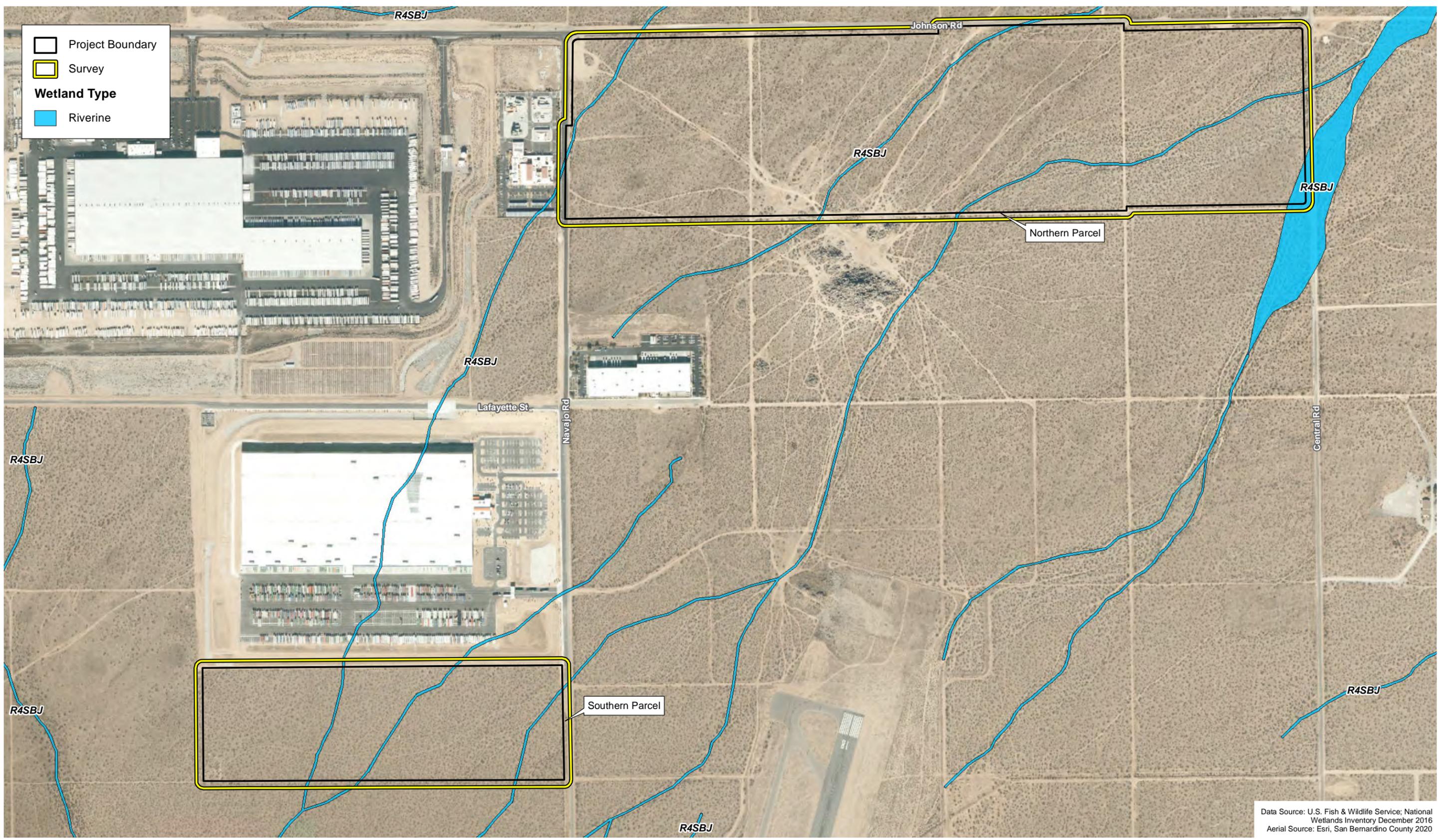
- **R: System RIVERINE.** The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 parts per trillion (ppt) or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.
 - **4: Subsystem INTERMITTENT.** This Subsystem includes channels that contain flowing water only part of the year. When the water is not flowing, it may remain in isolated pools or surface water may be absent.
 - **SB: Class STREAMBED.** Includes all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide.
 - **J: Water Regime INTERMITTENTLY FLOODED.** The substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation. The dominant plant communities under this Water Regime may change as soil moisture conditions change. Some areas exhibiting this Water Regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes. This Water Regime is generally limited to the arid West.

3.4 REGIONAL WATER QUALITY CONTROL PLAN

There are nine Regional Water Quality Control Boards in California. The Project site is located within Regional Water Quality Control Board Region 6, the Lahontan Region. The SWRCB and the Lahontan RWQCB have adopted a Water Quality Control Plan (or “Basin Plan”) for the Lahontan Region. The Basin Plan contains goals and policies, descriptions of conditions, and proposed solutions to surface and groundwater issues. The Basin Plan also establishes water quality standards for surface and groundwater resources and includes beneficial uses and levels of water quality that must be met and maintained to protect these uses. These water quality standards are implemented through various regulatory permits pursuant to CWA Section 401 for Water Quality Certifications and Section 402 for Report of Waste Discharge permits.

The unnamed drainages that pass through the Project sites are not described in the Lahontan Basin Plan (Lahontan RWQCB 1995).

Project Boundary
 Survey
Wetland Type
 Riverine



Data Source: U.S. Fish & Wildlife Service; National Wetlands Inventory December 2016
 Aerial Source: Esri, San Bernardino County 2020

National Wetland Inventory

Jurisdictional Delineation Report for the Apple Valley Project Site



Exhibit 6



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4.0 JURISDICTIONAL ANALYSIS

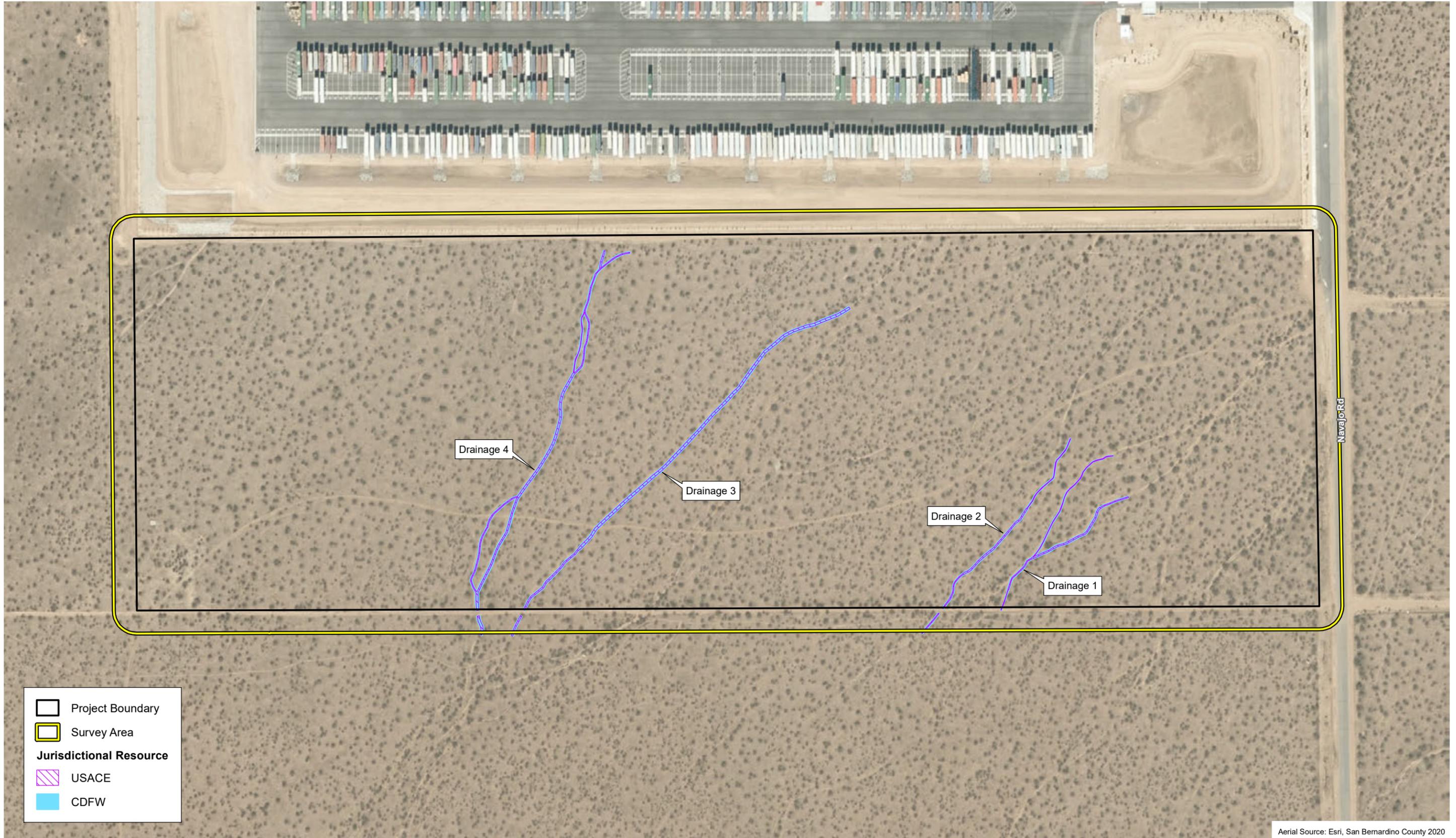
Several small ephemeral channels run through both the northern and southern parcels in a north-to-south or northeast-to-southwest direction. These channels are poorly formed, meaning they are all shallow (less than 3 inches deep), and are probably the result of a single rain event, rather than multiple events that would have scoured and deepened these channels. Topography within and in the vicinity of the Project site is generally flat so that surface water flows in the area are generally diffuse and spread out in numerous small drainages rather than a few well-formed channels.

Identifying on-site drainages on an aerial photo is difficult because of the many paths on the landscape created by off-road vehicles (ORVs) which appear similar to the drainage features. ORVs appear to have possibly used drainage pathways as vehicle paths in the past so that these channels will exhibit an OHWM and the ORV disturbance areas continue further upstream where no OHWM occurs.

Furthermore, the drainage features within each parcel of the Project site are disconnected from the surrounding hydrologic system by the roads that surround the parcels and the Big Lots distribution center. There are no culverts that allow water to flow into the northern or southern parcels and water does not flow over the roads. Therefore, the drainage features documented in this report are largely disconnected from upstream drainage patterns.

In all, 9 drainage features were identified during the field survey which are shown as Drainages 1 through 9 on Exhibits 7a-7b. Because these are poorly formed drainages, there are areas between drainage sections where no evidence of an OHWM or channel banks were observed. This is probably because no surface flows have occurred recently and the original drainage flow paths have been obscured by ORV activity, wind erosion, and/or plant establishment. Areas that appear to connect drainage fragments (but where no indicators or surface water flows were noted during the field survey) are indicated on Exhibits 7a-7b by a dotted line.

A summary of these jurisdictional resources is provided in Table 1 and photographs are provided in Attachment D that illustrate the general conditions on the Project site and of the various drainages.

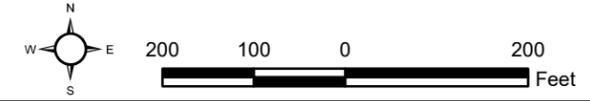


Project Boundary
 Survey Area
Jurisdictional Resource
 USACE
 CDFW

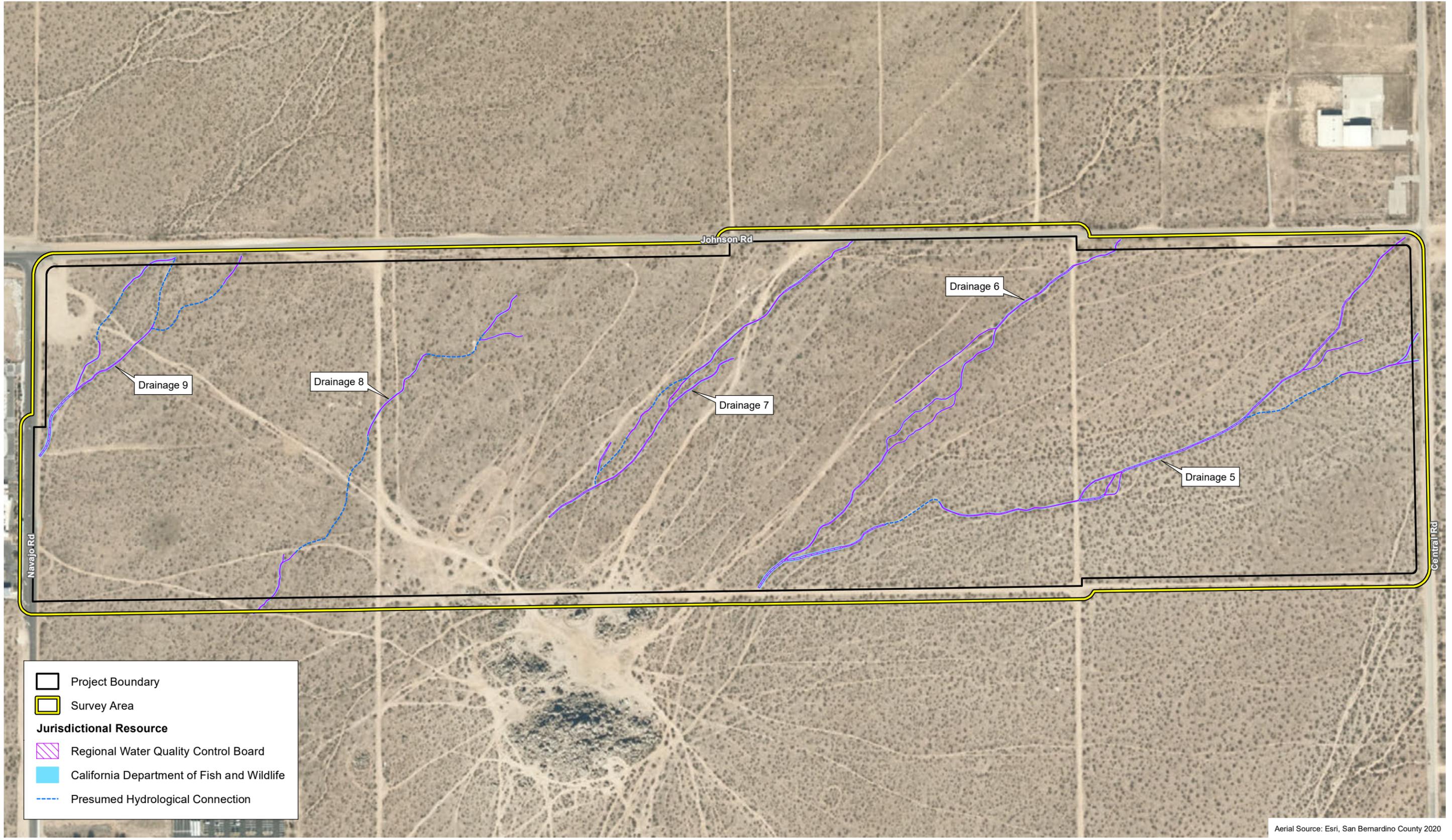
Aerial Source: Esri, San Bernardino County 2020

Jurisdictional Resources – Southern Parcel
Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit 7a



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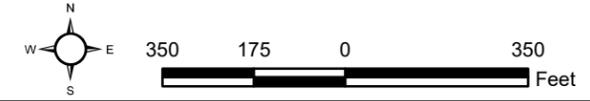


	Project Boundary
	Survey Area
Jurisdictional Resource	
	Regional Water Quality Control Board
	California Department of Fish and Wildlife
	Presumed Hydrological Connection

Aerial Source: Esri, San Bernardino County 2020

Jurisdictional Resources - Northern Parcel
Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit 7b



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**TABLE 1
SUMMARY OF JURISDICTIONAL RESOURCES ON THE PROJECT SITE**

Feature	Latitude/Longitude (decimal degrees)		Feature Length (linear feet)	OHWM Width Range (feet)	Area of RWQCB Jurisdiction (acres)		CDFW Jurisdiction Width Range (feet)	Area of CDFW Jurisdiction (acres)
	Upstream End	Downstream End			Wetland	Non- wetland		
Drainage 1	34.586891°, -117.190985°	34.586299°, -117.191889°	684	1–3	0.00	0.03	2–5	0.06
Drainage 2	34.587324°, -117.191287°	34.586285°, -117.192161°	471	1–3	0.00	0.02	3–5	0.04
Drainage 3	34.588192°, -117.192632°	34.586273°, -117.195189°	977	3–5	0.00	0.10	5–7	0.15
Drainage 4	34.588285°, -117.194659°	34.586295°, -117.195504°	1,316	1–5	0.00	0.08	3–7	0.15
Drainage 5	34.600843°, -117.171819°	34.597316°, -117.179818°	3,561	1–5	0.00	0.27	2–7	0.43
Drainage 6	34.600865°, -117.175457°	34.597316°, -117.179818°	2,826	1–6	0.00	0.14	2–6	0.26
Drainage 7	34.600831°, -117.179006°	34.598263°, -117.182482°	2,192	2–4	0.00	0.14	3–6	0.22
Drainage 8	34.600587°, -117.182706°	34.597185°, -117.186398°	1,008	1–2	0.00	0.04	2–4	0.08
Drainage 9	34.600831°, -117.186614°	34.598745°, -117.189213°	1,161	2–6	0.00	0.09	4–10	0.15
Total					0.00	0.91		1.54

OHWM: Ordinary High Water Mark; USACE: U.S. Army Corps of Engineers; RWQCB: Regional Water Quality Control Board; CDFW: California Department of Fish and Wildlife

4.1 “WATERS OF THE UNITED STATES” DETERMINATION

As discussed in Section 1.3, the federal government recently put forth a final Water Rule that contains an updated definition of WOTUS. This WOTUS definition covers features that have been consistently regulated by the Clean Water Act such as TNWs, the territorial seas, interstate waters, and any impoundments of these waters. Pertinent to this analysis, WOTUS also consist of “jurisdictional tributaries”, which are drainage features that meet either the relatively permanent standard or the significant nexus standard.

Relatively Permanent Standard

The relatively permanent standard identifies drainage features that convey surface water flows for a period that is at least seasonal (i.e., surface water must be continuously present for a minimum period of 3 months). The infrequency of rainfall events in the Mojave Desert, the small watersheds associated with individual drainage features, and the well-drained soils that constitute the stream bottoms indicate that none of the features in the survey area would be considered relatively permanent.

Significant Nexus Standard

Water generally drains in a southerly direction in the vicinity of the Project site in southern Sidewinder Valley. Historically, surface (and subsurface) water would flow approximately four miles to the south until reaching Apple Valley Dry Lake in the northern part of the City of Apple Valley. Currently, the area has numerous obstacles to water flow including paved roadways,

scattered residential development, and the Apple Valley County Airport. Apple Valley Dry Lake is more than four miles to the Mojave River which is the closest WOTUS. Based on the hydrology of the area that drains to an internally drained lakebed that is more than four miles from the nearest WOTUS, the drainage features in the Project area do not exhibit a significant nexus to any other jurisdictional waters.

Wetlands Determination

The Project does not contain any soil types that are considered potentially hydric (see Section 3.2) and no areas were observed where surface water would pond. Based on the well-drained soil throughout the Project site and the lack of any hydrophytic vegetation, it is assumed that no wetland conditions exist on the Project site.

Summary

Based on the infrequent presence of any surface flows and the lack of connectivity to other WOTUS, none of the drainage features documented in Table 1 are considered under the jurisdiction of the USACE.

4.2 REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

Though the on-site drainage features are not considered to be WOTUS, the RWQCB has broad latitude to regulate waters via the Porter-Cologne Act. The limits of non-wetland “waters of the State” are defined by the break in the streambank slopes and scour marks created by storm flows.

Based on these boundaries, the project site contains 0.91 acre of non-wetland “waters of the State” (Table 1; Exhibit 7).

Impact Summary

Project construction will likely impact all of the drainage features on the Project site. Therefore, impacts to RWQCB isolated “waters of the State” would total 0.91 acre.

4.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION

The limits of CDFW jurisdiction on the Project site were mapped to the top of the bank of all jurisdictional features. There is no adjacent riparian habitat present along these features so that CDFW’s jurisdiction is limited to the top of each feature’s banks. Therefore, the total amount of CDFW’s jurisdictional area is 1.54 acres (Table 1; Exhibit 7).

Impact Summary

Project construction will likely impact all of the drainage features on the Project site. Therefore, impacts to CDFW jurisdictional waters would total 1.54 acres.

5.0 REGULATORY APPROVAL PROCESS

This section summarizes the various permits, agreements, and certifications that may be required prior to initiation of the proposed Project activities that involve impacts to jurisdictional waters, including:

- USACE Section 404 Permit
- RWQCB Section 401 Water Quality Certification
- CDFW Section 1602 Notification of Lake or Streambed Alteration

It should be noted that all regulatory permit applications can be processed concurrently.

5.1 U.S. ARMY CORPS OF ENGINEERS

As described above, no on-site drainage features are considered WOTUS due to their lack of connectivity to a downstream TNW. Because there are no WOTUS on the Project site, a Section 404 permit should not be required.

5.2 REGIONAL WATER QUALITY CONTROL BOARD

Assuming the USACE concurs that there are no WOTUS on the Project site, the RWQCB would authorize impacts to jurisdictional features via a Waste Discharge Requirements (WDR) permit rather than a Section 401 Water Quality Certification. Applying for a WDR permit would require urban storm water runoff to be addressed during and after construction in the form of Best Management Practices (BMPs). These BMPs are intended to address the treatment of pollutants carried by storm water runoff. Please note that WDR permit holders are required to pay an annual fee until the RWQCB is notified that the authorized project has been completed.

5.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Prior to construction, Notification of a Lake or Streambed Alteration (LSA) must be submitted to the CDFW that describes any proposed streambed alteration contemplated by the proposed project. If an LSA Agreement is required, the CDFW may want to conduct an on-site inspection.

In addition to the formal application materials and the fee, a copy of the appropriate environmental document (e.g., Mitigated Negative Declaration) should be included in the submittal, consistent with CEQA requirements. The CDFW will not deem the application to be complete until the application fees have been paid and the agency is provided with a certified CEQA document and a signed copy of the receipt of County Clerk filing fees for the Notice of Determination (NOD).

5.4 RECOMMENDATIONS

Based on the conclusions of this Jurisdictional Delineation Report, the following recommendations are identified:

1. The USACE should be consulted to confirm that on-site features are not considered WOTUS so that no permitting pursuant to Section 404 of the Clean Water Act is required.
2. Staff from the RWQCB and CDFW should be contacted to discuss the proposed Project activities and determine the appropriate permitting strategy.
3. Upon determining the appropriate permitting strategy, the following should be prepared and processed: a RWQCB Report of Waste Discharge and a CDFW Notification of Lake or Streambed Alteration.

6.0 REFERENCES

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ATTACHMENT A
SUMMARY OF REGULATORY AUTHORITY

REGULATORY AUTHORITY

This attachment summarizes the regulatory authority of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW) over activities that have potential to impact jurisdictional resources.

U.S. Army Corps of Engineers

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into “waters of the United States” (WOTUS) under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all WOTUS where the material (1) replaces any portion of WOTUS with dry land or (2) changes the bottom elevation of any portion of any WOTUS. These fill materials would include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these waters.

Waters of the United States

On January 18, 2023, the United States Environmental Protection Agency (USEPA) and the USACE published in the *Federal Register* a new Water Rule which provides an updated definition of WOTUS. This Water Rule became effective on March 20, 2023.

This new Water Rule replaces regulations put forth in the Navigable Waters Protection Rule (NWPR) by the Trump Administration in June 2020 which had revised the definition of WOTUS. On August 30, 2021, the U.S. District Court for the District of Arizona vacated the NWPR pursuant to the case of *Pascua Yaqui Tribe v. U.S. Environmental Protection Agency* (2021), which led the USACE to utilize the definition of WOTUS that was in use prior to the 2015 Water Rule issued by the Obama Administration. The new Water Rule seeks to use the pre-2015 regulations as the basis for the definition of WOTUS, while incorporating the Supreme Court’s ruling from the case of *Rapanos v. United States* (“Rapanos”, 2006)¹.

In this Supreme Court’s Rapanos ruling, Justice Kennedy authored a separate concurring opinion concluding that wetlands are WOTUS if they, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as “navigable”. The definition of WOTUS under the new 2023 Water Rule uses Justice Kennedy’s “significant nexus” standard as a basis for determining if a wetland is considered “adjacent” and therefore under the jurisdiction of the USACE.

The recently issued 2023 Water Rule defines WOTUS per the following categories:

1. Traditional Navigable Waters (TNWs), the territorial seas, and interstate waters (“paragraph (a)(1) waters”);
2. Impoundments of “waters of the United States” (“paragraph (a)(2) impoundments”);
3. Tributaries to TNWs, the territorial seas, interstate waters, or paragraph (a)(2) impoundments when the tributaries meet either the relatively permanent standard or the significant nexus standard (i.e., “jurisdictional tributaries”);
4. Wetlands adjacent to paragraph (a)(1) waters, wetlands adjacent to and with a continuous surface connection to relatively permanent paragraph (a)(2) impoundments, wetlands adjacent to tributaries that meet the relatively permanent standard, and wetlands adjacent

¹ Consolidated cases: *Rapanos v. United States* and *Carabell v. United States* refer to the U.S. Supreme Court’s decision concerning USACE jurisdiction over “waters of the U.S.” under the CWA.

to paragraph (a)(2) impoundments or jurisdictional tributaries when the wetlands meet the significant nexus standard (“jurisdictional adjacent wetlands”); and

5. Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) that meet either the relatively permanent standard or the significant nexus standard (“paragraph (a)(5) waters”).

The relatively permanent standard relates to waterways that contain surface water on a seasonal basis, meaning that surface water must be present for a period of at least 3 months. Wetland and non-wetland waters are considered to have a significant nexus to other jurisdictional waters if it is determined that they have the ability to affect their physical, chemical, or biological integrity.

The regulatory text for this rule specifically identifies several features that are non-jurisdictional by definition. These include:

- waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
- prior converted cropland;
- ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
- artificially irrigated areas that would revert to dry land if the irrigation ceased;
- 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;
- 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;
- 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 WOTUS; and
- swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Ordinary High Water Mark

The landward limit of tidal “waters of the U.S.” is the high-tide line. In non-tidal waters where adjacent wetlands are absent, the lateral limits of USACE jurisdiction extend to the ordinary high water mark (OHWM).² The OHWM is defined as “that 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”.³ When wetlands are present, the lateral limits of USACE jurisdiction extend beyond the OHWM to the limits of the adjacent wetlands.⁴

² U.S. Army Corps of Engineers (USACE). 2005 (December 7). Regulatory Guidance Letter. Ordinary High Water Mark Identification. Washington, D.C.: USACE.

³ *Code of Federal Regulations* (CFR), Title 33, §328.3(e)

⁴ USACE 2005

Wetlands

A wetland is a subset of jurisdictional waters and is defined by the USACE and the USEPA as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions”.⁵ Wetlands generally include swamps, marshes, bogs, and areas containing similar features.

The definition and methods for identifying wetland resources can be found in the USACE’s *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*,⁶ a supplement to the 1987 *Corps of Engineers Wetlands Delineation Manual*.⁷ Both the 1987 Wetlands Manual and the 2008 Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of wetland “waters of the U.S.”. Pursuant to these manuals, a three-parameter approach is used to identify wetlands and requires evidence of wetland hydrology, hydrophytic vegetation, and hydric soils. In order to be considered a wetland, an area must exhibit one or more indicators of all three of these parameters. However, problem areas may periodically or permanently lack certain indicators for reasons such as seasonal or annual variability of rainfall, vegetation, and other factors. Atypical wetlands lack certain indicators due to recent human activities or natural events. Guidance for determining the presence of wetlands in these situations is presented in the regional supplement.

Section 404 Permit

Except as specified in Section 323.4 of the CFR, impacts to “waters of the U.S.” require a Section 404 Permit. Permit authorization may be in the form of (1) a “general permit” authorizing a category of activities in a specific geographical region or nationwide or (2) an “individual permit” (IP) following a review of an individual application form (to be obtained from the district office having jurisdiction over the waters in which the activity is proposed to be located).

Regulatory authorization in the form of a Nationwide Permit (NWP) is provided for certain categories of activities such as repair, rehabilitation, or replacement of a structure or fill which was previously authorized; utility line placement; or bank stabilization. NWPs authorize only those activities with minimal adverse effects on the aquatic environment and are valid only if the conditions applicable to the permits are met or waivers to these conditions are provided in writing from the USACE. Please note that waivers may require consultation with affected federal and State agencies, which can be a lengthy process with no mandated processing time frames. Certain activities do not require submission of an application form but may require a separate notification. If the NWP conditions cannot be met, an IP will be required. “Waters of the U.S.” temporarily filled, flooded, excavated, or drained but restored to pre-construction contours and elevations after construction are not included in the measurement of loss of “waters of the U.S.”. The appropriate permit authorization will be based on the amount of impacts to “waters of the U.S.”, as determined by the USACE. There is no filing fee for the Section 404 Permit.

Approximately three or four months are typically required to process a routine permit application; large or complex activities may take longer to process. When a permit application is received, it will be assigned an identification number and reviewed for completeness by the District Engineer. If an application is incomplete, additional information will be requested within 15 days of receipt of the application. If an application is complete, the District Engineer will issue a public notice

⁵ 33 CFR §328.3(b)

⁶ USACE. 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. (J.S. Wakeley, R.W. Lichvar, and C.V. Noble, Eds.). Vicksburg, MS: U.S. Army Engineer Research and Development Center.

⁷ Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1)*. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

within 15 days unless specifically exempted by provisions of the CFR. Public comments will be accepted no more than 30 days but not less than 15 days from the date of public notice; these will become part of the administrative record of the application. Generally, the District Engineer will decide on the application no later than 60 days after receipt of the completed application. Additional permit situations may increase the permit processing time (e.g., projects involving a Section 401 Water Quality Certification, a coastal zone management consistency analysis, historic properties, a federal agency, and/or Endangered species). The Project Applicant will be given time, not to exceed 30 days, to respond to requests of the District Engineer.

On January 31, 2007, the USACE published a memorandum clarifying the Interim Guidance for Amendments to the National Historic Preservation Act and the Advisory Council on Historic Preservation (ACHP) implementing regulations.⁸ The Interim Guidance applies to all Department of the Army requests for authorization/verification, including Individual Permits (IPs, i.e., standard permits and letters of permission) and all Regional General Permits (RGPs) and Nationwide Permits (NWP). The State or Tribal Historic Preservation Officer (SHPO/THPO) has 30 days to respond to a determination that a proposed activity, which otherwise qualifies for an NWP or an RGP, has no effect or no adverse effect on a historic property. If the SHPO/THPO does not respond within 30 days of notification, the Los Angeles District may proceed with verification. If the SHPO/THPO disagrees with the District's determination, the District may work with the SHPO/THPO to resolve the disagreement or request an opinion from the ACHP. The USACE will submit the Draft Jurisdictional Delineation Report to the SHPO/THPO for review prior to initiating the actual regulatory process.

Please note that, if the USACE determines that the drainages/waterbodies are jurisdictional and would be impacted by project implementation, the Applicant will be required to obtain a CWA Section 401 Water Quality Certification from the RWQCB before the USACE will issue the Section 404 Permit. If the USACE determines that the impacted drainage/waterbody is not jurisdictional, the Applicant will be required to obtain RWQCB authorization under the provisions of a Report of Waste Discharge (ROWD).

Jurisdictional Determinations

Pursuant to USACE Regulatory Guidance Letter (RGL) 08-02 (dated June 26, 2008), the USACE can issue two types of jurisdictional determinations to implement Section 404 of the CWA: Approved Jurisdictional Determinations and Preliminary Jurisdictional Determinations.⁹ An Approved Jurisdictional Determination is an official USACE determination that jurisdictional "waters of the U.S.", "Navigable Waters of the U.S.", or both are either present or absent on a site. An Approved Jurisdictional Determination also identifies the precise limits of jurisdictional waters on a project site.

The USACE will provide an Approved Jurisdictional Determination when (1) an Applicant requests an official jurisdictional determination; (2) an Applicant contests jurisdiction over a particular water body or wetland; or (3) when the USACE determines that jurisdiction does not exist over a particular water body or wetland. The Approved Jurisdictional Determination then becomes the USACE's official determination that can then be relied upon over a five-year period to request regulatory authorization as part of the permit application.

In addition, an Applicant may decline to request an Approved Jurisdictional Determination and instead obtain a USACE IP or General Permit Authorization based on a Preliminary Jurisdictional

⁸ USACE. 2007 (January 31). Memorandum: Interim Guidance for Amendments to the National Historic Preservation Act and the Advisory Council on Historic Preservation (ACHP) Implementing Regulations. Washington, D.C.: USACE.

⁹ USACE. 2008b (June 26). Regulatory Guidance Letter. Jurisdictional Determinations. Washington, D.C.: USACE.

Determination or, in certain circumstances (e.g., authorizations by non-reporting nationwide general permits), with no Jurisdictional Determination.

Preliminary Jurisdictional Determinations are non-binding, advisory in nature, and may not be appealed. They indicate that there may be “waters of the U.S.” on a project site. An Applicant may elect to use a Preliminary Jurisdictional Determination to voluntarily waive or set aside questions regarding CWA jurisdiction over a site, usually in the interest of expediting the permitting process. The USACE will determine what form of Jurisdictional Determination is appropriate for a particular project site.

The USACE Regulatory Branch Offices will coordinate with the USEPA Regional Office and USACE Headquarters (HQ), as outlined in its January 28, 2008, memorandum entitled “Process for Coordinating Jurisdictional Determinations Conducted Pursuant to Section 404 of the Clean Water Act in Light of the *Rapanos* and *SWANCC* Supreme Court Decisions”.¹⁰ The guidance provided in this memorandum is quoted as follows:

1. Effective immediately, unless and until paragraph 5(b) of the June 5, 2007, Rapanos guidance coordination memorandum is modified by a joint memorandum from Army and EPA, we will follow these procedures:
 - a. For jurisdictional determinations involving significant nexus determinations, USACE districts will send copies of draft jurisdictional delineations via e-mail to appropriate EPA regional offices. The EPA regional office will have 15 calendar days to decide whether to take the draft jurisdictional delineation as a special case under the January 19, 1989, “Memorandum of Agreement Between the Department of the Army and the USEPA Concerning the Determination of the Section 404 Program and the Application of the Exceptions under Section 404(f) of the Clean Water Act.” If the EPA regional office does not respond to the district within 15 days, the district will finalize the jurisdictional determination.
 - b. For jurisdictional determinations involving isolated waters determinations, the agencies will continue to follow the procedure in paragraph 5(b) of June 5, 2007, coordination memorandum, until a new coordination memorandum is signed by USACE and EPA. (In accordance with paragraph 6 of the June 5, 2007, coordination memorandum, this is a 21-day timeline that can only be changed through a joint memorandum between agencies).
2. Approved JDs are not required for non-reporting NWP, unless the project proponent specifically requests an approved JD. For proposed activities that may qualify for authorization under a State Programmatic General Permit (SPGP) or RGP, an approved JD is not required unless requested by the project proponent.
3. The USACE will continue to work with EPA to resolve the JDs involving significant nexus and isolated waters determinations that are currently in the elevation process.
4. USACE districts will continue posting completed Approved JD Forms on their web pages.

¹⁰ USACE. 2008c (January 28). *Memorandum for Commander, Major Subordinate Commands and District Commands. Process for Coordinating Jurisdictional Determinations Conducted Pursuant to Section 404 of the Clean Water Act in Light of the *Rapanos* and *SWANCC* Supreme Court Decisions*. Washington, D.C.: USACE.

Regional Water Quality Control Board

The RWQCB is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCB's jurisdiction extends to all "waters of the State" and to all "waters of the U.S.", including wetlands (isolated and non-isolated).

Section 401 of the CWA provides the RWQCB with the authority to regulate, through a Water Quality Certification, any proposed, federally permitted activity that may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide certification that there is reasonable assurance that an activity which may result in discharge to navigable waters will not violate water quality standards. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which contain numeric and narrative objectives that can be found in each of the nine RWQCBs' Basin Plans.

The Porter-Cologne Act provides the State with very broad authority to regulate "waters of the State" (which are defined as any surface water or groundwater, including saline waters). The Porter-Cologne Act has become an important tool in the post-SWANCC (Solid Waste Agency of Northern Cook Counties vs. United States Army Corps of Engineers) and Rapanos era with respect to the State's authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file an ROWD when there is no federal nexus, such as under Section 404(b)(1) of the CWA. Although "waste" is partially defined as any waste substance associated with human habitation, the RWQCB interprets this to include fill discharge into water bodies.

Section 401 Water Quality Certification

Issuance of the USACE Section 404 Permit would be contingent upon the approval of a Section 401 Water Quality Certification from the RWQCB. Also, the RWQCB requires certification of the project's California Environmental Quality Act (CEQA) documentation before it will approve the Section 401 Water Quality Certification or ROWD. The RWQCB, as a responsible agency, will use the project's CEQA document to satisfy its own CEQA-compliance requirements.

On June 1, 2020, the USEPA finalized the "Clean Water Act Section 401 Certification Rule" to implement the water quality certification process consistent with the text and structure of the Clean Water Act (CWA). The final rule establishes procedures that promote consistent implementation of CWA section 401 and regulatory certainty in the federal licensing and permitting process. The new regulation includes reviews and approvals by the USACE prior to the RWQCB issuing a 401 Certification and reviews and approvals by the EPA prior to the USACE issuing a 404. The new 401 rule went into effect on September 11, 2020.

The new certification rule defines a discharge subject to 401 Certification as a discharge from a point source into a water of the United States. The new rule also states that States with additional water quality regulations cannot use these to expand the certification request.

The new rule requires all project proponents to request a pre-filing meeting with the RWQCB at least 30 days prior to filing a 401 "Certification Request". The filing procedure has been simplified to require the filing of a "Certification Request", rather than the acceptance of a "complete application". The certification request has nine mandatory components:

1. identify the project proponent(s) and a point of contact;
2. identify the proposed project;

3. identify the applicable federal license or permit;
4. identify the location and nature of any potential discharge that may result from the proposed project and the location of receiving waters;
5. include a description of any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge;
6. include a list of all other federal, interstate, tribal, state, territorial, or local agency authorizations required for the proposed project, including all approvals or denials already received;
7. include documentation that a pre-filing meeting request was submitted to the certifying authority at least 30 days prior to submitting the certification request;
8. contain the following statement: 'The project proponent hereby certifies that all information contained herein is true, accurate, and complete, to the best of my knowledge and belief; and
9. contain the following statement: 'The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.'

There is a mandatory 30 day wait period between a pre-filing meeting request and the filing of a Certification Request. A Certification Request must be filed with the RWQCB and the USACE concurrently. USACE reviews the Certification Request for the nine required components. The USACE has 15 days to review the Certification Request. The USACE then notifies the RWQCB that request is complete. And concurrently notifies the RWQCB of the reasonable time period to act on the Certification Request. The reasonable time period is not to exceed 1 year. Within 15 days of receipt of the Certification Request, the RWQCB must provide the applicant with the following: 1) date of receipt; 2) applicable reasonable period of time to act on the Certification Request; and 3) date upon which waiver will occur if the certifying authority fails or refuses to act on the Certification Request.

Once the RWQCB issues the 401 Certification, the USACE has 5 days to notify the USEPA that the 401 Certification has been issued. The USEPA then has 30 days to notify neighboring jurisdictions of the 401 Certification. Neighboring jurisdictions have 60 days to respond. If there are no objections to the 401 Certification, then the USACE would issue the 404 permit.

On June 2, 2021, the USEPA published a notice of intention to reconsider and revise the Clean Water Act Section 401 Certification Rule. At this time, they are currently accepting public comment. Until a new rule goes into effect, the current 401 Certification Rule stands.

The RWQCB is required under the *California Code of Regulations* (CCR) to have a "minimum 21-day public comment period" before any action can be taken on the Section 401 application.¹¹ This period closes when the RWQCB acts on the application. Since projects often change or are revised during the Section 401 permit process, the comment period can remain open. The public comment period starts as soon as an application has been received. Generally, the RWQCB Section 401, USACE Section 404, and CDFW Section 1602 permit applications are submitted at the same time.

The RWQCB requires the Applicant to address urban storm water runoff during and after construction in the form of Best Management Practices (BMPs). These BMPs are intended to address the treatment of pollutants carried by storm water runoff and are required in all complete applications. The notification/application for a CWA Section 401 Water Quality

¹¹ 23 CCR §3858(a)

Certification must also address compliance with the Basin Plan. Please note that filing an application would also require the payment of an application fee which would be based on project impacts. The fee schedule calculator is available at https://www.waterboards.ca.gov/resources/fees/water_quality/docs/dredgefillcalculator.xlsm.

California Department of Fish and Wildlife

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the *California Fish and Game Code*.¹² Activities of State and local agencies as well as public utilities that are project proponents are regulated by the CDFW under Section 1602 of the *California Fish and Game Code*. This section regulates any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. Section 1602 of the *California Fish and Game Code* applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State.

The CDFW jurisdictional limits are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric and saturated soils conditions. In general, the CDFW takes jurisdiction from the top of a stream bank or to the outer limits of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place within or in the vicinity of a river, stream, lake or within or in the vicinity of tributaries to a river, stream, or lake. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish and other aquatic plant and/or wildlife species. It also includes watercourses that have a surface or subsurface flow that support or have supported riparian vegetation.

Section 1602 Lake or Streambed Alteration Agreement

The CDFW enters into a Lake or Streambed Alteration (LSA) Agreement with a project proponent to ensure protection of wildlife and habitat values and acreages.

Prior to construction, a Notification of an LSA must be submitted to the CDFW that describes any proposed lake or streambed alteration that would occur with implementation of a project. The Notification of an LSA must address the initial construction and long-term operation and maintenance of any structures (such as a culvert or a desilting basin) included in the project design that are located within any river, stream, or lake and that may require periodic maintenance. In addition to the formal application materials and the fee, a copy of the appropriate environmental document (e.g., a Mitigated Negative Declaration) should be included in the submittal, consistent with CEQA requirements. The complete notification package must be completed on CDFW's Environmental Permit Information Management System (EPIMS). This notification will serve as the basis for the CDFW's issuance of a Section 1602 LSA Agreement. Note that notification is not required before beginning emergency work, but the CDFW must be notified in writing within 14 days after beginning the work.

After receiving Notification of an LSA Agreement, the CDFW will determine whether an LSA Agreement will be required for the proposed activity. An LSA Agreement will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an LSA Agreement is required, the CDFW may want to conduct an on-site inspection.

¹² See §§1600–1616.

If the CDFW does not respond in writing concerning the completeness of the Notification within 30 days of its submittal, the Notification automatically becomes complete. If the CDFW does not submit a draft LSA Agreement to the Applicant within 60 days of the determination of a completed Notification package, the CDFW will issue a letter that either (1) identifies the final date to transmit a draft LSA Agreement or (2) indicates that an LSA Agreement was not required. The CDFW will also indicate that it was unable to meet this mandated compliance date and that, by law, the Applicant is authorized to complete the project without an LSA Agreement as long as the Applicant constructs the project as proposed and complies with all avoidance, minimization, and mitigation measures described in the submitted Notification package. Please note that, if the project requires revisions to the design or project construction, the CDFW may require submittal of a new Notification/application with an additional 90-day permit process.

If determined to be necessary, the CDFW will prepare a draft LSA Agreement, which will include standard measures to protect fish and wildlife resources during project construction and during ongoing operation and maintenance of any project element that occurs within a CDFW jurisdictional area. The draft Agreement must be transmitted to the Applicant within 60 calendar days of the CDFW's determination that the notification is complete. It should be noted that the 60-day timeframe might not apply to long-range agreements.

Following receipt of a draft LSA Agreement from the CDFW, the Applicant has 30 calendar days to notify the CDFW concerning the acceptability of the proposed terms, conditions, and measures. If the Applicant agrees with these terms, conditions and measures, the Agreement must be signed and returned to the CDFW. The Agreement becomes final once the CDFW executes it and an LSA Agreement is issued. Please note that all application fees must be paid and the final certified CEQA documentation must be provided prior to the CDFW's execution of the Agreement.

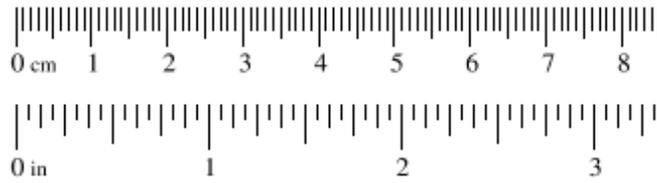
ATTACHMENT B
ORDINARY HIGH WATER MARK DATA SHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 1 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: NW of intersection of Navajo Road and Los Padres Rd Projection: Datum: WGS 84 Coordinates: 34.586607, -117.191328					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Big Lots distribution center to the north and paved road to the east have cut off some inflows						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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Hydrogeomorphic Floodplain Units 						
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW: <ol style="list-style-type: none"> 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. <ol style="list-style-type: none"> 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 OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



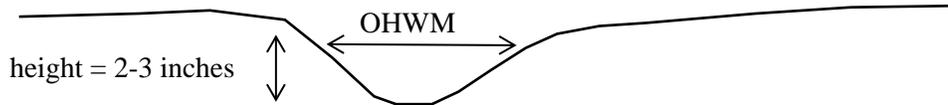
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Streambed present with intermittent scour marks. Stream bottom characterized by soil that is slightly sandier than surrounding loam soils.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 35 % Tree: _____ % Shrub: 30 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage very narrow. Water marks present on stream bottom and presence of sandy soils.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 35 % Tree: _____% Shrub: 30 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainage is narrow so that the low-flow and active floodplain areas are essentially the same

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

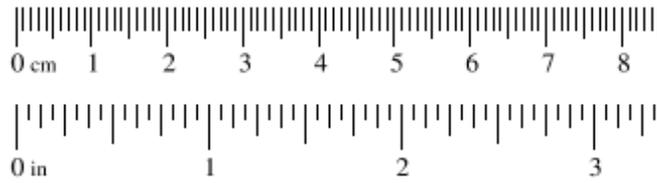
N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 2 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: NW of intersection of Navajo Road and Los Padres Rd Projection: Datum: WGS 84 Coordinates: 34.586482, -117.192267					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Big Lots distribution center to the north and paved road to the east have cut off some inflows						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert.						
Checklist of resources (if available): <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies						
Hydrogeomorphic Floodplain Units 						
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> 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. <ol style="list-style-type: none"> 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: <table style="width: 100%; margin-left: 20px;"> <tr> <td><input type="checkbox"/> Mapping on aerial photograph</td> <td><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



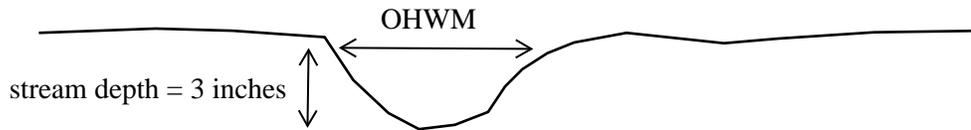
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Streambed present with intermittent scour marks. Stream bottom characterized by soil that is slightly sandier than surrounding loam soils.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____ % Shrub: 25 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage very narrow. Water marks present on stream bottom and presence of sandy soils.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____% Shrub: 25 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainage is narrow so that the low-flow and active floodplain areas are essentially the same

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 3 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:
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Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: NW of intersection of Navajo Road and Los Padres Rd Projection: Datum: WGS 84 Coordinates: 34.587245, -117.194053
--	---

Potential anthropogenic influences on the channel system:

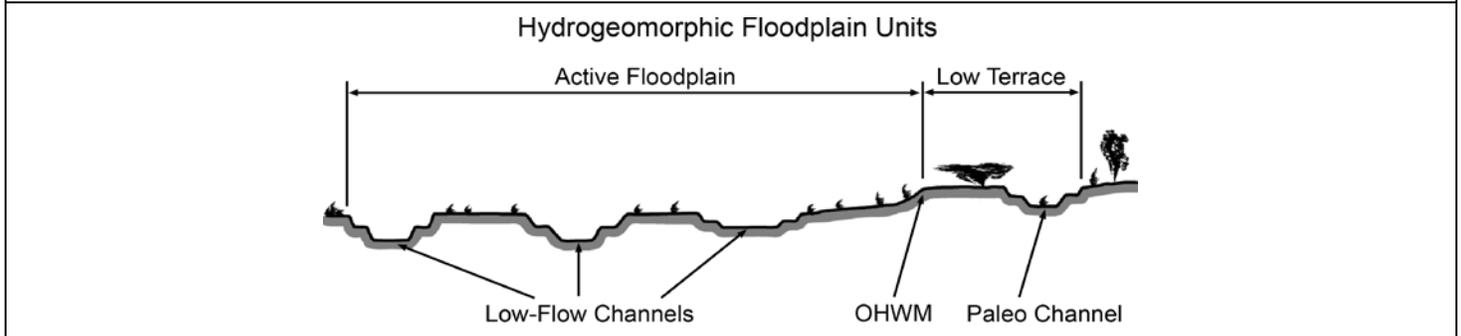
Evidence of off-road vehicle activity on site. Big Lots distribution center to the north and paved road to the east have cut off some inflows

Brief site description:

Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert.

Checklist of resources (if available):

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

<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

Wentworth Size Classes

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



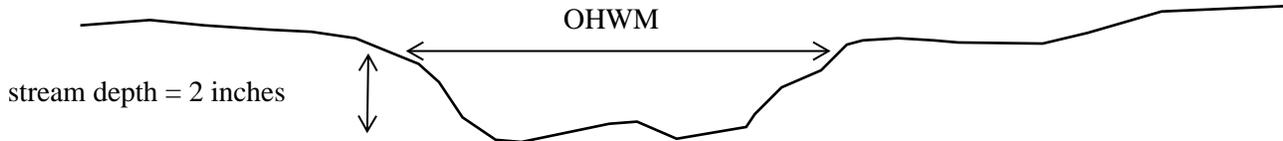
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and slightly wider than previous drainages. Braided conditions with shallow stream bank. Water marks showing flow patterns are present, minor soil change between upland and stream bottom.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam
Total veg cover: 20 % Tree: _____ % Shrub: 15 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Braided water marks present on stream bottom.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 20 % Tree: _____% Shrub: 15 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Braided water marks present on stream bottom.

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

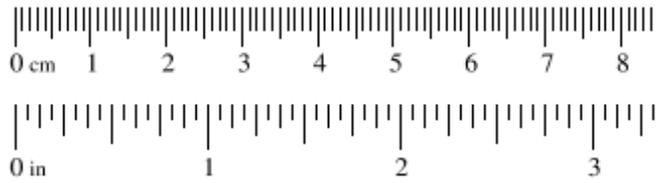
N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 4 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: NW of intersection of Navajo Road and Los Padres Rd Projection: Datum: WGS 84 Coordinates: 34.587231, -117.195077					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Big Lots distribution center to the north and paved road to the east have cut off some inflows						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> 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 OHW: <ol style="list-style-type: none"> 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. <ol style="list-style-type: none"> 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 OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



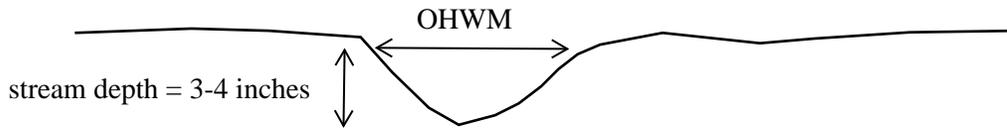
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Streambed present with intermittent scour marks.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam
Total veg cover: 30 % Tree: _____ % Shrub: 25 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage very narrow. Water marks present on stream bottom and presence of sandy soils.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____% Shrub: 25 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainage is narrow so that the low-flow and active floodplain areas are essentially the same

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

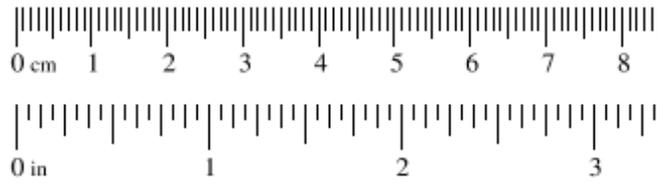
N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 5 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: SE of intersection of Johnson Road and Navajo Road Projection: Datum: WGS 84 Coordinates: 34.598727, -117.174818					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Surrounding paved roads have directed surface runoff from roads to a few locations on site and have cut-off historic flow patterns.						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert. Victor Valley College training center located to the west of survey area.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> 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 OHW: <ol style="list-style-type: none"> 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. <ol style="list-style-type: none"> 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 OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



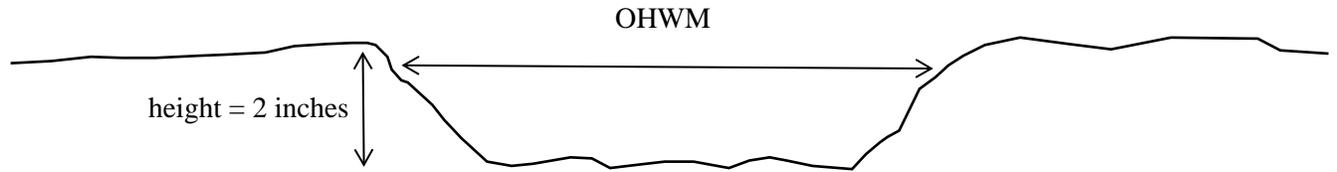
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Streambed present with intermittent scour marks. Stream bottom characterized by soil that is slightly sandier than surrounding loam soils.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam
Total veg cover: 30 % Tree: _____ % Shrub: 30 % Herb: 0 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage width varies - narrow in some parts, but off-road vehicle use has made it difficult to distinguish water marks vs dirt bike tracks

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____% Shrub: 30 % Herb: 0 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainag low-flow and active floodplain areas are essentially the same due to steep stream banks

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

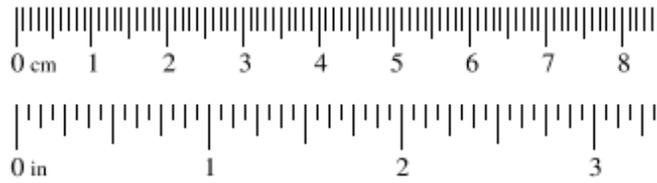
N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 6 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: SE of intersection of Johnson Road and Navajo Road Projection: Datum: WGS 84 Coordinates: 34.599472, -117.177986					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Surrounding paved roads have directed surface runoff from roads to a few locations on site and have cut-off historic flow patterns.						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert. Victor Valley College training center located to the west of survey area.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
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<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



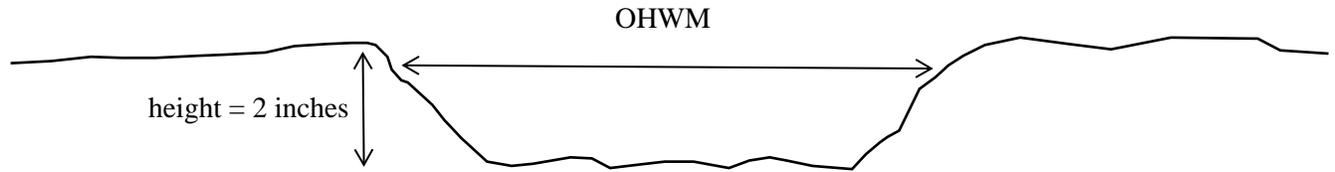
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Sandy stream bottom has numerous off-road motorbike tracks. OHWM mapped to outer extent of stream bottom, though hard to determine if motorbikes or historic water flows created these marks that determine jurisdictional width. Stream bottom soils very sandy.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 20 % Tree: _____ % Shrub: 20 % Herb: 0 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage width varies - narrow in some parts, but off-road vehicle use has made it difficult to distinguish water marks vs dirt bike tracks

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 20 % Tree: _____% Shrub: 20 % Herb: 0 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainag low-flow and active floodplain areas are essentially the same due to steep stream banks

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

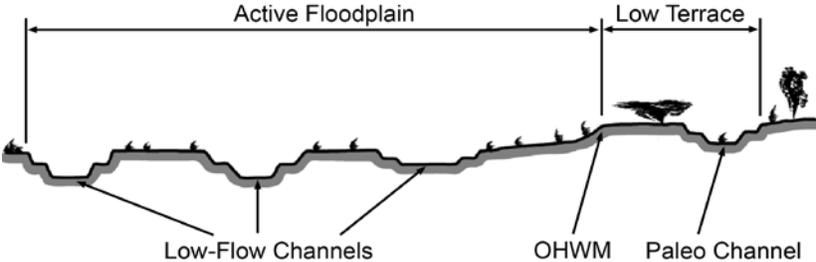
Benches

Other: _____

Comments:

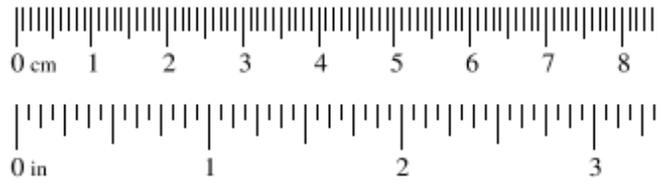
N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 7 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: SE of intersection of Johnson Road and Navajo Road Projection: Datum: WGS 84 Coordinates: 34.599157, -117.181972					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Surrounding paved roads have directed surface runoff from roads to a few locations on site and have cut-off historic flow patterns.						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert. Victor Valley College training center located to the west of survey area.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> 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 OHW: <ol style="list-style-type: none"> 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. <ol style="list-style-type: none"> 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 OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



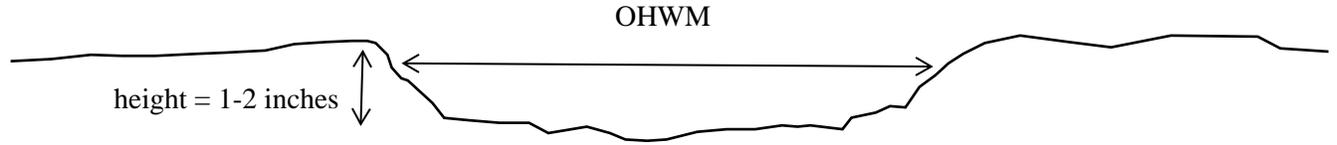
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Extent of sandy stream bottom is primary determinant for jurisdictional boundary.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 30 % Tree: _____ % Shrub: 25 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage has very sandy bottom, distinct from surrounding upland areas. Very shallow.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____% Shrub: 25 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainag low-flow and active floodplain areas are essentially the same due to shallow stream conditions and extent of sandy bottom.

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 8 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: SE of intersection of Johnson Road and Navajo Road Projection: Datum: WGS 84 Coordinates: 34.599266, -117.184468					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Surrounding paved roads have directed surface runoff from roads to a few locations on site and have cut-off historic flow patterns.						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert. Victor Valley College training center located to the west of survey area.						
Checklist of resources (if available):						
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<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
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1/4 0.005	0.125	Fine sand
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1/16 0.0012	0.031	Coarse silt
1/32 0.00061	0.0156	Medium silt
1/64 0.00031	0.0078	Fine silt
1/128 0.00015	0.0039	Very fine silt
		Clay



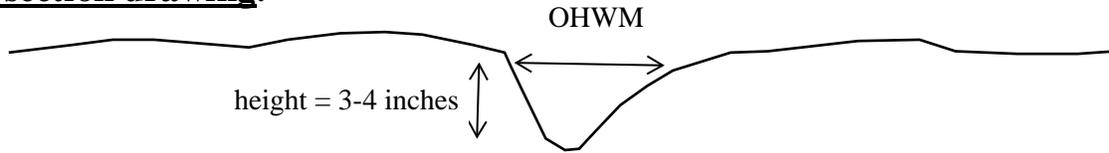
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Streambed present with intermittent scour marks. Stream bottom characterized by soil that is slightly sandier than surrounding loam soils.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand
Total veg cover: 30 % Tree: _____ % Shrub: 25 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage very narrow. Water marks present on stream bottom and presence of sandy soils.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____% Shrub: 25 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainag low-flow and active floodplain areas are essentially the same due to shallow stream conditions and extent of sandy bottom.

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

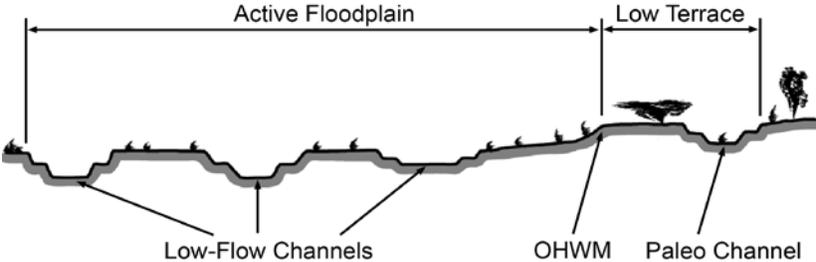
Benches

Other: _____

Comments:

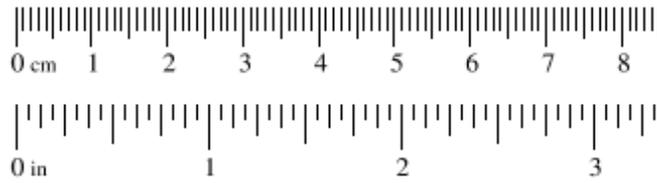
N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Apple Valley project site Project Number: 3TBP010600 Stream: Drainage 9 (per Juris Delineation Report) Investigator(s): David Hughes	Date: June 26, 2022 Town: Apple Valley Photo begin file#:	Time: State: California Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: SE of intersection of Johnson Road and Navajo Road Projection: Datum: WGS 84 Coordinates: 34.599883, -117.188205					
Potential anthropogenic influences on the channel system: Evidence of off-road vehicle activity on site. Surrounding paved roads have directed surface runoff from roads to a few locations on site and have cut-off historic flow patterns.						
Brief site description: Project site consists of undeveloped, vacant, mostly flat parcel. Vegetation consists of creosote bush scrub, typical of Mojave Desert. Victor Valley College training center located to the west of survey area.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: May, 2022 <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> 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 OHW: <ol style="list-style-type: none"> 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. <ol style="list-style-type: none"> 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 OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

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



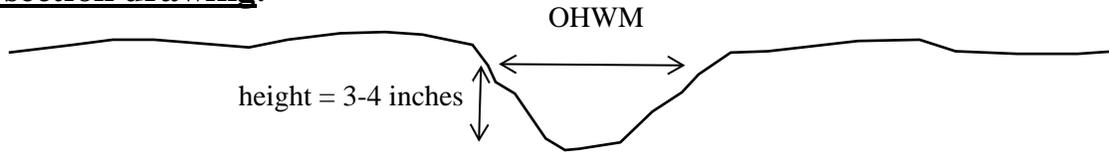
Project ID:

Cross section ID:

Date:

Time:

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Drainage is a shallow and narrow ephemeral streambed. Streambed present with intermittent scour marks. Stream bottom characterized by soil that is slightly sandier than surrounding loam soils.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 30 % Tree: % Shrub: 25 % Herb: 5 %

Community successional stage:

- | | |
|---|--|
| <input type="checkbox"/> NA | <input checked="" type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Drainage very narrow. Water marks present on stream bottom and presence of sandy soils.

Project ID:

Cross section ID:

Date:

Time:

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: sandy loam

Total veg cover: 30 % Tree: _____% Shrub: 25 % Herb: 5 %

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

Drainage low-flow and active floodplain areas are essentially the same due to shallow stream conditions and extent of sandy bottom.

Floodplain unit:

Low-Flow Channel

Active Floodplain

Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: N/A

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

Community successional stage:

NA

Mid (herbaceous, shrubs, saplings)

Early (herbaceous & seedlings)

Late (herbaceous, shrubs, mature trees)

Indicators:

Mudcracks

Soil development

Ripples

Surface relief

Drift and/or debris

Other: _____

Presence of bed and bank

Other: _____

Benches

Other: _____

Comments:

N/A. Drainage feature is a small ephemeral channel that does not have a low terrace area

ATTACHMENT C
LITERATURE REVIEW DETAILS

DESCRIPTIONS OF SOILS IN SURVEY AREA

SAN BERNARDINO COUNTY, CALIFORNIA, MOJAVE RIVER AREA

Helendale-Bryman Loamy Sands, 2 to 5 Percent Slopes

Map Unit Setting

National map unit symbol: hks6
Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Helendale and similar soils: 50 percent
Bryman and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Helendale

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: loamy sand
H2 - 6 to 30 inches: sandy loam
H3 - 30 to 66 inches: sandy loam
H4 - 66 to 99 inches: loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Description of Bryman**Setting**

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 8 inches: loamy sand
H2 - 8 to 12 inches: sandy loam
H3 - 12 to 44 inches: sandy clay loam
H4 - 44 to 60 inches: loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Minor Components**Cajon**

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

Mohave variant

Percent of map unit: 5 percent

Hydric soil rating: No

Unnamed soils

Percent of map unit: 5 percent

Hydric soil rating: No

Cajon-Arizo Complex, 2 to 15 Percent Slopes**Map Unit Setting**

National map unit symbol: hkrq

Elevation: 2,800 to 3,300 feet

Mean annual precipitation: 3 to 6 inches

Mean annual air temperature: 59 to 66 degrees F

Frost-free period: 180 to 290 days

Farmland classification: Not prime farmland

Map Unit Composition

Cajon, gravelly surface, and similar soils: 55 percent

Arizo and similar soils: 30 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon, Gravelly Surface**Setting**

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: gravelly sand

H2 - 6 to 60 inches: gravelly sand

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

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: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent

Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: R030XF028CA - COBBLY SANDY

Hydric soil rating: No

Description of Arizo

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: gravelly loamy sand

H2 - 6 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

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: More than 80 inches

Frequency of flooding: None, Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A

Ecological site: R030XF025CA - GRAVELLY COARSE LOAMY

Hydric soil rating: No

Minor Components

Helendale

Percent of map unit: 4 percent

Hydric soil rating: No

Bryman

Percent of map unit: 4 percent

Hydric soil rating: No

Joshua

Percent of map unit: 4 percent

Hydric soil rating: No

Cajon, clayey substratum

Percent of map unit: 3 percent

Rock Outcrop-Lithic Torriorthents Complex, 15 to 50 Percent Slopes

Map Unit Setting

National map unit symbol: hkt0

Elevation: 650 to 9,000 feet

Mean annual precipitation: 3 to 5 inches

Mean annual air temperature: 63 to 66 degrees F

Frost-free period: 200 to 290 days

Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 60 percent

Lithic torriorthents and similar soils: 30 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting

Landform: Mountains

Landform position (two-dimensional): Backslope, summit

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave

Across-slope shape: Concave

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Description of Lithic Torriorthents

Setting

Landform: Mountains, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank, side slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: variable

H2 - 15 to 29 inches: bedrock

Properties and qualities

Slope: 15 to 50 percent

Depth to restrictive feature: 8 to 20 inches to lithic bedrock

Drainage class: Excessively drained

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 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydric soil rating: No

Minor Components

Sparkhule

Percent of map unit: 4 percent

Hydric soil rating: No

Trigger

Percent of map unit: 3 percent

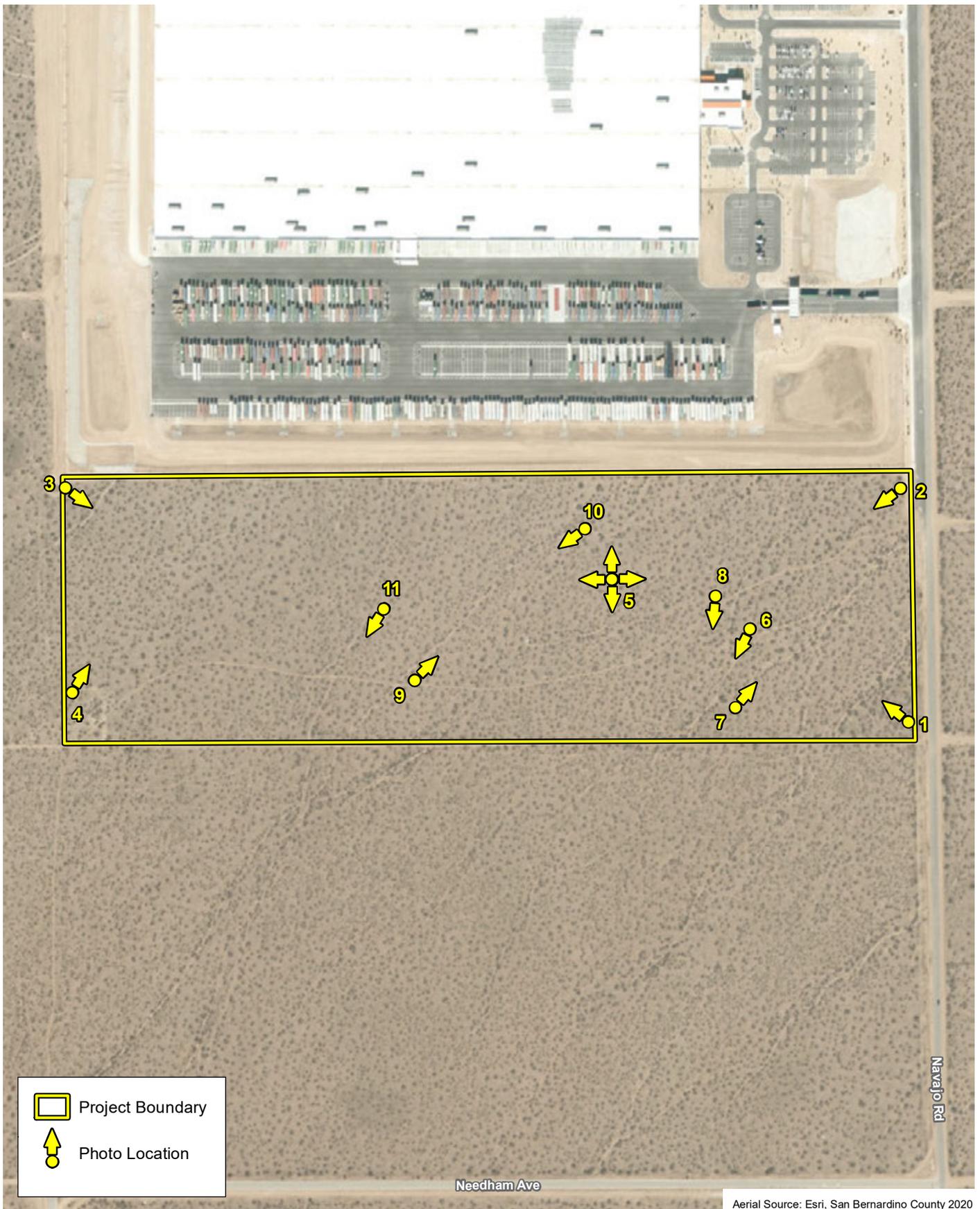
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent

Hydric soil rating: No

ATTACHMENT D
SITE PHOTOGRAPHS



 Project Boundary
 Photo Location

Needham Ave

Navajo Rd

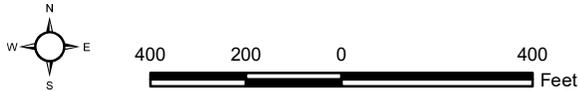
Aerial Source: Esri, San Bernardino County 2020

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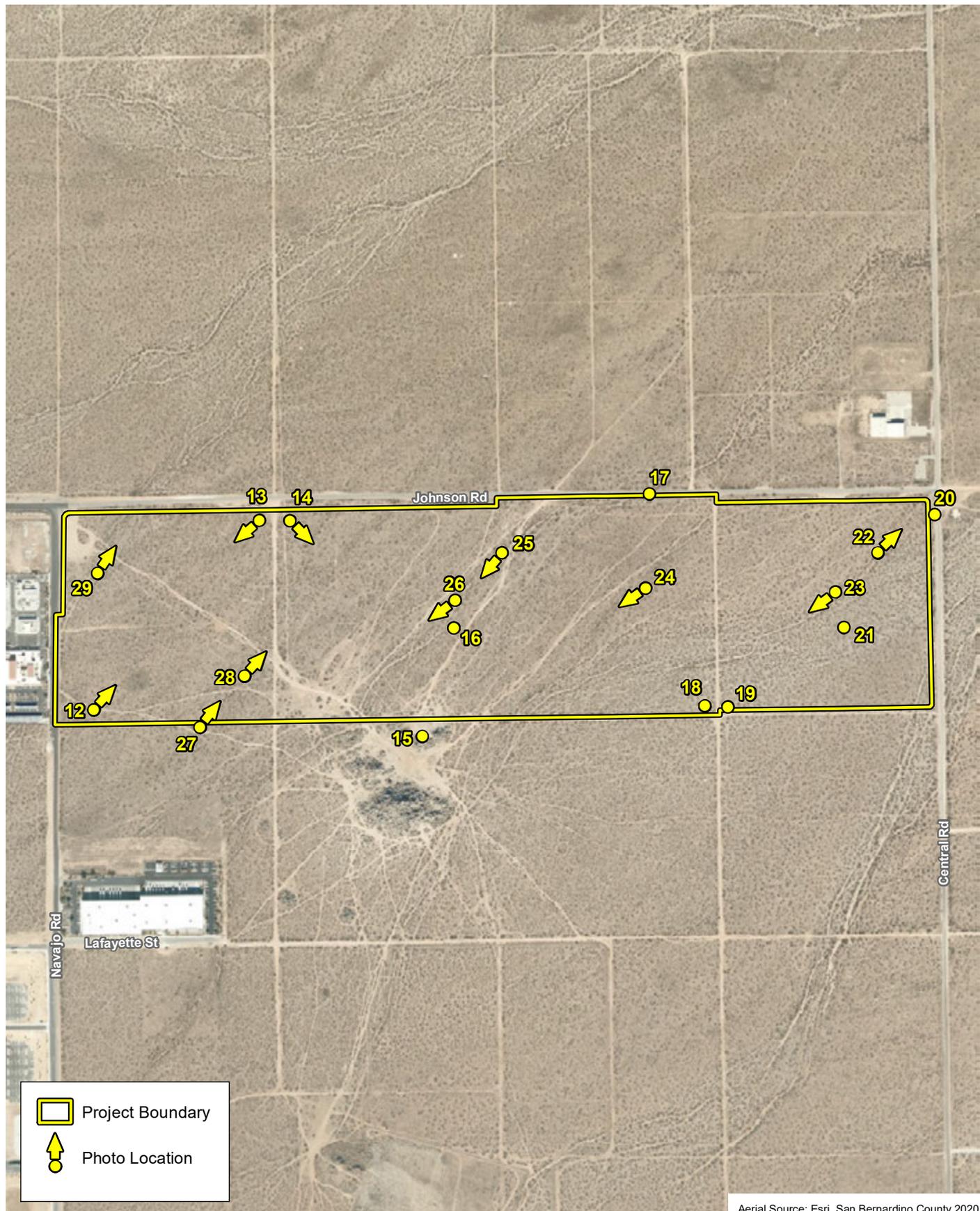
Photo Locations - Southern Parcel

Exhibit D-1

Jurisdictional Delineation Report for the Apple Valley Project Site



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Aerial Source: Esri, San Bernardino County 2020

Photo Locations - Northern Parcel

Exhibit D-2

Jurisdictional Delineation Report for the Apple Valley Project Site

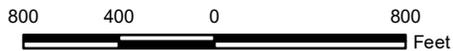




Photo Location 1, facing northwest. June 26, 2022. Overview of existing site conditions.



Photo Location 2, facing southwest. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-3





Photo Location 3, facing southeast. June 26, 2022. Overview of existing site conditions.



Photo Location 4, facing northeast. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-4





Photo Location 5, facing east. June 26, 2022. Overview of existing site conditions.



Photo Location 5, facing north. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-5





Photo Location 5, facing south. June 26, 2022. Overview of existing site conditions.



Photo Location 5, facing west. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-6





Photo Location 6, June 26, 2022. View of Drainage 1, facing downstream.



Photo Location 7, June 26, 2022. View of Drainage 1, facing upstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-7





Photo Location 8, June 26, 2022. View of Drainage 2, facing downstream



Photo Location 9, June 26, 2022. View of Drainage 3, facing upstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-8





Photo Location 10, June 26, 2022. View of Drainage 3, facing downstream.



Photo Location 11, June 26, 2022. View of Drainage 4, facing downstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-9





Photo Location 12, facing northeast. June 26, 2022. Overview of existing site conditions.



Photo Location 13, facing southwest. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-10





Photo Location 14, facing southeast. June 26, 2022. Overview of existing site conditions.



Photo Location 15, facing north. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-11





Photo Location 16, facing east. June 26, 2022. Overview of existing site conditions.



Photo Location 16, facing north. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-12





Photo Location 16, facing south. June 26, 2022. Overview of existing site conditions.



Photo Location 16, facing west. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-13





Photo Location 17, facing southwest. June 26, 2022. Overview of existing site conditions.



Photo Location 18, facing northwest. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-14





Photo Location 19, facing northeast. June 26, 2022. Overview of existing site conditions.



Photo Location 20, facing southwest. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-15





Photo Location 21, facing east. June 26, 2022. Overview of existing site conditions.



Photo Location 21, facing north. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-16





Photo Location 21, facing south. June 26, 2022. Overview of existing site conditions.



Photo Location 21, facing west. June 26, 2022. Overview of existing site conditions.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-17





Photo Location 22, June 26, 2022. View of Drainage 5, facing upstream.



Photo Location 23, June 26, 2022. View of Drainage 5, facing downstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-18





Photo Location 24, June 26, 2022. View of Drainage 6, facing downstream.



Photo Location 25, June 26, 2022. View of Drainage 7, facing downstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-19





Photo Location 26, June 26, 2022. View of Drainage 7, facing downstream.



Photo Location 27, June 26, 2022. View of Drainage 8, facing upstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-20





Photo Location 28, June 26, 2022. View of Drainage 8, facing upstream.



Photo Location 29, June 26, 2022. View of Drainage 9, facing upstream.

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Site Photos

Jurisdictional Delineation Report for the Apple Valley Project Site

Exhibit D-21



**Appendix G:
Site Photographs**

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Photograph 1: Photograph of the northern border of the West Project site, looking southwest, showing creosote bush scrub.



Photograph 2: Photograph of the East Project site, looking northwest from Lafayette Street, showing creosote bush scrub, a dirt road, and a disturbed area.



Photograph 3: Photograph of the East Project site, looking west, showing a silver cholla (*Cylindropuntia echinocarpis*) cactus in creosote bush scrub.



Photograph 4: Photograph of an ephemeral drainage along the southern border of the West Project site, looking northeast from Los Padres Road.



Photograph 5: Photograph of an ephemeral drainage along the eastern border of the East Project site, looking southwest from Central Road.



Photograph 6: Photograph of an ephemeral drainage near the center of the East Project site, looking northeast.

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**Appendix H:
Flora and Fauna Compendia**

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Common Name	Scientific Name	Status
Plants		
Family Agavaceae		
Western Joshua tree	<i>Yucca brevifolia</i>	Native, CDNPA, SC
Family Apiaceae		
Mojave desertparsley	<i>Lomatium mohavense</i>	Native
Family Asteraceae		
Annual bur-sage	<i>Ambrosia acanthicarpa</i>	Native
Axillary cottonthorn	<i>Tetradymia axillaris</i>	Native
Common burrobrush	<i>Ambrosia salsola</i>	Native
Common goldfields	<i>Lasthenia gracilis</i>	Native
Cooper's dogweed	<i>Adenophyllum cooperi</i>	Native
Cooper's rabbitbrush	<i>Ericameria cooperi</i>	Native
Desert dandelion	<i>Malacothrix glabrata</i>	Native
Desert marigold	<i>Baileya multiradiata</i>	Native
Narrow-scaled cottonthorn	<i>Tetradymia stenolepis</i>	Native
Rubber rabbitbrush	<i>Ericameria nauseosa</i>	Native
White bur-sage	<i>Ambrosia dumosa</i>	Native
Family Boraginaceae		
Lacy phacelia	<i>Phacelia tanacetifolia</i>	Native
Tessellated fiddleneck	<i>Amsinckia tessellata</i>	Native
Family Brassicaceae		
California mustard	<i>Caulanthus lasiophyllus</i>	Native
Eastern rocket	<i>Sisymbrium orientale</i>	Nonnative
Grayish shortpod mustard	<i>Hirschfeldia incana</i>	Nonnative
Tumble mustard	<i>Sisymbrium altissimum</i>	Nonnative
Wise tansy mustard	<i>Descurainia spohia</i>	Nonnative
Family Cactaceae		
Beavertail cactus	<i>Opuntia basilaris</i> var. <i>basilaris</i>	Native, CDNPA
Pencil cholla	<i>Cylindropuntia ramosissima</i>	Native, CDNPA
Silver cholla	<i>Cylindropuntia echinocarpa</i>	Native, CDNPA

Common Name	Scientific Name	Status
Family Ephedraceae		
Nevada ephedra	<i>Ephedra nevadensis</i>	Native
Family Euphorbiaceae		
Rattlesnake sandmat	<i>Euphorbia albomarginata</i>	Native
Family Fabaceae		
Bajada lupine	<i>Lupinus concinnus</i>	Native
Mojave locoweed	<i>Astragalus mohavensis</i>	Native
Mojave lupine	<i>Lupinus ordatus</i>	Native
Family Geraniaceae		
Redstem stork's bill	<i>Erodium cicutarium</i>	Nonnative
Redstem filaree	<i>Erodium cicutarium</i>	Nonnative
Family Lamiaceae		
Redstem stork's bill	<i>Erodium cicutarium</i>	Nonnative
Chia sage	<i>Salvia columbariae</i>	Native
Mexican bladdersage	<i>Scutellaria mexicana</i>	Native
Family Liliaceae		
Redstem stork's bill	<i>Erodium cicutarium</i>	Nonnative
Blue dicks	<i>Dipterostemon capitatus</i>	Native
Family Loasaceae		
Whitestem blazingstar	<i>Mentzelia albicaulis</i>	Native
Family Malvaceae		
Apricot mallow	<i>Sphaeralcea ambigua</i>	Native
Family Onagraceae		
Alfalfa	<i>Medicago sativa</i>	Nonnative
Booth's sun cup	<i>Eremothera boothii</i>	Native
Family Poaceae		
Bread wheat	<i>Triticum aestivum</i>	Nonnative
Cheat grass	<i>Bromus tectorum</i>	Nonnative
Common Mediterranean grass	<i>Schismus barbatus</i>	Nonnative
Desert needle grass	<i>Stipa speciosa</i>	Native

Common Name	Scientific Name	Status
Red brome	<i>Bromus rubens</i>	Nonnative
Squirrel tail grass	<i>Elymus elymoides</i>	Nonnative
Family Polygonaceae		
California buckwheat	<i>Eriogonum fasciculatum</i>	Native
Family Rutaceae		
Turpentine broom	<i>Thamnosma montana</i>	Native
Family Solanaceae		
Anderson's box thorn	<i>Lycium andersonii</i>	Native
Cooper's box thorn	<i>Lycium cooperi</i>	Native
Family Zygophyllaceae		
Creosote bush	<i>Larrea tridentata</i>	Native
Reptiles		
Family Crotaphytidae		
Long-nosed leopard lizard	<i>Gambelia wislizenii</i>	—
Family Phrynosomatidae		
Desert horned lizard	<i>Phrynosoma platyrhinos</i>	—
Side-blotched lizard	<i>Uta stansburiana</i>	—
Birds		
Family Corvidae		
Common raven	<i>Corvus corax</i>	MBTA, CFGC
Family Fringillidae		
House finch	<i>Haemorhous mexicanus</i>	MBTA, CFGC
Family Passerellidae		
Black-throated sparrow	<i>Amphispiza bilineata</i>	MBTA, CFGC
Family Picidae		
Northern flicker	<i>Colaptes auratus</i>	MBTA, CFGC
Family Remizidae		
Verdin	<i>Auriparus flaviceps</i>	MBTA, CFGC
Family Strigidae		
Burrowing owl	<i>Athene cunicularia</i>	SSSC, MBTA, CFGC

Common Name	Scientific Name	Status
Family Tyrannidae		
Western kingbird	<i>Tyrannus verticalis</i>	MBTA, CFGC
Mammals		
Family Canidae		
Desert kit fox	<i>Vulpes macrotis</i>	CFGC ¹
Family Leporidae		
Desert cottontail	<i>Sylvilagus audubonii</i>	—
Family Sciuridae		
White-tailed antelope squirrel	<i>Ammospermophilus leucurus</i>	—
Notes: CDNPA = Protected under California Desert Native Plants Act CFGC = Protected under CFGC §§ 3503 and 3513 CFGC ¹ = Protected under CFGC §§ 460 MBTA = Protected under the MBTA (16 USC § 703 et seq.) SC = State Candidate for Listing SSSC = State Species of Special Concern (CFGC § 2050 et sec.).		

**Appendix I:
Special-status Species Tables**

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Table 1: Special-status Plant Species Evaluated

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
Plants						
<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	FE	—	1B.1	This species is found in Pinyon and juniper woodland (carbonate, talus). Elevation: 1219-2377m Blooming Period: May-October	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, it is located in the mountains. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Androsace elongata</i> ssp. <i>acuta</i> California androsace	—	—	4.2	This species is found in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Elevation: 150-1305m Bloom period: March-June	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, it is located in the mountains. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Boechnera dispar</i> Pinyon rockcress	—	—	2B.3	This species is found in Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland in granitic and gravelly soil. Elevation: 1200-2540m Bloom period: March-June	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, it is located in the mountains. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Canbya candida</i> White pygmy-poppy	—	—	4.2	This species is found in Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland in granitic and gravelly soil. Elevation: 600-1460m Bloom period: March-June	None: Does not occur. No suitable habitat on the Project sites for this species. There are two historical records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. One is at the foothills of the mountains to the south and the other in the Mohave River. In	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
					addition, this species was not observed during focused plant surveys conducted for the project.	
<i>Castilleja plagiotoma</i> Mojave paintbrush	—	—	4.3	This species is found in great basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland. Elevation: 300-2500m Bloom period: April-June	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence was from 1937. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Chorizanthe spinosa</i> Mojave spineflower	—	—	4.2	This species is found in Chenopod scrub, Joshua tree woodland Mojavean desert scrub, and playas. Elevation: 6-1300m Bloom period: March-July	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, it is located in the foothills of the mountains to the south. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Cryptantha clokeyi</i> Clokey's cryptantha	—	—	1B.2	This species is found in Mojavean desert scrub. Elevation: 725-1365m Bloom period: April	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However it is located in the mountains to the south. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Cymopterus deserticola</i> Desert cymopterus	—	—	1B.2	This species is found in Joshua tree woodland and Mojavean desert scrub. Elevation: 630-1500m Bloom period: March-May	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence was from 1988. In addition, this species was not observed during	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
					focused plant surveys conducted for the project.	
<i>Cymopterus multinervatus</i> Purple-nerve cymopterus	—	—	2B.2	Sandy or gravelly soils in Mojavean desert scrub and pinyon and juniper woodland. Elevation: 790-1800m Bloom period: March-April	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site which is located in Lucerne Valley over the eastern mountains. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Diplacus johnstonii</i> Johnston's monkeyflower	—	—	4.3	This species is found in lower montane coniferous forest (scree, disturbed areas, rocky or gravelly soil, roadsides) Elevation: 975-2920m Bloom period: May-August	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, it is located in the mountains to the south. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Diplacus mohavensis</i> Mojave monkeyflower	—	—	1B.2	Sandy or gravelly, often in washes. Joshua tree woodland, Mojavean desert scrub. Elevation: 600-1200m Bloom period: April-June	None: Does not occur. No suitable habitat on the Project sites for this species. There is 24 historical records, all older than 20 years, in the CNDDDB. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Dudleya abramsii</i> ssp. <i>affinis</i> San Bernardino Mountains dudleya	—	—	1B.2	Granitic, quartzite, or carbonate soils in pebble (pavement) plain, Pinyon and juniper woodland, and upper montane coniferous forest. Elevation: 1250-2600m Bloom period: April-July	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, it is located in the mountains to the south. In addition, this species was not observed during	No
<i>Eremothera boothii</i> ssp. <i>boothii</i>	—	—	2B.3	Joshua tree woodland and pinyon and juniper woodland.	None: Does not occur. No suitable habitat on the Project sites for this species. There are	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
Booth's evening-primrose				Elevation: 815-2400m Bloom period: April-September	three historical records and one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the recent was located in the Mojave River. In addition, this species was not observed during focused plant surveys conducted for the project.	
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	—	—	1B.2	Chenopod scrub, Mojavean desert scrub, and playas. Elevation: 500-960m Bloom period: March-May	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence was from 1914. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Johnstonella costata</i> Ribbed cryptantha	—	—	4.3	Desert dunes, Mojavean desert scrub, Sonoran desert scrub. Elevation: 60-500m Bloom period: February-May	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence is located at the foothills of the mountains to the south. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> Sagebrush loeflingia	—	—	2B.2	Sandy soils in desert dunes, Great Basin scrub, and Sonoran desert scrub. Elevation: 700-1615m Blooming period: April-May	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence an undated occurrence located in Baldy Mesa. Typical location of this species is in Antelope Valley. In addition, this species was not observed during focused plant surveys conducted for the project.	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
<i>Lycium torreyi</i> Torrey's box-thorn	—	—	4.2	Sandy, rocky, washes, streambanks, desert valleys. Mojavean desert scrub and Sonoran desert scrub. Elevation: 50-1220m Bloom period: (January-February)March-June(September-November)	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence was from 1955. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Mentzelia eremophila</i> Solitary blazing star	—	—	4.2	Mojavean desert scrub. Elevation: 700-1220m Bloom period: March-May	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence is located in the mountains in the northwest. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Monardella exilis</i> Mojave monardella	—	—	4.2	Chenopod scrub, Desert dunes, Great Basin scrub, Joshua tree woodland Lower montane coniferous forest, Mojavean desert scrub, Pinyon and juniper woodland. Elevation: 600-2050m Bloom period: April-September	None: Does not occur. No suitable habitat on the Project sites for this species. There are four historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the most recent occurrence is 1969. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Muilla coronata</i> Crowned muilla	—	—	4.2	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland. Elevation: 670-1960m Bloom period: March-April (May)	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the occurrence is located near the Mojave River. In addition, this species was not observed during focused plant surveys conducted for the project.	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
<i>Opuntia basilaris</i> var. <i>brachyclada</i> Short-joint beavertail	—	—	1B.2	Chaparral, Joshua tree woodland Mojavean desert scrub, Pinyon and juniper woodland. Elevation: 425-1800m Bloom period: April-June (August)	Present: Species was observed during surveys conducted for the Project.	Yes
<i>Pediomelum castoreum</i> Beaver Dam breadroot	—	—	1B.2	Sandy soils in washes and roadcuts, in Joshua tree woodland and Mojavean desert scrub. Elevation: 610-1525m Bloom period: April-May	None: Does not occur. No suitable habitat on the Project sites for this species. There three historical records and one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the recent occurrence is located in the Mojave River. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Penstemon clelandii</i> var. <i>mohavensis</i> Mojave beardtongue	—	—	1B.2	Granitic and rocky soils in Mojavean desert scrub, Pinyon and juniper woodland. Elevation: 925-1620m Bloom period: March-May	None: Does not occur. No suitable habitat on the Project sites for this species. There are four historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the most recent occurrence is 1998 and located in the mountains to the east. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Pentachaeta aurea</i> ssp. <i>aurea</i> Golden-rayed pentachaeta	—	—	4.2	Cismontane woodland, coastal sage scrub, lower montane coniferous forest, valley and foothill grassland. Elevation: 80-1850m Bloom period: March-July	None: Does not occur. No suitable habitat on the Project sites for this species. There are two historical records and two recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, all records are located in the mountains to the south. In addition, this species was not observed during focused plant surveys conducted for the project.	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	—	—	1B.2	Rocky or sandy, often granitic soils (sometimes washes) in chaparral, Mojavean desert scrub, and Pinyon and juniper woodland. Elevation: 400-1900m Bloom period: March-June	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is from 1996 and is located in the mountains to the south. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Sclerocactus polyancistrus</i> Mojave fish-hook cactus	—	—	4.2	Usually carbonate soils. Great basin scrub, Joshua tree woodland, Mojavean desert scrub. Elevation: 640-2320m Bloom period: April-July	None: Does not occur. No suitable habitat on the Project sites for this species. There are 9 historical records and two recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the recent records are located along the national trails highway near Oro Grande. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Scutellaria bolanderi</i> ssp. <i>Austromontana</i> Southern mountains skullcap	—	—	1B.2	Mesic soils in chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 425-2000m Bloom period: June-August	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is from 1915 and is located in the Mojave River. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Selaginella asprella</i> Bluish spike-moss	—	—	4.3	Granitic and rocky soils in cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest. Elevation: 1600-2700m Bloom period: July	None: Does not occur. No suitable habitat on the Project sites for this species. There are two historical records and three recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, all records are located in the mountains to the south. In addition, this species was not	No

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
					observed during focused plant surveys conducted for the project.	
<i>Symphytotrichum defoliatum</i> San Bernardino aster	—	—	1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). Elevation: 2-2040m Bloom period: July-November	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is from 1991 and is located along the Mojave River. In addition, this species was not observed during focused plant surveys conducted for the project.	No
<i>Yucca brevifolia</i> Western Western Joshua tree	—	SC; WJTCA	None	Chaparral, Joshua tree woodland, Mojavean desert scrub, Pinon and juniper woodlands, Sonoran desert scrub Elevation: 400-1800m Bloom period: March-June	Present. Species was observed during surveys conducted for the Project.	Yes
Code Designations						
¹ Federal Status: 2024 USFWS Listing			² State Status: 2024 CDFW Listing		³ CNPS: 2024 CNPS Listing	
FE = Listed as endangered under the Endangered Species Act. FT = Listed as threatened under the Endangered Species Act. FC = Candidate for listing (threatened or endangered) under the Endangered Species Act. FD = Delisted in accordance with the Endangered Species Act. FPD = Federally Proposed to be Delisted. — = Not federally listed			SE = Listed as endangered under the California Endangered Species Act (CESA). ST = Listed as threatened under the CESA. SC = Listed as Candidate under the CESA. CR = Rare in California. — = Not State listed		Rank 1A = Plants presumed extirpated in California and either rare or extinct elsewhere Rank 1B = Plants rare, threatened, or endangered in California and elsewhere Rank 2A: Plants presumed extirpated in California but common elsewhere Rank 2B: Plants rare, threatened, or endangered in California but more common elsewhere Rank 3: Plants about which more information is needed Rank 4: Watch List: Plants of limited distribution Blooming period: Months in parentheses are uncommon.	

Scientific Name Common Name	Status			Habitat Description ⁴	Potential to Occur and Rationale ⁵	Included in Impact Analysis
	USFWS ¹	CDFW ²	CNPS ³			
Notes: ⁴ Habitat Description: Habitat description adapted from CNDDDB and CNPS online inventory or other specified source. ⁵ Potential to Occur and Rationale: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source. Sources: California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx . Accessed August 5, 2024. California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/ . Accessed August 5, 2024. California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/ . Accessed August 5, 2024.						

Table 2: Special-status Wildlife Species Evaluated

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴	Included in Impact Analysis
	USFWS ¹	CDFW ²			
Invertebrates					
<i>Bombus crotchii</i> Crotch's bumble bee	—	SC	This species occurs primarily in California, including coastal habitats, western Mojave Desert, San Joaquin Valley, and adjacent foothills through most of southwestern California. It inhabits arid grasslands and shrublands, and its food sources including milkweeds, pincushions, lupines, clovers, phacelias, sages, clarkias, poppies, and buckwheats.	Moderate. The Project sites contains suitable habitat for this species to forage and nest in. There is one historical record and one recent in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the recent record is located in the Sidewinder Mountains to the east.	Yes
Amphibians					
<i>Anaxyrus californicus</i> arroyo toad	FE	SSC	Breed, forage, and/or aestivate in aquatic habitats, riparian, coastal sage scrub, oak, and chaparral habitats. Breeding pools must be open and shallow with minimal current, and with a sand or pea gravel substrate overlain with sand or flocculent silt. Adjacent banks with sandy or gravelly terraces and very little herbaceous cover for adult and juvenile foraging areas, within a moderate riparian canopy of cottonwood, willow, or oak.	None: Does not occur. No suitable habitat on the Project sites for this species. There is two historical records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the records are located in the Mojave River.	No
<i>Rana draytonii</i> California red-legged frog	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is undated and is located in the Mojave River.	No
Reptiles					
<i>Actinemys pallida</i> southwestern pond turtle	FC	SSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historical record and one recent in the CNDDDB	No

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴	Included in Impact Analysis
	USFWS ¹	CDFW ²			
			woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	and/or CNPS between 5 and 10 miles from the project site. However, the records are located in the Mojave River.	
<i>Gopherus agassizii</i> Mojave Desert tortoise	FT	SE	Requires firm ground to dig burrows, or rocks to shelter among. Found in arid sandy or gravelly locations along riverbanks, washes, sandy dunes, alluvial fans, canyon bottoms, desert oases, rocky hillsides, creosote flats and hillsides.	Moderate: Not observed during focused surveys conducted for this species for the Project.	Yes
<i>Phrynosoma blainvillii</i> coast horned lizard	None	SSC	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	None: Does not occur. No suitable habitat on the Project sites for this species. There is two historical records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the records are located near the Mojave River.	No
Birds					
<i>Agelaius tricolor</i> tricolored blackbird	BCC; MBTA	ST; SSC; FGC	Nests in wetlands with cattails, bulrushes, and willows, also in agricultural fields, especially triticale fields. Foraging habitats include cultivated fields, feedlots associated with dairy farms, and wetlands.	None: Does not occur. No suitable habitat on the Project sites for this species. There is one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the records are located near the Mojave River.	No
<i>Aquila chrysaetos</i> golden eagle	BCC; MBTA	FP; FGC	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock cliffs and ledges.	None: Does not occur. No suitable habitat on the Project sites for this species since the sites include open expanses with short vegetation. Project sites do not contain hilly topography used by the species for wintering, and lacks suitable large trees and cliffs required for nesting. There are 3 historic records and 18 recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴	Included in Impact Analysis
	USFWS ¹	CDFW ²			
				However, the records are located in the mountain ranges to the east and west.	
<i>Athene cunicularia</i> burrowing owl	BCC; MBTA	SSC; FGC	Found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel (<i>Otospermophilus beecheyi</i>).	Present. Species was observed during surveys conducted for the Project. There are 47 CNDDDB records for this species in the 9-quad search area encompassing the project site.	Yes
<i>Buteo swainsoni</i> Swainson's hawk	BCC; MBTA	ST; FGC	Antelope Valley Swainson's hawks are known to have historically nested in Joshua tree woodlands and foraged in grasslands and native desert scrub communities. Currently, they nest in Joshua tree woodlands, ornamental roadside trees, and windrow or perimeter trees in active and historical agricultural areas. Foraging habitat includes dry land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, new orchards, and cereal grain crops. Swainson's hawks may also forage in grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base. Gophers dominate the prey base of agriculturally based pairs while Swainson's hawks nesting in natural desert habitats consume a wider variety of prey species.	None: Does not occur. The Project sites do not contain suitable habitat for nesting for this species as this species is a wintering migrant in the area. There are 2 historic records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the most recent record is from 1932.	No
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	FT MBTA	SE; FGC	Nests in riparian forest along the broad lower flood-bottoms of larger river systems. Found in riparian jungles of willow, often mixed with cottonwoods; understory consists of blackberry, nettles, and wild grape.	None: Does not occur. No suitable habitat on the Project sites for this species. There one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is located in the Mojave River.	No
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE	SE; FGC	Riparian woodlands in Southern California. Breeds in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands including lakes and reservoirs.	None: Does not occur. No suitable habitat on the Project sites for this species. There one historic record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No

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	USFWS ¹	CDFW ²			
			Habitat patches must be at least 0.25 ac in size and at least 30 feet wide. Nests in native vegetation including willows, seepwillow, boxelder, buttonbush, and cottonwood but also uses thickets dominated by non-native tamarisk and Russian olive, or in mixed native non-native stands.	However, the most recent record is from 1990 and located in the Mojave River.	
<i>Falco mexicanus</i> Prairie falcon	BCC; MBTA	WL; FGC	Uncommon permanent resident associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrublands. Typically nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area. Sometimes nests on old raven or eagle stick nest on cliff, bluff, or rock outcrop.	None: Does not occur. No suitable habitat on the Project sites for this species. There three historic records and three recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the most recent record is located in the mountains to the east or near the Mojave River.	No
<i>Icteria virens</i> yellow-breasted chat	—	SSC; FGC	Occurs and nests in riparian thickets of willow and other bushy tangles near watercourses. Long-distance migrant.	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historic record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is from 1990 and located in the Mojave River.	No
<i>Lanius ludovicianus</i> loggerhead shrike	BCC; MBTA	SSC; FGC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Moderate. The Project sites contains suitable nesting and foraging habitat for this species. There are four recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	Yes
<i>Piranga rubra</i> summer tanager	MTBA	SSC; FGC	Low-elevation willow and cottonwood woodlands, and in higher-elevation mesquite and saltcedar stands.	None: Does not occur. No suitable habitat on the Project sites for this species. There are two historic records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is from 1990 and located in the Mojave River.	No
<i>Setophaga petechia</i> yellow warbler	BCC; MBTA	SSC; FGC	Breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and	None: Does not occur. No suitable habitat on the Project sites for this species. There is one	No

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			other small trees and shrubs typical of low, open-canopy riparian woodland. During migration, forages in woodland, forest, and shrub habitats.	recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is located in the Mojave River.	
<i>Toxostoma bendirei</i> Bendire's thrasher	BCC; MBTA	SSC; FGC	Desert, especially areas of tall vegetation, cholla cactus, creosote bush and yucca, and in juniper woodland.	Moderate. The Project sites contains suitable nesting and foraging habitat for this species. There are three historic records and one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site. However, the record is located in the Mojave River.	Yes
<i>Toxostoma lecontei</i> Le Conte's thrasher	BCC; MBTA	SSC; FGC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	Moderate. The Project sites contains suitable nesting and foraging habitat for this species. There are 20 historic records and one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	Yes
<i>Vireo bellii pusillus</i> Least Bell's vireo	FE; MTBA	SE; FGC	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	None: Does not occur. No suitable habitat on the Project sites for this species. There are 2 historic records and seven recent records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No
Fish					
<i>Siphateles bicolor mohavensis</i> Mohave tui chub	FE	SE, FP	Associated with deep pools and slough-like areas of the Mojave River, in areas with aquatic ditchgrass (<i>Riparia maritima</i>).	None: Does not occur. No suitable habitat on the Project sites for this species. There are four historic records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No
Mammals					
<i>Antrozous pallidus</i> Pallid bat	—	SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historic record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No

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<i>Chaetodipus fallax pallidus</i> Pallid San Diego pocket mouse	—	SSC	In desert wash, desert scrub, desert succulent scrub, pinyon-juniper woodland. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	None: There are no CNDDDB occurrences for this species in the region. There is six historic records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	—	SSC	Coniferous forests and woodlands, deciduous riparian woodland, semi-desert and montane shrublands.	None: Does not occur. No suitable habitat on the Project sites for this species. There are two historic records in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No
<i>Eumops perotis californicus</i> Western mastiff bat	—	SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historic record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No
<i>Lasiorycteris noctivagans</i> Silver-haired bat	—	—	Occurs in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark.	None: Does not occur. No suitable habitat on the Project sites for this species. There is one historic record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	No
<i>Vulpes macrotis</i> Desert kit fox	—	—	Broadly distributed across the California desert and located in sparsely vegetated scrub habitats such as creosote scrub communities with abundant rodent populations.	Present. Species was observed during surveys conducted for the Project.	
<i>Xerospermophilus mohavensis</i> Mohave ground squirrel	None	ST	Mojave creosote scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland.	Moderate. The Project sites contains suitable habitat for this species. There is eight historic records and one recent record in the CNDDDB and/or CNPS between 5 and 10 miles from the project site.	Yes

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	USFWS ¹	CDFW ²			
Code Designations					
¹ Federal Status: 2024 USFWS Listing			² State Status: 2024 CDFW Listing		
ESU = Evolutionary Significant Unit is a distinctive population. FE = Listed as endangered under the Endangered Species Act. FT = Listed as threatened under the Endangered Species Act. FC = Candidate for listing (threatened or endangered) under the Endangered Species Act. FD = Delisted in accordance with the Endangered Species Act. FPD = Federally Proposed to be Delisted. MBTA = protected by the Migratory Bird Treaty Act — = Not federally listed			SE = Listed as endangered under the California Endangered Species Act (CESA). ST = Listed as threatened under the CESA. SSC = Species of Special Concern as identified by the CDFW. FP = Listed as fully protected under the Fish and Game Code. FGC = protected by Fish and Game Code 3503-3513 SC = Candidate for listing under CESA. WL = CDFW Watch List — = Not State listed		
Notes: ³ Habitat Description: Habitat description adapted from CNDDDB or other specified source. ⁴ Potential to Occur and Rationale: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source. Sources: California Department of Fish and Wildlife (CDFW). 2024. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx . Accessed January 9, 2024. California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/ . Accessed January 9, 2024					