Appendix C1

Biological Existing Conditions Report

Existing Conditions Report

Inland Empire North Logistics Center Apple Valley

JANUARY 2024

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Acronyms and Abbreviations

Acronym	Definition
amsl	above mean sea level
BSA	biological survey area
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
CEQA Guidelines	State of California CEQA Guidelines
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DOD	Department of Defense
FESA	Federal Endangered Species Act
GIS	geographic information system
GLA	Glenn Lukos Associates
HU	Hydrologic Unit
HUC	Hydrologic Unit Code
ISA	International Society of Arboriculture
MBTA	Migratory Bird Treaty Act
NABA	North American Butterfly Association
OHWM	ordinary high water mark
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1 Introduction

This report documents the results of surveys conducted to identify potential special-status biological resources within the Inland Empire North Logistics Center Apple Valley Project (Project) located in the town of Apple Valley (Town), San Bernardino County, California. Figure 1, Project Location, shows the regional location of the Project and Figure 2, Project Site, shows the site vicinity.

The purpose of this report is to describe the existing condition of biological resources within the Project in terms of vegetation communities, plants, wildlife, wildlife habitats, and aquatic resources.

1.1 Project Description

1.1.1 Project Location

The approximately 201.1-acre Project, including the 178.7-acre Project boundary and 22.4 acres of off-site improvements extending beyond the Project boundary (hereafter referred to as the off-site improvement areas) is located in the northwestern part of the Town, which is within the Victor Valley/High Desert region of San Bernardino County. The Project boundary is located directly east of Interstate (I) 15, north of Falchion Road and south of Norco Street. Off-site improvements to roadways immediately adjacent to the Project boundary and would occur at Falchion Road between Outer Highway 15 and Apple Valley Road, Norco Street between Outer Highway 15 and Apple Valley Road, Outer Highway 15 between Falchion Road and Norco Street, and Apple Valley Road between Falchion Road and Norco Street with proposed off-site improvements located along the Outer Highway 15 (see Figures 1 and 2).

The Project consists of eight Assessor's Parcel Numbers 047-203-103, 047-203-108, 047-203-110, 047-205-105, 047-205-129, 047-205-130, 047-206-133, and 047-206-134. Specifically, the Project is located in Sections 26, 34, and 35 of Township 6N, Range 4W, as depicted on the U.S. Geological Survey Victorville, California 7.5-minute topographic quadrangle map. Regional access to the Project is provided via I-15, which is located adjacent to the Project's western boundary.

1.1.2 Project Characteristics

1.1.2.1 Project Components

The Project would include construction of two industrial/warehouse buildings and associated improvements totaling approximately 2,604,446 square feet within the 177.74-acre parcel. The Project's associated improvements would include loading docks, truck and vehicle parking, and landscaped areas.

Off-Site Improvements

Off-site improvements to roadways are located within the 22.4-acre off-site improvement areas and would occur at Falchion Road between Outer Highway 15 and Apple Valley Road, Norco Street between Outer Highway 15 and Apple Valley Road, Outer Highway 15 between Falchion Road and Norco Street, and Apple Valley Road between Falchion Road and Norco Street.

Site Access and Circulation

Access to the Project would be provided via driveways off Outer Highway 15 to Falchion Road and Norco Street along the eastern boundary of the Project boundary. Paved passenger vehicle parking areas would be provided within areas east and west of Buildings 1 and 2, while tractor-trailer stalls and loading docks would be surrounding Buildings 1 and 2 to the north and south, and east.

The Project would include several improvements to the local circulation system, including improvements to Falchion Road and Outer Highway 15 and the construction of Norco Road and Apple Valley Road. These improvements would occur along the immediate frontage of the Project. The ultimate design of these roadway improvements is not yet available and would be determined by the Town's Engineering Department. To account for all possible development scenarios that may occur, the proposed roadway improvements are assumed to occur within the entirety of the 22.4-acre off-site improvement areas.

In addition, the Project would involve a General Plan Amendment to modify the Town's Circulation Element to realign Apple Valley Road. Apple Valley Road is Major Divided Arterial roadway with a 128-foot right-of-way. From the Project site's southern boundary at Falchion Road, Apple Valley Road has not yet been constructed but is planned to traverse north through the Project site to Stoddard Wells Road. The proposed General Plan Amendment would shift the proposed alignment slightly to the east. The Project would involve the construction of this roadway along the Project's frontage between Falchion Road and Norco Street. The ultimate construction of Apple Valley Road north of the Project site between Norco Street and Stoddard Wells Road would be constructed at a future time by the Town or future developers and subject to additional environmental review pursuant to CEQA. It is not necessary for Project implementation and is unrelated to the Project.

Utility Improvements

Given the vacant, undeveloped nature of the Project site, both wet and dry utilities, including domestic water, sanitary sewer, storm drainage, and electricity, would need to be extended onto the Project site.

Lateral utility connections proposed within the existing Apple Valley Road south of the Project were previously analyzed during environmental review pursuant to CEQA for the Apple Valley 143 project (Town of Apple Valley 2023). It is assumed that the Project will tie into the proposed water line at Falchion Road, and any street and utility improvements along the existing Apple Valley Road previously analyzed for the Apple Valley 143 Project were not analyzed as part of the Project.

Operations

A tenant for the proposed industrial warehouse building has not yet been identified; however, the Project would operate as a warehouse and/or distribution facility with two industrial/warehouse buildings. Business operations would be expected to be conducted within the enclosed buildings, with the exception of the entrance and exit of trucks and passenger vehicles accessing the site, passenger and truck parking, the loading and unloading of trailers within designated truck courts/loading area, and the internal and external movement of materials around the Project site via forklifts, pallet jacks, yard hostlers, and similar equipment. It is anticipated that the facilities would be operated 24 hours a day, 7 days a week.

1.1.2.2 Project Construction

Construction of the Project is anticipated to last approximately 22 months.

Construction activities would include site preparation (e.g., vegetation clearing, grubbing, tree removal, discing), grading, building construction, paving, and architectural coating.

Construction activities would generally occur across six phases: site preparation (e.g., vegetation clearing, grubbing, tree removal, discing), grading, building construction/utility installation, paving, and architectural coating. With the exception of architectural coating (which would only occur on the Project site), all phases would occur both on the Project site and within the Off-Site Street and Utility Improvements.

For on-site and off-site development, the Project was assumed to have a balanced cut and fill. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site 5 days per week.

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2 Regulatory Setting

2.1 Federal

2.1.1 Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (16 USC 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS) for most plant and animal species, and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service for certain marine species. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing the extinction of plants and wildlife. The FESA defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under FESA, it is unlawful to "take" any listed species; "take" is defined as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

FESA allows for the issuance of incidental take permits for listed species under Section 7, which is generally available for projects that also require other federal agency permits or other approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the intentional and unintentional take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). Currently, the Migratory Birds office considers nests that support eggs, nestlings, or juveniles to be active. Additionally, Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The Executive Order requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species.

2.1.3 Clean Water Act

The Clean Water Act (CWA) is the major federal legislation governing water quality, providing guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 of the CWA requires an applicant for a federal license or permit that may result in a discharge of pollutants into waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The State Water Resources Control Board and Regional Water Quality Control Boards (RWQCBs) administer the 401 certification program in California. Section 402 of the CWA establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. USACE implementing regulations are found in 33 Code of Federal Regulations (CFR) Parts 320 to 332. Guidelines for implementation are

referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic ecosystem only if there is no practicable alternative that would have less adverse impacts.

Wetlands and Other Waters of the United States

The definition of waters of the United States establishes the geographic scope for authority under Section 404 of the CWA; however, the CWA does not specifically define waters of the United States, leaving the definition open to statutory interpretation and agency rulemaking. The definition of what constitutes "waters of the United States" (provided in 33 CFR Section 328.3[a]) has changed multiple times over the past few decades, starting with the United States v. Riverside Bayview Homes Inc. court ruling in 1985. Subsequent court proceedings, rule makings, and congressional acts in 2001 (Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers), 2006 (Rapanos v. United States), 2015 (Clean Water Rule), 2018 (suspension of the Clean Water Rule), 2019 (formal repeal of the Clean Water Rule), 2020 (Navigable Waters Protection Rule), and 2021 (Pasqua Tribe et al v. United States Environmental Protection Agency resulting in remand and vacatur of the Navigable Waters Protection Rule and a return to "the pre-2015 regulatory regime") have attempted to provide greater clarity to the term and its regulatory implementation. On December 30, 2022, the agencies announced the final Revised Definition of "Waters of the United States" rule (Rule) (88 CFR 3004–3144). The Rule was published in the Federal Register on January 18, 2023, and became effective on March 20, 2023, restoring federal jurisdiction over waters that were protected prior to 2015 under the Clean Water Act for traditional navigable waters, the territorial seas, interstate waters, and upstream water resources that significantly affect those waters. The Rule represents a re-expansion of federal jurisdiction over certain water bodies and wetlands previously exempt pursuant to the 2020 Navigable Waters Protection Rule. The Rule also considers various subsequent court decisions, including two notable Supreme Court decisions.

There are two key changes that the Rule incorporates. Firstly, the Rule reinstates the "Significant Nexus" test. The "Significant Nexus" test refers to waters that either alone, or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of traditional navigable waters, interstate waters, or the territorial seas (86 FR 69372–69450). The "Significant Nexus" test attempts to establish a scientific connection between smaller water bodies (such as ephemeral or intermittent tributaries) and larger, more traditional navigable waters (such as rivers). Significant nexus evaluations take into consideration hydrologic and ecologic factors including, but not limited to, volume, duration, and the frequency of surface water flow in the resource and its proximity to a traditional navigable water, and the functions performed by the resource on adjacent wetlands. Second, the Rule adopts the "Relatively Permanent Standard" test. To meet the "Relatively Permanent Standard," water bodies must be relatively permanent, standing, or continuously flowing and have a continuous surface connection to such waters.

On May 25, 2023, the Supreme Court issued its long-anticipated decision in Sackett v. U.S. Environmental Protection Agency, in which it rejected the U.S. Environmental Protection Agency's claim that "waters of the United States," as defined in the CWA, include wetlands with an ecologically significant nexus to traditional navigable waters. The Supreme Court held that only those wetlands with a continuous surface water connection to traditional navigable waterways would be afforded federal protection under the CWA. Specifically, to assert jurisdiction over an adjacent wetland under the CWA, a party must establish that (1) the adjacent body of water constitutes water(s) of the United States (i.e., a relatively permanent body of water connected to traditional interstate navigable waters) and (2) the wetland has a continuous surface connection with that water, making it

difficult to determine where the water ends and the wetland begins. The Rule will need to be modified by the Biden administration in light of this decision.

The term "wetlands" (a subset of waters of the United States) is defined in 33 CFR, Section 328.3(c)(16), as "areas that are inundated or saturated by surface or ground water 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 similar areas." In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high water mark," which is defined in 33 CFR 328.3(c)(7) 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 soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

On August 30, 2023, EPA released guidance further clarifying the definition of waters of the U.S. based on the Sackett v EPA ruling.

2.2 State

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code, Sections 2050–2068) provides protection and prohibits the take of plant, fish, and wildlife species listed by the State of California. Unlike FESA, under CESA state-listed plants have the same degree of protection as wildlife, but insects and other invertebrates may not be listed. Take is defined similarly to FESA and is prohibited for both listed and candidate species. Take authorization may be obtained by a project applicant from the California Department of Fish and Wildlife (CDFW) under CESA Section 2081, which allows take of a listed species for educational, scientific, or management purposes. In this case, private developers consult with CDFW to develop a set of measures and standards for managing the listed species, including full mitigation for impacts, funding of implementation, and monitoring of mitigation measures.

On October 21, 2019, the California Fish and Game Commission (Commission) received a petition from the Center for Biological Diversity to list western Joshua tree (*Yucca brevifolia*).[1] On November 1, 2019, the Commission referred the petition to CDFW for evaluation. CDFW evaluated the scientific information presented in the petition and other relevant information possessed by CDFW at the time of review and prepared a report for submittal to the Commission (CDFW 2020). The report states that CDFW recommended that the Commission accept the petition for further consideration of western Joshua tree under the CESA. On September 22, 2020, the Commission accepted the candidacy proposal for western Joshua tree, effective October 9, 2020. When a plant or wildlife species is granted candidacy under the CESA, the species is given the same protection as a threatened or endangered species while the Commission evaluates whether formal listing as threatened or endangered under the CESA is warranted.

[1] On October 21, 2019, the California Fish and Game Commission received a petition to list the following as threatened under the CESA: (1) western Joshua tree (*Yucca brevifolia*) throughout its California range, or, in the event the Commission determines that listing of western Joshua tree throughout its California range is not warranted, then (2) the western Joshua tree population within the northern part of western Joshua tree's California range, or (3) the western Joshua tree population within the southern part of western Joshua tree's California range.

In listing western Joshua tree as a candidate species under CESA, the Commission directed CDFW staff to evaluate whether the species should be formally listed under CESA. In March 2022, CDFW staff presented its findings to the Commission and recommended against the listing, citing the species widespread distribution and lack of data regarding the extent to which climate changes are expected to affect the species. This information was presented to the Commission on June 15–16, 2022. The Commission voted on the proposed listing at this meeting, but the vote resulted in a 2–2 tie. The Commission discussed western Joshua tree's listing status at its October 12–13, 2022 meeting; however, it was decided at this meeting to extend Joshua tree's candidate status discussion until their February 23, 2023, meeting, which was anticipated to be the final meeting before a listing decision was made. On July 1, 2023, the Western Joshua Tree Conservation Act was passed. While western Joshua tree is a candidate species, take for western Joshua tree can be received through payment of pre-determined mitigation fees.

2.2.2 California Fish and Game Code

Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code 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. 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. Furthermore, it is the responsibility of CDFW to maintain viable populations of all native species. Toward that end, CDFW has designated certain vertebrate species as Species of Special Concern, because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

Sections 1600–1616

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. CDFW takes jurisdiction to the top of bank of the stream, or the limit of the adjacent riparian vegetation, which may include oak woodlands in canyon bottoms. Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but reemerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an ordinary high water mark (OHWM) to be claimed as jurisdictional. CDFW does not have jurisdiction over ocean or shoreline resources.

Under California Fish and Game Code, Sections 1600–1616, CDFW has the authority to regulate work that will 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. CDFW also has the authority to regulate work that will 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. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all projects. Applications to CDFW must include a complete certified California Environmental Quality Act (CEQA) document.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (see Section 1900 et seq. of the California Fish and Game Code) directed CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this

State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. CESA expanded on the original Native Plant Protection Act and enhanced legal protection for plants, but the Native Plant Protection Act remains part of the California Fish and Game Code. To align with federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Because rare plants are not included in CESA, mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

Nesting Birds

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

2.2.3 California Environmental Quality Act

CEQA requires identification of a project's potentially significant impacts on biological resources and ways that such impacts can be avoided, minimized, or mitigated. The act also provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts.

The State of California CEQA Guidelines (CEQA Guidelines) Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors." A rare animal or plant is defined in Section 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or . . . [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c).

CDFW has developed a list of "Special Species" as "a general term that refers to all of the taxa the California Natural Diversity Database (CNDDB) is interested in tracking, regardless of their legal or protection status." This is a broader list than those species that are protected under the FESA, CESA, and other California Fish and Game Code provisions, and includes lists developed by other organizations, including for example the Audubon Watch List Species. Guidance documents prepared by other agencies, including the Bureau of Land Management Sensitive Species and USFWS Birds of Special Concern, are also included on this CDFW Special Species list. Additionally, CDFW has concluded that plant species listed as California Rare Plant Rank (CRPR) 1 and 2 by the California Native Plant Society (CNPS), and potentially some CRPR 3 plants, are covered by CEQA Guidelines Section 15380.

Section IV, Appendix G (Environmental Checklist Form), of the CEQA Guidelines requires an evaluation of impacts to "any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service."

2.2.4 Porter–Cologne Water Quality Control Act

Pursuant to provisions of the Porter–Cologne Act, the RWQCBs regulate discharging waste, or proposing to discharge waste, within any region that could affect a water of the state (California Water Code, Section 13260[a]). The State Water Resources Control Board defines a waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). All waters of the United States are waters of the state. Waters of the state include wetlands, and the State Water Resources Control Board definition of wetlands includes the following:

1. Natural wetlands
2. Wetlands created by modification of a surface water of the state
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration
    b. Specifically identified in a water quality control plan as a wetland or other water of the state
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape
    d. Greater than or equal to 1 acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes: industrial or municipal wastewater treatment or disposal; settling of sediment; detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial permitting program; treatment of surface waters; agricultural crop irrigation or stock watering; fire suppression; industrial processing or cooling water; active surface mining – even if the site is managed for interim wetlands functions and values; log storage; treatment, storage, or distribution of recycled water; maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or fields flooded for rice growing.

Wetlands that may not meet all of USACE's wetland delineation criteria are considered wetland waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation" (SWRCB 2019). Additionally, aquatic resources that USACE determines to not be waters of the United States because they lack a significant nexus to a traditional navigable water or are above the OHWM limit of federal jurisdiction may also be considered waters of the state. If a CWA Section 404 permit is not required for a project, the RWQCB may still require a permit (waste discharge requirements) for impacts to waters of the state under the Porter–Cologne Act.

2.2.5 California Desert Native Plants Act

The purpose of the California Desert Native Plants Act (CDNPA) is to protect certain species of California desert native plants from unlawful harvesting on both public and privately owned lands. The CDNPA only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants

unless a person has a valid permit or wood receipt and the required tags and seals. The appropriate permits, tags and seals must be obtained from the sheriff or commissioner of the county where collecting will occur, and the county will charge a fee. More information on the CDNPA, including the species protected under the law, is available by reading the provisions of the law.

2.3 Local

2.3.1 San Bernardino County General Plan and Development Code

The County of San Bernardino General Plan contains the goals and policies that guide future development within San Bernardino County (County of San Bernardino 2007a). San Bernardino County is broken into three distinct geographic planning regions: the valley, the mountains, and the desert. The Project site occurs within the Desert Planning Region of San Bernardino County. The Desert Planning Region has two goals and policies: (1) to preserve open lands by working with the Bureau of Land Management and (2) to ensure that off-highway vehicle use is managed to protect environmentally sensitive resources.

The Project would also need to comply with the Development Code. The San Bernardino Development Code (County of San Bernardino 2007b) implements the goals and policies of the General Plan. Chapter 88.01.060, Desert Native Plant Protection, of the San Bernardino County Development Code is a subset of the Plant Protection and Management Code (Chapter 88.01 of the Development Code) and focuses on the conservation of specified desert plant species.

2.3.2 Town of Apple Valley General Plan

The Town's Biological Resources Element (Town of Apple Valley 2009) contain goals and policies that address biological resources. The following goals and policies pertain to biological resources and are relevant to the Project:

Goal 1. Establish a pattern of community development that supports a functional, productive, and balanced relationship between the manmade environment and the natural environment.

Policy 1.A. Habitat for endangered, threatened, and sensitive species shall continue to be protected and preserved as Open Space by the Town.

Policy 1.B. The Town shall promote the use of native vegetation for landscaping to enhance and create viable habitat for local species.

Policy 1.C. The Town shall continue to promote biodiversity by protecting natural communities with high habitat value, protecting habitat linkages to prevent further fragmentation, and encouraging an appreciation for the natural environment and biological resources.

Goal 2. The Town shall work with local, state, and regional agencies to protect, preserve, and manage biological resources, especially threatened, endangered, and sensitive plants and wildlife species and their habitats.

Policy 2.A. The Town shall coordinate with CDFG [California Department of Fish and Game] and USFWS when working on projects that are proposed to be located within or adjacent to linkage areas or special survey areas.

Policy 2.B. The Town shall support and cooperate with other agencies in establishing multiple use corridors that link open space areas through drainage channels and utility easements, thereby encouraging the connectivity of natural communities.

Policy 2.C. The Town shall work with CDFG and the USFWS to approve and implement a MSHCP [Multiple Species Habitat Conservation Plan] for the Town and Sphere of Influence.

Policy 2.D. The Town shall work with CDFG and USFWS to ensure that state and federal protections required by the Migratory Bird Treaty Act addressed during the planning process.

Policy 2.E. The Town shall work with CDFG, RWQCB and ACOE [USACE] to ensure that state and federal jurisdictional areas are properly identified.

2.3.3 Apple Valley Municipal Code, Chapter 9.76: Plant Protection and Management Policy

Chapter 9.76 of the Apple Valley Municipal Code contains the Town's Protected Plant Policies (Town of Apple Valley 2022). This chapter establishes policies governing the removal of protected plants, including:

1. Desert native plants with stems 2 inches or greater in diameter or 6 feet or greater in height:
    a. Smoke tree (*Dalea spinosa*)
    b. All species of the family *Agavaceae* (century plants, nolinas, yuccas). Including the following known to Apple Valley:
        i. Mojave yucca (*Yucca schidigera*)
        ii. Lord's candle (*Yucca whipplei*)
        iii. Barrel cactus (*Ferocactus acanthodes*)
    c. All species of the genus *Prosopis* (mesquites)
2. Creosote rings, 10 feet or greater in diameter
3. All Joshua trees (mature and immature)
4. All plants protected or regulated by the CDNPA

Additionally, Section 9.76.010 of the Apple Valley Municipal Code states the following:

> Prior to the issuance of a native tree or plant removal permit in conjunction with a development permit and/or approval of a land use application which authorizes such removal, a plot plan shall be approved by the appropriate Town Review Authority (County Certified Plant Expert, Planning Commission or Town Council) for each site indicating exactly which trees or plants are authorized to be removed. The required information can be added to any other required plot plan.

Prior to issuance of development permits in areas with native trees or plants that are subject to the provisions of this Chapter, a pre-construction inspection shall be conducted by the appropriate authority.

2.3.3.1 Findings for Removal of Desert Native Plants

Per Apple Valley Municipal Code Section 9.76.010:

The Reviewing Authority shall authorize the removal of a native tree or plant subject to provisions of this Chapter only if the following findings are made:

A. The removal of the native tree or plant does not have a significant adverse impact on any proposed mitigation measures, soil retention, soil erosion and sediment control measures, scenic routes, flood and surface water runoff and wildlife habitats.
B. The removal of the native tree or plant is justified for one of the following reasons:
    a. The location of the native tree (excluding Joshua Trees) or plant and/or its dripline interferes with the reasonable improvement of the site with an allowed structure, sewage disposal area, paved area or other approved improvement or ground disturbing activity. Also such improvements have been designed in such a manner as to save as many healthy native trees and/or plants as reasonably practicable in conjunction with the proposed improvements.
    b. The location of the native tree or plant and/or its dripline interferes with the planned improvement of a street or development of an approved access to the subject or adjoining private property.
    c. The location of the native tree or plant is hazardous to pedestrian or vehicular travel or safety as determined by the Town Engineer.
    d. The native tree or plant or its presence interferes with or is causing extensive damage to utility services or facilities, roadways, sidewalks, curbs, gutters, pavement, sewer line(s), drainage or flood control improvements, foundations, existing structures, or municipal improvements.
    e. The condition or location of the native plant or tree is adjacent to and in such close proximity to an existing structure that the native plant or tree has or will sustain significant damage.

2.3.3.2 Findings for Transplanting of Desert Native Plants

Per Apple Valley Municipal Code Section 9.76.010:

The Town Manager, or designee, or other Reviewing Authority, shall only authorize the transplanting of desert native plants … subject to the provisions of this Chapter only if one or more of the following findings are made:

1. The desert native plants are to be transplanted in a manner approved by the Town Manager, or designee, or other Reviewing Authority, including any requirement for the issuance of plant tag seals and/or wood receipts.

2. The desert native plant is to be transplanted to another property within the same plant habitat under the supervision of a Desert Native Plant Expert and the removal of such plant will not adversely affect the desert environment on the subject site.
3. Any desert native plant on the site which is determined by the Town Manager, or designee, or other Reviewing Authority, as requiring transplanting has or will be transplanted or stockpiled for transplanting in accordance with methods approved by Town Manager, or designee. A Desert Native Plant Expert shall supervise and manage any required transplanting of desert native plants.

2.3.3.3 Protection of Joshua Trees

As stated in Section 9.76.040, existing Joshua Trees shall not be:

> disturbed, moved (transplanted or otherwise), removed or destroyed unless such disturbance, move, removal or destruction is first reviewed and approved by the Town of Apple Valley. The Town Manager, or designee, shall be responsible for review and approval of any request to disturb, move (transplant or otherwise), remove or destroy any existing Joshua Tree located on any property within any zoning district in the Town of Apple Valley. Forms for such review shall be available within the Planning Division.

Section 9.76.040 also states that:

> Anyone submitting an application to disturb, move, remove or destroy an existing Joshua Tree shall use all means necessary to retain and preserve such Tree(s) in its native (present) location in considering and presenting said Tree Disturbance application. This application shall take into consideration lot configuration, potential property development (buildable envelope), onsite circulation and all associated and related infrastructure needed to support construction within the buildable envelope. Further, persons submitting an application for a discretionary review or for any subdivision of land within the Town of Apple Valley upon which a Joshua Tree(s) is present, shall use all reasonable means available to retain and preserve the Tree(s) in its native (present) location in considering and presenting said application or subdivision request with regard to lot location and configuration, potential property development (buildable envelope), circulation system and all associated and related infrastructure.

2.3.3.4 Retention in Place of Joshua Trees

As stated in Section 9.76.040, "Joshua Tree(s) which conforms to the following [criteria] shall be preserved in place unless its removal, transplantation or destruction is approved as prescribed within this Section 9.76.040 of the Town of Apple Valley Municipal Code." The criteria are as follows:

1. A Joshua Tree that is known, by historic record, including pictures or written description, to be at least forty (40) years old.
2. A Joshua Tree which has a width of at least fifteen (15) feet as measured from the furthest point of outstretched branches (measured parallel to the ground).
3. A Joshua Tree which is at least fifteen (15) feet in height as measured from the base of the trunk to the highest point of the Tree.

4. A Joshua Tree which has a trunk measuring at least twelve (12) inches in diameter as measured four (4) feet from the ground.

Joshua Trees that do not conform to the above criteria must be preserved but may be transplanted to another location on the same property or may be made available for adoption through the Town's Joshua Tree Preservation and Adoption Program.

Additionally, Section 9.76.040 states:

> For any Joshua Tree(s) which conform to the criteria listed [above], for which the property owner/applicant has made a request for a Building Permit, application for a discretionary review or application for a subdivision of land within the Town of Apple Valley, said owner/applicant shall submit, as part of the application for approval, documentation of their best efforts to retain and preserve all Joshua Tree(s) within the limits of the development or subdivision in its native (present) location. Such documentation of best effort shall include how alternative lot configurations (including building envelopes on lots with existing Tree(s)), circulation, physical or environmental constraints of the site, allow no alternative subdivision configuration which would retain and preserve the Tree(s) in its native (present) location.

2.3.3.5 Transplanting of Joshua Trees

Section 9.76.040 states that a Desert Native Plant Expert (i.e., a California Agricultural Biologist, Registered Forester, International Society of Arboriculture [ISA] Certified Arborist, County-Certified Plant Expert, or others approved by the Town's Building Official) must supervise the initiation and completion of Town-approved transplanting of Joshua trees. Per Section 9.76.040:

> Approval of such transplant must take into consideration the time of year, the plant's original and transplanted physical orientation, prevailing wind direction, soil type of the original and transplanted locations, and other related attributes which may affect the successful transplantation of the Joshua Tree(s) in question as determined by the Town and the retained Botanist.
>
> Joshua Trees that are proposed to be removed shall be transplanted or stockpiled for future transplanting wherever possible. In the instance of stockpiling and/or transplanting the permittee has submitted and has had the approval of a Joshua Tree maintenance plan prepared by a Desert Native Plant Expert. This plan shall include a schedule for maintenance and a statement by the Desert Native Plant Expert that this maintenance plan and schedule will be implemented under his/her supervision. The schedule shall include the requirement that a maintenance report is required at the end of the project or at six (6) month intervals, evidence to the satisfaction of the Building Official that the Desert Native Plant Expert has supervised the scheduled maintenance to the extent that all transplanted and stockpiled plants have been maintained in such a manner to insure the highest practicable survival rate. In the event that this report is not satisfactory, a tree and plant replacement plan and implementation schedule prepared by a Desert Native Plant Expert may be required by the Building Official.

2.3.3.6 Findings for Removal of Joshua Trees

As stated in Section 9.76.040:

> The Reviewing Authority shall authorize the removal of a Joshua Tree(s) subject to provisions of this Chapter only if the following findings are made:
>
> 1. The removal of the Joshua Tree(s) does not have a significant adverse impact on any proposed mitigation measures, soil retention, soil erosion and sediment control measures, scenic routes, flood and surface water runoff and wildlife habitats.
> 2. The removal of the Joshua Tree(s) is justified for one of the following reasons:
>   a. The location of the Joshua Tree(s) or its dripline interferes with the reasonable improvement of the site with an allowed structure, sewage disposal area, paved area or other approved improvement or ground disturbing activity as determined by the Town Manager, or designee. Also such improvements have been designed in such a manner as to save as many healthy native trees and/or plants as reasonably practicable in conjunction with the proposed improvements.
>   b The location of the native tree or plant and/or its dripline interferes with the planned improvement of a street or development of an approved access to the subject to adjoining private property.
>   c The location of the native tree or plant is hazardous to pedestrian or vehicular travel or safety as determined by the Town Engineer.
>   d The native tree or plant, because of its presence, interferes with or is causing extensive damage to utility services or facilities, roadways, sidewalks, curbs, gutters, pavement, sewer line(s), drainage or flood control improvements, foundations, existing structures, or municipal improvements.
>   e The condition or location of the native plant or tree is adjacent to and in such close proximity to an existing or proposed structure that the native plant or tree has or will sustain significant damage.

3 Methods

Data regarding biological resources present within the 226.9-acre biological survey area (BSA) was obtained through a review of pertinent literature, field reconnaissance, habitat assessments, and protocol/focused surveys, which are described in detail in this section. The BSA includes the Project boundary plus a 100-foot buffer (on-site BSA), and off-site improvement areas plus a 100-foot buffer (off-site BSA) where the off-site improvement areas extend beyond the on-site BSA (Figure 2), For purposes of this report, special-status resources are defined as follows:

- Special-status plant species include the following:
  - Species designated as either rare, threatened, or endangered by CDFW or USFWS and protected under either the CESA (California Fish and Game Code Section 2050 et seq.) or the FESA (16 USC 1531 et seq.)
  - Species that are candidate species being considered or proposed for listing under FESA or CESA
  - Species that are included on the CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2023a) with a CRPR of 1 or 2 (CNPS 2023a)
- Special-status wildlife species include the following:
  - Species designated as either rare, threatened, or endangered by CDFW or USFWS and protected under either the CESA (California Fish and Game Code Section 2050 et seq.) or the FESA (16 USC 1531 et seq.)
  - Species that are candidate species being considered or proposed for listing under FESA or CESA
  - Species that are included on the CDFW Special Animals List (CDFW 2023b) as endangered, threatened, fully protected, or Species of Special Concern
- Special-status vegetation communities are those designated as sensitive by CDFW

3.1 Literature Review

Prior to conducting a field assessment, a literature search and database review were conducted by Dudek biologists to evaluate the natural resources found or potentially occurring within the BSA. The database review included the most recent versions of the California Natural Diversity Database (CNDDB), special-status species lists (CDFW 2023a, 2023b, 2023c, 2023d), and the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2023a). These databases were reviewed to identify sensitive biological resources present or potentially present for the U.S. Geological Survey 7.5-minute quadrangles on which the Project is located (Victorville) and the eight surrounding quadrangles (Apple Valley North, Turtle Valley, Hesperia, Apple Valley South, Helendale, Victorville NW, Baldy Mesa, and Adelanto). The CDFW occurrence data and critical habitat databases were queried using geographic information system (GIS) software based on a 5-mile buffer around the BSA.

3.2 Field Surveys

Glenn Lukos Associates (GLA) biologists Chris Waterston, David Smith, and Joseph Vu conducted an initial biological reconnaissance-level survey within the Project boundary to document biological resources and vegetation communities on June 17 and 23, 2022. Field methods, results, and assumptions are described in detail in Appendix A, GLA Biological/Regulatory Resource Evaluation. This survey included a focused western Joshua tree mapping survey within the Project boundary; however, Dudek conducted an updated western Joshua tree census consistent with requirements from the WJTCA.

Additional field surveys conducted by Dudek biologists included focused special-status plant and desert native plant surveys; protocol presence/absence surveys for the Mojave desert tortoise (*Gopherus agassizii*); Mohave ground squirrel habitat assessment and protocol surveys; western burrowing owl (*Athene cunicularia*) protocol surveys; and a Crotch's bumble bee (*Bombus crotchii*) habitat assessment.

An aquatic resources jurisdictional delineation was also conducted by Dudek biologists (see Appendix B, Aquatic Resources Delineation Report). The purpose of the aquatic resources jurisdictional delineation is to identify and map potential waters of the United States, including wetlands, under USACE jurisdiction, pursuant to Section 404 of the federal CWA; under RWQCB jurisdiction, pursuant to the Section 401 of the CWA and the Porter–Cologne Act; and under CDFW jurisdiction, pursuant to Section 1602 of the California Fish and Game Code.

Table 1 lists the dates, focus, survey area, conditions, and personnel for each survey conducted by Dudek.

Table 1. Survey Conditions

Date	Biologist	Survey Pass	Survey Area	Times	Weather Conditions
Special-Status Plants and Desert Native Plants Focused Surveys and Crotch's Bumble Bee Habitat Assessment					
04/27/2023	KD, ZP	N/A	Off-site BSA*	8:00 a.m.–4:29 p.m.	60–87°F; 0% cloud cover; 0–3 mph wind
05/01/2023	KD, SG, ZP	N/A	On-site BSA	7:12 a.m.–3:55 p.m.	51–63°F; 0% cloud cover; 2–30 mph wind
Western Joshua Tree Focused Survey					
12/06/2023	AC[1], AP	N/A	BSA	NR	NR
12/07/2023	AC[1], AP	N/A	BSA	NR	NR
12/08/2023	AC[1], AP	N/A	BSA	NR	NR
Mojave Desert Tortoise Protocol Surveys					
04/11/2023	RS, CB	N/A	On-Site BSA	10:40 a.m.–2:00 p.m.	72–82°F; 10% cloud cover; 5–20 mph wind
04/13/2023	VG, ZP	N/A	On-Site BSA	8:43 a.m.–4:47 p.m.	51–58°F; 10–20% cloud cover; 3–5 mph wind
04/27/2023	KD, ZP	N/A	On-site BSA	7:15 a.m. – 7:59 a.m.	56–60°F; 0–10% cloud cover; 0–3 mph wind
05/02/2022	KD, KN	N/A	Off-site BSA*	8:21 a.m. – 12:25 p.m.	49–59°F; 0% cloud cover; 1–5 mph wind
06/06/2023	SG, ZP, LB	N/A	On-Site BSA	6:21 a.m.–1:43 p.m.	49–72°F; 0–10% cloud cover; 0–3 mph wind
Mohave Ground Squirrel Protocol Surveys					
04/05/2023-04/09/2023	KF, KF[1]	Pass 1	Project boundary	N/A	51-83°F; 0-20% cloud cover; 3-7 mph wind
05/07/2023-05/11/2023	KF, KF[1]	Pass 2	Project boundary	N/A	54-84°F; 0-30% cloud cover; 1-14 mph wind
06/22/2023-06/26/2023	KF, KF[1]	Pass 3	Project boundary	N/A	58-89°F; 0-10% cloud cover; 1-20 mph wind

Table 1. Survey Conditions

Date	Biologist	Survey Pass	Survey Area	Times	Weather Conditions
Mohave Ground Squirrel Habitat Assessment					
04/19/2023	KF, KF[1]	N/A	Off-site BSA*	Not recorded	59-73°F; 0-1% cloud cover; 2-12 mph wind
Burrowing Owl Surveys					
04/04/2023	SG, ZP	Pass 1 and Burrow Mapping	On-Site BSA	6:17 a.m.–9:56 a.m.	32–42°F; 10–30% cloud cover; 2–8 mph wind
04/06/2023	JR, MM, SC, VG	Pass 1 and Burrow Mapping	On-Site BSA	6:30 a.m.-9:45 a.m.	31–53°F; 0% cloud cover; 1–7 mph wind
04/11/2023	RS, CB	Pass 1 and Burrow Mapping	On-Site BSA	6:00 a.m. – 10:00 a.m.	50–70°F; 0–10% cloud cover; 5–15 mph wind
04/12/2023	RS, CB	Pass 1 and Burrow Mapping	On-Site BSA	6:00 a.m.–9:00 a.m.	52–60°F; 90% cloud cover; 2–5 mph wind
05/12/2023	AJ	Pass 2	On-Site BSA	5:50 a.m.–10:10 a.m.	55–70°F; 0% cloud cover; 0–1 mph wind
05/18/2023	AC	Pass 2	On-Site BSA	8:38 a.m.–9:17 a.m.	75–78°F; 0% cloud cover; 1–2 mph wind
06/05/2023	SC, SL	Pass 3	On-Site BSA	6:30 a.m.–10:00 a.m.	53–83°F; 0% cloud cover; 1–3 mph wind
06/30/2023	ES, LB	Pass 4	On-site BSA	7:30 a.m.–9:30 a.m.	76–81°F; 0% cloud cover; 0–1 mph wind
Aquatic Resources Delineation and Vegetation Mapping					
06/23/2022	AC, BS	N/A	Off-site BSA*	8:12 a.m.–4:01 p.m.	68–91°F; 20% cloud cover; 1–4 mph wind
Aquatic Resources Delineation					
01/17/2023	KD	N/A	On-site BSA	12:30 p.m.–3:30 p.m.	46–50°F; 0–30% cloud cover; 0–10 mph wind
01/27/2023	ES, KD	N/A	On-site BSA	8:00 a.m.–12:10 p.m.	39–52°F; 0% cloud cover; 0–2 mph wind

Notes: °F = degrees Fahrenheit; mph = miles per hour; N.R. = not recorded.
Personnel: AC = Anna Cassady; AC[1] = Aida Castro; AJ = Allison Johnson; AP = Ana Pfleeger; BS = Britney (Strittmater) Schultz; CB = Chelsea Bowers-Doerning; DA = Dylan Ayers; ES = Eilleen Salas; JR = Jacob Rogers; KN = Kimerly Narel; KF = Karla Flores; KF[1] = Karl Fairchild; LB = Luz Badillo; MM = Max Murray; ST = Sarah Tian; SG = Sarah Greely; SC = Shana Carey; VG = Valerie Goodwin; ZP = Zarina Pringle
* Survey data taken from Appendix C, Biological Technical Report, of the Draft Environmental Impact Report: Apple Valley 143 Project, which overlaps and extends beyond the BSA (Town of Apple Valley 2023).

3.2.1 Vegetation Community and Land Cover Mapping

As presented in Appendix A, GLA conducted vegetation mapping within the Project boundary. To supplement existing vegetation mapping, Dudek utilized aerial imagery and existing data from Appendix C, Biological Technical Report,

of the Draft Environmental Impact Report: Apple Valley 143 Project (Town of Apple Valley 2023) within the off-site improvement areas and BSA.

Vegetation community classifications used in this report follow A Manual of California Vegetation, online edition (CNPS 2023b), and the California Natural Community List (CDFW 2023c), where feasible, with modifications made to accommodate the lack of conformity of the observed communities (e.g., developed/disturbed land uses) using Oberbauer et al. (2008). Vegetation communities were classified based on site factors, descriptions, distribution, and characteristic species present within an area. These classification systems focus on a quantified, hierarchical approach that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages).

Minimum mapping units were established to standardize the scale and appropriate evaluation of stands, as recommended by CDFW (2020). Mapping standards call for a minimum mapping unit of not greater than 10 acres for upland natural communities not considered sensitive, but usually 1 or 2 acres, and 0.25 acres for sensitive vegetation communities and wetland or riparian vegetation communities were used as minimum mapping units. Visible disturbance factors were also noted during vegetation mapping.

3.2.2 Flora

Latin and common names for plant species with a CRPR follow the CNPS Rare Plant Inventory (CNPS 2023a). For plant species without a CRPR, Latin names follow the Jepson Online Interchange for California Floristics (Jepson Flora Project 2023), and common names follow the California Natural Community List (CDFW 2023c) or the U.S. Department of Agriculture Natural Resources Conservation Service Plants Database (USDA 2023a).

3.2.3 Fauna

All wildlife species detected during the field surveys by sight, vocalizations, burrows, tracks, scat, and other signs were recorded. The site was visually scanned with and without binoculars to identify wildlife. Latin and common names of animals follow Crother (2017) for reptiles and amphibians, American Ornithological Society (AOS 2021) for birds, American Society of Mammologists (ASM 2023) for mammals, North American Butterfly Association (NABA 2016) or San Diego Natural History Museum (SDNHM 2002) for butterflies, and Moyle (2002) for fish.

3.2.4 Special-Status and Regulated Resources

3.2.4.1 Special-Status Plant Survey

Based on the existing GLA Biological/Regulatory Resource Evaluation (Appendix A) and the results of the literature review discussed in Section 3.1, 10 special-status plant species were determined to have a high or moderate potential to occur within the BSA based on known species distribution, species-specific habitat preferences, and habitat conditions on site: desert cymopterus (*Cymopterus deserticola*), purple-nerve cymopterus (*Cymopterus multinervatus*), Mojave monkeyflower (*Diplacus mohavensis*), Barstow woolly sunflower (*Eriophyllum mohavense*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), Beaver Dam breadroot (*Pediomelum castoreum*), Latimer's woodland-gilia (*Saltugilia latimeri*), San Bernardino aster (*Symphyotrichum defoliatum*), and western Joshua tree (further discussed in Section 3.2.4.2). Therefore, focused surveys were conducted for these species. In addition, focused surveys for desert native plants,

in accordance with the CDNPA and Chapter 9.76 of the Town Municipal Code, were also conducted and are further discussed below in Section 3.2.4.3.

Dudek biologists conducted a focused special-status plant survey within the BSA. The survey dates and biologists for the focused special-status plant surveys within the BSA are included in Table 1. Field survey methods and mapping of rare plants conformed to CNPS Botanical Survey Guidelines (CNPS 2001), Protocols for Surveying and Evaluating Impacts to Special Status Native Populations and Natural Communities (CDFW 2018), and General Rare Plant Survey Guidelines (Cypher 2002). Western Joshua tree mapping was conducted during separate focused surveys and is discussed in Section 3.2.4.2, Western Joshua Tree Focused Survey.

Reference sites of special-status plants were evaluated to ensure that target species were identifiable during the 2023 surveys. More specifically, desert cymopterus was observed in bloom by a Dudek biologist during a reference check survey in San Bernardino County, east of California city and north of Edwards Air Force Base, in March 2023. There are two research grade observations of purple-nerve cymopterus in bloom in San Bernardino County, in the Mojave National Preserve, in March and April 2023 (iNaturalist 2023a). There are several research grade observations of Mojave monkey flower in bloom in May and April 2023 near Barstow (iNaturalist 2023b). Barstow woolly sunflower was observed by Dudek biologists in San Bernardino County, north of Kramer Junction, in April 2022 in addition to numerous other observations in San Bernardino County April 2023 (iNaturalist 2023c). There are two research grade observations of Sagebrush loeflingia in Inyo County in May 2022 (iNaturalist 2022d). Beaver Dam breadfoot was observed in bloom in April by a Dudek biologist during a reference check survey in San Bernardino County, east of Apple Valley, and north of Lucerne Valley near Barstow Road. Finally, there are several research grade observations of Latimer's woodland-gilia in bloom in San Bernardino County in April 2023 (iNaturalist 2023e). Based on these observations, the target special status plant species would have been identifiable, if present. It should be noted that short-joint beavertail is a conspicuous stem succulent species that can be identified outside the blooming period and therefore was not included in the 2023 reference check.

3.2.4.2 Western Joshua Tree Focused Survey

Per Chapter 9.76 of the Town Municipal Code and the Western Joshua Tree Conservation Act, Dudek's International Society of Arboriculture (ISA) Certified Arborists performed a Joshua tree survey to inventory and evaluate the health and relocation potential for each western Joshua tree located on and within 50 feet of the Project site. The full methods and results are provided in Appendix C, Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan. During the inventory, the GPS position of each Joshua tree found on site was recorded. Dudek ISA Certified Arborists walked the entire site in parallel transects to ensure documentation of each western Joshua tree within the Project site and within 50 feet of the Project site.

Dudek collected the following attributes of each tree:

- Species
- Size class (Size A - < 1m, Size B - >1m and <5m, and Size C - >5m)
- Actual height (meters)

- Health (excellent, good, fair, poor, critical, and dead)[2]
- Live or dead
- Tree maturity (mature if branching occurs, not mature if no branching occurs)
- Flowering or fruiting stage (flowers or fruits present)
- If a tree had a severe bend in the trunk, height was recorded with two measurements, h1 and h2, h1 being the main, upright trunk, and h2 being the remaining, non-vertical trunk or branch. H1 and h2 were then added together to get an overall height and size class. If a tree was found leaning, the height was measured from the base of the tree along the leaning trunk to the top of the furthest leaf.
- All inventoried and assessed protected trees were tagged with an aluminum tag bearing a unique identification number, which was placed on the main trunk on the north side of each Joshua tree. Tagging on the north side allows for proper orientation during relocation (each relocated Joshua tree will need to be oriented in the same direction as it was in its original location). Photographs for each tree were taken in accordance with CDFW requirements for western Joshua tree photographs and included an object for frame of reference.

3.2.4.3 Desert Native Plant Survey

A desert native plant survey was conducted within the BSA in accordance with the CDNPA and Chapter 9.76 of the Town Municipal Code. The survey dates, biologists, and weather conditions are included in Table 1. All of the desert native plant target species are conspicuous shrubs that would have been identifiable during the survey.

In accordance with the Town of Apple Valley Municipal Code, Chapter 9.76, the following desert native plants were considered target species:

A. The following desert native plants with stems 2 inches or greater in diameter or 6 feet or greater in height:
   1. Smoke tree
   2. All species of the family Agavaceae (century plants, nolina, yuccas, cacti). Including the following known to Apple Valley:
      i. Mojave yucca
      ii. Lord's candle
      iii. Barrel cactus
      iv. All species of the genus Prosopis (mesquites)

[2] **Health Rating Descriptions**
Excellent. Tree has excellent health and strong vigor. No damage. Flowering and fruiting expected. Typically, only given to large, high-quality specimens (taller than 15 feet in height). Transplanting generally not recommended due to size.
Good. Tree has good health and vigor. All branches are alive and healthy. Damage is very localized and minimal. Flowering and fruiting likely, if tree is large enough. Tree is transplantable.
Fair. Tree health is average. Some stressors or damage possible, but any damage is minimal to moderate (e.g., rodent grazing, insect damage). No dead/broken branches. Tree is transplantable.
Poor. Tree is under stress, and overall health is 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 is 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. Tree is dead.

B. Creosote rings, 10 feet or greater in diameter

C. All Joshua trees (mature and immature)

In accordance with the CDNPA, Chapter 3, the following desert native plants were considered target species:

(a) All species of the family Agavaceae (century plants, nolinas, yuccas).

(b) 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.

(c) All species of the family Fouquieriaceae (ocotillo, candlewood).

(d) All species of the genus Prosopis (mesquites).

(e) All species of the genus Cercidium (*palos verdes*).

(f) *Acacia greggii* (catclaw).

(g) *Atriplex hymenelytra* (desert-holly).

(h) *Dalea spinosa* (smoke tree).

(i) *Olneya tesota* (desert ironwood), including both dead and live desert ironwood.

3.2.4.4 Desert Tortoise Protocol-Level Survey

On April 2, 1990, the Mojave population of the desert tortoise was listed by USFWS as threatened (55 FR 12178–12191). Proposed actions within the range of the desert tortoise fall under purview of FESA. Because the Project lies within the range of the desert tortoise (CDFW 2018) and in the Western Recovery Unit (USFWS 2011), Dudek conducted focused surveys for desert tortoise to determine the status of the species within the BSA. To evaluate the impacts to desert tortoise, protocol surveys were conducted in accordance with the Pre-Project Field Survey Protocol for Potential Desert Tortoise Habitats section included in Preparing for Any Action That May Occur within the Range of the Mojave Desert Tortoise (*Gopherus agassizii*) (USFWS 2010). Biologists surveyed the BSA by walking approximately 10-meter-wide transects for 100% coverage of the BSA.

3.2.4.5 Mohave Ground Squirrel Habitat Assessment

Dipodomys Ecological Consulting biologists conducted a habitat assessment within the off-site BSA for Mohave ground squirrel in addition to a nine-quadrangle query of the CNDDB to determine the locations of historical occurrences of Mohave ground squirrel (included in Appendix D, Mohave Ground Squirrel Protocol Survey Report). The habitat assessment consisted of walking meandering transects while recording vegetation communities and noting the presence of burrows and suitable soil per the Mohave Ground Squirrel Survey Guidelines (CDFG 2010). This 1-day survey was conducted on April 19, 2023.

3.2.4.6 Mohave Ground Squirrel Protocol Survey

Dipodomys Ecological Consulting biologists conducted an initial visual survey within the Project boundary in April 2023 (included in Appendix D). The visual surveys were conducted by driving and walking throughout the Project boundary to identify suitable habitat for Mohave ground squirrel, which is consistent with the methods described in the 2010 CDFW Mohave Ground Squirrel Survey Guidelines (CDFG 2010). Field methods are described in detail in Appendix D. Following an initial visual survey, three 5-day live-trapping surveys for Mohave ground squirrel were conducted between March 15 and July 15 within the Project boundary. The methods used for this trapping effort

followed the most recent CDFW Mohave Ground Squirrel Survey Guidelines issued in 2010 (CDFG 2010). Camera trappings consisted of five camera stations in locations designated by CDFW, and methods are described in detail in Appendix D. Additionally, as described above, Dipodomys Ecological Consulting biologists conducted a habitat assessment within the off-site improvement areas on April 19, 2023.

3.2.4.7 Burrowing Owl Protocol Survey

Dudek conducted protocol burrowing owl surveys within the on-site BSA to determine presence/absence. These surveys were conducted in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFW 2012). The protocol states that four survey passes shall be performed, with the first visits occurring between February 15 and April 15 and the remaining three visits, at least 3 weeks apart, between April 15 and July 15, with at least one visit after June 15.

Concurrent with the first pass of the burrowing owl surveys, Dudek biologists walked the entire on-site BSA to identify areas with suitable burrowing owl habitat (i.e., relatively open habitat with low gradients and burrow resources) and mapped all suitable burrows or burrow surrogates (i.e., ground-level cavities with openings of 4 inches in diameter or greater) using Esri Field Maps. Following completion of the first survey pass, which included the burrow survey, polygons were drawn around large clusters of burrow resources and individual burrows that could not be easily clustered were buffered by 25 feet to create a burrowing owl survey area. The remaining three survey passes were conducted within this refined burrowing owl survey area and completed using a combination of pedestrian transects spaced approximately 20 meters apart and spot checks where suitable burrows and the surrounding areas were investigated to determine the status of suitable burrows in these areas. To ensure accurate documentation of observations and prevent inadvertent flushing of potential individuals, the burrows and surrounding area were initially scanned from a distance using binoculars. Any burrowing owl individuals and status of the burrow were documented. If needed, the biologists carefully approached the burrowing owl survey area while scanning the area for burrowing owl individuals and investigating suitably sized burrows for any signs of activity. The use of pedestrian transects or spot checks was determined in the field by the spatial distribution and density of suitable burrows or burrow features.

If observed, any direct observations (visual or audible) or active burrow sign (e.g., molted feathers, pellets, prey remains, whitewash) of burrowing owls was recorded. The surveys were conducted when conditions were suitable for detecting owls (no rain, high winds [greater than 20 mph], dense fog, or temperatures over 90°F). If observed, any burrowing owl sightings, occupied burrows, and burrows with burrowing owl sign were mapped and recorded.

3.2.4.8 Crotch's Bumble Bee Habitat Assessment

On June 6, 2023, the California Department of Fish and Wildlife (CDFW) released the "Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species". Due to the potential for Crotch's bumble bee to occur within the BSA, Dudek conducted a Crotch's bumble bee habitat assessment. This included literature review of historical and current species occurrences, documentation of potential foraging, nesting, and/or overwintering resources, a floral survey documenting plant species in bloom and their percent cover, and other items described in "Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species" (CDFW 2023e). The habitat assessment concluded that the BSA did not contain sufficient floral resources to support Crotch's bumble bee. Therefore, focused surveys for Crotch's bumble bee were not warranted.

3.2.4.9 Aquatic Resources Delineation

Before conducting fieldwork for the aquatic resources delineation, Dudek reviewed aerial maps from the USFWS National Wetlands Inventory (USFWS 2023a), the U.S. Geological Survey (USGS) National Hydrography database (USGS 2023), the Natural Resource Conservation Service (USGS 2023; USDA 2023b), and historical aerials and topographic maps (Google 2023; Historic Aerials Online 2023). Survey datasheets and forms are included in the aquatic resources delineation report provided as Appendix B. The surveys were conducted on foot to visually cover 100% of the BSA. Both current and historical imagery was used to supplement field investigation efforts, particularly on private lands or in areas where anthropogenic impacts have obscured aquatic indicators normally found in the field. Remote sensing was not used during this delineation.

Dudek conducted a delineation of state and federal jurisdictional waters and wetlands within the BSA in accordance with current policies. Federal wetlands were mapped based on the procedures in the Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008a). Non-wetland waters were mapped at the OHWM based on the procedures defined in A Field Guide to the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b). Waters of the state were mapped in accordance with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2019). CDFW jurisdictional areas were mapped to include the bank of the stream/channel and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602.

To aid in the delineation and in conformance with the USACE 2008 Field Guide, ten OHWM datasheets (T-17 through T-26) were recorded at potential non-wetland waters within the BSA to determine the OHWM indicators within those features. OHWM datasheets are included in Appendix B. The jurisdictional delineation did not contain any features that met the State Water Resources Control Board wetland criteria, and due to the lack of hydrophytic vegetation and hydric soils, wetland determination data forms were not completed.

The limits of aquatic resources were collected in the field using a Trimble R1 GPS unit and Esri Field Maps mobile application with sub-meter accuracy. The geographic extents were digitized in a GIS based on the GPS data and data collected directly onto field maps using ArcGIS software.

3.2.5 Survey Limitations

Limitations of the surveys include a diurnal bias and the absence of trapping for reptiles, amphibians, and small mammals at night. The surveys were conducted during the daytime to maximize the detection of most wildlife. Most birds are active in the daytime, so diurnal surveys maximize the number of bird observations. Conversely, diurnal surveys usually result in few observations of mammals, many of which may only be active at night. In addition, many species of reptiles and amphibians are secretive in their habits and are difficult to observe using standard meandering transects.

The average rainfall in 2023 was above average, so flora was expected to be at or above the typical abundance. Surveys for special-status plant species adequately covered flora that are known to bloom within the vicinity.

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4 Environmental Setting

The purpose of this section is to describe the general existing conditions within and adjacent to the BSA to document the baseline conditions for this report and subsequent analysis.

4.1 Land Use

The approximately 226.9-acre BSA consists of vacant and undeveloped land, as well as disturbed land, paved and unpaved roads, and portions of the existing mining facility located directly east of the Project boundary.

Land uses surrounding the Project site consist of vacant land, I-15, unpaved roads, and mining operations. Specific land uses located in the immediate vicinity of the Project site include the following:

- **North:** Various unpaved roads and vacant land
- **East:** Aggregate mining operations
- **South:** Falchion Road, Apple Valley Road, various other unpaved roads, and vacant land
- **West:** I-15 and vacant land

In the broader Project vicinity, development includes industrial uses, the County of San Bernardino Refuse Disposal Site, residential uses, and commercial uses.

4.2 Climate

The BSA is located in the Apple Valley/High Desert region in western San Bernardino County. The average annual temperature was not available for Apple Valley; however, average annual temperatures in Victorville range from 46.7°F to 82.6°F. Additionally, the average annual high for Victorville is 109°F and the average annual low is 20°F (ACIS 2023). The average annual precipitation for Apple Valley is 5.47 inches (ACIS 2023). Periods of extended drought are common throughout the region.

4.3 Geology and Topography

The BSA is located in the Town, near Bell Mountain Wash, which lies between Bell Mountain to the east and Quartzite Mountain to the west. The Granite Mountains are approximately 10 miles southeast of the BSA and divide Apple Valley from Lucerne Valley.

The BSA is primarily comprised of even ground with some areas of small hills. The BSA's surface elevation ranges between approximately 2,910 and 3,060 feet above mean sea level (amsl), gradually sloping from east to west toward I-15.

4.4 Soils

According to the U.S. Department of Agriculture Natural Resource Conservation Service's Web Soil Survey (USDA 2023b), the BSA consists of four soil mapping units: the Cajon-Arizo complex, 2% to 15% slopes; Mirage-Joshua

complex, 2% to 5% slopes; pits; and Trigger- Sparkhule-rock outcrop association, steep. These soil mapping units are presented on Figure 3, Soils, and soils series are described in more detail below.

Arizo Series consists of very deep, excessively drained soils formed in mixed alluvium. This series is typically found on recent alluvial fans, inset fans, fan apron, fan skirts, stream terraces, floodplains of intermittent streams and channels at elevations of 750 to 4,600 feet amsl (USDA 2023b). Vegetation associated with this series is mainly creosote bush and burrobush (USDA 2023b).

Cajon Series consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. The Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans and river terraces at elevations of 200 to 4,300 feet amsl. Cajons soils with sandy loam surface textures have moderately rapid to rapid permeability. Vegetation associated with this series includes creosote bush, saltbush, Mormon-tea, Joshua trees, Indian rice grass, annual grasses and forbs (USDA 2023b).

Joshua Series consist of moderately deep, well-drained soils derived from mixed sources. These soils are found on old terraces with a well-developed erosion pavement at elevations ranging from 2,600 to 3,000 feet amsl (USDA 2023a). Vegetation associated with this series includes very sparse stands of creosote bush, white bursage, yucca species, some saltbush, annual grasses and forbs (USDA 2023b).

Mirage Series consists of deep, well-drained soils formed in mixed alluvium, dominantly from granitic sources. These soils are found on old terraces with well-developed erosion pavement at elevations ranging from 2,600 to 3,400 feet amsl. Vegetation associated with this series includes very sparse stands of creosote bush, yucca species, annual grasses and forbs (USDA 2023b).

Sparkhule Series consists of shallow to rock, well-drained soils that formed in residuum from volcanic or granitic rocks. Sparkhule soils are on rock pediments and hills at elevations ranging from 2,300 to 4.500 feet amsl (USDA 2023a). Vegetation associated with this series includes creosote bush, yucca species, annual grasses and forbs (USDA 2023b).

Trigger Series consists of shallow, well drained soils that formed in material weathered from hard sedimentary rocks. Trigger soils are on uplands at elevations ranging from 2,400 to 3,800 feet amsl. Vegetation associated with this series includes creosote bush, cactus, annual grasses and forbs (USDA 2023b).

Pits consist of active mining and excavation.

4.5 Watersheds and Hydrology

The BSA lies primarily within the Bell Mountain Wash subwatershed (Hydrologic Unit Code [HUC] 1809020807) of the Mojave subbasin, (HUC 18090208) (Figure 4, Hydrology; USGS 2023). The Bell Mountain Wash subwatershed is 36.19 square miles (23,160.32 acres) and contains Bell Mountain Wash as the prominent feature in the watershed. Several ephemeral drainages enter Bell Mountain Wash, which flows approximately 1.8 miles southwest before converging with the Mojave River. The Mojave River flows northeast and terminates in Soda Lake near the town of Baker. In addition to the USGS-defined watersheds, the RWQCB also defines watershed boundaries by Hydrologic Units (HUs). The review area is within the South Lahontan Hydrologic Basin, the Mojave HU, and the Upper Mojave Hydrologic Area (Lahontan RWQCB 2021).

5 Results

This section describes the results of the literature review and field surveys within the BSA.

5.1 Vegetation Communities and Land Covers

A total of four vegetation communities and land cover types were mapped within the BSA. As previously discussed in Section 3, Methods, vegetation mapping within the Project boundary was conducted by GLA in 2023, while vegetation mapping within the remaining BSA was completed by Dudek using aerial imagery and existing data from Appendix C, Biological Technical Report, of the Environmental Impact Report: Apple Valley 143 Project (Town of Apple Valley 2023). The spatial distribution of the vegetation communities and land covers are presented on Figure 5. The acreages of the mapped vegetation alliances/associations and other land covers in the BSA are presented in Table 2. Photos of the BSA can be found in Appendix E.

State rankings of 1, 2, or 3 are considered high priority for inventory or special status and impacts to these communities typically require mitigation.

Table 2. Vegetation Communities and Land Cover Types within the BSA

Vegetation Community or Land Cover Type	Floristic Alliance	Association	State Ranking[1]	Acreage
Scrub				
Creosote Bush Scrub	*Larrea tridentata*	*Larrea tridentata*	G5/S5[1]	102.76
Rubber Rabbitbrush Scrub	*Ericameria nauseosa*	*Ericameria nauseosa*	G5/S5[1]	64.84
			Shrub Subtotal[2]	*167.6*
Disturbed and Developed				
Disturbed Habitat	N/A	N/A	N/A	11.07
Urban/Developed	N/A	N/A	N/A	48.23
			Disturbed and Developed Subtotal[2]	*59.3*
			Total[2]	**226.9**

Notes:

[1] The conservation status of a vegetation community is designated by a number from 1 to 5. The numbers have the following meaning (NatureServe 2023):
1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure
N/A = not applicable
SNR = unranked, subnational rank not yet assessed

[2] Totals may not sum due to rounding.

5.1.1 Scrub

5.1.1.1 Creosote Bush Scrub (33.010.00)

The creosote bush shrubland alliance includes creosote bush as the dominant or co-dominant species in the shrub canopy. Creosote bush has an open shrub canopy of less than 3 meters (9.8 feet) tall, with an open to intermittent herbaceous layer of annuals and perennial grasses (CNPS 2023b). Species associated with the creosote bush alliance include bursage (*Ambrosia dumosa*), cheesebush (*Ambrosia salsola*), allscale scrub (*Atriplex polycarpa*), shadscale (*Atriplex confertifolia*), Nevada joint fir (*Ephedra nevadensis*), and Anderson's boxthorn (*Lycium andersonii*). Emergent trees such as honey mesquite (*Prosopis glandulosa*), and western Joshua tree may be present at low cover.

The creosote bush alliance is ranked by the CDFW as a G5/S5 alliance. This ranking indicates that globally and within California the alliance is widespread, abundant, and secure (CDFW 2023c; NatureServe 2023); therefore, the community is not considered sensitive under CEQA.

The creosote bush scrub alliance occurs throughout the southwestern portion of the BSA, and along the northern border of the BSA.

5.1.1.2 Rubber Rabbitbrush Scrub (35.310.00)

Rubber rabbitbrush alliance communities include rubber rabbitbrush as the dominant or co-dominant shrub in the canopy. Rubber rabbitbrush has an open to continuous shrub canopy less than 3 meters (9.8 feet) in height with a sparse herbaceous layer (CNPS 2023b). Species associated with the rubber rabbitbrush alliance include big sagebrush (*Artemesia tridentata*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), ephedra (*Ephedra* spp.), California buckwheat (*Eriogonum fasciculatum*), scale broom (*Lepidospartum squamatum*), and antelope bitterbrush (*Purshia tridentata*) (CNPS 2023b). Emergent trees may be present at low cover, including California juniper (*Juniperus californica)*, Jeffrey pine (*Pinus jeffreyi)*, single-leafpinyon (*Pinus monophyla)* or western Joshua tree (CNPS 2023b).

The rubber rabbitbrush alliance is ranked by the CDFW (2023c) as a G5/S5 alliance. This ranking indicates that globally and within California the alliance is widespread and abundant (CDFW 2023c; NatureServe 2023).

The rubber rabbitbrush scrub alliance occurs in the northeastern portion of the BSA.

5.1.2 Disturbed and Developed

5.1.2.1 Disturbed Habitat

Disturbed habitat refers to areas where soils have been recently or repeatedly disturbed by grading, compaction, or clearing of vegetation. Structures are typically not present within disturbed habitats, and these areas provide relatively low value for most plant and wildlife species. When vegetated, disturbed habitat supports predominantly non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance.

Disturbed habitat is not a listed vegetation community under the California Natural Community List (CDFW 2023c), but it has been used in this report because it best describes what was observed in the field. As such, this community is not globally, or state ranked and is not considered a sensitive natural community under CEQA.

Within the BSA, disturbed habitat occurs within the Outer Highway 15 right-of-way and along unpaved roads throughout the BSA.

5.1.2.2 Urban/Developed

Urban or developed land covers refer to areas that have been constructed on or otherwise physically altered to the point where vegetation is no longer present. Urban or developed areas are characterized by permanent or semi-permanent structures, hardscapes, and landscaped areas that require irrigation.

Developed land is not a listed vegetation community under the California Natural Community List (CDFW 2023c), but it has been used in this report because it best describes what was observed in the field. As such, this community is not globally, or state ranked and is not considered a sensitive natural community under CEQA.

Within the BSA, urban/developed areas occur along paved and unpaved roads that run through the BSA including Outer Highway 15, Quarry Road, and Falchion Road, in addition to an existing mining facility in the southeastern corner of the BSA.

5.2 Plants and Wildlife Observed

5.2.1 Plants

A total of 93 species of native or naturalized plants, 80 native (86%) and 13 non-native (14%), were recorded within the on-site BSA. A list of plant species observed by Dudek and GLA biologists is provided in Appendix F, Plant Compendium. A complete compendium of plants observed in the off-site BSA can be found in Appendix C, Biological Technical Report, of the Draft Environmental Impact Report: Apple Valley 143 Project (Town of Apple Valley 2023).

5.2.2 Wildlife

A total of 37 wildlife species, consisting of 34 native species (92%) and 3 non-native species (8%), were recorded within the on-site BSA during surveys (Appendix G, Wildlife Compendium). Birds detected on or in the immediate vicinity of the BSA included bushtit (*Psaltriparus minimus*), house finch (*Haemorhous mexicanus*), lesser nighthawk (*Chordeiles acutipennis*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), turkey vulture (*Cathartes aura*), house sparrow (*Passer domesticus*), mourning dove (*Passer domesticus*), European starling (*Sturnus vulgaris*), barn swallow (*Hirundo rustica*), verdin (*Auriparus flaviceps*), rock wren (*Salpinctes obsoletus*), Bewick's wren (*Thryomanes bewickii*), black-throated sparrow (*Amphispiza bilineata*), Bell's sparrow (*Artemisiospiza belli*), chipping sparrow (*Spizella passerine*), and white-crowned sparrow (*Zonotrichia leucophrys*). .

Mammals detected included desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Otospermophilus beecheyi*), domestic cat (*Felis catus*), black-tailed jackrabbit (*Lepus californicus*), and white-tailed antelope squirrel (*Ammospermophilus* leucurus).

Reptiles detected included common side-blotched lizard (*Uta stansburiana*), zebra-tailed lizard (*Callisaurus draconoides*), desert horned lizard (*Phrynosoma platyrhinos*), desert spiney lizard (*Sceloporus magister*), tiger whiptail (*Aspidoscelis tigris*), gophersnake (*Pituophis catenifer*), western rattlesnake (*Crotalus oreganus*), and Mohave rattlesnake (*Crotalus scutulatus*).

A complete compendium of wildlife observed in the off-site BSA can be found in Appendix C, Biological Technical Report, of the Draft Environmental Impact Report: Apple Valley 143 Project (Town of Apple Valley 2023).

5.3 Special-Status and Regulated Resources

The GLA Biological/Regulatory Resource Evaluation (Appendix A) provides tables of all special-status species whose geographic ranges fall within the general vicinity of the Project boundary. Special-status species' potential to occur within the Project boundary were evaluated based on known species distribution, species-specific habitat preferences, and GLA biologists' knowledge of regional biological resources. Species potentially occurring within the Project boundary are identified as having moderate or high potential to occur based on habitat conditions on site, and species for which there is little or no suitable habitat are identified as not expected to occur or having low potential to occur.

5.3.1 Special-Status Plants

Special-status plants include those listed, or candidates for listing, as threatened or endangered by USFWS and CDFW, and species identified as rare by the CNPS (particularly CRPR 1A, presumed extinct in California and either rare or extinct elsewhere; CRPR 1B, rare, threatened, or endangered in California and elsewhere; CRPR 2A, plants presumed extirpated in California but common elsewhere; and CRPR 2B, rare, threatened, or endangered in California but common elsewhere).

GLA biologists initially evaluated the potential for special-status plant species to occur within the Project boundary (Appendix A). According to the report, species were considered based on a number of factors, including (1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the Project (i.e., within the USGS "Victorville" 7.5-minute quadrangle); and (2) any other species that are known to occur within the vicinity of the Project boundary, or for which potentially suitable habitat occurs on site. Of the 21 special-status plant species identified in the database queries as potentially occurring in the vicinity, six species were either documented by GLA as occurring within the Project boundary or were determined by GLA to have some potential to occur within the Project boundary: beaver dam breadroot, crowned muilla (*Muilla coronata*), Mojave fish-hook cactus (*Sclerocactus polyancistrus*), solitary blazing star (*Mentzelia eremophila*), western Joshua tree, and white pygmy-poppy (*Canbya candida*). An analysis of these species and their potential to occur is included in the GLA Biological/Regulatory Resource Evaluation (Appendix A). Of these species recommended by GLA, all are CRPR 4 species except for beaver dam breadroot, which is a CRPR 1B species. CRPR 4 species are not considered special-status, and therefore, only beaver dam breadroot was included as a target species for the 2023 focused rare plant surveys.

Additionally, Dudek conducted an extensive desktop review of literature, existing documentation, and GIS data to evaluate the potential for special-status plant species to occur within the BSA, and identified the following nine species as either occurring within the BSA or having a moderate or high potential to occur within the BSA: desert cymopterus, purple nerve cymopterus, Mojave monkey flower, Barstow woolly sunflower, sagebrush loeflingia, short-joint beavertail, Latimer's woodland-gilia, San Bernardino aster, and western Joshua tree. Therefore, these species were also included as target species for 2023 focused rare plant surveys.

One special-status plant species, western Joshua tree, was observed within the BSA. Western Joshua tree is a state candidate for listing and is further discussed in Section 5.3.1.1. No other listed and/or CRPR 1 or 2 plants were observed during the focused surveys. Due to focused surveys being conducted during the appropriate blooming period, all other special-status plants are not expected to occur. In addition, there is no USFWS-designated critical habitat for listed plant species overlapping the BSA (USFWS 2023b).

Details of the western Joshua tree are below in Table 3.

Table 3. Special-Status Plant Species Observed or with Moderate or High Potential to Occur within the BSA

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Yucca brevifolia	western Joshua tree	None/SC/None	Great Basin grassland, Great Basin scrub, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland, Sonoran desert scrub, Valley and foothill grassland/perennial leaf succulent/Apr–May/ 1,310–6,560	Present. This species was observed within the BSA.

Notes: CRPR = California Rare Plant Rank; BSA = biological survey area.
Status Designations
State
SC: State listed candidate species

5.3.1.1 Western Joshua Tree

Western Joshua tree is a California state candidate for listing. Western Joshua tree is a monocot tree in the asparagus family (*Agavaceae*) that occurs within Joshua tree woodland, Great Basin grassland and scrub, Mojavean desert scrub, pinyon and juniper woodland, Sonoran desert scrub, and valley and foothill grassland. This species occurs in San Bernardino County and other southern and eastern counties in California between 1,310 and 6,560 feet amsl (CNPS 2023b). This species typically blooms between April and May, but is a conspicuous tree and identifiable at any time of year.

A total of 298 western Joshua tree individuals were recorded within the BSA (Figure 6, Joshua Tree Inventory). Of the Joshua tree individuals recorded, 283 individuals were found within the proposed Project boundary, while 15 were found adjacent (within 50 feet) to the limits of the Project. Trees in the tree survey area vary in size and stature according to age and location. Further details on phenological data are provided in Appendix C.

5.3.1.2 Desert Native Plants

In addition to western Joshua tree, two desert native plants were observed within the BSA during the focused desert native plant survey: one Wiggins' cholla (*Cylindropuntia echinocarpa*) and one Mojave yucca (*Yucca schidigera*) (Figure 7, Special-Status Plants and Burrow Surveys).

5.3.2 Special-Status Wildlife

Special-status wildlife include those listed, or candidates for listing, as threatened or endangered by USFWS and CDFW and those designated as Species of Special Concern by CDFW

GLA biologists initially evaluated the potential for special-status wildlife species to occur within the Project boundary before survey were conducted (Appendix A). According to the report, species were considered based on a number of factors, including (1) species identified by the CNDDB as occurring (either currently of historically) on or in the vicinity of the Project; and (2) any other species that are known to occur within the vicinity of the Project boundary, or for which potentially suitable habitat occurs on site. Of the 31 special-status wildlife species identified in the database queries as potentially occurring in the vicinity, eight species were determined by GLA to have a moderate potential to occur within the Project boundary before survey were conducted: Crotch's bumble bee, burrowing owl, Le Conte's thrasher (*Toxostoma lecontei*), loggerhead shrike (*Lanius ludovicianus*) Mohave ground squirrel, Mojave desert tortoise, pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). The details of these species are presented below in Table 4. Those special-status wildlife species that are not expected or have low potential to occur within the Project boundary are discussed in Appendix A but are not discussed further in this report as no significant direct or indirect impacts are expected. After focused surveys and habitat assessments were conducted for some special-status species, the potential to occur within the BSA changed, as noted in Table 4.

Table 4. Special Status Wildlife with Moderate Potential to Occur in the BSA

Scientific Name	Common Name	Status (Federal/ State)	Habitat Requirements	Potential to Occur Before Surveys	Potential to Occur After Surveys
Invertebrates					
Bombus crotchii	Crotch's bumble bee	Federal: None State: SCE	Relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert.	Moderate potential to occur.	Not expected to occur.
Reptiles					
Gopherus agassizii	Desert tortoise	Federal: FT State: ST	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 potential to occur.	Moderate potential to occur.
Birds					
Athene cunicularia	Burrowing owl	Federal: BCC State: SSC	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal	Moderate potential to occur.	Moderate potential to occur.

Table 4. Special Status Wildlife with Moderate Potential to Occur in the BSA

Scientific Name	Common Name	Status (Federal/ State)	Habitat Requirements	Potential to Occur Before Surveys	Potential to Occur After Surveys
			dunes, desert floors, and some artificial, open areas as a yearlong resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.		
Toxostoma lecontei	Le Conte's thrasher	Federal: BCC State: SSC	Desert scrub, mesquite, tall riparian brush and, locally, chaparral.	Moderate potential to occur.	Moderate potential to occur.
Lanius ludovicianus	Loggerhead shrike	Federal: BCC State: SSC	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs	Moderate potential to occur.	Moderate potential to occur.
Mammals					
Xerospermophilus mohavensis	Mohave ground squirrel	Federal: None State: ST	Mojave creosote scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland.	Moderate potential to occur.	Not expect to occur.
Antrozous pallidus	Pallid bat	Federal: None State: SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Moderate potential to forage within the Project site but not roost.	Moderate potential to forage within desert scrub habitat of the BSA but is not expected to roost.

Table 4. Special Status Wildlife with Moderate Potential to Occur in the BSA

Scientific Name	Common Name	Status (Federal/ State)	Habitat Requirements	Potential to Occur Before Surveys	Potential to Occur After Surveys
Corynorhinus townsendii	Townsend's big-eared bat	Federal: None State: SSC	Coniferous forests and woodlands, deciduous riparian woodland, semi-desert and montane shrublands.	Moderate potential to forage within the Project site but not roost.	Moderate potential to forage within desert scrub habitat of the BSA but is not expected to roost.

Source: GLA 2023.
Note: CNDDB = California Natural Diversity Database.
Status Designations
Federal
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
FE: Federally listed as endangered
FPD: Federally proposed for delisting
FT: Federally listed as threatened
State
FP: California Fully Protected Species
SCE: State candidate for listing as endangered
SE: State listed as endangered
SSC: California Species of Special Concern
ST: State listed as threatened
WL: California Watch List Species

No special-status wildlife species were observed within the BSA. In addition, there is no USFWS-designated critical habitat for listed wildlife species overlapping the BSA (USFWS 2023b). Suitable habitat for Crotch's bumblebee was not detected during the habitat assessment. Protocol-level surveys for Mohave ground squirrel were negative. Therefore, these species are not expected to occur and will not be analyzed further. Focused surveys for burrowing owl and Mojave desert tortoise were negative, but potentially suitable burrows for both species were detected. These are transient species and may still incidentally occur within the BSA. As such, these species will be analyzed further.

Burrowing Owl

Burrowing owl is a California Species of Special Concern. With a relatively wide-ranging distribution throughout the west, burrowing owls are considered to be habitat generalists (Lantz et al. 2004). In California, burrowing owls are yearlong residents of open, dry grassland and desert habitats and grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats (Zeiner et al. 1990). Preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils (Haug et al. 1993).

The presence of burrows is the most essential component of burrowing owl habitat as they are required for nesting, roosting, cover, and catching prey (Coulombe 1971; Martin 1973; Green and Anthony 1989; Haug et al. 1993). In California, western burrowing owls most commonly live in burrows created by California ground squirrels. Burrowing owls may occur in human-altered landscapes such as agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable (i.e., open and sparse), useable burrows are available, and foraging habitat occurs in close proximity (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can be used for nesting and roosting.

Although the BSA contains open scrub areas that may support this species, burrowing owl was not observed during focused surveys. However, numerous burrows that are potentially suitable for nesting were mapped (Figure 7). Mapped burrows were at least 4 inches in diameter, and all were natural earthen burrows. No active burrowing owl sign (i.e., feathers, whitewash, or pellets) were observed within the BSA. The nearest mapped CNDDB record is approximately 4.5 miles southwest of the BSA, from 2008 (CDFW 2023d). Based on the discussion above, burrowing owl has a moderate potential to occur within the BSA.

LeConte's Thrasher

LeConte's thrasher is a USFWS Bird of Conservation Concern and a California Species of Special Concern. LeConte's thrasher is found from below sea level up to 1,600 meters (5,250 feet) amsl in Southern California deserts in southern Mono County to the Mexican border (Dobkin and Granholm 2005; Sheppard 1996).

Preferred habitat for LeConte's thrasher is open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; LeConte's thrasher also occurs in western Joshua tree habitat with scattered shrubs (Dobkin and Granholm 2005). This species prefers gently rolling to well-drained slopes occupied by saltbush and joint fir (*Ephedra* sp.) with bare ground or sparse grass (Fitton 2008). These conditions are generally found on bajadas or alluvial fans where the slopes are bisected by dry washes (Fitton 2008). Much of the LeConte's thrasher's diet consists of insects found within leaf litter under desert shrubs; therefore, habitat must contain a sufficient ground cover (Sheppard 1996).

LeConte's thrasher was not observed during biological surveys. However, the BSA supports suitable foraging habitat (desert scrub) and nesting habitat (spiny shrubs and cactus). The nearest mapped CNDDB record is approximately 1.8 miles southwest of the BSA near the Mojave River from 2017 (CDFW 2023d). Based on the discussion above, LeConte's thrasher has a moderate potential to occur within the BSA.

Loggerhead Shrike

Loggerhead shrike (*Lanius ludovicianus*) is a USFWS Bird of Conservation Concern and a California Species of Special Concern. It is widespread throughout the United States, Mexico, and portions of Canada (Humple 2008). The species is a yearlong resident in most of the United States, including from California east to Virginia and south to Florida, and in Mexico. In California, although shrikes are widespread at the lower elevations in the state, the largest breeding populations are located in portions of the Central Valley, the Coast Ranges, and the southeastern deserts (Humple 2008).

Preferred habitats for loggerhead shrike are open areas that include scattered shrubs, trees, posts, fences, utility lines, or other structures that provide hunting perches with views of open ground, as well as nearby spiny vegetation or human-made structures (such as the tops of chain-link fences or barbed wire) that provide a location to impale prey upon for storage or manipulation (Humple 2008). Loggerhead shrikes occur most frequently in riparian areas along woodland edges, grasslands with sufficient perch and butcher sites, scrublands, and open canopied woodlands, although they can be quite common in agricultural and grazing areas, and can sometimes be found in mowed roadsides, cemeteries, and golf courses. Loggerhead shrikes occur only rarely in heavily urbanized areas. For nesting, the height of shrubs and presence of canopy cover are most important (Yosef 1996).

Loggerhead shrike was not observed during biological surveys. However, the BSA supports open habitat with scattered shrubs and trees that may provide suitable nesting and foraging habitat for loggerhead shrike. The nearest mapped CNDDB record is approximately 2.6 miles southwest of the BSA near the Mojave River from 2006 (CDFW 2023d). Based on the discussion above, loggerhead shrike has a moderate potential to occur within the BSA.

Crotch's Bumblebee

Crotch's bumblebee is a state candidate for listing as threatened. The Crotch's bumblebee is distributed in coastal California, east towards the Sierra-Cascade Crest, and is less commonly in western Nevada (Koch 2012). It occurs in grassland and scrub communities that contain *Phacelia, Clarkia, Eriogonum, Eschscholzia and Antirrhinum* species, which have been identified as genera with preferred nectar sources.

The BSA contains scrub communities that could potentially support the preferred plant genera. However, the only historical record within the 9 USGS 7.5-minute quadrangle area containing the BSA is approximately 4 miles northeast of the BSA near Bell Mountain from 1944 (CDFW 2023d). Additionally, Dudek conducted a focused habitat assessment for this species concurrently with rare plant surveys, and determined there were no suitable floral resources on site to support this species. Therefore, this species is not expected to occur within the BSA.

Mohave Ground Squirrel

Mohave ground squirrel is a State of California threatened species. This species' distribution range is restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties (Zeiner et al. 1990). Mohave ground squirrels generally inhabit areas where the soil is friable and sandy or gravelly. Mohave ground squirrels occur in desert scrub habitats dominated by creosote bush and desert saltbush scrub at elevations between 1,800 and 5,000 feet amsl.

No Mohave ground squirrels were captured or detected during protocol surveys conducted by Dipodomys Ecological Consulting (see Appendix D for details on the methods and results of this survey effort). A habitat assessment for Mohave ground squirrel conducted over the off-site BSA determined that while marginally suitable habitat is present, the species is not expected to occur in this area. This area lacks connectivity to core populations of the species, and the Mohave ground squirrel population densities in the southern portion of its range (i.e., where the Project is located) are relatively low. Finally, the more recent known occurrence of the species was documented in 2011 approximately 9 miles southwest of the Project boundary across the Mojave River. Given the low-quality habitat present in the off-site BSA, as well as a lack of connectivity to core populations and low population densities of Mohave ground squirrel in the vicinity of the Project site, protocol surveys were not warranted in the off-site BSA. Based on the discussion above, this species is not expected to occur within the BSA.

Pallid Bat

Pallid pat is a State of California Species of Special Concern. This species is widespread throughout the western United States; southern British Columbia, Canada; and mainland and Baja California, Mexico (Hermanson and O'Shea 1983; Hall 1981). The pallid bat is locally common in arid deserts (especially the Sonoran life zone) and grasslands throughout the western United States and also occurs in shrublands, woodlands, and forests at elevations up to 2,440 meters (8,000 feet) (Hermanson and O'Shea 1983; Hall 1981). Although this species prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, it has been observed far from such areas (Hermanson and O'Shea 1983).

Pallid bat has a moderate potential to forage within desert scrub habitat of the BSA but is not expected to roost.

Townsend's Big-Eared Bat

Townsend's big-eared bat is a State of California Species of Special Concern. The Townsend's big-eared bat ranges throughout the western United States; British Columbia, Canada; and Mexico (Kunz and Martin 1982). Within California, Townsend's big-eared bat occurs throughout the state, with the exception of alpine and subalpine areas of the Sierra Nevada

Townsend's big-eared bat has a moderate potential to forage within desert scrub habitat of the BSA but is not expected to roost.

Mojave Desert Tortoise

Desert tortoise is a federally and state-listed threatened species. The range of the Mohave population of the desert tortoise includes portions of the Mojave Desert and the Colorado Desert in Southern California (parts of Inyo, Kern, Los Angeles, San Bernardino, and Riverside Counties), southern Nevada (Clark, Esmeralda, Nye, and Lincoln Counties), northwestern Arizona (Mohave County), and southwestern Utah (Washington County).

Typical habitat for desert tortoise in the Mojave Desert is creosote bush scrub where precipitation ranges from 2 to 8 inches, with relatively high diversity of perennial plants and high productivity of ephemeral plants. Throughout most of the Mojave Desert, desert tortoises occur most commonly on gently sloping terrain with sandy gravel soils and where there is sparse cover of low-growing shrubs, which allows for the establishment of herbaceous plants. Soils must be friable enough for digging burrows, but firm enough that burrows do not collapse (USFWS 2008). Although populations of desert tortoise are not generally known to inhabit elevations much above 4,000 feet amsl, they occur from below sea level to an elevation of 7,300 feet amsl. Occupied habitat varies from flats and slopes dominated by creosote bush scrub at low elevations, to rocky slopes in blackbrush and juniper woodland ecotones at higher elevations (USFWS 2008).

Although the BSA contains suitable sandy soils and ephemeral washes within Mojave Desert habitat, desert tortoise was not observed during focused surveys. However, potentially suitable burrows and sign were mapped within the Project boundary (Figure 7). On site, there were 11 burrows with a rank 4 designation, indicating that they are suitable for desert tortoise and in good condition, but with no active sign, and six burrows with a rank 5 designation, indicating that they may have been used by desert tortoise in the past, but have no active sign and have since deteriorated. Additionally, the BSA contains 11 areas supporting desert tortoise pallet sites, i.e., shallow burrows or bank overhangs often consisting of caliche substrate where desert tortoise may temporarily take shelter. Finally, there was one incidence of what is potentially desert tortoise scat within the BSA (Figure 7). Furthermore, the nearest CNDDB occurrence was from 2005 and is mapped approximately 1 mile south of the BSA (CDFW 2023d). Based on the discussion above, desert tortoise has a moderate potential to occur within the BSA. Desert tortoise survey forms are included as Appendix H.

5.3.3 Potential Aquatic Resources

The jurisdictional aquatic resources delineation identified seven ephemeral drainages comprising approximately 1.93 acres within the BSA (Appendix B). Of that total, 1.68 acres are non-wetland waters of the state (below ordinary high-water mark) under RWQCB jurisdiction and streambed under CDFW. An additional 0.25 acres are solely jurisdictional streambed under CDFW (below and above ordinary high-water mark, to top of bank). The ephemeral drainages present are not likely subject to USACE jurisdiction because these features do not meet the relatively permanent standard as a water of the Unites States. A further breakdown of jurisdictional aquatic features is provided in Table 5, and the spatial distribution of jurisdictional aquatic features is presented on Figure 8, Potential Aquatic Resources.

Table 5. Aquatic Resource Summary for the BSA

Feature Name	Non-Wetland Waters of the State (RWQCB/CDFW) (acres)	Jurisdictional Streambed (CDFW) (acres)
NWW-05	0.25	0.25
NWW-06	0.89	1.00
NWW-07	0.19	0.34
NWW-08	0.07	0.07
NWW-09	0.24	0.24
NWW-11	0.02	0.02
NWW-12	0.02	0.02
Total[1]	**1.68**	**1.93**

Notes: RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife.
1 Totals may not sum due to rounding.

5.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by ensuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires).

Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may also serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as steppingstones for dispersal.

The BSA is not mapped as an essential connectivity area, natural landscape block, or linkage for the California Desert Linkage Network. While it is approximately 1 mile northeast of an area mapped as a linkage for the California Desert Linkage Network, it should be noted that Highway 15, which is mapped as a wildlife movement barrier by CDFW, separates the BSA from the northern and western portion of this area. Additionally, the southern portion of this linkage is generally surrounded by urban development. The BSA falls within lands mapped as Rank 1 (i.e., lands that have limited connectivity opportunity) (CDFW 2019).

According to CDFW (2019), rank 1 is defined as:

> Areas where land use may limit options for providing connectivity (e.g., agriculture, urban) or no connectivity importance has been identified in models. Includes lakes. Some Department of Defense (DOD) lands are also in this category because they have been excluded from models due to lack of conservation opportunity, although they may provide important connectivity habitat.

Additionally, due to the undeveloped land on the BSA, there are opportunities for wildlife to move across the site when migrating through the region. However, the BSA does not currently function as a corridor or linkage between two larger habitat blocks. Although the BSA may function as local dispersal habitat for wildlife movement and/or foraging/hunting, the Project would not create a significant impediment to wildlife movement that would warrant a wildlife corridor study.

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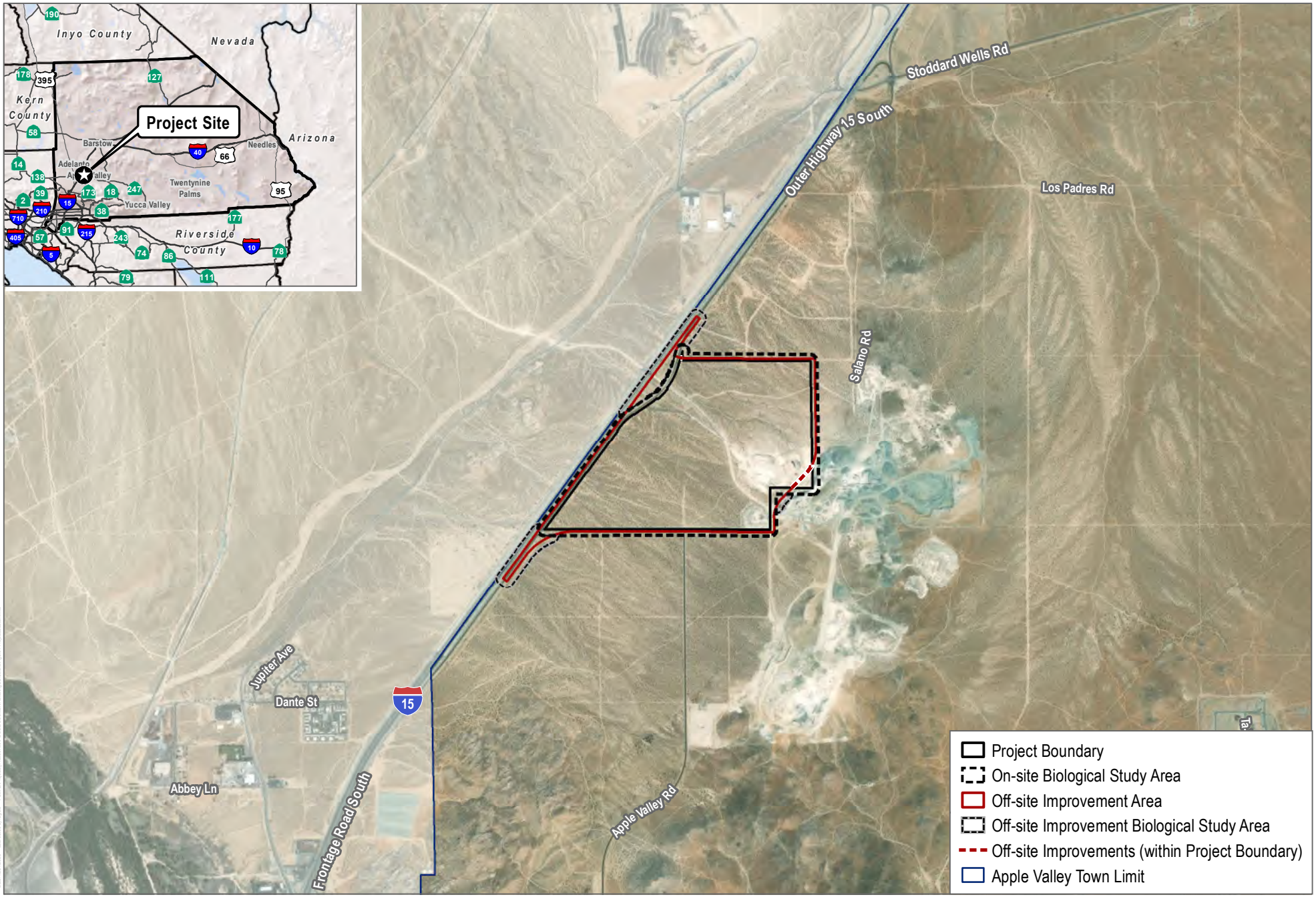

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Inland Empire North Logistics Center Apple Valley Project

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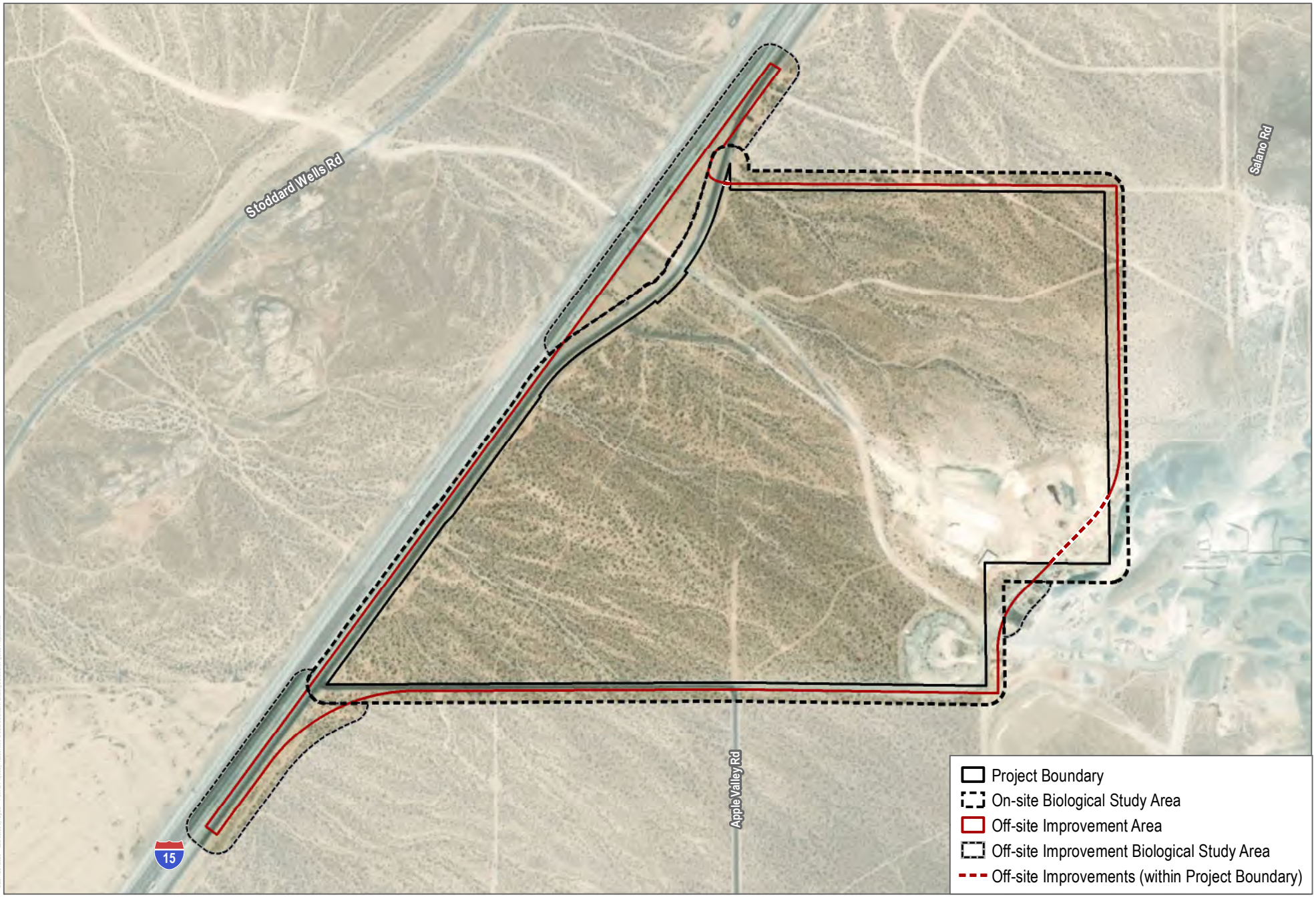

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

0 300 600 Feet

FIGURE 2

Project Site

Inland Empire North Logistics Center Apple Valley Project

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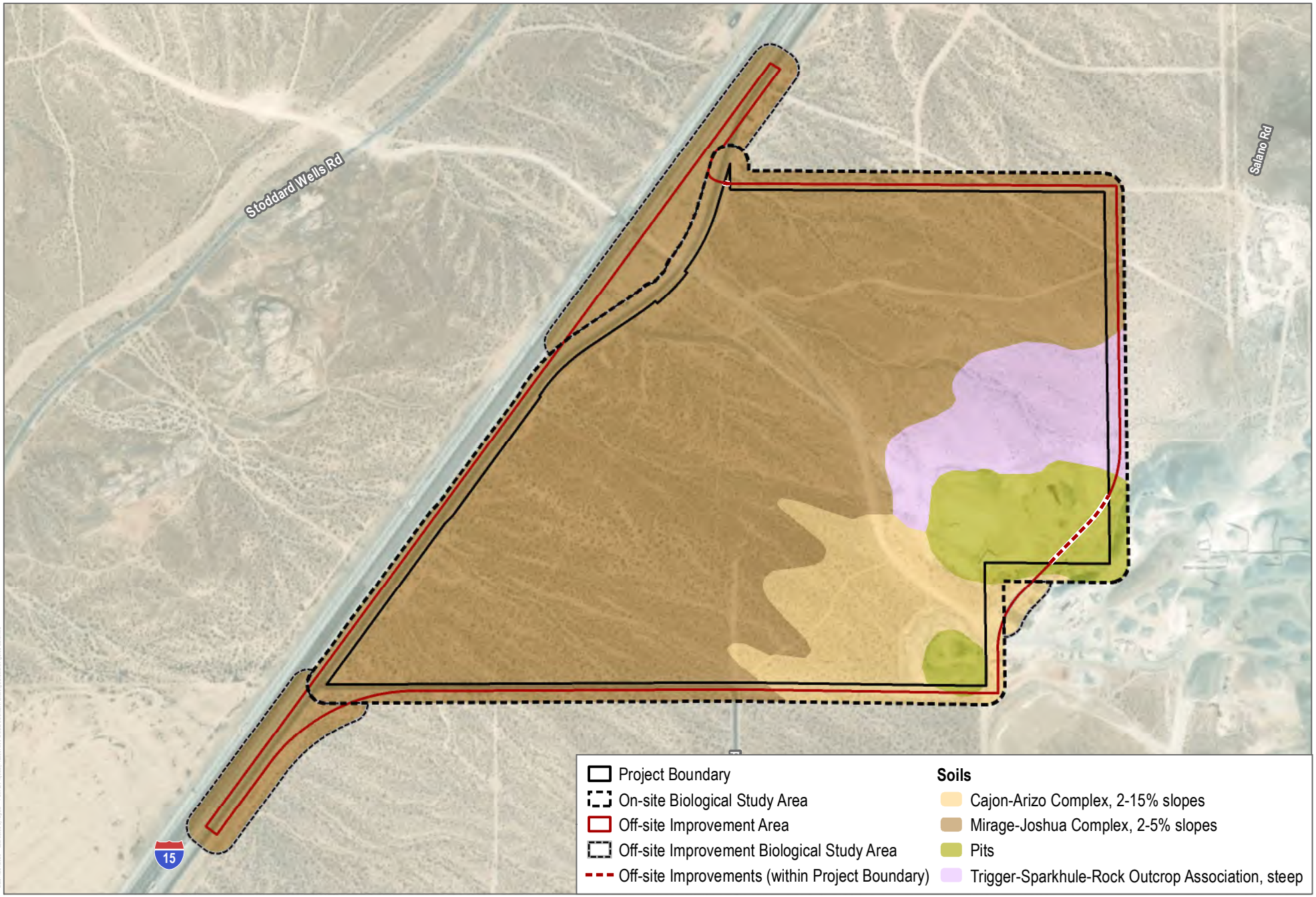

SOURCE: USDA NRCS Soils; County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

0 300 600 Feet

FIGURE 3

Soils

Inland Empire North Logistics Center Apple Valley Project

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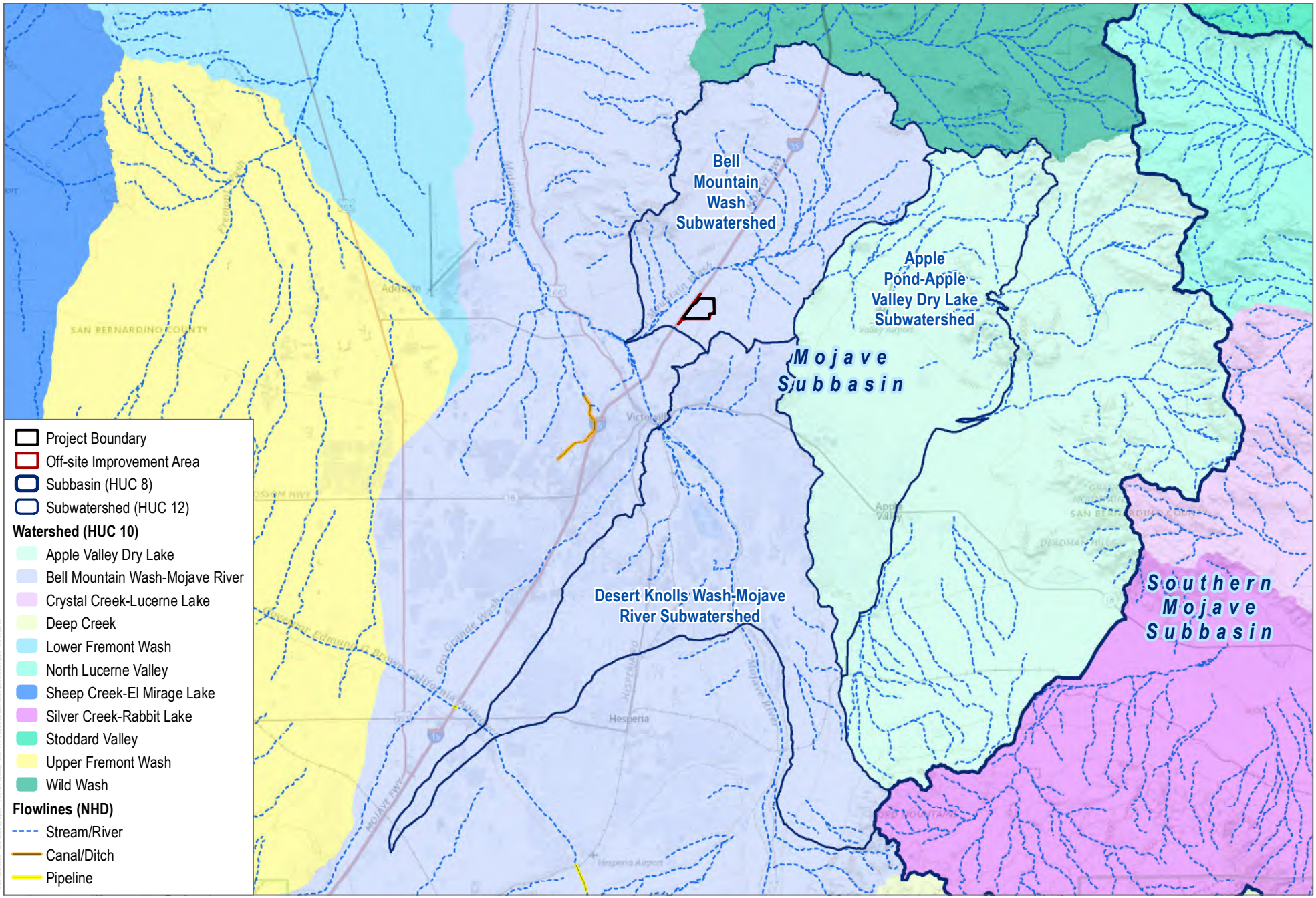

SOURCE: USGS; County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

FIGURE 4

Hydrology

Inland Empire North Logistics Center Apple Valley Project

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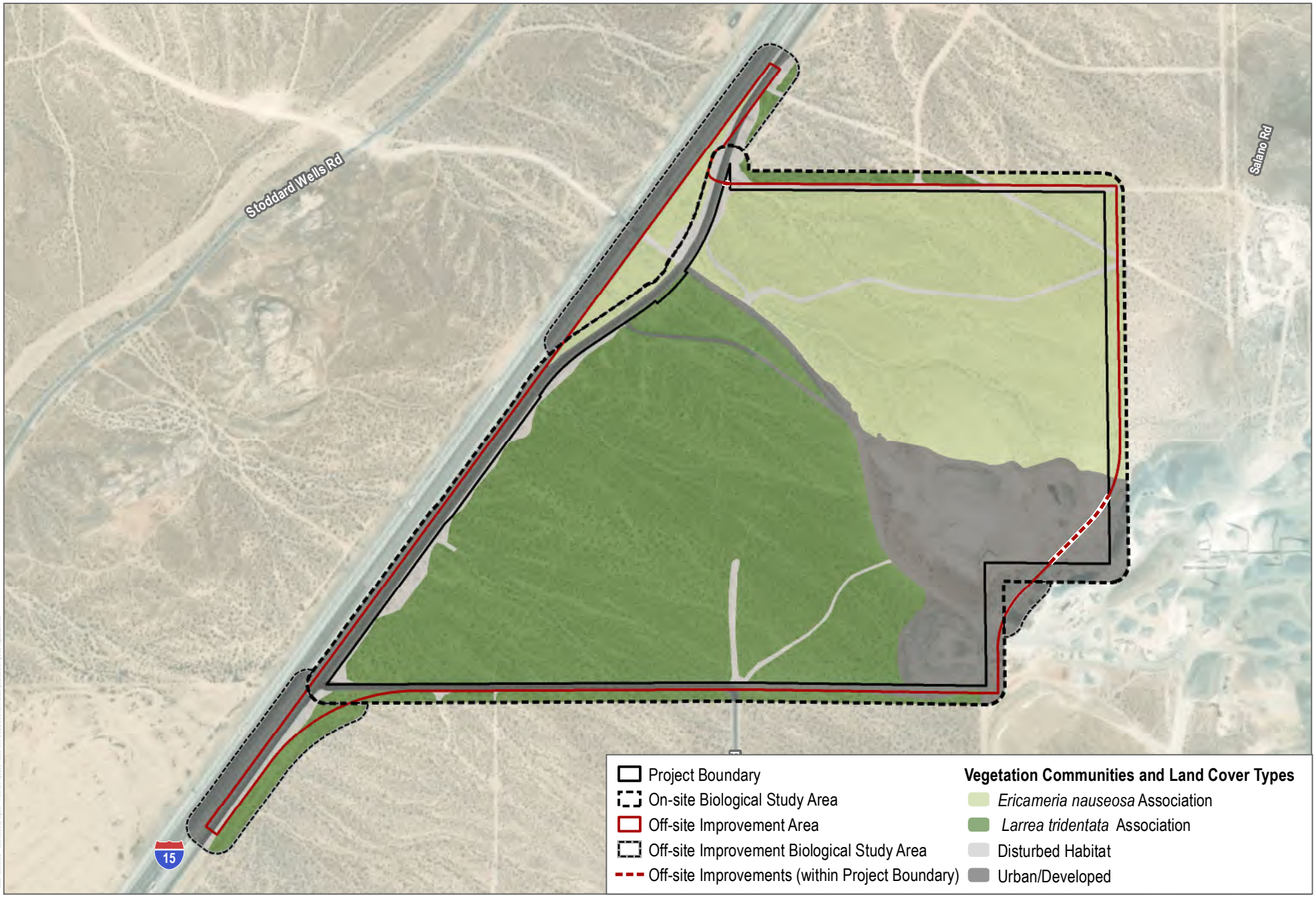

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

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FIGURE 5

Vegetation Commuities and Land Cover Types

Inland Empire North Logistics Center Apple Valley Project

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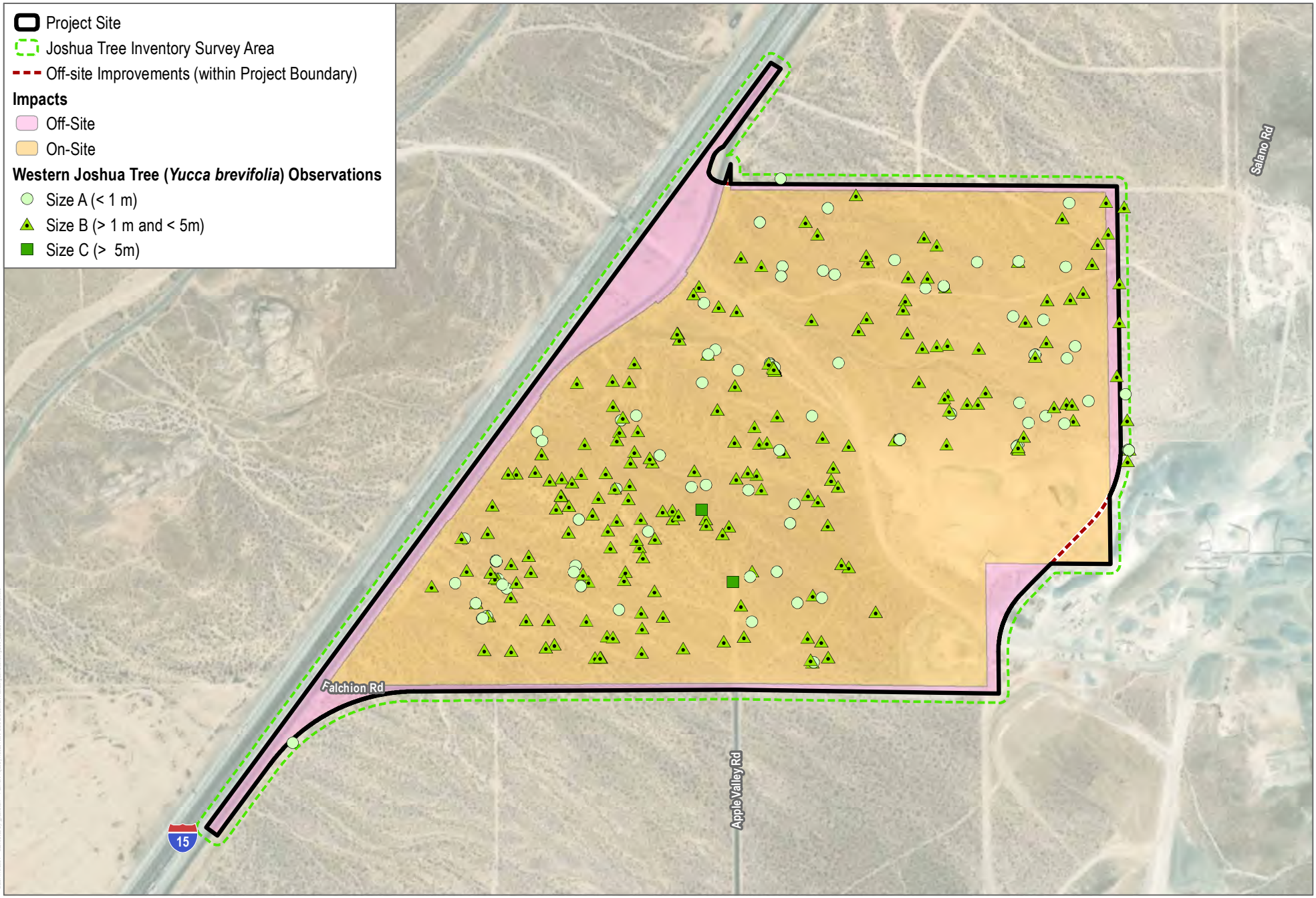

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

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FIGURE 6

Joshua Tree Inventory

Inland Empire North Logistics Center Apple Valley Project

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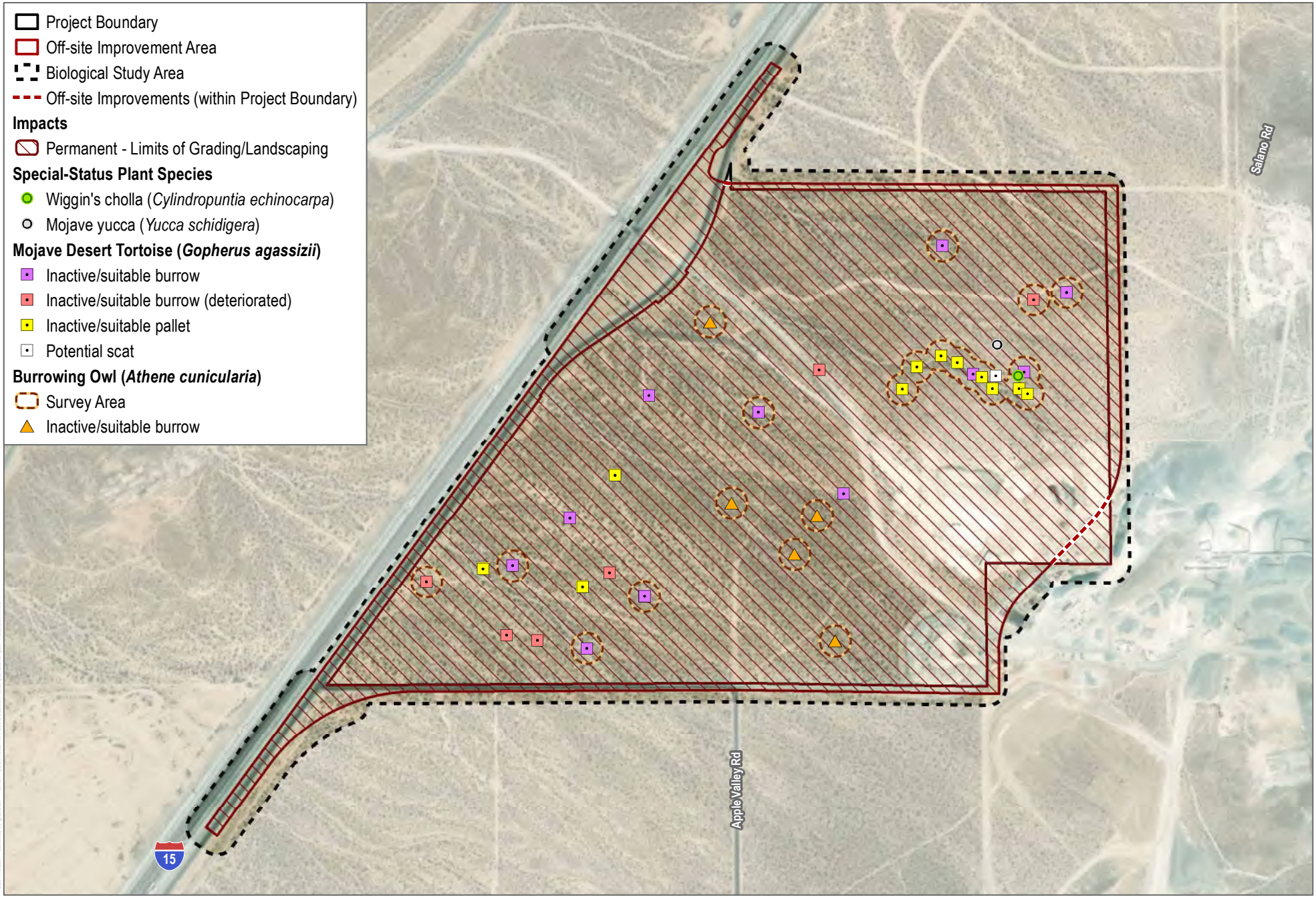

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

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FIGURE 7

Special-Status Plants and Burrow Surveys

Inland Empire North Logistics Center Apple Valley Project

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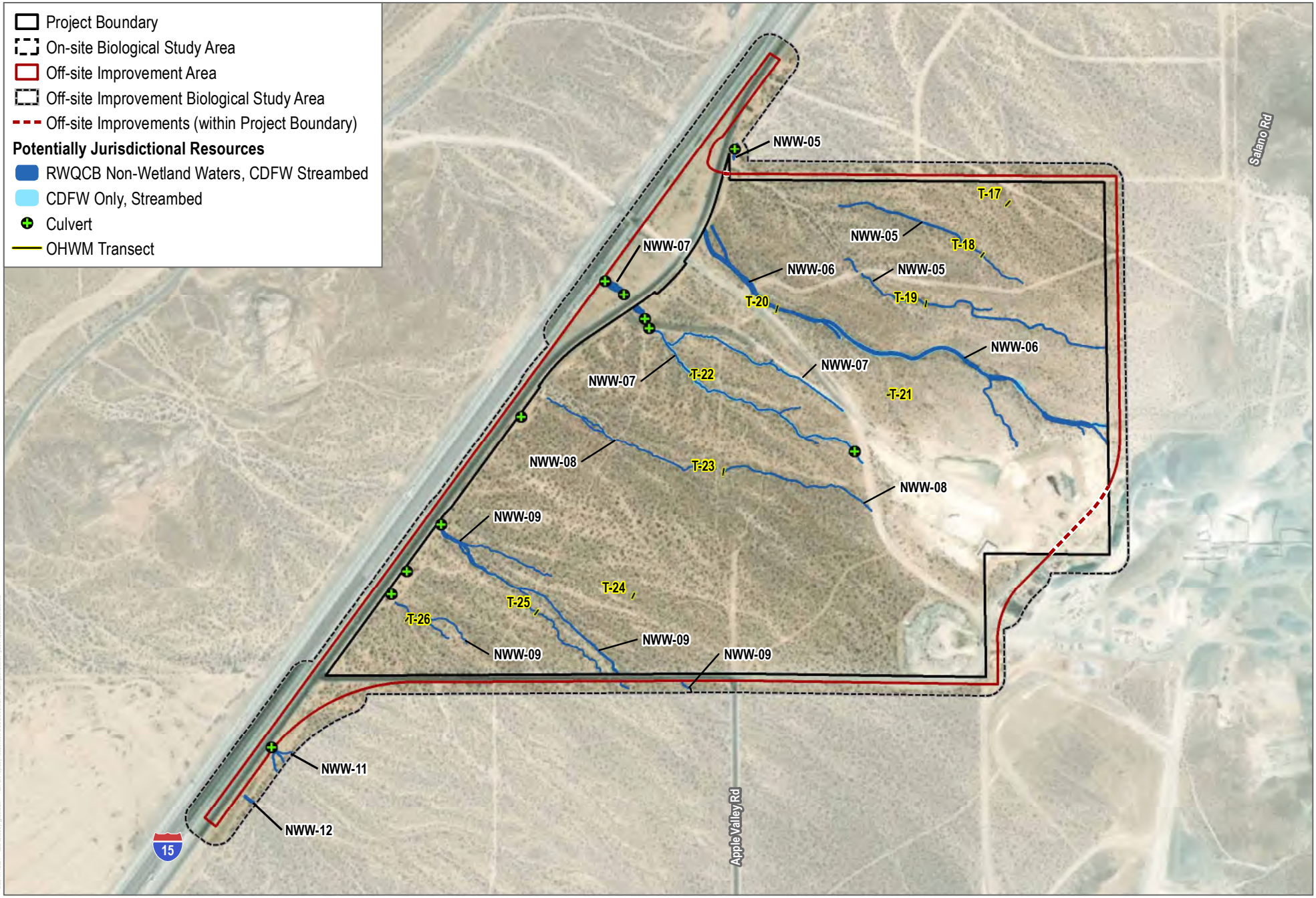

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

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FIGURE 8

Potential Aquatic Resources

Inland Empire North Logistics Center Apple Valley Project

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Appendix A

GLA Biological/Regulatory Resource Evaluation

GLENN LUKOS ASSOCIATES

Regulatory Services

August 23, 2023

Herb Krumsick
FGFW IV LLC
150 North Market Street
Wichita, Kansas 67206

SUBJECT: Results of a Biological/Regulatory Resource Evaluation for the Approximately 177.74-Acre Portion of the 404.17-Acre Inland Empire North Logistics Center located in the Town of Apple Valley, San Bernardino County, California

Dear Mr. Krumsick:

The approximately 404.17-acre Inland Empire North Logistics Center Project (Project) is located in San Bernardino County, California, with a 226.43-acre portion located within the City of Victorville and a 177.74-acre portion located within the Town of Apple Valley. All analyses presented in this report are for the 177.74-acre portion of the Project located within the Town of Apple Valley.

Glenn Lukos Associates, Inc. (GLA) visited the approximately 177.74-acre portion of the Project located in the Town of Apple Valley on June 17 and 23, 2022, to assess the current conditions of the Project site, potential for presence of sensitive biological resources, and to conduct an inventory of western Joshua trees.

Sensitive resources considered for this analysis include special-status species (e.g., threatened and endangered, species of concern, etc.), special-status habitats, nesting birds, waters of the United States (including wetlands) subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) and the Regional Water Quality Control Board, and waters of the State (including riparian vegetation) subject to the jurisdiction of the California Department of Fish and Wildlife (CDFW). Impacts to special-status species and habitats must be addressed during project review under the California Environmental Quality Act (CEQA). In addition, federally listed species (threatened or endangered) are regulated by the U.S. Fish and Wildlife Service (USFWS) pursuant to the Federal Endangered Species Act (FESA). Species listed as threatened or endangered by the State of California are regulated by CDFW pursuant to the California Endangered Species Act (CESA). Wildlife that are assigned other designations by CDFW (i.e., species of concern, fully-protected species, etc.), and plants given special status by the California

Native Plant Society (CNPS) are not granted additional protection, except that impacts to these species may need to be evaluated pursuant to CEQA.

1.0 SITE LOCATION AND DESCRIPTION

An approximately 177.74-acre portion of the Project is located in the Town of Apple Valley, San Bernardino County, California [Exhibit 1 – Regional Map]. The Project site is located east of the Interstate 15 (I-15) freeway just south of the Stoddard Wells Road exit and is within Section 26, Township 6 North, Range 4 West on the U.S. Geological Survey (USGS) topographic map Victorville, California 7.5-minute topographic quadrangle map [Exhibit 2 – Vicinity Map]. Adjacent land uses include active mining and quarries to the east, undeveloped lands to the north and south, and I-15 freeway to the west. Exhibit 3 provides an aerial image of the Project site, including the Project boundary.

2.0 METHODOLOGY

GLA biologists Chris Waterston, David Smith, and Joseph Vu visited the property on June 17 and 23, 2022, to conduct a site review. Site reconnaissance was conducted in such a manner as to allow inspection of the entire Project site by direct observation, including the use of binoculars. The Project site was walked following transects spaced appropriately in order to provide complete coverage of the site. The Project site was inspected to determine whether any special-status species, habitats, or potential jurisdictional aquatic resources are present on site.

In addition to site reconnaissance, evaluation of the Project included a review of the California Natural Diversity Database (CNDDB) for the Victorville quadrangle and surrounding quadrangles[1], and a review of the 2023 California Native Plant Society (CNPS) on-line inventory[2].

2.1 Western Joshua Tree Inventory

Pursuant to the *County of San Bernardino Municipal Code Title 8 Division 3 Chapter 88.01 Plant Protection and Management* and the *Town of Apple Valley Ordinance 9.76.040 Joshua Trees,* and as part of the surveys conducted for the Project site, GLA biologist David Smith performed an inventory survey of all Joshua trees (*Yucca brevifolia*) at the site, including dead trees. The Joshua tree inventory was performed on June 17 and 23, 2022. Each western Joshua tree was mapped and given a specific identifying number. Data was collected for each tree, including height and canopy measurements, and a health rating assessment. The health rating was based on the appearance of the tree, including the presence of dead branches and/or damage to the tree. Trees

[1] California Department of Fish and Wildlife. March 2023. Natural Diversity Database: RareFind 5.
[2] California Native Plant Society. 2023. Online Inventory of Rare and Endangered Plants of California (v9.5).

were placed in one of the following five categories based on the percentage of living branches: Very Good (greater than 75%), Average (60% to 75%), Poor (45% to 60%), Very Poor (less than 45%) and Dead (0%). The results of the Joshua tree inventory are provided in Section 3.8 below.

3.0 RESULTS

3.1 Existing Conditions

The Project site is currently undeveloped and consists of a series of small rolling hills with an elevation range of approximately 2,894 feet above mean sea level (AMSL) in the southwest to approximately 3,023 feet AMSL in the east.

3.1.1 Vegetation Mapping

Three vegetation community/land use types are present within the Project site. The first is *Larrea tridentata* Shrubland Alliance (Creosote Bush Scrub), which occurs throughout the southwestern portion of the Project site. The second vegetation type is *Ericameria nauseosa* Shrubland Alliance (Rubber Rabbitbrush Scrub), which occurs in the northeastern portion of the Project site. The remainder of the site is developed [Exhibit 4 - Vegetation Map]. Table 3-1 provides a summary of vegetation alliances/land uses and the corresponding acreage. Detailed descriptions of each vegetation type follow the table.

Table 3-1. Summary of Vegetation/Land Use Types for the Project Site

VEGETATION/LAND USE TYPE	TOTAL (acres)
Larrea tridentata Shrubland Alliance (Creosote Bush Scrub)	95.34
Ericameria nauseosa Shrubland Alliance (Rubber Rabbitbrush Scrub)	57.72
Developed	24.69
Total	**177.74**

***Larrea tridentata* Shrubland Alliance (Creosote Bush Scrub)**

Approximately 95.34 acres of the Project site are vegetated with creosote brush scrub. Dominant species include creosote bush (*Larrea tridentata*), cheese bush (*Ambrosia salsola*), white bur-sage (*Ambrosia dumosa*), short-pod mustard (*Hirschfeldia incana*), western Joshua tree, desert trumpet (*Eriogonum inflatum*), teddybear cholla (*Cylindropuntia bigelovii*), barrel cactus (*Ferocactus cylindraceus*), rattlesnake sandmat (*Euphorbia albomarginata*), sandpaper plant

(*Petalonyx thurberi*), Nevada ephedra (*Ephedra nevadensis*), fourwing saltbush (*Atriplex canescens* ssp. *canescens*), and Mojave yucca (*Yucca schidigera*).

***Ericameria nauseosa* Shrubland Alliance (Rubber Rabbitbrush Scrub)**

Approximately 57.72 acres of the Project site are vegetated with rubber rabbitbrush scrub. Dominant species include rubber rabbitbrush (*Ericameria nauseosa*), desert mallow (*Sphaeralcea ambigua*), desert trumpet (*Eriogonum inflatum*), big sagebrush (*Artemisia tridentata*), and Nevada ephedra (*Ephedra nevadensis*).

Developed

Approximately 24.69 acres of the Project site is developed with an industrial/mining facility.

3.1.2 Wildlife Species

Wildlife species detected onsite include American crow (*Corvus brachyrhynchos*), western kingbird (*Tyrannus verticalis*), black-throated sparrow (*Amphispiza bilineata*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), Say's phoebe (*Sayornis saya*), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), zebra-tailed lizard (*Callisaurus draconoides*), and great basin fence lizard (*Sceloporus occidentalis longipes*).

3.2 Special-Status Plants

One special-status plant species was observed onsite during the general survey: western Joshua tree (State Candidate for Listing [SC]). Other special-status species have potential to occur on site, but were not observed during the general biological survey, including beaver dam breadroot (*Pediomelum castoreum*), crowned muilla (*Muilla coronata*), Mojave fish-hook cactus (*Sclerocactus polyancistrus*), solitary blazing star (*Mentzelia eremophila*), and white pygmy-poppy (*Canbya candida*).

Table 3-2 provides a summary of all plants considered for this analysis. Species were considered based on a number of factors, including: 1) species identified by the March 2023 CNDDB as occurring (either currently of historically) on or in the vicinity of the Project; and 2) any other species that are known to occur within the vicinity of the Project, or for which potentially suitable habitat occurs on site.

Table 3-2. Special-Status Plants Evaluated for the Project

Species Name	Status	Habitat Requirements	Potential for Occurrence
Beaver Dam breadroot *Pediomelum castoreum*	Federal: None State: None CNPS: Rank 1B.2	Sandy soils in washes and roadcuts, in Joshua tree woodland and Mojavean desert scrub.	Moderate potential to occur.
Bluish spike-moss *Selaginella asprella*	Federal: None State: None CNPS: Rank 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.	Does not occur due to a lack of suitable habitat.
Booth's evening-primrose *Eremothera boothii* ssp. *boothii*	Federal: None State: None CNPS: Rank 2B.3	Joshua tree woodland and pinyon and juniper woodland.	Not expected to occur.
Crowned muilla *Muilla coronata*	Federal: None State: None CNPS: Rank 4.2	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland	Moderate potential to occur.
Desert cymopterus *Cymopterus deserticola*	Federal: None State: None CNPS: Rank 1B.2	Sandy soils in Joshua tree woodland and Mojavean desert scrub.	Does not occur due to a lack of suitable habitat.
Latimer's woodland-gilia *Saltugilia latimeri*	Federal: None State: None CNPS: Rank 1B.2	Rocky or sandy, often granitic soils (sometimes washes) in chaparral, Mojavean desert scrub, and Pinyon and juniper woodland.	Does not occur due to a lack of suitable habitat.
Mojave fish-hook cactus *Sclerocactus polyancistrus*	Federal: None State: None CNPS: Rank 4.2	Usually carbonate soils. Great basin scrub, Joshua tree woodland, Mojavean desert scrub	Low potential to occur.
Mojave monkeyflower *Diplacus mohavensis*	Federal: None State: None CNPS: Rank 1B.2	Sandy or gravelly, often in washes. Joshua tree woodland, Mojavean desert scrub.	Does not occur due to a lack of suitable habitat.
Mojave paintbrush *Castilleja plagiotoma*	Federal: None State: None CNPS: Rank 4.3	Great basin scrub (alluvial), Joshua tree woodland, Lower montane coniferous forest, Pinyon and juniper woodland	Does not occur due to a lack of suitable habitat.
Mojave spineflower *Chorizanthe spinosa*	Federal: None State: None CNPS: Rank 4.2	Sometimes alkaline soil. Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, Playas	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Pinyon rockcress *Boechera dispar*	Federal: None State: None CNPS: Rank 2B.3	Granitic, gravelly soils in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	Does not occur due to a lack of suitable habitat.
Ribbed cryptantha *Johnstonella (Cryptantha) costata*	Federal: None State: None CNPS: Rank 4.3	Sandy soils in desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub.	Does not occur due to a lack of suitable habitat.
Sagebrush loeflingia *Loeflingia squarrosa* var. *artemisiarum*	Federal: None State: None CNPS: Rank 2B.2	Sandy soils in desert dunes, Great Basin scrub, and Sonoran desert scrub.	Does not occur due to a lack of suitable habitat.
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None CNPS: Rank 1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic).	Does not occur due to a lack of suitable habitat.
San Bernardino Mountains dudleya *Dudleya abramsii* ssp. *affinis*	Federal: None State: None CNPS: Rank 1B.2	Granitic, quartzite, or carbonate soils in pebble (pavement) plain, Pinyon and juniper woodland, and upper montane coniferous forest.	Does not occur due to a lack of suitable habitat.
Short-joint beavertail *Opuntia basilaris* var. *brachyclada*	Federal: None State: None CNPS: Rank 1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	Not expected to occur.
Solitary blazing star *Mentzelia eremophila*	Federal: None State: None CNPS: Rank 4.2	Mojavean desert scrub	Moderate potential to occur.
Southern mountains skullcap *Scutellaria bolanderi* ssp. *austromontana*	Federal: None State: None CNPS: Rank 1B.2	Mesic soils in chaparral, cismontane woodland, lower montane coniferous forest.	Does not occur due to a lack of suitable habitat.
Torrey's Box-thorn *Lycium torreyi*	Federal: None State: None CNPS: Rank 4.2	Sandy, rocky, washes, streambanks, desert valleys. Mojavean desert scrub and Sonoran desert scrub.	Does not occur due to a lack of suitable habitat.
White pygmy-poppy *Canbya candida*	Federal: None State: None CNPS: Rank 4.2	Gravelly, sandy, and granitic soils in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland.	Moderate potential to occur.
Yucca brevifolia Western Joshua Tree	Federal: None State: Candidate Threatened CNPS: None	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinon and juniper woodlands, and Sonoran desert scrub	Present on Project site.

Federal
FE – Federally Endangered
FT – Federally Threatened

State
SE – State Endangered
ST – State Threatened
SC – State Candidate for Listing

CNPS Rare Plant Rank
Rank 1B – Plants rare, threatened, or endangered in California and elsewhere.
Rank 2 – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 – Plants about which more information is needed.
Rank 4 – Plants of limited distribution (a watch list).

CNPS Threat Rank Extensions
.1 – Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

OCCURRENCE

- Does not occur – The site does not contain habitat for the species and/or the site does not occur within the geographic range of the species.
- Confirmed absent – The site contains suitable habitat for the species, but the species has been confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur on-site due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur based on suitable habitat, however its presence/absence has not been confirmed.
- Confirmed present – The species was detected on-site incidentally or through focused surveys.

3.3 Special-Status Animals

No special-status animals were observed on site during the general survey. Several special-status animal species have potential to occur on site: desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*), Le Conte's thrasher (*Toxostoma lecontei*), loggerhead shrike (*Lanius ludovicianus*), Mohave ground squirrel (*Xerospermophilus mohavensis*), Crotch bumblebee (*Bombus crotchii*), pallid bat (*Antrozous pallidus*), hoary bat (*Lasiurus cinereus*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

Table 3-3 provides a summary of all species considered for the report. Species were considered based on a number of factors, including: 1) species identified by the March 2023 CNDDB as occurring (either currently of historically) on or in the vicinity of the Project; and 2) any other special-status species that are known to occur within the vicinity of the Project, or for which potentially suitable habitat occurs on site.

Table 3-3. Special-Status Animals Evaluated for the Project

Species Name	Status	Habitat Requirements	Potential for Occurrence
Invertebrates			
Crotch bumble bee *Bombus crotchii*	Federal: None State: CE	Relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert.	Moderate potential to occur.
San Emigdio blue butterfly *Plebulina emigdionis*	Federal: None State: S1S2	Montane desert canyons where shadscale scrub is present.	Does not occur due to a lack of suitable habitat.
Victorville shoulderband *Helminthoglypta mohaveana*	Federal: None State: S1	Terrestrial habitats along water features.	Does not occur due to a lack of suitable habitat.
Fish			
Mohave tui chub *Siphateles bicolor mohavensis*	Federal: FE State: SE, FP	Associated with deep pools and slough-like areas of the Mojave River, in areas with aquatic ditchgrass (*Riparia maritima*).	Does not occur due to a lack of suitable habitat.
Amphibians			
Arroyo toad *Anaxyrus californicus*	Federal: FE State: 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 gravely terraces and very little herbaceous cover for adult and juvenile foraging areas, within a moderate riparian canopy of cottonwood, willow, or oak.	Does not occur due to a lack of suitable habitat.
California red-legged frog *Rana draytonii*	Federal: FT State: SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	Does not occur due to a lack of suitable habitat.
Reptiles			
Coast horned lizard *Phrynosoma blainvillii*	Federal: None State: SSC	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Desert tortoise *Gopherus agassizii*	Federal: FT State: ST	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 potential to occur.
Western pond turtle *Emys marmorata*	Federal: None State: SSC	Slow-moving permanent or intermittent streams, small ponds and lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and treatment lagoons. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Does not occur due to a lack of suitable habitat.
Birds			
Burrowing owl *Athene cunicularia*	Federal: BCC State: SSC	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.	Moderate potential to occur.
Golden eagle *Aquila chrysaetos*	Federal: BGA State: FP	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Does not occur due to a lack of suitable habitat.
Gray vireo *Vireo vicinior*	Federal: BCC State: SSC	Desert scrub, mixed juniper or pinyon pine and oak scrub associations, and chaparral, in hot, arid mountains and high plains scrubland.	Not expected to occur.
Le Conte's thrasher *Toxostoma lecontei*	Federal: BCC State: SSC	Desert scrub, mesquite, tall riparian brush and, locally, chaparral.	Moderate potential to occur.
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Loggerhead shrike *Lanius ludovicianus*	Federal: BCC State: SSC	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	Moderate potential to occur.
Long-eared owl *Asio otus*	Federal: None State: SSC	Riparian habitats are required by the long-eared owl, but it also uses live-oak thickets and other dense stands of trees.	Does not occur due to a lack of suitable habitat.
Prairie falcon *Falco mexicanus*	Federal: BCC State: WL	Breeds in mountainous regions and shortgrass prairies, nesting on cliff ledges.	Does not occur due to a lack of suitable habitat.
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE	Riparian woodlands along streams and rivers with mature dense thickets of trees and shrubs.	Does not occur due to a lack of suitable habitat.
Summer tanager *Piranga rubra*	Federal: None State: SSC	Low-elevation willow and cottonwood woodlands, and in higher-elevation mesquite and saltcedar stands.	Does not occur due to a lack of suitable habitat.
Swainson's hawk *Buteo swainsoni*	Federal: BCC State: ST	Summer in wide open spaces of the American West. Nest in grasslands, but can use sage flats and agricultural lands. Nests are placed in lone trees.	Does not occur due to a lack of suitable habitat.
Tricolored blackbird *Agelaius tricolor*	Federal: BCC State: CE, SSC	Breeding colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat of natural grassland, woodland, or agricultural cropland.	Does not occur due to a lack of suitable habitat.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Federal: FT, BCC State: SE	Dense, wide riparian woodlands with well-developed understories.	Does not occur due to a lack of suitable habitat.
Yellow warbler *Setophaga petechia*	Federal: BCC State: SSC	Breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland. During migration, forages in woodland, forest, and shrub habitats.	Does not occur due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Yellow-breasted chat *Icteria virens*	Federal: None State: SSC	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories.	Does not occur due to a lack of suitable habitat.
Mammals			
Hoary bat *Lasiurus cinereus*	Federal: None State: None WBWG: M	Prefers trees at the edge of clearings, but have been found in trees in heavy forests, open wooded glades, and shade trees along urban streets and in city parks.	Moderate potential to forage within the Project site but not roost.
Mohave ground squirrel *Xerospermophilus mohavensis*	Federal: None State: ST	Mojave creosote scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland.	Moderate potential to occur.
Mohave river vole *Microtus californicus mohavensis*	Federal: None State: SSC	Moist habitats including meadows, freshwater marshes and irrigated pastures in the vicinity of the Mojave River.	Does not occur due to a lack of suitable habitat.
Pallid bat *Antrozous pallidus*	Federal: None State: SSC WBWG: H	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Moderate potential to forage within the Project site but not roost.
San Diego pocket mouse *Chaetodipus fallax pallidus*	Federal: None State: SSC	In desert wash, desert scrub, desert succulent scrub, pinyon-juniper woodland. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	Does not occur due to a lack of suitable habitat.
Silver-haired bat *Lasionycteris noctivagans*	Federal: None State: None WBWG: M	Temperate, northern hardwoods with ponds or streams nearby. Roost in hollow snags and bird nests.	Does not occur due to a lack of suitable habitat.
Townsend's big-eared bat *Corynorhinus townsendii*	Federal: None State: SSC WBWG: H	Coniferous forests and woodlands, deciduous riparian woodland, semi-desert and montane shrublands.	Moderate potential to forage within the Project site but not roost.

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FSC – Federal Species of Concern

State
SE – State Endangered
ST – State Threatened
SSC – California Species of Special Concern
CFP – California Fully-Protected Species

Western Bat Working Group (WBWG)

H – High Priority
LM – Low-Medium Priority
M – Medium Priority
MH – Medium-High Priority

OCCURRENCE

- Does not occur – The site does not contain habitat for the species and/or the site does not occur within the geographic range of the species.
- Confirmed absent – The site contains suitable habitat for the species, but the species has been confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur on-site due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur based on suitable habitat, however its presence/absence has not been confirmed.
- Confirmed present – The species was detected on-site incidentally or through focused surveys

3.4 Special-Status Habitats

A review of the March 2023 CNDDB did not identify any special-status habitats as occurring within the vicinity of the Project site. In addition, the Project site does not support any other special-status habitats including wetland or riparian resources.

3.5 Nesting Birds

The Project site contains vegetation (shrubs and herbaceous vegetation) with the potential to support nesting birds. Impacts to nesting birds are prohibited under the Migratory Bird Treaty Act and California Fish and Game Code.[3] As long as trees, shrubs, and herbaceous vegetation with the potential to support nesting birds are removed from September 16 to January 31 (outside of the nesting season), then no further actions are recommended. If vegetation must be removed during the nesting season (February 1 through September 15), a nesting bird survey should be conducted prior to any removals to prevent any impacts to active nests. If active nests are identified onsite, then adequate buffers should be provided around the nests, as determined by a qualified biologist, until the nests are no longer active.

[3] The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

3.6 Critical Habitat

The Project site does not occur within any areas mapped as designated or proposed Critical Habitat by the USFWS.

3.7 Potential Jurisdictional Waters

The Project site contains several small unvegetated ephemeral tributaries to Bell Mountain Wash, which is located in the 226.43-acre portion of the overall 404.17-acre Project site located in the City of Victorville.. Bell Mountain Wash is ephemeral and only conveys flows in response to major storm events. Flows ultimately discharge into the Mojave River, located less than two miles from the Project site, which flows northwest and terminates in Soda Lake near the town of Baker, California.

3.8 Joshua Tree Inventory

GLA mapped 144 western Joshua trees at the Project site [Exhibit 5 - Joshua Tree Survey Map], including 129 live trees and 15 dead trees. The data collected for each inventoried tree are provided below in Table 3-4.

Table 3-4. Results of Joshua Tree Inventory

Tree #	*Tree Field ID#	Height (Feet)	Canopy Diameter (Feet)	Health Rating	Notes
1	100	8	6	Very Good (greater than 75%)	
2	101	7	4	Very Good (greater than 75%)	
3	102	9	5	Very Good (greater than 75%)	
4	103	8	4	Very Good (greater than 75%)	
5	104	3	1	Very Good (greater than 75%)	
6	105	2	1	Very Good (greater than 75%)	
7	106	12	10	Poor (45% to 60%)	
8	108	2	1	Very Good (greater than 75%)	
9	109	4	2	Very Good (greater than 75%)	
10	110	0	0	Dead (0%)	Downed
11	111	5	2	Very Good (greater than 75%)	
12	112	4	2	Very Good (greater than 75%)	
13	113	5	2	Very Good (greater than 75%)	
14	114	9	5	Very Good (greater than 75%)	
15	115	4	2	Very Good (greater than 75%)	
16	116	3	1	Very Good (greater than 75%)	
17	117	3	1	Very Good (greater than 75%)	

Tree #	*Tree Field ID#	Height (Feet)	Canopy Diameter (Feet)	Health Rating	Notes
18	118	0	0	Dead (0%)	Downed
19	119	7	2	Average (60% to 75%)	
20	120	1	1	Very Good (greater than 75%)	
21	121	5	2	Very Good (greater than 75%)	
22	122	11	6	Average (60% to 75%)	
23	123	12	6	Average (60% to 75%)	Branching of one additional trunk.
24	124	8	5	Average (60% to 75%)	
25	125	7	3	Very Good (greater than 75%)	
26	126	13	4	Very Good (greater than 75%)	
27	127	8	3	Average (60% to 75%)	
28	128	5	2	Very Good (greater than 75%)	
29	129	4	1	Very Good (greater than 75%)	
30	130	7	3	Very Good (greater than 75%)	
31	131	0	0	Dead (0%)	Downed
32	132	2	1	Very Good (greater than 75%)	
33	133	6	2	Very Good (greater than 75%)	
34	134	2	0	Dead (0%)	Standing. Crown missing.
35	135	7	3	Very Good (greater than 75%)	
36	136	6	2	Very Good (greater than 75%)	
37	137	1	1	Very Good (greater than 75%)	
38	138	9	3	Very Good (greater than 75%)	
39	139	4	1	Very Good (greater than 75%)	Branching of one additional trunk
40	140	4	2	Very Good (greater than 75%)	
41	141	8	2	Very Good (greater than 75%)	
42	142	2	1	Very Good (greater than 75%)	
43	143	1	1	Very Good (greater than 75%)	
44	144	8	3	Very Good (greater than 75%)	Branching of one additional trunk
45	145	5	2	Very Good (greater than 75%)	
46	146	4	1	Very Good (greater than 75%)	
47	147	0	0	Dead (0%)	Downed
48	148	1	1	Very Good (greater than 75%)	Branching of one additional trunk
49	149	3	1	Very Good (greater than 75%)	
50	150	4	2	Very Good (greater than 75%)	
51	151	8	2	Very Good (greater than 75%)	
52	152	9	8	Dead (0%)	
53	153	9	4	Very Good (greater than 75%)	

Tree #	*Tree Field ID#	Height (Feet)	Canopy Diameter (Feet)	Health Rating	Notes
54	154	18	7	Dead (0%)	
55	155	12	5	Very Good (greater than 75%)	
56	156	2	2	Very Good (greater than 75%)	
57	157	2	1	Very Good (greater than 75%)	
58	158	6	3	Very Good (greater than 75%)	
59	159	6	3	Average (60% to 75%)	
60	160	0	0	Dead (0%)	Downed
61	161	0	0	Dead (0%)	Downed
62	162	6	2	Very Good (greater than 75%)	
63	163	20	10	Poor (45% to 60%)	Partially downed
64	164	5	2	Very Good (greater than 75%)	
65	165	2	1	Very Good (greater than 75%)	
66	166	18	10	Very Poor (less than 45%)	Partially downed
67	167	5	2	Very Good (greater than 75%)	
68	168	12	6	Very Good (greater than 75%)	
69	169	0	0	Dead (0%)	Downed
70	170	1	1	Very Good (greater than 75%)	
71	171	6	4	Poor (45% to 60%)	Partially downed
72	172	5	2	Average (60% to 75%)	
73	173	4	2	Very Good (greater than 75%)	
74	174	16	12	Average (60% to 75%)	
75	175	5	2	Very Good (greater than 75%)	
76	176	8	3	Very Good (greater than 75%)	
77	177	3	2	Very Good (greater than 75%)	
78	178	4	2	Very Good (greater than 75%)	
79	179	6	3	Very Good (greater than 75%)	
80	180	4	2	Very Good (greater than 75%)	
81	181	7	4	Very Good (greater than 75%)	
82	182	3	2	Very Good (greater than 75%)	
83	183	9	3	Very Good (greater than 75%)	
84	184	4	2	Very Good (greater than 75%)	
85	185	7	0	Dead (0%)	
86	186	2	1	Very Good (greater than 75%)	
87	187	9	3	Very Good (greater than 75%)	
88	188	4	2	Very Good (greater than 75%)	
89	189	10	3	Average (60% to 75%)	
90	190	6	2	Very Poor (less than 45%)	Branching of one additional trunk
91	191	3	2	Very Good (greater than 75%)	
92	192	4	2	Very Good (greater than 75%)	
93	193	3	2	Very Good (greater than 75%)	

Tree #	*Tree Field ID#	Height (Feet)	Canopy Diameter (Feet)	Health Rating	Notes
94	194	15	10	Very Good (greater than 75%)	
95	195	4	2	Very Good (greater than 75%)	
96	196	7	3	Very Good (greater than 75%)	Clonal recruitment of one smaller specimen 3' tall, 2' wide
97	197	6	2	Very Good (greater than 75%)	
98	198	2	1	Very Good (greater than 75%)	
99	199	3	1	Very Poor (less than 45%)	
100	300	1	1	Very Good (greater than 75%)	
101	301	5	2	Very Good (greater than 75%)	
102	302	3	1	Very Good (greater than 75%)	
103	303	3	2	Very Good (greater than 75%)	
104	304	1	1	Average (60% to 75%)	
105	305	3	2	Very Good (greater than 75%)	
106	306	7	3	Very Good (greater than 75%)	
107	307	4	2	Very Good (greater than 75%)	
108	308	4	1	Average (60% to 75%)	
109	309	7	2	Very Good (greater than 75%)	
110	310	10	3	Poor (45% to 60%)	
111	311	7	3	Very Good (greater than 75%)	
112	312	5	3	Very Good (greater than 75%)	
113	313	2	2	Very Good (greater than 75%)	
114	315	7	2	Dead (0%)	Mostly downed
115	316	2	2	Very Good (greater than 75%)	
116	317	5	2	Very Good (greater than 75%)	
117	318	1	1	Very Good (greater than 75%)	
118	319	10	3	Very Good (greater than 75%)	
119	320	2	2	Very Good (greater than 75%)	
120	321	8	3	Very Good (greater than 75%)	Branching of two additional trunks
121	322	3	2	Very Good (greater than 75%)	
122	323	2	1	Very Good (greater than 75%)	
123	324	6	3	Very Good (greater than 75%)	
124	325	4	2	Very Good (greater than 75%)	
125	326	2	1	Very Good (greater than 75%)	
126	327	1	1	Very Good (greater than 75%)	
127	328	5	2	Very Good (greater than 75%)	
128	329	3	2	Very Good (greater than 75%)	
129	330	0	0	Dead (0%)	Downed

Tree #	*Tree Field ID#	Height (Feet)	Canopy Diameter (Feet)	Health Rating	Notes
130	331	12	4	Very Good (greater than 75%)	Branching of two additional trunks
131	332	10	2	Average (60% to 75%)	
132	333	4	2	Very Good (greater than 75%)	
133	334	3	2	Very Good (greater than 75%)	
134	335	4	2	Very Good (greater than 75%)	
135	336	4	0	Dead (0%)	
136	337	4	2	Very Good (greater than 75%)	
137	338	15	7	Very Poor (less than 45%)	Branching of one additional trunk
138	339	6	2	Average (60% to 75%)	
139	340	3	2	Very Good (greater than 75%)	
140	341	5	3	Very Good (greater than 75%)	
141	342	6	3	Very Good (greater than 75%)	
142	343	6	2	Very Good (greater than 75%)	
143	344	4	0	Dead (0%)	
144	345	4	2	Very Good (greater than 75%)	

*Tree ID= the number assigned in the field during the survey.

4.0 CONCLUSIONS

4.1 Special-Status Animals

The Project site contains suitable habitat for Le Conte's thrasher (Species of Special Concern [SCC]), loggerhead shrike (SSC), burrowing owl (SSC), desert tortoise (Federally and State Endangered), Mohave ground squirrel (State Threatened), pallid bat (SSC), hoary bat (SSC), Townsend's big-eared bat (SSC), and Crotch bumble bee (State Candidate Endangered).

4.2 Special Status Plants

As noted above, the Project site contains suitable habitat for several special status plants including beaver dam breadroot, crowned muilla, Mojave fish-hook cactus, **s**olitary blazing star, and white pygmy-poppy.

4.3 Nesting Birds

The Project site contains vegetation and bare ground with the potential to support native nesting birds. As discussed above, the California Fish and Game Code prohibits mortality of native birds, including eggs.

4.4 Potential Jurisdictional Waters

As noted above the Project site contains several small ephemeral drainages that appear to be tributary to Bell Mountain Wash to the west. The Bell Mountain Wash and its tributaries are potentially jurisdictional for the Corps, Regional Board, and CDFW.

4.5 Western Joshua Tree

As noted above, 144 western Joshua trees were mapped during the western Joshua tree survey and inventory effort conducted within the Project site [Exhibit 5 - Joshua Tree Survey Map].

If you have any questions regarding this report, please call me (949) 837-0404 or via email at jvu@wetlandpermitting.com.

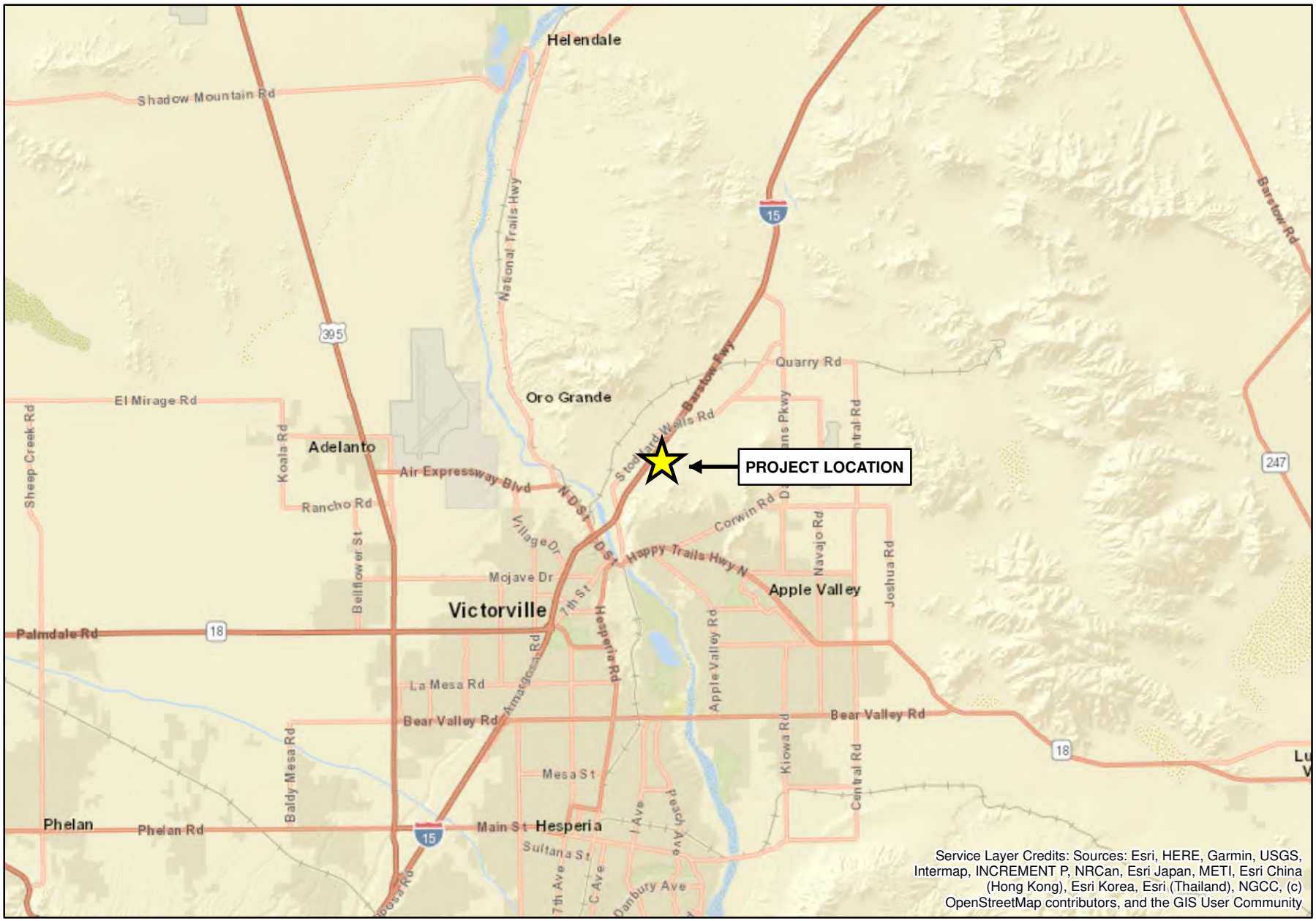
Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Joseph Vu
Biologist

P:1588-1a.bio ex cond Apple Valley

Source: ESRI World Street Map



Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

N

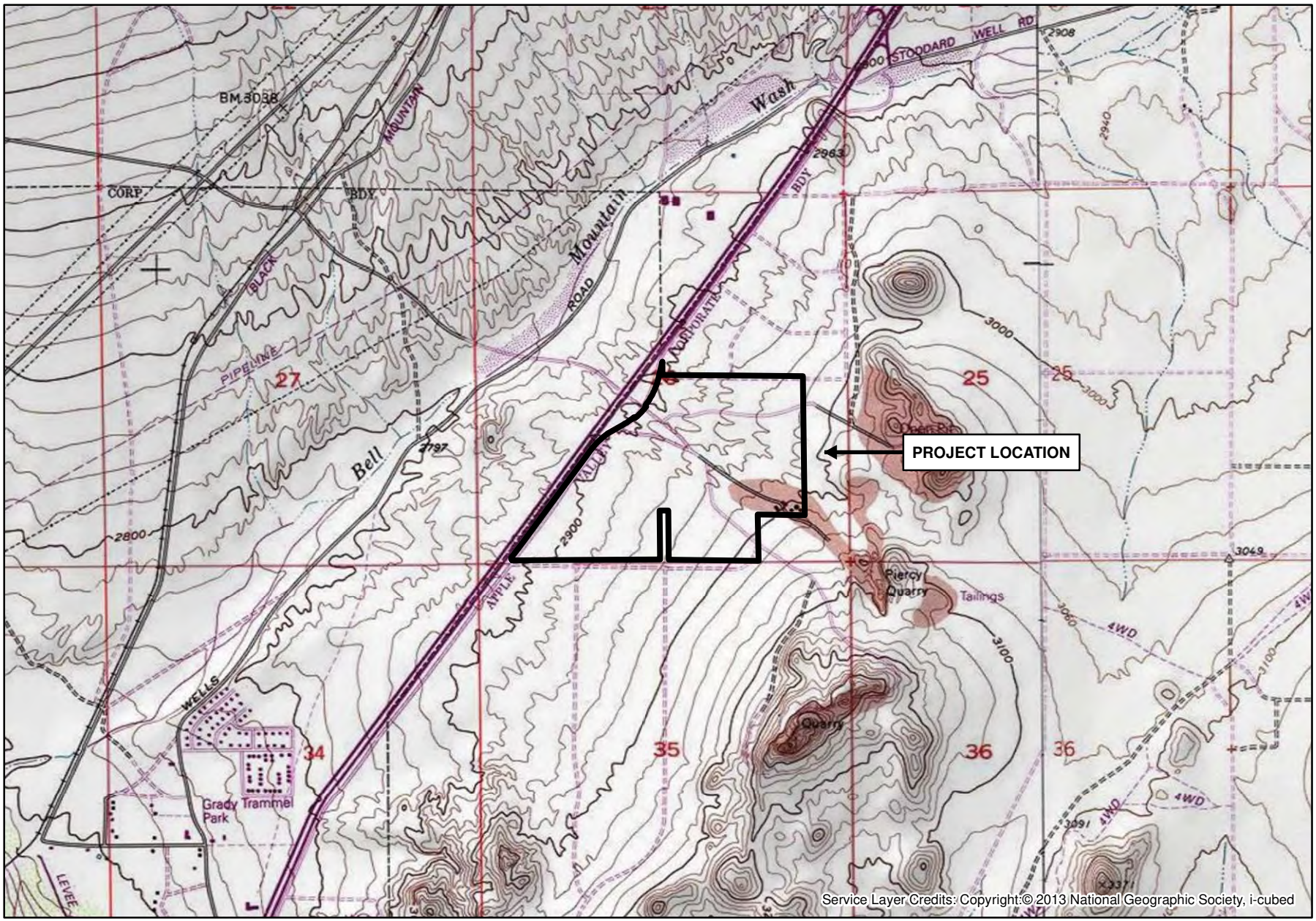
0 2 4 8 Miles

INLAND EMPIRE NORTH LOGISTICS CENTER

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1



INLAND EMPIRE NORTH LOGISTICS CENTER

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2

Approximate Project Site

N

0 175 350 700

Feet

1 inch = 350 feet

Coordinate System: State Plane 5 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: July 15, 2022

INLAND EMPIRE NORTH LOGISTICS CENTER

Aerial Map

GLENN LUKOS ASSOCIATES

Exhibit 3

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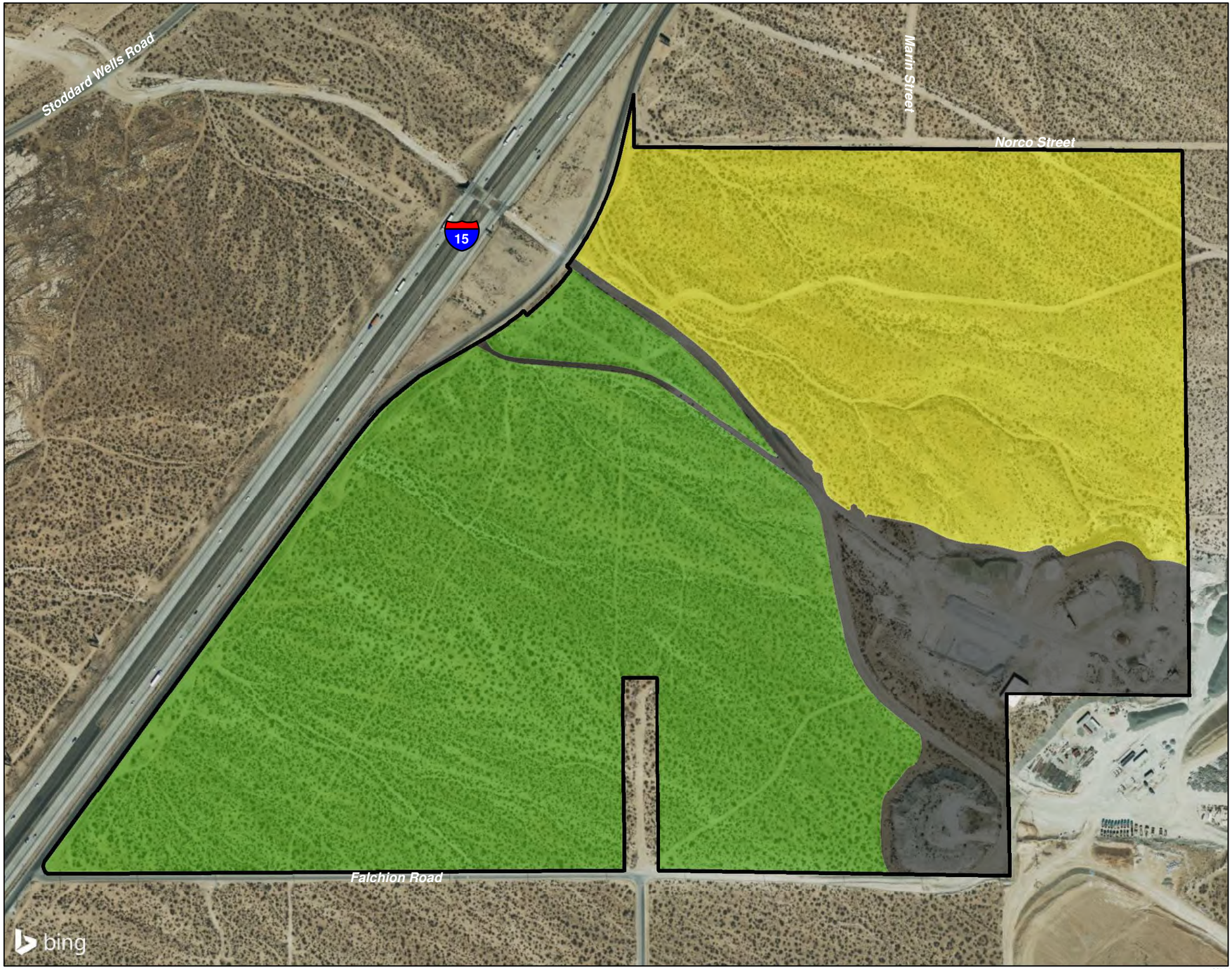

Approximate Project Site

Larrea tridentata Shrubland Alliance (Creosote Bush Scrub)

Ericameria nauseosa Shrubland Alliance (Rubber Rabbitbrush Scrub)

Developed

N

0 175 350 700

Feet

1 inch = 350 feet

Coordinate System: State Plane 5 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: July 15, 2022

INLAND EMPIRE NORTH LOGISTICS CENTER

Vegetation Map

GLENN LUKOS ASSOCIATES

Exhibit 4

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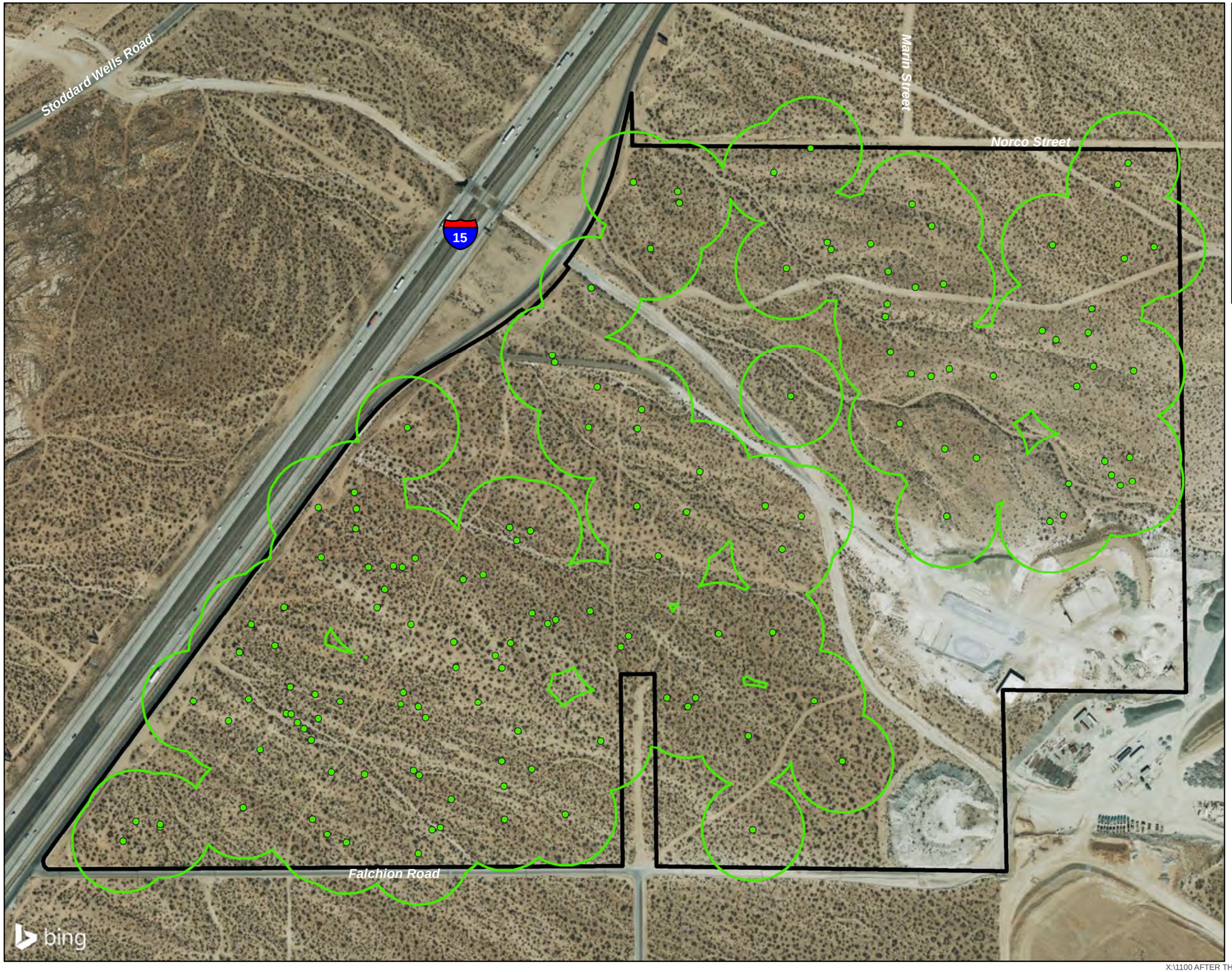

Approximate Project Site

Joshua Tree Location (144)

186 Foot Western Joshua Tree Seed Bank Buffer

N

0 175 350 700

Feet

1 inch = 350 feet

Coordinate System: State Plane 5 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: September 7, 2022

INLAND EMPIRE NORTH LOGISTICS CENTER

Joshua Tree Inventory Map

GLENN LUKOS ASSOCIATES

Exhibit 5

X:\1100 AFTER THE REST\1588-01CARN\GIS\JoshuaTreesGIS\1588-1_JoshuaTreeInventory_East.mxd

Appendix B

Aquatic Resources Delineation Report

Aquatic Resources Delineation Report

Inland Empire North Logistics Center Apple Valley Project

JANUARY 2024

Prepared for:

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Printed on 30% post-consumer recycled material.

Table of Contents

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TABLES

FIGURES

APPENDICES

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AJD	Approved Jurisdictional Determination
APT	Antecedent Precipitation Tool
ARC	antecedent runoff condition
ARDR	Aquatic Resources Delineation Report
CDFW	California Department of Fish and Wildlife
EPA	U.S. Environmental Protection Agency
HUC	Hydrologic Unit Code
I	Interstate
NETR	Nationwide Environmental Title Research, LLC
NHD	National Hydrography Dataset
NWI	National Wetlands Inventory
NWW	non-wetland water
OHWM	ordinary high water mark
PDSI	Palmer Drought Severity Index
project	Inland Empire North Logistics Center Apple Valley Project
RWQCB	Regional Water Quality Control Board
TNW	traditional navigable water
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1 Introduction

This Aquatic Resources Delineation Report (ARDR) was prepared in accordance with the U.S. Army Corps of Engineers (USACE) Los Angeles District Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2017). This ARDR and supporting appendices provide the 20 items listed in the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports. This ARDR presents the results of the jurisdictional aquatic resource delineation conducted by Dudek for the proposed Inland Empire North Logistics Center Apple Valley Project (project) located in the Town of Apple Valley, San Bernardino County, California. The delineation was conducted to identify and map existing aquatic resources potentially subject to the regulatory jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act (33 USC 1344), waters of the state potentially subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act, and stream and riparian habitats potentially subject to the jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code (collectively defined as jurisdictional aquatic resources).

1.1 Disclaimer Statement

This ARDR presents Dudek's best effort to quantify the extent of aquatic resources potentially regulated by USACE, RWQCB, and CDFW (i.e., regulatory agencies) within the identified review areas using the current regulations, written policies, and guidance from these regulatory agencies. The potential jurisdictional boundaries described in this report are subject to verification by the regulatory agencies. Only the regulatory agencies can make a final determination on whether the features present are subject to USACE, RWQCB, and/or CDFW regulation. This ARDR serves as a request for the USACE to complete an Approved Jurisdictional Determination (AJD). Appendix A provides the required form associated with the AJD request.[1]

1.2 Contact Information

Contact information for the project applicant and agent are provided in Table 1.[2] Access to the review area (defined in Section 2, Review Area Description and Landscape Setting) is not restricted, but if a site visit is requested, the project applicant or agent will accompany regulatory staff to the review area.[3]

1 Minimum Standards Item 1 (Request for Jurisdictional Determination)
2 Minimum Standards Item 2 (Contact Information)
3 Minimum Standards Item 3 (Site Access Statement)

Table 1. Contact Information

Project Applicant	Synergy Consulting	**Agent**	Dudek
Contact Name	Jessica Haughton	**Contact Name**	Megan Enright
Address	1818 Library Street, Suite 500 Reston, Virginia 20190	**Address**	605 Third Street Encinitas, California 92024
Phone	702.330.1715	**Phone**	760.420.7833
Email	jhaughton@synergyconsultingca.com	**Email**	menright@dudek.com

2 Review Area Description and Landscape Setting[4]

The approximately 226.9-acre review area is located within the Town of Apple Valley in San Bernardino County (Figure 1, Project Location)[5]. The review area consists of 19 property parcels (Table 2), including the project boundary plus a 100-foot buffer, and off-site improvement areas plus a 100-foot buffer where the off-site improvement areas extend beyond the project boundary buffer. The approximate center of the project is at latitude 34.575069, longitude -117.267789. Directions to the review area are as follows: From Victorville, travel northwest on U.S. Highway 18 and turn right on Stoddard Wells Road. Continue on the Interstate (I) 15 Frontage Road and turn right onto Quarry Road to enter the review area.[6]

Topography within the review area ranges from approximately 2,910 to 3,060 feet above mean sea level (Figure 1). The review area decreases in elevation toward I-15. Similarly, drainage patterns within the review area trend southeast to northwest toward I-15. Adjacent land uses include I-15 to the west, the quarry to the southeast, and undeveloped land to the north, south, and partially the east. The review area is mapped on Sections 26, 34, and 35 of Township 6 North, Range 4 West, within the Victorville 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle maps (Figure 1).

Table 2. Review Area Assessor's Parcel Numbers

Accessor's Parcel Numbers						
047220101	047205105	047220107	047205110	047205131	047205129	047220108
047220106	047220201	047220211	047220210	047220209	047203108	047205130
047203103	047206133	047206134	047205121	047203110		

2.1 Soils[7]

Soil types within the review area are present in Table 3 and shown on Figure 2, Soils. The National Technical Committee for Hydric Soils defines hydric soils; the Changes in Hydric Soils Database Selection Criteria (77 Federal Register 12234) outlines the current four hydric soil criteria. The hydric soils are indicated by shading on Table 3 below (USDA 2023a, 2023b).

Table 3. Soils Mapped within the Review Area

Soil Series/Unit	Soil Map Unit	Hydric Rating	Acreage
Cajon/Arizo	Cajon-Arizo Complex, 2–15% Slopes	Not Hydric	23.30
Mirage/Joshua	Mirage-Joshua Complex, 2–5% Slopes	Not Hydric	170.08
Pits	Pits	Hydric	16.06

4 Minimum Standards Item 10 (Description of Existing Field Conditions)
5 Minimum Standard Item 14 (Site Location Map)
6 Minimum Standards Item 4 (Directions)
7 Minimum Standards Item 13 (Soil Descriptions)

Table 3. Soils Mapped within the Review Area

Soil Series/Unit	Soil Map Unit	Hydric Rating	Acreage
Trigger/Sparkhule	Trigger-Sparkhule-Rock Outcrop Association, Steep	Not Hydric	17.46
		Total	**226.90**

Sources: USDA 2023a, 2023b.
Note: Shaded row denotes hydric soils.

2.2 Vegetation

Table 4 provides the vegetation communities and land cover acreages within the review area. Vegetation mapping was conducted by Glenn Lukos Associates in June 2022 within the project boundary and supplemented by Dudek using aerial imagery and existing data from Appendix C, Biological Technical Report of the Draft Environmental Impact Report: Apple Valley 143 Project (Town of Apple Valley 2023) within the off-site improvement areas and review area buffer. Two vegetation communities, *Larrea tridentata* Shrubland Alliance (Creosote Bush Scrub), and *Ericameria nauseosa* Shrubland Alliance (Rubber Rabbitbrush Scrub), and two land cover types, disturbed habitat and urban/developed land, were mapped in the review area.

Table 4. Vegetation Communities and Land Cover Types in the Review Area

Vegetation Community/Land Cover Type	Total Acreage
Ericameria nauseosa Shrubland Alliance (Rubber Rabbitbrush Scrub)	64.84
Larrea tridentata Shrubland Alliance (Creosote Bush Scrub)	102.76
Disturbed Habitat	11.07
Urban/Developed	48.23
Total	**226.90**

2.3 Watershed

The review area is within the Mojave subbasin (Hydrologic Unit Code [HUC] 8 18090208), Bell Mountain Wash-Mojave River watershed (HUC-10 1809020807), and the Bell Mountain Wash subwatershed (HUC-12 180902080705) (Figure 3, Hydrology) (USGS 2023). The Mojave subbasin comprises approximately 4,618 square miles and is entirely within San Bernardino County (USGS 2023). The primary geographic and surface hydrologic feature of the watershed is the Mojave River, which flows north for approximately 120 miles until it reaches Silver Dry Lake near the community of Baker. Some reaches of the Mojave River flow underground in the confined riverbed channel (Lahontan RWQCB 2021). The features within the review area drain across I-15 to the primary feature in the Bell Mountain Wash HUC 12, the Bell Mountain Wash, which flows northeast to southwest and drains into the Mojave River, a traditional navigable water (TNW), approximately 1.71 miles southwest (USGS 2023).

In addition to the USGS-defined watersheds noted above, the RWQCB also defines watershed boundaries by Hydrologic Units. The review area is within the South Lahontan Hydrologic Basin, the Mojave Hydrologic Unit, and the Upper Mojave Hydrologic Area (Lahontan RWQCB 2021).

2.4 Review Area Alterations, Current and Past Land Use

Dudek utilized Google Earth Pro (Google Earth 2023), Nationwide Environmental Title Research, LLC (NETR) Online Historic Aerials (NETR Online 2023), and the University of California, Santa Barbara (UCSB n.d.) database to assess historic and ongoing land uses within the review area. Quarry Road, the established dirt road that bisects the review area from I-15, was already established in the earliest aerial image available (i.e., January 1953) along with portions of the quarry/mining area in the eastern portion of the review area. The remainder of the review area, as well as the area to the north and south, was generally undeveloped on open space in January 1953 while I-15 was already constructed along the western boundary (NETR Online 2023). Other dirt roads are visible transecting the review area as early as January 1953 and expand throughout the years to the extent observed during the site visits. Normal circumstances were assumed to be present within the review area.

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3 Precipitation Data and Analysis[8]

The USACE-developed Antecedent Precipitation Tool (APT) was used to assess whether the delineation date occurred in a drier, average, or wetter than normal period (USACE 2022). To determine what constitutes a "typical year," USACE developed the APT. The information generated from the APT can help to determine whether normal hydrologic and/or climatic conditions were present during the site visit and assist with completing the Wetland Determination Data Form.

The APT provides three climatological parameters: Palmer Drought Severity Index (PDSI), season, and antecedent precipitation condition. The PDSI is a standardized index calculated on a monthly basis with PDSI value outputs ranging from -4 (extreme drought) to +4 (very wet) (NOAA 2021) to assess drought conditions (i.e., PDSI Class). The APT determines wet versus dry season based on related procedures provided in the applicable regional supplement for the review area (in this case, the Arid West Supplement). If the antecedent runoff condition (ARC) score is less than 10, then the antecedent precipitation condition is classified as drier than normal; normal conditions are present with an ARC score of 10 to 14; conditions are wetter than normal when an ARC score is greater than 14 (USACE 2020).

Table 5 summarizes the key data extrapolated from the APT output: estimated drought conditions (PDSI Class), wet or dry season determination, ARC score, and antecedent precipitation condition. Based on the APT output provided in Appendix B and summarized in Table 5, the precipitation and climatic conditions for the review area were within the normal range during the time of the delineation.

Table 5. Antecedent Precipitation Tool Data for the Review Area

Survey Date	PDSI Class	Season	ARC Score	Antecedent Precipitation Condition
1/17/2023	-1.39	Wet Season	14	Normal Conditions
1/27/2023	-1.39	Wet Season	14	Normal Conditions

Notes: PDSI = Palmer Drought Severity Index; ARC = antecedent runoff condition.

Additionally, according to the U.S. Department of Agriculture Agricultural Applied Climate Information System (USDA 2023c), the area around the review area receives an average of 5.40 inches of precipitation annually.

8 Minimum Standards Item 11 (Discussion of Hydrology)

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4 Investigation Methods[9]

The jurisdictional delineation was conducted by Dudek biologists in January 2023 (Table 6). Prior to conducting the jurisdictional delineation, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data (USFWS 2023) and USGS National Hydrography Dataset (NHD) (USGS 2023) was reviewed to determine if the review area contained any features mapped by USFWS. Site-specific topographical data were reviewed in conjunction with aerials, both current and historical, to determine the potential presence of non-wetland waters. Vegetation mapping was reviewed to assess whether the review area supported hydrophytic vegetation and potential wetlands. Jurisdictional boundaries were mapped in the field using Esri Collector on a mobile device. Data from an unpublished existing jurisdictional delineation conducted by Dudek in June 2022 were used to supplement field investigation efforts, specifically within the off-site improvement area along I-15 and Falchion Road. In addition, both current and historical imagery were used to supplement field investigation efforts throughout the project boundary and were primarily relied upon for delineation of the southernmost off-site improvement area. Remote sensing was not used for the delineation.

Table 6. Schedule of the Aquatic Resources Delineation

Date	Hours	Personnel	Conditions
01/17/2023	8:30 a.m.–3:26 p.m.	DA, KD, SG	41°F–48°F; 0% cloud cover; 5–12 mph wind
01/27/2023	8:00 a.m.–12:00 p.m.	KD, ES	40°F–52°F; 0% cloud cover; 0–7 mph wind

Personnel: DA = Dylan Ayers; KD = Kathleen Dayton; SG = Sarah Greely; Eilleen Salas.
Note: mph = miles per hour.

4.1 U.S. Army Corps of Engineers

The USACE wetlands delineation was conducted in accordance with the 1987 USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (USACE 2008b) was used to determine the limits of non-wetland waters. Non-wetland waters were delineated on topographical maps in conjunction with Esri Collector on a mobile device. The widths of each non-wetland water were determined in the field according to the OHWM manual (USACE 2008b).

Wetland Determination Forms were not taken throughout the review area given the lack of drainages with vegetation communities where a predominance of hydrophytic vegetation was present to meet USACE three-parameter wetlands parameters. OHWM data forms, based on the updated OHWM data sheets (USACE 2010), were completed at representative cross sections of non-wetland waters to capture their characteristics and widths. All data forms can be found in Appendix C.

[9] Minimum Standards Item 8 (Dates of Field Work), Item 5 (Use of 1987 Manual, Regional Supplement, and OHWM guide), Item 12 (Statement Regarding Use of Remote Sensing), Item 18 (Data Forms) and Item 19 (Methods)

4.2 Regional Water Quality Control Board

Waters of the state regulated by RWQCB were mapped in accordance with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021). As described by SWRCB (2021), wetland waters of the state are mapped based on the procedures in USACE's 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987) and its 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008a). Non-wetland waters are mapped at the OHWM based on the procedures defined in USACE's 2008 A Field Guide to Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b).

4.3 California Department of Fish and Wildlife

CDFW jurisdictional areas were mapped to include the bank of the stream/channel and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979). CDFW also regulates riparian vegetation communities that occur beyond the limits of regulated streambeds.

5 Description of Observed Potential Aquatic Resources[10]

The following descriptions document the presence or absence of aquatic resource indicators within the review area per the methodologies discussed in Section 4, Investigation Methods. Figure 4, Potential Aquatic Resources, illustrates the location and extent of the features within the review area.[11] A description of these features and their observed OHWM indicators is provided below. Appendix C contains the data forms completed during the site visits, which are also summarized below. Representative photographs of these potential resources are provided in Appendix D.[12] The ORM Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet is included in Appendix E.[13]

Non-Wetland Water 5

Non-Wetland Water (NWW) 05 is a feature composed of two drainages located in the northern portion of the review area. Cross sections T-18 and T-19 recorded the following indicators of an OHWM: a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C). These drainages initiate within the review area and generally flow east to west; however, the indicators noted above are inconsistent in the downstream segment of the feature (Photo Number 6, Appendix D; Figure 4). Flows were observed near a culvert at the I-15 frontage road that may convey flows across I-15 toward Bell Mountain Wash, approximately 0.31 miles northwest (Figure 4). NWW-05 did not contain invertebrates, algae, fish, and/or other aquatic taxa that could indicate consistent and/or permanent flows on site. Furthermore, flowing or standing water was not observed within the feature. As such, it appears NWW-05 only conveys ephemeral flows that only drain for short durations in direct response to precipitation or rainfall events.

Non-Wetland Water 6

NWW-06 is a feature located in the northern portion of the review area that appears to collect runoff from the aggregate mining facility in and adjacent to the eastern portion of the review area. These drainages flow southeast to northwest and may cross an I-15 culvert crossing to reach Bell Mountain Wash, approximately 0.31 miles northwest (Figure 4). Cross section T-20 recorded the following indicators of an OHWM: a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C). NWW-06 did not contain invertebrates, algae, fish, and/or other aquatic taxa that could indicate consistent and/or permanent flows on site. Furthermore, flowing or standing water was not observed within the feature. As such, it appears NWW-06 only conveys ephemeral flows that only drain for short durations in direct response to precipitation or rainfall events.

Non-Wetland Water 7

NWW-07 is a feature located in the central northwestern portion of the review area that appears to collect runoff from dirt roads surrounding and leading up to the aggregate mining facility. The drainages generally flow from

10 Minimum Standards Item 6 (Aquatic Resource Narrative)
11 Minimum Standards Items 7 and 16 (Delineation Maps)
12 Minimum Standards Item 17 (Ground Photos)
13 Minimum Standards Items 9 (Table Listing All Aquatic Resources) and 15 (ORM Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet)

southeast to northwest, traveling across several culvert inlets and outlets on site, before reaching the I-15 frontage road (Photo Number 12, Appendix D). Flows continue off site across I-15 toward Bell Mountain Wash, approximately 0.31 miles northwest (Figure 4). Cross section T-22 recorded the following indicators of an OHWM: a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C). NWW-07 did not contain invertebrates, algae, fish, and/or other aquatic taxa that could indicate consistent and/or permanent flows on site. Furthermore, flowing or standing water was not observed within the feature. As such, it appears NWW-07 only conveys ephemeral flows that only drain for short durations in direct response to precipitation or rainfall events.

Non-Wetland Water 8

NWW-08 is a feature located in the central portion of the review area that appears to collect runoff from a dirt road surrounding and leading up to the aggregate mining facility. Cross section T-23 recorded the following indicators of an OHWM: a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C). The feature generally flows east to west before draining off site near the I-15 frontage road (Appendix D). Flow may cross an I-15 culvert crossing to reach Bell Mountain Wash, approximately 0.31 miles northwest (Figure 4). NWW-08 did not contain invertebrates, algae, fish, and/or other aquatic taxa that could indicate consistent and/or permanent flows on site. Furthermore, flowing or standing water was not observed within the feature. As such, it appears NWW-08 only conveys ephemeral flows that only drain for short durations in direct response to precipitation or rainfall events.

Non-Wetland Water 9

NWW-09 is a braided feature located near the southwest segment of the review area. These drainages initiate on site and generally flow southeast to northwest before draining off site at a I-15 frontage road culvert inlet (Photo Number 20, Appendix D). Flows continue off site across I-15 toward Bell Mountain Wash, approximately 0.43 miles northwest (Figure 4). Cross section T-25 recorded the following indicators of an OHWM: a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C; Photo Number 19, Appendix D). NWW-09 did not contain invertebrates, algae, fish, and/or other aquatic taxa that could indicate consistent and/or permanent flows on site. Furthermore, flowing or standing water was not observed within the feature. As such, it appears NWW-09 only conveys ephemeral flows that only drain for short durations in direct response to precipitation or rainfall events.

Non-Wetland Water 11

NWW-11 is a braided feature located in the southwest corner of the review area. These drainages appear to initiate off site, generally flowing southeast to northwest before draining into a culvert at the I-15 frontage road. Flows continue off site across I-15 toward Bell Mountain Wash, approximately 0.46 miles northwest (Figure 4). Cross section T-25 provides representative OHWM data for NWW-11 given the similar conditions observed via aerials within NWW-09 (i.e., similar aquatic resource type and indicators). The recorded indicators of an OHWM at cross section T-25 include a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C). Based on a review of current and historic aerials (Google Earth 2023), NWW-11 appears to convey similar ephemeral flows as those observed in the primary project boundary.

Non-Wetland Water 12

NWW-12 is a feature located in the southwest corner of the review area. The feature appears to initiate off site, generally flowing southeast to northwest toward the I-15 frontage road. Flow may cross an I-15 culvert crossing to reach Bell Mountain Wash, approximately 0.49 miles northwest (Figure 4). Cross section T-25 provides representative OHWM data for NWW-12 given the similar conditions observed via aerials within NWW-09 (i.e., similar aquatic resource type and indicators). The recorded indicators of an OHWM at cross section T-25 include a break in bank slope, a change in average sediment texture, and a change in vegetation cover between the active floodplain and adjacent uplands (Appendix C). Based on a review of current and historic aerials (Google Earth 2023), NWW-12 appears to convey similar ephemeral flows as those observed in the primary project boundary.

Other Features

In addition to the non-wetland features describes above, multiple upland swales were also observed within the review area. These features lacked sufficient indicators of an OHWM and/or a defined bed and bank during field investigations, which excludes them from consideration as potential jurisdictional waters or jurisdictional streambed. Therefore, they are not depicted in Figure 4 or discussed further. Cross sections T-16, T-19, T-22, and T-24 were collected to demonstrate the lack of an OHWM and/or indicators of a defined bed and bank and describes these non-jurisdictional features. Additionally, photos of these areas are provided in Appendix D and photo locations are depicted on Figure 4.

5.1 Waters of the United States (USACE)

On August 29, 2023, the U.S. Environmental Protection Agency (EPA) and USACE issued a final rule to amend the final Revised Definition of "Waters of the United States" rule (88 CFR 3004–3144; published in the Federal Register on January 18, 2023, and effective on March 20, 2023) to conform with the *Sackett v. EPA* decision. Some of the key changes to the rule included the removal of the significant nexus test from consideration when identifying tributaries and other waters as federally protected and the revision of the adjacency test when identifying federally jurisdictional wetlands. Under the EPA's new definition, a "waters of the U.S." is a relatively permanent, standing, or continuously flowing body of water that has an apparent surface connection to a TNW.

The seven ephemeral drainages present within the review area did not appear to meet the definition of a "waters of U.S.," specifically 33 CFR 328.3(a)(3), as the features do not appear to be "relatively permanent, standing or continuously flowing bodies of water." As previously discussed and shown in Appendix D, the features throughout the review area appear to convey ephemeral flows that only drain for short durations in direct response to precipitation or rainfall events, and permanent or consistent flow was not distinguishable during field observation or in a review of recent and historic aerials (Google Earth 2023). Therefore, all features present are not anticipated to be subject to USACE jurisdiction because these features do not meet the relatively permanent standard as a water of the U.S. However, a final determination will be made by USACE during the AJD process.

5.2 Waters of the State (RWQCB)

Approximately 1.68 acres of non-wetland waters potentially regulated by the RWQCB are present within the review area. Contrary to the USACE, the RWQCB regulates all surface waters under the Porter-Cologne Water Quality Control

Act. All seven ephemeral drainages have been identified as waters of the state. Table 7 lists the features within the review area that are RWQCB jurisdictional.

Table 7. Potential RWQCB Aquatic Resources Summary for the Review Area

Feature Name	Location (Latitude/Longitude; Decimal Degrees)	Acreage/Linear Feet
Non-Wetland Waters		
NWW-05	34.5784194, -117.2652843	0.25
NWW-06	34.5765027, -117.2661094	0.89
NWW-07	34.5760376, -117.2692687	0.19
NWW-08	34.5750324, -117.2701210	0.07
NWW-09	34.5733813, -117.2731468	0.24
NWW-11	34.5706874, -117.2768704	0.02
NWW-12	34.5700568, -117.2773633	0.02
	Grand Total	**1.68**

Notes: RWQCB = Regional Water Quality Control Board; NWW = non-wetland water.

5.3 CDFW Jurisdiction

All the features described in Section 5.2, Waters of the State (RWQCB), have been identified as streambed potentially regulated by CDFW. Because CDFW regulates from bank to bank, certain portions of the review area where the top of a channel bank extended beyond the OHWM are subject to regulation by CDFW as streambed. These areas are displayed in the Figure 4. The total acreage of CDFW jurisdictional areas are listed in Table 8.

Table 8. Potential CDFW Aquatic Resources Summary for the Review Area

Feature Name	Location (Latitude/Longitude; Decimal Degrees)	Acreage/Linear Feet[1]
Streambed		
NWW-05	34.5784194, -117.2652843	0.25
NWW-06	34.5765027, -117.2661094	1.00
NWW-07	34.5760376, -117.2692687	0.34
NWW-08	34.5750324, -117.2701210	0.07
NWW-09	34.5733813, -117.2731468	0.24
NWW-11	34.5706874, -117.2768704	0.02
NWW-12	34.5700568, -117.2773633	0.02
	Grand Total	**1.93**

Notes: CDFW = California Department of Fish and Wildlife; NWW = non-wetland water.

[1] Totals may not sum due to rounding.

5.4 National Wetland Inventory and National Hydrography Dataset

The review area contains one resource from the USFWS NWI database mapped as intermittent riverine (USFWS 2023) (Figure 3). This feature generally overlaps with portions of NWW-06 and NWW-07. The review area contains six resources from the USGS NHD database mapped as ephemeral stream/river features (USGS 2023) (Figure 3). These features generally overlap with portions of NWW-05, NWW-06, NWW-07, and NWW-09. USGS NHD also maps one additional ephemeral stream/river feature near the southern corner of the property boundary within the review area; however, it does not correspond with any observed potential aquatic features. Neither USFWS NWI or USGS NHD map any features within the delineated extent of NWW-11 or NWW-12.

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6 Results and Conclusions

Based on the jurisdictional delineation and review of relevant information provided in this ARDR, seven non-wetland water features were delineated within the review area. These features may be regulated by RWQCB and CDFW. In total, 1.68 acres of non-wetland waters (below OHWM) fall under RWQCB jurisdiction and 1.93 acres of CDFW Streambed (below and above OHWM, to top of bank) occurs in the review area. As noted in Section 5, Description of Observed Potential Aquatic Resources, all the features within the review area do not appear to meet the definition of a waters of the U.S., specifically 33 CFR 328.3(a)(3), as the features do not appear to be "relatively permanent, standing or continuously flowing bodies of water." As such, the features may not be regulated by USACE via the AJD process. This ARDR can be used by those agencies to determine if they would regulate the features described herein. The GIS data for the delineation are provided digitally (Appendix F). [14]

[14] Minimum Standards Item 20 (Digital Data)

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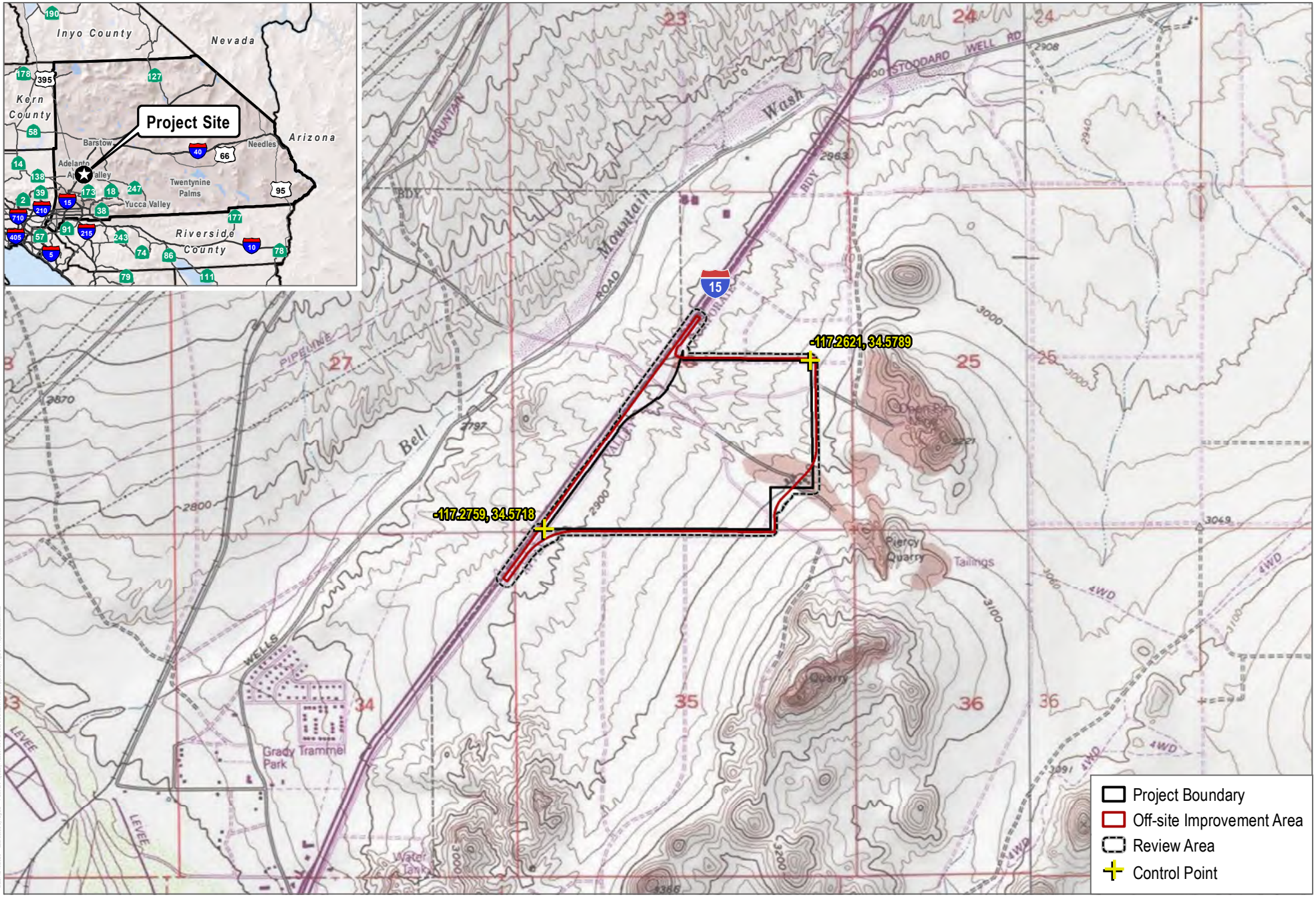

SOURCE: USGS 7.5-Minute Series Victorville Quadrangle; Township 6N / Range 4W / Sections 26, 34, 35; County of San Bernardino

DUDEK

FIGURE 1

Project Location

Inland Empire North Logistics Center Apple Valley Aquatic Resources Delineation Report

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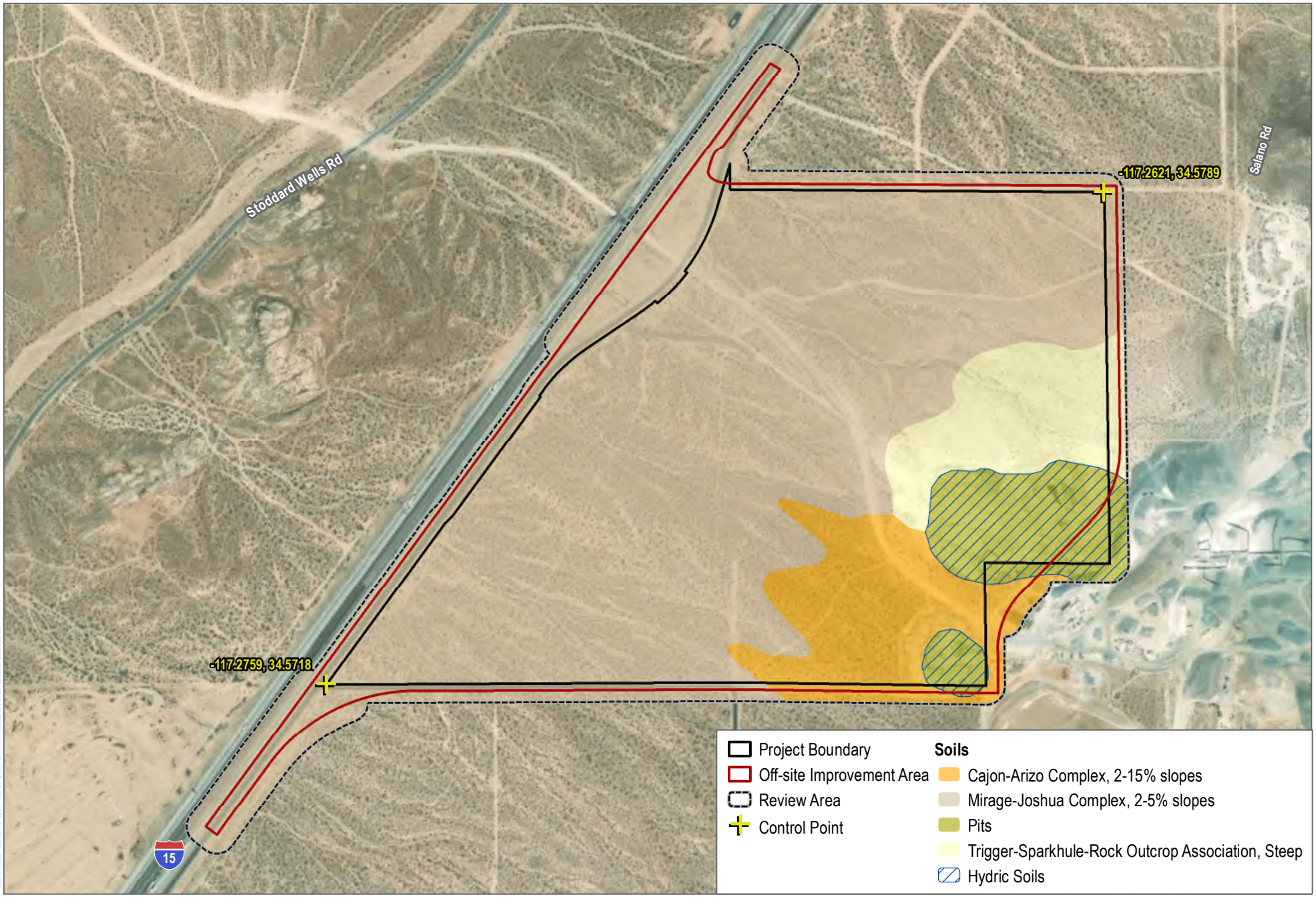

SOURCE: County of San Bernardino; USDA NRCS; Open Street Map; ESRI World Imagery 2022

DUDEK

0 300 600 Feet

FIGURE 2

Soils

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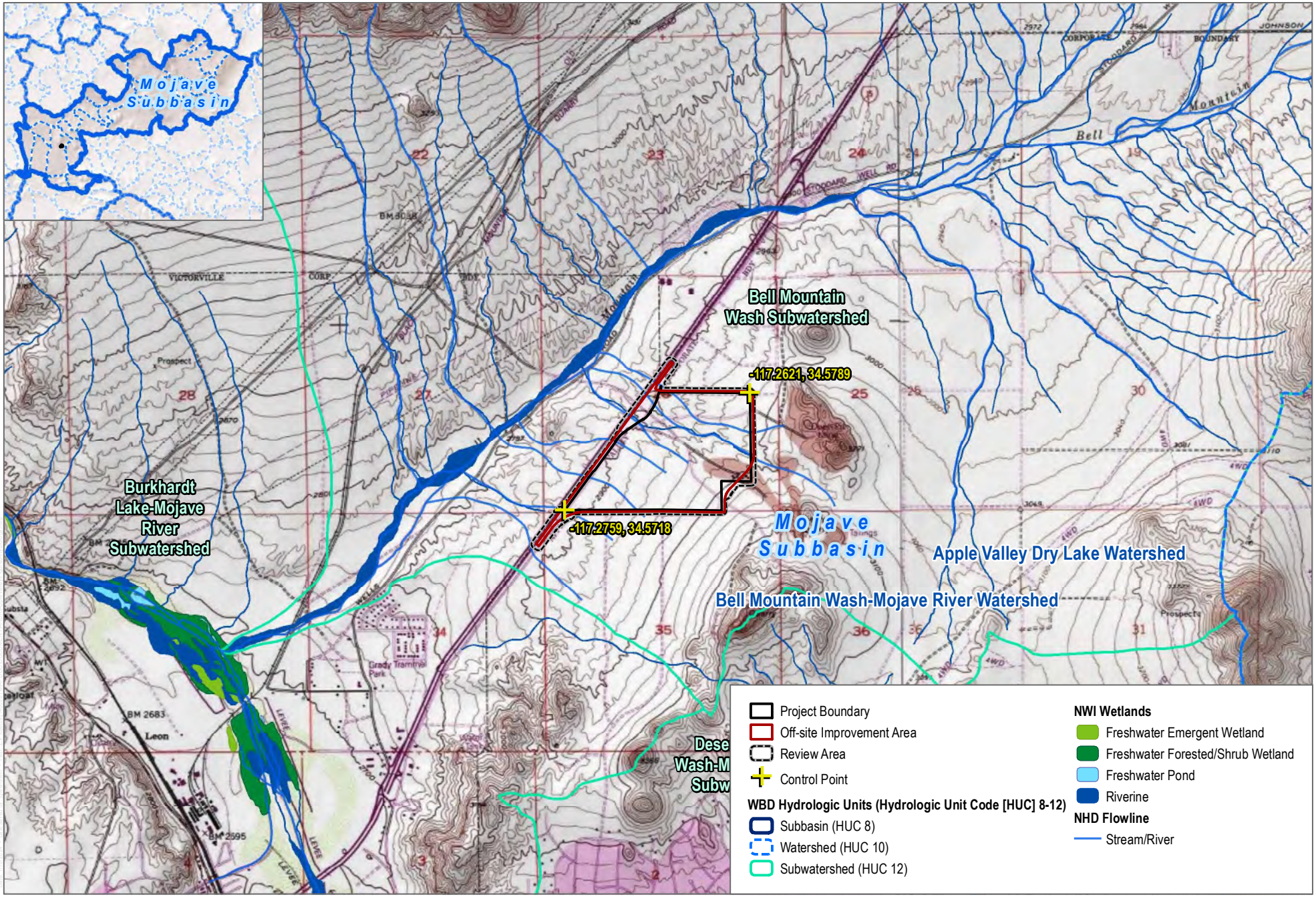

SOURCE: USGS 2023; NWI 2023; RWQCB 2023; USGS Topo Maps 2023

DUDEK

0 0.25 0.5 Miles

FIGURE 3

Hydrology

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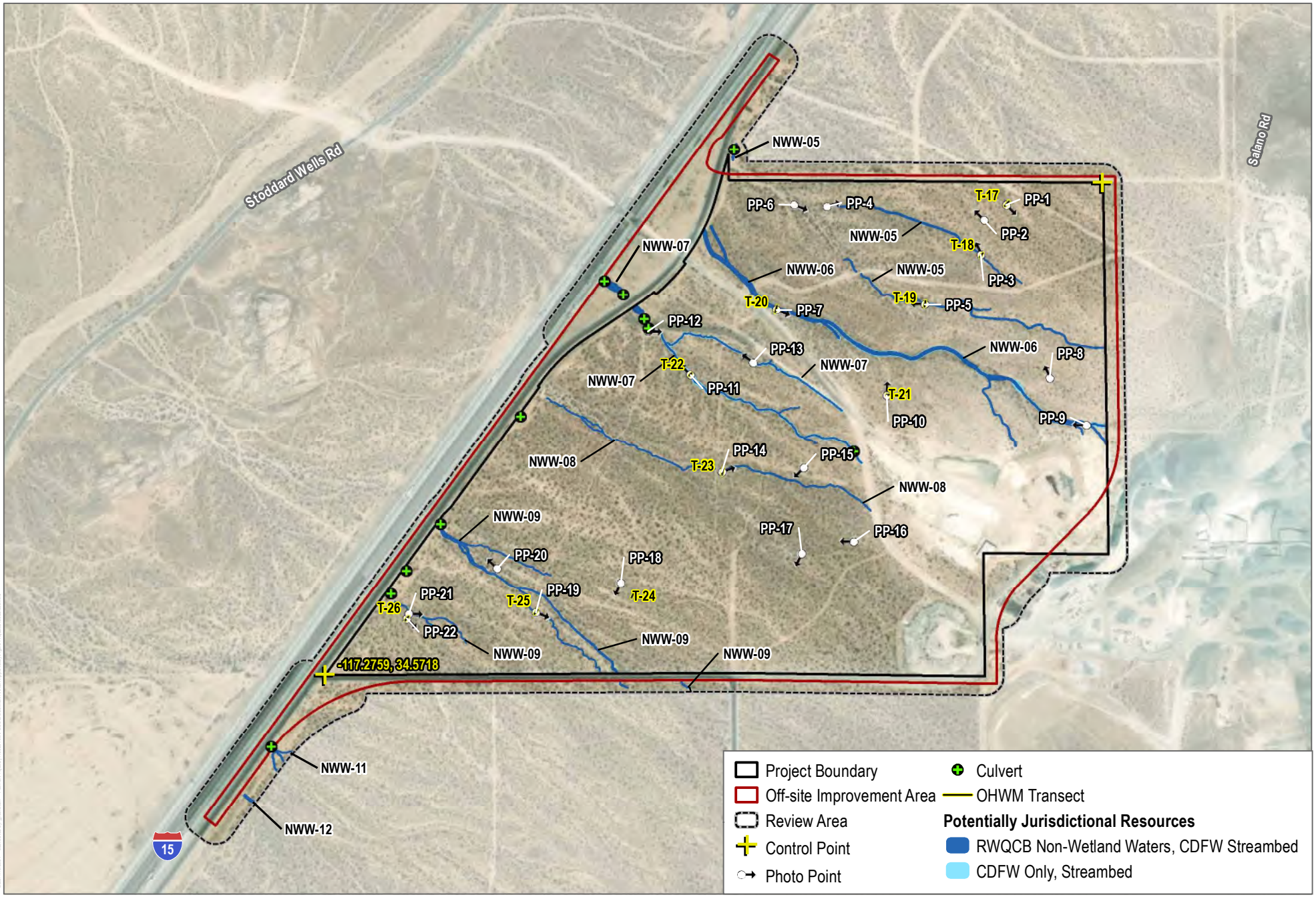

SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

0 300 600 Feet

FIGURE 4

Potential Aquatic Resources

Inland Empire North Logistics Center Apple Valley Aquatic Resources Delineation Report

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Appendix A

Request for a Jurisdictional Determination

U.S. Army Corps of Engineers (USACE)

REQUEST FOR JURISDICTIONAL DETERMINATION (JD)

For use of this form, see Sec 404 CWA, Sec 10 RHA, Sec 103 MPRSA; the proponent agency is CECW-COR.

Form Approved - OMB No. 0710-0024 Expires 2024-04-30

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

Principal Purpose The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the review area that are or that may be subject to federal jurisdiction under the regulatory authorities referenced above.

Routine Uses This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice or FOIA request as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in any approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.

Disclosure Submission of requested information is voluntary, however, if the information is not provided there may be some delay in processing your request. Failure to provide this information will not result in an adverse action.
System of Record Notice (SORN): The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website:
http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. To (*District Name*): Los Angeles District

2. I am requesting a JD on property located at (*Street Address*): East of I-15, from Norco St. to just south of Falchion Rd.

City/Township/Parish: Apple Valley County: San Bernardino State: California

Acreage of Parcel/Review Area for JD: 226.9

Section: 26, 34, and 35 Township: 6 North Range: 4 West

Latitude (*decimal degrees*): 34.575069 °

Longitude (*decimal degrees*): -117.267789 °

(*For linear projects, please include the center point of the proposed alignment.*)

3. Please attach a survey/plat map and vicinity map identifying location and review area for the JD.

4. ☐ I currently own this property. ☐ I plan to purchase this property.

☒ I am an agent/consultant acting on behalf of the requester.

☐ Other (*please explain*):

N/A

5. Reason for request: (*check as many as applicable*)

- [ ] I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
- [ ] I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- [ ] I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
- [ ] I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
- [ ] I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
- [ ] A Corps JD is required in order to obtain my local/state authorization.
- [x] I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
- [ ] I believe that the site may be comprised entirely of dry land.
- [ ] Other:

N/A

6. Type of determination being requested:

- [x] I am requesting an approved JD.
- [ ] I am requesting a preliminary JD.
- [ ] I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
- [ ] I am unclear as to which JD I would like to request and require additional information to inform my decision.

7. Typed or Printed Name: Jessica Haughton Daytime Phone No.: 702-330-1715

Company Name: Synergy Consulting Email Address: jhaughton@synergyconsultingca.com

Address: 1818 Library Street, Suite 500, Reston, VA 20190

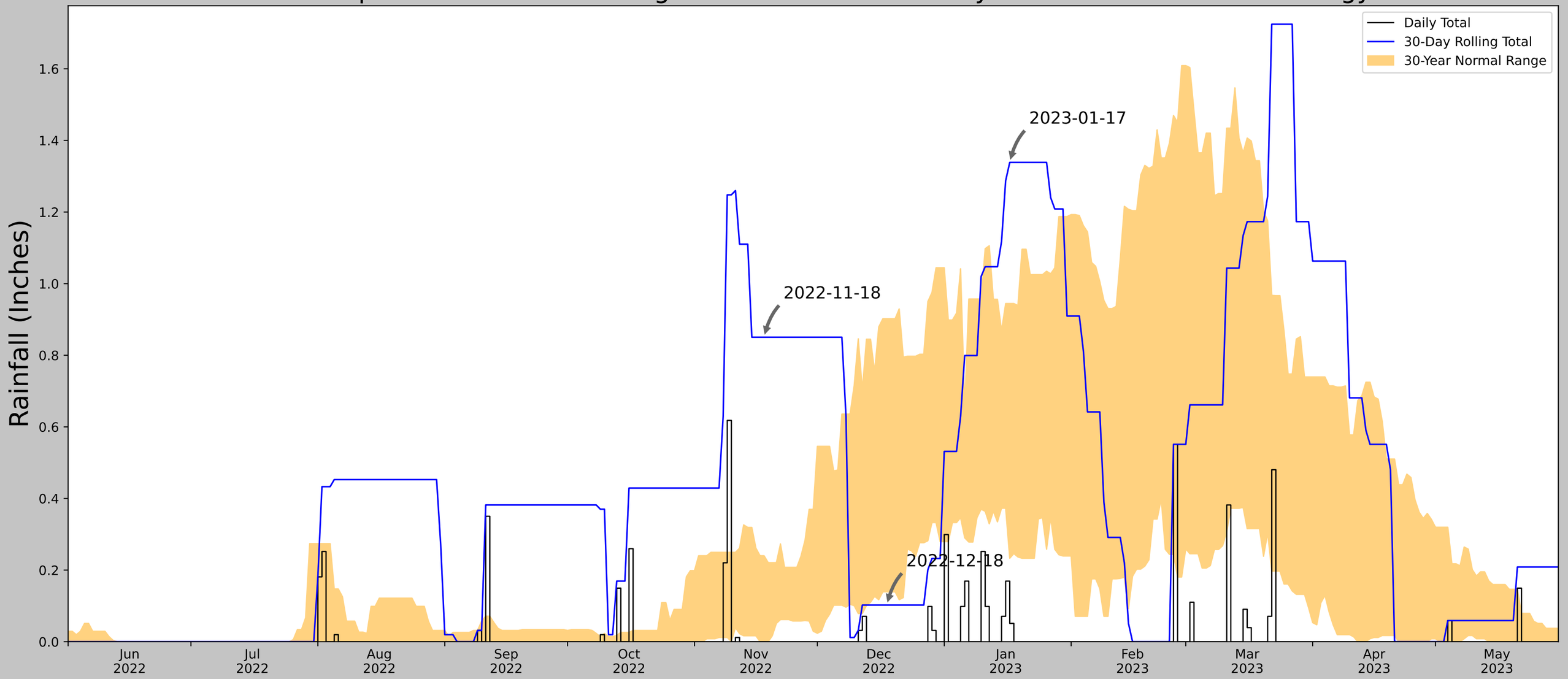
By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

Signature:	Date:

Appendix B

Antecedent Precipitation Tool Output

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	34.581553, -117.273892
Observation Date	2023-01-17
Elevation (ft)	2820.099
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

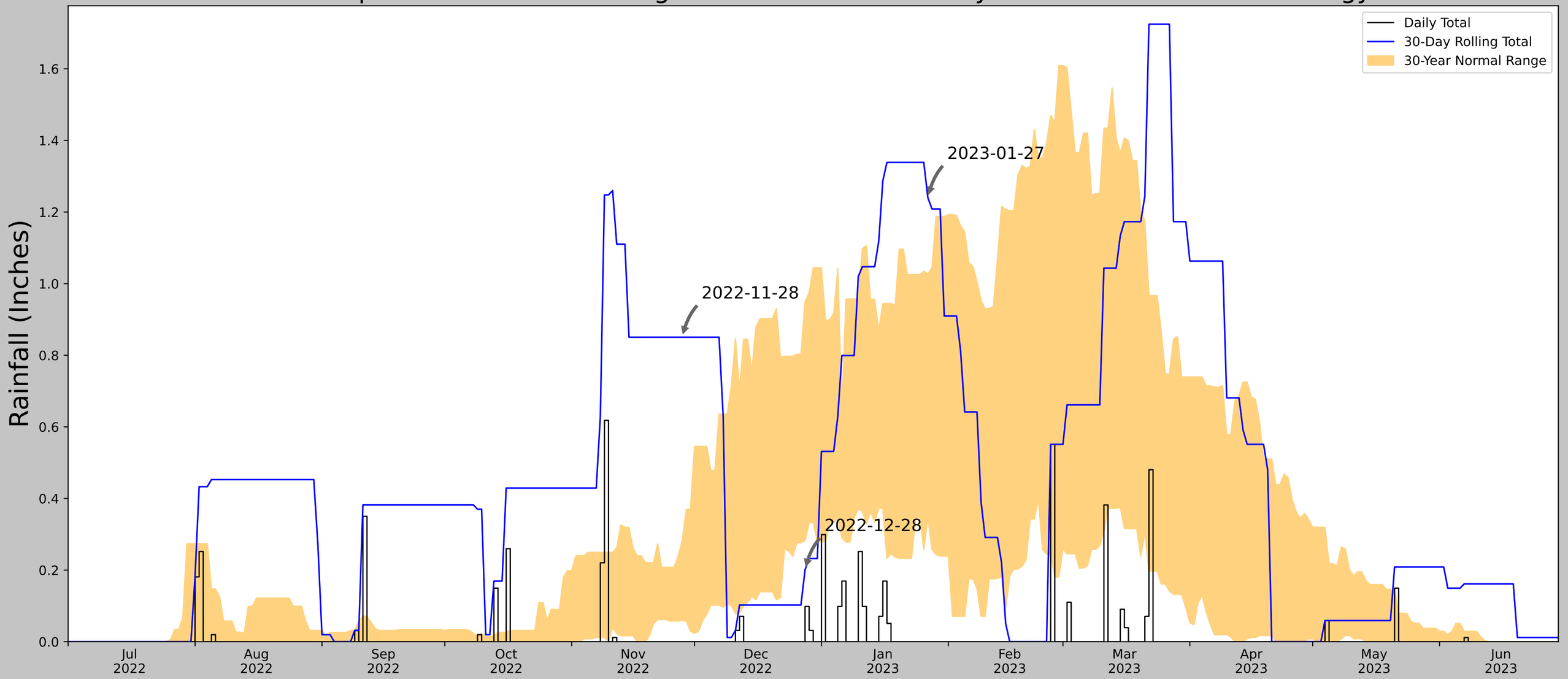
30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-01-17	0.233071	0.944488	1.338583	Wet	3	3	9
2022-12-18	0.13937	0.901969	0.102362	Dry	1	2	2
2022-11-18	0.0	0.240157	0.850394	Wet	3	1	3
Result							Normal Conditions - 14

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
VICTORVILLE	34.5292, -117.2928	2879.921	3.774	59.822	1.924	11065	90
APPLE VALLEY 2.6 SSW	34.4957, -117.2353	2880.906	4.009	0.985	1.808	96	0
APPLE VALLEY 1.9 N	34.556, -117.2111	2935.039	5.005	55.118	2.528	1	0
APPLE VALLEY 2.6 SE	34.5043, -117.1808	2940.945	6.604	61.024	3.375	1	0
EL MIRAGE	34.5892, -117.6303	2950.131	19.647	70.21	10.221	188	0
LYTLE CREEK RS	34.2383, -117.4708	2729.987	22.517	149.934	13.509	2	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	34.581553, -117.273892
Observation Date	2023-01-27
Elevation (ft)	2820.099
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-01-27	0.346457	1.027559	1.240158	Wet	3	3	9
2022-12-28	0.28189	0.95	0.200787	Dry	1	2	2
2022-11-28	0.059055	0.283465	0.850394	Wet	3	1	3
Result							Normal Conditions - 14

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
VICTORVILLE	34.5292, -117.2928	2879.921	3.774	59.822	1.924	11065	90
APPLE VALLEY 2.6 SSW	34.4957, -117.2353	2880.906	4.009	0.985	1.808	96	0
APPLE VALLEY 1.9 N	34.556, -117.2111	2935.039	5.005	55.118	2.528	1	0
APPLE VALLEY 2.6 SE	34.5043, -117.1808	2940.945	6.604	61.024	3.375	1	0
EL MIRAGE	34.5892, -117.6303	2950.131	19.647	70.21	10.221	188	0
LYTLE CREEK RS	34.2383, -117.4708	2729.987	22.517	149.934	13.509	2	0

Appendix C
Data Forms

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: N/A
Investigator(s): A. Cassady and E. Salas

Date: 1/27/23 **Time:** 0923
Town: Apple Valley **State:** CA
Photo begin file#: 1 **Photo end file#:** 1

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.578611, -117.263611

Potential anthropogenic influences on the channel system:

Aggregate plant located directly east of the review area. I-15 to the west of review area. Surrounding area to data point is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

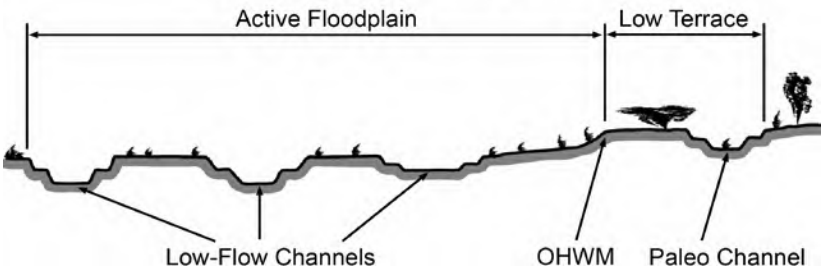
Brief site description:

Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Lower topographic area between two gentle slopes.

Checklist of resources (if available):

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

Hydrogeomorphic Floodplain Units

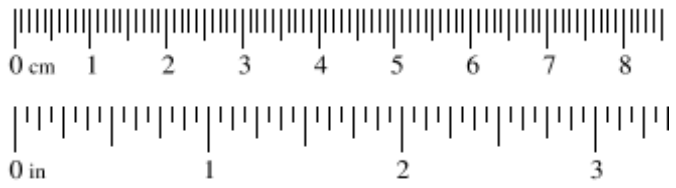


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

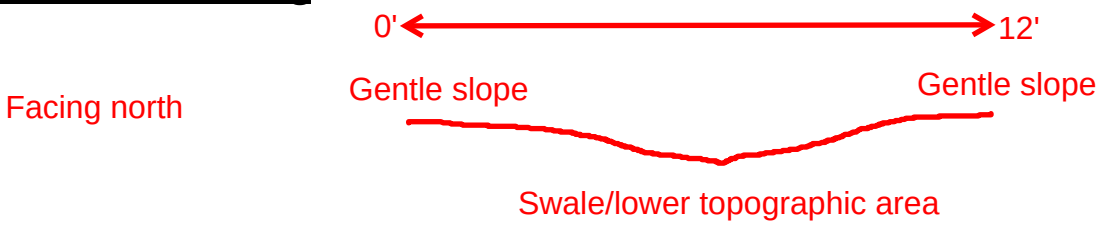
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-17 **Date:** 1/27/23 **Time:** 0923

Cross section drawing:



OHWM

GPS point: 34.576944, -117.272778

Indicators:

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

Comments:

Swale-like feature (i.e., slight concave/lower topographic area) that does not appear to sustain sufficient flows to create a break in bank slope and/or bed and bank. Average sediment texture and vegetation species did not differ from the concave area to the adjacent slopes. A slight change in vegetation cover is visible (generally unvegetated to vegetated uplands); however, no other OHWM indicators are present. Data was collected after a recent rain event.

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Project ID: IE North Logistics Center **Cross section ID:** T-17 **Date:** 1/27/23 **Time:** 0923

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: NWW-05
Investigator(s): A. Cassady and E. Salas

Date: 1/27/23 **Time:** 0900
Town: Apple Valley **State:** CA
Photo begin file#: 3 **Photo end file#:** 3

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.577778, -117.264167

Potential anthropogenic influences on the channel system:

Dirt road located upstream/east of feature. Aggregate plant located directly east of the review area. I-15 to the west of review area. Surrounding area to data point is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

Brief site description:

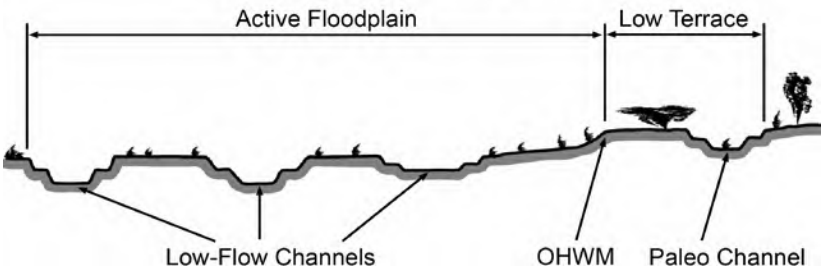
Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Braided feature within creosote bush scrub.

Checklist of resources (if available):

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

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

Hydrogeomorphic Floodplain Units

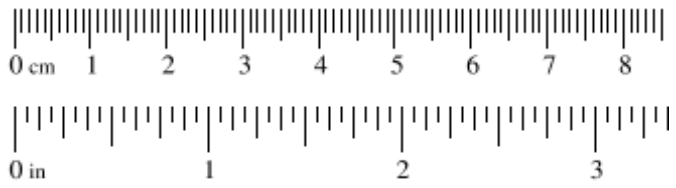


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-18 **Date:** 1/27/23 **Time:** 0900

Cross section drawing:

Facing northwest (downstream)

OHWM

GPS point: 34.577778, -117.264167

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Approximately 1-foot-wide OHWM defined by a change in average sediment texture, change in vegetation cover, and break in bank slope. Data collected after recent rain event.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

Low flow channel is indistinguishable from active floodplain/OHWM.

Project ID: IE North Logistics Center **Cross section ID:** T-18 **Date:** 1/27/23 **Time:** 0900

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

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

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

Community successional stage:

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

Indicators:

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

Comments:

Approximately 1-foot-wide AF with defined break in bank slope, less than 1' vertical depth from uplands to AF.

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

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Sand w/ pebbles

Total veg cover: 6 % Tree: 0 % Shrub: 6 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace, continues from AF to uplands which are mapped as creosote bush scrub. Uplands defined by soil development and surface relief.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: NWW-05
Investigator(s): A. Cassady and D. Ayers

Date: 1/17/23 **Time:** 1035
Town: Apple Valley **State:** CA
Photo begin file#: 5 **Photo end file#:** 5

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.577211, -117.26522

Potential anthropogenic influences on the channel system:

Dirt road transects the feature. Aggregate plant located directly east of the review area. I-15 to the west of review area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

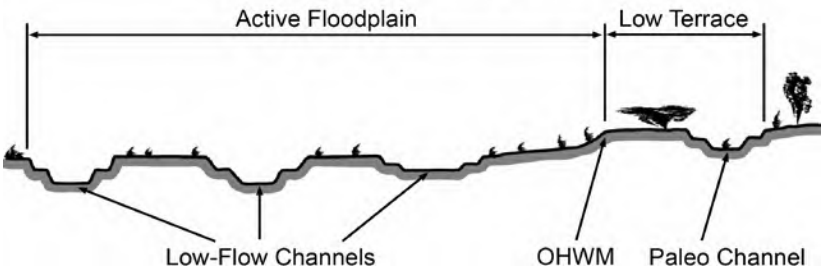
Brief site description:

Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Feature within creosote bush scrub.

Checklist of resources (if available):

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

Hydrogeomorphic Floodplain Units

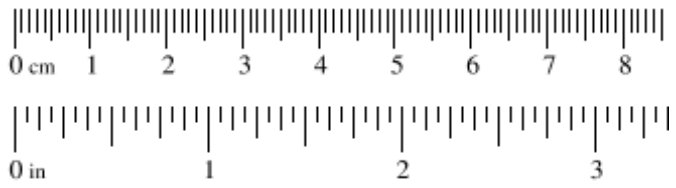


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-19 **Date:** 1/17/23 **Time:** 1035

Cross section drawing:

OHWM

GPS point: 34.577211, -117.26522

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Approximately 3-foot-wide OHWM defined by a change in average sediment texture, change in vegetation cover, and break in bank slope. Data collected after recent rain event.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: Within AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

Low flow channel is indistinguishable from active floodplain/OHWM.

Project ID: IE North Logistics Center **Cross section ID:** T-19 **Date:** 1/17/23 **Time:** 1035

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

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand w/ pebbles

Total veg cover: 2 % Tree: 0 % Shrub: 2 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

Approximately 3-foot-wide AF with defined break in bank slope. Sediment texture consist of fine sand with cobbles/pebbles intermixed throughout.

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

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

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

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace, continues from AF to uplands which are mapped as creosote bush scrub. Uplands defined by soil development and surface relief.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: NWW-06
Investigator(s): A. Cassady and S. Greely

Date: 1/17/23 **Time:** 1055
Town: Apple Valley **State:** CA
Photo begin file#: 7 **Photo end file#:** 7

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.576944, -117.267778

Potential anthropogenic influences on the channel system:

Dirt road transects the feature. Feature appears to collect runoff from aggregate plant located directly east of the review area. I-15 to the west of review area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

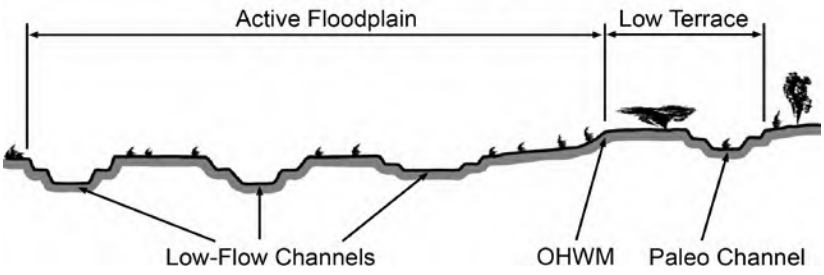
Brief site description:

Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Braided feature within creosote bush scrub.

Checklist of resources (if available):

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

Hydrogeomorphic Floodplain Units

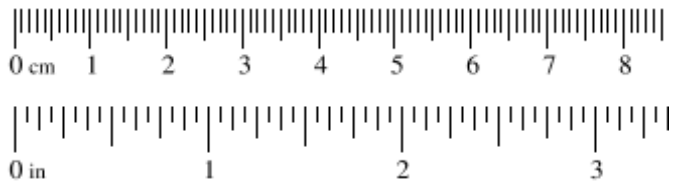


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

Wentworth Size Classes

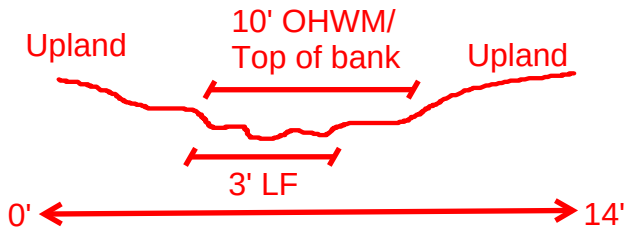
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt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



Project ID: IE North Logistics Center **Cross section ID:** T-20 **Date:** 1/17/23 **Time:** 1055

Cross section drawing:

Facing west (downstream)



OHWM

GPS point: 34.576944, -117.267778

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Approximately 10-foot-wide OHWM defined by a change in average sediment texture, change in vegetation cover, and break in bank slope. One approximately 3-foot-wide LF channel observed within the OHWM with various ripples throughout. Data collected after recent rain event.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: Within AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine silt

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

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

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

Comments:

Approximately 3-foot-wide LF channel within OHWM defined by various ripples throughout. Sediment texture consist of fine silt.

Project ID: IE North Logistics Center **Cross section ID:** T-20 **Date:** 1/17/23 **Time:** 1055

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

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

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

Community successional stage:

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

Indicators:

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

Comments:

Approximately 10-foot-wide AF with defined break in bank slope. Ripples present within LF and AF throughout.

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

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 35 % Tree: 0 % Shrub: 35 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace, continues from AF to uplands which are mapped as creosote bush scrub. Uplands defined by soil development and surface relief. Sediment texture consist of fine sand with cobbles intermixed.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: N/A
Investigator(s): A. Cassady and D. Ayers

Date: 1/17/23 **Time:** 1253
Town: Apple Valley **State:** CA
Photo begin file#: 10 **Photo end file#:** 10

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.575861, -117.265957

Potential anthropogenic influences on the channel system:

Aggregate plant located directly east of this area/the review area. I-15 to the west of review area. Surrounding area to data point is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

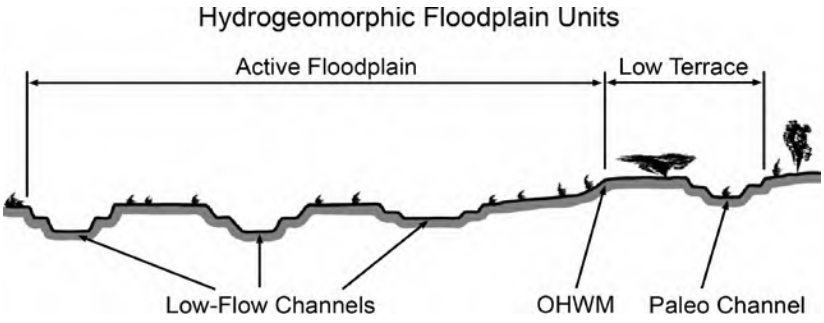
Brief site description:

Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Lower topographic area between two slopes.

Checklist of resources (if available):

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

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

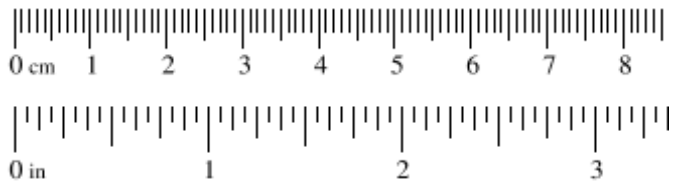


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

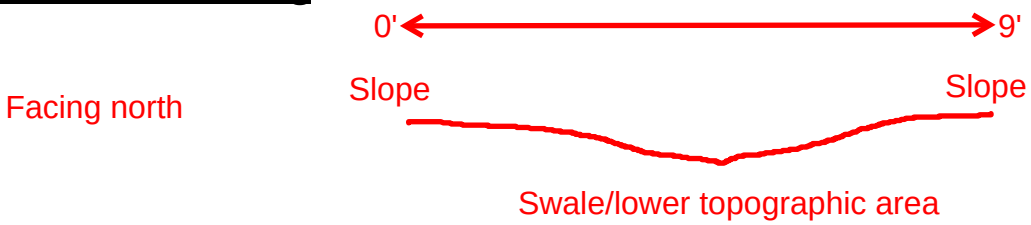
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-21 **Date:** 1/17/23 **Time:** 1253

Cross section drawing:



OHWM

GPS point: 34.575861, -117.265957

Indicators:

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

Comments:

Swale-like feature (i.e., slight concave/lower topographic area) in between slopes that does not appear to sustain sufficient flows to create a break in bank slope and/or bed and bank. Vegetation species did not differ from the concave area to the adjacent slopes. A slight change in sediment texture is visible; however, no other OHWM indicators are present. Data was collected after a recent rain event.

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Project ID: IE North Logistics Center **Cross section ID:** T-21 **Date:** 1/17/23 **Time:** 1253

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: NWW-07
Investigator(s): A. Cassady and K. Dayton

Date: 1/17/23 **Time:** 1322
Town: Apple Valley **State:** CA
Photo begin file#: 11 **Photo end file#:** 11

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.576111, -117.269167

Potential anthropogenic influences on the channel system:

Dirt road located adjacent/north of the feature. Feature appears to collect runoff from aggregate plant/road located directly east of the review area. I-15 to the west of review area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

Brief site description:

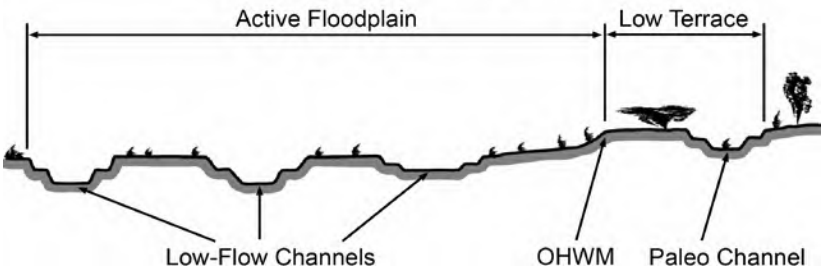
Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Braided feature within creosote bush scrub.

Checklist of resources (if available):

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

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

Hydrogeomorphic Floodplain Units

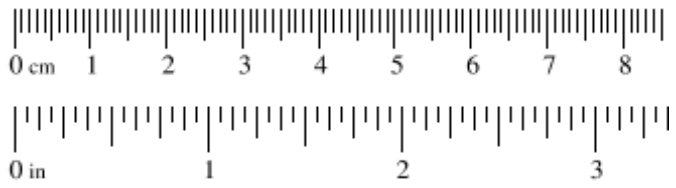


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

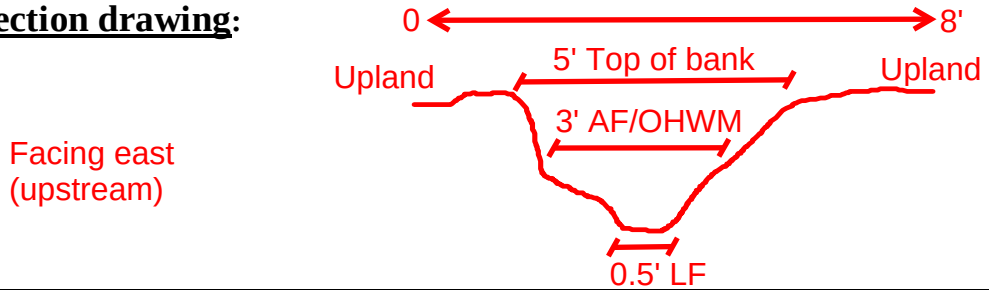
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-22 **Date:** 1/17/23 **Time:** 1322

Cross section drawing:



OHWM

GPS point: 34.576111, -117.269167

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Approximately 3-foot-wide OHWM defined by a change in average sediment texture, change in vegetation cover, and break in bank slope. One approximately 0.5-foot-wide LF channel observed within the OHWM. Data was collected after recent rain event.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: Within OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine silt

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

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

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

Comments:

Approximately 0.5-foot-wide LF channel within OHWM with drainage patters (i.e., ripples/wet sediment flows visible), sediment texture consist of fine silt with some granules present throughout.

Project ID: IE North Logistics Center **Cross section ID:** T-22 **Date:** 1/17/23 **Time:** 1322

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

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

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

Community successional stage:

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

Indicators:

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

Comments:

Approximately 3-foot-wide AF with defined break in bank slope (one bank of feature is steep/incised). Drift and debris present as dead plant matter.

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

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

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

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace, continues from AF to uplands which are mapped as creosote bush scrub. Uplands defined by soil development and surface relief. Sediment texture consist of fine sand with some pebbles intermixed.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: NWW-08
Investigator(s): A. Cassady and D. Ayers
Date: 1/17/23 **Time:** 1336
Town: Apple Valley **State:** CA
Photo begin file#: 14 **Photo end file#:** 14

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.574765, -117.268867

Potential anthropogenic influences on the channel system:

Feature appears to collect runoff from aggregate plant/road located directly east of the feature/review area. I-15 to the west of review area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

Brief site description:

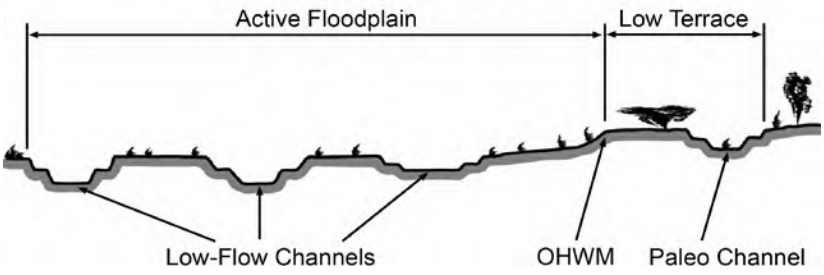
Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Braided feature within creosote bush scrub.

Checklist of resources (if available):

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

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

Hydrogeomorphic Floodplain Units

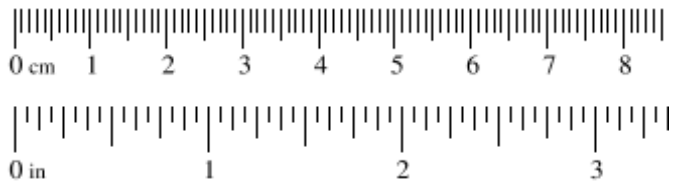


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

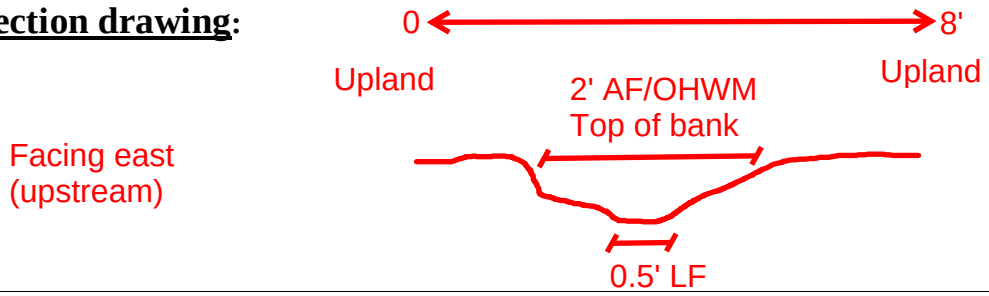
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-23 **Date:** 1/17/23 **Time:** 1336

Cross section drawing:



OHWM

GPS point: 34.574765, -117.268867

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Approximately 2-foot-wide OHWM defined by a change in average sediment texture, change in vegetation cover, and break in bank slope. One approximately 0.5-foot-wide LF channel observed within the OHWM. Data was collected after recent rain event.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: Within OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

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

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

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

Comments:

Approximately 0.5-foot-wide LF channel within OHWM. Sediment texture consist of fine sand with some granules present throughout.

Project ID: IE North Logistics Center **Cross section ID:** T-23 **Date:** 1/17/23 **Time:** 1336

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

GPS point: Same as OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 4 % Tree: 0 % Shrub: 4 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

Approximately 2-foot-wide AF defined by a break in bank slope.

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

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

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

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace, continues from AF to uplands which are mapped as creosote bush scrub. Uplands defined by soil development and surface relief.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: N/A
Investigator(s): A. Cassady and K. Dayton

Date: 1/27/23 **Time:** 0917
Town: Apple Valley **State:** CA
Photo begin file#: 18 **Photo end file#:** 18

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.572778, -117.270278

Potential anthropogenic influences on the channel system:

Dirt road/aggregate plant located directly east of area/the review area. I-15 to the west of review area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

Brief site description:

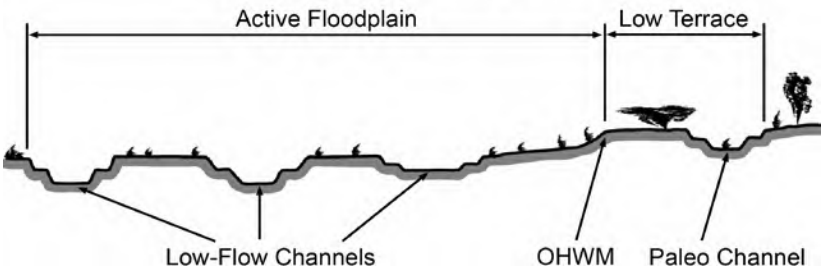
Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Lower topographic area between two gentle slopes.

Checklist of resources (if available):

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

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

Hydrogeomorphic Floodplain Units

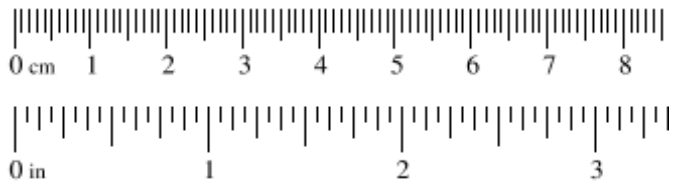


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

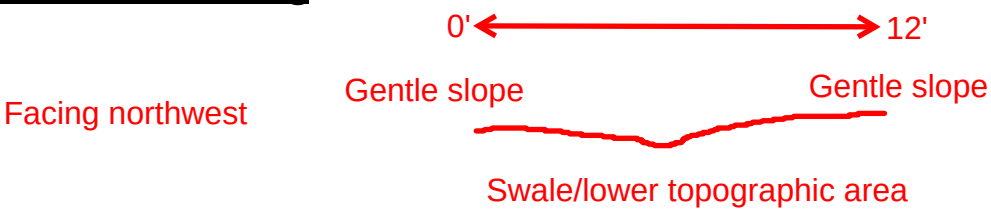
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-24 **Date:** 1/27/23 **Time:** 0917

Cross section drawing:



OHWM

GPS point: 34.572778, -117.270278

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☑ Other: Drainage signature
- ☐ Other: _____

Comments:

Swale-like feature (i.e., slight concave/lower topographic area). Data collected after recent rain event which appears to have created drainage signature; however, average sediment texture, vegetation cover, and vegetation species did not differ from the concave area to the adjacent slopes. See Appendix D, Photo Point Number 18. No other OHWM indicators are present.

Floodplain unit:

☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Project ID: IE North Logistics Center **Cross section ID:** T-24 **Date:** 01/27/23 **Time:** 0917

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: NWW-09
Investigator(s): A. Cassady and K. Dayton

Date: 1/27/23 **Time:** 0949
Town: Apple Valley **State:** CA
Photo begin file#: 19 **Photo end file#:** 19

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.5725, -117.271944

Potential anthropogenic influences on the channel system:

Dirt roads transect the feature. Aggregate plant located directly east of the review area. I-15 to the west of review area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

Brief site description:

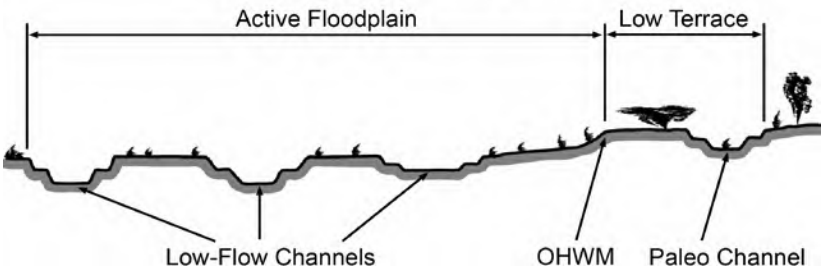
Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Braided feature within creosote bush scrub.

Checklist of resources (if available):

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

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

Hydrogeomorphic Floodplain Units

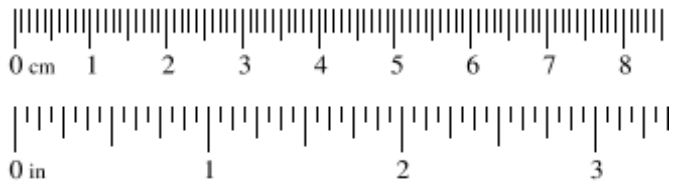


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

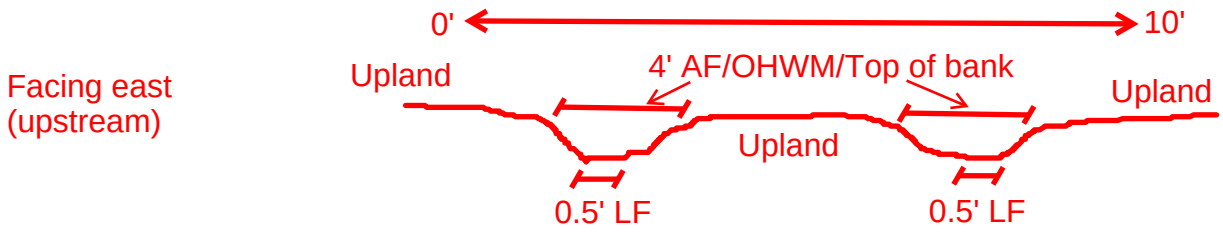
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-25 **Date:** 1/27/23 **Time:** 0949

Cross section drawing:



OHWM

GPS point: 34.5725, -117.271944

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Braided feature with various drainages with a defined OHWM. The OHWM's are approximately 4-foot-wide and defined by a change in average sediment texture, change in vegetation cover, and break in bank slope. Approximately 0.5-foot-wide LF channels observed within the OHWM. Data was collected after recent rain event.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: Within AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

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

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

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

Comments:

LF channels approximately 0.5-foot-wide within OHWM distinguished by visible ripples throughout.

Project ID: IE North Logistics Center **Cross section ID:** T-25 **Date:** 1/27/23 **Time:** 0949

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

GPS point: Same as AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 2 % Tree: 0 % Shrub: 2 % Herb: 0 %

Community successional stage:

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

Indicators:

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

Comments:

Approximately 4-foot-wide AF defined by a break in bank slope. Drift and debris present as dead plant matter.

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

GPS point: Above OHWM

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

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

Community successional stage:

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

Indicators:

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

Comments:

No true low terrace, continues from AF to uplands which are mapped as creosote bush scrub. Uplands defined by soil development and surface relief.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: IE North Logistics Center
Project Number: N/A (Dudek Project No. 14802)
Stream: N/A
Investigator(s): A. Cassady and S. Greely
Date: 1/17/23
Town: Apple Valley
Photo begin file#: 22
Time: 1333
State: CA
Photo end file#: 22

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

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
IE North Logistics Center Apple Valley ARDR (Dudek 2023)

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.5725, -117.274444

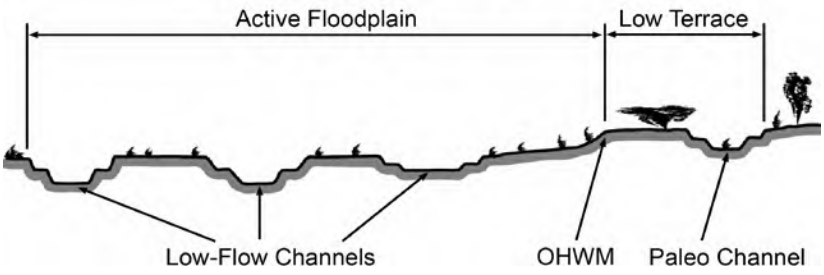
Potential anthropogenic influences on the channel system:
I-15 direct to the west of the data point area. Surrounding area is undeveloped; however, signs of off-road vehicle usage was observed throughout the review area.

Brief site description:
Primarily undeveloped site adjacent I-15 with braided and wash features throughout. Aggregate plant located directly east of the review area. Lower topographic area between two gentle slopes.

Checklist of resources (if available):

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

Hydrogeomorphic Floodplain Units

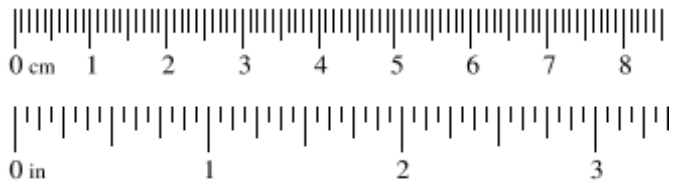


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

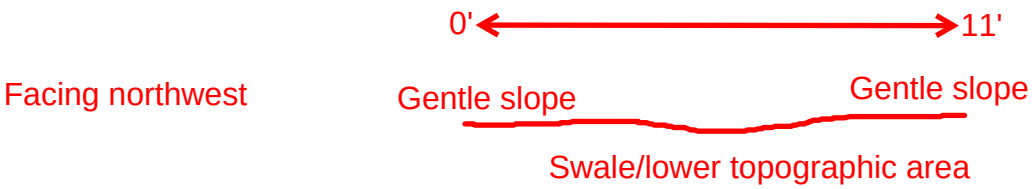
Wentworth Size Classes

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



Project ID: IE North Logistics Center **Cross section ID:** T-26 **Date:** 1/17/23 **Time:** 1333

Cross section drawing:



OHWM

GPS point: 34.5725, -117.274444

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Swale-like feature (i.e., slight concave/lower topographic area) in between slopes that does not appear to sustain sufficient flows to create a break in bank slope and/or bed and bank. Vegetation species did not differ from the concave area to the adjacent slopes. A slight change in sediment texture is visible; however, no other OHWM indicators are present. Data was collected after a recent rain event.

Floodplain unit:

- [ ] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Project ID: IE North Logistics Center **Cross section ID:** T-26 **Date:** 01/17/23 **Time:** 1333

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

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

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

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

Community successional stage:

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

Indicators:

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

Comments:

N/A

Appendix D
Review Area Photos

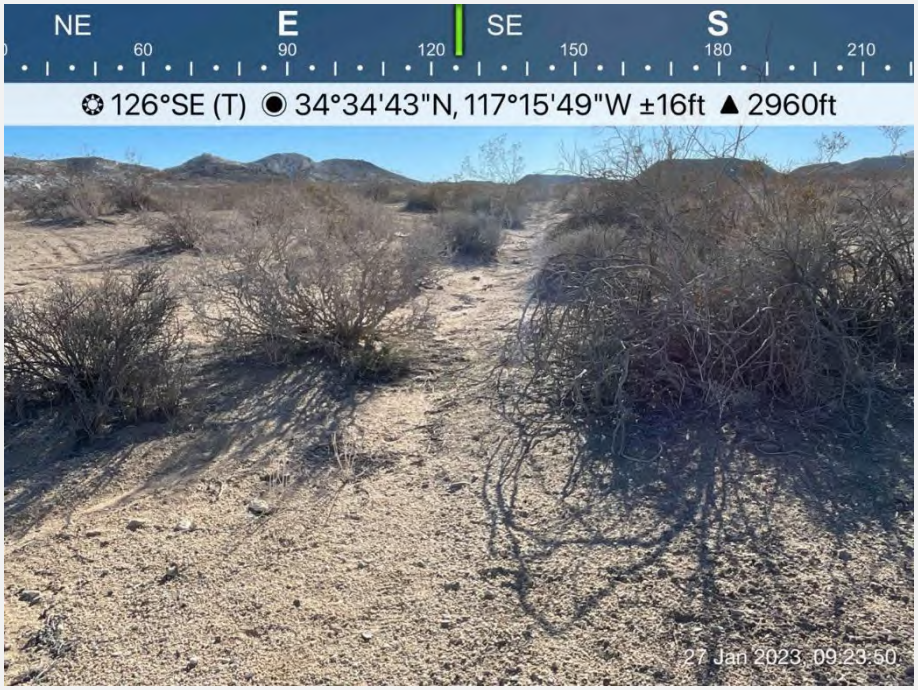


Photo Number 1. Overview of Transect (T)-17 which described a non-jurisdictional swale area facing southeast.

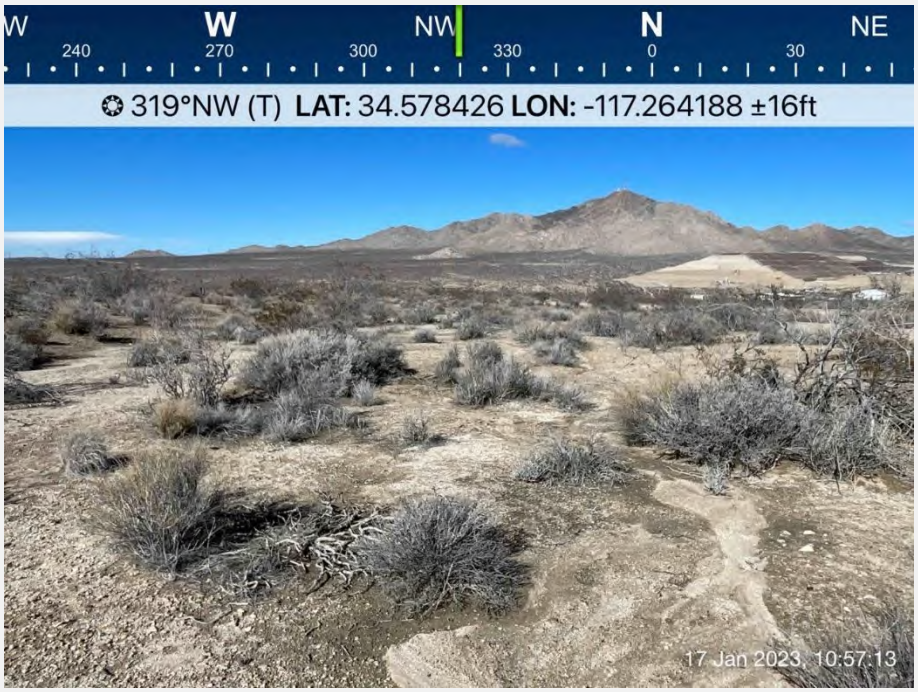


Photo Number 2. View of a non-jurisdictional swale area facing northwest.

Photo Number 3. Overview of T-18 collected at NWW-05 facing northwest.

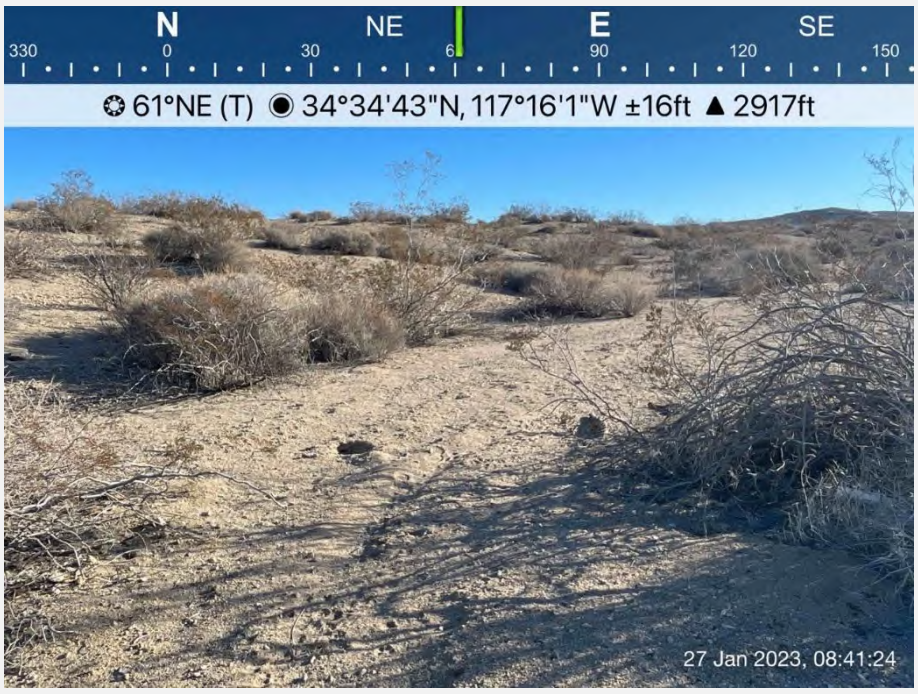


Photo Number 4. Northeast view of the downstream segment of NWW-05 where feature loses definition.

Photo Number 5. View of T-19 collected at NWW-05 facing west.

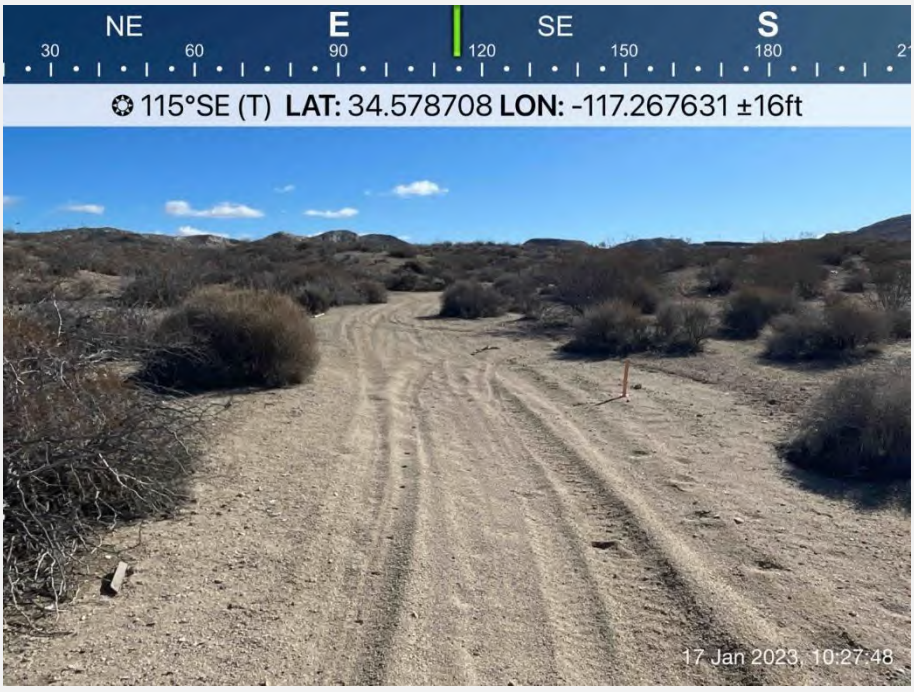


Photo Number 6. View of disturbance within the review area facing east/southeast.

Photo Number 7. View of T-20 collected at NWW-06 facing east/southeast.

Photo Number 8. View of a non-jurisdictional swale area facing northwest.

Photo Number 9. View upstream segment of NWW-06 facing west.

Photo Number 10. View of T-21 which described a non-jurisdictional swale area facing north.

Photo Number 11. View of T-22 collected at NWW-07 facing south/southwest.

Photo Number 12. View of downstream NWW-07 drains into and across dirt road. Photo taken facing east.

Photo Number 13. View of NWW-07 facing south.

Photo Number 14. View of T-23 collected at NWW-08 facing northeast/east.

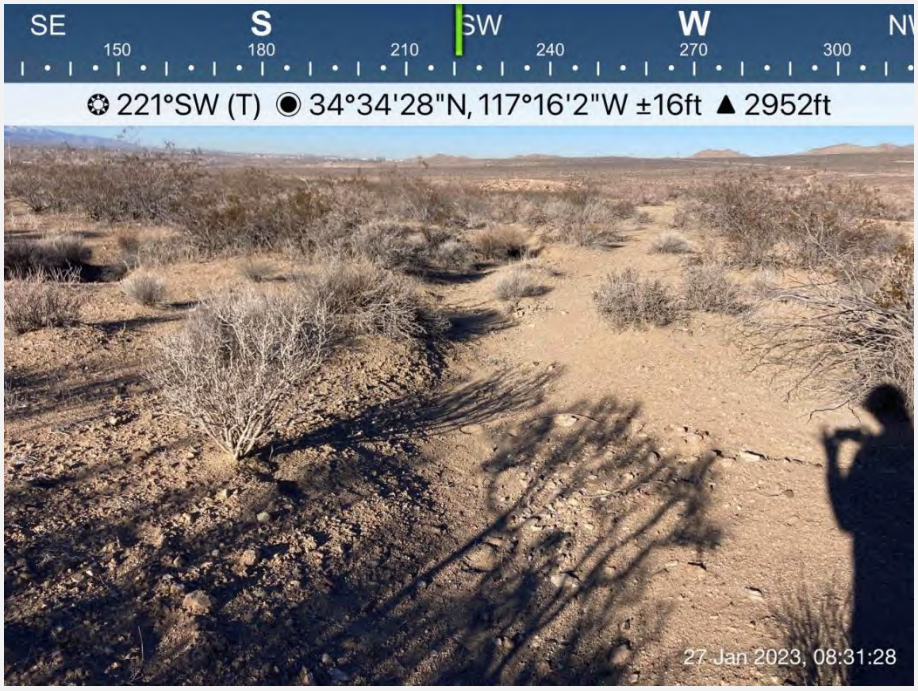


Photo Number 15. View of a non-jurisdictional swale area facing southwest.

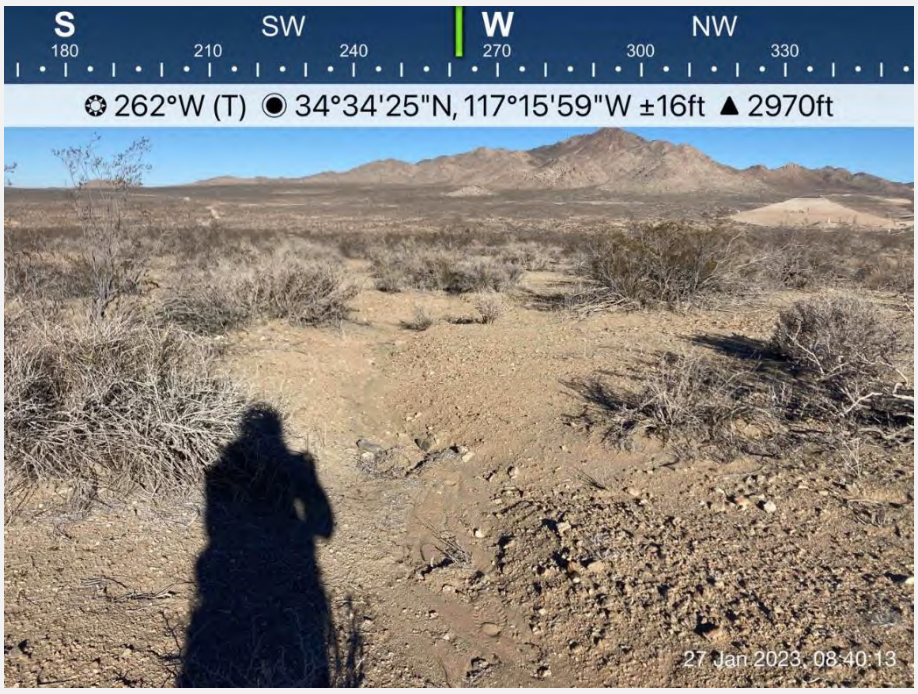


Photo Number 16. View of a non-jurisdictional swale area facing west.

Photo Number 17. View of a non-jurisdictional swale area facing south/southwest.

Photo Number 18. View of T-24 collected at a non-jurisdictional swale area facing south/southwest.

Photo Number 19. View of T-25 collected at NWW-09 facing east.

Photo Number 20. View of a non-jurisdictional area facing northwest.

Photo Number 21. Additional view of NWW-09 facing east.

Photo Number 22. View of T-26 collected at a non-jurisdictional swale area facing southeast.

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Appendix E

ORM Bulk Upload Aquatic Resource or Consolidated Excel Spreadsheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
NWW-05	CALIFORNIA	R6		Area	0.25	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57841940	-117.26528430	N/A
NWW-06	CALIFORNIA	R6		Area	0.89	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57650270	-117.26610940	N/A
NWW-07	CALIFORNIA	R6		Area	0.19	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57603760	-117.26926870	N/A
NWW-08	CALIFORNIA	R6		Area	0.07	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57503240	-117.27012100	N/A
NWW-09	CALIFORNIA	R6		Area	0.24	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57338130	-117.27314680	N/A
NWW-11	CALIFORNIA	R6		Area	0.02	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57068740	-117.27687040	N/A
NWW-12	CALIFORNIA	R6		Area	0.02	ACRE	NON-WOTUS-TRIB.NEGATIVE.A3	34.57005680	-117.27736330	N/A

Appendix F

GIS Data (Provided Electronically)

Appendix C

Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan

Joshua Tree Preservation, Protection, and Relocation Plan

Inland Empire North Logistics Center Project

JANUARY 2024

Prepared for:

SYNERGY CONSULTING
1818 Library Street, Suite 500
Reston, Virginia 20190
Contact: Jessica Haughton

Prepared by:

DUDEK

38 North Marengo Avenue
Pasadena, California 91101
Contact: Chris Kallstrand
ISA Certified Arborist, No. WE-8208A

Printed on 30% post-consumer recycled material.

Table of Contents

SECTION **PAGE NO.**

TABLES

FIGURES

APPENDICES

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
amsl	above mean sea level
AVDC	Apple Valley Development Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
DNPS	Desert Native Plant Specialist
ISA	International Society of Arboriculture
ITP	Incidental Take Permit
Joshua Tree Plan	Joshua Tree Preservation, Protection, and Relocation Plan
Project	Inland Empire North Logistics Center Project
Town	Town of Apple Valley
WJT	western Joshua tree
WJTCA	Western Joshua Tree Conservation Act

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1 Introduction

The purpose of this Joshua Tree Preservation, Protection, and Relocation Plan (Joshua Tree Plan) for the proposed Inland Empire North Logistics Center Project (Project) is to provide detailed specifications for Synergy Consulting to meet the requirements of Chapter 9.76 of the Town of Apple Valley's (Town) Development Code (Town of Apple Valley 2010) and the evolving California Department of Fish and Wildlife (CDFW) requirements to protect, preserve, and mitigate impacts to western Joshua trees (*Yucca brevifolia*) as a result of the proposed Project.

On September 22, 2020, the California Fish and Game Commission granted approval of the petition for candidacy of the western Joshua tree, marking the effective commencement of this status on October 9, 2020 (CDFW 2020). The acceptance of candidacy under the California Endangered Species Act endows the western Joshua tree with equivalent protection as that afforded to threatened or endangered species. This protection is sustained during the period in which the California Fish and Game Commission conducts an evaluation to determine whether formal listing as threatened or endangered under California Endangered Species Act is warranted.

Within this assessment interval, the removal or disturbance of western Joshua trees necessitates the acquisition of a 2081 Incidental Take Permit (ITP) issued by CDFW. Until recently, obtaining a 2081 ITP represented the principal avenue for obtaining permissions to undertake activities impacting western Joshua trees. A significant development occurred with the enactment of the Western Joshua Tree Conservation Act (WJTCA) in July 2023, which introduced an additional permitting mechanism for activities involving western Joshua trees.

Under the WJTCA, the act regards the relocation of western Joshua trees as a minimization measure, in contrast to the previous Section 2081 ITP process, where relocation was viewed as an experimental approach. Specifically, the WJTCA outlines the following provisions related to relocation:

> (4)(A) The department [CDFW] may require the permittee to relocate one or more of the western Joshua trees. The permittee shall implement measures to assist the survival of relocated trees and shall comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees, including, but not limited to:
>
> > (i) A requirement that the relocated western Joshua tree is placed in a location and with proper orientation to improve its survival.
> >
> > (ii) A requirement that western Joshua trees are relocated between October and March.
> >
> > (iii) Adherence to performance criteria to ensure that relocated trees have at least an 80-percent survivability rate.
> >
> > (iv) A requirement that a desert native plant specialist be on site to oversee relocation.
>
> (B) The department [CDFW] may limit relocation to certain size classes of trees.

Furthermore, Chapter 9.76 of the Apple Valley Development Code (AVDC) states that "it is in the public interest to promote the continued health of this Town's abundant and diverse plant resources by providing regulations and guidelines for the management of the plant resources in the Town of Apple Valley on property or combinations of

property under private or public ownership…." Additionally, the Town's Interim Local Policy and Procedures on the Western Joshua Tree states the following for any property within any zoning district in the Town:

- After submittal, Town Staff will complete a pre-site inspection to determine the presence or absence of the Western Joshua Tree (WJT).
  - If the proposed grading/construction is withing 40-feet of a WJT, the Applicant may seek a determination from a Desert Native Plant Specialist (DNPS) to attest to and confirm the avoidance of the WJT with a reduced separation distance. The report must contain the findings and avoidance recommendations of the DNPS.
  - If it is determined that the proposed development activity would require a take of the WJT, the project may be redesigned to avoid impact to the tree, or the applicant must obtain an Incidental Take Permit from the CDFW before the project can proceed.

If a development is subject to the California Environmental Quality Act (CEQA), the Applicant must identify if the WJT will be protected, relocated, or removed.

In addition to local regulations, per CDFW, Dudek evaluated all Joshua trees located within 50 feet of the proposed Project. Furthermore, as requested by CDFW, Dudek collected relevant Joshua tree data including height, mortality, maturity, and presence of flowers or fruit.

As such, this Joshua Tree Plan addresses the requirements of the Town's Plant Protection and Management policy, requested CDFW Joshua tree information, and the proposed mitigation required by CDFW under the WTJCA and provides details regarding the site's Joshua trees, detailed specifications for the protection of trees to be preserved on site, and relocation/salvage requirements for those trees requiring removal and relocation.

1.1 Applicability

The provisions of this Joshua Tree Plan apply toward the protection and removal of Joshua trees located within the Town of Apple Valley, California, as defined in the Town's Plant Protection and Management policy (AVDC 9.76).

1.2 Project Location

The approximately 178-acre Project site is located in the northwestern part of the Town, which is within the Victor Valley Region of San Bernardino County (Figure 1, Regional Map; Figure 2, Project Vicinity). The Project site is located directly east of I-15, north of Falchion Road and south of Norco Street. Regional access to the Project site is provided via I-15, which is located adjacent to the Project site's western boundary. Off-site improvements to roadways are located within the vicinity of the Project and would occur at Falchion Road between Outer Highway 15 and Apple Valley Road, Norco Street between Outer Highway 15 and Apple Valley Road, Outer Highway 15 between Falchion Road and Norco Street, and Apple Valley Road between Falchion Road and Norco Street (see Figure 3, Site Plan).

The site consists of Assessor's Parcel Number 0472-031-08. Specifically, the Project site is located in Section 26, Township 6N, Range 4W, as depicted on the U.S. Geological Survey Victorville, California 7.5-minute topographic quadrangle map.

1.3 Project Components

The Project would include construction of two industrial/warehouse buildings and associated improvements on a 177.74-acre site. Building 1 would be approximately 1,507,326 square feet while Building 2 would be approximately 1,097,120 square feet. The Project's associated improvements would include loading docks, truck and vehicle parking, and landscaped areas (Figure 3, Site Plan).

Off-Site Improvements

Off-site improvements to roadways are located within the 22.4-acre off-site improvement areas and would occur at Falchion Road between Outer Highway 15 and Apple Valley Road, Norco Street between Outer Highway 15 and Apple Valley Road, Outer Highway 15 between Falchion Road and Norco Street, and Apple Valley Road between Falchion Road and Norco Street.

Site Access and Circulation

Access to the Project would be provided via driveways off Outer Highway 15 to Falchion Road and Norco Street along the eastern boundary of the Project boundary. Paved passenger vehicle parking areas would be provided within areas east and west of Buildings 1 and 2, while tractor-trailer stalls and loading docks would be surrounding Buildings 1 and 2 to the north and south, and east.

The Project would include several improvements to the local circulation system, including improvements to Falchion Road and Outer Highway 15 and the construction of Norco Road and Apple Valley Road. These improvements would occur along the immediate frontage of the Project. The ultimate design of these roadway improvements is not yet available and would be determined by the Town's Engineering Department. To account for all possible development scenarios that may occur, the proposed roadway improvements are assumed to occur within the entirety of the 22.4-acre off-site improvement areas.

In addition, the Project would involve a General Plan Amendment to modify the Town's Circulation Element to realign Apple Valley Road. Apple Valley Road is Major Divided Arterial roadway with a 128-foot right-of-way. From the Project site's southern boundary at Falchion Road, Apple Valley Road has not yet been constructed but is planned to traverse north through the Project site to Stoddard Wells Road. The proposed General Plan Amendment would shift the proposed alignment slightly to the east. The Project would involve the construction of this roadway along the Project's frontage between Falchion Road and Norco Street. The ultimate construction of Apple Valley Road north of the Project site between Norco Street and Stoddard Wells Road would be constructed at a future time by the Town or future developers and subject to additional environmental review pursuant to CEQA. It is not necessary for Project implementation and is unrelated to the Project.

Utility Improvements

Given the vacant, undeveloped nature of the Project site, both wet and dry utilities, including domestic water, sanitary sewer, storm drainage, and electricity, would need to be extended onto the Project site.

Lateral utility connections proposed within the existing Apple Valley Road south of the Project were previously analyzed during environmental review pursuant to CEQA for the Apple Valley 143 project (Town of Apple Valley 2023). It is assumed that the Project will tie into the proposed water line at Falchion Road, and any street and utility

improvements along the existing Apple Valley Road previously analyzed for the Apple Valley 143 Project were not analyzed as part of the Project.

Operations

A tenant for the proposed industrial warehouse building has not yet been identified; however, the Project would operate as a warehouse and/or distribution facility with two industrial/warehouse buildings. Business operations would be expected to be conducted within the enclosed buildings, with the exception of the entrance and exit of trucks and passenger vehicles accessing the site, passenger and truck parking, the loading and unloading of trailers within designated truck courts/loading area, and the internal and external movement of materials around the Project site via forklifts, pallet jacks, yard hostlers, and similar equipment. It is anticipated that the facilities would be operated 24 hours a day, 7 days a week.

Project Construction

Construction of the Project is anticipated to last approximately 22 months.

Construction activities would include site preparation (e.g., vegetation clearing, grubbing, tree removal, discing), grading, building construction, paving, and architectural coating.

Construction activities would generally occur across six phases: site preparation (e.g., vegetation clearing, grubbing, tree removal, discing), grading, building construction/utility installation, paving, and architectural coating. With the exception of architectural coating (which would only occur on the Project site), all phases would occur both on the Project site and within the Off-Site Street and Utility Improvements.

For on-site and off-site development, the Project was assumed to have a balanced cut and fill. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site 5 days per week.

1.4 Site Characteristics

The Project site consists of vacant and undeveloped land, as well as disturbed land, paved and unpaved roads, and portions of the existing mining facility located directly east of the Project boundary.

Land uses surrounding the Project site consist of vacant land, I-15, unpaved roads, and mining operations. Specific land uses located in the immediate vicinity of the Project site include the following:

- **North:** Various unpaved roads and vacant land
- **East:** Aggregate mining operations
- **South:** Falchion Road, Apple Valley Road, various other unpaved roads, and vacant land
- **West:** I-15 and vacant land

In the broader Project vicinity, development includes industrial uses, the County of San Bernardino Refuse Disposal Site, residential uses, and commercial uses.

Climate

The Project site is located in the Apple Valley/High Desert region in western San Bernardino County. The average annual temperature was not available for Apple Valley; however, average annual temperatures in Victorville range from 46.7°F to 82.6°F. Additionally, the average annual high for Victorville is 109°F and the average annual low is 20°F (ACIS 2023). The average annual precipitation for Apple Valley is 5.47 inches (ACIS 2023). Periods of extended drought are common throughout the region.

Topography and Soils

The Project site is located in the Town, near Bell Mountain Wash, which lies between Bell Mountain to the east and Quartzite Mountain to the west. The Granite Mountains are approximately 10 miles southeast of the site and divide Apple Valley from Lucerne Valley.

The site is composed of undeveloped vacant lands and portions of an existing mining facility. The off-site improvement areas include dirt and paved roadways (specifically Outer Highway 15 or I-15 frontage road, Norco Road, Falchion Road, and Quarry Road), as well as undeveloped vacant lands immediately adjacent to these roadways. Topography within the site is generally flat with some areas of small hills. Elevation ranges from approximately 2,910 feet above mean sea level (amsl) to 3,060 feet amsl, generally sloping from east to west toward I-15. Adjacent land uses include various unpaved roads and vacant land to the north, I-15 to the west, Falchion Road, Apple Valley Road, various other unpaved roads, and vacant land to the south, and aggregate mining operations to the east.

According to the U.S. Department of Agriculture's Natural Resource Conservation Service's Web Soil Survey (USDA 2023), the site consists of four soil mapping units: Cajon-Arizo complex, 2%–15% slopes; Mirage-Joshua complex, 2%–5% slopes; pits; and Trigger-Sparkhule-rock outcrop association, steep.

Vegetation

The Project site supports four vegetation communities or land cover types. Vegetation communities and land uses mapped within the site include creosote bush scrub, rubber rabbitbrush scrub, disturbed habitat, and urban/developed areas. Vegetation mapping within the Project boundary was conducted by GLA in 2023, while vegetation mapping within the remaining biological survey area (Project site, off-site improvement areas, and 100-foot buffer) was completed by Dudek using aerial imagery and existing data.

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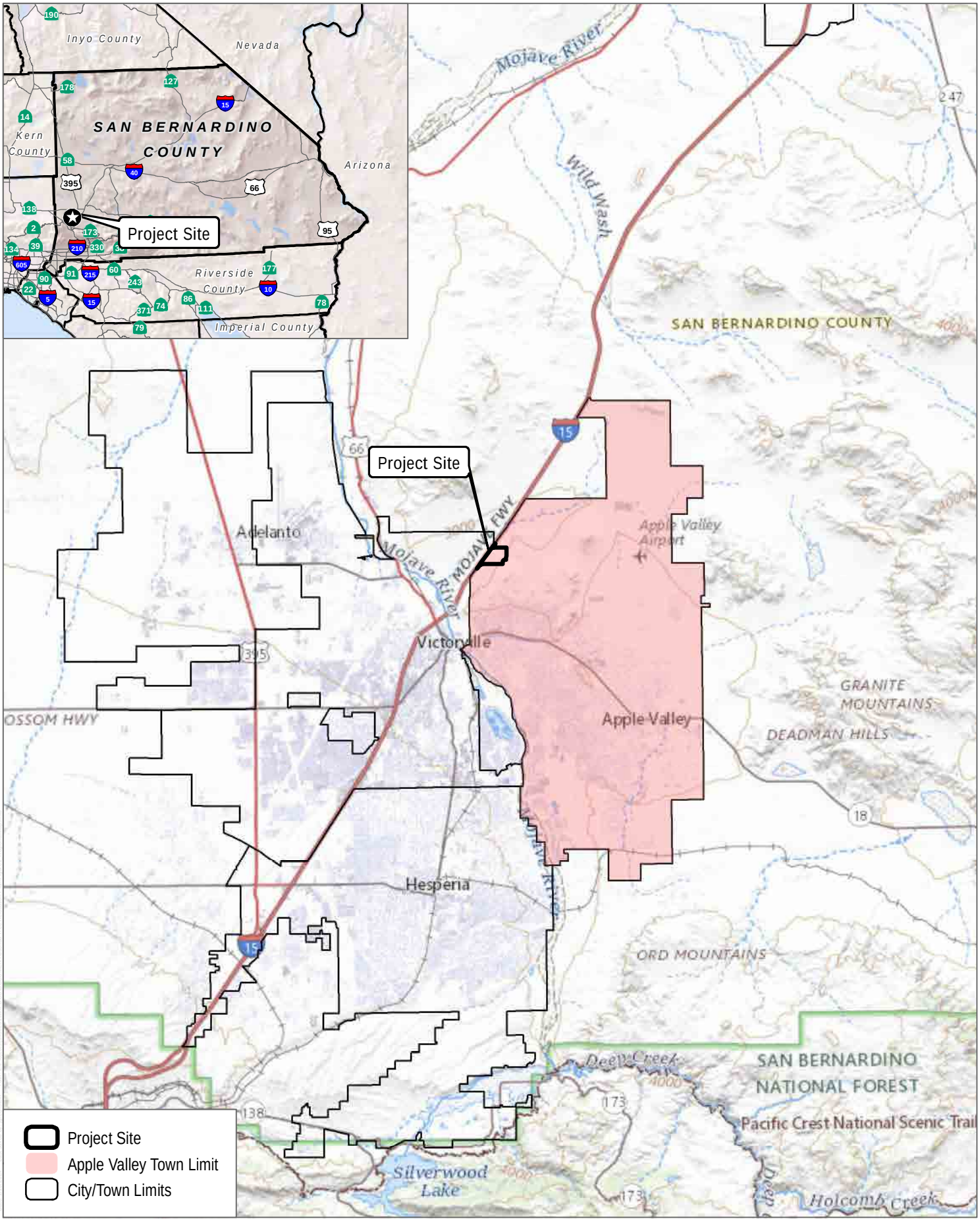

SOURCE: USGS Topo 2020

DUDEK

0 2 4 Miles

FIGURE 1

Regional Map

Inland Empire North Logistics Center Apple Valley Project

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SOURCE: Bing Maps (accessed 2022)

DUDEK

0 330 660 Feet

FIGURE 2

Project Vicinity

Inland Empire North Logistics Center Apple Valley Project

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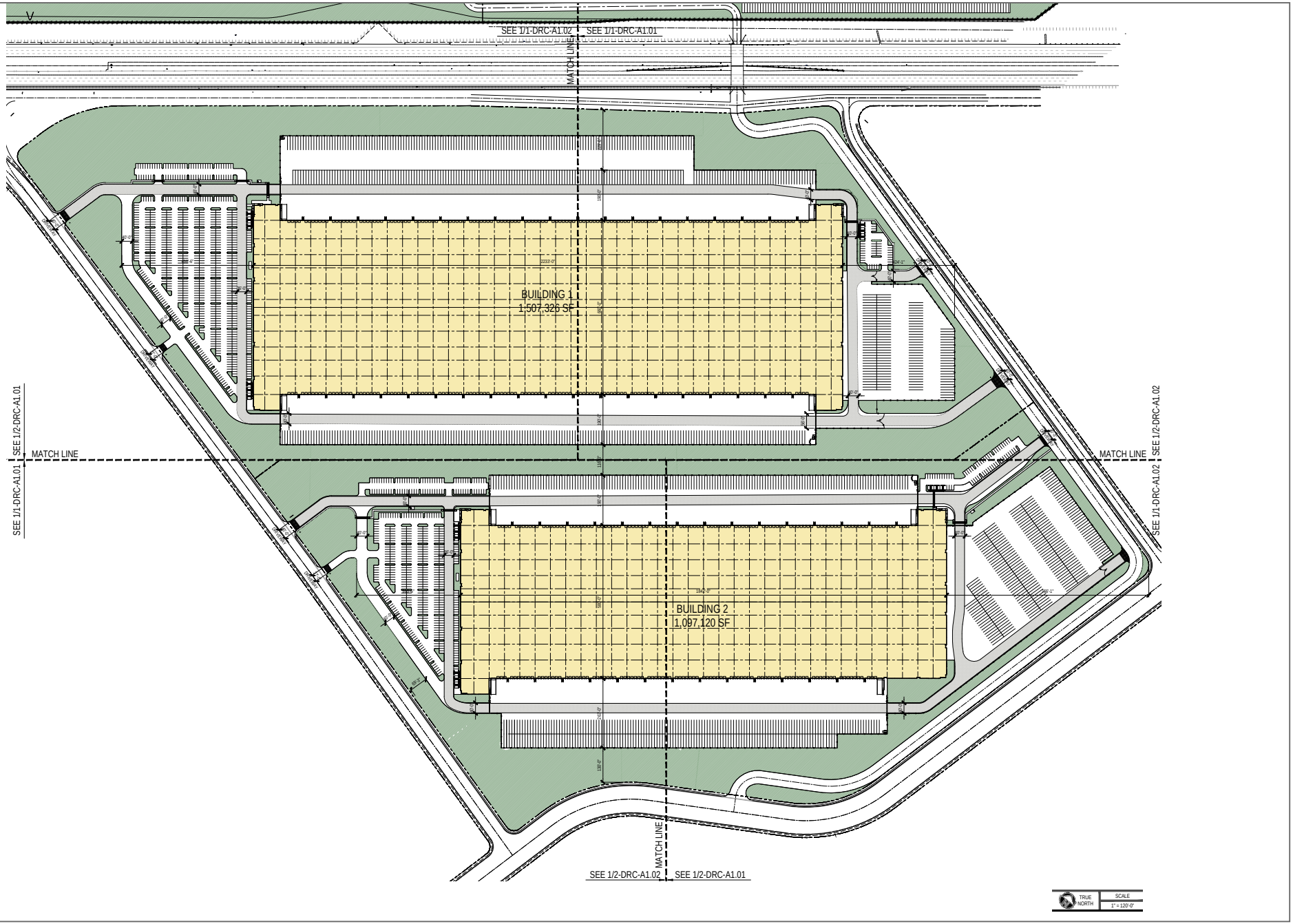

SOURCE: David Evans and Associates Inc 2023; LHA 2023; Synergy Consulting 2023

DUDEK

FIGURE 3

Site Plan

Inland Empire North Logistics Center Apple Valley Project

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2 Policy and Permits

2.1 Town of Apple Valley

2.1.1 City Policy

Per Chapter 9.76 of the Town of Apple Valley's Development Code (Town of Apple Valley 2010) Plant Protection and Management, "It is the stated intent and desire of the Town Council of the Town of Apple Valley to recognize and preserve the contribution that Joshua Trees have made to the desert environment and, more specifically, to the Town's "Better Way of Life". In conformance with this recognition, no existing Joshua Tree shall be disturbed, moved (transplanted or otherwise), removed or destroyed unless such disturbance, move, removal or destruction is first reviewed and approved by the Town of Apple Valley. The Town Manager, or designee, shall be responsible for review and approval of any request to disturb, move (transplant or otherwise), remove or destroy any existing Joshua Tree located on any property within any zoning district in the Town of Apple Valley." (Town of Apple Valley 2010). Chapter 9.76 continues by stating "Further, while it is the intent and desire of the Town to preserve and protect all Joshua Trees, this intent and desire shall be balanced against the community's need for growth and the development rights of individual property owners. To achieve this preservation and protection, while protecting both the property rights of property owners and the community's desert environment, anyone applying to disturb, move, remove or destroy an existing Joshua Tree shall use all means necessary to retain and preserve such Tree(s) in its native (present) location in considering and presenting said Tree Disturbance application."

Furthermore, Chapter 9.76 states the following regarding retention and transplantation:

> **Retention:**
>
> The following shall be the minimum criteria for the preservation of Joshua Trees in place. While Joshua Trees which do not conform to the following criteria must be preserved, they may be transplanted to another location on the same property or may be made available for adoption through the Town's Joshua Tree Preservation and Adoption Program. A Joshua Tree(s) which conforms to the following shall be preserved in place unless its removal, transplantation or destruction is approved as prescribed within this Section 9.76.040 of the Town of Apple Valley Municipal Code. For any Joshua Tree(s) which conform to the criteria listed below, for which the property owner/applicant has made a request for a Building Permit, application for a discretionary review or application for a subdivision of land within the Town of Apple Valley, said owner/applicant shall submit, as part of the application for approval, documentation of their best efforts to retain and preserve all Joshua Tree(s) within the limits of the development or subdivision in its native (present) location. Such documentation of best effort shall include how alternative lot configurations (including building envelopes on lots with existing Tree(s)), circulation, physical or environmental constraints of the site, allow no alternative subdivision configuration which would retain and preserve the Tree(s) in its native (present) location.
>
> 1. A Joshua Tree that is known, by historic record, including pictures or written description, to be at least forty (40) years old.

2. A Joshua Tree which has a width of at least fifteen (15) feet as measured from the furthest point of outstretched branches (measured parallel to the ground).
3. A Joshua Tree which is at least fifteen (15) feet in height as measured from the base of the trunk to the highest point of the Tree.
4. A Joshua Tree which has a trunk measuring at least twelve (12) inches in diameter as measured four (4) feet from the ground.

Transplantation: Transplanting approved by the Town of Apple Valley must be initiated and completed under the supervision of a Desert Native Plant Expert (1). Approval of such transplant must take into consideration the time of year, the plant's original and transplanted physical orientation, prevailing wind direction, soil type of the original and transplanted locations, and other related attributes which may affect the successful transplantation of the Joshua Tree(s) in question as determined by the Town and the retained Botanist. Joshua Trees that are proposed to be removed shall be transplanted or stockpiled for future transplanting wherever possible. In the instance of stockpiling and/or transplanting the permittee has submitted and has had the approval of a Joshua Tree maintenance plan prepared by a Desert Native Plant Expert (1). This plan shall include a schedule for maintenance and a statement by the Desert Native Plant Expert that this maintenance plan and schedule will be implemented under his/her supervision.

The schedule shall include the requirement that a maintenance report is required at the end of the project or at six (6) month intervals, evidence to the satisfaction of the Building Official that the Desert Native Plant Expert has supervised the scheduled maintenance to the extent that all transplanted and stockpiled plants have been maintained in such a manner to insure the highest practicable survival rate. In the event that this report is not satisfactory, a tree and plant replacement plan and implementation schedule prepared by a Desert Native Plant Expert may be required by the Building Official.

2.1.2 City Permits

Per the Town's 2010 Plant Protection and Management Code (Chapter 9.76), a removal permit is required for the removal of any native tree or plant that is subject to the provisions the code. Chapter 9.76.010, Removal Permit, states the following:

1. A removal permit shall be required for the removal of any native tree or plant that is subject to the provisions of this Chapter. Disturbing, moving (transplanting or otherwise), removal or destruction of an existing Joshua Tree(s) shall be subject to the provisions of Section 9.76.040.
2. A land use application, a building permit and all other development permits (e.g., grading, mobile home setdowns, etc.), shall consider and include a review of any proposed application and/or development permit shall be a permit for the removal of native trees or plants, if such land use application or development permit specifically reviews and approves such removals. Such reviews shall consider and require compliance with the provisions of this Chapter.
3. The reviewing authority may require certification from an appropriate tree expert or desert native plant expert that such tree removals are appropriate, supportive of a healthy environment and are in compliance with the provisions of this Chapter.

4. Removals of native trees or plants that are not requested in conjunction with a land use application or development permit may be accomplished only under a permit issued by the Town of Apple Valley Planning Division, subject to the provisions of this Chapter.
5. The Building Official shall require a pre-construction inspection prior to approval of development permits. The duration of a plant or tree removal permit when issued in conjunction with a land use application and/or a development permit shall be coterminous with the duration of the associated application or permit, unless otherwise specified. The Reviewing Authority shall specify the expiration date for all other tree and/or plant.

2.1.3 Findings for Removals

Per the Town's 2010 Plant Protection and Management Code (Chapter 9.76), the Reviewing Authority shall authorize the removal of a native tree or plant subject to provisions of Chapter 9.76 only if the following findings are made:

1. The removal of the native tree or plant does not have a significant adverse impact on any proposed mitigation measures, soil retention, soil erosion and sediment control measures, scenic routes, flood and surface water runoff and wildlife habitats.
2. The removal of the native tree or plant is justified for one of the following reasons:
    a. The location of the native tree (excluding Joshua Trees) or plant and/or its dripline interferes with the reasonable improvement of the site with an allowed structure, sewage disposal area, paved area or other approved improvement or Town of Apple Valley Development Code 2010 Adopted April 27, 2010, Chapter 9.76 Plant Protection and Management 3 ground disturbing activity. Also, such improvements have been designed in such a manner as to save as many healthy native trees and/or plants as reasonably practicable in conjunction with the proposed improvements.
    b. The location of the native tree or plant and/or its dripline interferes with the planned improvement of a street or development of an approved access to the subject or adjoining private property.
    c. The location of the native tree or plant is hazardous to pedestrian or vehicular travel or safety as determined by the Town Engineer.
    d. The native tree or plant or its presence interferes with or is causing extensive damage to utility services or facilities, roadways, sidewalks, curbs, gutters, pavement, sewer line(s), drainage or flood control improvements, foundations, existing structures, or municipal improvements.
    e. The condition or location of the native plant or tree is adjacent to and in such close proximity to an existing structure that the native plant or tree has or will sustain significant damage.

2.2 California Department of Fish and Wildlife

2.2.1 Western Joshua Tree Conservation Act

Background

The WJTCA was enacted in July 2023 with the primary objective of preserving the western Joshua tree and its associated habitat, while aligning with the state's broader renewable energy and housing priorities.

The WJTCA introduces a streamlined permitting framework that applies to specific development activities and mandates the collection of mitigation fees. These fees are intended to facilitate the acquisition and preservation of western Joshua tree habitat, as well as to support conservation measures aimed at safeguarding the western Joshua tree. The underlying goal is to counterbalance the adverse impacts on western Joshua trees resulting from authorized projects and to promote species conservation on a landscape scale.

Under the WJTCA, CDFW is authorized to perform the following key functions:

- Issue permits for the trimming and removal of hazardous or deceased western Joshua trees
- Grant permits for the incidental take of western Joshua trees, contingent upon the fulfillment of specific conditions
- Establish agreements with counties or cities to delegate limited authority for the issuance of the aforementioned permits, provided that predetermined conditions are met

Furthermore, the WJTCA instructs CDFW to develop a comprehensive conservation plan for the western Joshua tree by the conclusion of 2024.

The WJTCA institutes two categories of mitigation fees, reduced fees and standard fees, depending on the geographical location, as defined in the California Fish and Game Code (Section 1927). It empowers CDFW to issue permits for the incidental take of one or more western Joshua trees, subject to compliance with stipulated conditions. Permit holders may opt to remit specified fees in lieu of undertaking mitigation activities. Additionally, the WJTCA authorizes CDFW to issue permits for the removal of deceased western Joshua trees and the trimming of live western Joshua trees under specific circumstances.

Notably, all in-lieu fees collected under the WJTCA are directed to the Western Joshua Tree Conservation Fund, with the explicit purpose of allocation to CDFW. These funds are designated exclusively for the acquisition, conservation, and management of western Joshua tree conservation lands, as well as the execution of other initiatives designed to safeguard the western Joshua tree.

Permitting

The initial step in the Project permitting process necessitates the comprehensive survey and documentation of western Joshua trees located on the Project site and within a 50-foot radius surrounding the Project site. This census must adhere to precise specifications outlined on CDFW's official website.

Simultaneously, a permit application, available on CDFW's website, must be completed. The application mandates that the applicant complies with CEQA. There are no stipulated statutory deadlines governing the permitting process; however, CDFW is committed to expeditiously processing the applications upon receipt. Upon successful processing of the application by CDFW, the permittee will be issued an invoice for the mandatory mitigation fee. This fee is to be remitted via check or money order, with the invoice securely attached, following the precise instructions provided by CDFW.

3 Joshua Tree Survey

3.1 Joshua Tree Survey Methods

Per Chapter 9.76 of the AVDC and the WJTCA, Dudek's International Society of Arboriculture (ISA) Certified Arborists performed a Joshua tree survey to inventory and evaluate the health and relocation potential for each Joshua tree located on and within 50 feet of the Project site (Appendix A, Joshua Tree Locations). The inventory was conducted by ISA Certified Arborists Ana Pfleeger, Aida Castro, and Hansen LeClair on December 6 through December 8, and December 12, 2023. During the inventory, the GPS position of each Joshua tree found on site was recorded. Dudek Certified Arborists walked the entire site in parallel transects to ensure documentation of each Joshua tree on site.

Dudek collected the following attributes of each tree:

- Species
- Size class (Size A - < 1m, Size B - >1m and <5m, and Size C - >5m)
- Actual height (meters)
- Health (excellent, good, fair, poor, critical, and dead)[1]
- Live or dead
- Tree maturity (mature if branching occurs, not mature if no branching occurs)
- Flowering or fruiting stage (flowers or fruits present)

If a tree had a severe bend in the trunk, height was recorded with two measurements, h1 and h2, h1 being the main, upright trunk, and h2 being the remaining, non-vertical trunk or branch. H1 and h2 were then added together to get an overall height and size class. If a tree was found leaning, the height was measured from the base of the tree along the leaning trunk to the top of the furthest leaf.

All inventoried and assessed protected trees were tagged with an aluminum tag bearing a unique identification number, which was placed on the main trunk on the north side of each Joshua tree. Tagging on the north side allows for proper orientation during relocation (each relocated Joshua tree will need to be oriented in the same direction as it was in its original location). Photographs for each tree were taken in accordance with CDFW requirements for western Joshua tree photographs and included an object for frame of reference.

[1] **Health Rating Descriptions**
Excellent. Tree has excellent health and strong vigor. No damage. Flowering and fruiting expected. Typically, only given to large, high-quality specimens (taller than 15 feet in height). Transplanting generally not recommended due to size.
Good. Tree has good health and vigor. All branches are alive and healthy. Damage is very localized and minimal. Flowering and fruiting likely, if tree is large enough. Tree is transplantable.
Fair. Tree health is average. Some stressors or damage possible, but any damage is minimal to moderate (e.g., rodent grazing, insect damage). No dead/broken branches. Tree is transplantable.
Poor. Tree is under stress, and overall health is 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 is 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. Tree is dead.

3.2 Joshua Tree Survey Findings

Dudek's arborists recorded 298 Joshua trees within and adjacent to (within 50 feet of) the limits of the Project site (Appendix A), as presented in Appendix B, Joshua Tree Information Matrix. In total, 283 Joshua trees are located within the Project site, and 15 additional trees located within 50 feet of the Project site (survey area). Trees in the tree survey area vary in size and stature according to age and location. Most of the trees within the survey area fall into CDFW's size class B, which are those trees between 1 and 5 meters in height (71%). Most of the trees with the survey area are immature (58%). Because the survey was conducted in the fall, none of the trees were found to be flowering or fruiting. The health of the Joshua trees varies across the site and ranges from good to dead. In total, 122 trees (41%) exhibit good health, 36 trees (12%) exhibit fair health, six trees (2%) exhibit poor health, three trees (1%) exhibit very poor health, and 131 trees (44%) are dead. Individual attributes of each tree are presented in Appendix B, and individual photographs are presented in Appendix C, Individual Joshua Tree Photographs.

3.3 Project Impacts – Joshua Trees

There is wide variation in tolerance to construction impacts among tree species, and the response of an individual tree to impacts also varies with age and condition. Impacts assessed for the proposed Project include those trees with protected zones within 50 feet of proposed improvements and identified disturbance areas (as defined in the proposed Project site plan). The impact discussion in this section identifies all impacts to protected Joshua trees that are anticipated to occur based on an evaluation of tree locations compared with the proposed Project site plan. Trees identified for removal are graphically presented in Appendix D, Joshua Tree Impacts, and the proposed Project site plan is presented in Figure 3.

Based on grading and development plans for the proposed Project, it is estimated that 283 trees will require removal to accommodate the proposed Project. The proposed Project would preserve all 15 of the remaining Joshua trees found within 50 feet of the Project site. Table 1 summarizes impact determinations for Joshua trees within the tree survey area that are subject to regulation under the Town code.

Table 1. Summary of Protected Tree Impact Determinations

Health	Impact Determination		Total (number)
	Removal (number)	No Impact (number)	
Good	115	7	122
Fair	36	0	36
Poor	6	0	6
Very poor	3	0	3
Dead	123	8	131
Total	**283**	**15**	**298**

4 Town of Apple Valley Requirements

4.1 Plot Plan Requirements

Section F of Chapter 9.76.01(o) of the Town of Apple Valley Plant Protection and Management Code states the following:

> Prior to the issuance of a native tree or plant removal permit in conjunction with a development permit and/or approval of a land use application which authorizes such removal, a plot plan shall be approved by the appropriate Town Review Authority (County Certified Plant Expert, Planning Commission or Town Council) for each site indicating exactly which trees or plants are authorized to be removed. The required information can be added to any other required plot plan. Prior to issuance of development permits in areas with native trees or plants that are subject to the provisions of this Chapter, a pre-construction inspection shall be conducted by the appropriate authority. Such pre-construction inspections may be combined with any other required inspection.

As such, Appendix D details the post-construction status of each mapped and evaluated Joshua tree found on the proposed Project site.

4.2 Relocation and Protection of Trees

Each tree was evaluated for its relocation potential. Due to the low success rate of mature Joshua tree relocation, only single-stemmed trees in good health and less than 15 feet in height were selected. Based on Project-related impacts, 283 Joshua trees would be directly impacted by the proposed Project. Of the 283 direct impacts, 57 Joshua trees met the defined criteria for improved likelihood of post-transplant success. As such, the site contains 57 potentially relocatable trees, which are required to be transplanted per Section 9.76.040 of the AVDC. It is recommended that all 57 potentially transplantable western Joshua trees be relocated in accordance with the relocation specifications detailed in Section 4.3. As of the date of this Joshua Tree Plan, relocation of western Joshua trees is not a CDFW requirement. However, it should be noted that relocation of additional trees may be requested by CDFW following review of the WJTCA ITP Application. As of the date of this report, the final relocation locations for the 57 potentially relocatable WJT's is unknown. However, on-site relocation planting spots for the 57 Joshua trees should be prioritized over off-site planting spots when possible and as spacing allows. Should it be found that all of the transplantable trees cannot be accommodated on site, any remaining trees, shall be entered into an adoption program or planted at a suitable off-site location. The final relocation locations will be provided at later date.

Furthermore, based on the impact analysis, none of the Joshua trees on the Project site would be preserved, but all 15 of the remaining Joshua trees, found within 50 feet of the Project site, will be. As such, it is recommended that they be protected in place in accordance with the tree protection measures identified in this Joshua Tree Plan.

4.3 Relocation Specifications

The following sections provide details and recommended specifications for the relocation, storage, and care of western Joshua trees in the post-development landscape for the 57 potentially relocatable western Joshua trees required by the city and any additional trees that may be required by CDFW.

4.3.1 Salvage

Joshua trees have fragile, shallow root systems that are easily damaged during the salvaging and relocation process. During excavation of the root ball, it is important that as much of the existing root structure as possible be captured so that an intact root ball is maintained during the salvaging and relocation process. The following sections include recommendations to help increase the chances of successful salvage/relocation.

4.3.1.1 Contractor

Joshua tree salvage and relocation should be completed by an experienced Joshua tree relocation specialist.

4.3.1.2 Pre-salvage Meeting

Prior to initiating Joshua tree salvage, all contractors involved in salvage activities should attend a site meeting with the Project arborist. The Project arborist should provide the contractor(s) with a copy of the Joshua Tree Plan and review all relevant components of the Joshua Tree Plan.

4.3.1.3 Salvage Timing

To increase the chances of successful relocation, trees should be relocated October through February. To increase Joshua tree survivability, the trees should not be dug out and/or salvaged in warmer months (April through September). However, should Project limitations and timing require a date not during the recommended October through February salvage period, salvaged trees should be stored in a temporary, on-site location, per the recommendations in Section 4.4, Storage.

4.3.1.4 Pre-irrigation

Prior to Joshua tree digging, each identified Joshua tree relocation candidate should be pre-watered. Specifically, each tree should be watered 24 hours prior to relocation. Pre-watering thoroughly soaks the root ball of each tree.

4.3.1.5 Equipment Sanitization

Equipment should be sterilized prior to digging up and transplanting each tree. Equipment sterilization reduces the likelihood of pathogens being passed from tree to tree.

4.3.1.6 Digging

Tree relocation is best completed through the use of machinery. A front-end loader or hydraulic tree spade is recommended. The hydraulic tree spade may be best used in instances where the soil type is sandy or silty.

However, hand-digging of smaller Joshua trees (1 to 2 feet in height) is acceptable. The goal of relocation is to maintain a high root-to-shoot ratio. Joshua tree excavation should capture as much of the root ball as possible; however, due to the tree's shallow root system, holes do not need to be deep in order to do so. In general, the holes may range from 12 to 18 inches in depth for smaller trees (1 to 2 feet tall) to 24 to 36 inches deep for larger trees. The entire root ball should be removed intact, if possible.

4.3.1.7 Root Maintenance

All attempts should be made to minimize exposure of the root ball to air; it is recommended that exposed roots be kept wet at all times during the relocation process. Damaged and exposed roots should be cleaned and dusted with sulfur or a fungicide to decrease the likelihood of root pathogens.

4.4 Storage

All Joshua trees recommended for relocation could be transplanted to off-site locations or throughout the Project site depending on the WJTCA ITP process. If the trees are relocated, all 57 trees may be stored within a temporary storage location approved by a qualified arborist. The temporary storage location should be based on the development schedule. The storage location should be determined at a later date once the final schedule is confirmed. Trees requiring storage or stockpiling in the short term (i.e., 1 to 4 weeks) should adhere to the storage recommendations provided in the Section 4.4.1 through 4.4.6.

4.4.1 Storage

Trees stored for longer than 2 weeks should be temporarily stored in shallow ditches, backfilled with native soils, and tamped down. The shallow ditches should be dug prior to tree relocation, and the final depth should be comparable to the depth at which each Joshua tree was dug. Temporary storage trench depths should be approximately 12 to 24 inches deep, depending on the size of the tree's root ball. It is recommended that trench widths be 1 foot larger than the root ball of the tree, and long enough to accommodate the tree, with enough room for equipment between each tree. Multiple trenches may be required to accommodate all salvaged trees.

4.4.2 Storage Direction

During storage, all trees should be oriented in the same direction that they were prior to removal. Each Joshua tree should be tagged on its northern side and be reoriented with the tagged side facing north. Prior to tree relocation, each tag should be inspected to ensure that it is securely attached to the tree.

4.4.3 Stabilization

Larger plants, over 5 feet tall, may require stabilization until the roots have had the opportunity to become reestablished. To support larger trees, guy-wire staking may be necessary. Guy-wires should be connected to the ground (i.e., preferably via a "dead-man" anchor below grade) and attached to the trunk or limbs with an expandable, non-abrasive connector. Multiple guy-wires may be required (i.e., recommended three equally spaced around the root ball for stability).

4.4.4 Irrigation

Stored trees should be watered one to two times per week during the storage period to ensure tree health and increase relocation success. During the storage period, the trees should be watered by hand or by temporary irrigation. Should temporary irrigation be installed, the use of drip emitters is recommended. Irrigation emitters should be spaced according to the watering zone specified for each tree. The total amount of water required for each tree is dependent on the season and tree size. Irrigation needs may range from 2 to 20 gallons per watering cycle and is dependent on ambient daytime temperatures and rainfall totals. Additionally, persistent wet soil may cause mildew and root rot. As such, soil moisture levels should be routinely checked at the time of watering and allowed to dry out between watering cycles. The irrigation schedule should be adjusted to meet the conditions described above.

4.4.5 Duration

Trees should not be stockpiled or stored for longer than 45 days.

4.4.6 Summer Salvage: Temporary Shade Structure

Per Section 4.3.1.3, Salvage Timing, should Project limitations and timing require an earlier start date than the recommended October through February salvage period, salvaged trees should be stored as described in Section 4.3.1, Salvage. Furthermore, to reduce tree stress and reduce the risk of post-transplant mortality, the salvaged trees should be stored underneath a temporary shade structure. The temporary shade structure should be sufficient in size to cover the salvaged trees and provide protection from the direct heat of the summer sun. The shade structure should use a minimum 30% shade cloth to shade the trees during the warmer months. The shade structure should be attached to galvanized steel structural poles (or similar) to ensure the shade structure is structurally stable. The shade structure should be installed per the manufacturer's recommendations. Due to the potential for high winds, the shade structure should be attached to the ground using diagonal "dead-man" cable supports and concrete-post footings. The shade structure should be of adequate height to cover the trees. For trees that are greater than 10 feet in height, individual shade structures may be established for each tree. The remaining trees, under 10 feet in height, may be stored under a contiguous structure. In addition to the temporary shade structure, all salvaged trees should be relocated and maintained per the recommendations specified throughout this Joshua Tree Plan.

4.5 Transplant Planting

The following sections detail transplanting guidelines for the salvaged Joshua trees.

4.5.1 Site Preparation

Prior to tree transplantation, each receiver location should be dug. Planting locations should be finalized once the final landscape plan has been developed and approved. Prior to digging, the sites should be flagged for identification by the Project arborist or registered botanist. In general, the receiving hole may range from 12 to 18 inches in depth for smaller trees (1 to 2 feet tall) to 24 to 36 inches deep for larger trees. The width of the

hole should be approximately 1 foot larger than the root ball of the transplanted tree. Holes may require additional digging prior to Joshua tree installation.

4.5.2 Pre-watering

A water and root hormone mixture should be prepared prior to transplanting the trees. The mixture should be composed of vitamin B1, which is commonly sold by nurseries. The mixture should be mixed per the manufacturer's directions, which is typically at a 1:250 ratio (B1-to-water ratio). The receiving hole should be filled with the diluted mixture of rooting hormone and water and allowed to drain prior to placing the tree in the hole.

4.5.3 Planting Direction

Proper orientation of the relocated trees is important to the success of the salvaged trees. Improper planting can result in sunburn and growth distortion. As such, the north side of each tree should be clearly marked/tagged prior to digging, and each tree should be replanted (and stored) in the same orientation as it was in prior to removal.

4.5.4 Planting

Prior to final installation, the hole size should be inspected by the Project arborist to ensure that the planting hole is, at a minimum, 1 foot wider than the root ball and is neither too deep nor too shallow. The hole may require minor adjustments prior to installation. The depth of the hole should be less than the height of the root ball. If the hole is inadvertently dug too deep, soil should be added and compacted by hand or foot. Breaking up compacted soil in a large area around the tree (outside the drip line of the tree) provides the newly emerging roots room to expand into loose soil. This should hasten root growth, translating into quicker establishment. Once the size of the hole is finalized, the tree should be lowered into the hole in the proper orientation, backfilled with native soil, and watered again. Following backfilling and placement, the root ball should be tamped down into the hole to eliminate water pockets.

Following planting, a water basin should be installed approximately 1 foot outside of the pre-determined watering zone. The watering basin should be approximately 3 to 4 inches in height and surround the tree. The basin should be left intact throughout the establishment period.

4.5.5 Post-transplant Stabilization

Larger plants, over 5 feet tall, may require stabilization until the roots have had the opportunity to become reestablished. To support larger trees, guy-wire staking may be necessary. Guy-wires should be connected to the ground (i.e., preferably via a "dead-man" anchor below grade) and attached to the trunk or limbs with an expandable, non-abrasive connector. Multiple guy-wires may be required (i.e., recommended three equally spaced around the root ball for stability). Guy-wires should be removed once the tree is determined to be established by the Project arborist.

4.6 Post-relocation Care

4.6.1 Irrigation

Trees that have been relocated to their final planting location should be watered one to two times per week for an initial 2 to 3 months, depending on the season, rainfall totals, tree size, and watering zone size. Irrigation should be adjusted seasonally, with a goal of removing the transplanted trees from supplemental irrigation after 2 years have passed and growth has resumed. The total amount of water required for each tree is dependent on the season and tree size. Persistent wet soil may cause mildew and root rot. As such, soil moisture levels should be routinely checked at the time of watering, and the soil should be allowed to drain and dry out between watering cycles. Watering should be accomplished by hand or by a temporary irrigation system. During irrigation, the tree basin should be filled and allowed to fully drain. Irrigation needs may range from 2 to 20 gallons per watering. The watering cycle should be adjusted based on tree health and season.

4.6.2 Stabilization

Trees that have been stabilized should be routinely inspected by the Project arborist to ensure that the guy-wires and straps are not damaging the trees. The expandable, non-abrasive connectors should be adjusted, as needed, to minimize damage to the trees. The guy-wires can be removed once the Project arborist has determined that the trees have become established. In general, little to no movement should be observed for the root ball when the tree is gently pushed. Once the roots are well established, it is important to remove the tree stakes. This encourages a natural strengthening of the tree trunk so it can support the weight of the branches as they begin grow and spread.

4.6.3 Fertilization

Post-transplantation fertilization is not required.

4.7 Monitoring and Reporting

Tree relocation, stockpiling, maintenance, and watering should be monitored by a Certified Arborist or registered botanist.

4.7.1 Monitoring

The Town requires an approved Joshua Tree maintenance plan and schedule prepared by a Desert Native Plant Expert to ensure that the transplanted trees “have been maintained in such a manner to insure the highest practicable survival rate.” For the initial 3 months following transplantation, weekly monitoring by a Certified Arborist or registered botanist should occur to ensure that the watering needs of each relocated tree are being met. Following the initial 3-month monitoring period, the relocated trees should be monitored on a monthly basis for 9 months. Following the first year of monitoring, the trees should be monitored quarterly (every 3 months) for 3 years to ensure tree establishment. Monitoring may be adjusted based on tree health and observations by the Project arborist. The monitoring period should begin once all trees have been installed. CDFW does not define a minimum post-transplantation monitoring period. However, an annual inspection and report for 4 years is recommended.

4.7.2 Reporting

The Town requires a maintenance report at the end of the Project or at 6-month intervals. Additionally, annual reports should be prepared at the end of each calendar year to document the status of the transplantation program and the health/survivability of the relocated trees. Reports of all monitoring should be submitted to the Town and CDFW if reporting is required. Monitoring should track the location, health, and status of each transplanted Joshua tree. The monitoring arborist or registered botanist should include recommendations for maintenance and irrigation, should they be needed.

4.8 Transplantation Success Criteria

The Town does not define a minimum success ratio for transplanted Joshua trees. However, per CDFW requirements, adherence to an 80% survivability rate is required should relocation occur. As such, the transplantation program would be considered successful if, after four growing seasons (4 years)—including two growing seasons with supplemental irrigation and two without the transplanted trees maintain a minimum of 80% survivability. In total, the relocation would be considered successful if a total of 47 WJTs successfully survived four growing seasons. Should the surviving number of trees drop below 80%, it is recommended that trees be obtained from a local adoption program or from a local nursery to meet the 4-year, 80% threshold. The Town or CDFW may define alternative minimum success criteria. The final 80% survivability rate will be based on the total number of western Joshua trees required for relocation by CDFW or the town of Apple Valley, should relocation be required.

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5 California Department of Fish and Wildlife Mitigation

The following section details the proposed mitigation program described within the ITP Application for the Project (Item No. 9).

5.1 Proposed Minimization and Mitigation

As described in Section 1, Introduction, under the WJTCA, relocation of western Joshua trees is considered a minimization measure, in contrast to the previous Section 2081 ITP process, where relocation was viewed as an experimental approach. Relocation in the WJTCA is described as follows:

> (4) (A) The department [CDFW] may include permit conditions that require the permittee to relocate one or more of the western Joshua trees. If relocation is required, the permittee shall implement measures to assist the survival of relocated trees, and to comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees. These relocation measures shall include, but are not limited to, all of the following:
>
> (i) A requirement that the relocated western Joshua tree is placed in a location and with proper orientation to improve its survival.
>
> (ii) A requirement that western Joshua trees are relocated at a time that maximizes their survival when feasible.
>
> (iii) A requirement that a desert native plant specialist be onsite to oversee relocation

Beyond the option of relocation, the California Fish and Game Commission also established the Western Joshua Tree Conservation Fund. This dedicated fund provides for the acquisition, preservation, and responsible management of western Joshua tree conservation lands, as well as the facilitation of various other initiatives aimed at the conservation of western Joshua trees.

Regarding the acquisition of permits for the incidental take of western Joshua trees, permittees are required to remit an in-lieu fee contingent on the Project's geographical location. This fee structure is divided into two categories: the reduced mitigation fee area, characterized by lower mitigation fees, and the standard fee area, where mitigation fees are comparatively higher. The Project site is situated within the reduced mitigation fee area. The reduced fees are as follows:

- Trees 5 meters or greater in height: $1,000
- Trees 1 meter or greater but less than 5 meters in height: $200
- Trees less than 1 meter in height: $150

Mitigation for Direct Impacts

Mitigation for direct impacts to 283 western Joshua trees will be fulfilled through the WJTCA in-lieu fee program. As described, the Project is located in the reduced mitigation fee area. Table 2 summarizes the impacts to western Joshua trees by height class, the mitigation fee per tree by height class, and the total cost of mitigation. Note that CDFW calculates the mitigation fee and sends an invoice to the applicant after the application is submitted.

Table 2. In-Lieu Mitigation Fees for Impacts to Western Joshua Trees

Western Joshua Tree Height Class	Count of Western Joshua Trees	Mitigation Fee Per Tree by Height Class	Total Cost
5 meters or greater in height	4	$1,000	$4,000
1 meter to less than 5 meters in height	201	$200	$40,200
Less than 1 meter in height	78	$150	$11,700
Total	**283**	**N/A**	**$55,900**

In addition, 57 western Joshua trees may be relocated, as described herein, as an avoidance and minimization measure.

6 Tree Protection

For Joshua trees that do not require relocation and that will be preserved, the following measures are recommended to protect the remaining Joshua trees so that they have protected zones (crown/canopy width plus 6 feet) around each tree within and immediately adjacent to (within 25 feet of) all active construction areas. For protected trees on site that remain within undisturbed areas, similar tree protection measures are recommended to ensure against potential inadvertent disturbance.

6.1 Tree Protection Measures prior to Construction

Fencing: Orange polyethylene construction fencing, no less than 4 feet in height, with tree protection signs, shall be erected around all undisturbed trees (or tree groups). The protective fencing shall be installed at the protected zone boundary of each tree (or tree group), which is defined as 6 feet beyond the tree crown/canopy dripline. The intent of protective fencing is to prevent root damage and/or compaction of the soil by grading equipment. An ISA Certified Arborist may be required on site if grading activities occur within a tree's protected zone. Fencing shall be secured to 6-foot-tall, heavy-gauge T-bar posts pounded into the ground a minimum of 18 inches and spaced a minimum of 8 feet on center. Fencing shall be attached to the T-bar posts, with minimum 14-gauge wire fastened to the top, middle, and bottom of each post. Tree protection signs shall be attached to every fourth post. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities in the vicinity of the protected tree(s) are complete.

Preconstruction Meeting: A preconstruction meeting shall be held between all contractors (including grading, tree removal/pruning, and builders) and an ISA Certified Arborist or registered botanist. The meeting shall focus on instructing the contractors on tree protection practices and on answering any questions. All equipment operators and spotters, assistants, and those directing operators from the ground shall provide written acknowledgment of having received tree protection training. This training shall include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish these tasks.

6.2 Protection and Maintenance during Construction

Once construction activities have begun, the following protection measures shall be followed:

Equipment Operation and Storage: Contractors shall avoid heavy equipment operation around protected trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and consequently reduces water penetration into the soil. All heavy equipment and vehicles shall, at minimum, stay out of the fenced protected tree zone except where specifically approved in writing and under the supervision of a Certified Arborist or registered botanist.

Materials Storage and Disposal: Contractors shall not store or discard any supplies or materials, including paint, lumber, and concrete overflow, within the protected zone, and shall remove all foreign debris within the protected zone. However, the contractors shall leave the duff, mulch, chips, and other organic material around the retained trees for water retention and nutrient supply. In addition, the contractors shall avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline, diesel, oils, hydraulic, brake, and transmission fluids,

paint, paint thinners, and glycol (anti-freeze) shall be disposed of properly. Contractors shall ensure that equipment is parked at outside of the protected zone to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the trees could result in tree decline and mortality.

Grade Changes: Contractors shall ensure that grade changes, including adding fill, are not permitted within the protected zone without special written authorization and under supervision by an ISA Certified Arborist or registered botanist. Lowering the grade within the protected zone would necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the trees. Adding soil, even temporarily, on top of the existing grade would compact the soil further and decrease water and air availability to the tree roots. Contractors shall ensure that grade changes made outside of the protected tree zone will not create conditions that allow water to pond at the base of the tree. Water trapped at the base of a tree could lead to root rot and other detrimental tree impacts.

Moving Construction Materials: Contractors shall ensure that care is exercised when moving construction equipment and supplies near undisturbed Joshua trees, especially overhead. Contractors shall ensure that damage to the trees is avoided when transporting or moving construction materials and working around trees (even outside of the fenced protected zone). Contractors shall flag aboveground tree parts that could be damaged (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange flagging.

Trenching: Except where specifically approved in writing beforehand, all trenching shall be outside the fenced protected zone. Where trenching is necessary in areas that contain roots from retained trees, contractors shall use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade to limit root impacts. An ISA Certified Arborist or registered botanist shall ensure that all pruning cuts are clean and sharp to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may result in tree mortality. Use of root-pruning and Air-Spade equipment shall be accompanied only by hand removal of soil from trench locations. The trench shall be made no deeper than necessary to accommodate the intended materials.

Irrigation/Hand Watering: Irrigation/hand watering of retained Joshua trees on site shall seek to mimic natural rainfall patterns in Southern California. As such, irrigation/hand watering is not required unless recommended by the monitoring ISA Certified Arborist or registered botanist.

Inspection/Reporting: An ISA Certified Arborist or registered botanist shall inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the proposed Project's construction period. A site observation report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted by the ISA Certified Arborist or registered botanist following each inspection. Annual monitoring reports to document year-end conditions shall also be submitted.

6.3 Maintenance after Construction

Following completion of the construction activity within 20 feet of the protected zones of undisturbed Joshua trees, the tree protection fencing may be removed, and the following measures may be performed to sustain and enhance the vigor of the trees:

Pruning: Regular pruning of the trees is not required.

Watering: The retained trees should not require regular irrigation/hand watering, other than during the 12 months following substantial root pruning, if applicable. Supplemental irrigation/hand watering for the retained trees that sustained root pruning and any newly planted trees may be necessary, especially in years with low winter rainfall.

Watering Adjacent Plant Material: All watering near retained Joshua trees and adjacent vegetation should mimic natural rainfall patterns. Supplemental irrigation of adjacent plant material should not be required.

Monitoring: For the initial 3 months, weekly monitoring by an ISA Certified Arborist or registered botanist is recommended to ensure that the watering needs of each tree is being met. Following the initial 3-month monitoring period, it is recommended that the trees be monitored on a monthly basis for 9 months. Following the first year of monitoring, it is recommended that the trees be monitored quarterly (every 3 months) for 3 years. Following each monitoring visit, a site observation report summarizing site conditions, observations, tree health, and recommendations for promoting tree health should be submitted. Any tree mortality will be noted, and any tree dying during the monitoring period will be replaced with the same species as specified per Town replacement standards.

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7 Fees

Per Chapter 9.76 of the AVDC, where permits or reviews are required and they are not incorporated into other review or permit procedures, fees will be paid in accordance with the Town's fee schedule. In addition to the Town required fees, per Section 5 of this report, mitigation for direct impacts to 283 western Joshua trees will be fulfilled through the WJTCA in-lieu fee program. As described, the Project site is in the reduced mitigation fee area. Table 2 summarizes the impacts to western Joshua trees by height class, the mitigation fee per tree by height class, and the total cost of mitigation. However, note that CDFW calculates the mitigation fee and sends an invoice to the applicant after the application is submitted.

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8 Desert Native Plants

In addition to western Joshua trees, the site contains other desert native plants that are protected by the Town of Apple Valley Plant Protection and Management Policy (Chapter 9.76), the County of San Bernardino's Desert Native Plant Protection, and the state Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.). Based on the results of the surveys conducted by GLA and Dudek from June 2022 to June 2023, one Wiggins' cholla (*Cylindropuntia echinocarpa*) and one Mojave yucca (*Yucca schidigera)* were found on site.

In accordance with the California Desert Native Plants Act and Town of Apple Valley Chapter 9.76 (Plant Protection and Management Policy), a native plant removal permit must be obtained from the Town prior to the removal of the Wiggin's cholla, Mojave yucca, and western Joshua tree. No further mitigation is required; however, permit conditions may require salvage or that the species be incorporated into the landscape plan of the Project. Any approved land use application and/or development permit will be the permit for the removal of Wiggin's cholla, Mojave yucca, and western Joshua tree once the Town approves it.

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9 References

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Town of Apple Valley. 2010. *Town of Apple Valley Development Code*. Chapter 9.76, Plant Protection and Management. https://www.applevalley.org/home/showpublisheddocument/6480/635611242901270000.

Town of Apple Valley. 2023. *Draft Environmental Impact Report: Apple Valley 143 Project*. SCH No. 2022070019. Prepared by Dudek. Encinitas, California: Dudek. August 2023. https://ceqanet.opr.ca.gov/Project/2022070019.

USDA. 2023. "Web Soil Survey." USDA, Natural Resources Conservation Service. Accessed January 2023. http://websoilsurvey.nrcs.usda.gov/

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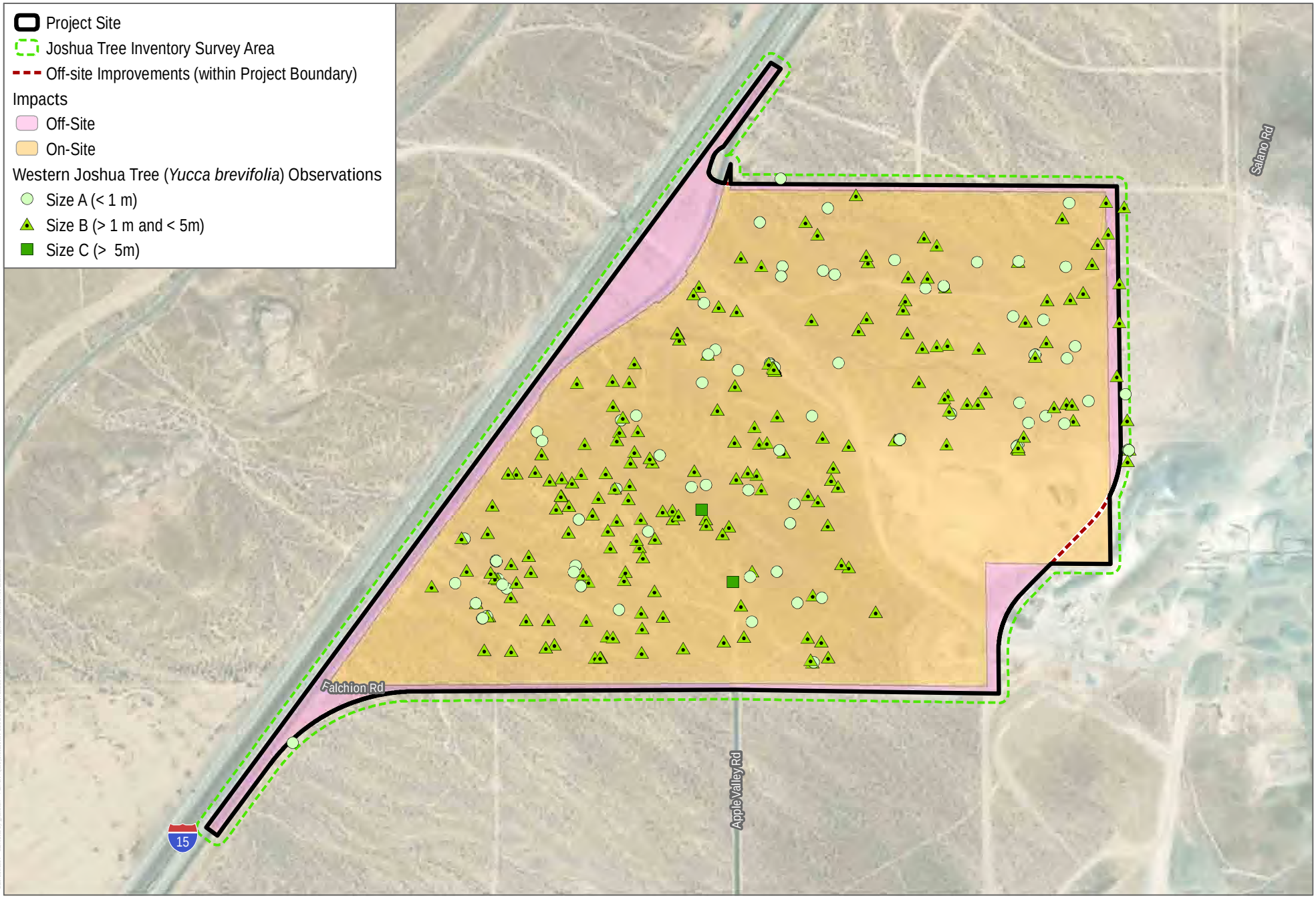
Appendix A

Joshua Tree Locations



SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

0 300 600 Feet

APPENDIX A

Joshua Tree Locations

Inland Empire North Logistics Center Apple Valley Project

Appendix B

Joshua Tree Information Matrix

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
1	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_1	Project Site	Yes	34.57228	-117.27
2	Size B (> 1 m and < 5m)	3.66	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_2	Project Site	Yes	34.57221	-117.271
3	Size B (> 1 m and < 5m)	1.37	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_3	Project Site	Yes	34.5722	-117.271
4	Size B (> 1 m and < 5m)	2.44	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_4	Project Site	Yes	34.5722	-117.271
5	Size B (> 1 m and < 5m)	1.83	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_5	Project Site	Yes	34.57232	-117.273
6	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_6	Project Site	Yes	34.57233	-117.273
7	Size A (< 1 m)	0.61	Dead	No	None	Dead	No		None	IENLA-A_WJT_Tree_7	50-ft Buffer	Yes	34.57099	-117.277
9	Size B (> 1 m and < 5m)	1.19	Live	No	None	Good	Yes	Relocate with tree 10	Direct	IENLA-A_WJT_Tree_9	Project Site	Yes	34.57302	-117.273
10	Size A (< 1 m)	0.88	Live	No	None	Good	Yes	Relocate with tree 9	Direct	IENLA-A_WJT_Tree_10	Project Site	Yes	34.57302	-117.273
11	Size A (< 1 m)	0.61	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_11	Project Site	Yes	34.5728	-117.273
12	Size A (< 1 m)	0.3	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_12	Project Site	Yes	34.5728	-117.273
13	Size B (> 1 m and < 5m)	1.52	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_13	Project Site	Yes	34.57283	-117.273
14	Size A (< 1 m)	0.91	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_14	Project Site	Yes	34.57283	-117.273
15	Size B (> 1 m and < 5m)	2.13	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_15	Project Site	Yes	34.57283	-117.273
16	Size B (> 1 m and < 5m)	1.25	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_16	Project Site	Yes	34.57277	-117.272
17	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_17	Project Site	Yes	34.57236	-117.272
18	Size B (> 1 m and < 5m)	4.27	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_18	Project Site	Yes	34.57241	-117.272
19	Size B (> 1 m and < 5m)	2.16	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_19	Project Site	Yes	34.57277	-117.272
20	Size B (> 1 m and < 5m)	1.52	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_20	Project Site	Yes	34.57275	-117.271
21	Size B (> 1 m and < 5m)	3.66	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_21	Project Site	Yes	34.57252	-117.271
22	Size B (> 1 m and < 5m)	2.44	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_22	Project Site	Yes	34.57251	-117.271
23	Size B (> 1 m and < 5m)	1.19	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_23	Project Site	Yes	34.57287	-117.27
24	Size B (> 1 m and < 5m)	1.37	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_24	Project Site	Yes	34.57264	-117.27
25	Size B (> 1 m and < 5m)	1.77	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_25	Project Site	Yes	34.5728	-117.27
26	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_26	Project Site	Yes	34.57234	-117.27
27	Size B (> 1 m and < 5m)	3.35	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_27	Project Site	Yes	34.57243	-117.269
28	Size B (> 1 m and < 5m)	3.05	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_28	Project Site	Yes	34.57318	-117.27
29	Size B (> 1 m and < 5m)	1.46	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_29	Project Site	Yes	34.57335	-117.271
30	Size B (> 1 m and < 5m)	1.52	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_30	Project Site	Yes	34.57347	-117.271
31	Size A (< 1 m)	0.58	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_31	Project Site	Yes	34.57291	-117.271
32	Size B (> 1 m and < 5m)	2.74	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_32	Project Site	Yes	34.57332	-117.271
33	Size B (> 1 m and < 5m)	4.27	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_33	Project Site	Yes	34.57343	-117.271
34	Size A (< 1 m)	0.91	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_34	Project Site	Yes	34.57326	-117.271
35	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_35	Project Site	Yes	34.57348	-117.272
36	Size B (> 1 m and < 5m)	2.74	Live	Yes	None	Good	Yes		Direct	IENLA-A_WJT_Tree_36	Project Site	Yes	34.57332	-117.273
37	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_37	Project Site	Yes	34.5731	-117.273
38	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_38	Project Site	Yes	34.57359	-117.273
39	Size A (< 1 m)	0.15	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_39	Project Site	Yes	34.57363	-117.273
40	Size A (< 1 m)	0.46	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_40	Project Site	Yes	34.57364	-117.273
41	Size A (< 1 m)	0.46	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_41	Project Site	Yes	34.57364	-117.273
42	Size A (< 1 m)	0.64	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_42	Project Site	Yes	34.57337	-117.273
43	Size B (> 1 m and < 5m)	2.74	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_43	Project Site	Yes	34.57337	-117.273
44	Size B (> 1 m and < 5m)	1.37	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_44	Project Site	Yes	34.57339	-117.273
45	Size A (< 1 m)	0.55	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_45	Project Site	Yes	34.57329	-117.273
46	Size A (< 1 m)	0.61	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_46	Project Site	Yes	34.57323	-117.273
47	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_47	Project Site	Yes	34.57346	-117.273
48	Size B (> 1 m and < 5m)	2.9	Live	Yes	None	Good	Yes		Direct	IENLA-A_WJT_Tree_48	Project Site	Yes	34.5735	-117.273

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
49	Size A (< 1 m)	0.55	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_49	Project Site	Yes	34.57332	-117.274
50	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_50	Project Site	Yes	34.57327	-117.274
51	Size B (> 1 m and < 5m)	1.19	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_51	Project Site	Yes	34.57398	-117.274
52	Size A (< 1 m)	0.34	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_52	Project Site	Yes	34.57396	-117.274
53	Size B (> 1 m and < 5m)	1.04	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_53	Project Site	Yes	34.57405	-117.273
54	Size B (> 1 m and < 5m)	1.37	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_54	Project Site	Yes	34.57371	-117.272
55	Size A (< 1 m)	0.85	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_55	Project Site	Yes	34.57356	-117.272
56	Size A (< 1 m)	0.94	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_56	Project Site	Yes	34.57346	-117.272
57	Size B (> 1 m and < 5m)	1.52	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_57	Project Site	Yes	34.57382	-117.271
58	Size B (> 1 m and < 5m)	3.66	Live	Yes	None	Very Poor	No		Direct	IENLA-A_WJT_Tree_58	Project Site	Yes	34.57408	-117.271
59	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_59	Project Site	Yes	34.57367	-117.27
60	Size B (> 1 m and < 5m)	3.96	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_60	Project Site	Yes	34.57383	-117.27
61	Size B (> 1 m and < 5m)	3.66	Live	Yes	None	Good	Yes		Direct	IENLA-A_WJT_Tree_61	Project Site	Yes	34.57394	-117.27
62	Size C (> 5m)	5.18	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_62	Project Site	Yes	34.5733	-117.269
63	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_63	Project Site	Yes	34.57396	-117.27
64	Size A (< 1 m)	0.58	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_64	Project Site	Yes	34.57405	-117.27
65	Size A (< 1 m)	0.79	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_65	Project Site	Yes	34.57424	-117.271
66	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_66	Project Site	Yes	34.57445	-117.273
67	Size B (> 1 m and < 5m)	1.04	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_67	Project Site	Yes	34.57405	-117.272
68	Size B (> 1 m and < 5m)	3.51	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_68	Project Site	Yes	34.57431	-117.271
69	Size B (> 1 m and < 5m)	3.81	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_69	Project Site	Yes	34.57431	-117.271
70	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_70	Project Site	Yes	34.57422	-117.271
71	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_71	Project Site	Yes	34.57424	-117.27
72	Size B (> 1 m and < 5m)	3.35	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_72	Project Site	Yes	34.57435	-117.27
73	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_73	Project Site	Yes	34.57436	-117.27
74	Size B (> 1 m and < 5m)	1.52	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_74	Project Site	Yes	34.57423	-117.27
75	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_75	Project Site	Yes	34.57428	-117.27
76	Size C (> 5m)	5.33	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_76	Project Site	Yes	34.57437	-117.269
77	Size B (> 1 m and < 5m)	2.13	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_77	Project Site	Yes	34.57423	-117.269
78	Size B (> 1 m and < 5m)	2.44	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_78	Project Site	Yes	34.57415	-117.269
79	Size A (< 1 m)	0.98	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_79	Project Site	Yes	34.5747	-117.269
80	Size B (> 1 m and < 5m)	1.22	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_80	Project Site	Yes	34.57453	-117.271
81	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_81	Project Site	Yes	34.57455	-117.271
82	Size B (> 1 m and < 5m)	4.88	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_82	Project Site	Yes	34.57458	-117.272
83	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_83	Project Site	Yes	34.57459	-117.272
84	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_84	Project Site	Yes	34.57444	-117.272
85	Size B (> 1 m and < 5m)	1.37	Live	No	None	Very Poor	No		Direct	IENLA-A_WJT_Tree_85	Project Site	Yes	34.5744	-117.272
86	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_86	Project Site	Yes	34.57492	-117.273
87	Size B (> 1 m and < 5m)	2.74	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_87	Project Site	Yes	34.57492	-117.273
88	Size B (> 1 m and < 5m)	2.44	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_88	Project Site	Yes	34.57494	-117.272
89	Size B (> 1 m and < 5m)	1.98	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_89	Project Site	Yes	34.57482	-117.272
90	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_90	Project Site	Yes	34.57484	-117.272
91	Size B (> 1 m and < 5m)	4.57	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_91	Project Site	Yes	34.57478	-117.272
92	Size B (> 1 m and < 5m)	1.55	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_92	Project Site	Yes	34.57491	-117.271
93	Size B (> 1 m and < 5m)	4.57	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_93	Project Site	Yes	34.57492	-117.271
94	Size A (< 1 m)	0.61	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_94	Project Site	Yes	34.57468	-117.271
95	Size B (> 1 m and < 5m)	1.86	Live	Yes	None	Fair	No	Mistagged at 94	Direct	IENLA-A_WJT_Tree_95	Project Site	Yes	34.57469	-117.271

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
96	Size B (> 1 m and < 5m)	3.05	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_96	Project Site	Yes	34.57474	-117.271
97	Size A (< 1 m)	0.64	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_97	Project Site	Yes	34.57473	-117.269
98	Size B (> 1 m and < 5m)	1.52	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_98	Project Site	Yes	34.57494	-117.269
99	Size A (< 1 m)	0.88	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_99	Project Site	Yes	34.57516	-117.27
100	Size B (> 1 m and < 5m)	3.2	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_100	Project Site	Yes	34.57507	-117.27
101	Size B (> 1 m and < 5m)	1.46	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_101	Project Site	Yes	34.57513	-117.27
102	Size B (> 1 m and < 5m)	1.68	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_102	Project Site	Yes	34.57523	-117.27
103	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_103	Project Site	Yes	34.57507	-117.271
104	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_104	Project Site	Yes	34.5754	-117.271
105	Size B (> 1 m and < 5m)	1.07	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_105	Project Site	Yes	34.57534	-117.271
106	Size B (> 1 m and < 5m)	1.8	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_106	Project Site	Yes	34.5752	-117.272
107	Size A (< 1 m)	0.76	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_107	Project Site	Yes	34.57553	-117.272
108	Size A (< 1 m)	0.7	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_108	Project Site	Yes	34.57539	-117.272
109	Size B (> 1 m and < 5m)	1.07	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_109	Project Site	Yes	34.57552	-117.271
110	Size B (> 1 m and < 5m)	1.52	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_110	Project Site	Yes	34.57553	-117.27
111	Size B (> 1 m and < 5m)	1.04	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_111	Project Site	Yes	34.57573	-117.271
112	Size A (< 1 m)	0.15	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_112	Project Site	Yes	34.57576	-117.27
113	Size A (< 1 m)	0.91	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_113	Project Site	Yes	34.57671	-117.269
114	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_114	Project Site	Yes	34.57664	-117.269
115	Size B (> 1 m and < 5m)	4.88	Live	Yes	None	Poor	No		Direct	IENLA-A_WJT_Tree_115	Project Site	Yes	34.57664	-117.269
116	Size B (> 1 m and < 5m)	1.22	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_116	Project Site	Yes	34.57686	-117.27
117	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_117	Project Site	Yes	34.57653	-117.27
118	Size A (< 1 m)	0.91	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_118	Project Site	Yes	34.57623	-117.269
119	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_119	Project Site	Yes	34.57583	-117.269
120	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_120	Project Site	Yes	34.57625	-117.271
121	Size B (> 1 m and < 5m)	1.52	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_121	Project Site	Yes	34.57627	-117.271
122	Size B (> 1 m and < 5m)	4.88	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_122	Project Site	Yes	34.57624	-117.272
123	Size B (> 1 m and < 5m)	4.57	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_123	Project Site	Yes	34.5759	-117.271
124	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_124	Project Site	Yes	34.57569	-117.271
125	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_125	Project Site	Yes	34.57695	-117.27
126	Size B (> 1 m and < 5m)	3.05	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_126	Project Site	Yes	34.57696	-117.27
127	Size B (> 1 m and < 5m)	3.96	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_127	Project Site	Yes	34.57734	-117.269
128	Size A (< 1 m)	0.3	Live	No	None	Poor	No		Direct	IENLA-A_WJT_Tree_128	Project Site	Yes	34.5774	-117.269
129	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_129	Project Site	Yes	34.57753	-117.269
130	Size B (> 1 m and < 5m)	1.22	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_130	Project Site	Yes	34.57764	-117.269
131	Size B (> 1 m and < 5m)	1.52	Dead	Yes	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_131	Project Site	Yes	34.5764	-117.268
132	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_132	Project Site	Yes	34.5764	-117.268
133	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_133	Project Site	Yes	34.57643	-117.268
134	Size B (> 1 m and < 5m)	2.44	Dead	Yes	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_134	Project Site	Yes	34.57643	-117.268
135	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_135	Project Site	Yes	34.57644	-117.268
136	Size B (> 1 m and < 5m)	2.44	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_136	Project Site	Yes	34.57645	-117.268

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
137	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_137	Project Site	Yes	34.57644	-117.268
138	Size A (< 1 m)	0.91	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_138	Project Site	Yes	34.57645	-117.268
139	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_139	Project Site	Yes	34.5765	-117.268
140	Size A (< 1 m)	0.61	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_140	Project Site	Yes	34.57648	-117.268
141	Size A (< 1 m)	0.3	Dead	No	None	Dead	No	Previously removed and piled by unknown party	Direct	IENLA-A_WJT_Tree_141	Project Site	Yes	34.5765	-117.268
142	Size A (< 1 m)	0.91	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_142	Project Site	Yes	34.5764	-117.269
143	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_143	Project Site	Yes	34.57529	-117.267
144	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_144	Project Site	Yes	34.57541	-117.267
145	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_145	Project Site	Yes	34.57573	-117.267
146	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_146	Project Site	Yes	34.57618	-117.269
147	Size B (> 1 m and < 5m)	1.52	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_147	Project Site	Yes	34.57573	-117.268
148	Size B (> 1 m and < 5m)	2.44	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_148	Project Site	Yes	34.57497	-117.267
149	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_149	Project Site	Yes	34.57558	-117.268
150	Size B (> 1 m and < 5m)	3.96	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_150	Project Site	Yes	34.57536	-117.269
151	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_151	Project Site	Yes	34.57533	-117.268
152	Size B (> 1 m and < 5m)	3.66	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_152	Project Site	Yes	34.57534	-117.268
153	Size A (< 1 m)	0.3	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_153	Project Site	Yes	34.57523	-117.268
154	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_154	Project Site	Yes	34.5752	-117.268
155	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_155	Project Site	Yes	34.57479	-117.267
156	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_156	Project Site	Yes	34.57469	-117.267
157	Size B (> 1 m and < 5m)	4.57	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_157	Project Site	Yes	34.57482	-117.269
158	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_158	Project Site	Yes	34.57491	-117.268
159	Size B (> 1 m and < 5m)	2.44	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_159	Project Site	Yes	34.57487	-117.268
160	Size B (> 1 m and < 5m)	2.44	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_160	Project Site	Yes	34.57457	-117.267
161	Size B (> 1 m and < 5m)	1.52	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_161	Project Site	Yes	34.57448	-117.267
162	Size A (< 1 m)	0.61	Live	No	None	Poor	No		Direct	IENLA-A_WJT_Tree_162	Project Site	Yes	34.57444	-117.268
163	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_163	Project Site	Yes	34.57466	-117.268
164	Size A (< 1 m)	0.91	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_164	Project Site	Yes	34.57465	-117.268
165	Size B (> 1 m and < 5m)	1.52	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_165	Project Site	Yes	34.57412	-117.267
166	Size A (< 1 m)	0.61	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_166	Project Site	Yes	34.57415	-117.268
167	Size B (> 1 m and < 5m)	3.05	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_167	Project Site	Yes	34.57412	-117.269
168	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_168	Project Site	Yes	34.57401	-117.269
169	Size B (> 1 m and < 5m)	2.44	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_169	Project Site	Yes	34.57355	-117.267
170	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_170	Project Site	Yes	34.57351	-117.267
171	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_171	Project Site	Yes	34.57346	-117.268
172	Size A (< 1 m)	0.3	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_172	Project Site	Yes	34.57338	-117.268
173	Size A (< 1 m)	0.61	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_173	Project Site	Yes	34.57344	-117.268
174	Size B (> 1 m and < 5m)	3.05	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_174	Project Site	Yes	34.5731	-117.267
175	Size A (< 1 m)	0.91	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_175	Project Site	Yes	34.57306	-117.267
176	Size A (< 1 m)	0.3	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_176	Project Site	Yes	34.57299	-117.268
177	Size B (> 1 m and < 5m)	4.57	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_177	Project Site	Yes	34.57296	-117.269
178	Size A (< 1 m)	0.3	Live	No	None	Poor	No		Direct	IENLA-A_WJT_Tree_178	Project Site	Yes	34.57272	-117.268

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
179	Size B (> 1 m and < 5m)	3.96	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_179	Project Site	Yes	34.5725	-117.269
180	Size B (> 1 m and < 5m)	1.22	Dead	Yes	None	Dead	No	Pieces scattered	Direct	IENLA-A_WJT_Tree_180	Project Site	Yes	34.57248	-117.267
181	Size B (> 1 m and < 5m)	1.83	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_181	Project Site	Yes	34.57243	-117.267
182	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Good	Yes		Direct	IENLA-A_WJT_Tree_182	Project Site	Yes	34.57285	-117.266
183	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No	2 stem	Direct	IENLA-A_WJT_Tree_183	Project Site	Yes	34.57219	-117.267
184	Size B (> 1 m and < 5m)	1.22	Live	No	None	Poor	No	H1 2', H2 2'	Direct	IENLA-A_WJT_Tree_184	Project Site	Yes	34.57215	-117.267
185	Size A (< 1 m)	0.3	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_185	Project Site	Yes	34.57212	-117.267
186	Size B (> 1 m and < 5m)	3.05	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_186	Project Site	Yes	34.57211	-117.267
187	Size A (< 1 m)	0.94	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_187	Project Site	Yes	34.5765	-117.267
188	Size B (> 1 m and < 5m)	1.52	Live	No	None	Good	Yes	Relocate with tree 189	Direct	IENLA-A_WJT_Tree_188	Project Site	Yes	34.57537	-117.266
189	Size A (< 1 m)	0.85	Live	No	None	Good	Yes	Relocate with tree 188	Direct	IENLA-A_WJT_Tree_189	Project Site	Yes	34.57538	-117.266
190	Size A (< 1 m)	0.18	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_190	Project Site	Yes	34.57537	-117.266
191	Size B (> 1 m and < 5m)	1.25	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_191	Project Site	Yes	34.57622	-117.265
192	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_192	Project Site	Yes	34.5753	-117.265
193	Size B (> 1 m and < 5m)	1.01	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_193	Project Site	Yes	34.57579	-117.265
194	Size A (< 1 m)	0.82	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_194	Project Site	Yes	34.57575	-117.265
195	Size B (> 1 m and < 5m)	2.13	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_195	Project Site	Yes	34.57602	-117.265
196	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_196	Project Site	Yes	34.57598	-117.265
197	Size B (> 1 m and < 5m)	1.19	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_197	Project Site	Yes	34.57589	-117.265
198	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_198	Project Site	Yes	34.57589	-117.264
199	Size B (> 1 m and < 5m)	2.59	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_199	Project Site	Yes	34.57523	-117.264
200	Size B (> 1 m and < 5m)	1.22	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_200	Project Site	Yes	34.57526	-117.264
201	Size A (< 1 m)	0.37	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_201	Project Site	Yes	34.57528	-117.264
202	Size A (< 1 m)	0.21	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_202	Project Site	Yes	34.57526	-117.264
203	Size B (> 1 m and < 5m)	3.35	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_203	Project Site	Yes	34.57521	-117.264
204	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_204	Project Site	Yes	34.57541	-117.264
205	Size B (> 1 m and < 5m)	2.13	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_205	Project Site	Yes	34.57606	-117.264
206	Size B (> 1 m and < 5m)	2.01	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_206	Project Site	Yes	34.57714	-117.267
207	Size A (< 1 m)	0.55	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_207	Project Site	Yes	34.5759	-117.264
208	Size A (< 1 m)	0.91	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_208	Project Site	Yes	34.5756	-117.264
209	Size B (> 1 m and < 5m)	1.31	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_209	Project Site	Yes	34.57564	-117.263
210	Size A (< 1 m)	0.82	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_210	Project Site	Yes	34.57559	-117.263
211	Size A (< 1 m)	0.46	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_211	Project Site	Yes	34.57571	-117.263
212	Size B (> 1 m and < 5m)	1.37	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_212	Project Site	Yes	34.57583	-117.263
213	Size B (> 1 m and < 5m)	1.22	Live	Yes	None	Very Poor	No		Direct	IENLA-A_WJT_Tree_213	Project Site	Yes	34.5767	-117.264
214	Size B (> 1 m and < 5m)	1.1	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_214	Project Site	Yes	34.57676	-117.265
215	Size B (> 1 m and < 5m)	3.35	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_215	Project Site	Yes	34.57674	-117.265
216	Size B (> 1 m and < 5m)	1.89	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_216	Project Site	Yes	34.57672	-117.265
217	Size B (> 1 m and < 5m)	1.52	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_217	Project Site	Yes	34.57693	-117.266
218	Size B (> 1 m and < 5m)	2.29	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_218	Project Site	Yes	34.57716	-117.266
219	Size B (> 1 m and < 5m)	1.52	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_219	Project Site	Yes	34.57698	-117.267
220	Size B (> 1 m and < 5m)	1.83	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_220	Project Site	Yes	34.57729	-117.266
221	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_221	Project Site	Yes	34.57658	-117.263
222	Size A (< 1 m)	0.55	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_222	Project Site	Yes	34.5766	-117.263
223	Size A (< 1 m)	0.34	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_223	Project Site	Yes	34.5766	-117.263
224	Size B (> 1 m and < 5m)	1.22	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_224	Project Site	Yes	34.57588	-117.263
225	Size B (> 1 m and < 5m)	1.83	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_225	Project Site	Yes	34.57587	-117.263

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
226	Size B (> 1 m and < 5m)	1.68	Live	No	None	Good	No		None	IENLA-A_WJT_Tree_226	50-ft Buffer	Yes	34.5752	-117.262
227	Size A (< 1 m)	0.3	Live	No	None	Good	No		None	IENLA-A_WJT_Tree_227	50-ft Buffer	Yes	34.5752	-117.262
228	Size A (< 1 m)	0.3	Live	No	None	Good	No		None	IENLA-A_WJT_Tree_228	50-ft Buffer	Yes	34.5752	-117.262
229	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		None	IENLA-A_WJT_Tree_229	50-ft Buffer	Yes	34.57504	-117.262
231	Size B (> 1 m and < 5m)	2.47	Live	Yes	None	Good	No		None	IENLA-A_WJT_Tree_231	50-ft Buffer	Yes	34.57563	-117.262
232	Size A (< 1 m)	0.91	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_232	Project Site	Yes	34.57592	-117.262
233	Size A (< 1 m)	0.76	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_233	Project Site	Yes	34.57655	-117.263
234	Size B (> 1 m and < 5m)	1.16	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_234	Project Site	Yes	34.57679	-117.263
235	Size B (> 1 m and < 5m)	2.8	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_235	Project Site	Yes	34.57709	-117.264
236	Size A (< 1 m)	0.7	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_236	Project Site	Yes	34.57716	-117.264
237	Size B (> 1 m and < 5m)	1.83	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_237	Project Site	Yes	34.57742	-117.266
238	Size A (< 1 m)	0.46	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_238	Project Site	Yes	34.57712	-117.263
239	Size A (< 1 m)	0.73	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_239	Project Site	Yes	34.57673	-117.263
240	Size A (< 1 m)	0.76	Dead	No	None	Dead	No		None	IENLA-A_WJT_Tree_240	50-ft Buffer	Yes	34.57602	-117.262
241	Size B (> 1 m and < 5m)	1.25	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_241	Project Site	Yes	34.57628	-117.262
242	Size B (> 1 m and < 5m)	1.37	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_242	Project Site	Yes	34.5774	-117.263
243	Size B (> 1 m and < 5m)	1.01	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_243	Project Site	Yes	34.57742	-117.263
244	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		None	IENLA-A_WJT_Tree_244	50-ft Buffer	Yes	34.57708	-117.262
245	Size B (> 1 m and < 5m)	2.74	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_245	Project Site	Yes	34.57751	-117.263
246	Size B (> 1 m and < 5m)	4.11	Dead	Yes	None	Dead	No		None	IENLA-A_WJT_Tree_246	50-ft Buffer	Yes	34.57765	-117.262
247	Size B (> 1 m and < 5m)	1.19	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_247	Project Site	Yes	34.57728	-117.269
248	Size B (> 1 m and < 5m)	1.46	Live	No	None	Good	No		None	IENLA-A_WJT_Tree_248	50-ft Buffer	Yes	34.57876	-117.262
251	Size A (< 1 m)	0.73	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_251	Project Site	Yes	34.57882	-117.263
252	Size B (> 1 m and < 5m)	1.49	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_252	Project Site	Yes	34.57861	-117.263
253	Size B (> 1 m and < 5m)	3.2	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_253	Project Site	Yes	34.57884	-117.262
254	Size B (> 1 m and < 5m)	2.44	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_254	Project Site	Yes	34.57838	-117.262
255	Size B (> 1 m and < 5m)	1.37	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_255	Project Site	Yes	34.57823	-117.262
256	Size A (< 1 m)	0.85	Live	No	None	Good	No		None	IENLA-A_WJT_Tree_256	50-ft Buffer	Yes	34.57921	-117.268
257	Size B (> 1 m and < 5m)	2.13	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_257	Project Site	Yes	34.57793	-117.262
258	Size A (< 1 m)	0.61	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_258	Project Site	Yes	34.57789	-117.263
259	Size B (> 1 m and < 5m)	1.07	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_259	Project Site	Yes	34.5776	-117.265
260	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_260	Project Site	Yes	34.57761	-117.265
261	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_261	Project Site	Yes	34.57762	-117.265
262	Size A (< 1 m)	0.91	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_262	Project Site	Yes	34.57759	-117.265
263	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_263	Project Site	Yes	34.57775	-117.265
264	Size B (> 1 m and < 5m)	2.13	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_264	Project Site	Yes	34.57776	-117.266
265	Size A (< 1 m)	0.91	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_265	Project Site	Yes	34.5778	-117.267
266	Size A (< 1 m)	0.61	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_266	Project Site	Yes	34.57786	-117.267
267	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_267	Project Site	Yes	34.57794	-117.268
268	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_268	Project Site	Yes	34.57806	-117.269
269	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_269	Project Site	Yes	34.57793	-117.268
270	Size A (< 1 m)	0.3	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_270	Project Site	Yes	34.57779	-117.268
271	Size B (> 1 m and < 5m)	3.05	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_271	Project Site	Yes	34.57808	-117.266
272	Size B (> 1 m and < 5m)	1.22	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_272	Project Site	Yes	34.57798	-117.266
273	Size A (< 1 m)	0.91	Live	No	None	Good	Yes		Direct	IENLA-A_WJT_Tree_273	Project Site	Yes	34.57801	-117.266
274	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Fair	No		Direct	IENLA-A_WJT_Tree_274	Project Site	Yes	34.57797	-117.264
275	Size A (< 1 m)	0.3	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_275	Project Site	Yes	34.57798	-117.264

Tree No.	Size Class	Height (m)	Mortality	Mature (Branched)	Flower or Fruit	Health	Relocation Potential	Notes	Impact Status	Photograph No.	Project Location	Within 15m of Construction	Latitude	Longitude
276	Size A (< 1 m)	0.91	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_276	Project Site	Yes	34.57797	-117.264
277	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Good	No		Direct	IENLA-A_WJT_Tree_277	Project Site	Yes	34.57821	-117.265
278	Size B (> 1 m and < 5m)	1.83	Dead	Yes	None	Dead	No		Direct	IENLA-A_WJT_Tree_278	Project Site	Yes	34.5784	-117.267
279	Size A (< 1 m)	0.61	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_279	Project Site	Yes	34.57858	-117.268
280	Size B (> 1 m and < 5m)	1.52	Dead	No	None	Dead	No		Direct	IENLA-A_WJT_Tree_280	Project Site	Yes	34.57858	-117.267
281	Size B (> 1 m and < 5m)	3.96	Live	Yes	None	Poor	No		Direct	IENLA-A_WJT_Tree_281	Project Site	Yes	34.57833	-117.265
282	Size B (> 1 m and < 5m)	2.44	Live	No	None	Fair	No		Direct	IENLA-A_WJT_Tree_282	Project Site	Yes	34.57897	-117.267
283	Size A (< 1 m)	0.61	Live	No	None	Good	No		Direct	IENLA-A_WJT_Tree_283	Project Site	Yes	34.57877	-117.267
AV143_104	Size B (> 1 m and < 5m)	1.68	Dead	Yes	None	Dead	No		Direct	AV143_WJT_Tree_104	Project Site	Yes	34.57866	-117.269
AV143_105	Size A (< 1 m)	0.61	Live	No	None	Good	No		Direct	AV143_WJT_Tree_105	Project Site	Yes	34.57853	-117.269
AV143_106	Size B (> 1 m and < 5m)	4.88	Dead	Yes	None	Dead	No		Direct	AV143_WJT_Tree_106	Project Site	Yes	34.57842	-117.269
AV143_107	Size C (> 5m)	5.03	Dead	Yes	None	Dead	No		Direct	AV143_WJT_Tree_107	Project Site	Yes	34.57834	-117.269
AV143_108	Size C (> 5m)	5.49	Dead	Yes	None	Dead	No		Direct	AV143_WJT_Tree_108	Project Site	Yes	34.57541	-117.273
AV143_109	Size B (> 1 m and < 5m)	1.52	Dead	No	None	Dead	No		Direct	AV143_WJT_Tree_109	Project Site	Yes	34.57542	-117.272
AV143_110	Size B (> 1 m and < 5m)	3.66	Dead	Yes	None	Dead	No		Direct	AV143_WJT_Tree_110	Project Site	Yes	34.57296	-117.275
AV143_111	Size B (> 1 m and < 5m)	1.98	Live	No	None	Good	Yes		Direct	AV143_WJT_Tree_111	Project Site	Yes	34.57352	-117.274
AV143_112	Size B (> 1 m and < 5m)	3.35	Live	No	None	Good	Yes		Direct	AV143_WJT_Tree_112	Project Site	Yes	34.57427	-117.273
AV143_113	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		Direct	AV143_WJT_Tree_113	Project Site	Yes	34.57434	-117.274
AV143_114	Size B (> 1 m and < 5m)	2.44	Live	Yes	None	Good	No		Direct	AV143_WJT_Tree_114	Project Site	Yes	34.57209	-117.275
AV143_115	Size A (< 1 m)	0.61	Live	No	None	Good	No		Direct	AV143_WJT_Tree_115	Project Site	Yes	34.57194	-117.272
AV143_116	Size B (> 1 m and < 5m)	4.27	Live	Yes	None	Good	No		Direct	AV143_WJT_Tree_116	Project Site	Yes	34.57212	-117.272
AV143_117	Size B (> 1 m and < 5m)	1.37	Dead	Yes	None	Dead	No		Direct	AV143_WJT_Tree_117	Project Site	Yes	34.57214	-117.273
AV143_118	Size B (> 1 m and < 5m)	3.05	Live	Yes	None	Good	Yes		Direct	AV143_WJT_Tree_118	Project Site	Yes	34.57198	-117.271
AV143_119	Size B (> 1 m and < 5m)	1.52	Dead	Yes	None	Dead	No		None	AV143_WJT_Tree_119	50-ft Buffer	Yes	34.57167	-117.267
AV143_120	Size B (> 1 m and < 5m)	1.37	Live	No	None	Good	No		None	AV143_WJT_Tree_120	50-ft Buffer	Yes	34.57162	-117.27
AV143_123	Size B (> 1 m and < 5m)	1.52	Dead	Yes	None	Dead	No		None	AV143_WJT_Tree_123	50-ft Buffer	Yes	34.57167	-117.274
AV143_125	Size B (> 1 m and < 5m)	1.22	Dead	No	None	Dead	No		None	AV143_WJT_Tree_125	50-ft Buffer	Yes	34.57171	-117.274

Appendix C

Individual Joshua Tree Photographs

IENLA-A_WJT_Tree_2

IENLA-A_WJT_Tree_3

IENLA-A_WJT_Tree_4

IENLA-A_WJT_Tree_5

IENLA-A_WJT_Tree_6

IENLA-A_WJT_Tree_7

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IENLA-A_WJT_Tree_11

IENLA-A_WJT_Tree_12

IENLA-A_WJT_Tree_13

IENLA-A_WJT_Tree_14

IENLA-A_WJT_Tree_15

IENLA-A_WJT_Tree_16

IENLA-A_WJT_Tree_17

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IENLA-A_WJT_Tree_30

IENLA-A_WJT_Tree_31

IENLA-A_WJT_Tree_32

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IENLA-A_WJT_Tree_40

IENLA-A_WJT_Tree_41

IENLA-A_WJT_Tree_42

IENLA-A_WJT_Tree_43

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IENLA-A_WJT_Tree_45

IENLA-A_WJT_Tree_46

IENLA-A_WJT_Tree_47

IENLA-A_WJT_Tree_48

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IENLA-A_WJT_Tree_61

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IENLA-A_WJT_Tree_76

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IENLA-A_WJT_Tree_80

IENLA-A_WJT_Tree_81

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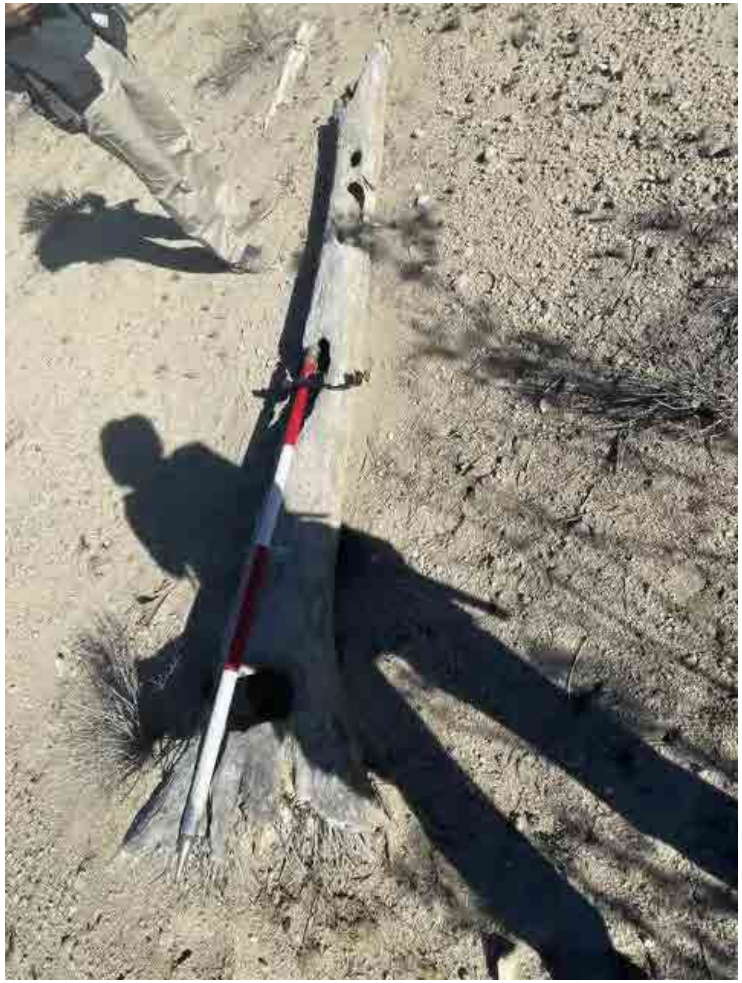
IENLA-A_WJT_Tree_85



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IENLA-A_WJT_Tree_113

IENLA-A_WJT_Tree_114

IENLA-A_WJT_Tree_115

IENLA-A_WJT_Tree_116

IENLA-A_WJT_Tree_117

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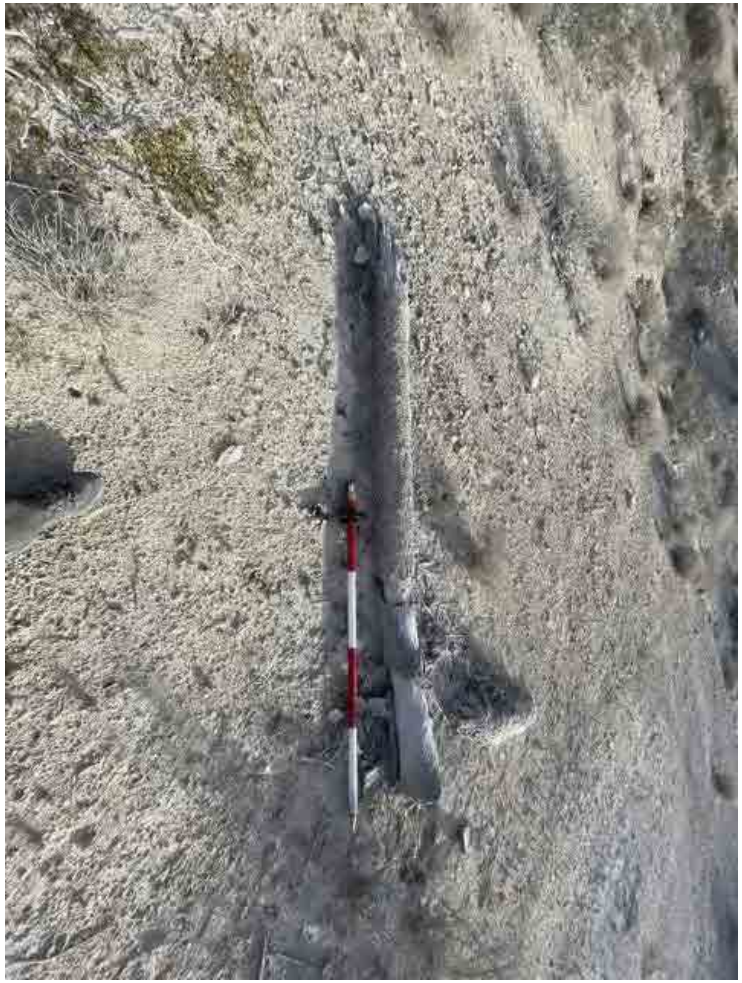

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IENLA-A_WJT_Tree_254

IENLA-A_WJT_Tree_255

IENLA-A_WJT_Tree_256

IENLA-A_WJT_Tree_257

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IENLA-A_WJT_Tree_259

IENLA-A_WJT_Tree_260

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IENLA-A_WJT_Tree_265

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IENLA-A_WJT_Tree_267

IENLA-A_WJT_Tree_268

IENLA-A_WJT_Tree_269

IENLA-A_WJT_Tree_270

IENLA-A_WJT_Tree_271

IENLA-A_WJT_Tree_272

IENLA-A_WJT_Tree_273

IENLA-A_WJT_Tree_274

IENLA-A_WJT_Tree_275

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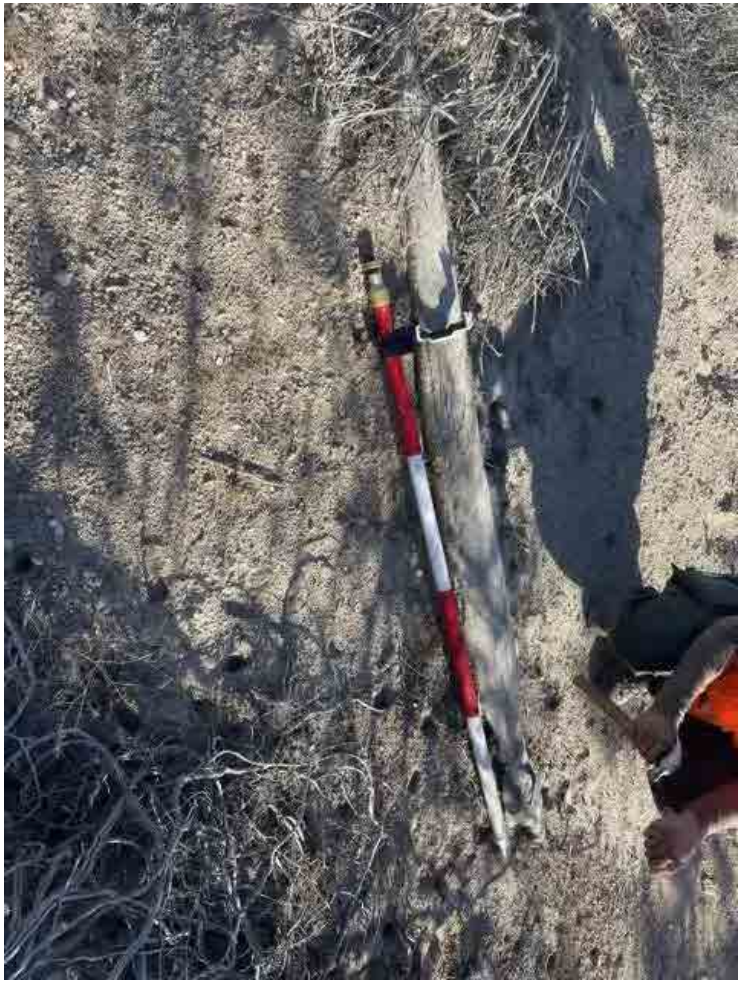

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IENLA-A_WJT_Tree_283

AV143_WJT_Tree_104

AV143_WJT_Tree_105

AV143_WJT_Tree_106

AV143_WJT_Tree_107

AV143_WJT_Tree_108

AV143_WJT_Tree_109

AV143_WJT_Tree_110

AV143_WJT_Tree_111

AV143_WJT_Tree_112

AV143_WJT_Tree_113

AV143_WJT_Tree_114

AV143_WJT_Tree_115

AV143_WJT_Tree_116

AV143_WJT_Tree_117

AV143_WJT_Tree_118

AV143_WJT_Tree_119

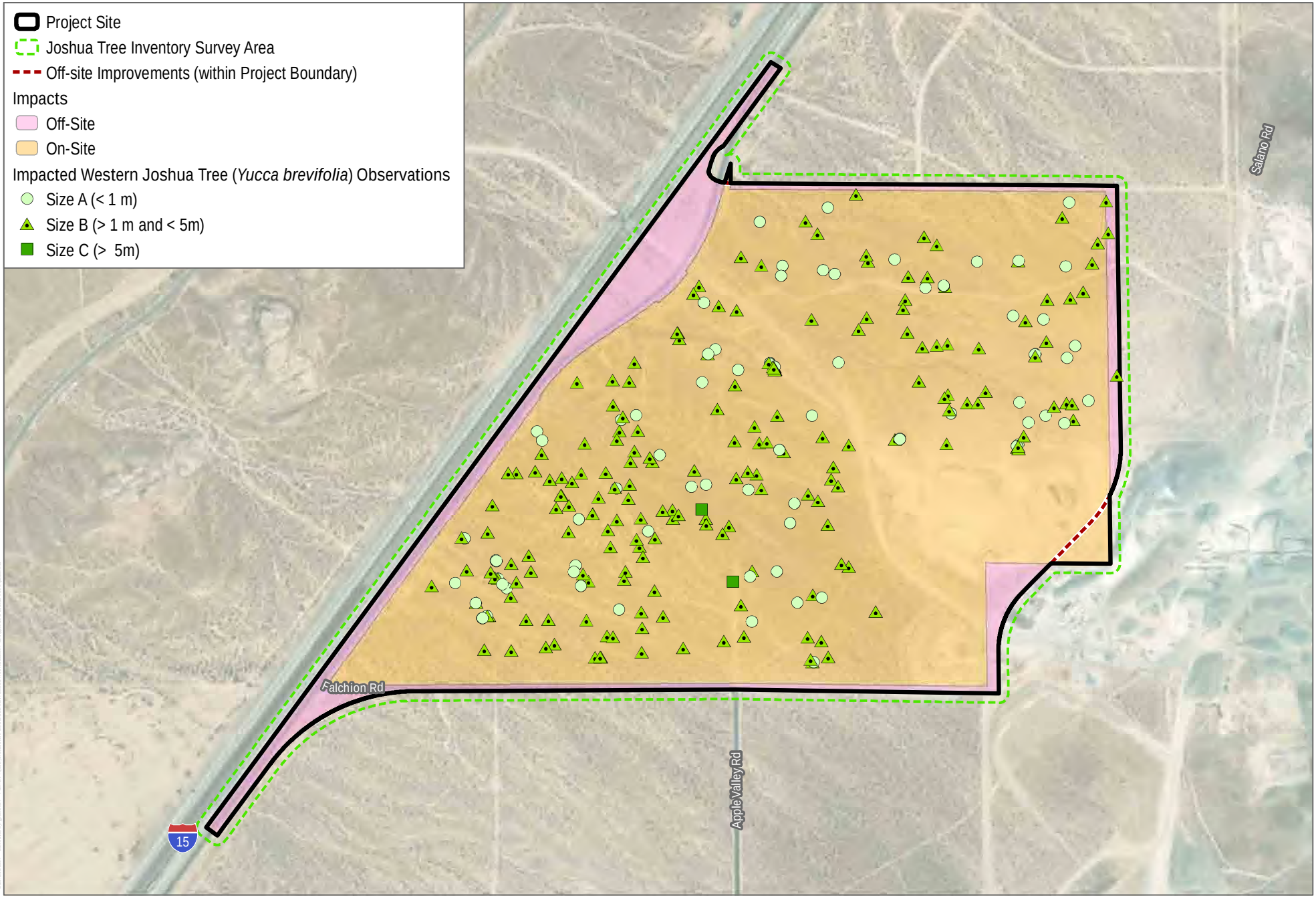
AV143_WJT_Tree_120

AV143_WJT_Tree_123

AV143_WJT_Tree_125

IENLA-A_WJT_Tree_1

Appendix D
Joshua Tree Impacts



SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

0 300 600 Feet

APPENDIX D

Joshua Tree Impacts

Inland Empire North Logistics Center Apple Valley Project

Appendix D

Mohave Ground Squirrel Protocol Survey Report

August 11, 2023

Anna Cassady
Dudek
605 Third Street
Encinitas, CA 92024
Via email: acassady@dudek.com

Subject: Results of Mohave Ground Squirrel Protocol Surveys for the Inland Empire North Logistics Center Project, Victorville and Apple Valley, San Bernardino County, California

Dear Ms. Cassady:

The purpose of this report is to document the results of a California Department of Fish and Wildlife (CDFW) protocol survey for Mohave ground squirrel (*Xerospermophilus mohavensis*; MGS) conducted by Dipodomys Ecological Consulting LLC (DEC) for the Inland Empire North Logistics Center Project (project). Presented in this report are a description of the project, project location, the biological setting of the site, MGS natural history, survey methodology, results of trapping efforts for MGS, and conclusions.

Project Description and Location

FGFW IV, LLC proposes to develop a speculative distribution warehouse on a 400-acre parcel. The 400-acre project encompasses portions of the City of Victorville, Town of Apple Valley, and unincorporated areas in San Bernardino County, California. The project is bordered by Falchion Road on the south, Los Padres Road on the north, Solano Road on the east, and undeveloped desert on the west. The project is bisected by Interstate 15 (**Figures 1 and 2**). Surrounding land use includes a cement mine on the southeast corner of the project, a landfill northwest of the project, and a pipe supply commercial development on the northeast portion of the project. Gas and electric transmission infrastructure, and an ore transport railroad are located immediately west of the project. The southern and eastern portions of the site are surrounded by undeveloped desert land. The primary source of disturbance is past and current off-highway vehicle (OHV) activity and traffic associated with the cement mine. The project sites can be found on U.S. Geological Survey (USGS) 7.5-minute Victorville topographic quadrangle map within Section 26, Township 6 North and Range 4 West, as shown in **Figure 1**, Project Location.

Biological Setting

One vegetation community was identified within the project site: creosote bush scrub (CDFW CA Code 33.010.00), with varying levels of disturbance throughout the site. Dominant plants present include creosote bush (*Larrea tridentata*), Nevada jointfir (*Ephedra nevadensis*), white bursage (*Ambrosia dumosa*), Cooper's boxthorn (*Lycium cooperi*), and Mojave indigo bush (*Psorothamnus arborescens*). Additional shrubs present include Joshua tree (*Yucca brevifolia*), Anderson's thornbush (*Lycium andersonii*), bladdersage (*Scutellaria mexicana*), spiny hopsage (*Grayia spinosa*), cheesebush (*Ambrosia salsola*), Cooper's goldenbush (*Ericameria cooperi*), rubber rabbitbrush (*Ericameria nauseosa*), four-

wing saltbush (*Atriplex canescens*), cottonthorn (*Tetradymia stenolepis*), California buckwheat (*Eriogonum fasciculatum*), Great Basin sagebrush (*Artemisia tridentata*), winterfat (*Krascheninnikovia lanata*), desert pepperweed (*Lepidium fremontii*), desert prince's plume (*Stanleya pinnata*), sweetbush (*Bebbia juncea*), Thurber's sandpaper plant (*Petalonyx thurberi*), beavertail (*Opuntia basilaris*), turpentine broom (*Thamnosma montana*), cottontop cactus (*Echinocactus polycephalus*), hedgehog cactus (*Echinocerus* sp.), and silver cholla (*Cylindropuntia echinocarpa*).

Herbaceous plants include fiddleneck (*Amsinckia tessellata*), red-stemmed filaree (*Erodium cicutarium*), desert pincushion (*Chaenactis fremontii*), blue dicks (*Dipterostemon capitatus*), common phacelia (*Phacelia distans*), Fremont phacelia (*Phacelia fremontii*), clavate fruited primrose (*Chylismia claviformis*), desert red-root (*Eremocarya micrantha*), desert trumpet (*Eriogonum inflatum*), Wallace's wooly daisy (*Eriophyllum wallacei*), desert gold poppy (*Eschscholzia glyptosperma*), little gilia (*Gilia minor*), goldfields (*Lasthenia californica*), desert lupine (*Lupinus schockleyi*), wishbone bush (*Mirabilis laevis*), short podded mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), milkvetch (*Astragulus* sp.), white fiesta flower (*Pholistoma membranaceum*), thistle sage (*Salvia carducea*), desert mallow (*Sphaeralcea ambigua*), Mediterranean grass (*Schismus barbatus*), cheatgrass (*Bromus tectorum*), and foxtail brome (*Bromus madritensis*).

Soil consists of Mirage-Joshua complex, Nebona-Cuddeback complex, and Cajon-Arizo complex (WebSoil 2023). The project site is located at an elevation of approximately feet 2,733 above mean sea level (amsl).

Mohave Ground Squirrel Natural History

Mohave ground squirrels are medium-sized (210-230mm, 85-130g), diurnal squirrels. Their dorsal pelage is light gray to cinnamon-brown, while their ventral side is creamy. Unlike round-tailed ground squirrels (*Xerospermophilus tereticaudus*), which occur sympatrically in the southeast portion of their range, MGS have a short, flat tail that is light-colored on its underside, and have brown cheeks instead of white.

MGS inhabit a small geographic area in the western Mojave Desert. This species ranges from Palmdale in the southwest, the Lucerne Valley in the southeast, Olancha in the northwest, and the Avawatz Mountains in the northeast (Gustafson 1993). Although occurrences in the southern portion of their range are rare, occurrences have been documented on the California Natural Diversity Database (CNDDB) as recently as 2011 (Figure 3). Vegetation communities (as classified by the California Native Plant Society) typically associated with MGS include Mojave Creosote Scrub, Shadscale Scrub, Desert Saltbush Scrub, Desert Sink Scrub, and Joshua Tree Woodland. MGS feed primarily on the leaves and seeds of forbs and shrubs. In the northern portion of their range, MGS have been found to feed on spiny hopsage, winterfat and saltbush (*Atriplex* sp.), especially in early spring when forbs are unavailable, during summer when forbs have dried out, and during drought conditions (Leitner and Leitner 1998). Recent studies have also indicated that MGS feed on the following forbs and shrubs: freckled milkvetch (*Astragalus lentiginosus*), Mojave lupine (*Lupinus odoratus*), buckwheat (*Eriogonum* sp.), white mallow (*Eremalche exilis*), fiddleneck, Russian thistle, desert pincushion (*Chaenactis* sp.), Cryptantha (*Cryptantha pterocarya*), Coreopsis (*Leptosyne bigelovii*), Valley lessingia (*Lessingia glandulifera*), desert dandelion (*Malacothrix glabrata*), Phacelia (*Phacelia* sp.), wire lettuce (*Stephanomeria* sp.) Anderson's desert thorn, spiny horsebrush (*Tetradimya spinosa*), and Joshua tree (Leitner and Leitner 2017).

MGS have adapted to live in hot desert environments by limiting their activity aboveground through estivation and hibernation. The timing of emergence from hibernation varies by location: in the northern

portion of their range male MGS emerge mid-March (Leitner and Leitner 1998); however, in the southern portion of their range, MGS may emerge as early as mid-January (Recht 1977). Throughout their active period, MGS store fat in preparation for estivation, which typically occurs between July and September, but may occur as early as April or May during drought conditions (Leitner et al. 1995). MGS reproduction is dependent on fall and winter rains and individuals may forgo breeding entirely if low rainfall (<80mm) results in reduced herbaceous plants (Leitner and Leitner 2017).

Throughout the range of MGS, they may co-occur with antelope ground squirrels (*Ammospermophilus leucurus*), round-tailed ground squirrels (**Table 1**), and California ground squirrels (*Otospermophilus beecheyi*). MGS may be misidentified with round-tailed ground squirrels, but this is unlikely to occur with antelope ground squirrels, because the latter species has white dorsal stripes that makes them resemble a chipmunk more than an MGS. California ground squirrels are also notably larger and are not typically confused with MGS.

MGS are classified as threatened and are protected under the California Endangered Species Act. Primary threats to MGS include limited distribution, low abundance, and habitat loss from by converting suitable habitat to urban, suburban, agricultural, and military land uses (Gustafson 1993, Leitner and Leitner 2017).

TABLE 1
RTGS AND MGS CHARACTERISTICS

	RTGS	MGS
Head and body length (mm)	130-181	128-165
Tail length (mm)	70-112	50-72
Weight (g)	110-200	70-300
Back pelage appearance	Back dull gray brown or pale cinnamon	Back pale pinkish brown finely flecked with white
Tail appearance	Tail long and narrow, round in profile	Tail narrow at base, tufted and somewhat banded near tip, flattened in profile
Tail color	Edge and underside pale brown	Edge and underside of tail white
Social structure	Semi-colonial	Solitary except when breeding

From: Peterson Field Guide-Mammals of North America F. Reid 4th Edition (2006)

Methods

Mohave ground squirrel (MGS) Protocol surveys for the Inland Empire North Logistics Center Project MGS were conducted in accordance with the 2010 CDFW MGS Survey Guidelines and consisted of an initial visual survey followed by live trapping and camera trapping efforts. Details for each survey type are described below.

Visual Survey

An initial review of the California Natural Diversity Database (CNDDB) was conducted prior to the visual assessment to determine the historical recorded occurrences of MGS near the project site (**Figure 3**). The visual survey was conducted by Principal Investigator Karla Flores (MOU and Scientific Collection Permit SC-10572) and Principal Investigator Karl Fairchild (SCP S-182820007-18333-001) on April 7, 2023. The visual survey consisted of driving and walking throughout the project site to identify

suitable habitat for MGS. This included identifying plants known to provide forage material for MGS such as spiny hopsage, winterfat, Cooper's boxthorn, Anderson's desert thorn, and Joshua tree (Leitner 2022). Areas supporting suitable habitat for MGS where these plants are concentrated were recorded on an aerial map. Suitable soil types for burrowing and burrow densities were also noted.

Live Trapping

Live trapping surveys were conducted by Karla Flores and Karl Fairchild and consisted of setting up five live trapping survey grids. Three grids consisted of the standard 10x10 (315m x 315m) grid configuration. The fourth and fifth grids consisted of 100 traps, configured in a 25-trap 5x5 (140mx140m) grid configuration and a 75-trap polygon with 25 traps moved out of the SE corner (**Figure 2**). Permission to modify the CDFW MGS survey protocol was received on March 29, 2023. Grids encompassed representative habitat types. Coordinate locations for the five grids are listed in **Table 2**. Traps in each grid were spaced 35 meters apart and utilized XLK Sherman live-traps (3x3.75x12") with accompanying A-frame cardboard shade covers staked to the ground with metal tent stakes. All traps were baited with 4-way livestock feed and peanut butter powder and were opened within one hour of sunrise and were checked no more than every four hours. All traps were closed within an hour of sunset. Trapping was conducted when temperatures were between 50- and 90-degrees Fahrenheit, and inclement conditions (rain, thunderstorms) were not present. All animals captured were released at their capture location, and the following information recorded for each capture: species, weight, age, sex, and reproductive condition. Live-trapping surveys were conducted for a period of five days in each of the three survey windows established by the MGS survey guidelines (1st: March 15-April 3; 2nd May 1-31;3rd June 15-July 15). Details for each survey period are presented in **Table 3.** MGS Survey and Trapping Forms, including weather details, are presented in **Attachment A** and **Attachment B**.

TABLE 2
UTM COORDINATES FOR CORNERS OF LIVE TRAPPING GRIDS

Grid	Corner	Zone	Easting	Northing	Grid	Corner	Zone	Easting	Northing
1	SW	11	474630	3826915	2b	SE	11	475050	3826400
1	NW	11	474630	3827230	2b	NE	11	475050	3826260
1	SE	11	474945	3826915	3	SW	11	474995	3825640
1	NE	11	474945	3827230	3	NW	11	474995	3825955
2a	SW	11	475150	3826725	3	SE	11	475310	3825640
2a	NW	11	475150	3826865	3	NE	11	475310	3825955
2a	SE	11	475290	3826725	4	SW	11	475615	3826060
2a	NE	11	475290	3826865	4	NW	11	475615	3826375
2b	SW	11	474735	3826085	4	SE	11	475930	3826060
2b	NW	11	474735	3826400	4	NE	11	475930	3826375

*Datum: WGS 1984

TABLE 3
MOHAVE GROUND SQUIRREL SURVEY DATES

Grid	Survey 1	Survey 2	Survey 3
1	April 10-14, 2023	May 2-6, 2023	June 16-20, 2023
2A	April 10-14, 2023	May 2-6, 2023	June 16-20, 2023
2B	April 10-14, 2023	May 2-6, 2023	June 16-20, 2023
3	April 5-9, 2023	May 7-11,2023	June 22-26, 2023
4	April 5-9, 2023	May 7-11, 2023	June 22-26, 2023

Camera Trapping

Camera trapping surveys were used to supplement live-trapping efforts and consisted of setting up twenty camera trapping stations throughout the project site (**Figure 2**). Each camera trap station consisted of a Bushnell Core Low Glow Trail Camera (Model 1199932CB) secured to a 36-inch U-post facing a bait station. The bait station consisted of a feeding tube filled with 4-way livestock feed staked to the ground with a 12-inch railroad spike. Cameras operated 24 hours a day, concurrent with live-trapping surveys, and followed the set-up specifications described in Delaney et al. 2017. Coordinate locations for each camera trap station are listed below in **Table 4**.

Photos from the camera trap stations were downloaded and reviewed by the Principal Investigator after every five-day trapping session. A list of species detected at the camera trap stations is included in **Table 5**.

TABLE 4
COORDINATE LOCATIONS FOR CAMERA TRAP STATIONS

Camera	Zone	Easting	Northing	Camera	Zone	Easting	Northing
1	11	475173	3827136	11	11	474866	3825690
2	11	474622	3827067	12	11	475113	3825701
3	11	474871	3826942	13	11	475239	3825905
4	11	474591	3825866	14	11	475545	3825675
5	11	474744	3826689	15	11	475371	3825915
6	11	474620	3826051	16	11	475381	3826345
7	11	474819	3826284	17	11	475557	3826186
8	11	474940	3826320	18	11	475663	3826297
9	11	475129	3826599	19	11	475908	3826184
10	11	475234	3826831	20	11	475694	3826035

*Datum: WGS 1984

Results

Visual Survey

Based on the habitat data collected during the visual survey, MGS habitat is present onsite. Primary MGS food plants such as spiny hopsage and winterfat are present onsite. Other plants also associated with MGS in microhistology and metabarcoding studies (Leitner 2022) are present onsite, these include: creosote bush, fourwing saltbush, Joshua tree, Cooper's boxthorn, Anderson's thornbush, red-stemmed filaree and

fiddleneck. Visual observations of burrows and burrow complexes showed that soil onsite is suitable for burrowing.

Live Trapping

No MGS were captured during live trapping. Captures consisted of white-tailed antelope ground squirrel, California ground squirrel, desert woodrat (*Neotoma lepida*), yellow-backed spiny lizard (*Sceloporus uniformis*), and Great Basin whiptail (*Aspidoscelis tigris*) and side-blotched lizard. (**Table 5; Figure 4**).

TABLE 5
RESULTS OF MOHAVE GROUND SQUIRREL PROTOCOL SURVEYS

Grid	Common name	Scientific name	Session			Total
			1	2	3	
1	White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	12	11	23	46
1	California ground squirrel	*Otospermophilus beecheyi*	0	0	4	4
1	Great Basin whiptail	*Aspidoscelis tigris*	0	1	0	1
1	Yellow-backed spiny lizard	*Sceloporus uniformis*	0	0	1	1
1	Side-blotched lizard	*Uta stansburiana*	0	1	0	1
2A	White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	1	0	11	12
2A	California ground squirrel	*Otospermophilus beecheyi*	4	0	1	5
2B	White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	14	10	62	86
2B	California ground squirrel	*Otospermophilus beecheyi*	1	3	4	8
2B	Desert woodrat	*Neotoma lepida*	0	2	0	2
2B	Great Basin whiptail	*Aspidoscelis tigris*	4	0	0	4
3	White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	15	16	108	139
3	Great Basin whiptail	*Aspidoscelis tigris*	0	0	1	1
4	White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	13	11	66	90
4	Yellow-backed spiny lizard	*Sceloporus uniformis*	0	1	1	2
					Total	**402**

Camera Trapping

No Mohave ground squirrels were detected in the images collected during the camera trapping surveys. Thirteen species were observed utilizing the camera trap stations: white-tailed antelope ground squirrel, Great Basin whiptail (*Aspidoscelis tigris*), domestic dog (*Canis familiaris*), coyote (*Canis latrans*), spiny pocket mouse (*Chaetodipus* sp.) Merriam's kangaroo rat (*Dipodomys merriami*), Panamint kangaroo rat (*Dipodomys panamintinus*), domestic cat (*Felis domesticus*), black-tailed jackrabbit (*Lepus californicus*), desert woodrat (*Neotoma lepida*), California ground squirrel, silky pocket mouse (*Perognathus* sp.), and desert cottontail (*Sylvilagus audubonii*) (**Table 6**).

TABLE 6
RESULTS OF MOHAVE GROUND SQUIRREL CAMERA TRAPPING

Common Name	Scientific Name	Grid 1	Grid 2A	Grid 2B	Grid 3	Grid 4
White-tailed antelope ground squirrel	*Ammospermophilus leucurus*			X	X	X
Great Basin whiptail	*Aspidoscelis tigris*		X			
Domestic dog	*Canis familiaris*	X		X		
Coyote	*Canis latrans*		X			
Spiny pocket mouse	*Chaetodipus sp.*					
Merriam's kangaroo rat	*Dipodomys merriami*					X
Panamint kangaroo rat	*Dipodomys panamintinus*	X	X	X	X	X
Domestic cat	*Felis domesticus*			X		
Black-tailed jackrabbit	*Lepus californicus*		X	X		
Desert woodrat	*Neotoma lepida*			X		
California ground squirrel	*Otospermophilus beecheyi*	X	X	X	X	X
Silky pocket mouse sp.	*Perognathus sp.*		X	X	X	
Desert cottontail	*Sylvilagus audubonii*			X		

Conclusions

The Inland Empire North Logistics Center Project is located within the southern portion of the MGS range where MGS occurrences are rare, and population densities have historically been low. Additionally, the site is located outside of the MGS core population areas, peripheral population areas and linkage areas described in the 2019 CDFW MGS Conservation Strategy. California Natural Diversity Database (CNDDB) occurrence details for MGS in the vicinity of the project site (**Figure 3**), indicate that MGS are generally extirpated from the general area. The nearest MGS occurrence to the project site was recorded 0.7 miles north from the project site in 1977 in intact habitat. The most recent occurrence recorded in the vicinity of the project was recorded in 2011, 9.3 miles southwest of the project, across the Mojave River.

Although suitable habitat is present within the project, no MGS were captured or detected during the live trapping or camera trapping surveys. Furthermore, the distance from core population areas and significant barriers to dispersal between the project site and documented recent occurrences make it unlikely that colonization from core MGS populations will occur in the near future. Based on the results of this survey, the CDFW survey guidelines indicate that the department will stipulate that no MGS occur on the project site. This stipulation will expire one year from the last day of trapping, June 26, 2023.

I hereby certify that the information in this report is true, and that it conforms to accepted biological standards. Please feel free to contact Karla Flores by phone at (619) 972-4319 or by email at kflores@dipodomysecological.com or Karl Fairchild by phone at (541) 609-1038 or by email at kfairchild@dipodomysecological.com, with any questions regarding this report.

Sincerely,

Karla L. Flores
Principal Investigator

Karl Fairchild
Principal Investigator

Figures and Attachments
Figure 1-Project Location
Figure 2-Survey Area
Figure 3- Historical MGS Occurrences
Figure 4- Results

Attachment A-CDFW Mohave Ground Squirrel Survey and Trapping Form(s)
Attachment B-Weather Details
Attachment C-Species Compendium
Attachment D-Representative Photographs

References

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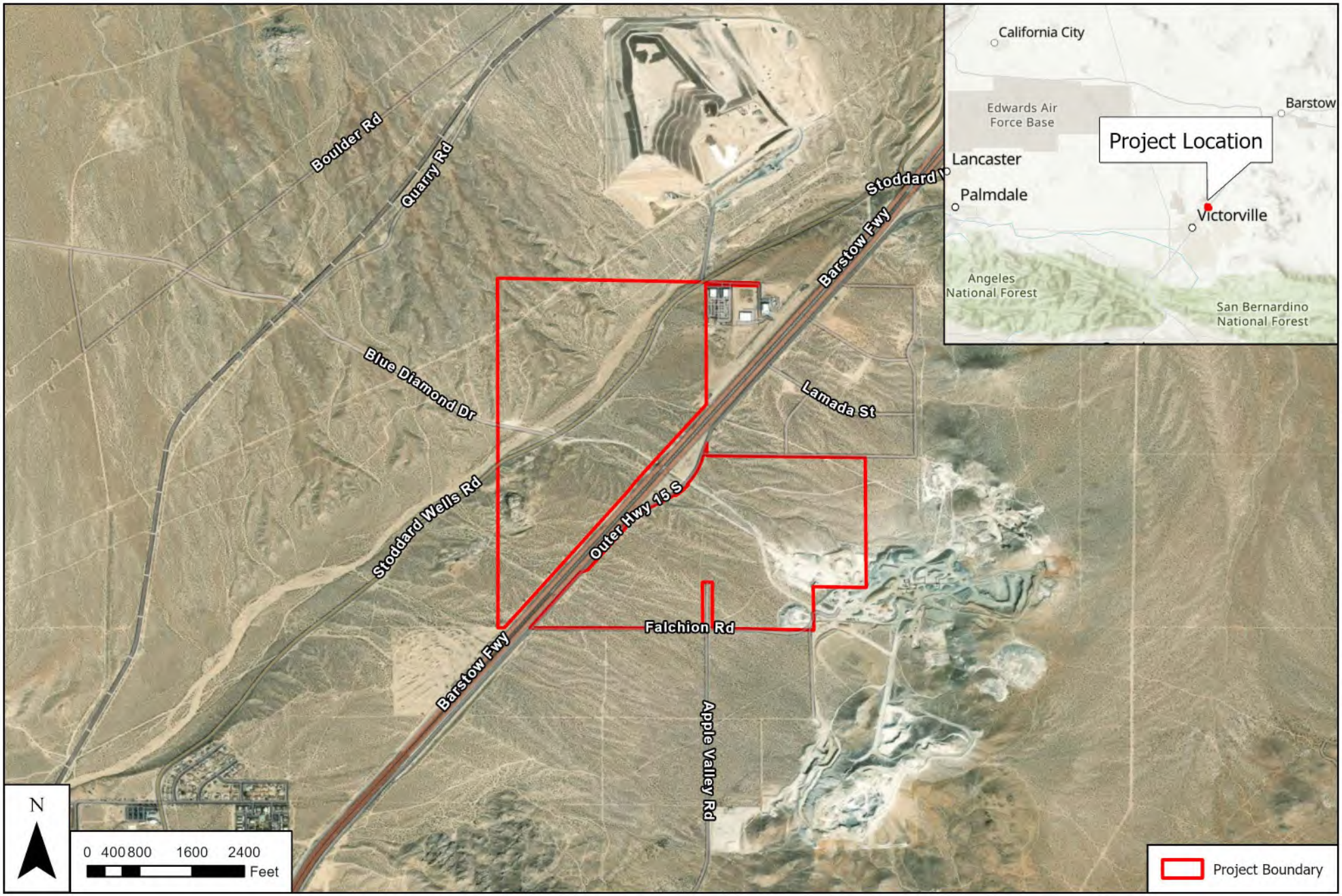


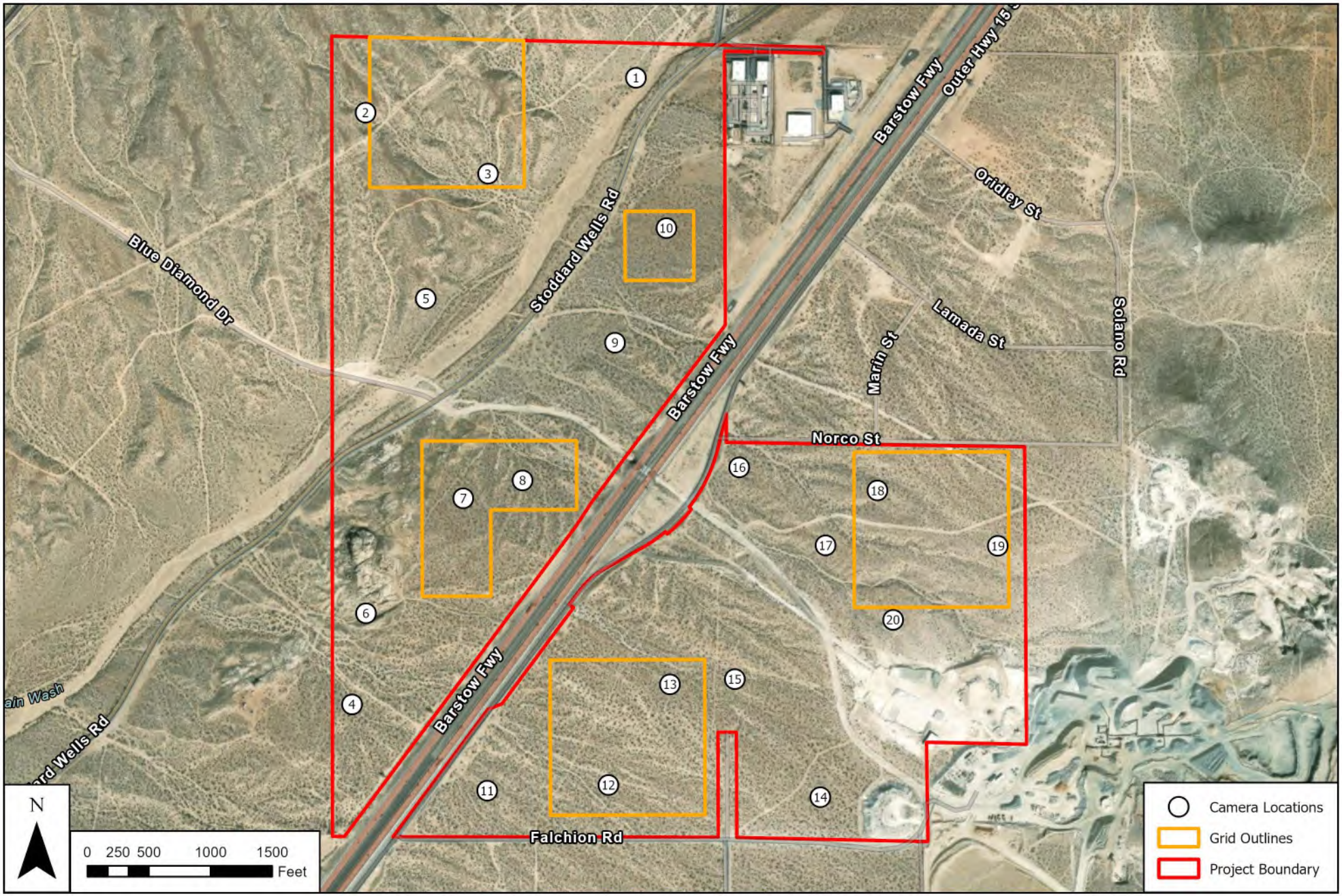
SOURCE: ESRI

Inland Empire North Logistics Center Project

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 1

Project Location



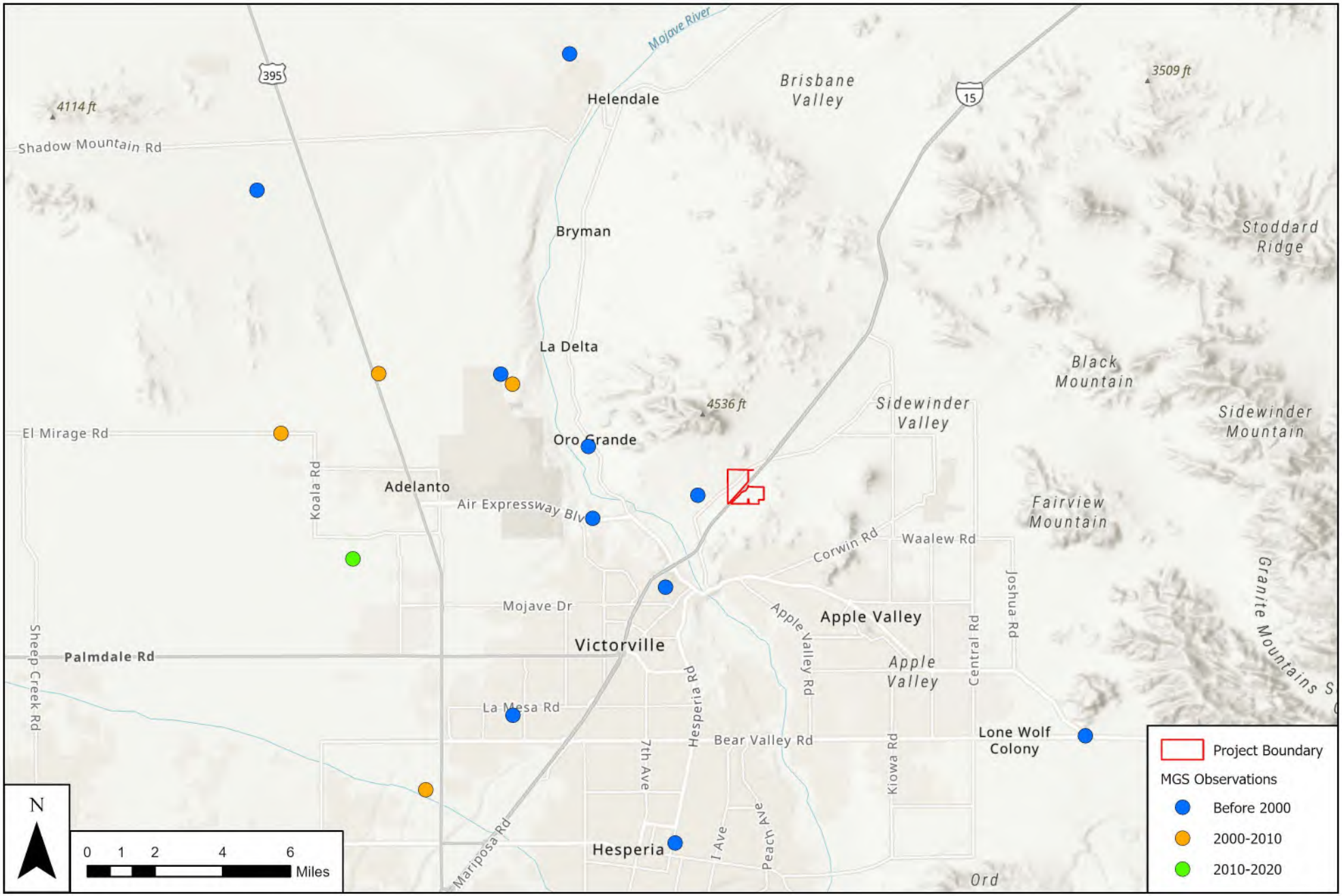
SOURCE: ESRI

Inland Empire North Logistics Center Project

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 2

Survey Area



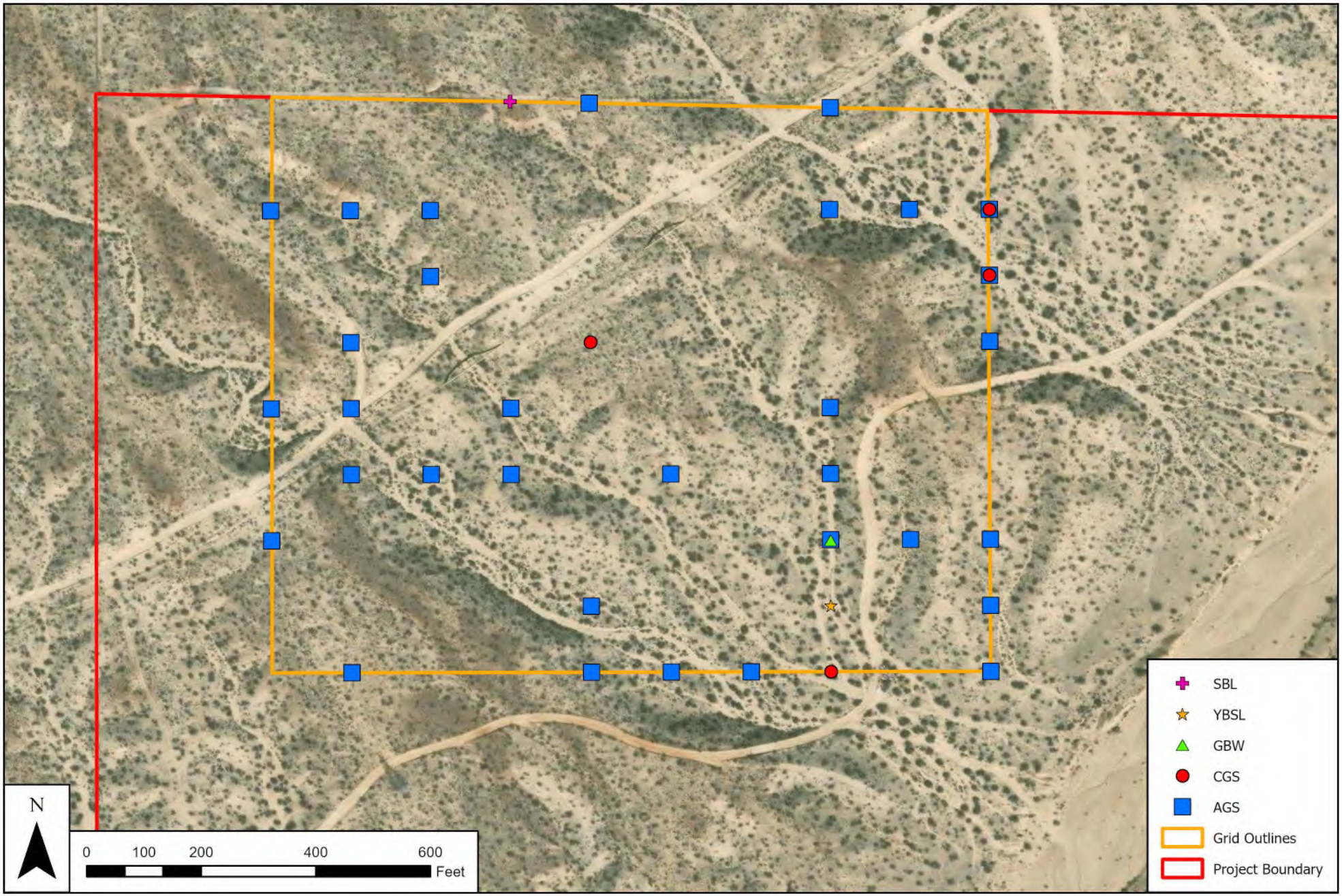
SOURCE: ESRI

Inland Empire North Logistics Center Project

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 3

Historical MGS Occurrences



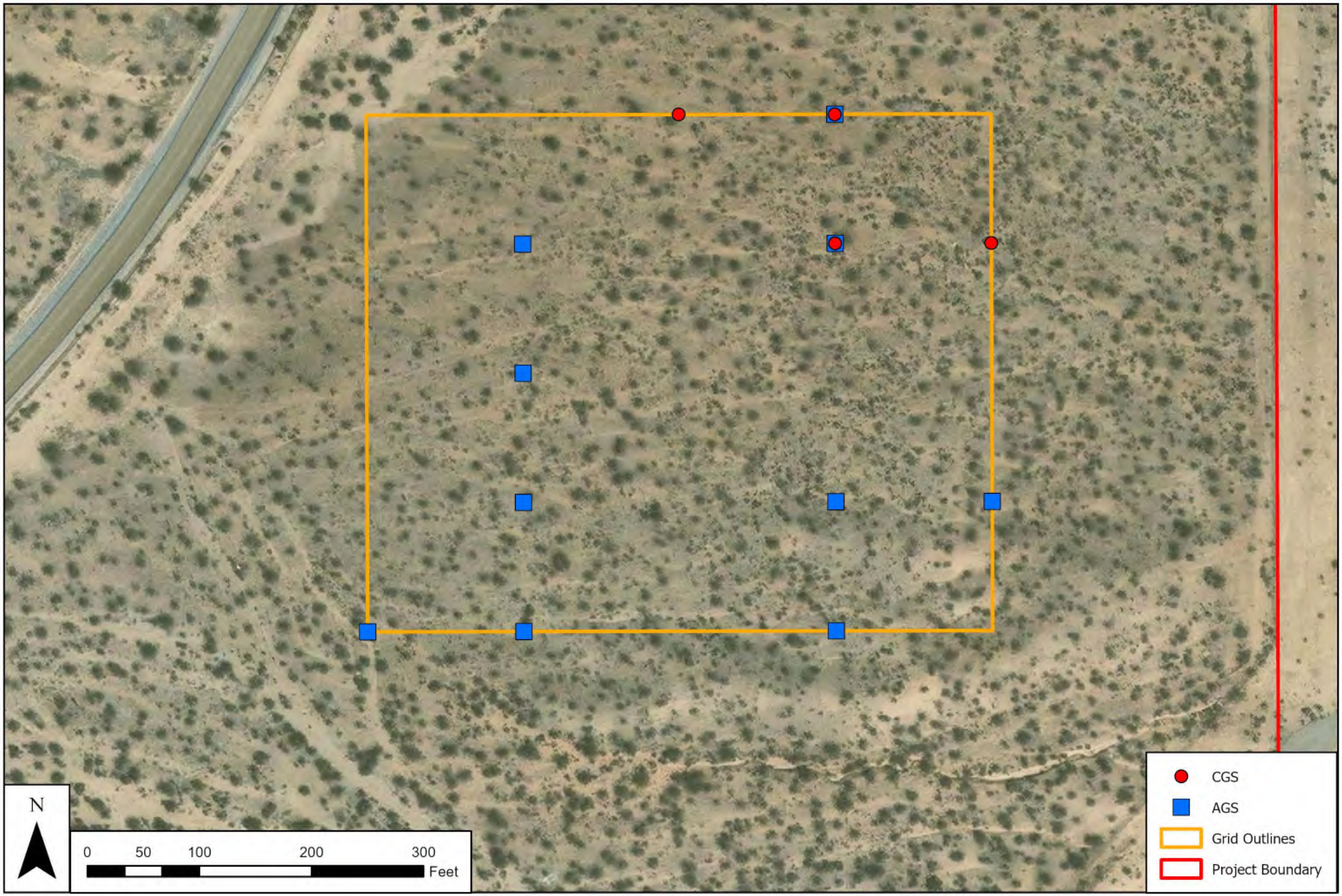
SOURCE: ESRI

Inland Empire North Logistics Center Project

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 4a

Grid 1 Trapping Results



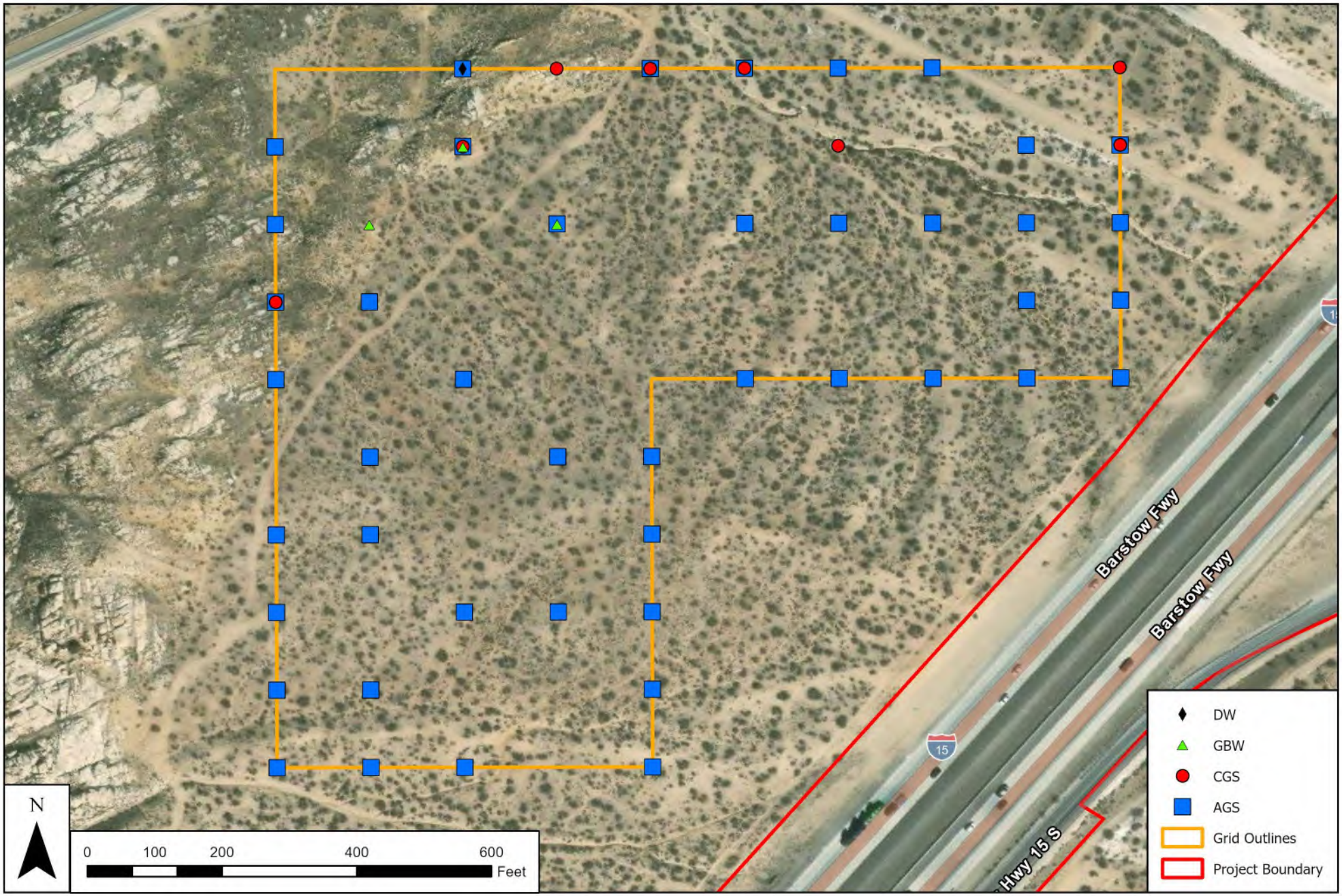
SOURCE: ESRI

Inland Empire North Logistics Center Project

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 4b

Grid 2a Trapping Results



SOURCE: ESRI

Inland Empire North Logistics Center Project

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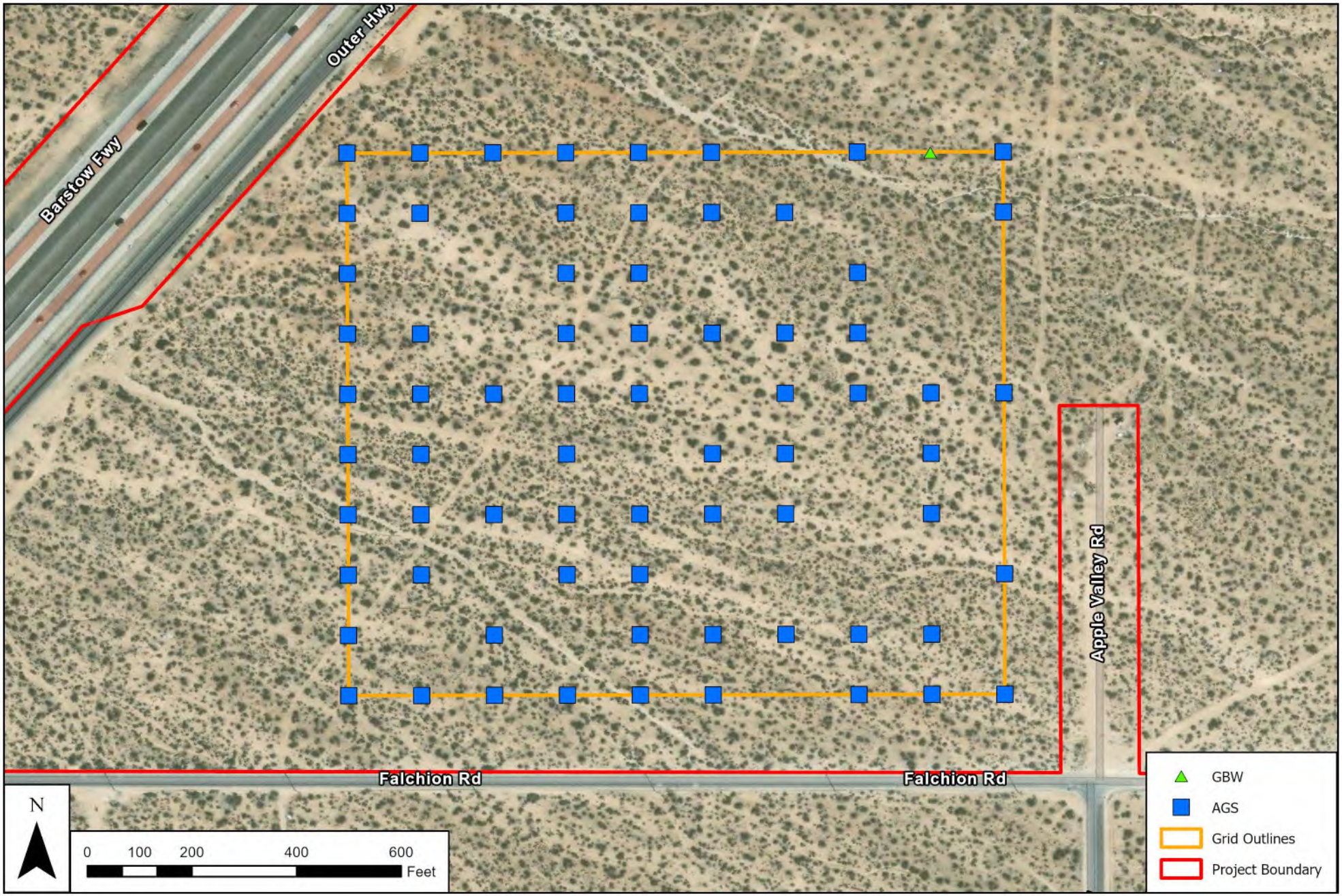
Figure 4c

Grid 2b Trapping Results



SOURCE: ESRI

Inland Empire North Logistics Center Project

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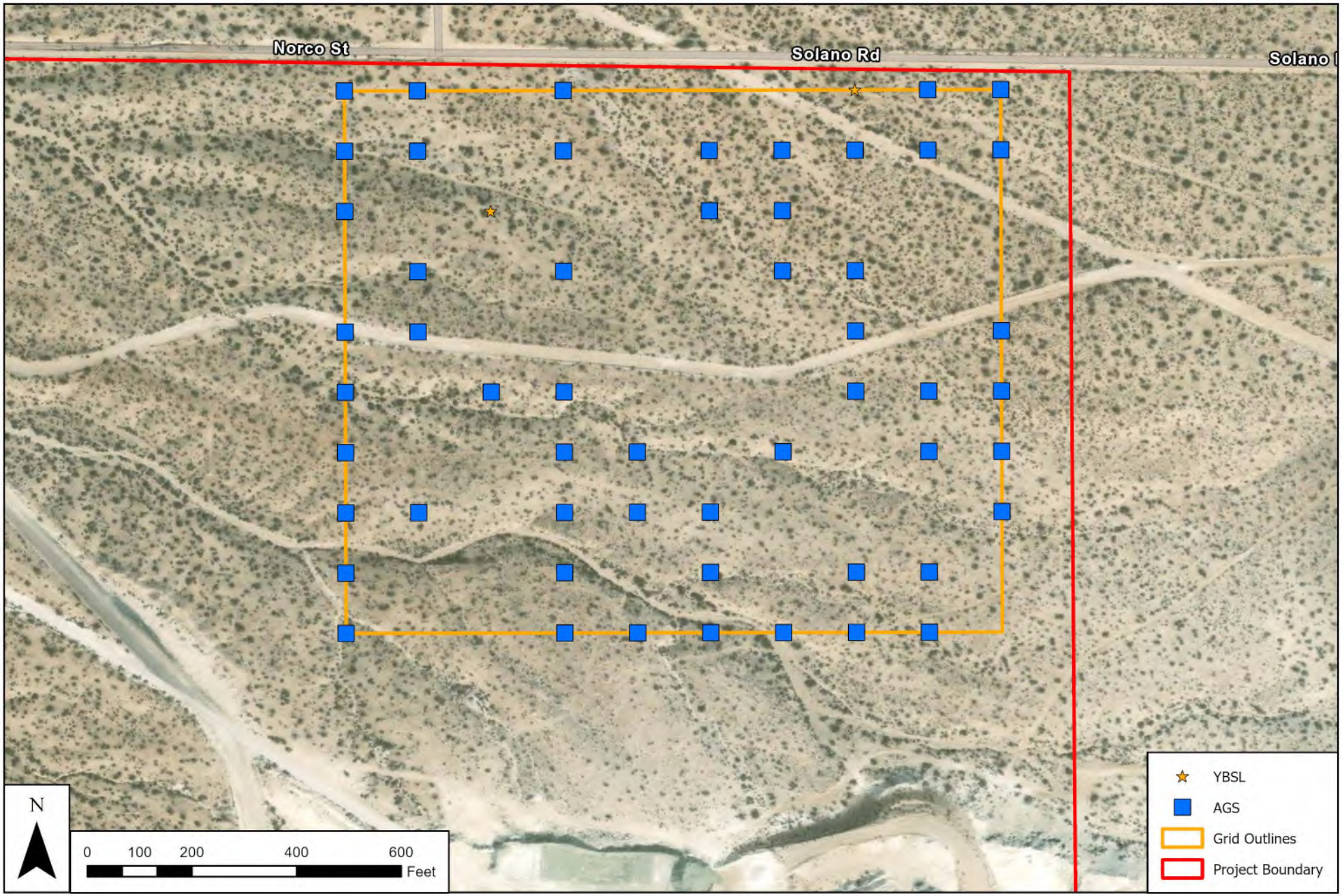
Figure 4d

Grid 3 Trapping Results



SOURCE: ESRI

Inland Empire North Logistics Center Project

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Figure 4e

Grid 4 Trapping Results

Attachment A

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Inland Empire North Logistics Center-Grid 1 Property owner: FGFW IV, LLC

Location: Township 6 North; Range 4 West; Section 26 ; ¼ Section _____

Quad map/series: Victorville UTM coordinates: SW 474630 3826915 NW 474630 3827230 SE 474945 3826915 NE 474945 3827230
GPS coordinates of trapping-grid corners

Acreage of Project Site: 400 acres Acreage of potential MGS habitat on site: 400 acres

Total acreage visually surveyed on project site: 400 Date(s): April 7, 2023
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 400 acres Number of sampling grids: 5

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 10-14, 2023 SECOND May 2-6, 2023 THIRD June 16-20, 2023
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: Creosote bush, winterfat, Nevada joint-fir, cheesebush, Mojave indigo bush
other perennials: Anderson's thornbush, cheesebush, spiny hopsage, white bursage, silver cholla, turpentine broom, bladdersage, beavertail, desert pepperweed
dominant annuals: Red-stemmed filaree, fiddleneck, foxtail brome, desert gold poppy
other annuals: Fremont phacelia, little gilia, desert trumpet, devil's spineflower, common phacelia, browneyes, Wallace's woolly daisy, desert lupine

Land forms (mesa, bajada, wash): bajada

Soils description: Mirage-Joshua complex, Nebona-Cuddeback complex, Cajon-Arizo complex

Elevation: 2740ft Slope: 2-15%

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Inland Empire North Logistics Center-Grid 2a Property owner: FGFW IV, LLC

Location: Township 6 North; Range 4 West; Section 26 ; ¼ Section _____

Quad map/series: Victorville UTM coordinates: SW 475150 3826725 NW 475150 3826865 SE 475290 3826725 NE 474945 3826865
GPS coordinates of trapping-grid corners

Acreage of Project Site: 400 acres Acreage of potential MGS habitat on site: 400 acres

Total acreage visually surveyed on project site: 400 Date(s): April 7, 2023
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 400 acres Number of sampling grids: 5

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 10-14, 2023 SECOND May 2-6, 2023 THIRD June 16-20, 2023
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: Creosote bush, Joshua tree, rubber rabbitbrush, fourwing saltbush
other perennials: Anderson's thornbush, Nevada joint-fir, turpentine broom, cottonthorn, pencil cactus, silver cholla
dominant annuals: Red-stemmed filaree, fiddleneck, thistle sage, foxtail brome
other annuals: Wallace's woolly daisy, goldfields

Land forms (mesa, bajada, wash): slope

Soils description: Mirage-Joshua complex, Nebona-Cuddeback complex, Cajon-Arizo complex

Elevation: 2740ft Slope: 2-15%

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Inland Empire North Logistics Center-Grid 2b Property owner: FGFW IV, LLC

Location: Township 6 North; Range 4 West; Section 26 ; ¼ Section _____

Quad map/series: Victorville UTM coordinates: SW 474735 3826085 NW 474735 3826400 SE 475050 3826915 NE 475050 3826060
GPS coordinates of trapping-grid corners

Acreage of Project Site: 400 acres Acreage of potential MGS habitat on site: 400 acres

Total acreage visually surveyed on project site: 400 Date(s): April 7, 2023
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 400 acres Number of sampling grids: 5

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 10-14, 2023 SECOND May 2-6, 2023 THIRD June 16-20, 2023
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: Creosote bush, Nevada joint-fir, cheesebush, Joshua tree, California buckwheat, Mojave indigo bush, Anderson's thornbush
other perennials: Spiny hopsage, winterfat, Cooper's goldenbush, narrowleaf goldenbush, silver cholla, pencil cactus, turpentine broom, bladdersage, sweetbush
dominant annuals: Red-stemmed filaree, fiddleneck, foxtail brome, desert gold poppy

other annuals: Common phacelia, desert pincushion, red root cryptantha, desert trumpet, milk vetch, hedgehog cactus, Wallace's woolly daisy, desert lupine
blue dicks, fiesta flower, Thurber's sandpaper plant, apricot mallow, four-o-clock, goldfields, little gilia

Land forms (mesa, bajada, wash): desert slope

Soils description: Mirage-Joshua complex, Nebona-Cuddeback complex, Cajon-Arizo complex

Elevation: 2740ft Slope: 2-15%

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Inland Empire North Logistics Center-Grid 3 Property owner: FGFW IV, LLC

Location: Township 6 North; Range 4 West; Section 26 ; ¼ Section _____

Quad map/series: Victorville UTM coordinates: SW 474995 3825640 NW 474995 3825955 SE 475310 3825640 NE 475310 3825955
GPS coordinates of trapping-grid corners

Acreage of Project Site: 400 acres Acreage of potential MGS habitat on site: 400 acres

Total acreage visually surveyed on project site: 400 Date(s): March 31, 2023
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 400 acres Number of sampling grids: 5

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 5-9, 2023 SECOND May 7-11, 2023 THIRD June 22-26, 2023
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: Creosote bush, Nevada joint-fir, Mojave indigo bush
other perennials: Anderson's thornbush, cheesebush, spiny hopsage
dominant annuals: Red-stemmed filaree, fiddleneck, foxtail brome, desert gold poppy
other annuals: browneyes, Wallace's woolly daisy, desert lupine

Land forms (mesa, bajada, wash): bajada

Soils description: Mirage-Joshua complex, Nebona-Cuddeback complex, Cajon-Arizo complex

Elevation: 2740ft Slope: 2-15%

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Inland Empire North Logistics Center-Grid 4 Property owner: FGFW IV, LLC

Location: Township 6 North; Range 4 West; Section 26 ; ¼ Section _____

Quad map/series: Victorville UTM coordinates: SW 475615 3826060 NW 475615 3826375 SE 475930 3826060 NE 475930 3826375
GPS coordinates of trapping-grid corners

Acreage of Project Site: 400 acres Acreage of potential MGS habitat on site: 400 acres

Total acreage visually surveyed on project site: 400 Date(s): March 31, 2023
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 400 acres Number of sampling grids: 5

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 5-9 2023 SECOND May 7-11, 2023 THIRD June 22-26, 2023
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: Creosote bush, winterfat, Nevada joint-fir, cheesebush, Mojave indigo bush
other perennials: Anderson's thornbush, cheesebush, turpentine broom, desert pepperweed, desert prince's plume
dominant annuals: Red-stemmed filaree, fiddleneck, foxtail brome, desert gold poppy
other annuals: desert trumpet, devil's spineflower, browneyes, Wallace's woolly daisy, desert lupine

Land forms (mesa, bajada, wash): bajada

Soils description: Mirage-Joshua complex, Nebona-Cuddeback complex, Cajon-Arizo complex

Elevation: 2740ft Slope: 2-15%

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

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Attachment B

Attachment B: Grid 1 and 2 weather details for California Department of Fish and Wildlife (CDFW) Mohave ground squirrel (*Xerospermophilus mohavensis*) protocol surveys. Details include date, survey (1-3), air temperature (min-max ° Fahrenheit), soil temperature (min-max ° Fahrenheit), wind speed (mph) and percent cloud cover (%).

Grid	Date		Air Temperature (°F)		Soil temperature (°F)		Wind (mph)		Cloud Cover (%)	
			Min	Max	Min	Max	Start	End	Start	End
1&2	4/10/2023	1	69	87	55.2	69.2	1	4	0	0
1&2	4/11/2023	1	65.3	84.2	56.3	75	6.2	9.9	0	40
1&2	4/12/2023	1	65	81.9	60	75.7	7.3	11.7	70	80
1&2	4/13/2023	1	55.8	73.2	56.6	71.4	6.3	13.2	10	5
1&2	4/14/2023	1	54	73.4	50.5	82.1	5.5	5	0	0
1&2	5/2/2023	2	57.4	68.2	59.8	77.5	13.3	15	60	15
1&2	5/3/2023	2	51.4	66.1	53.6	80.4	2.7	18.6	5	40
1&2	5/4/2023	2	50.6	62.3	56.7	70	8.2	12.9	75	70
1&2	5/5/2023	2	61.9	64.7	52.7	81	3.4	11.8	15	10
1&2	5/6/2023	2	56.5	73.2	54.2	74.4	8.3	6.8	1	30
1&2	6/16/2023	3	66.4	88.8	72	77	1.4	2.2	30	5
1&2	6/17/2023	3	68.5	90	72	77.9	1.8	3.3	0	2
1&2	6/18/2023	3	70.6	90	74.9	78.9	2.9	11.1	1	0
1&2	6/19/2023	3	66.3	88.1	71.6	77	4.5	9.3	1	0
1&2	6/20/2023	3	61.1	88	67	74.3	7.8	7.4	2	5

Attachment B: Grid 3 and 4 weather details for California Department of Fish and Wildlife (CDFW) Mohave ground squirrel (*Xerospermophilus mohavensis*) protocol surveys. Details include date, survey (1-3), air temperature (min-max ° Fahrenheit), soil temperature (min-max ° Fahrenheit), wind speed (mph) and percent cloud cover (%).

Grid	Date		Air Temperature (°F)		Soil temperature (°F)		Wind (mph)		Cloud Cover (%)	
			Min	Max	Min	Max	Start	End	Start	End
3&4	4/5/2023	1	60.3	63.6	46.3	60.9	5.7	4.9	1	10
3&4	4/6/2023	1	51.1	65.7	45.2	62.8	3.6	2.6	1	1
3&4	4/7/2023	1	52.7	73.4	48.3	80.4	4.2	5.7	20	20
3&4	4/8/2023	1	61.4	77.8	47.9	70.2	3.7	2.9	5	10
3&4	4/9/2023	1	63.9	83	51.1	74.5	2.6	7.3	0	0
3&4	5/7/2023	2	61.1	76.8	55	82.7	7.8	8.1	2	0
3&4	5/8/2023	2	57.4	77.8	55.9	84.3	6.2	15.9	0	5
3&4	5/9/2023	2	53.8	76.5	55.5	83.5	1.4	14.2	0	30
3&4	5/10/2023	2	52.5	79.2	55.4	82.7	6.4	8.8	0	2
3&4	5/11/2023	2	53.6	84.3	56.6	77.2	1.4	5.7	0	0
3&4	6/22/2023	3	59	77	67.6	80.6	2.7	19.5	10	0
3&4	6/23/2023	3	53.7	89.2	62	83.3	1.1	3.7	2	0
3&4	6/24/2023	3	60.6	87	63.6	79.3	1.6	3.2	5	0
3&4	6/25/2023	3	58	85.7	65.1	72.5	2.3	5	0	0
3&4	6/26/2023	3	61.3	89.1	66.6	73.4	2	6.1	0	0

Attachment C

Common name	Scientific name	Special Status
Plants		
white bursage	*Ambrosia dumosa*	
cheesebush	*Ambrosia salsola*	
fiddleneck	*Amsinckia tessellata*	
milkvetch	*Astragalus* sp.	
fourwing saltbush	*Atriplex canescens*	
sweetbush	*Bebbia juncea*	
foxtail brome	*Bromus madritensis*	
desert pincushion	*Chaenactis fremontii*	
Devil's spineflower	*Chorizanthe rigida*	
clavate fruited primrose	*Chylismia claviformis*	
silver cholla	*Cylindropuntia echinocarpa*	
pencil cholla	*Cylindropuntia ramosissima*	
blue dicks	*Dipterostemon capitatus*	
cottontop cactus	*Echinocactus polycephalus*	
hedgehog cactus	*Echinocereus* sp.	
Nevada jointfir	*Ephedra nevadensis*	
desert red-root	*Eremocarya micrantha*	
Cooper's goldenbush	*Ericameria cooperi*	
rubber rabbitbrush	*Ericameria nauseosa*	
California buckwheat	*Eriogonum fasciculatum*	
desert trumpet	*Eriogonum inflatum*	
Wallace's woolly daisy	*Eriophyllum wallacei*	
red-stemmed filaree	*Erodium cicutarium*	
desert gold poppy	*Eschscholzia glyptosperma*	
little gilia	*Gilia minor*	
spiny hopsage	*Grayia spinosa*	
winterfat	*Krascheninnikovia lanata*	
creosote bush	*Larrea tridentata*	
goldfields	*Lasthenia californica*	
desert pepperweed	*Lepidium fremontii*	
desert lupine	*Lupinus schockleyi*	
Anderson's thornbush	*Lycium andersonii*	
wishbone bush	*Mirabilis laevis*	
beavertail	*Opuntia basilaris*	
sandpaper plant	*Petalonyx thurberi*	
common phacelia	*Phacelia distans*	
Fremont phacelia	*Phacelia fremontii*	
white fiesta flower	*Pholistoma membranaceum*	
Mojave indigo bush	*Psorothamnus arborescens*	
thistle sage	*Salvia carduacea*	
bladdersage	*Scutellaria mexicana*	
desert mallow	*Sphaeralcea ambigua*	
desert prince's plume	*Stanleya pinnata*	
cottonthorn	*Tetradymia stenolepis*	
turpentine broom	*Thamnosma montana*	
Joshua tree	*Yucca brevifolia*	

Common name	Scientific name	Special Status
Birds		
Cooper's hawk	*Accipiter cooperii*	
white-throated swift	*Aeronautes saxatalis*	
black-throated sparrow	*Amphispiza bilineata*	
Bell's sparrow	*Artemisiospiza belli*	
verdin	*Auriparus flaviceps*	
red-tailed hawk	*Buteo jamaicensis*	
Costa's hummingbird	*Calypte costae*	
Wilson's warbler	*Cardellina pusilla*	
lesser nighthawk	*Chordeiles acutipennis*	
northern harrier	*Circus hudsonius*	SSC
western wood-pewee	*Contopus sordidulus*	
ruby-crowned kinglet	*Corthylio calendula*	
common raven	*Corvus corax*	
horned lark	*Eremophila alpestris*	
American kestrel	*Falco sparverius*	
house finch	*Haemorhous mexicanus*	
barn swallow	*Hirundo rustica*	
loggerhead shrike	*Lanius ludovicianus*	SSC
California gull	*Larus californicus*	
ash-throated flycatcher	*Myiarchus cinerascens*	
house sparrow	*Passer domesticus*	
phainopepla	*Phainopepla nitens*	
black-tailed gnatcatcher	*Polyoptila melanura*	
rock wren	*Salpinctes obsoletus*	
Say's phoebe	*Sayornis saya*	
yellow-rumped warbler	*Setophaga coronata*	
western tanager	*Setophaga coronata*	
yellow warbler	*Setophaga petechia*	
Townsend's warbler	*Setophaga townsendi*	
Brewer's sparrow	*Spizella breweri*	
European starling	*Sturnus vulgaris*	
American robin	*Turdus migratorius*	
mourning dove	*Zenaida macroura*	
white-crowned sparrow	*Zonotrichia leucophrys*	
Mammals		
white-tailed antelope ground squirrel	*Ammospermophilus leucurus*	
domestic dog	*Canis familiaris*	
coyote	*Canis latrans*	
Merriam's kangaroo rat	*Dipodomys merriami*	
Panamint kangaroo rat	*Dipodomys panamitinus*	
black-tailed jackrabbit	*Lepus californicus*	
California ground squirrel	*Otospermophilus beeckeyi*	
Reptiles		
Mojave green rattlesnake	*Crotalus scutulatus*	
desert horned lizard	*Phrynosoma platyrhinos*	
common chuckwalla	*Sauromalus ater*	

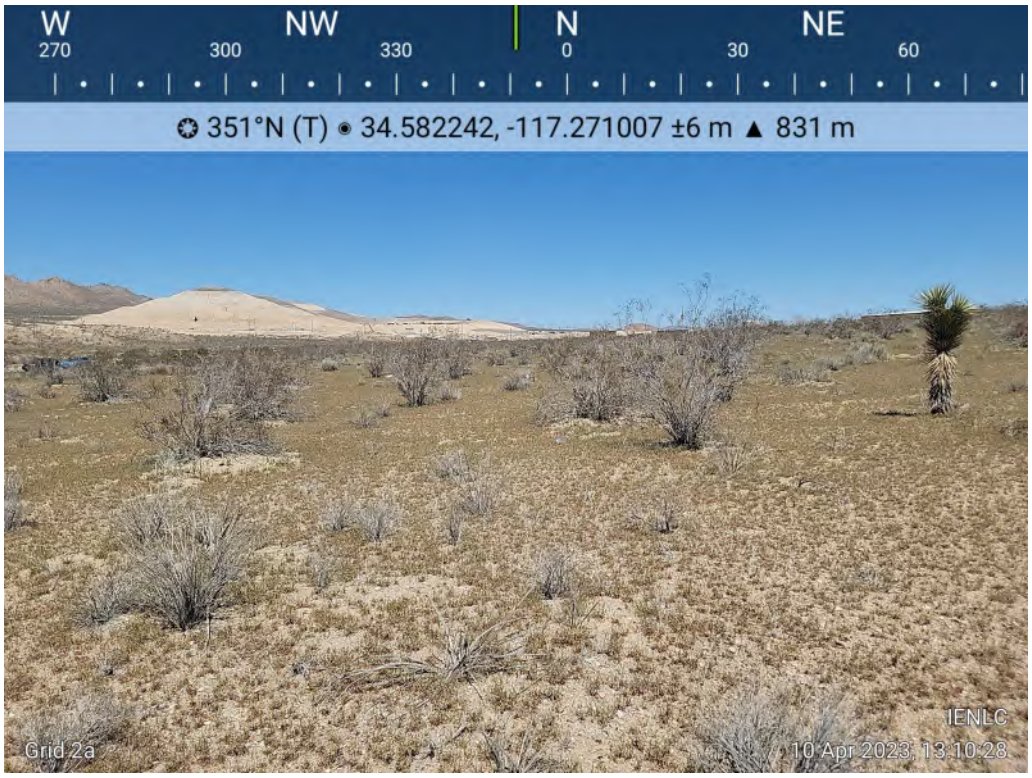
Common name	Scientific name	Special Status
yellow-backed spiny lizard	*Sceloporus uniformis*	
Great basin whiptail	*Aspidoscelis tigris*	
zebra-tailed lizard	*Callisaurus draconoides*	
side-blotched lizard	*Uta stansburiana*	

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

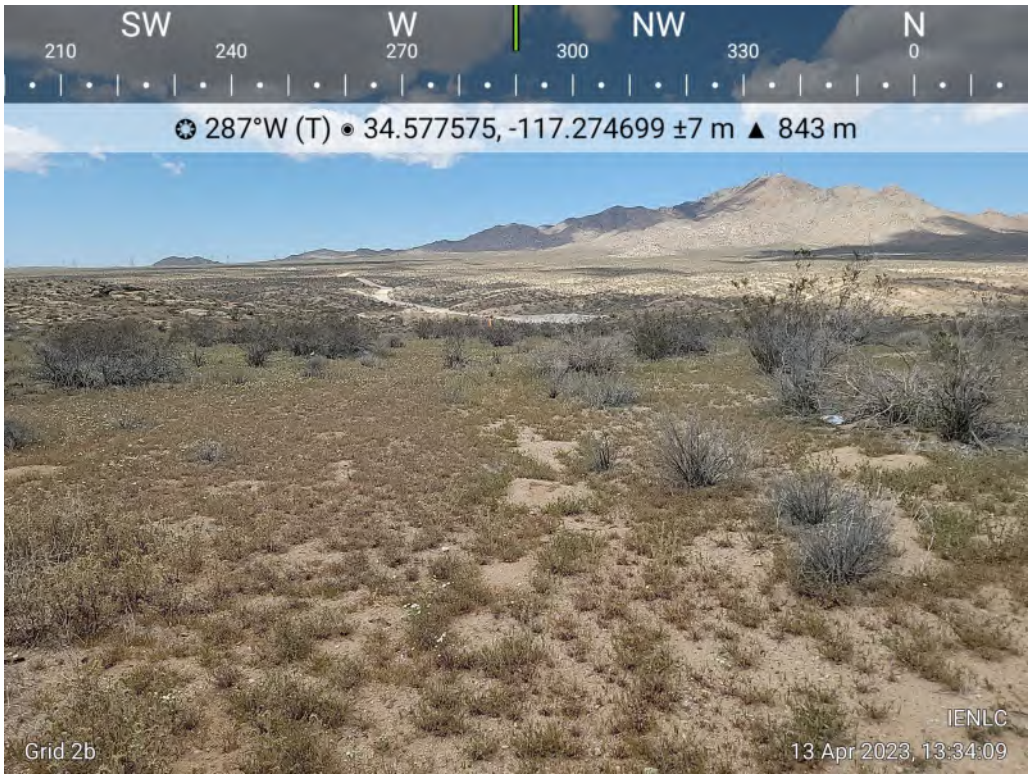
Attachment D

Photograph 1: Representative vegetation on Grid 1, facing northwest.

Photograph 2: Representative vegetation on Grid 1, facing south.



Photograph 3: Representative vegetation on Grid 2A, facing north.



Photograph 4: Representative vegetation on Grid 2B, facing north.

Photograph 5: Representative vegetation on Grid 3, facing west.

Photograph 6: Representative vegetation on Grid 4, facing south.

Photograph 7: Representative camera trap station.

Photograph 8: Representative live trap station.

Photograph 9: White-tailed antelope ground squirrel (*Ammospermophilus leucurus*) captured.

Photograph 10: California ground squirrel (*Otospermophilus beecheyi*) captured.

Photograph 11: Winterfat (*Krascheninnikovi lanata*), MGS food plant located on project site.

Photograph 12: Mojave green rattlesnake (*Crotalus scutulatus*), MGS food plant located on project site.

Photograph 13: Common chuckwalla (*Sauromalus ater*) on Grid 2.

Photograph 14: Coyote (*Canis latrans*) visiting camera trap station.

May 5, 2023

Anna Cassady
Dudek
605 Third Street
Encinitas, CA 92024
Via email: acassady@duek.com

Subject: Results of a Mohave Ground Squirrel Habitat Assessment for the 7-mile utility alignment for Apple Valley 143 Project, San Bernardino County, California

Dear Anna:

The purpose of this report is to document the results of a Mohave ground squirrel (*Xerospermophilus mohavensis*; MGS) Habitat Assessment conducted by Dipodomys Ecological Consulting LLC (DEC) on the 7-mile utility alignment for the Apple Valley 143 Project (project). Presented in this report are a description of the project, project location, MGS natural history, survey methodology, results of the MGS Habitat Assessment, and conclusions/recommendations.

Project Description and Location

Covington Group, Inc., proposes to develop a speculative industrial distribution warehouse on a 143-acre parcel. In addition to the warehouse footprint, the proposed development will require 7 miles (approximately 111.24 acres) of utility tie-in alignments (off-site improvements). This MGS habitat assessment was conducted to determine the potential for MGS to occur within the culvert installation footprint.

The 7-mile alignment is located within the Town of Apple Valley in San Bernardino County, California. The easternmost extent of the alignment is located along Johnson Road 240 meters west of Navajo Road. The alignment then extends approximately 2 miles west towards the intersection with Stoddard Wells Road, then extends 1.65 miles southwest towards Outer Highway 15, then extends 1.75 miles south along Outer Highway 15 towards Falchion Road, then extends 0.4 miles west along Falchion Road towards Apple Valley Road, then extends 1.5 miles along Apple Valley Road and ends at the intersection of Apple Valley Road and Ohna Road (**Figure 1-2**). The study area, composed of the project alignment and an associated 100-foot buffer, consists of creosote bush-ephedra scrub, disturbed creosote bush scrub, disturbed/developed, ornamentals plantings, and saltbush scrub (**Figure 4**). The primary source of disturbance is past and current off highway vehicle (OHV) activity and roadside litter. The project alignment is located on the U.S. Geological Survey (USGS) 7.5-minute Victorville and Apple Valley North topographic quadrangle map within Sections 16, 17, 18, 19, 20, 21, Township 6 North and Range 3 West, and Sections 23, 24, 26 and 35 Township 6 North and Range 4 West and Section 2 Township 5 North and Range 4 West as shown in **Figure 1**, Project Location.

Mohave Ground Squirrel Natural History

Mohave ground squirrels are medium-sized (210-230mm, 85-130g), diurnal squirrels. Their dorsal pelage is light gray to cinnamon-brown, while their ventral side is creamy. Unlike round-tailed ground squirrels, which occur sympatrically in the southeast portion of their range, MGS have a short, flat tail that is light-colored on its underside, and have brown cheeks instead of white.

MGS inhabit a small geographic area in the western Mojave Desert. This species ranges from Palmdale in the southwest, the Lucerne Valley in the southeast, Olancha in the northwest, and the Avawatz Mountains in the northeast (Gustafson 1993). Although occurrences in the southern portion of their range are rare, occurrences have been documented on the California Natural Diversity Database (CNDDB) as recently as 2011 (Figure 3). Vegetation communities (as classified by the California Native Plant Society) typically associated with MGS include Mojave Creosote Scrub, Shadscale Scrub, Desert Saltbush Scrub, Desert Sink Scrub, and Joshua Tree Woodland. MGS feed primarily on the leaves and seeds of forbs and shrubs. In the northern portion of their range, MGS have been found to feed on spiny hopsage (*Grayia spinosa*), winterfat (*Krascheninnikovia lanata*) and saltbush (*Atriplex* sp.), especially in early spring when forbs are unavailable, during summer when forbs have dried out, and during drought conditions (Leitner and Leitner 1998). Recent studies have also indicated that MGS feed on the following forbs and shrubs: freckled milkvetch (*Astragalus lentiginosus*), Mojave lupine (*Lupinus odoratus*), buckwheat (*Eriogonum* sp.), white mallow (*Eremalche exilis*), fiddleneck (*Amsinckia tessellata*), Russian thistle (*Salsola tragus*), desert pincushion (*Chaenactis* sp.), Cryptantha (*Cryptantha pterocarya*), Coreopsis (*Leptosyne bigelovii*), Valley lessingia (*Lessingia glandulifera*), desert dandelion (*Malacothrix glabrata*), Phacelia (*Phacelia* sp.), wire lettuce (*Stephanomeria* sp.) Anderson's desert thorn (*Lycium andersonii*), spiny horsebrush (*Tetradimya spinosa*), and Joshua tree *(Yucca brevifolia*) (Leitner and Leitner 2017).

MGS have adapted to live in hot desert environments by limiting their activity aboveground through estivation and hibernation. The timing of emergence from hibernation varies by location: in the northern portion of their range male MGS emerge mid-March (Leitner and Leitner 1998); however, in the southern portion of their range, MGS may emerge as early as mid-January (Recht 1977). Throughout their active period, MGS store fat in preparation for estivation, which typically occurs between July and September, but may occur as early as April or May during drought conditions (Leitner et al. 1995). MGS reproduction is dependent on fall and winter rains and individuals may forgo breeding entirely if low rainfall (<80mm) results in reduced herbaceous plants (Leitner and Leitner 2017).

Throughout the range of MGS, they may co-occur with antelope ground squirrels, round-tailed ground squirrels, and California ground squirrels. MGS may be confused with round-tailed ground squirrels, but this is unlikely to occur with antelope ground squirrels, because the latter species has white dorsal stripes that makes them resemble a chipmunk more than an MGS. California ground squirrels are notably larger and are not typically confused with MGS.

MGS are classified as threatened and are protected under the California Endangered Species Act. Primary threats to MGS include limited distribution, low abundance, and habitat loss from by converting suitable habitat to urban, suburban, agricultural, and military land uses (Gustafson 1993, Leitner and Leitner 2017).

Methods

Prior to carrying out the habitat assessment in the field, a 12-quad query of the California Natural Diversity Database (CNDDB) was conducted to determine the locations of historical recorded occurrences of MGS near the project site (**Figure 3**).

The MGS habitat assessment was conducted on April 19, 2023, by permitted biologists Karla Flores (MOU Principal Investigator, Scientific Collection Permit SC-10572) and Karl Fairchild (MOU Principal Investigator, SCP S-182820007-18333-001). The habitat assessment consisted of walking meandering transects throughout a 100-foot buffer along the 7-mile project footprint while recording vegetation communities and individual plants that provide suitable habitat for MGS. The presence of any plant species associated with MGS was also recorded. The presence of burrows within the survey area was also noted as an indication that the soil is friable and suitable for burrowing rodents.

Results

The 12-quad CNDDB query yielded 16 MGS occurrences within the search area. The most recent of these occurrences was recorded in 2011, approximately nine miles west of the survey area. The closest MGS occurrence was documented in 1977, approximately one mile west of the survey area (**Figure 3**).

The field survey results of the MGS habitat assessment showed that there are five vegetation communities present along the 7-mile alignment and 100-foot buffer including: creosote bush-ephedra scrub, disturbed creosote bush scrub, disturbed/developed land, ornamental plantings, and saltbush scrub (**Figure 3, Table 1**). Of these vegetation communities, moderate quality habitat for MGS is present along Falchion Road in creosote bush-ephedra scrub and low-quality habitat is located along disturbed creosote bush scrub.

Creosote bush -ephedra scrub is located almost entirely along Falchion Road and extending slightly south along Apple Valley Road. Shrub species in this vegetation community include creosote bush (*Larrea tridentata*), Nevada joint-fir (*Ephedra nevadensis*), cheesebush (*Ambrosia salsola*), Anderson's thornbush, Mojave indigo bush (*Psorothamnus arborescens*), and winterfat. Forb/annual species present include desert pepperweed (*Lepidium fremontii*), mountain red-root (*Eremocarya lepida*), Fremont phacelia (*Phacelia fremontii*), Jones' blazing star (*Mentzelia jonesii*), yellow California mustard (*Caulanthus flavescens*), Devil's spineflower (*Chorizanthe rigida*), fiddleneck, and Mediterranean grass (*Schismus barbatus*).

Disturbed creosote bush scrub was located along Johnson Road and Apple Valley Road. Shrub species in this vegetation community include creosote bush, interior goldenbush (*Ericameria linearifolia*) and scale broom (*Lepidospartum squamatum*). Forb/annual species present include fiddleneck, red-stemmed filaree (*Erodium cicutarium*), London rocket (*Sisymbrium irio*), short-podded mustard (*Hirschfeldia incana*), and Mediterranean grass.

Developed/disturbed land is primarily unvegetated, but includes small, sparsely distributed patches of London rocket, short-podded mustard, red brome (*Bromus madritensis*), and coyote brush (*Baccharis pilularis*), and occasional, scattered four-wing saltbush (*Atriplex canescens*).

Ornamental plantings included blue palo verde (*Parkinsonia florida*), mesquite (*Prosopis* sp.), and desert willow (*Chilopsis linearis*), and yucca cultivars (*Yucca* sp.).

Saltbush scrub consisted of allscale saltbush (*Atriplex polycarpa*), four-wing saltbush (*Atriplex canescens*), rubber rabbitbrush (*Ericameria nauseosa*), cheesebush, white bursage (*Ambrosia dumosa*), and Mojave indigo bush.

Eight soil types were mapped along the survey area including: Cajon sand (2-9% slope), Cajon-Arizo complex (2-15%slope), Helendale-Bryman loamy sands (2-5% slope), Mirage-Joshua complex (2-5% slopes), Nebona-Cuddeback complex (2-9% slope) and rock outcrop-lithic torriorthents, Sparkhule-rock outcrop complex (15-50% slopes) and trigger Sparkhule rock outcrop association. Elevation within the study area ranged between 2,779 and 2,973 feet above mean sea level.

Weather conditions during the habitat assessment were sunny with temperatures between 59.1° and 72.8°F, wind speeds between 2.3 and 12 mph, and 1% cloud cover. Vertebrate species observed during the habitat assessment included horned lark (*Eremophila alpestris*), common raven (*Corvus corax*) and European starling (*Sturnus vulgaris*).

TABLE 1
VEGETATION COMMUNITIES

Vegetation Community	Acres
Creosote Bush-Ephedra Scrub	4.98
Disturbed Creosote Bush Scrub	27.34
Disturbed/Developed	75.71
Ornamental Plantings	2.14
Saltbush Scrub	1.07
Total	111.24

Conclusions and Recommendations

The 7-mile extension to the Apple Valley 143 project footprint consists largely of disturbed/developed areas and disturbed creosote bush scrub. The latter vegetation community is associated with MGS occurrences (CDFW 2019). Winterfat, a preferred MGS food plant, is present throughout the creosote bush-ephedra scrub vegetation community, albeit at low density. The other preferred food plant, spiny hopsage, was not encountered during the habitat assessment, but has been observed during other surveys in the immediate vicinity. Other plants known to provide forage for MGS are also present: allscale saltbush, creosote bush, Cooper's boxthorn, fiddleneck and red-stemmed filaree (Leitner 2022). The presence of these plants along with friable soils for burrowing suggests that some MGS habitat may be present within the study area but is generally low-quality due to high levels of development, proximity to busy roadways (those within the survey area and the I-15 freeway), OHV activity, and illegal dumping.

Results of the CNDDB query showed that the most recent MGS occurrence was documented in 2011, approximately nine miles west of the survey area (recent aerial photos indicate this site has been developed into a solar farm and is no longer capable of supporting MGS). The closest MGS occurrence was recorded in 1977, one mile west of the project site. Additionally, results published in the 2021 status report for MGS showed that one MGS was recorded visiting a camera trap station in the Victor Valley, west of the Mojave River and north of the Southern California Logistics Airport (Leitner 2021), within one mile of a 2007 occurrence. This suggests that despite low densities of MGS present in the southern

portion of the MGS range, a relict population may persist. All these MGS occurrences, however, are separated from the survey area by the Interstate 15 Freeway, and all but the 1977 occurrence by the Mojave River, two landscape features that may significantly limit dispersal to the east. The closest MGS core population area (the Harper Lake core population) to the survey site is located over 20 miles to the north, and it is separated from the survey site by Highway 58, Interstate 15, and the Mojave River, which may inhibit dispersing individuals. The limited connectivity between established core populations and relict populations, as well as the disturbance in and around the survey area, suggest that MGS occupancy is unlikely despite the presence of low to moderate quality habitat within the study area.

Even though it is unlikely that MGS are present within the project (based on the range of MGS, lack of connectivity to core populations, and low population densities in the southern portion of the MGS range), it should be noted that an MGS Habitat Assessment does not prove or disprove presence of MGS. The presence/absence of MGS is evaluated using established survey protocols. As DEC is currently conducting MGS protocol surveys immediately north of Falchion Road for the unrelated Inland Empire North Logistics Center Project and north of Johnson Road for the Apple Valley 84 Project (with negative results to date for both projects), DEC does not recommend additional protocol surveys for the 7-mile Utility Extension to the Apple Valley 143 Project at this time. However, CDFW has final authority on whether to require additional surveys for project approval.

I hereby certify that the information in this report is true, and that it conforms to accepted biological standards. Please feel free to contact Karla Flores by phone at (619) 972-4319 or by email at kflores@dipodomysecological.com with any questions regarding this report.

Sincerely,

Karla L. Flores
Principal Biologist

Figures and Attachments
Figure 1-Project Location
Figure 2-Survey Area
Figure 3- Historical MGS Occurrences
Figure 4- Vegetation Communities

Attachment A- Representative Photographs

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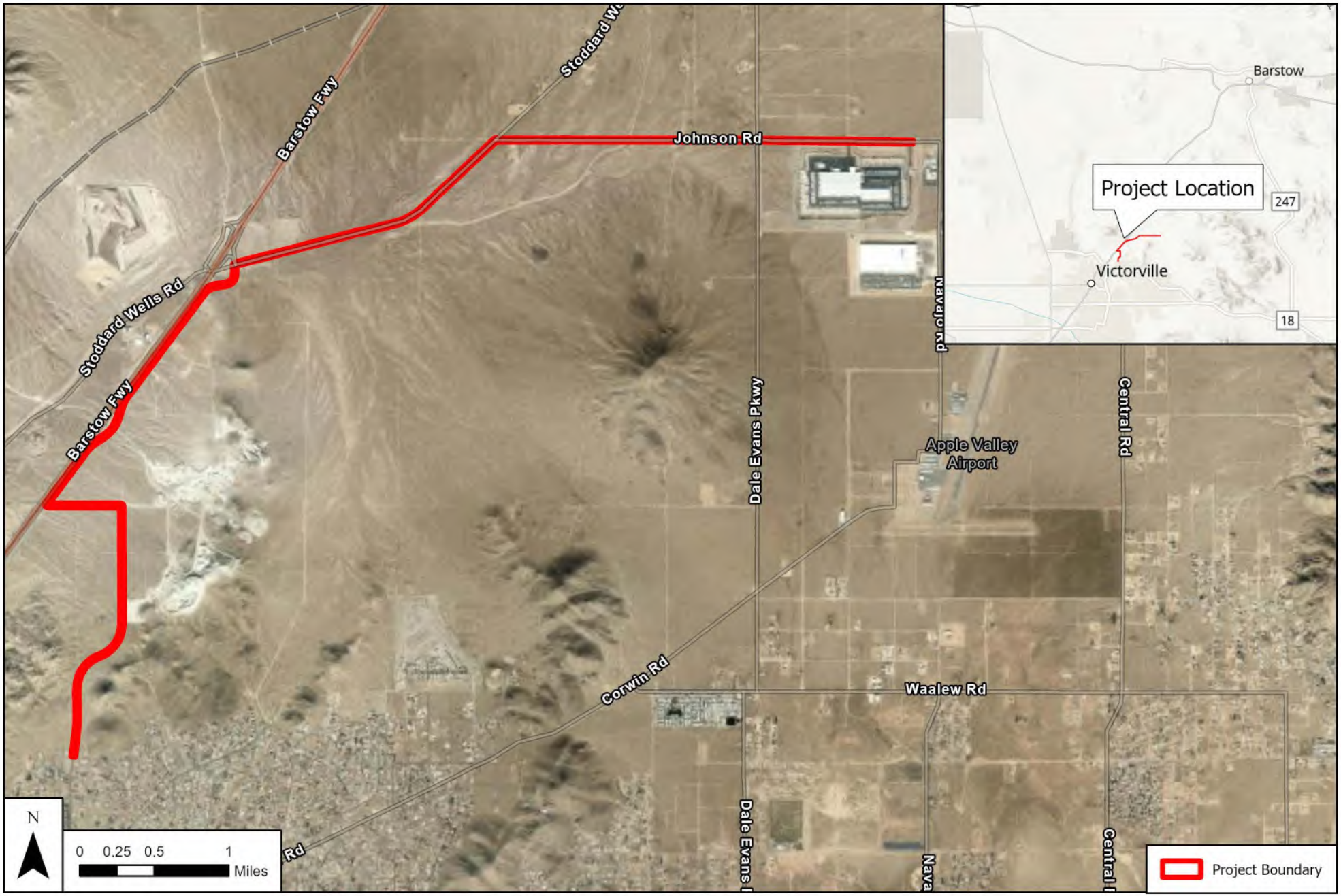


SOURCE: ESRI

Apple Valley 143 Utility Alignment Project

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 1

Project Location

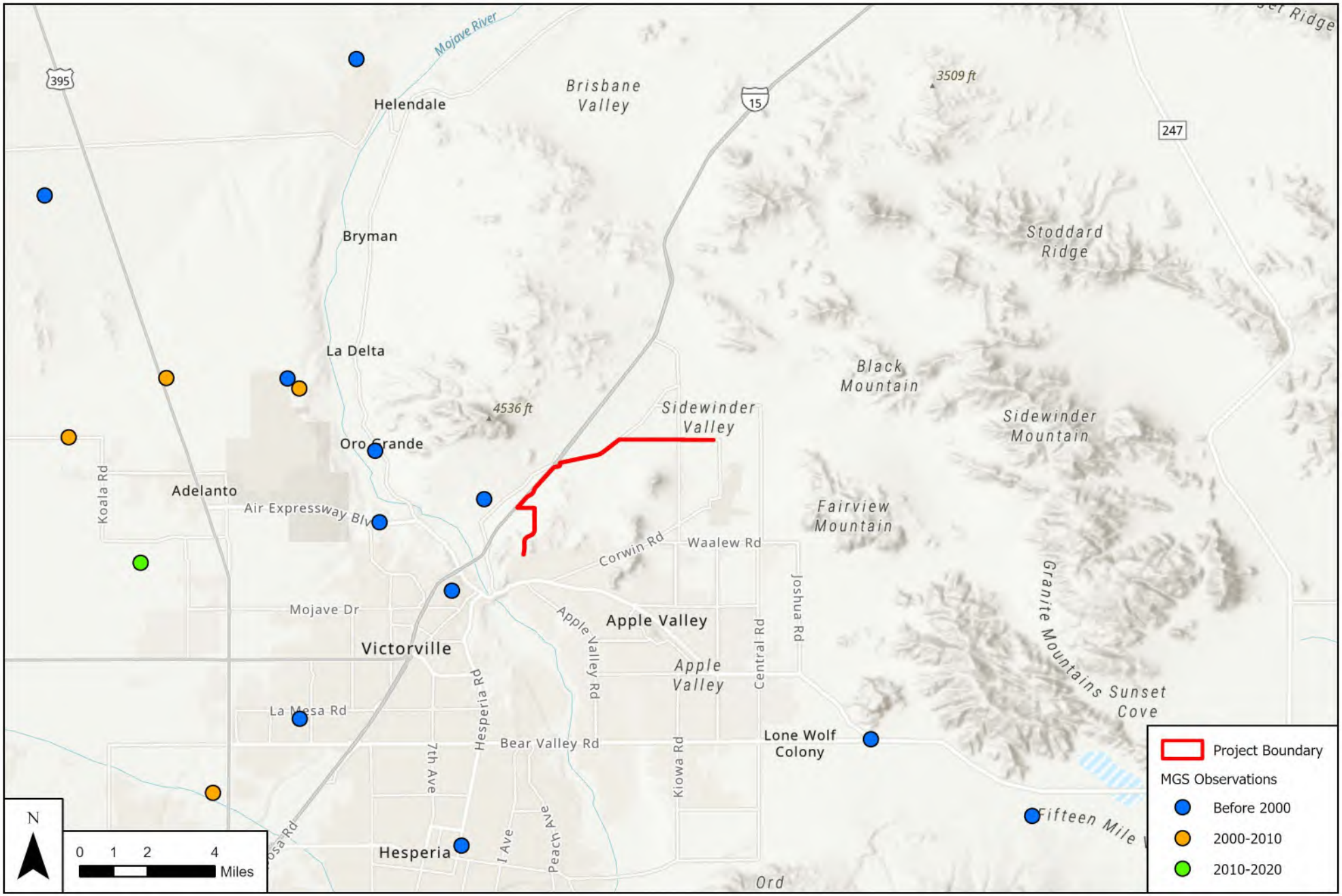
SOURCE: ESRI

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Apple Valley 143 Utility Alignment Project

Figure 2

Survey Area



SOURCE: ESRI

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Apple Valley 143 Utility Alignment Project

Figure 3

Historical MGS Occurrences

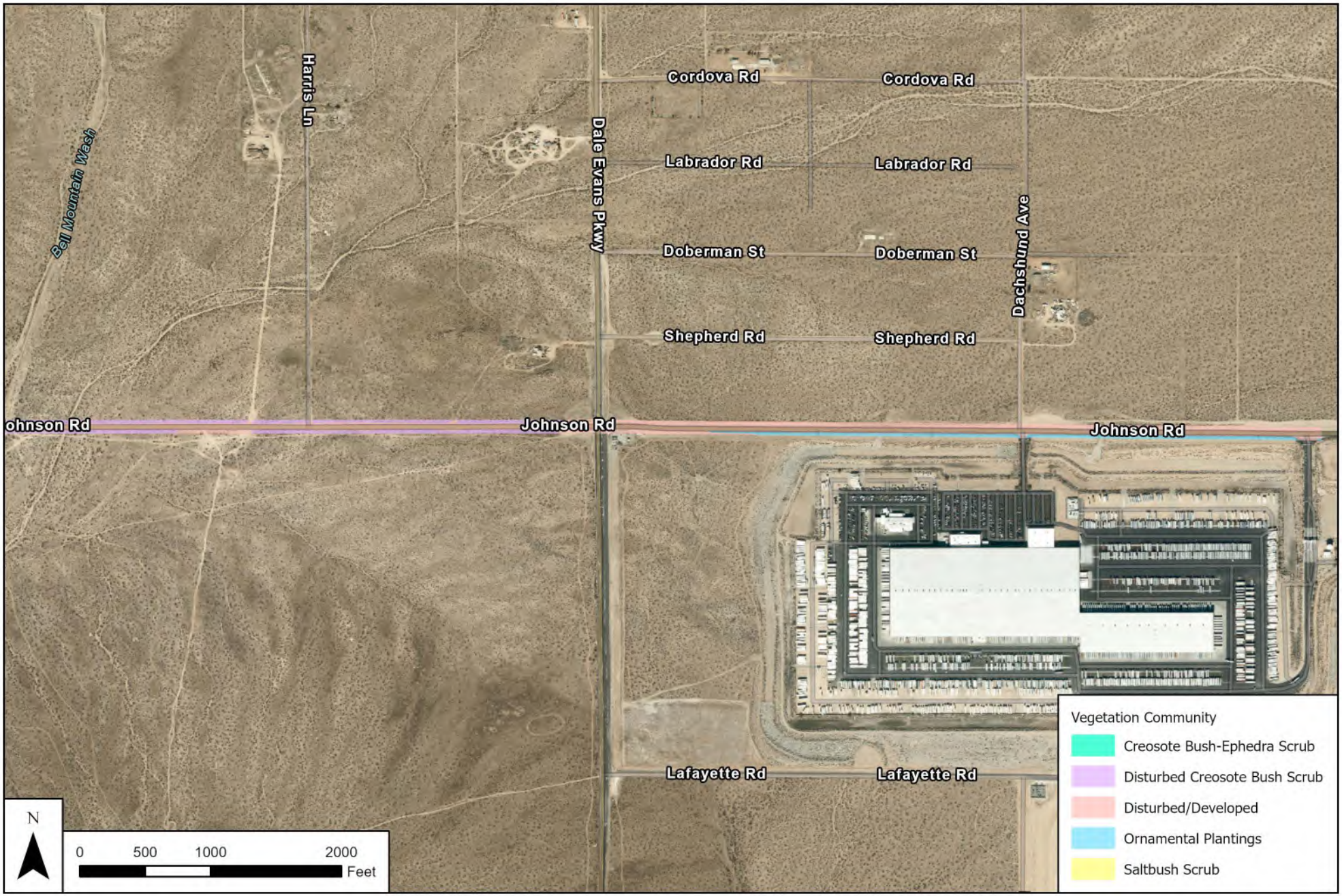

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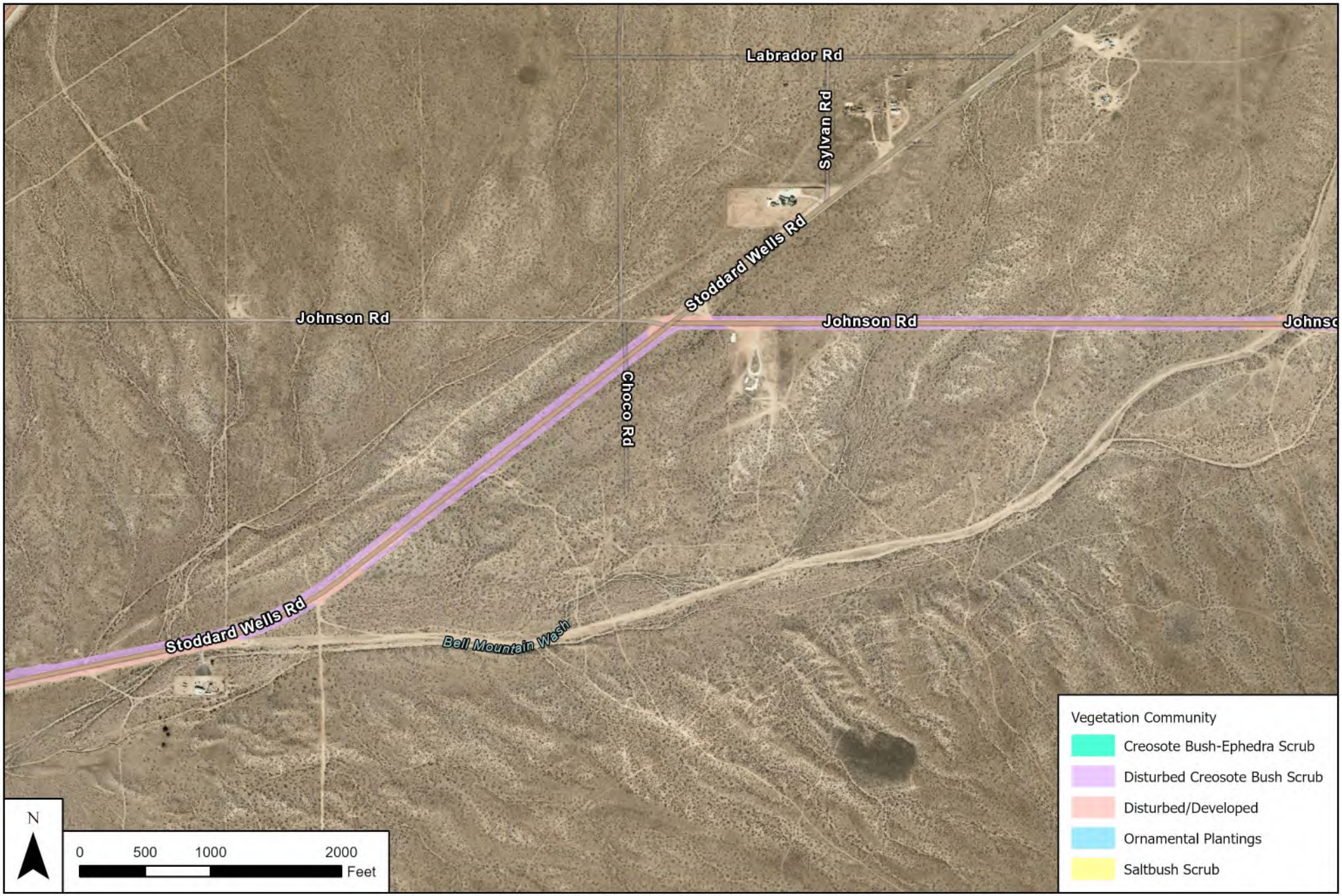
Figure 4a

Vegetation Communities



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Apple Valley 143 Utility Alignment Project

Figure 4b

Vegetation Communities

SOURCE: ESRI

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ECOLOGICAL CONSULTING, LLC

Apple Valley 143 Utility Alignment Project

Figure 4c

Vegetation Communities

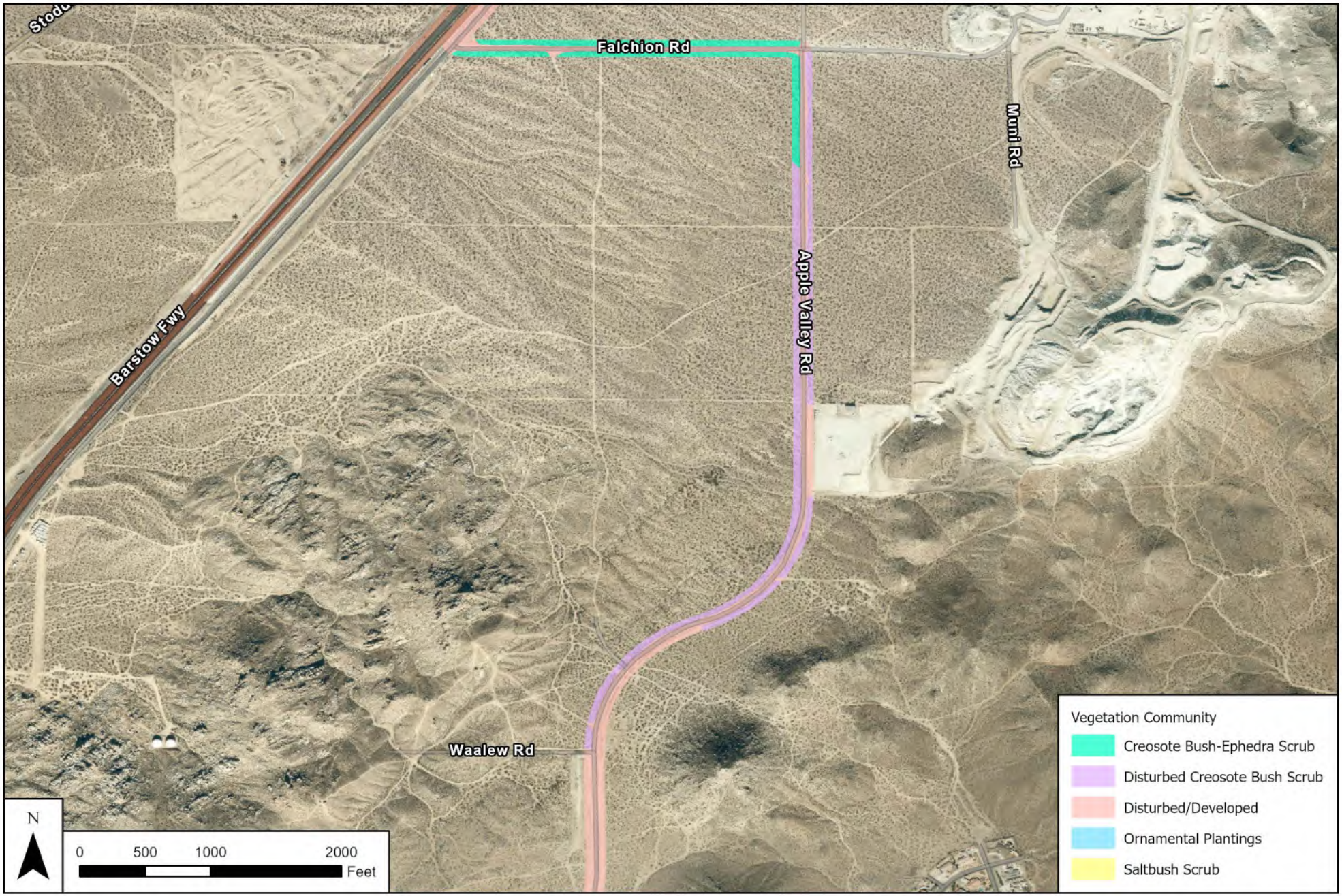
SOURCE: ESRI

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Apple Valley 143 Utility Alignment Project

Figure 4d

Vegetation Communities



SOURCE: ESRI

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Figure 4e

Vegetation Communities

SOURCE: ESRI

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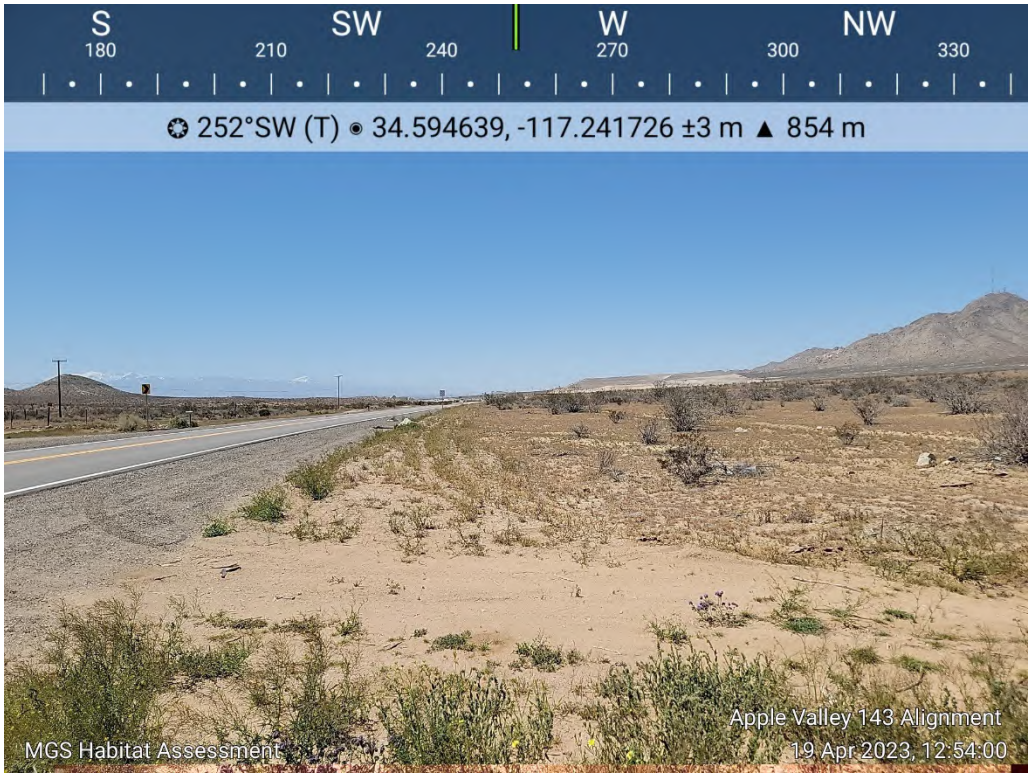
Apple Valley 143 Utility Alignment Project

Figure 4f

Vegetation Communities

Photograph 1:Disturbed creosote bush scrub and ornamental plantings (background) along Johnson Road (easternmost extent of alignment).



Photograph 2: Disturbed creosote bush scrub along Stoddard Wells Road.

Photograph 3: Saltbush scrub along Outer Highway 15.

Photograph 4: Disturbed creosote bush scrub along Outer Highway 15.

Photograph 5: Creosote bush-ephedra scrub along Falchion Road.

Photograph 6: Disturbed creosote bush scrub along Apple Valley Road.

Photograph 7: Disturbed creosote bush scrub along Apple Valley Road.

Photograph 8: Disturbed/developed land along Apple Valley Road.

Appendix E
Photo Documentation

Photo 1. View of ephemeral wash in southwest portion of the on-site BSA, facing southeast.

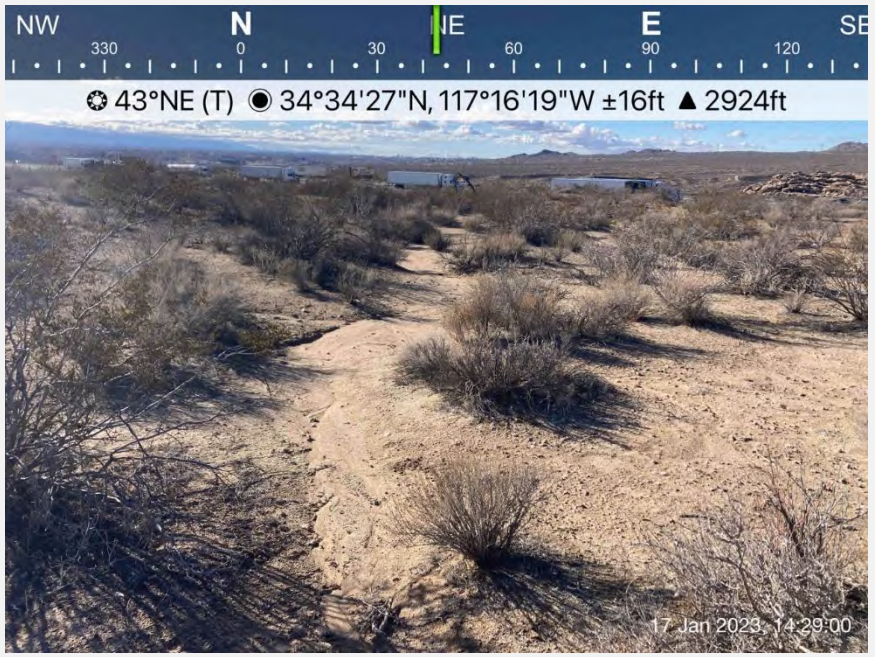


Photo 2. View of creosote scrub vegetation community and ephemeral wash in southwest portion of the on-site BSA, facing north east.

Photo 3. View of urban/developed land consisting of Quarry Road in central portion of the on-site BSA, facing south.

Photo 4. View of creosote scrub community and culvert pipe under Quarry Road in central portion of the on-site BSA, facing north.

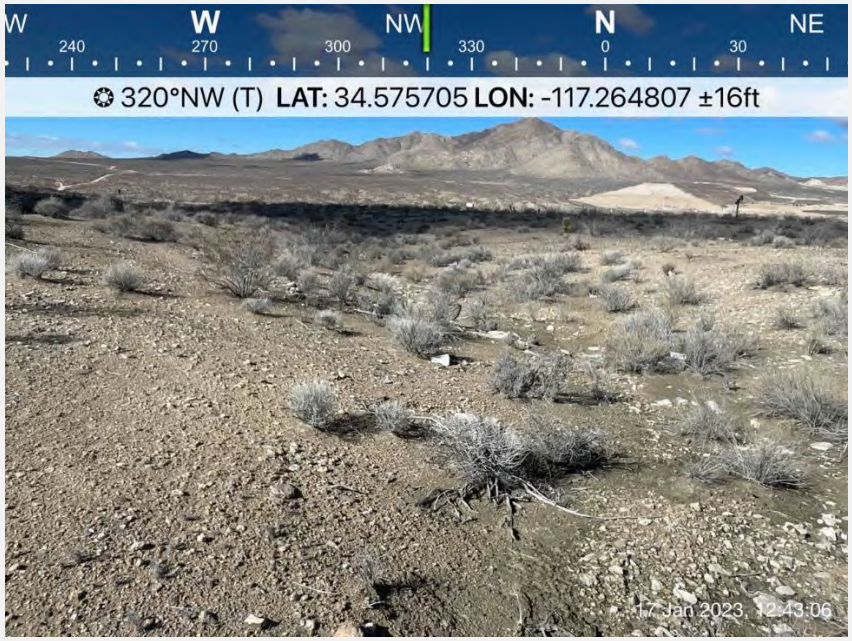


Photo 5. View of rubber rabbitbrush vegetation community in central portion of the on-site BSA, facing northwest.

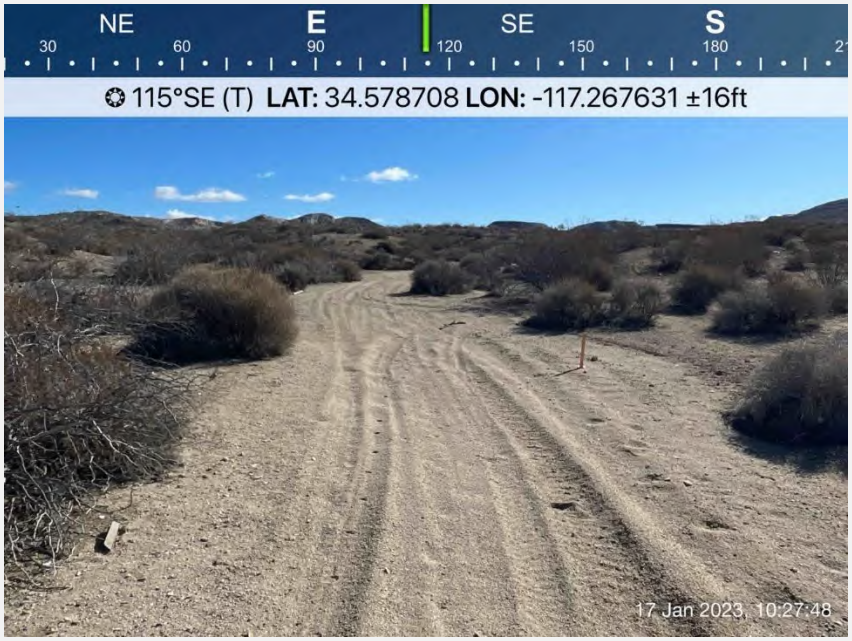


Photo 6. View of disturbed habitat consisting of a dirt road in northwest portion of the on-site BSA, facing southeast.

Photo 7. View of rubber rabbitbrush vegetation community in northeast portion of the on-site BSA, facing southeast.

Photo 8. View of urban/developed land consisting of the quarry site in southeast portion of the on-site BSA, facing northeast.

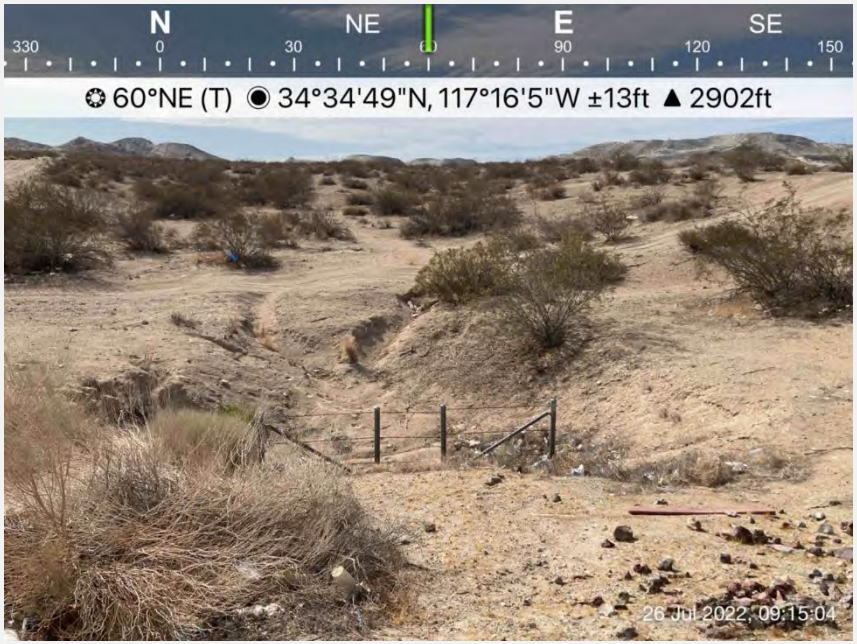


Photo 9. View of disturbed habitat and creosote scrub in the northwestern portion of the off-site improvement BSA, facing northeast.

Photo 10. View of rubber rabbitbrush in the western portion of the off-site improvement BSA, facing southeast.

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Appendix F
Plant Compendium

Vascular Species

Eudicots

ASTERACEAE – SUNFLOWER FAMILY

Acamptopappus sphaerocephalus – rayless goldenhead
Adenophyllum cooperi – Cooper's dogweed
Ambrosia acanthicarpa – flatspine bur ragweed
Ambrosia dumosa – white bursage
Ambrosia salsola – cheesebush
Chaenactis carphoclinia var. *carphoclinia* – *pebble pincushion*
Chaenactis macrantha – *bighe*ad dustymaiden
Chaenactis xantiana – fleshcolor pincushion
Cirsium occidentale – cobwebby thistle
Ericameria nauseosa – rubber rabbitbrush
Eriophyllum wallacei – woolly easterbonnets
Malacothrix coulteri – snake's head
Malacothrix glabrata – smooth desertdandelion
Stephanomeria exigua ssp. *exigua* – small wirelettuce
Stephanomeria pauciflora – brownplume wirelettuce
Tetradymia spinosa – shortspine horsebrush
Xylorhiza tortifolia var. *tortifolia* – Mojave woodyaster

BORAGINACEAE – BORAGE FAMILY

Amsinckia tessellata – bristly fiddleneck
Cryptantha pterocarya – wingnut cryptantha
Greeneocharis circumscissa var. *circumscissa* – cushion cryptantha
Greeneocharis circumscissa – cushion cryptantha
Pectocarya penicillata – sleeping combseed
Pectocarya platycarpa – broadfruit combseed
Pectocarya recurvata – curvenut combseed
Pectocarya setosa – moth combseed
Phacelia distans – distant phacelia
Phacelia fr*emontii* – Fremont's phacelia
Phacelia tanacetifolia – lacy phacelia

BRASSICACEAE – MUSTARD FAMILY

* *Brassica tournefortii* – Tournefort's mustard
Caulanthus heterophyllus – California mustard
Caulanthus lasiophyllus – California mustard

Descurainia pinnata – western tansymustard
* *Descurainia sophia* – herb sophia
* *Hirschfeldia incana* – shortpod mustard
Lepidium fremontii – desert pepperweed
Lepidium lasiocarpum ssp. *lasiocarpum* – shaggyfruit pepperweed
* *Lepidium perfoliatum* – clasping pepperweed
* *Sisymbrium altissimum* – tall tumblemustard
* *Sisymbrium irio* – London rocket
Stanleya pinnata var. *pinnata* – desert princesplume

CACTACEAE – CACTUS FAMILY

Cylindropuntia echinocarpa – silver cholla
Cylindropuntia ramosissima – branched pencil cholla
Opuntia basilaris var. *basilaris* – beavertail pricklypear

CAMPANULACEAE – BELLFLOWER FAMILY

Nemacladus rubescens – desert threadplant

CHENOPODIACEAE – GOOSEFOOT FAMILY

Grayia spinosa – spiny hop sage
Krascheninnikovia lanata – winterfatland
* *Salsola tragus* – prickly Russian thistle

EUPHORBIACEAE – SPURGE FAMILY

Euphorbia albomarginata – whitemargin sandmat

FABACEAE – LEGUME FAMILY

Astragalus layneae – widow's milkvetch
Astragalus lentiginosus var. *variabilis* – freckled milkvetch
Parkinsonia florida – blue palo verde
Prosopis glandulosa – honey mesquite
Psorothamnus fremontii var. *fremontii* – Fremont's dalea

GERANIACEAE – GERANIUM FAMILY

* *Erodium cicutarium* – redstem stork's bill

LAMIACEAE – MINT FAMILY

Salvia columbariae – chia
Scutellaria mexicana – Mexican bladdersage

LOASACEAE – LOASA FAMILY

Mentzelia albicaulis – whitestem blazingstar

Mentzelia involucrata – whitebract blazingstar

NYCTAGINACEAE – FOUR O'CLOCK FAMILY

Mirabilis laevis – desert wishbone-bush

ONAGRACEAE – EVENING PRIMROSE FAMILY

Chylismia claviformis – browneyes

Eremothera boothii – Booth's evening primrose

PAPAVERACEAE – POPPY FAMILY

Eschscholzia minutiflora – pygmy poppy

PLANTAGINACEAE – PLANTAIN FAMILY

Plantago ovata – desert Indianwheat

POLEMONIACEAE – PHLOX FAMILY

Eriastrum eremicum ssp. *eremicum* – desert woollystar

Gilia minor – little gilia

Ipomopsis polycladon – manybranched ipomopsis

Loeseliastrum matthewsii – desert calico

Loeseliastrum schottii – Schott's calico

POLYGONACEAE – BUCKWHEAT FAMILY

Chorizanthe brevicornu – brittle spineflower

Chorizanthe rigida – rigid spineflower

Eriogonum angulosum – anglestem buckwheat

Eriogonum deflexum – flatcrown buckwheat

Eriogonum fasciculatum var. *polifolium* – California buckwheat

Eriogonum inflatum – desert trumpet

Eriogonum reniforme – kidneyleaf buckwheat

Oxytheca perfoliata – roundleaf oxytheca

RUTACEAE – RUE FAMILY

Thamnosma montana – turpentinebroom

SOLANACEAE – NIGHTSHADE FAMILY

Lycium andersonii – Anderson's boxthorn

Lycium cooperi – peach thorn

ZYGOPHYLLACEAE – CALTROP FAMILY

Larrea tridentata – creosote bush

Gymnosperms and Gnetophytes

EPHEDRACEAE – EPHEDRA FAMILY

Ephedra nevadensis – Nevada joint fir

Monocots

AGAVACEAE – AGAVE FAMILY

Hesperoyucca whipplei – chaparral yucca
Yucca brevifolia – Joshua tree
Yucca schidigera – Mojave yucca

POACEAE – GRASS FAMILY

* *Bromus rubens* – red brome
* *Bromus tectorum* – cheatgrass
Elymus elymoides – squirreltail
* *Festuca bromoides* – brome fescue
Festuca octoflora – sixweeks fescue
* *Hordeum murinum* – mouse barley
Poa secunda – onesided bluegrass
* *Schismus arabicus* – Arabian schismus
Stipa hymenoides – Indian rice grass

* signifies introduced (non-native) species

Appendix G
Wildlife Compendium

Birds

Bushtits

AEGITHALIDAE – LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus – bushtit

Finches

FRINGILLIDAE – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus – house finch

Flycatchers

TYRANNIDAE – TYRANT FLYCATCHERS

Sayornis nigricans – black phoebe

Sayornis saya – Say's phoebe

Tyrannus verticalis – western kingbird

Goatsuckers

CAPRIMULGIDAE – GOATSUCKERS

Chordeiles acutipennis – lesser nighthawk

Hummingbirds

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

Jays, Magpies and Crows

CORVIDAE – CROWS AND JAYS

Corvus brachyrhynchos – American crow

Corvus corax – common raven

Larks

ALAUDIDAE – LARKS

Eremophila alpestris – horned lark

Mockingbirds and Thrashers

MIMIDAE – MOCKINGBIRDS AND THRASHERS

Mimus polyglottos – northern mockingbird

New World Vultures

CATHARTIDAE – NEW WORLD VULTURES

Cathartes aura – turkey vulture

Old World Sparrows

PASSERIDAE – OLD WORLD SPARROWS

* *Passer domesticus* – house sparrow

Pigeons and Doves

COLUMBIDAE – PIGEONS AND DOVES

Zenaida macroura – mourning dove

Starlings and Allies

STURNIDAE – STARLINGS

* *Sturnus vulgaris* – European starling

Swallows

HIRUNDINIDAE – SWALLOWS

Hirundo rustica – barn swallow

Verdin

REMIZIDAE – PENDULINE TITS AND VERDINS

Auriparus flaviceps – verdin

Wrens

TROGLODYTIDAE – WRENS

Salpinctes obsoletus – rock wren

Thryomanes bewickii – Bewick's wren

New World Sparrows

PASSERELLIDAE – NEW WORLD SPARROWS

Amphispiza bilineata – black-throated sparrow
Artemisiospiza belli – Bell's sparrow
Spizella passerina – chipping sparrow
Zonotrichia leucophrys – white-crowned sparrow

Mammals

Domestic

FELIDAE – CATS

* *Felis catus* – domestic cat

Hares and Rabbits

LEPORIDAE – HARES AND RABBITS

Lepus californicus – black-tailed jackrabbit
Sylvilagus audubonii – desert cottontail

Squirrels

SCIURIDAE – SQUIRRELS

Ammospermophilus leucurus – white-tailed antelope squirrel
Otospermophilus beecheyi – California ground squirrel

Reptiles

Lizards

PHRYNOSOMATIDAE – IGUANID LIZARDS

Callisaurus draconoides – zebra-tailed lizard
Phrynosoma platyrhinos – desert horned lizard
Sceloporus magister – desert spiny lizard
Sceloporus occidentalis – western fence lizard
Uta stansburiana – common side-blotched lizard

TEIIDAE – WHIPTAIL LIZARDS

Aspidoscelis tigris – tiger whiptail

Snakes

COLUBRIDAE – COLUBRID SNAKES

Pituophis catenifer – gophersnake

VIPERIDAE – VIPERS

Crotalus oreganus – western rattlesnake

Crotalus scutulatus – Mohave rattlesnake

* signifies introduced (non-native) species

Appendix H
Desert Tortoise Survey Forms

Date of survey: 11/04/23 (day, month, year) Survey biologist(s): Ryan Stanley, Chelsea Bowers-Doerning (name, email, and phone number)

Site description: IENLC, 177 acres, Apple Valley, CA (project name and size, general location)

County: San Bernardino Quad: Victorville Location: 34.573987, -117.270751 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 16 Transect #: 23 Transect length: Various

GPS Start-point: 34.576254, -117.266637, 897 m (easting, northing, elevation in meters) Start time: 10:40 (am)/pm

GPS End-point: 34.572187, -117.269137, 902 m (easting, northing, elevation in meters) End time: 2:00 am/(pm)

Start Temp: 22.2 °C End Temp: 27.8 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Date of survey: 13/04/23 (day, month, year) Survey biologist(s): Valerie Goodwin, Zarina Pringle (name, email, and phone number)

Site description: IENLC, 177 acres, Apple Valley, CA (project name and size, general location)

County: San Bernardino Quad: Victorville Location: 34.573987, -117.270751 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 75 Transect #: 26 Transect length: Various

GPS Start-point: 34.571885, -117.275935, 881 m (easting, northing, elevation in meters) Start time: 8:43 am/pm

GPS End-point: 34.571781, -117.268656, 904 m (easting, northing, elevation in meters) End time: 4:47 am/pm

Start Temp: 10.6 °C End Temp: 14.4 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	34.5760994	-117.2636245	Burrow	Shaded refugia, no sign
2	34.5763189	-117.2649386	Burrow	Potential DETO pallet in berm, no sign
3	34.5782062	-117.2649658	Burrow	Rank 4, no sign
4	34.5760233	-117.2634766	Burrow	Potential DETO pallet in berm, no sign
5	34.5774052	-117.2633591	Burrow	Class 5, no sign
6	34.5761017	-117.2640994	Burrow	Shaded refugia, no sign
7	34.5761062	-117.2656981	Burrow	Potential DETO pallet in bank. No sign
8	34.573334	-117.2741476	Burrow	Class 5, no sign
9	34.5775069	-117.2627791	Burrow	Large burrow under shrubs, could be suitable for DETO, but no sign.

Date of survey: 27/04/23 (day, month, year) Survey biologist(s): Kathleen Dayton, Zarina Pringle (name, email, and phone number)

Site description: IENLC, 177 acres, Apple Valley, CA (project name and size; general location)

County: San Bernardino Quad: Victorville Location: 34.573987, -117.270751 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: ~~100% coverage~~ or Sampling Area size to be surveyed: 19 acres Transect #: 3 Transect length: 3,518 ft

GPS Start-point: 34.571691, -117.275862, 882 m (easting, northing, elevation in meters) Start time: 7:15 (am)/pm

GPS End-point: 34.571364, -117.264336, 924 m (easting, northing, elevation in meters) End time: 7:59 (am)/pm

Start Temp: 13.3 °C End Temp: 15.6 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Kim Narel

Date of survey: 02/05/2023 (day, month, year) Survey biologist(s): Katie Dayton; kdayton@dudek.com (name, email, and phone number)

Site description: Apple Valley 143 Roadway offsites; 114 ac (project name and size; general location)

County: San Bernardino Quad: Victorville NW NORTH Location: 34°36'3.40"N; 117°11'54.00"W (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: ~~100% coverage~~ or Sampling Area size to be surveyed: 114 ac Transect #: 2 Transect length: 8.0 miles

GPS Start-point: 34°36'3.40"N; 117°11'54.00"W (easting, northing, elevation in meters) Start time: 8:21 (am)/pm

GPS End-point: 34°33'8.43"N; 117°16'23.88"W (easting, northing, elevation in meters) End time: 12:25 am/(pm)

Start Temp: 9.4 °C End Temp: 15 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

NO desert tortoise observed.
NO sign observed.
NO active burrows observed.

Date of survey: 06/06/23 (day, month, year) Survey biologist(s): Sarah Greely, Zarina Pringle, Luz Badillo (name, email, and phone number)

Site description: IENLC, 177 Acres, Apple Valley, CA (project name and size; general location)

County: San Bernardino Quad: Victorville Location: 34.573987, -117.270751 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 93 acres Transect #: 77 Transect length: various

GPS Start-point: 34.571804, -117.274165, .887 m (easting, northing, elevation in meters) Start time: 6:21 (am)/pm

GPS End-point: 34.571735, -117.264268, 993 m (easting, northing, elevation in meters) End time: 1:43 am/(pm)

Start Temp: 9.4 °C End Temp: 22.2 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	34.57487958	-117.2707938	Burrow	Alcove under creosote bush. No sign.
2	34.57296641	-117.2721936	Burrow	Class 5
3	34.57372259	-117.2676123	Burrow	Class 4
4	34.5723416	-117.2713187	Burrow	Class 4, webbing at entrance
5	34.5760417	-117.2701895	Burrow	Class 4, 2-3" deep, no active
6	34.5732445	-117.2713849	Burrow	class 4, maybe DETO pallet sign
7	34.57254162	-117.2727397	Burrow	Class 5, trash inside, possibly
8	34.5734456	-117.2709051	Burrow	Class 5, possibly DETO pallet. DETO pallet
9	34.5745807	-117.266747	Burrow	Large burrow under ephedra
10	34.5735207	-117.2731496	Burrow	Possible DETO pallet
11	34.574253	-117.2716031	Burrow	Class 4, no active sign, no fecal sign present.