Appendix C

Biological Resources Technical Report

Biological Resources Technical Report

Apple Valley 143 Project

JUNE 2023

Prepared for:

COVINGTON DEVELOPMENT PARTNERS
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254
Contact: Brandon Gallup

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Megan Enright, Senior Biologist
Anna Cassady, Biologist

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Table of Contents

SECTION **PAGE NO.**

Acronyms and Abbreviations vii

1 Introduction 1
- 1.1 Project Description 1
  - 1.1.1 Project Location 1
  - 1.1.2 Project Components 1

2 Regulatory Setting 3
- 2.1 Federal 3
  - 2.1.1 Federal Endangered Species Act 3
  - 2.1.2 Migratory Bird Treaty Act 3
  - 2.1.3 Clean Water Act 3
- 2.2 State 7
  - 2.2.1 California Endangered Species Act 7
  - 2.2.2 California Fish and Game Code 8
  - 2.2.3 California Environmental Quality Act 16
  - 2.2.4 Porter–Cologne Water Quality Control Act 16
  - 2.2.5 California Desert Native Plants Act 17
- 2.3 Local 17
  - 2.3.1 San Bernardino County General Plan and Development Code 17
  - 2.3.2 The Town of Apple Valley General Plan 18
  - 2.3.3 Apple Valley Municipal Code - Chapter 9.76 – Plant Protection and Management Policy 18

3 Methods 23
- 3.1 Literature Review 23
- 3.2 Field Surveys 23
  - 3.2.1 Vegetation Community and Land Cover Mapping 25
  - 3.2.2 Flora 26
  - 3.2.3 Fauna 26
  - 3.2.4 Special-Status and Regulated Resources 26
  - 3.2.5 Survey Limitations 29

4 Environmental Setting 31
- 4.1 Climate 31
- 4.2 Geology and Topography 31
- 4.3 Soils 31

4.4 Surrounding Land Uses 32
4.5 Watersheds and Hydrology 32

5 Results 33
5.1 Vegetation Communities and Land Covers 33
5.1.1 Rubber Rabbitbrush Scrub 33
5.1.2 Creosote Bush Scrub 34
5.1.3 Joshua Tree Woodland 34
5.1.4 Disturbed Habitat 35
5.1.5 Urban/Developed Land 35
5.2 Plants and Wildlife Observed 35
5.2.1 Plants 35
5.2.2 Wildlife 35
5.3 Special-Status and Regulated Resources 36
5.3.1 Special-Status Plants 37
5.3.2 Western Joshua Tree 38
5.3.3 Desert Native Plants 38
5.3.4 Special-Status Wildlife 39
5.3.5 Evaluation of Aquatic Resources 43
5.4 Wildlife Corridors and Habitat Linkages 45

6 Project Impacts 47
6.1 Impacts to Sensitive Vegetation Communities 47
6.1.1 Direct Impacts 47
6.1.2 Indirect Impacts 48
6.2 Impacts to Special-Status Plants 48
6.2.1 Direct Impacts 48
6.2.2 Indirect Impacts 49
6.3 Impacts to Special-Status Wildlife 50
6.3.1 Direct Impacts 50
6.3.2 Indirect Impacts 52
6.4 Impacts to Aquatic Resources 54
6.4.1 Direct Impacts 54
6.4.2 Indirect Impacts 54
6.5 Impacts to Wildlife Corridors and Habitat Linkages 55
6.5.1 Direct Impacts 55
6.5.2 Indirect Impacts 55
6.6 Impacts Associated with Local Policies and Ordinances 55
6.7 Impacts Associated with Habitat Conservation Plans 56

7 Significant Impacts and Mitigation 59
7.1 Explanation of Findings of Significance 59
7.2 Impact BIO-1: Special-Status Species 60
7.2.1 Direct Impacts 60
7.2.2 Indirect Impacts 63
7.2.3 Mitigation Measures 69
7.3 Impact BIO-2: Sensitive Vegetation Communities 73
7.3.1 Direct Impacts 73
7.3.2 Indirect Impacts 74
7.3.3 Mitigation Measures 75
7.4 Impact BIO-3: Jurisdictional Waters 76
7.4.1 Direct Impacts 76
7.4.2 Indirect Impacts 76
7.4.3 Mitigation Measures 77
7.5 Impact BIO-4: Wildlife Corridors and Migratory Routes 78
7.5.1 Direct Impacts 78
7.5.2 Indirect Impacts 79
7.5.3 Mitigation Measures 79
7.6 Impact BIO-5: Local Policies or Ordinances 79
7.6.1 Direct and Indirect Impacts 79
7.6.2 Mitigation Measures 80
7.7 Impact BIO-6: Habitat Conservation Plans 80
8 References 81

TABLES

1 Survey Conditions 24
2 Existing Vegetation Communities and Land Cover Types within the BSA 33
3 Wildlife Species Detected within or adjacent to the BSA 36
4 Special-Status Plant Species Observed with Moderate or High Potential to Occur within the BSA 37
5 Special-Status Wildlife Species Observed with Moderate or High Potential to Occur within the BSA 40
6 Impacts to Vegetation Communities and Land Cover Types within the BSA 48

FIGURES

1 Regional Map 87
2 Project Vicinity 89
3 Project Site Plan 91
4-1 Biological Resources 93
4-2 Biological Resources 95

4-3 Biological Resources 97
4-4 Biological Resources 99
4-5 Biological Resources 101
4-6 Biological Resources 103
4-7 Biological Resources 105
4-8 Biological Resources 107
4-9 Biological Resources 109
5 Soils 111
6 Hydrologic Setting 113
7-1 Aquatic Resources Delineation- Waters of the State 115
7-2 Aquatic Resources Delineation- Waters of the State 117
7-3 Aquatic Resources Delineation- Waters of the State 119
7-4 Aquatic Resources Delineation- Waters of the State 121
7-5 Aquatic Resources Delineation- Waters of the State 123
7-6 Aquatic Resources Delineation- Waters of the State 125
7-7 Aquatic Resources Delineation- Waters of the State 127
7-8 Aquatic Resources Delineation- Waters of the State 129
7-9 Aquatic Resources Delineation- Waters of the State 131
7-10 Aquatic Resources Delineation- Waters of the State 133
7-11 Aquatic Resources Delineation- Waters of the State 135
8-1 Impacts to Biological Resources 137
8-2 Impacts to Biological Resources 139
8-3 Impacts to Biological Resources 141
8-4 Impacts to Biological Resources 143
8-5 Impacts to Biological Resources 145
8-6 Impacts to Biological Resources 147
8-7 Impacts to Biological Resources 149
8-8 Impacts to Biological Resources 151
8-9 Impacts to Biological Resources 153
9 Historical Mojave Ground Squirrel Occurrences 155

APPENDICES

A Jurisdictional Waters Delineation – Potential Waters of the United States
B Jurisdictional Waters Delineation – Potential Waters of the State
C Mohave Ground Squirrel Protocol Survey Report
D Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan
E Plant Compendium
F Wildlife Compendium
G Special-Status Plants Potentially Occurring within the Biological Survey Area
H Special-Status Wildlife Potentially Occurring within the Biological Survey Area
I Desert Tortoise Presence/Absence Surveys
J Burrowing Owl Relocation Plan
K Desert Kit Fox Relocation and Mitigation Plan

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Acronyms and Abbreviations

Acronym	Definition
amsl	above mean sea level
BMP	best management practice
BSA	biological survey area
CALGreen	California Green Building Standards Code
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
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
FESA	federal Endangered Species Act
GIS	geographic information system
I	Interstate
MBTA	Migratory Bird Treaty Act
MDAQMD	Mojave Desert Air Quality Management District
MM	Mitigation Measure
NCCP/HCP	Natural Community Conservation Plan/Habitat Conservation Plan
OHWM	ordinary high water mark
RWQCB	Regional Water Quality Control Board
SWPPP	stormwater pollution prevention plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

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1 Introduction

This report documents the results of surveys conducted to identify potential biological resources constraints for the Apple Valley 143 Project (project) located in the Town of Apple Valley (Town), San Bernardino County, California. A cumulative analysis of the project is provided in this report. Figure 1, Regional Map, shows the regional location of the project, and Figure 2, Project Vicinity, shows the site vicinity.

The purpose of this report is to (1) describe the conditions of biological resources within the project site in terms of vegetation communities, plants, wildlife, wildlife habitats, and wetlands; (2) quantify potential direct and indirect impacts to special-status biological resources that would result from the project; (3) discuss those impacts in terms of biological significance in view of federal, state, and local laws, County of San Bernardino General Plan, and the Town of Apple Valley's General Plan and Municipal Code (policies); and (4) specify measures to avoid, minimize, and/or mitigate any significant impacts that would occur to special-status biological resources as a result of project implementation.

1.1 Project Description

1.1.1 Project Location

The approximately 258.3-acre project, including the 144-acre project site and 114.3 acres of off-site improvements (hereafter referred to as the off-site improvement areas), is located in the northern portion of the Town, which is located in the Victor Valley/High Desert region in western San Bernardino County (Figure 1, Regional Map; Figure 2, Project Vicinity). The project is located immediately east of Interstate (I) 15 and north of Stoddard Wells Road with proposed off-site improvements located along Johnson Road, Stoddard Wells Road, Frontage Road South, Falchion Road, and Apple Valley Road. The project consists of Assessor's Parcel Numbers 047-222-206, 047-222-211, 047-221-105, 047-221-106, 047-221-115, 047-221-103, 047-221-207, and 047-222-303 and rights-of-way. Specifically, the project is located in Sections 19, 20, 21, 23, 24, and 26, Township 6 North, Range 3 and 4 West, as depicted on the U.S. Geological Survey Victorville and Apple Valley North, California 7.5-minute topographic quadrangle maps (USGS 1987, 2015). Regional access to the project is provided via Stoddard Wells Road immediately adjacent to the south and I-15 bordering the western boundary of the project.

1.1.2 Project Components

The project would include construction of three industrial/warehouse buildings and associated improvements (see Figure 3, Project Site Plan). Building 1, the southernmost building, would be approximately 615,000 square feet; Building 2, the center building, would be approximately 1,220,000 square feet; and Building 3, the northernmost building, would be approximately 793,000 square feet. The project would involve associated improvements, including loading docks, truck and vehicle parking, and landscaped areas.

Off-Site Improvements

The project would involve the installation of approximately 7.9 miles of off-site water line adjacent to the following developed roadways: approximately 1.7 linear miles in Stoddard Wells Road, approximately 2.3 linear miles in Johnson Road, approximately 1.7 linear miles in Outer I-15 Road, approximately 0.67 mile in Falchion Road, and approximately

1.5 miles in Apple Valley Road. In addition, the project involves a culvert extension leading from the southern boundary of the on-site project boundary across Stoddard Wells Road.

Site Access and Circulation

Access to the project site would be provided via Outer I-15 Road on the eastern boundary of the project site, as well as a driveway off Stoddard Wells Road. Paved passenger vehicle parking areas would be provided within areas east of Buildings 1, 2, and 3, while tractor-trailer stalls and loading docks would be surrounding Building 1 to the north and south, and surrounding Buildings 2 and 3 to the north, south, and west. In total, the project would provide approximately 515 loading dock positions, approximately 884 tractor-trailer stalls, roughly 975 passenger vehicle spaces, and approximately 920,000 square feet of landscape area coverage.

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.

Operations

Tenants for the project have not been identified, and the three industrial warehouse buildings are considered speculative. Business operations would be expected to be conducted within the enclosed buildings, with the exception of ingressing and egressing 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.

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. 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 to "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 (SWRCB) 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.

2023 Waters of the U.S. Rule The current applicability of the CWA, in accordance with the "2023 WoUS Rule," must be harmonized with the Supreme Court of the United Stated (SCOTUS) rulings on *United States v. Riverside Bayview* (BAYVIEW), *Solid Waste Agency of Northern Cook County v. USACE* (SWANCC), *Rapanos v. United State*s (RAPANOS), and *Sackett v. Environmental Protection Agency* (SACKETT) rulings. To that end, the 2023 rule establishes a definition of "WoUS" that includes three parts:

- Paragraph (a) jurisdictional waters;
- Paragraph (b) exclusions; and
- Paragraph (c) definitions.

The 2023 Rule defines the following WoUS. There are no changes from the Pre-2015 Waters Rule in the definitions of a(1), a(2), and a(4) Waters. However, there are nuance changes to a(3) Waters, and there substantial changes to identifying a(5) Waters. In general, the 2023 Rule does not consider "isolated" as described in SWANCC, nor does it consider a need to have ties to interstate commerce (BAYVIEW). This rule relies entirely on the definitions below for TNWs, and their impoundment and tributaries which are established by having a "Significant Nexus" by contributing to the biological, chemical, or physical characteristics of a TNW.

During the first two months of the 2023 Rule implementation, several court cases have enjoined the use of the rule and subsequently reverted to the Pre-2015 Rule. Currently 27 States are using the Pre-2015 Rule. Nonetheless, California has not been enjoined and continues to fall under jurisdiction of the 2023 Rule. As such, on 26 May 2023 SCOTUS ruled on SACKETT. In general, this ruling found that the CWA's use of "waters" encompasses "only those relatively permanent, standing or continuously flowing bodies of water 'forming geographic[al] features' that are described in ordinary parlance as 'streams, oceans, rivers, and lakes.'" 547 U.S., at 739 (quoting Webster's New International Dictionary 2882 (2d ed. 1954) (Webster's Second); original alterations omitted). The court appears to have struck down the use of the Significant Nexus Analysis, use of "Similarly Situated Waters" being combined to have a biological, chemical, or biological nexus to a TNW.

Further, the court determined that WoUS extent only to tributaries of TNWs that have Relatively Permanent Flows, such that they flow or are inundated unless there is unusually prolonged drought, or the ebb of a tide.

On 26 May 2023, the USACE issued the following paragraph: "The U.S. Environmental Protection Agency and USACE (the agencies) are in receipt of SCOTUS's 25 May 2023 decision in SACKETT. In light of this decision, the agencies will interpret the phrase "WoUS" consistent with SCOTUS's decision in SACKETT. The agencies continue to review the decision to determine next steps." Based on the fact that the USACE states that they will interpret WoUS consistent with the Court Ruling," the likely result will be the changes identified below. However, until formal guidance from the U.S. Environmental Protection Agency and USACE is received, the results of how this decision will affect projects is speculative. All actions will need to be evaluated on a case-by-case basis using the guidance available, at the time.

Below are the 2023 WoUS categories, and the likely effect the SACKETT may have on their jurisdiction.

2023 WoUS Rule Definitions

a(1) Waters - Traditional navigable waters, the territorial seas, and interstate waters. Waters which are currently used or were used in the part or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

These Waters remained unchanged from the "Pre-2015 WoUS Rule" and do not appear to conflict with the WoUS definition from SACKETT.

- ✓ Interstate Waters have been Clarified in the Preamble. They include Lake, ponds, and wetlands crossing state boundaries. These waters are jurisdictional in their entirety.
- ✓ Tributaries crossing interstate boundaries are jurisdictional for those portions of the tributary - of the same stream order, that crosses the state line.

a(2) Impoundments - Waters affected by discrete barriers, like natural or human-made barriers. This applies to both impoundments of previously jurisdictional waters, and impoundments that now qualify at the time of assessment.

These Waters remained unchanged from the "Pre-2015 WoUS Rule" and do not appear to conflict with the WoUS definition from SACKETT.

- ✓ This does not include other (a)5 Waters that become impounded, though they may be jurisdictional under different criteria.
- ✓ Paragraph (a)(2) of the final rule includes impoundments of "WoUS." Impoundments are distinguishable from natural lakes and ponds because they are created by discrete structures like dams or levees that typically have the effect of raising the water surface elevation, creating, or expanding the area of open water, or both.
- ✓ Impoundments can be natural (like beaver ponds) or artificial (like reservoirs). The agencies consider paragraph (a)(2) impoundments to include:

(1) impoundments created by impounding one of the "WoUS" that was jurisdictional under this rule's definition at the time the impoundment was created; and

(2) impoundments of waters that at the time of assessment meet the definition of "WoUS" under paragraph (a)(1), (a)(3), or (a)(4) of this rule.

(a)(3) Tributaries - Tributaries include natural, man-altered, or man-made water bodies that flow directly or indirectly into an (a)(1) Water, or an (a)(2) Impoundment. Jurisdictional tributaries must meet the relatively permanent standard (i.e., have flowing or standing water year-round or continuously during certain times of the year [RPW], or have a significant nexus [tributaries that alone - or in combination, significantly affect]) to an (a)(1) Water. For tributaries, interstate waters include the portion of the tributary - of the same stream order, as the point that crosses or serves as a state line.

SACKETT decision appears to limit the (a)3 Tributaries to only Permanent or Relatively Permanent Waters by excluding the vagaries of significant nexus, and they would need to be evaluated individually and not in conjunction with similarly situated Waters.

- ✓ Tributaries can include rivers, streams, lakes, ponds, and impoundments - as well as ditches and canals. Not all tributaries are jurisdictional under the final rule.
- ✓ To be jurisdictional, tributaries must meet either the relatively permanent standard, or the significant nexus standard. The final rule preamble explains that relatively permanent waters include tributaries that have flowing or standing water year-round - or continuously during certain times of year. Relatively permanent waters do not include tributaries with flowing - or standing water, for only a short duration in direct response to precipitation.

(a)(4) Adjacent Wetlands - No change to the definition of "wetlands," or "adjacent" to an (a)(1) Waters.

SACKETT has greatly affected what qualifies as adjacent. It appears to have constrained adjacent to only an unbroken surface connection.

- ✓ Unbroken surface or shallow subsurface connection - to a jurisdictional water, even though non-jurisdictional features.
- ✓ Are close enough to have significant water quality and aquatic ecosystem effects, alone - or in combination with, other jurisdictional tributaries and adjacent wetlands. It appears the Sackett case would eliminate wetlands that rely on a significant nexus analysis or only have a ground water connection to a WoUS

(a)(5) Waters are not identified in (a)(1) through (4) - Intrastate lakes and ponds, streams, and wetlands not identified as part of earlier qualifications that meet the two tests below. (a)(5) Waters not identified in (a)(1) through (4). It appears the Sackett decision has removed (a)5ii Waters from jurisdiction.

- ✓ Intrastate lakes and ponds, streams, and wetlands not identified as part of earlier qualifications that meet the two tests below.
  - Relatively Permanent Standard - Flowing or standing water year-round, or continuously during certain times of year, indirectly or directly to traditional navigable waterways, territorial seas, interstate waters, or impoundments, OR to relatively permanent tributaries to those waters.
  - Significant Nexus Standard - Feature can "significantly affect" biological, chemical, or physical characteristics of traditional navigable waterways, territorial seas, and interstate waters. Unlike for tributaries and adjacent wetlands, this must be assessed on an individual basis.

***SACKETT appears to remove these intermittent and ephemeral signatures jurisdiction under the CWA*.**

Summary of probable changes in CWA jurisdiction resulting from the SCOTUS Rulings:

Although the 2023 WoUS Rule includes the (a)(3) tributaries, (a)(4) Adjacent Wetlands, and a(5) Waters - outside the need to be used for interstate commerce, required post BAYVIEW. The final rule preamble notes that the agencies intend to address such waters in a future action.

The court concluded that the RAPANOS plurality[1] was correct: the CWA's use of "waters" encompasses "only those relatively permanent, standing or continuously flowing bodies of water 'forming geographic[al] features' that are described in ordinary parlance as 'streams, oceans, rivers, and lakes," and utilize several dictionary definitions for "waters" as "a. flowing water, or water moving in waves: The river's mighty waters. b. the sea or seas bordering a particular country or continent or located in a particular part of the world." They found in it difficult to reconcile these definitions with classifying "lands," wet or otherwise, as "waters" (RAPANOS plurality opinion) (BAYVIEW).

The SACKETT summation held that the "CWA extends to only those wetlands that are "as a practical matter indistinguishable from WoUS." This requires the party asserting jurisdiction over adjacent wetlands to establish "first, that the adjacent [body of water constitutes] .... 'water[s] of the United States' (i.e., a relatively permanent body of water).

2.2 State

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code, Section 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*).[2] 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 2020a). The report states that CDFW recommended that the Commission accept the petition for further consideration of western Joshua tree under CESA. On September 22, 2020, the Commission approved the petition to accept the candidacy proposal for western Joshua tree, effective October 9, 2020. 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.

[1] RAPANOS - Four Justices concluded that the CWA's coverage did not extend beyond two categories: first, certain relatively permanent bodies of water connected to traditional interstate navigable waters and, second, wetlands with such a close physical connection to those waters that they were "as a practical matter indistinguishable from WoUS."

[2] On October 21, 2019, the Commission received a petition to list the following as threatened under CESA: (1) western Joshua tree (*Yucca brevifolia*) throughout its California range, or, in the event the Commission determines that listing of *Yucca brevifolia* 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.

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

Sections 1600 to 1616 of the California Fish and Game Code are outlined below.

1600. The Legislature finds and declares that the protection and conservation of the fish and wildlife resources of this state are of utmost public interest. Fish and wildlife are the property of the people and provide a major contribution to the economy of the state, as well as providing a significant part of the people's food supply; therefore their conservation is a proper responsibility of the state. This chapter is enacted to provide conservation for these resources.

1601. The following definitions apply to this chapter:

(a) "Agreement" means a lake or streambed alteration agreement.

(b) "Day" means calendar day.

(c) "Emergency" has the same definition as in Section 21060.3 of the Public Resources Code.

(d) "Entity" means any person, state or local governmental agency, or public utility that is subject to this chapter.

1602. (a) An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) The department receives written notification regarding the activity in the manner prescribed by the department. The notification shall include, but is not limited to, all of the following:

(A) A detailed description of the project's location and a map.

(B) The name, if any, of the river, stream, or lake affected.

(C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.

(D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(E) A copy of any other applicable local, state, or federal permit or agreement already issued.

(F) Any other information required by the department.

(2) The department determines the notification is complete in accordance with Chapter 4.5 (commencing with Section 65920) of Division 1 of Title 7 of the Government Code, irrespective of whether the activity constitutes a development project for the purposes of that chapter.

(3) The entity pays the applicable fees, pursuant to Section 1609.

(4) One of the following occurs:

(A)

(i) The department informs the entity, in writing, that the activity will not substantially adversely affect an existing fish or wildlife resource, and that the entity may commence the activity without an agreement, if the entity conducts the activity as described in the notification, including any measures in the notification that are intended to protect fish and wildlife resources.

(ii) Each region of the department shall log the notifications of activities where no agreement is required. The log shall list the date the notification was received by the department, a brief description of the proposed activity, and the location of the activity. Each item shall remain on the log for one year. Upon written request by any person, a regional office shall send the log to that person monthly for one year. A request made pursuant to this clause may be renewed annually.

(B) The department determines that the activity may substantially adversely affect an existing fish or wildlife resource and issues a final agreement to the entity that includes reasonable measures necessary to protect the resource, and the entity conducts the activity in accordance with the agreement.

(C) A panel of arbitrators issues a final agreement to the entity in accordance with subdivision (b) of Section 1603, and the entity conducts the activity in accordance with the agreement.

(D) The department does not issue a draft agreement to the entity within 60 days from the date notification is complete, and the entity conducts the activity as described in the notification, including any measures in the notification that are intended to protect fish and wildlife resources.

(b) (1) If an activity involves the routine maintenance and operation of water supply, drainage, flood control, or waste treatment and disposal facilities, notice to and agreement with the department shall not be required after the initial notification and agreement, unless the department determines either of the following:

(A) The work described in the agreement has substantially changed.

(B) Conditions affecting fish and wildlife resources have substantially changed, and those resources are adversely affected by the activity conducted under the agreement.

(2) This subdivision applies only if notice to, and agreement with, the department was attained prior to January 1, 1977, and the department has been provided a copy of the agreement or other proof of the existence of the agreement that satisfies the department, if requested.

(c) It is unlawful for any person to violate this chapter.

1603. (a) After the notification is complete, the department shall determine whether the activity may substantially adversely affect an existing fish and wildlife resource. If the department determines that the activity may have that effect, the department shall provide a draft agreement to the entity within 60 days after the notification is complete. The draft agreement shall describe the fish and wildlife resources that the department has determined the activity may substantially adversely affect and include measures to protect those resources. The department's description of the affected resources shall be specific and detailed, and the department shall make available, upon request, the information upon which its determination of substantial adverse effect is based. Within 30 days of the date of

receipt of the draft agreement, the entity shall notify the department whether the measures to protect fish and wildlife resources in that draft agreement are acceptable. If the department's measures are not acceptable, the entity shall so notify the department in writing and specify the measures that are not acceptable. Upon written request, the department shall meet with the entity within 14 days of the date the department receives the request for the purpose of resolving any disagreement regarding those measures. If the entity fails to respond, in writing, within 90 days of receiving the draft agreement, the department may withdraw that agreement, and require the entity to resubmit a notification to the department before commencing the activity.

(b) If mutual agreement is not reached at any meeting held pursuant to subdivision (a), the entity may request, in writing, the appointment of a panel of arbitrators to resolve the disagreement. A panel of arbitrators shall be appointed within 14 days of receipt of the written request. The panel of arbitrators shall be comprised of three persons, as follows: one representative selected by the department; one representative selected by the affected entity; and a third person mutually agreed upon by the department and the entity, who shall serve as the panel chair. If the department and the entity cannot agree on the third person within that 14-day period, the third person shall be appointed in the manner provided by Section 1281.6 of the Code of Civil Procedure. The third person shall have scientific expertise relevant to the fish and wildlife resources that may be substantially adversely affected by the activity proposed by the entity and to the measures proposed by the department to protect those resources. The authority of the panel of arbitrators is limited to resolving disagreements regarding the measures specified in subdivision (a), and subdivisions (b) and (g) of Section 1605, and, in the case of an extension, whether or not the agreement needs to be modified to protect fish and wildlife resources. Any decision by the panel of arbitrators shall be issued within 14 days from the date the panel was established, shall be binding on the department and the affected entity, shall be based on the best scientific information reasonably available at the time of the arbitration, and, except for a decision to extend an agreement without modification, shall be made in the form of a final agreement. The final agreement issued by the panel shall also include, without modification, all measures that were not subject to arbitration. Each party shall pay the expenses of their selected representative and pay one-half the expenses of the third person.

1604. Any party affected by a decision made by an arbitration panel pursuant to this chapter may petition a court of competent jurisdiction for confirmation, correction, or vacation of the decision in accordance with Chapter 4 (commencing with Section 1285) of Title 9 of Part 3 of the Code of Civil Procedure.

1605. (a) (1) Except as otherwise provided in this section, the term of an agreement shall not exceed five years.

(2) Notwithstanding paragraph (1), after the agreement expires, the entity shall remain responsible for implementing any mitigation or other measures specified in the agreement to protect fish and wildlife resources.

(b) Any entity may request one extension of a previously-approved agreement, if the entity requests the extension prior to the expiration of its original term. The department shall grant the extension unless it determines that the agreement requires modification because the measures contained in the agreement no longer protect the fish and wildlife resources that the activity may substantially adversely affect. In the event the department makes that determination, the department shall propose measures intended to protect those resources.

(c) If the entity disagrees with the department's determination that the agreement requires modification to protect fish and wildlife resources or with the measures proposed by the department, the disagreement shall be resolved pursuant to the procedures described in subdivision (b) of Section 1603.

(d) The department may not extend an agreement for more than five years.

(e) (1) An original agreement shall remain in effect until the department grants the extension request, or new measures are imposed to protect fish and wildlife resources by agreement or through the arbitration process.

(2) Notwithstanding paragraph (1), an original agreement may not remain in effect for more than one year after its expiration date.

(f) If the entity fails to submit a request to extend an agreement prior to its expiration, the entity shall submit a new notification before commencing or continuing the activity covered by the agreement.

(g) Notwithstanding paragraph (1) of subdivision (a), the department may issue an agreement, that otherwise meets the requirements of this chapter, for a term longer than five years if the following conditions are satisfied:

(1) The information the entity provides to the department in its notification meets the requirements of paragraph (1) of subdivision (a) of Section 1602.

(2) The entity agrees to provide a status report to the department every four years. The status report shall be delivered to the department no later than 90 days prior to the end of each four-year period, and shall include all of the following information:

(A) A copy of the original agreement.

(B) The status of the activity covered by the agreement.

(C) An evaluation of the success or failure of the measures in the agreement to protect the fish and wildlife resources that the activity may substantially adversely affect.

(D) A discussion of any factors that could increase the predicted adverse impacts on fish and wildlife resources, and a description of the resources that may be adversely affected.

(3) The department shall review the four-year status report, and conduct an on-site inspection to confirm that the entity is in compliance with the agreement and that the measures in the agreement continue to protect the fish and wildlife resources. If the department determines that the measures in the agreement no longer protect the fish and wildlife resources that are being substantially adversely affected by the activity, the department, in consultation with the entity, and within 45 days of receipt of the report, shall impose one or more new measures to protect the fish and wildlife resources affected by the activity. If requested to do so by the entity, the department shall make available the information upon which it determined the agreement no longer protects the affected fish and wildlife resources. If the entity disagrees with one or more of the new measures, within seven days of receiving the new measures, it shall notify the department, in writing, of the disagreement. The entity and the department shall consult regarding the disagreement. The consultation shall be completed within seven days after the department receives the entity's notice of disagreement. If the department and entity fail to reach agreement, the entity may request, in writing, the appointment of a panel of arbitrators to resolve the disagreement. The panel of arbitrators shall be appointed within 14 days of the completed consultation. The panel of arbitrators shall issue a decision within 14 days of the date it is established.

All other provisions of subdivision (b) of Section 1603 regarding the panel shall apply to any arbitration panel established in accordance with this subdivision. If the entity fails to provide timely status reports as required by this subdivision, the department may suspend or revoke the agreement.

(4) The agreement shall authorize department employees to conduct on-site inspections relevant to the agreement, upon reasonable notice. Nothing in this section limits the authority of department employees to inspect private or public sites.

(5) Except as provided in paragraph (3), subparagraph (D) of paragraph (4) of subdivision (a) of Section 1602 and the time periods to process agreements specified in this chapter do not apply to agreements issued pursuant to this section.

(h) Each region of the department shall log the notifications of activities for which a long-term agreement is being considered pursuant to subdivision (g). The log shall list the date the notification was received by the department, a brief description of the proposed activity, and the location of the activity. Each item shall remain on the log for one year. Upon written request by any person, a regional office shall send the log to that person monthly for one year. A request made pursuant to this paragraph may be renewed annually.

1606. The department shall not condition the issuance of an agreement on the receipt of another local, state, or federal permit.

1607. Any time period prescribed in this chapter may be extended by mutual agreement.

1608. The department shall provide any entity that submits a notification pursuant to Section 1602 with all of the following information:

(a) The time period for review of the notification.

(b) An explanation of the entity's right to object to any measures proposed by the department.

(c) The time period within which objections may be made in writing to the department.

(d) The time period within which the department is required to respond, in writing, to the entity's objections.

(e) An explanation of the right of the entity to arbitrate any measures in a draft agreement.

(f) The procedures and statutory timelines for arbitration, including, but not limited to, information about the payment requirements for arbitrator fees.

(g) The current schedule of fees to obtain an agreement.

1609. (a) The director may establish a graduated schedule of fees to be charged to any entity subject to this chapter. The fees charged shall be established in an amount necessary to pay the total costs incurred by the department in administering and enforcing this chapter, including, but not limited to, preparing and submitting agreements and conducting inspections. The department may adjust the fees pursuant to Section 713. Fees received pursuant to this section shall be deposited in the Fish and Game Preservation Fund.

(b) (1) The fee schedule established pursuant to subdivision (a) may not impose a fee that exceeds five thousand dollars ($5,000) for any agreement.

(2) The fee limitation described in paragraph (1) does not apply to any agreement issued pursuant to subdivision (g) of Section 1605.

1610. (a) Except as provided in subdivision (b), this chapter does not apply to any of the following:

(1) Immediate emergency work necessary to protect life or property.

(2) Immediate emergency repairs to public service facilities necessary to maintain service as a result of a disaster in an area in which a state of emergency has been proclaimed by the Governor pursuant to Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code.

(3) Emergency projects undertaken, carried out, or approved by a state or local governmental agency to maintain, repair, or restore an existing highway, as defined in Section 360 of the Vehicle Code, within the existing right-of-way of the highway, that has been damaged as a result of fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide, within one year of the damage. Work needed in the vicinity above and below a highway may be conducted outside of the existing right-of-way if it is needed to stop ongoing or recurring mudslides, landslides, or erosion that pose an immediate threat to the highway, or to restore those roadways damaged by mudslides, landslides, or erosion to their predamage condition and functionality. This paragraph does not exempt from this chapter any project undertaken, carried out, or approved by a state or local governmental agency to expand or widen a highway damaged by fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide. The exception provided in this paragraph does not apply to a highway designated as an official state scenic highway pursuant to Section 262 of the Streets and Highways Code.

(b) The entity performing the emergency work described in subdivision (a) shall notify the department of the work, in writing, within 14 days of beginning the work. Any work described in the emergency notification that does not meet the criteria for the emergency work described in subdivision (a) is a violation of this chapter if the entity did not first notify the department in accordance with Section 1602.

1611. (a) An entity that submits a timber harvesting plan in accordance with Section 4581 of the Public Resources Code or directly to the department is deemed to have given the notification required by Section 1602, as long as the following information is included in the plan:

(1) The volume, type, and equipment to be used in removing or displacing any one or combination of soil, sand, gravel, or boulders.
(2) The volume of water, intended use, and equipment to be used in any water diversion or impoundment, if applicable.
(3) The equipment to be used in road or bridge construction.
(4) The type and density of vegetation to be affected and an estimate of the area involved.
(5) A diagram or sketch of the location of the operation that clearly indicates the stream or other water and access from a named public road. Locked gates shall be indicated and the compass direction shall be shown.
(6) A description of the period of time in which operations will be carried out.

(b) Notwithstanding subdivision (a), the department is not required to determine whether the notification is complete or otherwise process the notification until the timber harvesting plan and the proper notification fee have both been received by the department.

(c) Nothing in this section requires the department to issue an agreement fewer than 60 days from the date the notification is complete.

(d) The date on which the term of an agreement issued pursuant to this section begins shall be the date timber operations first commence, unless the agreement specifies a later beginning date.

1612. The department may suspend or revoke an agreement at any time if it determines that an entity is not in compliance with the terms of the agreement or fails to provide timely status reports as required by subdivision (g) of Section 1605. The department shall adopt regulations establishing the procedure for suspension or revocation

of an agreement. The procedure shall require the department to provide to the entity a written notice that explains the basis for a suspension or revocation, and to provide the entity with an opportunity to correct any deficiency before the department suspends or revokes the agreement.

1613. If after receiving a notification, but before the department executes a final agreement, the director of the department informs the entity, in writing, that the activity described in the notification, or any activity or conduct by the entity directly related thereto, violates any provision of this code or the regulations that implement the code, the department may suspend processing the notification and subparagraph (D) of paragraph (4) of subdivision (a) of Section 1602 and the timelines specified in Section 1603 do not apply. This section ceases to apply if any of the following occurs:

(a) The department determines that the violation has been remedied.
(b) Legal action to prosecute the violation is not filed within the applicable statute of limitations.
(c) Legal action to prosecute the violation has been terminated.

1614. If the entity is required to perform work subject to this chapter pursuant to a court or administrative order or notice, the entity shall include the measures proposed by the department to protect fish and wildlife resources in the agreement. Those measures are not subject to arbitration.

1615. (a) A person who violates this chapter is subject to a civil penalty of not more than twentyfive thousand dollars ($25,000) for each violation.

(b) The civil penalty imposed pursuant to subdivision (a) is separate from, and in addition to, any other civil penalty imposed pursuant to this section or any other provision of the law.

(c) In determining the amount of any civil penalty imposed pursuant to this section, the court shall take into consideration all relevant circumstances, including, but not limited to, the nature, circumstance, extent, and gravity of the violation. In making this determination, the court may consider the degree of toxicity and volume of the discharge, the extent of harm caused by the violation, whether the effects of the violation may be reversed or mitigated, and, with respect to the defendant, the ability to pay, the effect of any civil penalty on the ability to continue in business, any voluntary cleanup efforts undertaken, any prior history of violations, the gravity of the behavior, the economic benefit, if any, resulting from the violation, and any other matters the court determines that justice may require.

(d) Every civil action brought under this section shall be brought by the Attorney General upon complaint by the department, or by the district attorney or city attorney in the name of the people of the State of California, and any actions relating to the same violation may be joined or consolidated.

(e) (1) In any civil action brought pursuant to this chapter in which a temporary restraining order, preliminary injunction, or permanent injunction is sought, it is not necessary to allege or prove at any stage of the proceeding any of the following:

(A) That irreparable damage will occur if the temporary restraining order, preliminary injunction, or permanent injunction is not issued.
(B) That the remedy at law is inadequate.

(2) The court shall issue a temporary restraining order, preliminary injunction, or permanent injunction in a civil action brought pursuant to this chapter without the allegations and without the proof specified in paragraph (1).

(f) All civil penalties collected pursuant to this section shall not be considered fines or forfeitures as defined in Section 13003, and shall be apportioned in the following manner:

(1) Fifty percent shall be distributed to the county treasurer of the county in which the action is prosecuted. Amounts paid to the county treasurer shall be deposited in the county fish and wildlife propagation fund established pursuant to Section 13100.
(2) Fifty percent shall be distributed to the department for deposit in the Fish and Game Preservation Fund. These funds may be expended to cover the costs of any legal actions or for any other law enforcement purpose consistent with Section 9 of Article XVI of the California Constitution.

1616. Any agreement or any memorandum of understanding executed by the department pursuant to this chapter prior to January 1, 2004, shall be subject to, and shall be governed by, the provisions of this chapter that were in existence prior to that date. This section does not apply to paragraph (2) of subdivision (b) of Section 1602, requiring an entity to provide a copy or other satisfactory evidence of an agreement attained prior to January 1, 1977, upon the request of the department.

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

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 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" (CDFW 2022a, 2022b). This is a broader list than those species that are protected under FESA, CESA, and other California Fish and Game Code provisions, and includes lists developed by other organizations, including 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 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 (SWRCB 2019) includes the following:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
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; or
d. Greater than or equal to one acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes [...]:
    i. Industrial or municipal wastewater treatment or disposal,
    ii. Settling of sediment,
    iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial permitting program,
    iv. Treatment of surface waters,
    v. Agricultural crop irrigation or stock watering,
    vi. Fire suppression,
    vii. industrial processing or cooling,
    viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
    ix. Log storage,
    x. Treatment, storage, or distribution of recycled water, or
    xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
    xii. Fields flooded for rice growing.

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 The 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 Removals 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:
>
> a. 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.
> b. 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.
> c. 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), on-site 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:

a. A Joshua Tree that is known, by historic record, including pictures or written description, to be at least forty (40) years old.
b. 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).
c. 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.
d. 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 467.6-acre biological survey area (BSA), which includes the project site and off-site improvement areas plus a 100-foot buffer (Figure 4, Biological Resources), was obtained through a review of pertinent literature, field reconnaissance, habitat assessments, and protocol/focused surveys, which are described in detail in this section. For purposes of this report, special-status resources are defined as follows:

- Special-status plant species include:
  - Species designated as either rare, threatened, or endangered by CDFW or USFWS and are protected under either CESA (California Fish and Game Code, Section 2050 et seq.) or 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 2022a), or species with a CRPR of 1 or 2 in the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2022a)
  - Species protected under the CDNPA
- Special-status wildlife species include:
  - Species designated as either rare, threatened, or endangered by CDFW or USFWS and are protected under either CESA (California Fish and Game Code, Section 2050 et seq.) or FESA (16 USC 1531 et seq.)
  - Species that are candidate species being considered or proposed for listing under FESA or CESA
  - Species that are Species of Conservation Concern included on the CDFW Special Animals List (CDFW 2022b)
  - Certain species designated by California Fish and Game Code Section 4000 as fur-bearing mammals
- 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 2022a, 2022b, 2022c), and the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2022a). 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 majority of the BSA is located (Victorville and Apple Valley North) and the 10 surrounding quadrangles (Fairview Valley, Stoddard Well, Turtle Valley, Helendale, Victorville NW, Adelanto, Baldy Mesa, Hesperia, Apple Valley South, and Fifteen Mile Valley). 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

Dudek biologists Rachel Swick and Kim Narel conducted an initial biological reconnaissance-level field survey of the project site to document biological resources and vegetation communities on December 2, 2021. Additional reconnaissance-level field surveys of the off-site improvement areas were conducted on June 23, July 26, and

October 31, 2022. Additional field surveys conducted by Dudek included a focused special-status plant survey and desert native plant survey, focused western Joshua tree mapping surveys, protocol presence/absence surveys for the Mojave desert tortoise (*Gopherus agassizii*), and Mohave ground squirrel (*Xerospermophilus mohavensis*) protocol surveys.

An aquatic resources jurisdictional delineation (Appendix A and Appendix B) was conducted by NOREAS. in December 2022, January 2023, February 2023, and March 2023. 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, scope, conditions, and personnel for each survey. Photos of the BSA can be found in the specific survey reports.

Table 1. Survey Conditions

Date	Biologist(s)	Type of Survey
11/11/2021	N. Stamm K. Burritt	Western Joshua Tree Focused Survey
12/02/2021	R. Swick K. Narel	Biological Reconnaissance Survey; Vegetation Mapping
04/07/2022	K. Burritt K. Ortiz	Western Joshua Tree Focused Survey
04/11/2022	C. Adams E. Salas	Special-Status Plant Survey and Desert Native Plant Survey
04/12/2022	C. Adams E. Salas	Special-Status Plant Survey and Desert Native Plant Survey
05/03/2022	D. Ayers K. Narel S. Greely	Desert Tortoise Protocol Presence/Absence Surveys
05/04/2022	A. Anderson K. Narel S. Greely	Desert Tortoise Protocol Presence/Absence Surveys
06/23/2022	A. Cassady B. Schultz	Biological Reconnaissance Survey; Vegetation Mapping
03/2022–06/2022[a]	Dipodomys Ecological Consulting K. Flores K. Fairchild	Mohave Ground Squirrel Protocol Surveys
07/26/2022	A. Cassady B. Schultz	Biological Reconnaissance Survey; Vegetation Mapping
08/16/2022	A. Castro	Western Joshua Tree Focused Survey
10/31/2022	B. Schultz	Biological Reconnaissance Survey; Vegetation Mapping; Desert Tortoise Protocol Presence/Absence Survey

Table 1. Survey Conditions

Date	Biologist(s)	Type of Survey
11/19/2022	Dipodomys Ecological Consulting K. Flores K. Fairchild	Mohave Ground Squirrel Habitat Assessment – off-site improvement area
12/2022 – 03/2023	NOREAS L. Malo L. Hulse L. Patterson	Aquatic Resources Delineation
04/19/2023	Dipodomys Ecological Consulting K. Flores K. Fairchild	Mohave Ground Squirrel Habitat Assessment – off-site improvement area
04/27/2023	K. Dayton; R. Pringle	Special-Status Plant Survey and Desert Native Plant Survey
04/27/2023	K. Dayton; R. Pringle	Desert Tortoise Protocol Presence/Absence Surveys
04/27/2023	A. Castro; S. Tian	Western Joshua Tree Focused Survey
05/02/2023	K. Dayton; K. Narel	Desert Tortoise Protocol Presence/Absence Surveys

3.2.1 Vegetation Community and Land Cover Mapping

Dudek conducted vegetation mapping within the BSA. The survey date and biologist are included in Table 1. Dudek used CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018) and California Natural Community List (CDFW 2022d), also referred to as the Natural Communities List, based on the Manual of California Vegetation, second edition (Sawyer et. al. 2009) to map the entire BSA. 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). Vegetation communities and land covers were delineated to the vegetation alliance level and, where appropriate, the association level. Some modifications, such as the Preliminary Descriptions of the Terrestrial natural Communities of California (Holland 1986; Oberbauer et. al. 2008), were incorporated to accommodate the lack of conformity of the observed communities to those included in these references.

Vegetation mapping was conducted on foot to visually cover 100% of the BSA. Vegetation communities and land cover types were mapped in the field using an Esri ArcGIS mobile application. Vegetation communities were classified based on site factors, descriptions, distribution, and characteristic species present within an area. Information was recorded, including dominant species and associated cover classes, aspect, canopy height, and visible disturbance factors.

Minimum mapping units were established to standardize the scale and appropriate evaluation of stands, as recommended by CDFW (2020b). 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 be noted during vegetation mapping.

Following completion of the fieldwork, Dudek GIS analysts digitized the vegetation boundaries as delineated by the field biologists and created a GIS coverage for vegetation communities.

3.2.2 Flora

Latin and common names for plant species with a CRPR (formerly CNPS List) follow the CNPS Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2022a). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2022), and common names follow the California Natural Community list (CDFW 2022d) or the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service PLANTS Database (USDA 2022a).

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 2018) for birds, and Wilson and Reeder (2005) for mammals.

3.2.4 Special-Status and Regulated Resources

3.2.4.1 Special-Status Plant Survey

Based on the results of the literature review discussed in Section 3.1, nine special-status plant species were determined to have a 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*), 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 of Apple Valley Municipal Code, were also conducted and are further discussed below in Section 3.2.4.3.

Dudek conducted a focused special-status plant survey within the project site on April 11 and 12, 2022. Focused surveys were conducted for the off-site improvement areas on April 27, 2023. The survey date and biologist 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 a separate focused survey and is further 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 2022 surveys. More specifically, desert cymopterus was observed in San Bernardino County, north of Victorville and west of Barstow, in April 2022 (iNaturalist 2022a). Purple-nerve cymopterus was observed in bloom in San Bernardino County, north of Mountain Pass, in March 2022 (iNaturalist 2022b). Barstow woolly sunflower was observed in San Bernardino County, north of Kramer Junction, in April 2022 in addition to numerous other observations in San Bernardino County in March 2022 (iNaturalist 2022c). Sagebrush loeflingia was observed in Inyo County in May 2022 (iNaturalist 2022d). 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 2022 reference check.

3.2.4.2 Western Joshua Tree Focused Survey

The Commission determined that listing the western Joshua tree as threatened or endangered under CESA may be warranted and is currently under review. During the status review, the western Joshua tree is protected under CESA as a candidate species.

Per CDFW and the Town's Plant Protection and Management policy, Dudek's Certified Arborists performed a western Joshua tree survey to inventory and evaluate the health and relocation potential for each western Joshua tree located on the project site, off-site improvements, and a 186-foot buffer (Joshua Tree Inventory Survey Area). The western Joshua tree survey inventory and evaluation survey methods are provided in Appendix D. The inventory was conducted by Certified Arborists (Table 1). During the inventory, the GPS position of each western Joshua tree found on site was recorded and tree attributes and phenological data were collected for each tree.

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 western Joshua tree. Tagging on the north side allows for proper orientation during relocation (each relocated western Joshua tree will need to be oriented in the same direction as it was in its original location).

3.2.4.3 Desert Native Plant Survey

A desert native plant survey within BSA was conducted in accordance with the CDNPA and Chapter 9.76 of the Town of Apple Valley Municipal Code. The survey date, biologist, 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)
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 on site. 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 2019). Biologists surveyed the site by walking approximately 10-meter-wide transects for 100% coverage of the BSA. A buffer survey was not conducted as there was no legal access to these areas.

3.2.4.5 Mohave Ground Squirrel Protocol Survey

Dipodomys Ecological Consulting biologists conducted initial visual surveys within the project site and off-site improvement areas for Mohave ground squirrel in March and November 2022, as well as April 2023 (Dipodomys Ecological Consulting 2022, 2023). The visual surveys were conducted by driving and walking throughout the project site, portions of the off-site improvement areas, 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 C. Following an initial visual survey, three 5-day live-trapping surveys for Mohave ground squirrel were conducted between March 15 and June 26 within the on-site portion of the BSA. 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 C.

3.2.4.6 Evaluation of Aquatic Resources

An evaluation of the project site and off-site improvement areas was performed to assess the presence – or absence, of federal jurisdictional waters of the U.S.[3], lakes, rivers, or streambeds subject to regulation pursuant to Section 1600 (et seq.) of the California Fish and Game Code. This evaluation was completed using data acquired from current and historical imagery, hydrologic databases, analytic tools, physical on the ground

[3] Pursuant to the regulations and regulatory guidance outlined within the existing "2023 Water of the United States Rule," implemented in March 2023.

analyses/measurements, and pursuant to the regulations, manuals, and guidance documentation provided by the United States Army Corps of Engineers, CDFW, and other stakeholders. NOREAS. assessed the project site and off-site improvement areas in December 2022, January, February, and March of 2023. These visits were conducted during – and within, a week of multiple day rain events. Field methods, results and assumptions are described in detail in Appendix A and Appendix B.

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 2022 was below average, which has potential to limit the growth of flora. However, initial botanical reference searches were conducted prior to focused special-status plant surveys, and these search results are discussed further in Section 3.2.4.1 of this report. Conditions were monitored prior to collecting data to ensure target species would be identifiable if present. 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 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, annual temperatures in Victorville range from 44°F to 78°F (WRCC 2022a). The average annual precipitation for Apple Valley is 5.17 inches (WRCC 2022b). Periods of extended drought are common throughout the region.

4.2 Geology and Topography

The BSA is located just north of Victorville, along 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 on-site BSA is composed of undeveloped vacant lands north of Stoddard Wells Road. The southern portion of the on-site BSA is subject to disturbance as a result of illegal dumping and trespassing. These unpermitted activities have led to areas of exposed bare soils (where trails have formed) and several debris piles. The on-site portion of the BSA has surface elevation ranges between approximately 2,912 and 3,010 feet above mean sea level (amsl) and gently slopes up from the northwestern corner towards the southern boundary along Stoddard Wells Road. The off-site portion of the BSA has surface elevation range between 3,085 feet amsl at the eastern portion of Johnson Road and slopes gently to 2,980 feet amsl at the western portion of Stoddard Wells Road and continues sloping southwesterly to approximately 2,890 feet amsl at Falchion Road.

4.3 Soils

According to the USDA Natural Resource Conservation Service's Web Soil Survey (USDA 2022b), the BSA occurs within the San Bernardino County, Mojave River Area (CA671). The BSA consists of eight soil complexes: Cajon sand (2% to 9% slopes), Cajon-Arizo complex (2% to 15% slopes), Helendale-Bryman loamy sands (2% to 5% slopes), Mirage-Joshua complex (2% to 5% slopes), Nebona-Cuddeback complex (2% to 9% slopes), rock outcrop-Lithic Torriorthents complex (15% to 50% slopes), and Sparkhule-rock outcrop complex (15% to 50% slopes). These soil types are described in more detail below and are presented on Figure 5, Soils.

Cajon Series consists of very deep, somewhat excessively drained soils. The Cajon soils are at elevations of 200 to 4,300 feet amsl. Cajons soils with sandy loam surface textures have moderately rapid to rapid permeability (USDA 2022b).

Arizo Series consists of very deep, excessively drained soils. This series is typically found at elevations of 750 to 4,600 feet amsl (USDA 2022b).

Helendale Series consists of very deep, well-drained soils. These soils are found at elevations ranging from 2,000 to 3,935 feet amsl (USDA 2022b).

Bryman Series consists of deep, well-drained soils. Bryman soils are found at elevations between 2,800 to 3,800 feet amsl (USDA 2022b).

Mirage Series consists of deep, well-drained soils. These soils are found at elevations ranging from 2,600 to 3,400 feet amsl (USDA 2022b).

Joshua Series consist of moderately deep, well-drained soils. These soils are found at elevations ranging from 2,600 to 3,000 feet amsl (USDA 2022b).

Nebona Series consists of shallow, well-drained soils. These soils are found on terraces at elevations ranging from 2,200 to 3,000 feet amsl (USDA 2022b).

Cuddeback Series consists of moderately deep, well-drained soils. These soils are found at elevations ranging from 2,200 to 3,000 feet amsl (USDA 2022b).

Pits consists of active mining and excavation.

Rock Outcrop – Lithic Torriorthents Complex occurs at elevations ranging from 3,000 to 4,950 feet amsl. Soils in this complex have well developed sandy loam or sandy clay loam subsoil, are underlain by weathered granite, and include patchy clay films. The Lithic Torriorthents are shallow and well-drained soils. Lithic Torriorthent soils are characterized by rapid permeability (USDA 1978).

Sparkhule Series consists of shallow to rock, well-drained soils. These soils are found at elevations ranging from 2,300 to 4.500 feet amsl (USDA 2022b).

4.4 Surrounding Land Uses

The BSA is primarily composed of currently vacant, undeveloped property located at the northwestern edge of Apple Valley and east of Victorville. The BSA is surrounded by undeveloped desert open space and sparse residential development. I-15 borders a portion of the northwestern boundary of the BSA. Stoddard Wells Road provides access along the southern boundary of the BSA.

According to the Apple Valley General Plan, the land use and zoning designations for the project site are Regional Commercial (C-R) (Town of Apple Valley 2009). Additionally, the project site is located within the Warehouse Distribution Regional Commercial (C-R) Overlay. Land uses surrounding the BSA primarily consist of vacant land. Land use immediately adjacent to the facility consists of vacant land followed by Walmart and Big Lots Distribution Centers to the east, I-15 to the west, a solar energy plant to the southwest, and completely undeveloped land to the north and west. The nearest populated areas are the southern parts of the Town, located approximately 3 miles to the south of the BSA.

4.5 Watersheds and Hydrology

The BSA is located within the Bell Mountain Wash subwatershed (Hydrologic Unit Code 180902080705) within the Bell Mountain Wash – Mojave River watershed (Figure 6, Hydrologic Setting).

5 Results

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

5.1 Vegetation Communities and Land Covers

The vegetation communities and land cover types mapped within the BSA are detailed below in Table 2. The spatial distribution of the vegetation communities and land covers are presented on Figure 4, Biological Resources.

State rankings of 1, 2, or 3 are considered high priority for inventory or special status, and impacts to these communities typically require mitigation. Vegetation communities considered sensitive biological resources by CDFW under CEQA (CDFW 2022d) have an asterisk (*) at the end of the community name in Table 2. One vegetation community, Joshua tree woodland, has a CDFW ranking of 3.2 and is considered special status.

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

Floristic Alliance	Association	Vegetation Community[a]	State Ranking[b]	Project Site (acres)	Off-Site Areas (acres)	100-Foot Buffer (acres)	Total BSA (acres)[c]
Ericameria nauseosa	*Ericameria nauseosa*	Rubber rabbitbrush scrub	S5	—	4.8	11.3	16.1
Larrea tridentata	*Larrea tridentata*	Creosote bush scrub	S5	127.7	34.0	128.9	290.5
Yucca brevifolia	N/A	Joshua tree woodland*	S3	10.7	—	0.2	10.9
N/A	N/A	Disturbed habitat	NA	5.6	27.9	47.6	81.1
N/A	N/A	Urban/developed	NA	—	47.7	21.3	69.0
		Total[c]	**—**	**144.0**	**114.3**	**209.2**	**467.6**

Notes: BSA = biological survey area; N/A = not applicable.
An asterisk (*) indicates that a vegetation community is considered to be sensitive biological resources by CDFW under CEQA (CDFW 2022d).

[a] The spatial distribution of the vegetation communities and land covers are presented on Figure 4, Biological Resources.

[b] The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2022):
1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure
NA = not applicable
GNR = unranked, global rank not yet assessed
SNR = unranked, subnational rank not yet assessed

[c] Total acreages may not sum exactly due to rounding.

5.1.1 Rubber Rabbitbrush Scrub

Rubber rabbitbrush scrub, or *Ericameria nauseosa* shrubland association, is recognized by the Natural Communities List, and the community includes rubber rabbitbrush (*Ericameria nauseosa*) as the dominant or

codominant species in the shrub canopy, with a sparse or grassy herbaceous layer (CNPS 2022b). Rubber rabbitbrush scrub has an open to continuous shrub canopy of less than 3 meters (9 feet) in height (CNPS 2022b). This alliance consists of at least 2% absolute cover of rubber rabbitbrush or more than 25% relative cover in the shrub canopy (CNPS 2022b).

Rubber rabbitbrush scrub occurs along Frontage Road South within the off-site BSA and is dominated by rubber rabbitbrush, with a lower cover of allscale (*Atriplex polycarpa*) in some isolated locales.

The rubber rabbitbrush scrub alliance is ranked as S5 and therefore is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2022d).

5.1.2 Creosote Bush Scrub

Creosote bush scrub, or *Larrea tridentata* association, is recognized by the Natural Communities List, and the communities include creosote bush (*Larrea tridentata*) as the dominant shrub, exceeding all other shrubs in cover, and if white bursage (*Ambrosia dumosa*) or brittlebush (*Encelia farinosa*) are present, their cover is less than three times the cover of creosote bush, of if white bursage is present, it is less than two times the cover of creosote bush (CNPS 2022b). This community can also be referred to as "creosote bush flats."

Creosote bush scrub composes the majority of the BSA. Creosote is the dominant shrub species with a lower cover of Nevada joint fir. Additionally, western Joshua trees were scattered throughout the creosote bush scrub community within the BSA; however, western Joshua tree made up less than 1% absolute cover and therefore did not warrant its own community.

Creosote bush scrub is ranked as S5 and therefore is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2022d).

5.1.3 Joshua Tree Woodland

Joshua tree woodland, or *Yucca brevifolia* alliance, is recognized by the Natural Communities List, and the community includes western Joshua tree as an emergent small tree over a shrub or grass layer (CNPS 2022b). Joshua tree woodland has an open-to-intermittent tree canopy less than 14 meters (45 feet) in height and an open-to-intermittent shrub and herbaceous layer with perennial grasses and seasonal annuals (CNPS 2022b). This alliance consists of Joshua trees evenly distributed of at least 1% cover, with *Juniperus* and/or *Pinus* spp. of at least more than 1% absolute cover in the tree canopy (CNPS 2022b).

Joshua tree woodland occurs within the western portion of the on-site BSA, east of I-15. In addition, there are portions of the central on-site BSA where individual Joshua trees are located; however, these areas do not meet the minimum requirement of 1% cover and therefore were not mapped as Joshua tree woodland alliance. Within the on-site BSA, this community contains greater than 1% cover of western Joshua tree and included scattered creosote bush and Nevada joint fir.

Joshua tree woodland alliance is ranked as S3.2 and is considered a sensitive biological resource by CDFW under CEQA (CDFW 2022d).

5.1.4 Disturbed Habitat

Although not recognized by the Natural Communities List (CDFW 2022d), disturbed habitat refers to areas that have had physical anthropogenic disturbance and, as a result, cannot be identified as a native or naturalized vegetation association. However, these areas do have a recognizable soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Disturbed habitat is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2022d).

Within the BSA, disturbed habitat includes the existing dirt roads found within the site and generally along the western and southern boundaries of the on-site portion of the BSA, as well as bordering Stoddard Wells Road and Johnson Road. The roads within the on-site area are commonly used by utility workers or vehicles that need access within the site. Disturbed habitat also includes various dirt roads within the off-site portion of the BSA.

Disturbed habitat is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2022d).

5.1.5 Urban/Developed Land

Although not recognized by the Natural Communities List (CDFW 2022d), urban/developed land represents areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are not supported. This land cover type generally consists of semi-permanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated or supports a variety of ornamental plants and landscaping.

Within the BSA, urban/developed land consists of the paved roads including Stoddard Wells Road running east/west along the southern boundary and Johnson Road running east/west along the northern boundary of the BSA, as well as an I-15 frontage road, Falchion Road, and Apple Valley Road where off-site improvements are proposed.

Urban/developed land is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2022d).

5.2 Plants and Wildlife Observed

5.2.1 Plants

A total of 98 species of native or naturalized plants, 84 native (86%) and 14 non-native (14%), were recorded within the BSA. A list of plant species observed is provided in Appendix E, Plant Compendium.

5.2.2 Wildlife

A total of 30 wildlife species, consisting of 29 native species and 1 non-native species, were recorded within the BSA - or vicinity during surveys (Appendix F). The observed species and their respective habitat associations are provided in Table 3 below.

Table 3. Wildlife Species Detected within or adjacent to the BSA

Scientific Name	Common Name
Piranga ludoviciana	Western tanager
Haemorhous mexicanus	House finch
Spinus psaltria	Lesser goldfinch
Myiarchus cinerascens	Ash-throated flycatcher
Corvus corax	Common raven
Eremophila alpestris	Horned lark
Passer domesticus	House sparrow
Polioptila melanura	Black-tailed gnatcatcher
Athene cunicularia	Burrowing owl
Zenaida macroura	Mourning dove
Stelgidopteryx serripennis	Northern rough-winged swallow
Auriparus flaviceps	Verdin
Setophaga coronate	Yellow-rumped warbler
Amphispiza bilineata	Black-throated sparrow
Artemisiospiza belli	Bell's sparrow
Zonotrichia leucophrys	White-crowned sparrow
Canis latrans	Coyote
Vulpes macrotis arsipus	Desert kit fox
Lepus californicus	Black-tailed jackrabbit
Sylvilagus audubonii	Desert cottontail
Dipodomys panamintinus	Panamint kangaroo rat
Perognathus longimembris	Little pocket mouse
Ammospermophilus leucurus	White-tailed antelope squirrel
Callisaurus draconoides	Zebra-tailed lizard
Phrynosoma platyrhinos	Desert horned lizard
Uta stansburiana	Common side-blotched lizard
Aspidoscelis tigris	Tiger whiptail
Gambelia wislizenii	Long-nosed leopard lizard
Crotalus scutulatus	Mohave rattlesnake

5.3 Special-Status and Regulated Resources

Appendix G (Special-Status Plant Species Potentially Occurring within the Biological Survey Area) and Appendix H (Special-Status Wildlife Species Potentially Occurring within the Biological Survey Area) provide tables of all special-status species whose geographic ranges fall within the general BSA vicinity. Special-status species' potential to occur within the BSA were evaluated based on known species distribution, species-specific habitat preferences, and Dudek biologists' knowledge of regional biological resources. Species potentially occurring within the BSA 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; CRPR 1B, rare, threatened, or endangered throughout its range; and CRPR 2, rare or endangered in California, more common elsewhere).

Dudek botanists performed 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. Each special-status plant species was assigned a rating of "not expected," "low," "moderate," or "high" potential to occur based on relative location to known occurrences, vegetation community, soil, and elevation. Based on the results of the literature review and database searches, 16 special-status plant species were identified as potentially occurring within the BSA, and 8 species were determined to have at least a moderate potential to occur within the BSA: desert cymopterus, purple-nerve cymopterus, Mojave monkeyflower, Barstow woolly sunflower, sagebrush loeflingia, short-joint beavertail, Beaver Dam breadroot, and western Joshua tree. Therefore, a focused survey for these species was conducted on April 11 and 12, 2022, as well as April 27, 2023, as discussed in Section 3.2.4.1. There were no additional special-status plant species that were determined to have a moderate or high potential to occur within the BSA based on the soils, vegetation communities (habitat) present, elevation range, and previous known locations based on the CNDDB, Information for Planning and Conservation, and CNPS Inventory of Rare and Endangered Plants of California (Appendix G).

Listed species with any potential to occur and non-listed special-status species with a moderate or higher potential to occur are discussed herein. Those special-status plant species that occur in the region, but that are not expected to or have low potential to occur in the BSA due to a lack of suitable habitat, the BSA being located outside of the species' known geographic or elevation range, or those that were not observed during the focused 2022 and 2023 special-status plant surveys, are also included in Appendix G; however, these species are not discussed further because no significant direct or indirect impacts are expected. In addition, there is no USFWS-designated critical habitat for listed plant species overlapping the BSA (USFWS 2022b).

One special-status plant species, western Joshua tree, was observed within the BSA and is further discussed in Section 5.3.2, Western Joshua Tree. No other listed or non-listed CRPR 1 or CRPR 2 plants were observed during the western Joshua Tree focused surveys. Due to focused surveys being conducted during the appropriate blooming period, all other special-status plants are not expected to occur.

Details of the western Joshua tree are below in Table 4.

Table 4. Special-Status Plant Species Observed 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 amsl)	Potential to Occur
Yucca brevifolia	Western Joshua tree	None/SC/None	Great Basin grassland, Great Basin scrub, Joshua tree woodland,	Observed. This species was observed within the BSA.

Table 4. Special-Status Plant Species Observed 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 amsl)	Potential to Occur
			Mojavean desert scrub, pinyon and juniper woodland, Sonoran desert scrub, valley and foothill grassland/perennial leaf succulent/April–May/1,310–6,560	

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

5.3.2 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 2022a). This species typically blooms between April and May.

A total of 71 western Joshua tree individuals were observed within the Joshua Tree Inventory Survey Area (on-site project site, off-site project site, and associated 186-foot buffer) (Figure 4). Of the 71 trees found within the Joshua Tree Inventory Survey Area, 29 western Joshua tree individuals are located within the project site and off-site improvement areas, with the remaining 42 western Joshua tree individuals located within the associated 186-foot buffer. Further details on phenological data of the 71 western Joshua tree individuals observed is provided in Appendix D.

5.3.3 Desert Native Plants

In addition to western Joshua tree, a total of 26 desert native plants were observed within the BSA during the focused desert native plant survey (Figure 4). Specifically, 6 blue palo verde (*Parkinsonia florida*), 5 Wiggins' cholla (*Cylindropuntia echinocarpa*), 9 branched pencil cholla (*Cylindropuntia ramosissima*), 2 short-joint beavertail, 1 honey mesquite (*Prosopis glandulosa*), and 3 Mojave yucca (*Yucca schidigera*) were observed.[4]

[4] One short-joint beavertail was incidentally observed during the Mohave ground squirrel protocol surveys (Appendix D). This specimen was small in size, in poor health, and located in the northeastern quadrant of the on-site portion of the BSA.

5.3.4 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 and as sensitive by USFWS.

As they did for special-status plants, Dudek biologists performed an extensive desktop review of literature, existing documentation, and GIS data to evaluate the potential for special-status wildlife species to occur within the BSA. Each special-status wildlife species was assigned a rating of "not expected," "low," "moderate," or "high" potential to occur based on relative location to known occurrences and vegetation community/habitat association. Additional detail related to each rating is provided below:

- **Observed:** Species was documented within the BSA during field survey efforts
- **High:** Habitat within the BSA is suitable and species has been documented either within the BSA or immediately adjacent to project boundary in recent records (i.e., within 20 years).
- **Moderate:** Habitat within the BSA is suitable and species has been documented within 5 miles of BSA in recent records (i.e., within 20 years).
- **Low:** Habitat within the BSA is marginal and/or documented occurrences of species are historical (i.e., over 20 years old)
- **Not expected:** Habitat within the BSA is unsuitable or BSA is outside of the known geographic range of the species.
- **Absent:** Species has been confirmed absent from the BSA during protocol surveys for the species.

Listed species with any potential to occur and non-listed special-status species with a moderate or higher potential to occur are discussed herein. Those special-status wildlife species that are not expected or have low potential to occur in the BSA are also included in Appendix H; however, these species are not discussed further as no significant direct or indirect impacts are expected. Based on the results of the literature review and database searches, 26 special-status wildlife species were reported in the CNDDB and USFWS databases as occurring in the vicinity of the BSA. Of these, desert tortoise and Mohave ground squirrel were determined to have a moderate potential to occur based on suitable habitat present and nearby occurrences; therefore, focused protocol-level surveys were conducted for these species. Desert tortoise and Mohave ground squirrel surveys were confirmed absent through focused, protocol-level surveys, as further detailed in Section 3.2.4.4 and 3.2.4.5. In addition, there is no USFWS-designated critical habitat for listed wildlife species overlapping the BSA (USFWS 2022b).

Two special-status wildlife species, burrowing owl and desert kit fox, were observed within the BSA. Three additional special-status wildlife species were determined to have a moderate potential to occur within the BSA based on habitat present and/or previous known locations in CNDDB records: loggerhead shrike (*Lanius ludovicianus*), LeConte's thrasher (*Toxostoma lecontei*), and American badger (*Taxidea taxus*). No other special-status wildlife species were observed nor determined to have at least a moderate potential to occur within the BSA. The details of these species are presented in Table 5.

Table 5. Special-Status Wildlife Species Observed with Moderate or High Potential to Occur within the BSA

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Athene cunicularia (burrow sites and some wintering sites)	Burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Observed in the central portion of the on-site BSA. One burrowing owl was observed flushing from a burrow during a field survey in March 2022. No additional observations were detected during subsequent surveys on the BSA. The BSA contains suitable open scrub habitat with small mammal burrow complexes that are at least 4 inches wide. The nearest CNDDB occurrence record is approximately 2.5 miles south of the BSA and is from 2005 (CDFW 2022c).
Lanius ludovicianus (nesting)	Loggerhead shrike	BCC/SSC	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Moderate potential to occur. The BSA contains potentially suitable foraging habitat (open desert scrub) capable of supporting this species. The nearest CNDDB occurrence record is mapped approximately 4.1 miles southwest of the BSA and was documented in 2006 (CDFW 2022c).
Toxostoma lecontei	LeConte's thrasher	BCC/SSC	Nests and forages in desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus	Moderate potential to occur. The BSA contains desert scrub and scattered Joshua tree habitat potentially capable of supporting this species nesting. The nearest CNDDB occurrence record is mapped approximately 3.3 miles southwest of the BSA and was documented in 2017 (CDFW 2022c).
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Moderate potential to occur. The BSA contains suitable open creosote flats with friable soils, and potentially suitable burrows were observed and mapped within the BSA.
Vulpes macrotis arsipus	Desert kit fox	None/None[a]	Creosote bush flats, woodland, and scrub; desert dunes and scrub; Joshua tree woodland	Observed within the BSA via a camera trap that was deployed as part of the Mohave ground squirrel focused surveys.

Status Designations:
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern

SSC: California Species of Special Concern
Notes: BSA = biological survey area; CNDDB = California Natural Diversity Database.
[a] Species considered a "fur-bearing mammal" protected under Fish and Game Code Section 4000.

Protocol-level surveys for desert tortoise and Mohave ground squirrel were negative. These species, in addition to burrowing owl, American badger, and desert kit fox are detailed in the following discussion.

Burrowing Owl

Burrowing owl is a USFWS bird of conservation concern and 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 in 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 caching 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 (*Otospermophilus beecheyi*). 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); usable 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.

One burrowing owl was observed flushing from a burrow in March 2022 (Figure 4). No additional observations were detected during subsequent surveys (March to July 2022) within the BSA. The BSA contains suitable open scrub habitat with small mammal burrow complexes that are at least 4 inches wide. The nearest CNDDB occurrence record is approximately 2.5 miles south of the BSA and is from 2005 (CDFW 2022c).

Loggerhead Shrike

Loggerhead shrike 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 habitat for loggerhead shrike is 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 top of chain-link fences or barbed wire) that provide a location to impale prey upon for storage or manipulation (Humple 2008). This species nests and forages in desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats. Furthermore, this species nests in spiny shrubs or cactus. 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 has 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 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 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). Much of the LeConte's thrasher's diet consists of insects found within leaf litter under desert shrubs; therefore, habitat must contain sufficient ground cover (Sheppard 1996).

LeConte's thrasher has moderate potential to occur within the BSA.

American Badger

American badger is a California Species of Special Concern. American badgers prefer open scrub or grassy areas (NPS 2015; USGS 2020). The BSA includes Joshua tree woodland and creosote bush flats with friable soils that could support this species.

American badger has a moderate potential to occur within the BSA.

Desert Kit Fox

Desert kit fox is considered a "fur-bearing mammal," protected from take under the Commission's Mammal Hunting Regulations (Subdivision 2, Chapter 5), which effectively protects it from hunting pressure. Desert kit fox is not listed by USFWS or CDFW under any special-status designation. The desert kit fox lives in the open desert, on creosote bush flats, and amongst the sand dunes (NPS 2015; USGS 2020).

Desert kit fox was observed within the on-site BSA via a camera trap deployed for the Mohave ground squirrel focused surveys. The BSA provides suitable creosote bush flats habitat for this species, and other suitable desert kit dens were observed within the BSA (Figure 4).

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).

The typical habitat for the 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 of 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).

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 site by walking approximately 10-meter-wide transects for 100% coverage of the BSA. A buffer survey was not conducted as there was no legal access to these areas. Desert tortoise was not observed during 2022 or 2023 focused protocol surveys (USFWS 2019); therefore, this species is not expected to occur within the BSA. The BSA contains suitable sandy soils and creosote scrub; however, the BSA is immediately adjacent to I-15 to the west and bound along the south and east by Stoddard Wells Road. The nearest CNDDB occurrence was from 2004 and is mapped approximately 0.7 miles north of the BSA (CDFW 2022c). Survey forms are included as Appendix I.

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.

Dipodomys Ecological Consulting biologists conducted initial visual surveys within the project site and off-site improvement areas for Mohave ground squirrel in March and November 2022, as well as April 2023 (Dipodomys Ecological Consulting 2022, 2023). The visual surveys were conducted by driving and walking throughout the project site, portions of the off-site improvement areas, 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). Mohave ground squirrel was not observed during 2022 and 2023 protocol surveys (Appendix C).

A habitat assessment for Mohave ground squirrel conducted over the off-site improvement areas determined that the species is not expected to occur in this area. The off-site improvement areas consist of creosote bush scrub, a vegetation community that is associated with Mohave ground squirrel occurrences; however, the area is highly disturbed and lacks the plants preferred by the species for food (i.e., spiny hopsage [*Grayia spinosa*] and winterfat [*Krascheninnikovia lanata*]). In addition, 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 site is located) are relatively low. Finally, the more recent known occurrence of the species was documented in 2011 approximately 11 miles southwest of the project site, while the closest known occurrence was approximately 7 miles northwest of the project site in 2007. Given the low-quality habitat present in the off-site improvement areas, 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 improvement areas.

5.3.5 Evaluation of Aquatic Resources

The data presented in Appendix A (NOREAS 2023a) asserts that there are no waters of the United States within the project site and off-site improvement areas. Furthermore, there is no evidence that water leaves the project site, or the off-site improvement areas, and enters Bell Mountain Wash on a relatively permanent - or continuously flowing basis. This assessment is also based on the fact that no signatures with an Ordinary High-Water Mark (OHWM) within

the project site or off-site improvement areas reach the Mojave River, which, although not an interstate water nor a tributary to a Traditionally Navigable Water (TNW), is currently being regulated by the USACE. The project site and off-site improvement areas are not tributary to a TNW, nor an Interstate Water. Therefore, no signatures were identified within the project site and off-site improvement areas that are subject to federal Clean Water Act jurisdiction.

The data presented in Appendix B (NOREAS 2023b) is intended to delineate the extent of California Department of Fish and Wildlife (CDFW) jurisdiction - pursuant to Section 1600 (et seq.) of the California Fish and Game Code (CFG Code) within the project site and off-site improvement areas. To that end, there are no lake, rivers, or streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code within the project site. This rationale is based on the fact that the erosional signatures observed within the project site do not possess resources that support fish and aquatic wildlife as described in the CFG Code. The following summarizes why the project site lacks resources that constitutes a stream for the purposes of implementing and enforcing CFG Code Sections 1600 (et seq.):

- The project site does not possess any creeks and rivers, as defined in Title 14, CCR, Section 1.72. As there is no riparian vegetation or aquatic resources within the project site that supports fish or other aquatic life; nor does the project site include watercourses having a surface or subsurface flow that supports - or has supported, riparian vegetation.
- There are no intermittent streams, blue-lines, swales, or erosional features that support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife within the project site.
- There is no observable difference in the vegetation composition, density, or vigor between the project site's erosional signatures, and the adjacent lands.
- There are no features within the project site – erosional or otherwise, that have a surface connection to Bell Mountain Wash, or the Mojave River. All soil types mapped within the BSA are well drained, and none have a hydric soil rating.
- The features detected within the project site are erosional signatures and rills, characterized by very small depressions, or the size of motorcycle tire ruts. These features have small, negligible, localized watershed areas, and they do not possess aquatic resources or other attributes that would distinguish them functionally - or biologically, from upland habitats.
- There is no aquatic or riparian vegetation, aquatic animals (i.e., fish, amphibians, reptiles and invertebrates), or terrestrial species which derive benefits from a stream system within the project site.
- There are no discernable banks, rack lines, shelving, or "in-stream" features within the project site.
- The project site is not within the 100-year flood plain.
- The native vegetation occurring naturally along the project site's erosional signatures, rills and tire ruts is not the result of increased water availability, or nutrients. Nor does it create an "edge'' or ecotone between vegetation types that require water on one side, and adjacent upland habitat on the other; nor are there "natural banks" or evidence of confined flows that persist within the project site. No streambed indicators are present within the project site.
- Signatures observed within the project site meet the general definition and description for ruts and rills, and other erosional features characterized by low volume, infrequent, or short duration flow.

In conclusion, there is also no evidence that water leaves the project site and enters into larger systems that supports aquatic fish and wildlife, thus rendering the project site isolated, lacking aquatic fish and wildlife, and lacking aquatic or riparian vegetation/habitat; and not subject to CFG Code Sections 1600 (et seq.) jurisdiction.

Nonetheless, the off-site improvement areas - at six (6) specific locales, include non-wetland, ephemeral dry desert washes that total 404 linear feet. These six distinct features associated with the off-site improvement areas, have discernable bank lines with topographic relief, connectivity with Bell Mountain Wash, and subsequently to the Mojave River. As a result, it has been determined that the six features within the off-site improvement areas consist of 0.13-acres of ephemeral streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code (Appendix B, NOREAS 2023b) (Figure 7).

In this instance, the limits of the Regional Water Boards jurisdiction as it applies to the Porter-Cologne Act (California Water Code section 13000 et seq.) is coincident with the extent of CDFW jurisdiction - pursuant to Section 1600 (et seq.) of the CFG Code within the off-site improvement areas (NOREAS 2023c).

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 stepping stones for dispersal.

The BSA is not mapped as an essential connectivity area or natural landscape block; however, it is located approximately 1.8 miles southwest of an essential connectivity area and approximately 3.6 miles northeast of an essential connectivity area (CDFW 2022b). Additionally, the BSA is mapped as an Area of Conservation Emphasis, Rank 3 (CDFW 2022c).

According to CDFW (2019), Rank 3 is defined as:

> [O]ther areas that have been identified as having connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. This may change with future changes in surrounding land use or regional specific information. Hexagons included in this category include areas mapped as “intensified” in the TNC Omniscape study, core habitat areas, and hexagons on the periphery of mapped habitat linkages when not included in the categories above [i.e., Rank 4 and Rank 5].

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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6 Project Impacts

This section addresses direct and indirect impacts to biological resources that would result from implementation of the project. The significance determinations for proposed or potential impacts are described and proposed mitigation is provided in Section 7, Significant Impacts and Mitigation. Cumulative impacts are addressed in the project's environmental impact report.

Direct impacts refer to complete loss of a biological resource. For purposes of this report, it refers to the area where vegetation clearing, grubbing, or grading replaces biological resources. Direct impacts were quantified by overlaying the proposed impact limits on the biological resources map of the BSA. Direct impacts would occur from construction of an industrial/warehouse building and associated loading docks, tractor-trailer stalls, passenger vehicle parking species, and landscape areas. All on-site and off-site direct impacts are considered permanent.

Indirect impacts are reasonably foreseeable effects caused by a project's implementation on remaining or adjacent biological resources outside the direct disturbance zone. For purposes of this report, indirect impacts may affect areas outside the disturbance. Indirect impacts may be short-term and construction-related, or long-term and associated with development in proximity to biological resources.

Cumulative impacts refer to the combined environmental effects of a project and other relevant projects. These impacts may be minor when analyzed individually but become collectively significant as they occur over time. Cumulative impacts are addressed in the project's environmental impact report.

The evaluation of project impacts is organized by the resource potentially affected: riparian and sensitive vegetation communities (special-status vegetation communities), special-status species, jurisdictional waters and wetlands, and wildlife movement.

6.1 Impacts to Sensitive Vegetation Communities

6.1.1 Direct Impacts

A total of 258.3[5] acres, including 144.0 acres within the project site and 114.3 acres within the off-site areas, would be impacted by the project within the BSA; specifically, 144.0 acres of on-site permanent impacts and 114.3 acres of off-site permanent impacts (Figure 8, Impacts to Biological Resources). Table 6 summarizes permanent direct impacts to vegetation communities and land covers within the BSA. As stated in Section 5.1, Vegetation Communities and Land Covers, CDFW state rankings of 1, 2, or 3 are considered high priority for inventory or special-status communities, and impacts to these communities typically require mitigation. Joshua tree woodland is considered a sensitive biological resource by CDFW under CEQA.

All ground-disturbing activities are considered permanent impacts to Joshua tree woodland. The project will result in permanent impacts to 10.7 acres of Joshua tree woodland, which would be considered a significant impact under CEQA absent mitigation.

[5] Totals do not sum due to rounding.

The project would also result in permanent impacts to 247.6 acres of vegetation communities and land cover types that are not considered sensitive by CDFW, including creosote bush scrub, rubber rabbitbrush scrub, disturbed habitat, and urban/developed land. Therefore, these direct impacts are considered less than significant under CEQA.

Table 6. Impacts to Vegetation Communities and Land Cover Types within the BSA

Floristic Alliance	Association	Vegetation Community	Total Existing BSA (acres)	On-Site Permanent Impacts (acres)	Off-Site Permanent Impacts Areas (acres)
Ericameria nauseosa	*Ericameria nauseosa*	Rubber rabbitbrush scrub	16.1	—	4.8
Larrea tridentata	*Larrea tridentata*	Creosote bush scrub	290.5	127.7	34.0
Yucca brevifolia	N/A	Joshua tree woodland	10.9	10.7	—
N/A	N/A	Disturbed habitat	81.1	5.6	27.9
N/A	N/A	Urban/developed	69.0	—	47.7
		Total[a]	**467.6**	**144.0**	**114.3**

Notes: BSA = biological survey area; N/A = not applicable.
[a] Total acreages may not sum exactly due to rounding.

6.1.2 Indirect Impacts

Construction-related short-term indirect impacts may include inadvertent spillover impacts outside of the construction footprint, dust accumulation on Joshua tree woodland, chemical spills, stormwater erosion and sedimentation, and increased wildfire risk.

Potential long-term (post-construction) indirect impacts from operation and maintenance activities may include effects of herbicides, changes in water quality, increased wildfire risk, induced demand of the surrounding area, increased traffic and vehicle emissions, and accidental chemical spills. Indirect impacts to Joshua tree woodland are considered significant absent mitigation.

6.2 Impacts to Special-Status Plants

6.2.1 Direct Impacts

Non-Listed Special-Status Plant Species

Focused surveys conducted on April 11 and 12, 2022, within the on-site portion of the BSA, and April 27, 2023, within the off-site portion of the BSA resulted in no observations of non-listed special-status plant species; therefore, the project would have no direct or indirect impacts to non-listed special-status plant species within the BSA. Therefore, these direct impacts are considered less than significant under CEQA.

The BSA does not occur within federally designated critical habitat for special-status plant species, and there would be no direct impacts to critical habitat.

One listed special-status plant species was observed within the BSA: western Joshua tree. This species is further discussed below.

Western Joshua Tree

Western Joshua tree, a candidate for state listing under CESA, was observed and would be directly impacted by the project. Based on the site plan, implementation of the project would result in direct impacts to 29 western Joshua tree individuals. All ground-disturbing activities are considered permanent impacts to western Joshua trees. Direct impacts to western Joshua tree are considered significant absent mitigation under CEQA.

Based on a literature review completed by CDFW (Vander Wall et al. 2006), CDFW would like the western Joshua tree locations to be buffered by 186 feet to account for the impacts to the seed bank for western Joshua trees and their associated habitat. Therefore, a 186-foot buffer (or radius) was applied to each western Joshua tree location. Direct impacts to this 186-foot buffer were analyzed, and the project would result in 45.2 acres of direct impacts and 48.4 acres of indirect impacts to western Joshua trees, their seed bank, and their associated habitat.

Based on The Western Joshua Tree Conservation Act, impacts to western Joshua tree can be mitigated on a per-tree basis. Therefore, the project would result in impacts to 29 western Joshua trees.

6.2.2 Indirect Impacts

Non-Listed Special-Status Plant Species

Construction-related, short-term indirect impacts may include inadvertent spillover impacts outside the construction footprint, dust accumulation on non-listed special-status plants, chemical spills, stormwater erosion and sedimentation, and increased wildfire risk.

Potential long-term (post-construction) indirect impacts from operation and maintenance activities may include effects of herbicides, changes in water quality, increased wildfire risk, induced demand of the surrounding area, increased traffic and vehicle emissions, and accidental chemical spills. Indirect impacts to non-listed special-status plants are considered significant absent mitigation.

Western Joshua Tree

Typically, CDFW considers any western Joshua tree within 186 feet of a direct impact to be indirectly impacted (Vander Wall et. al. 2006). However, for this project, the only direct impacts within 186 feet of western Joshua trees are impacts within developed, existing road right-of-way that will be replaced following construction; no western Joshua tree seedbank or associated species would be affected by the impact. Therefore, the 42 western Joshua trees within 186 feet of development would not be considered take. However, the 42 western Joshua trees 186 feet from the off-site work in the road right-of-way would be indirectly impacted and considered significant absent mitigation.

Construction-related, short-term indirect impacts may include inadvertent spillover impacts outside of the construction footprint, dust accumulation on western Joshua tree, chemical spills, stormwater erosion and sedimentation, and increased wildfire risk.

Potential long-term (post-construction) indirect impacts from operation and maintenance activities may include effects of herbicides, changes in water quality, increased wildfire risk, induced demand of the surrounding area, increased traffic and vehicle emissions, and accidental chemical spills. Indirect impacts to western Joshua tree are considered significant absent mitigation.

6.3 Impacts to Special-Status Wildlife

6.3.1 Direct Impacts

The project could result in significant impacts to five special-status wildlife species: burrowing owl, loggerhead shrike, LeConte's thrasher, American badger, and desert kit fox; therefore, these species are further discussed below. Focused protocol-level surveys were conducted for desert tortoise and Mohave ground squirrel; therefore, these species are also discussed below.

The BSA does not occur within federally designated critical habitat for special-status wildlife species, and there would be no direct impacts to critical habitat.

Burrowing Owl

Burrowing owl was observed within the BSA, and several suitable burrows were mapped within the BSA; therefore, the species could occupy the BSA prior to construction.

The project would result in the loss of 210.6 acres of suitable habitat for burrowing owl, including impacts to rubber rabbitbrush scrub, creosote bush scrub, Joshua tree woodland, and disturbed habitat. These potential direct impacts to burrowing owls are considered significant absent mitigation under CEQA.

Loggerhead Shrike

Loggerhead shrike is a CDFW Species of Special Concern during its nesting period. It can be found in lowlands and foothills throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon–juniper, juniper, desert riparian, and western Joshua tree habitats. Loggerhead shrike was not observed during the biological surveys but has a moderate potential to occur in the BSA. Suitable nesting habitat, particularly near western Joshua trees, is present within the BSA.

The project would result in the loss of 177.1 acres of suitable habitat for loggerhead shrike, including impacts to rubber rabbitbrush scrub, creosote bush scrub and Joshua tree woodland. However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 177.1 acres of suitable habitat for loggerhead shrike would be considered less than significant under CEQA.

LeConte's Thrasher

LeConte's thrasher has a moderate potential to occur within the BSA. It can be found in desert scrub, alkali desert scrub, and desert succulent shrub habitats, and also occurs in western Joshua tree habitat with scattered shrubs. LeConte's thrasher was not observed during the biological surveys but has a moderate potential to occur in the BSA. Suitable foraging and nesting habitat are present within the BSA.

The project would result in the loss of 177.1 acres of suitable habitat for LeConte's thrasher, including impacts to rubber rabbitbrush scrub, creosote bush scrub and Joshua tree woodland. However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 177.1 acres of suitable habitat for LeConte's thrasher would be considered less than significant under CEQA.

American Badger

The BSA contains open creosote flats with friable soils, which is considered suitable habitat for American badger. In addition, suitable burrows were mapped within the BSA; therefore, the species could occupy the BSA prior to construction.

The project would result in the loss of 210.6 acres of suitable habitat for American badger, including impacts to rubber rabbitbrush scrub, creosote bush scrub, Joshua tree woodland, and disturbed habitat. However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 210.6 acres of suitable habitat for American badger would be considered less than significant under CEQA.

Desert Kit Fox

Desert kit fox was observed within the BSA through camera trapping as part of the Mohave ground squirrel–focused surveys. Additionally, several suitable burrows were mapped within the BSA; therefore, the species could occupy the BSA prior to construction.

The project would result in the loss of 210.6 acres of suitable habitat for desert kit fox, including impacts to rubber rabbitbrush scrub, creosote bush scrub, Joshua tree woodland, and disturbed habitat. However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 210.6 acres of suitable habitat for desert kit fox is considered less than significant under CEQA.

Desert Tortoise

The results of the protocol-level survey determined that desert tortoise is currently considered absent from the BSA. The on-site vegetation has been determined to provide moderate-quality habitat for the desert tortoise. While suitable habitat for this species will be removed as a result of construction of the project, this habitat is unoccupied, and the project would not result in any direct or indirect impacts to desert tortoise. Therefore, impacts to desert tortoise associated with the project and BSA would be less than significant under CEQA.

Mohave Ground Squirrel

The BSA is located in the southern portion of the Mohave ground squirrel range where Mohave ground squirrel occurrences are rare, and where population densities have historically been low. In addition, the BSA is located outside the core and peripheral population areas of Mohave ground squirrel, as well as outside linkage areas of the species, as described in the 2019 CDFW Mohave Ground Squirrel Conservation Strategy. Records from the CNDDB reveal the nearest occurrence of this species was recorded in 1977 and was 2.3 miles southwest of the BSA. Additionally, this occurrence is located west of I-15 which may act as a barrier to Mohave ground squirrel dispersal. The nearest occurrence on the east side of I-15 was recorded in 1919, approximately 4.8 miles southwest from the BSA. The most recent occurrences of Mohave ground squirrel were recorded in 2007 west of the Oro Grande/ Mojave River (i.e., west of I-15), approximately 6.7 miles northwest from the BSA (Figure 9, Historical Mohave Ground Squirrel Occurrences).

The visual surveys concluded that Mohave ground squirrel is not expected to occur within the off-site improvement areas due to the low-quality habitat, lack of connectivity to core populations, and low population densities of Mohave ground squirrel in the vicinity; therefore, protocol surveys were not warranted within the off-site improvement areas (Dipodomys Ecological 2022, 2023).

The visual surveys concluded that the on-site portion of the BSA provides suitable habitat for Mohave ground squirrel, including the presence of the species' preferred food plants (winterfat). Although suitable Mohave ground squirrel habitat is present within the on-site BSA, no Mohave ground squirrels were captured during the live-trapping or detected at the camera stations. Furthermore, based on the distance of the BSA from core population areas, as well as the presence of significant barriers to dispersal between the BSA and documented recent occurrences, it is unlikely that colonization from core populations will occur in the near future within the BSA. As such, the survey results indicate that Mohave ground squirrel do not inhabit the BSA (Appendix C).

As such, the project would not result in any direct impacts to Mohave ground squirrel. Therefore, impacts to Mohave ground squirrel associated with the project and BSA would be less than significant under CEQA.

Nesting Migratory Birds and Raptors

Similar to most other sites containing trees, shrubs, and other vegetation, the BSA contains opportunities for birds of prey (raptors) and other avian species to nest on site. Native nesting bird species with potential to occur within the BSA are protected by California Fish and Game Code Sections 3503 and 3503.5 and by the federal MBTA (16 USC 703–711). In particular, Section 3503 provides that it is unlawful to take, possess, or needlessly destroy the active nests or eggs of any bird in California; Section 3503.5 protects all raptors and their eggs and active nests; and the MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of native migratory bird species throughout the United States. Currently, California considers any nest that is under construction or modification or is supporting eggs, nestlings, or juveniles as "active." Therefore, impacts to nesting migratory birds and raptors would be considered significant absent mitigation under CEQA.

6.3.2 Indirect Impacts

Burrowing Owl

Construction activities have the potential to result in short-term indirect impacts to burrowing owls and their habitat. Those impacts could include dust, noise and vibration, trash and debris, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. These potential short-term or temporary indirect impacts to burrowing owls are considered significant absent mitigation under CEQA.

Post-construction (long-term) activities have the potential to result in indirect impacts to burrowing owls and their habitat. Those long-term impacts could result from development within or adjacent to burrowing owl habitat, including trash and debris, increased human presence, vehicle collisions, chemical spills, nighttime lighting, and increased invasive plant species that may degrade habitat. These potential long-term indirect impacts to burrowing owls are considered significant absent mitigation under CEQA.

Loggerhead Shrike

Construction activities have the potential to result in short-term indirect impacts to loggerhead shrike and their habitat. Those impacts could include dust, noise and vibration, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. These potential short-term or temporary indirect impacts to loggerhead shrike would be significant absent mitigation under CEQA.

Post-construction (long-term) activities have the potential to result in indirect impacts to loggerhead shrike and their habitat. Long-term impacts that could result from development within or adjacent to loggerhead shrike habitat include nighttime lighting and increased invasive plant species that may degrade habitat. These potential long-term indirect impacts to loggerhead shrikes would be significant absent mitigation under CEQA.

LeConte's Thrasher

Construction activities have the potential to result in short-term indirect impacts to LeConte's thrasher and their habitat. Those impacts could include dust, noise and vibration, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. These potential short-term or temporary indirect impacts to LeConte's thrasher would be significant absent mitigation under CEQA.

Post-construction (long-term) activities have the potential to result in indirect impacts to LeConte's thrasher and their habitat. Long-term impacts that could result from development within or adjacent to LeConte's thrasher habitat include nighttime lighting and increased invasive plant species that may degrade habitat. These potential long-term indirect impacts to LeConte's thrasher would be significant absent mitigation under CEQA.

American Badger

Construction activities have the potential to result in short-term indirect impacts to American badger and their habitat. Those short-term impacts could include dust, noise and vibration, trash and debris, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. These potential short-term or temporary indirect impacts to the species are considered significant absent mitigation under CEQA.

Post-construction (long-term) activities have the potential to result in indirect impacts to the species and their habitat. These impacts could include trash and debris, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. Given the species could occupy the BSA prior to construction, potential long-term indirect impacts to American badger are considered significant absent mitigation under CEQA.

Desert Kit Fox

Construction activities have the potential to result in short-term indirect impacts to desert kit fox and their habitat. Those impacts could include dust, noise and vibration, trash and debris, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. These potential short-term or temporary indirect impacts to desert kit fox are considered significant absent mitigation under CEQA.

Post-construction (long-term) activities have the potential to result in indirect impacts to this species and their habitat. These impacts could include trash and debris, increased human presence, vehicle collisions, chemical spills, and nighttime lighting. These potential long-term indirect impacts to desert kit fox are considered significant absent mitigation under CEQA.

Nesting Migratory Birds and Raptors

Construction activities have the potential to result in indirect impacts to nesting migratory birds and raptors and their habitats. Those impacts could include the loss of a nest through increased dust, noise and vibration, increased human presence, and nighttime lighting. These potential short-term or temporary indirect impacts to these species are considered significant absent mitigation under CEQA.

Post-construction (long-term) activities have the potential to result in indirect impacts to migratory birds and raptors and their habitat. Those long-term impacts could result from development within or adjacent to suitable habitat, including nighttime lighting and increased invasive plant species that may degrade habitat. These potential long-term indirect impacts to migratory birds and raptors are considered significant absent mitigation under CEQA.

6.4 Impacts to Aquatic Resources

The data presented in Appendix A (NOREAS 2023a) asserts that there are no waters of the U.S. within the project site and off-site improvement areas. The data presented in Appendix B (NOREAS 2023b) details that there are no lake, rivers, or streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code within the project site. But in sharp contrast, Appendix B (NOREAS 2023b) also outlines that within the off-site improvement areas - at six (6) specific locales, non-wetland, ephemeral dry desert washes that total 404 linear feet were detected. These six distinct features are associated with the off-site improvement areas, have discernable bank lines with topographic relief, connectivity with Bell Mountain Wash, and subsequently to the Mojave River. As a result, it has been determined that the six features within the off-site improvement areas consist of 0.13-acres of ephemeral streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code. In this instance, the limits of the Regional Water Boards jurisdiction - as it applies to the Porter-Cologne Act (California Water Code section 13000 et seq.), is coincident with the extent of CDFW jurisdiction - pursuant to Section 1600 (et seq.) of the CFG Code within the off-site improvement areas.

6.4.1 Direct Impacts

The project would result in the loss of 0.12 acres of non-wetland ephemeral waters of the state subject to regulation under Section 1600 (et seq.) of the CFG Code and RWQCB jurisdiction. It is important to note this presents NOREAS' best professional judgment at estimating special aquatic resource area boundaries using the most up-to-date regulations, written policies, and guidance from the resource agencies. However, only the resource agencies can make a final determination of special aquatic resource area boundaries and jurisdiction. These potential direct impacts to jurisdictional waters are considered significant absent mitigation under CEQA.

6.4.2 Indirect Impacts

Construction-related (short-term) indirect impacts may include inadvertent spillover impacts outside of the construction footprint, chemical spills, and stormwater erosion and sedimentation. These potential short-term or temporary indirect impacts to jurisdictional aquatic resources are considered significant absent mitigation under CEQA.

Post-construction (long-term) indirect impacts from operations and maintenance activities may include changes in water quality and accidental chemical spills. These potential long-term indirect impacts to jurisdictional aquatic resources are considered significant absent mitigation under CEQA.

6.5 Impacts to Wildlife Corridors and Habitat Linkages

6.5.1 Direct Impacts

The BSA is located in an area that has been identified by CDFW as having connectivity importance but not having been identified as a channelized area, a species corridor, or a habitat linkage (CDFW 2019). As a result, the BSA does not provide for regional wildlife movement or serve as a regional wildlife corridor. Wildlife movement may be temporarily disrupted during the construction phase of the project, although this effect would be both localized and short-term in nature. Nearby corridors that could support wildlife movement in the region include an area of land mapped as a part of the linkage design for the California Desert Linkage Network that is located approximately 1.8 miles northeast of the BSA. Additionally, a second area mapped as a linkage for the California Desert Linkage lies approximately 3.6 miles southwest of the BSA (CDFW 2022b).

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. Further, the project site does not contain nursery sites, such as bat colony roosting sites or colonial bird nesting areas. Therefore, impacts associated with wildlife movement, wildlife corridors, and wildlife nursery sites would be less than significant under CEQA.

6.5.2 Indirect Impacts

Some short-term indirect impacts to localized wildlife movement could occur due to construction-related noise and work in the vicinity. However, these impacts would be temporary and would not be expected to significantly disrupt wildlife movement due to ambient noise conditions and the ability for wildlife to continue to move around the construction area and portions of the BSA during and after construction. Work activities are not currently proposed during the nighttime.

Post-construction (long-term) indirect impacts from operations and maintenance activities may include nighttime lighting. These potential long-term indirect impacts to wildlife movement are considered significant absent mitigation under CEQA.

6.6 Impacts Associated with Local Policies and Ordinances

California Desert Native Plants

In addition to western Joshua tree, a total of 26 desert native plants were observed within the BSA during the focused desert native plant survey (Figure 4). Specifically, 6 blue palo verde (*Parkinsonia florida*), 5 Wiggins' cholla (*Cylindropuntia echinocarpa*), 9 branched pencil cholla (*Cylindropuntia ramosissima*), 2 short-joint beavertail, 1 honey mesquite (*Prosopis glandulosa*), and 3 Mojave yucca (*Yucca schidigera*) were observed.[6]

[6] One short-joint beavertail was incidentally observed during the Mohave ground squirrel protocol surveys (Appendix D). This specimen was small in size, in poor health, and located in the northeastern quadrant of the on-site portion of the BSA.

In total, 14 of these 26 desert native plants would be directly impacted within the on-site BSA: 4 Wiggins' cholla, 3 branched pencil cholla, 5 blue palo verde, 1 Mojave yucca, and 1 short-joint beavertail (Figure 4). The remaining 3 blue palo verde were documented within the off-site improvement areas associated with existing landscaping and would not be impacted. Therefore, because the focused desert native plant survey was positive for Wiggins' cholla, branched pencil cholla, and short-joint beavertail, and in accordance with the CDNPA and Chapter 9.76 of the Apple Valley Municipal Code a native plant removal permit must be obtained from the Town prior to the removal of these individuals. Additionally, these are addressed in the Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan (Appendix D), prepared to provide detailed specifications for the project applicant to meet the requirements of Chapter 9.76 of the Apple Valley Municipal Code to protect, preserve, and mitigate impacts to desert native plants.

Western Joshua Trees

In accordance with Chapter 9.76 of the Apple Valley Municipal Code, the preparation of a western Joshua tree and desert native plants relocation plan is required to mitigate impacts to western Joshua trees as a result of the project. As such, a Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan (Appendix D) was prepared for the project to provide detailed specifications for the project applicant to meet the requirements of Chapter 9.76 of the Apple Valley Municipal Code to protect, preserve, and mitigate impacts to western Joshua trees.

The Joshua Tree Preservation, Protection, and Relocation Plan addresses the requirements of the Town's Protected Plant Policy and provides details for the initial survey of the BSA'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.

6.7 Impacts Associated with Habitat Conservation Plans

The project is located within the California Desert Conservation Area Plan (BLM 1980). The project is also located within the West Mojave Plan (BLM 2005) and the Desert Renewable Energy Conservation Plan (BLM 2016) areas. The West Mojave Plan and Desert Renewable Energy Conservation Plan are amendments to the California Desert Conservation Area Plan. The Bureau of Land Management issued a Record of Decision for the West Mojave Plan in 2006, although the West Mojave Plan has not been formally adopted. The project will not conflict with the conservation criteria associated with the California Desert Conservation Area Plan or Desert Renewable Energy Conservation Plan. Therefore, impacts associated with an adopted habitat conservation plan would be less than significant under CEQA.

In addition, the BSA occurs within the Town of Apple Valley Multiple-Species Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), which is in the early stages of development, and there is no draft Town of Apple Valley Multiple-Species NCCP/HCP available for review at this time. However, there is a draft Public Review Planning Agreement document (Town of Apple Valley 2017) available for review that contains interim guidelines for the Town. Based on discussions Dudek has had with the Town on other projects in the Town, it is understood that the Town is at least 2 to 3 years away from completing this effort. However, the Town should be contacted for further clarity on this issue and to determine if they are implementing the interim guidelines. The interim guidelines, which should be reviewed in their totality, include requirements that are generally required under CEQA for biological resources, and there are some specific items to note: (1) all reports documenting the presence of listed species will be forwarded to responsible agencies; (2) for projects that propose to restore, enhance, or

create habitats, the project will be required to prepare a mitigation plan consistent with USACE Mitigation Rule; (3) for impacts to drainages other than the Mojave River, mitigation must be provided at least a 1:1 ratio, and all avoided drainages must have a buffer of 50 feet in width; (4) endemic plants must be translocated/restored at a 2:1 ratio; (5) areas of steep slopes should be avoided, and a buffer of 100 feet should be provided at the base of steeps slops; and (6) preferred landscaping is native, and planting invasive species is prohibited. In the event that the NCCP/HCP is approved at the time of project implementation, the biological technical report should be consistent with the Town of Apple Valley Multiple-Species NCCP/HCP.

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7 Significant Impacts and Mitigation

7.1 Explanation of Findings of Significance

Impacts to special-status vegetation communities, plant and wildlife species, and jurisdictional waters, including wetlands, must be quantified and analyzed to determine whether such impacts are significant under CEQA. CEQA Guidelines Section 15064(b) states that an ironclad definition of "significant" effect is not possible because the significance of an activity may vary with the setting. Appendix G of the CEQA Guidelines, however, does provide "examples of consequences which may be deemed to be a significant effect on the environment" (14 CCR 15064[e]). These effects include substantial effects on rare or endangered species of animal or plant or the habitat of the species. CEQA Guidelines Section 15065(a) is also helpful in defining whether a project may have a significant effect on the environment. Under that section, a proposed project may have a significant effect on the environment if the project has the potential to (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, (5) reduce the number or restrict the range of a rare or endangered plant or animal, or (6) eliminate important examples of a major period of California history or prehistory.

The following are the significance thresholds for biological resources provided in the CEQA Guidelines Appendix G Environmental Checklist, which states that a project would potentially have a significant effect if it does any of the following:

- **Impact BIO-1.** Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- **Impact BIO-2.** Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- **Impact BIO-3.** Has a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- **Impact BIO-4.** Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites.
- **Impact BIO-5.** Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- **Impact BIO-6.** Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The evaluation of whether an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or wildlife species. Impacts may be important locally, because they result in an adverse alteration of existing site conditions but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether that impact can be mitigated to a level below significance.

The following significance determinations were made based on the impacts of the project.

7.2 Impact BIO-1: Special-Status Species

The following significance determinations were made based on the impacts of the project. Proposed mitigation measures referenced in Sections 7.2.1 and 7.2.2 are provided in Section 7.2.3.

7.2.1 Direct Impacts

Non-Listed Special-Status Plant Species

No non-listed special-status plant species were observed within the BSA; therefore, the project would have no direct or indirect impacts to non-listed special-status plant species. In addition, the BSA does not occur within federally designated critical habitat for special-status plant species, and there would be no direct impacts to critical habitat.

One listed special-status plant species was observed within the BSA: western Joshua tree. No other listed special-status plants were observed within the BSA.

Western Joshua Tree

As required by **MM-BIO-1** (Conservation of Western Joshua Tree Lands), mitigation for direct impacts to 45.2 acres of western Joshua trees, or 29 individuals, (which includes the associated 186-foot buffer applied to each individual western Joshua tree) would be fulfilled through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Additionally, as required by **MM-BIO-2** (Relocation of Desert Native Plants) and in accordance with Chapter 9.76 of the Apple Valley Municipal Code, the preparation of a western Joshua tree and desert native plants relocation plan is required to mitigate impacts to western Joshua trees as a result of the project (also further discussed in Section 6.1, Impacts to Sensitive Vegetation Communities, and Section 6.2, Impacts to Special-Status Plants). As such, a Joshua Tree Preservation, Protection, and Relocation Plan, and California Desert Native Plant Relocation Plan (Appendix D) was prepared to provide detailed specifications for the project applicant to meet the requirements of Chapter 9.76 (Plant Protection and Management Policy) of the Apple Valley Municipal Code to protect, preserve, and mitigate impacts to western Joshua trees. Thus, mitigation for direct impacts to western Joshua tree would also mitigate for impacts to Joshua tree woodland. In addition, implementation of **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), and **MM-BIO-6** (Construction Monitoring Notebook) would reduce potential direct impacts to a less-than-significant level.

Implementation of **MM-BIO-1** through **MM-BIO-6**, as described above, would reduce potential direct impacts to western Joshua trees to less than significant.

Burrowing Owl

Pursuant to the California Fish and Game Code and the MBTA, a pre-construction survey in compliance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012) would be necessary to reevaluate the locations of potential burrowing owl burrows located within the project limits so take of owls or active owl nests can be avoided. Consistent with **MM-BIO-7** (Pre-Construction Surveys for Burrowing Owl and Avoidance), pre-construction surveys for burrowing owl shall be conducted in areas supporting potentially suitable habitat with the first survey no less than 14 days

prior to the start of construction activities, and the second within 24 hours of start of construction. A burrowing owl relocation plan has been prepared to facilitate implementation of this mitigation measure. This plan provides details on avoidance and minimization measures including buffer distances and active burrow screening, as well as the process used for excavating inactive burrows, and, if necessary, passive displacement and excavation of active burrows. The burrowing owl relocation plan is attached to this report as Appendix J. In addition, implementation of **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), and **MM-BIO-6** (Construction Monitoring Notebook) would reduce potential direct impacts to a less-than-significant level.

Furthermore, should burrowing owl be located during the pre-construction survey, the project would result in the loss of 210.6 acres of suitable habitat for burrowing owl, including impacts rubber rabbitbrush scrub, creosote bush scrub, Joshua tree woodland, and disturbed habitat. These direct impacts would be significant absent mitigation. As required by **MM-BIO-7**, mitigation for direct impacts to 210.6 acres, should burrowing owl be found during pre-construction surveys, would be fulfilled through conservation of suitable burrowing owl habitat through the purchase of credits at a CDFW approved conservation bank within the Inland Deserts Region (Region 6) at a minimum of 1:1 in-kind habitat replacement. Conservation banks protect specific sensitive species and their habitats by establishing and selling credits for species that occur within the conservation bank; thereby helping to consolidate conservation efforts for sensitive species and their habitats into a large, contiguous preserves which provide high quality wildlife habitat (CDFW 2023).

Additionally, as required by **MM-BIO-1**, mitigation for direct impacts to 29 western Joshua trees will be fulfilled through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Conservation efforts for western Joshua tree will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree would also mitigate for loss of suitable habitat for burrowing owl, which use similar habitat.

Implementation of **MM-BIO-1**, and **MM-BIO-3** through **MM-BIO-7**, as described above, would reduce potential direct impacts to a less-than-significant level.

Loggerhead Shrike

To avoid potential impacts to nesting loggerhead shrikes, it is recommended that vegetation removal activities be conducted outside the general bird nesting season (February 1 through August 31). If vegetation cannot be removed outside the bird nesting season, a pre-construction nesting bird survey by a qualified biologist is required prior to vegetation removal. This requirement is outlined in **MM-BIO-8** (Pre-Construction Nesting Bird Surveys and Avoidance).

The project would result in the loss of 177.1 acres of suitable habitat for loggerhead shrike (i.e., rubber rabbitbrush scrub, creosote bush scrub and Joshua tree woodland). However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 177.1 acres of suitable habitat for loggerhead shrike would be considered less than significant. Nonetheless, as required by **MM-BIO-1** (Conservation of Western Joshua Tree Lands), mitigation for direct impacts to 29 western Joshua trees would be fulfilled through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Conservation efforts for western Joshua tree will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree would also offset loss of suitable habitat for loggerhead shrike, which use similar habitat.

Implementation of **MM-BIO-1** and **MM-BIO-8**, as described above, would reduce potential direct impacts to loggerhead shrike to less than significant.

LeConte's Thrasher

To avoid potential impacts to nesting LeConte's thrasher, it is recommended that vegetation removal activities be conducted outside the general bird nesting season (February 1 through August 31). If vegetation cannot be removed outside the bird nesting season, a pre-construction nesting bird survey by a qualified biologist is required prior to vegetation removal. This requirement is outlined in **MM-BIO-8** (Pre-Construction Nesting Bird Surveys and Avoidance).

The project would result in the loss of 177.1 acres of suitable habitat for LeConte's thrasher (i.e., impacts to rubber rabbitbrush scrub, creosote bush scrub and Joshua tree woodland). However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 177.1 acres of suitable habitat for LeConte's thrasher would be considered less than significant. Nonetheless, as required by **MM-BIO-1** (Conservation of Western Joshua Tree Lands), mitigation for direct impacts to 29 western Joshua trees would be fulfilled through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Conservation efforts for western Joshua tree will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree would also offset loss of suitable habitat for LeConte's thrasher, which use similar habitat.

Implementation of **MM-BIO-1** and **MM-BIO-8**, as described above, would reduce potential direct impacts to LeConte's thrasher to less than significant.

American Badger

To avoid potential direct impacts to American badger, a pre-construction survey for American badger will be conducted within 10 days prior to the start of construction to determine the presence/absence of American badger. As such, in an abundance of caution and to ensure that potential impacts to this species are less than significant, the project applicant shall prepare a mitigation and monitoring plan that addresses American badger if the species is determined to occur on the project site prior to the start of construction, pursuant to **MM-BIO-9** (Pre-Construction Survey for American Badger and Avoidance). With the incorporation of **MM-BIO-9**, impacts associated with American badger would be less than significant. In addition, implementation of **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), and **MM-BIO-6** (Construction Monitoring Notebook) would reduce potential direct impacts to a less-than-significant level.

The project would result in the loss of 210.6 acres of suitable habitat for American badger, including impacts to rubber rabbitbrush scrub, creosote bush scrub, Joshua tree woodland, and disturbed habitat. However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 210.6 acres of suitable habitat for American badger would be considered less than significant. Nonetheless, as required by **MM-BIO-1** (Conservation of Western Joshua Tree Lands), mitigation for direct impacts to 29 western Joshua trees would be fulfilled through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Conservation efforts for western Joshua tree will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree would also offset loss of suitable habitat for American badger, which use similar habitat.

Implementation of **MM-BIO-1**, **MM-BIO-3** through **MM-BIO-6** and **MM-BIO-9**, as described above, would reduce potential direct impacts to American badger to less than significant.

Desert Kit Fox

To avoid potential direct impacts to desert kit fox, a pre-construction survey for desert kit fox will be conducted within 10 days prior to the start of construction to determine the presence/absence of desert kit fox, pursuant to **MM-BIO-10** (Pre-Construction Survey for Desert Kit Fox and Avoidance). To ensure that potential impacts to this species are less than significant, a desert kit fox relocation and mitigation plan has been prepared to facilitate implementation of this mitigation measure and is attached to this report as Appendix K. In addition, implementation of **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), and **MM-BIO-6** (Construction Monitoring Notebook) would reduce potential direct impacts to a less-than-significant level.

The project would result in the loss of 210.6 acres of suitable habitat for desert kit fox, including impacts to rubber rabbitbrush scrub, creosote bush scrub, Joshua tree woodland, and disturbed habitat. However, due to the availability of surrounding vacant lands with comparable suitable habitat, the loss of 210.6 acres of suitable habitat for desert kit fox is considered less than significant. Nonetheless, as required by **MM-BIO-1** (Conservation of Western Joshua Tree Lands), mitigation for direct impacts to 29 western Joshua trees would be fulfilled through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Conservation efforts for western Joshua tree will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree would also offset loss of suitable habitat for desert kit fox, which use similar habitat.

Implementation of **MM-BIO-1**, **MM-BIO-3** through **MM-BIO-6** and **MM-BIO-10**, as described above, would reduce potential direct impacts to desert kit fox to less than significant.

Nesting Migratory Birds and Raptors

To ensure compliance with the California Fish and Game Code and the MBTA and to avoid potential impacts to nesting birds, it is recommended that the vegetation removal activities be conducted outside the general bird nesting season (February 1 through August 31, depending on the species), and if vegetation cannot be removed outside the bird nesting season, a pre-construction nesting bird survey by a qualified biologist is required prior to vegetation removal. This requirement is outlined in **MM-BIO-8** (Pre-Construction Nesting Bird Surveys and Avoidance). With the incorporation of **MM-BIO-8**, impacts associated with nesting birds, including raptors, would be less than significant.

Implementation of **MM-BIO-8**, as described above, would reduce potential direct impacts to nesting migratory birds and raptors to less than significant.

7.2.2 Indirect Impacts

Non-Listed Special-Status Plant Species and Western Joshua Tree

Implementation of **MM-BIO-3** (Designated Biologist Authority) gives the project's designated biologist the authority to stop work if construction is not compliant with this CEQA document. **MM-BIO-4** (Compliance Monitoring) requires

that an experienced biologist oversee compliance with the protective measures, including limiting impacts to the project impact footprint. MM-BIO-5 (Education Program) would provide construction personnel with training related to western Joshua trees that are present on and adjacent to the impact footprint. MM-BIO-6 (Construction Monitoring Notebook) provides for documentation that the education program was administered to applicable personnel. MM-BIO-11 (Delineation of Property Boundaries) requires that impacts occur within the fenced, staked, or flagged area that is clearly delineated within the project impact footprint. The construction crew will be responsible for unauthorized impacts from construction activities to western Joshua trees that are outside the permitted project footprint. Thus, implementation of MM-BIO-3 through MM-BIO-6 and MM-BIO-11 will enable the project to avoid and minimize inadvertent spillover impacts outside of the approved impact footprint.

To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with Mojave Desert Air Quality Management District (MDAQMD) Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. Thus, implementation of MM-BIO-12 would help to avoid and minimize impacts to western Joshua tree from any construction-related chemical spills.

A stormwater pollution prevention plan (SWPPP) would be prepared and implemented to prevent all construction pollutants from contacting stormwater during construction activities, with the intent of keeping sediment and any other pollutants from moving off site and into receiving waters. Best management practice (BMP) categories employed on site would include erosion control, sediment control, and non-stormwater good housekeeping. Preparation and implementation of a SWPPP would help to avoid and minimize the potential effects of stormwater erosion during construction.

Construction of the project would introduce potential ignition sources to the project site, including the use of heavy machinery and the potential for sparks during welding activities or other hot work. However, the project would be required to comply with Town and state requirements for fire safety practices to reduce the possibility of fires during construction activities. Further, vegetation would be removed from the site prior to the start of construction. Adherence to Town and state regulatory standards during project construction would reduce the risk of wildfire ignition and spread during construction activities. Therefore, short-term construction impacts involving wildland fires would not be substantial.

Potential long-term (post-construction) indirect impacts from operations and maintenance activities may include effects of herbicides, changes in water quality, increased wildfire risk, and accidental chemical spills.

MM-BIO-13 (Herbicides) would limit herbicide use to instances where hand or mechanical efforts are infeasible and would only be applied when wind speeds are less than 7 miles per hour to prevent drift into off-site western Joshua trees.

Implementation of low-impact-development features and BMPs would, to the maximum extent practicable, reduce the discharge of pollutants into receiving waters, including inadvertent release of pollutants (e.g., hydraulic fluids and petroleum), the improper management of hazardous materials, trash and debris, and the improper management of portable restroom facilities (e.g., regular service) in accordance with all relevant local and state development standards. In addition, in accordance with California Green Building Standards Code (CALGreen)

requirements (24 CCR, Part 11), project source controls to improve water quality would be provided for outdoor material storage areas, outdoor trash storage/waste handling areas, and outdoor loading/unloading areas. Therefore, impacts to western Joshua trees due to changes in water quality would be avoided and minimized through implementation of low-impact-development features and BMPs.

Upon completion of project construction, with adherence to the Town of Apple Valley Municipal Code and because of the low ignitability of the proposed structures and implementation of fire-resistant and irrigated landscaping, the project would not facilitate wildfire spread or exacerbate wildfire risk. Further, given that surrounding off-site fuels consist of moderately spaced vegetation, wildfires in the immediate surrounding area are not common, and it is unlikely that the project site would be exposed to the uncontrolled spread of a wildfire. It is not anticipated that the project, due to slope, prevailing winds, and other factors, would exacerbate wildfire risks or the uncontrolled spread of a wildfire; thus, with adherence to the Town of Apple Valley Municipal Code, long-term indirect impacts to western Joshua tree associated with increased wildlife risk is not expected to occur.

In summary, implementation of **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), **MM-BIO-6** (Construction Monitoring Notebook), **MM-BIO-11** (Delineation of Property Boundaries), **MM-BIO-12** (Hazardous Waste), and **MM-BIO-13** (Herbicides) would reduce potential indirect impacts (short-term and long-term) to non-listed special-status plants and western Joshua tree to less than significant.

Burrowing Owl

MM-BIO-7 (Pre-Construction Surveys for Burrowing Owl and Avoidance) would require pre-construction burrowing owl surveys and result in establishment of construction buffers around any burrowing owl burrows found, thus limiting effects from most short-term indirect impacts, including noise and vibration, increased human presence, nighttime lighting, and vehicle collisions. **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), and **MM-BIO-6** (Construction Monitoring Notebook) would require that all workers complete a Worker Environmental Awareness Program (WEAP) training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. **MM-BIO-12** (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction. **MM-BIO-14** (Lighting) would require nighttime lighting during construction within 50 feet of habitat for special-status species to be directed away from natural areas. **MM-BIO-15** (Trash and Debris) would require trash and debris to be removed regularly and would require the use of animal-resistant trash receptacles to avoid attracting urban-related predator species.

Potential long-term indirect impacts that could result from development within or adjacent to burrowing owl habitat include nighttime lighting and increased invasive plant species that may degrade habitat. **MM-BIO-14** would require nighttime lighting during operations within 50 feet of habitat for special-status species to be directed away from natural areas. **MM-BIO-16** (Invasive Plant Management) would require that landscape plants within 200 feet of native vegetation communities not be on the most recent version of the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory (http://www.cal-ipc.org/ip/inventory/index.php).

In summary, implementation of MM-BIO-3 through MM-BIO-7, MM-BIO-12, and MM-BIO-14 through MM-BIO-16, as described above, would reduce potential indirect impacts (short-term and long-term) to burrowing owl to less than significant.

Loggerhead Shrike

MM-BIO-8 (Pre-Construction Nesting Bird Surveys and Avoidance) would require nesting bird surveys and would result in establishment of construction buffers around nests, thus limiting effects from most short-term indirect impacts, including noise and vibration, increased human presence, nighttime lighting, and vehicle collisions. MM-BIO-3 (Designated Biologist Authority), MM-BIO-4 (Compliance Monitoring), MM-BIO-5 (Education Program), and MM-BIO-6 (Construction Monitoring Notebook) would require that all workers complete a WEAP training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills be implemented and that repair and cleanup of any hazardous waste occurs. To reduce fugitive dust resulting from construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction. MM-BIO-14 (Lighting) would require nighttime lighting during construction within 50 feet of habitat for special-status species to be directed away from natural areas.

Potential long-term indirect impacts that could result from development within or adjacent to loggerhead shrike habitat include nighttime lighting and increased invasive plant species that may degrade habitat. MM-BIO-14 would require nighttime lighting during operations within 50 feet of habitat for special-status species to be directed away from natural areas. MM-BIO-16 (Invasive Plant Management) would require that landscape plants within 200 feet of native vegetation communities not be on the most recent version of the Cal-IPC Inventory of Invasive Plants (http://www.cal-ipc.org/ip/inventory/index.php).

In summary, implementation of MM-BIO-3 through MM-BIO-6, MM-BIO-8, MM-BIO-12, MM-BIO-14, and MM-BIO-16, as described above, would reduce potential indirect impacts (short-term and long-term) to loggerhead shrike to less than significant.

LeConte's Thrasher

MM-BIO-8 (Pre-Construction Nesting Bird Surveys and Avoidance) would require nesting bird surveys and would result in establishment of construction buffers around nests, thus limiting effects from most short-term indirect impacts, including noise and vibration, increased human presence, nighttime lighting, and vehicle collisions. MM-BIO-3 (Designated Biologist Authority), MM-BIO-4 (Compliance Monitoring), MM-BIO-5 (Education Program), and MM-BIO-6 (Construction Monitoring Notebook) would require that all workers complete a WEAP training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills be implemented and that repair and cleanup of any hazardous waste occurs. To reduce fugitive dust resulting from construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction. MM-BIO-14 (Lighting) would require nighttime lighting during construction within 50 feet of habitat for special-status species to be directed away from natural areas.

Potential long-term indirect impacts that could result from development within or adjacent to LeConte's thrasher habitat include nighttime lighting and increased invasive plant species that may degrade habitat. As noted previously, MM-BIO-14 would require nighttime lighting during operations within 50 feet of habitat for special-status species to be directed away from natural areas. MM-BIO-16 (Invasive Plant Management) would require that landscape plants within 200 feet of native vegetation communities not be on the most recent version of the Cal-IPC Inventory of Invasive Plants (http://www.cal-ipc.org/ip/inventory/index.php).

In summary, implementation of MM-BIO-3 through MM-BIO-6, MM-BIO-8, MM-BIO-12, MM-BIO-14, and MM-BIO-16, as described above, would reduce potential indirect impacts (short-term and long-term) to LeConte's thrasher to less than significant.

American Badger

MM-BIO-9 (Pre-Construction Survey for American Badger and Avoidance) would require a pre-construction survey for American badger and if determined present, would result in establishment of an American badger mitigation and monitoring plan, which shall include avoidance and minimization measures to reduce potential impacts, as well as compensatory mitigation to offset indirect impacts including noise and vibration, increased human presence, nighttime lighting, and vehicle collisions. MM-BIO-3 (Designated Biologist Authority), MM-BIO-4 (Compliance Monitoring), MM-BIO-5 (Education Program), and MM-BIO-6 (Construction Monitoring Notebook) would require that all workers complete a WEAP training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

Potential long-term indirect impacts that could result from development within or adjacent to the BSA include trash and debris, increased human presence, chemical spills, nighttime lighting, and increased invasive plant species that may degrade habitat. MM-BIO-12 would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. MM-BIO-14 (Lighting) would require nighttime lighting during operations within 50 feet of habitat for special-status species to be directed away from natural areas. MM-BIO-15 (Trash and Debris) would require trash and debris to be removed regularly and would require the use of animal-resistant trash receptacles to avoid attracting urban-related predator species. MM-BIO-16 (Invasive Plant Management) would require that landscape plants within 200 feet of native vegetation communities not be on the most recent version of the Cal-IPC California Invasive Plant Inventory (http://www.cal-ipc.org/ip/inventory/index.php).

In summary, implementation of MM-BIO-3 through MM-BIO-6, MM-BIO-9, MM-BIO-12, and MM-BIO-14 through MM-BIO-16, as described above, would reduce potential indirect impacts (short-term and long-term) to American badger to less than significant.

Desert Kit Fox

MM-BIO-10 (Pre-Construction Survey for Desert Kit Fox and Avoidance) would require a pre-construction survey for desert kit and if determined present, would result in implementation of the prepared desert kit fox mitigation and monitoring plan (Appendix K), which includes avoidance and minimization measures to reduce potential impacts,

as well as compensatory mitigation to offset indirect impacts including noise and vibration, increased human presence, nighttime lighting, and vehicle collisions. MM-BIO-3 (Designated Biologist Authority), MM-BIO-4 (Compliance Monitoring), MM-BIO-5 (Education Program), and MM-BIO-6 (Construction Monitoring Notebook) would require that all workers complete a WEAP training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. MM-BIO-14 (Lighting) would require nighttime lighting during construction within 50 feet of habitat for special-status species to be directed away from natural areas. To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

Potential long-term indirect impacts that could result from development within or adjacent to the BSA include trash and debris, increased human presence, chemical spills, nighttime lighting, and increased invasive plant species that may degrade habitat. As previously noted, MM-BIO-12 would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs and MM-BIO-14 would require nighttime lighting during operations within 50 feet of habitat for special-status species to be directed away from natural areas. MM-BIO-15 (Trash and Debris) would require trash and debris to be removed regularly and would require the use of animal-resistant trash receptacles to avoid attracting urban-related predator species. MM-BIO-16 (Invasive Plant Management) would require that landscape plants within 200 feet of native vegetation communities not be on the most recent version of the Cal-IPC California Invasive Plant Inventory (http://www.cal-ipc.org/ip/inventory/index.php).

In summary, implementation of MM-BIO-3 through MM-BIO-6, MM-BIO-10, MM-BIO-12, and MM-BIO-14 through MM-BIO-16, as described above, would reduce potential indirect impacts (short-term and long-term) to desert kit fox to less than significant.

Nesting Migratory Birds and Raptors

MM-BIO-8 (Pre-Construction Nesting Bird Surveys and Avoidance) would require nesting bird surveys and would result in establishment of construction buffers around nests, thus limiting effects from most short-term indirect impacts, including noise and vibration, increased human presence, nighttime lighting, and vehicle collisions. MM-BIO-3 (Designated Biologist Authority), MM-BIO-4 (Compliance Monitoring), MM-BIO-5 (Education Program), and MM-BIO-6 (Construction Monitoring Notebook) would require that all workers complete a WEAP training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills be implemented and that repair and cleanup of any hazardous waste occurs. To reduce fugitive dust resulting from construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction. MM-BIO-14 (Lighting) would require nighttime lighting during construction within 50 feet of habitat for special-status species to be directed away from natural areas. MM-BIO-16 (Invasive Plant Management) would require that landscape plants within 200 feet of native vegetation communities not be on the most recent version of the Cal-IPC California Invasive Plant Inventory (http://www.cal-ipc.org/ip/inventory/index.php).

In summary, implementation of **MM-BIO-3** through **MM-BIO-6**, **MM-BIO-8**, **MM-BIO-12**, **MM-BIO-14**, and **MM-BIO-16**, as described above, would reduce potential indirect impacts (short-term and long-term) to nesting migratory birds and raptors to less than significant.

7.2.3 Mitigation Measures

The project could result in potentially significant impacts to species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS, including special-status plant species, native desert plants protected under the CDNPA and Town of Apple Valley Municipal Code, western Joshua trees, burrowing owl, loggerhead shrike, LeConte's thrasher, American badger, desert kit fox, and nesting migratory birds and raptors. Implementation of **MM-BIO-1** through **MM-BIO-16** is required to reduce impacts to a less-than-significant level.

MM-BIO-1 Conservation of Western Joshua Tree Lands. Mitigation for direct impacts to 29 western Joshua trees will be fulfilled through a payment of the elected fees as described in Section 1927.3 of The Western Joshua Tree Conservation Act In conformance with the fee schedule, mitigation will consist of payment of $1,000 for each western Joshua tree five meters or greater in height, and $500 for each western Joshua tree less than five meters in height. Alternatively, mitigation will occur through off-site conservation or through a CDFW approved mitigation bank, or as required by an Incidental Take Permit, if received.

MM-BIO-2 Relocation of Desert Native Plants. Prior to the issuance of grading permits, the project applicant shall submit an application and applicable fee paid to the Town of Apple Valley for removal or relocation of protected native desert plants under Town of Apple Valley Municipal Code Chapter 9.76, as required, and shall schedule a pre-construction site inspection with the appropriate authority. In addition, a plot plan shall be approved by the appropriate Town of Apple Valley Review Authority (County Certified Plant Expert, Planning Commission, or Town Council) indicating exactly which trees or plants are authorized to be removed.

The application shall include certification from a qualified western Joshua tree and native desert plant expert(s) to determine that proposed removal or relocation of protected native desert plants are appropriate, supportive of a healthy environment, and in compliance with the Town of Apple Valley Municipal Code. Protected plants subject to Town of Apple Valley Municipal Code Chapter 9.76 may be relocated on site, or within an area designated as an area for species to be adopted later.

The application shall include a detailed plan for removal of all protected plants on the project site. The plan was prepared by a qualified western Joshua tree and native desert plant expert(s). The plan shall include, but not be limited to, the following measures:

- Salvaged plants shall be transplanted expeditiously to either their final on-site location or to an approved off-site area. If the plants cannot be expeditiously taken to their permanent relocation area at the time of excavation, they may be transplanted in a temporary area (stockpiled) prior to being moved to their permanent relocation site(s).
- Western Joshua trees shall be marked on their north facing side prior to excavation. Transplanted western Joshua trees shall be planted in the same orientation as they currently

occur on the project site, with the marking on the north side of the trees facing north at the relocation site(s).

- Transplanted plants shall be watered prior to and at the time of transplantation. The schedule of watering shall be determined by the qualified tree expert and desert native plant expert(s) to maintain plant health. Watering of the transplanted plants shall continue under the guidance of qualified tree expert and desert native plant expert(s) until it has been determined that the transplants have become established in the permanent relocation site(s) and no longer require supplemental watering.

MM-BIO-3 Designated Biologist Authority. The designated biologist shall have authority to immediately stop any activity that does not comply with the biological resources mitigation measures and/or to order any reasonable measure to avoid the unauthorized take of an individual western Joshua tree.

MM-BIO-4 Compliance Monitoring. The designated biologist shall be on site daily when impacts occur. The designated biologist shall conduct compliance inspections to minimize incidental take of western Joshua trees and impacts to other sensitive biological resources; prevent unlawful take of western Joshua trees; and ensure that signs, stakes, and fencing are intact, and that impacts are only occurring within the direct impact footprint (i.e., does not include the Project buffer). Weekly written observation and inspection records that summarize oversight activities, compliance inspections, and monitoring activities required by the Incidental Take Permit shall be prepared.

MM-BIO-5 Education Program. An education program (Worker Environmental Awareness Program [WEAP]) for all persons employed or otherwise working in the project site shall be administered before impacts occur. The WEAP shall consist of a presentation from the designated biologist that includes a discussion of the biology and status of western Joshua tree, burrowing owl, and loggerhead shrike, and other biological resources mitigation measures described in the California Environmental Quality Act document. Interpretation for non-English-speaking workers shall be provided, and the same instruction shall be provided to any new workers before they are authorized to perform work in the project area. Upon completion of the WEAP, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees who will be conducting work in the project area.

MM-BIO-6 Construction Monitoring Notebook. The designated biologist shall maintain a construction-monitoring notebook on site throughout the construction period, which shall include a copy of the biological resources mitigation measures with attachments and a list of signatures of all personnel who have successfully completed the education program. The notebook will include a sign-off date page for the designated biologist to sign and date each construction date that the project is in compliance. The permittee shall ensure that a copy of the construction monitoring notebook is available for review at the project site upon request by the California Department of Fish and Wildlife.

MM-BIO-7 Pre-Construction Surveys for Burrowing Owl and Avoidance. One pre-construction burrowing owl survey shall be completed no more than 14 days before initiation of site preparation or grading activities, and a second survey shall be completed within 24 hours of the start of site preparation or grading activities. If ground-disturbing activities are delayed or suspended for more than 30 days after the pre-construction surveys, the project site shall be resurveyed. Surveys for burrowing owl

shall be conducted in accordance with protocols established in the Staff Report on Burrowing Owl Mitigation (prepared by the California Department of Fish and Game [now California Department of Fish and Wildlife; CDFW]) in 2012 or current version.

If burrowing owls are detected, the burrowing owl relocation plan (Appendix C) shall be implemented in consultation with the Town of Apple Valley. As required by the burrowing owl relocation plan, disturbance to burrows shall be avoided during the nesting season (February 1 through August 31). Buffers will be established around occupied burrows as determined by a qualified biologist. No project activities shall be allowed to encroach into established buffers without the consent of a monitoring biologist. The buffer shall remain in place until it is determined that occupied burrows have been vacated or the nesting season has completed.

Outside of the nesting season, passive owl relocation techniques approved by CDFW shall be implemented. Owls shall be excluded from burrows in the immediate project area and within a buffer zone if there is a threat to the surface or subterranean burrow structure by installing one-way doors in burrow entrances. These doors will be placed at least 48 hours prior to ground-disturbing activities. The project area shall be monitored daily for 1 week to confirm owl departure from burrows prior to any ground-disturbing activities. Compensatory mitigation for permanent loss of owl habitat will be provided following the guidance in the CDFW 2012 Staff Report on Burrowing Owl Mitigation or current version.

Where possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into the tunnels during excavation to maintain an escape route for any wildlife inside the burrow.

Should burrowing owl be located during the pre-construction survey, the project would result in the loss of 210.6 acres of suitable habitat for burrowing owl. Mitigation for direct impacts to 210.6 acres shall be fulfilled through conservation of suitable burrowing owl habitat through the purchase of credits at a minimum of 1:1 in-kind habitat replacement of equal or better functions and values to those impacted by the project, for a total of 210.6 acres.

MM-BIO-8 Pre-Construction Nesting Bird Surveys and Avoidance. Construction activities shall avoid the migratory bird nesting season (typically February 1 through August 31), to reduce any potential significant impact to birds that may be nesting on the survey area. If construction activities must occur during the migratory bird nesting season, an avian nesting survey of the project site and within 500 feet of all impact areas must be conducted to determine the presence/absence of protected migratory birds and active nests. The avian nesting survey shall be performed by a qualified wildlife biologist within 72 hours prior to the start of construction in accordance with the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503, 3503.5, and 3513. If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate buffer established around the nest, which will be determined by the biologist based on the species' sensitivity to disturbance. The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing. On-site construction monitoring shall also be conducted when construction occurs in close proximity to an active nest buffer. No project activities may encroach

into established buffers without the consent of a monitoring biologist. The buffer shall remain in place until it is determined the nestlings have fledged and the nest is no longer considered active.

MM-BIO-9 Pre-Construction Survey for American Badger and Avoidance. A pre-construction survey for American badger shall be conducted within 10 days before initiation of site preparation or grading activities to determine the presence/absence of American badger. If discovered during the survey, an American badger mitigation and monitoring plan shall be developed. The mitigation and monitoring plan shall include avoidance and minimization measures to reduce potential impacts, as well as compensatory mitigation to offset direct or indirect impacts. The plan will be developed in consultation with the California Department of Fish and Wildlife. At a minimum, the plan shall:

- Identify pre-construction survey methods for American badger.
- Describe feasible pre-construction and construction-phase avoidance methods.
- Describe pre-construction and construction-phase relocation methods, including the possibility for passive relocation.
- For burrows that will not be impacted by the project, identify an appropriate construction exclusion zone for both active and natal burrows.

MM-BIO-10 Pre-Construction Survey for Desert Kit Fox and Avoidance. A pre-construction survey for desert kit fox shall be conducted within 10 days before initiation of site preparation or grading activities to determine the presence/absence of desert kit fox.

If desert kit fox is detected, the desert kit fox relocation and mitigation plan shall be implemented. As required by the desert kit fox relocation and mitigation plan, if an active non-natal desert kit fox den is detected, a 200-foot no disturbance buffer will be established around the active den, unless otherwise authorized by the California Department of Fish and Wildlife (CDFW. Where required buffering will not be feasible, passive relocation, as outlined in the desert kit fox relocation and mitigation plan, is allowed with concurrence from the County of San Bernardino, CDFW, and U.S. Fish and Wildlife Service. If an active natal desert kit fox den is detected, an initial 200-foot no disturbance buffer will be established around the natal den, and this buffer will be maintained until the den can be verified to not host pups. Construction activities will not be permitted in this area until the den has been vacated. Once the den is vacated, and if in danger by construction, it can be collapsed, if deemed necessary by a qualified biologist.

A report to evaluate the success of the relocation efforts and any subsequent re-occupation, if applicable, will be provided (including a comprehensive summary, tables, maps, etc.) at the end of the construction period. Data will be readily available to the CDFW upon request. If an injured, sick, or dead desert kit fox is detected on any area associated with the project, the designated CDFW personnel at both the Ontario office and the Wildlife Investigation Lab will be notified as described within the desert kit fox relocation and mitigation plan.

MM-BIO-11 Delineation of Property Boundaries. Before beginning activities that would cause impacts, the contractor shall, in consultation with the designated biologist, clearly delineate the boundaries with fencing, stakes, or flags, consistent with the grading plan, within which the impacts will take place.

All impacts outside the fenced, staked, or flagged areas shall be avoided, and all fencing, stakes, and flags shall be maintained until the completion of impacts in that area.

MM-BIO-12 Hazardous Waste. The applicant shall immediately stop work and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so.

MM-BIO-13 Herbicides. The applicant shall limit herbicide use for invasive plant species and shall use herbicides only if it has been determined that hand or mechanical efforts are infeasible. To prevent drift, the permittee shall apply herbicides only when wind speeds are less than 7 miles per hour. All herbicide application shall be performed by a licensed applicator and in accordance with all applicable federal, state, and local laws and regulations.

MM-BIO-14 Lighting. Lighting for construction activities and operations within 50 feet of the outside edge of the impact footprint containing habitat for special-status wildlife will be directed away from natural areas.

MM-BIO-15 Trash and Debris. The following avoidance and minimization measures shall be implemented during project construction.

(1) Fully covered trash receptacles that are animal-proof will be installed and used by the operator to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Trash contained within the receptacles will be removed at least once a week from the project site.

(2) Construction work areas shall be kept clean of debris, such as cable, trash, and construction materials. All construction/contractor personnel shall collect all litter, vehicle fluids, and food waste from the project site on a daily basis.

MM-BIO-16 Invasive Plant Management. In order to reduce the spread of invasive plant species, landscape plants within 200 feet of native vegetation communities shall not be on the most recent version of the Cal-IPC California Invasive Plant Inventory (http://www.cal-ipc.org/ip/inventory/index.php). Post-construction, the applicant shall continually remove invasive plant species on site by hand or mechanical methods, as feasible.

7.3 Impact BIO-2: Sensitive Vegetation Communities

The following significance determinations were made based on the impacts of the project. Proposed mitigation measures referenced in Sections 7.3.1 and 7.3.2 are listed in Section 7.3.3 and provided in full in Section 7.2.3.

7.3.1 Direct Impacts

Mitigation for direct impacts to 29 western Joshua tree individuals will also mitigate for impacts to 10.7 acres of Joshua tree woodland. As required by **MM-BIO-1** (Conservation of Western Joshua Tree Lands), mitigation for direct impacts to 29 western Joshua trees will be fulfilled through through a payment of fees consistent with The Western Joshua Tree Conservation Act or through payment to a CDFW-approved mitigation bank. Conservation efforts for western Joshua tree will focus on the conservation of large, interconnected Joshua tree woodlands on lands where

edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree would also mitigate for impacts to 10.7 acres of Joshua tree woodland.

Additionally, as required by **MM-BIO-2** (Relocation of Desert Native Plants) and in accordance with Chapter 9.76 of the Town of Apple Valley Municipal Code, the preparation of a western Joshua tree and desert native plants relocation plan is required to mitigate impacts to western Joshua trees as a result of the project. As such, a Joshua Tree Preservation, Protection, and Relocation Plan, and California Desert Native Plant Relocation Plan (Appendix D) was prepared for the project to provide detailed specifications for the project applicant to meet the requirements of Chapter 9.76 of the Town of Apple Valley Municipal Code to protect, preserve, and mitigate impacts to Joshua trees. Thus, mitigation for impacts to western Joshua tree would also mitigate for impacts to Joshua tree woodland.

In summary, implementation of **MM-BIO-1** and **MM-BIO-2**, as described above, would reduce potential direct impacts to sensitive vegetation communities (i.e., Joshua tree woodland) to less than significant.

7.3.2 Indirect Impacts

Potential construction- and operation-related indirect impacts to Joshua tree woodland would be the same as the indirect impacts to western Joshua tree, as described in Section 7.2.2, Indirect Impacts.

Implementation of **MM-BIO-3** (Designated Biologist Authority) gives the project's designated biologist the authority to stop work if construction is not compliant with this CEQA document. **MM-BIO-4** (Compliance Monitoring) requires that an experienced biologist oversee compliance with the protective measures, including limiting impacts to the project impact footprint. **MM-BIO-5** (Education Program) would provide construction personnel with training related to Joshua tree woodland that is present on and adjacent to the impact footprint. **MM-BIO-6** (Construction Monitoring Notebook) provides for documentation that the education program was administered to applicable personnel. **MM-BIO-11** (Delineation of Property Boundaries) requires that impacts occur within the fenced, staked, or flagged area that is clearly delineated within the project impact footprint. The construction crew will be responsible for unauthorized impacts from construction activities to Joshua tree woodland that is outside the permitted project footprint. Thus, implementation of **MM-BIO-3** through **MM-BIO-6** and **MM-BIO-11** will enable the project to avoid and minimize inadvertent spillover impacts outside of the approved impact footprint.

To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. Thus, implementation of **MM-BIO-12** would help to avoid and minimize impacts to Joshua tree woodland from any construction-related chemical spills.

A SWPPP would be prepared and implemented to prevent all construction pollutants from contacting stormwater during construction activities, with the intent of keeping sediment and any other pollutants from moving off site and into receiving waters. BMP categories employed on site would include erosion control, sediment control, and non-stormwater good housekeeping. Preparation and implementation of a SWPPP would help to avoid and minimize the potential effects of stormwater erosion during construction.

Construction of the project would introduce potential ignition sources to the project site, including the use of heavy machinery and the potential for sparks during welding activities or other hot work. However, the project would be required to comply with Town and state requirements for fire safety practices to reduce the possibility of fires during construction activities. Further, vegetation would be removed from the site prior to the start of construction. Adherence to Town and state regulatory standards during project construction would reduce the risk of wildfire ignition and spread during construction activities. Therefore, short-term construction impacts involving wildland fires would not be substantial.

MM-BIO-13 (Herbicides) would limit herbicide use to instances where hand or mechanical efforts are infeasible and would only be applied when wind speeds are less than 7 miles per hour to prevent drift into off-site Joshua tree woodland.

Implementation of low-impact-development features and BMPs would, to the maximum extent practicable, reduce the discharge of pollutants into receiving waters, including inadvertent release of pollutants (e.g., hydraulic fluids and petroleum), the improper management of hazardous materials, trash and debris, and the improper management of portable restroom facilities (e.g., regular service) in accordance with all relevant local and state development standards. In addition, in accordance with CALGreen requirements (24 CCR, Part 11), project source controls to improve water quality would be provided for outdoor material storage areas, outdoor trash storage/waste handling areas, and outdoor loading/unloading areas. Therefore, impacts to Joshua tree woodland due to changes in water quality would be avoided and minimized through implementation of low-impact-development features and BMPs.

Upon completion of project construction, with adherence to the Town of Apple Valley Municipal Code and because of the low ignitability of the proposed structures and implementation of fire-resistant and irrigated landscaping, the project would not facilitate wildfire spread or exacerbate wildfire risk. Further, given that surrounding off-site fuels consist of moderately spaced vegetation, wildfires in the immediate surrounding area are not common, and it is unlikely that the project site would be exposed to the uncontrolled spread of a wildfire. It is not anticipated that the project, due to slope, prevailing winds, and other factors, would exacerbate wildfire risks or the uncontrolled spread of a wildfire; thus, with adherence to the Town of Apple Valley Municipal Code, long-term indirect impacts to Joshua tree woodland associated with increased wildlife risk is not expected to occur.

In summary, implementation of **MM-BIO-3** through **MM-BIO-6** and **MM-BIO-11** through **MM-BIO-13**, as described above, would reduce potential indirect impacts (short-term and long-term) to Joshua tree woodland to less than significant.

7.3.3 Mitigation Measures

The project could result in potentially significant impacts to Joshua tree woodland, a CDFW sensitive natural community. Implementation of MM-BIO-2 through MM-BIO-7 and MM-BIO-12 through MM-BIO-13 is required to reduce impacts to a less than significant level. See Section 7.2.3 for the full text of the following mitigation measures:

- **MM-BIO-1** (Conservation of Western Joshua Tree Lands)
- **MM-BIO-2** (Relocation of Desert Native Plants)
- **MM-BIO-3** (Designated Biologist Authority)
- **MM-BIO-4** (Compliance Monitoring)
- **MM-BIO-5** (Education Program)
- **MM-BIO-6** (Construction Monitoring Notebook)

- **MM-BIO-11** (Delineation of Property Boundaries)
- **MM-BIO-12** (Hazardous Waste)
- **MM-BIO-13** (Herbicides)

7.4 Impact BIO-3: Jurisdictional Waters

The following significance determinations were made based on the impacts of the project, and proposed mitigation measures referenced in Sections 7.4.1 and 7.4.2 are provided in Section 7.2.3 and Section 7.4.3.

7.4.1 Direct Impacts

Based on data provided in Appendix B (NOREAS 2023b), within the off-site improvement areas - at six (6) specific locales, non-wetland, ephemeral dry desert washes that total 404 linear feet were observed. These six distinct features within the off-site improvement areas consist of 0.13-acres of ephemeral streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code. In this instance, the limits of the Regional Water Boards jurisdiction - as it applies to the Porter-Cologne Act (California Water Code section 13000 et seq.), is coincident with the extent of CDFW jurisdiction - pursuant to Section 1600 (et seq.) of the CFG Code. For direct impacts to 0.12 acres of ephemeral streambeds, permits would be required and typically entail providing mitigation to offset the impacts. RWQCB regulates waters of the state under California's Porter–Cologne Act. California Fish and Game Code Sections 1600–1616 give CDFW regulatory powers over streams and lakes, as well as vegetation associated with these features. **MM-BIO-17** (Aquatic Resources Mitigation) would require obtaining permits from the regulatory agencies (i.e., the RWQCB, and CDFW).

In addition, **MM-BIO-3** (Designated Biologist Authority), **MM-BIO-4** (Compliance Monitoring), **MM-BIO-5** (Education Program), and **MM-BIO-6** (Construction Monitoring Notebook) would require that all workers complete a WEAP training and would require ongoing biological monitoring and compliance with all biological resource mitigation requirements. **MM-BIO-11** (Delineation of Property Boundaries) requires that impacts occur within the fenced, staked, or flagged area that is clearly delineated within the project impact footprint. The construction crew will be responsible for unauthorized impacts from construction activities to waters that are outside the permitted project footprint, if applicable. **MM-BIO-12** (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust mitigation measures in accordance with MDAQMD's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

In summary, implementation of **MM-BIO-3** through **MM-BIO-6**, **MM-BIO-11**, **MM-BIO-12**, and **MM-BIO-17**, as described above, would reduce potential direct impacts to jurisdictional aquatic resources to less than significant.

7.4.2 Indirect Impacts

Potential short-term indirect impacts would be considered significant absent mitigation. Implementation of **MM-BIO-3** (Designated Biologist Authority) gives the project's designated biologist the authority to stop work if construction is not compliant with this CEQA document. **MM-BIO-4** (Compliance Monitoring) requires that an experienced biologist oversee compliance with the protective measures, including limiting impacts within the project footprint. **MM-BIO-5** (Education Program) would provide construction personnel with training related to

waters of the state that are present on and adjacent to the impact footprint. MM-BIO-6 (Construction Monitoring Notebook) provides for documentation that the education program was administered to applicable personnel. MM-BIO-11 (Delineation of Property Boundaries) requires that impacts occur within the fenced, staked, or flagged area that is clearly delineated within the project impact footprint. The construction crew will be responsible for unauthorized impacts from construction activities to waters of the state that are outside the permitted project footprint, if applicable. Thus, implementation of MM-BIO-3 through MM-BIO-6 and MM-BIO-11 will enable the project to avoid and minimize inadvertent spillover impacts outside of the approved impact footprint.

MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. Thus, implementation of MM-BIO-12 would help to avoid and minimize impacts to waters of the state from any construction-related chemical spills.

A SWPPP would be prepared and implemented to prevent all construction pollutants from contacting stormwater during construction activities, with the intent of keeping sediment and any other pollutants from moving off site and into receiving waters. BMP categories employed on site would include erosion control, sediment control, and non-stormwater good housekeeping. Preparation and implementation of a SWPPP would help to avoid and minimize the potential effects of stormwater erosion during construction.

Potential long-term (post-construction) indirect impacts from operations and maintenance activities may include changes in water quality and accidental chemical spills. Implementation of low-impact-development features and BMPs would, to the maximum extent practicable, reduce the discharge of pollutants into receiving waters, including inadvertent release of pollutants (e.g., hydraulic fluids and petroleum); the improper management of hazardous materials; trash and debris; and the improper management of portable restroom facilities (e.g., regular service) in accordance with all relevant local and state development standards. In addition, in accordance with CALGreen requirements (24 CCR, Part 11), project source controls to improve water quality would be provided for outdoor material storage areas, outdoor trash storage/waste handling areas, and outdoor loading/unloading areas. Therefore, impacts to western Joshua trees due to changes in water quality would be avoided and minimized through implementation of low-impact-development features and BMPs.

MM-BIO-12 (Hazardous Waste) would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and cleanup of any hazardous waste occurs. Thus, implementation of MM-BIO-12 would help to avoid and minimize impacts to western Joshua tree from any operations-related chemical spills.

In summary, implementation of MM-BIO-3 through MM-BIO-6, MM-BIO-11, and MM-BIO-12, as described above, would reduce potential indirect (short-term and long-term) impacts to jurisdictional aquatic resources to less than significant.

7.4.3 Mitigation Measures

Significant direct permanent impacts would occur to state-defined non-wetland, ephemeral dry desert washes as a result of project activities. Short-term and long-term indirect impacts to state jurisdictional waters relating to construction activities (edge effects) and trash/pollution would not likely result in significant impacts, especially with the application of the standard BMPs that would be implemented during project construction. Incorporation of MM-BIO-3 through MM-BIO-6, MM-BIO-11, and MM-BIO-12 is required to reduce impacts to a less-than-significant level. See Section 7.2.3 for the full text of the following mitigation measures:

- MM-BIO-3 (Designated Biologist Authority)

- **MM-BIO-4** (Compliance Monitoring)
- **MM-BIO-5** (Education Program)
- **MM-BIO-6** (Construction Monitoring Notebook)
- **MM-BIO-11** (Delineation of Property Boundaries)
- **MM-BIO-12** (Hazardous Waste)

To reduce potentially significant impacts to aquatic resources, implementation of MM-BIO-17 is required:

MM-BIO-17 Aquatic Resources Mitigation. The off-site improvement areas support aquatic resources that are considered jurisdictional to the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW). Prior to construction activity, the applicant shall coordinate with the Lahontan RWQCB (Region 6) and CDFW (Inland Deserts Region 6) to assure conformance with applicable and relevant discretionary permitting requirements.

The project shall mitigate to ensure no-net-loss of state waters at a minimum of 1:1 with re-establishment credits (0.12-acre RWQCB/CDFW) for impacts on aquatic resources as a part of an overall strategy to accomplish no net loss, or at a higher ratio if re-establishment credits are not available. Mitigation shall be completed through use of a mitigation bank (e.g., West Mojave Mitigation Bank) or other applicant-sponsored mitigation. Final mitigation ratios and credits shall be determined in consultation with the RWQCB and/or CDFW based on agency evaluation of current resource functions and values and through each agency's respective permitting process.

Should applicant-sponsored mitigation be implemented, a habitat mitigation and monitoring plan shall be prepared in accordance with State Water Resources Control Board guidelines and approved by the agencies in accordance with the proposed program permits. The habitat mitigation and monitoring plan will include but is not limited to a conceptual planting plan including planting zones, grading, and irrigation, as applicable; a conceptual planting plant palette; a long-term maintenance and monitoring plan; annual reporting requirements; and proposed success criteria.

7.5 Impact BIO-4: Wildlife Corridors and Migratory Routes

The following significance determinations were made based on the impacts of the project, and proposed mitigation measures referenced in Sections 7.5.1 and 7.5.2 are listed in Section 7.5.3 and provided in full in Section 7.2.3.

7.5.1 Direct Impacts

No significant direct permanent impacts would occur on wildlife movement or use of native wildlife nursery sites associated with project activities. Existing nearby habitat linkages and wildlife corridor functions would remain intact while construction activities are conducted and following project completion. Therefore, implementation of the project would not result in significant direct impacts to wildlife corridors and migratory routes.

7.5.2 Indirect Impacts

Construction-related, short-term noise and work in the vicinity would be temporary and would not be expected to significantly disrupt wildlife movement due to ambient noise conditions and the ability for wildlife to continue to move around the construction area and upland portions of the BSA during and after construction. Temporary disturbance to local species may occur but would not substantially degrade the quality or use of the vegetation communities in the vicinity. Work activities are not currently proposed during the nighttime. Therefore, implementation of the project would not result in significant short-term indirect impacts to wildlife corridors and migratory routes.

Potential long-term (post-construction) indirect impacts from operations and maintenance activities could disrupt wildlife movement around the project due to increased lighting from buildings. **MM-BIO-14** (Lighting) would safeguard all lighting during operations, and within 50 feet of the outside edge of the impact footprint containing habitat for special-status wildlife, would be directed away from natural areas.

Implementation of **MM-BIO-14**, as described above, would reduce potential indirect impacts to wildlife movement to less than significant.

7.5.3 Mitigation Measures

Significant long-term indirect impacts would occur to wildlife movement as a result of project activities. Incorporation of **MM-BIO-14** is required to reduce impacts to a less-than-significant level. See Section 7.2.3 for the full text of the following mitigation measure:

- MM-BIO-14 (Lighting)

7.6 Impact BIO-5: Local Policies or Ordinances

The following significance determinations were made based on the impacts of the project, and proposed mitigation measures referenced in Section 7.6.1 are listed in Section 7.6.2 and provided in full in Section 7.2.3.

7.6.1 Direct and Indirect Impacts

California Desert Native Plants and Western Joshua Tree

Pursuant to **MM-BIO-2** (Relocation of Desert Native Plants), the project applicant shall submit an application and applicable fee paid to the Town for removal or relocation of protected native desert plants (i.e., western Joshua tree, Wiggins' cholla, branched pencil cholla, and short-joint beavertail) under Town of Apple Valley Municipal Code Chapter 9.76. The application shall include certification from a qualified Joshua tree and native desert plant expert(s) to determine that proposed removal or relocation of protected native desert plants are appropriate, supportive of a healthy environment, and in compliance with the Town of Apple Valley Municipal Code. The application will include the Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan (Appendix D). The plan was prepared by a qualified Joshua Tree and native desert plant expert. With the incorporation of mitigation, and with adherence to both the CDNPA and the Town of Apple Valley Municipal Code, impacts associated with western Joshua tree and desert native plants would be less than significant.

The project could result in potentially significant impacts to native desert plants and western Joshua trees, which are addressed by state and local plant and tree preservation regulations, absent mitigation. Implementation of **MM-BIO-1** (Conservation of Western Joshua Tree Lands) and **MM-BIO-2** (Relocation of Desert Native Plants) would reduce potential impacts to California desert native plants and western Joshua tree to less than significant.

7.6.2 Mitigation Measures

Significant long-term indirect impacts to California desert native plants and western Joshua tree relating to local policies or ordinances could occur as a result of project activities. Incorporation of **MM-BIO-1** and **MM-BIO-2** is required to reduce impacts to a less-than-significant level. See Section 7.2.3 for the full text of the following mitigation measures:

- **MM-BIO-1** (Conservation of Western Joshua Tree Lands)
- **MM-BIO-2** (Relocation of Desert Native Plants)

7.7 Impact BIO-6: Habitat Conservation Plans

The project will not conflict with the conservation criteria associated with the California Desert Conservation Area Plan or Desert Renewable Energy Conservation Plan. Therefore, the project would not be in conflict with any habitat conservation plans.

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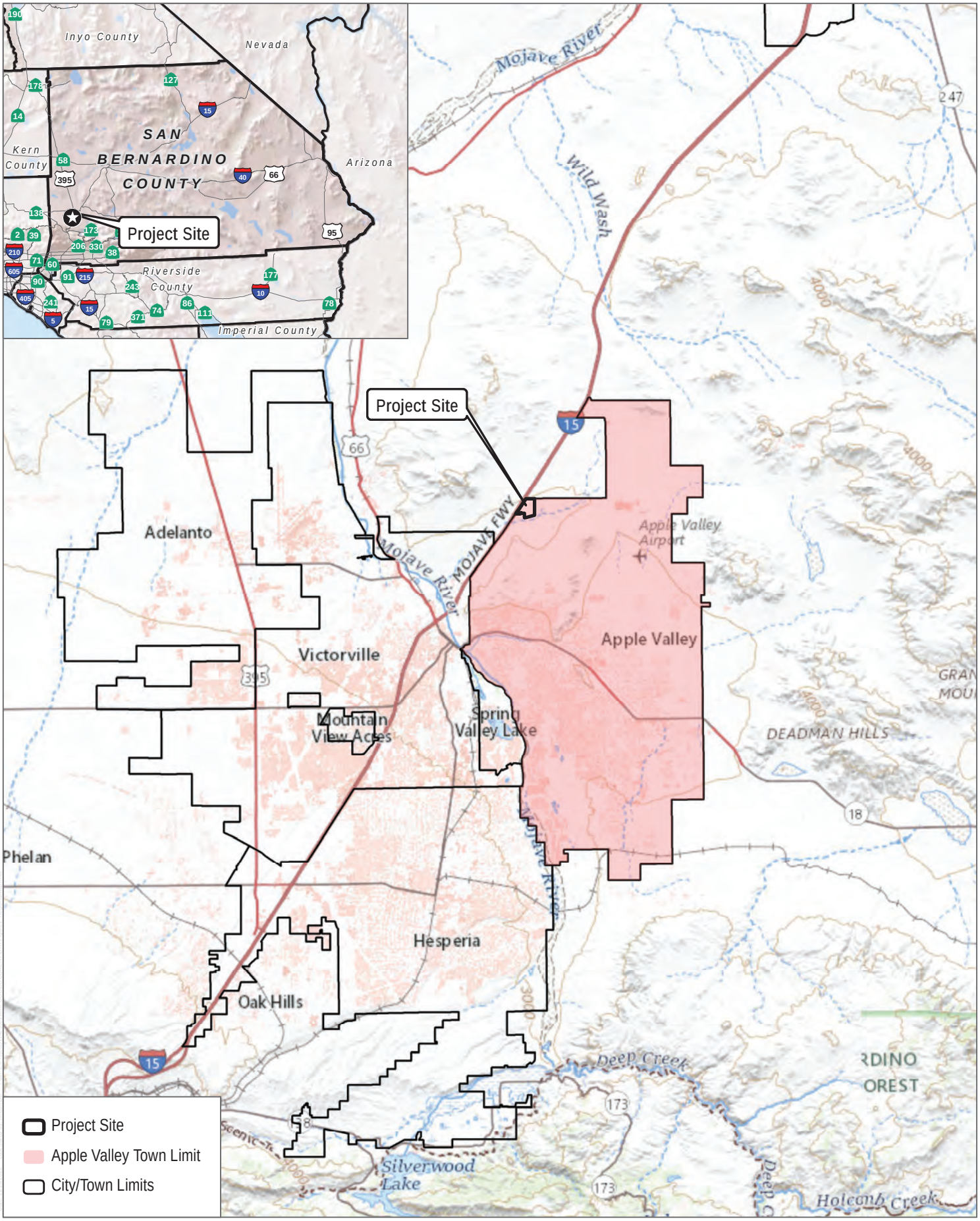
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SOURCE: USGS Topo 2020

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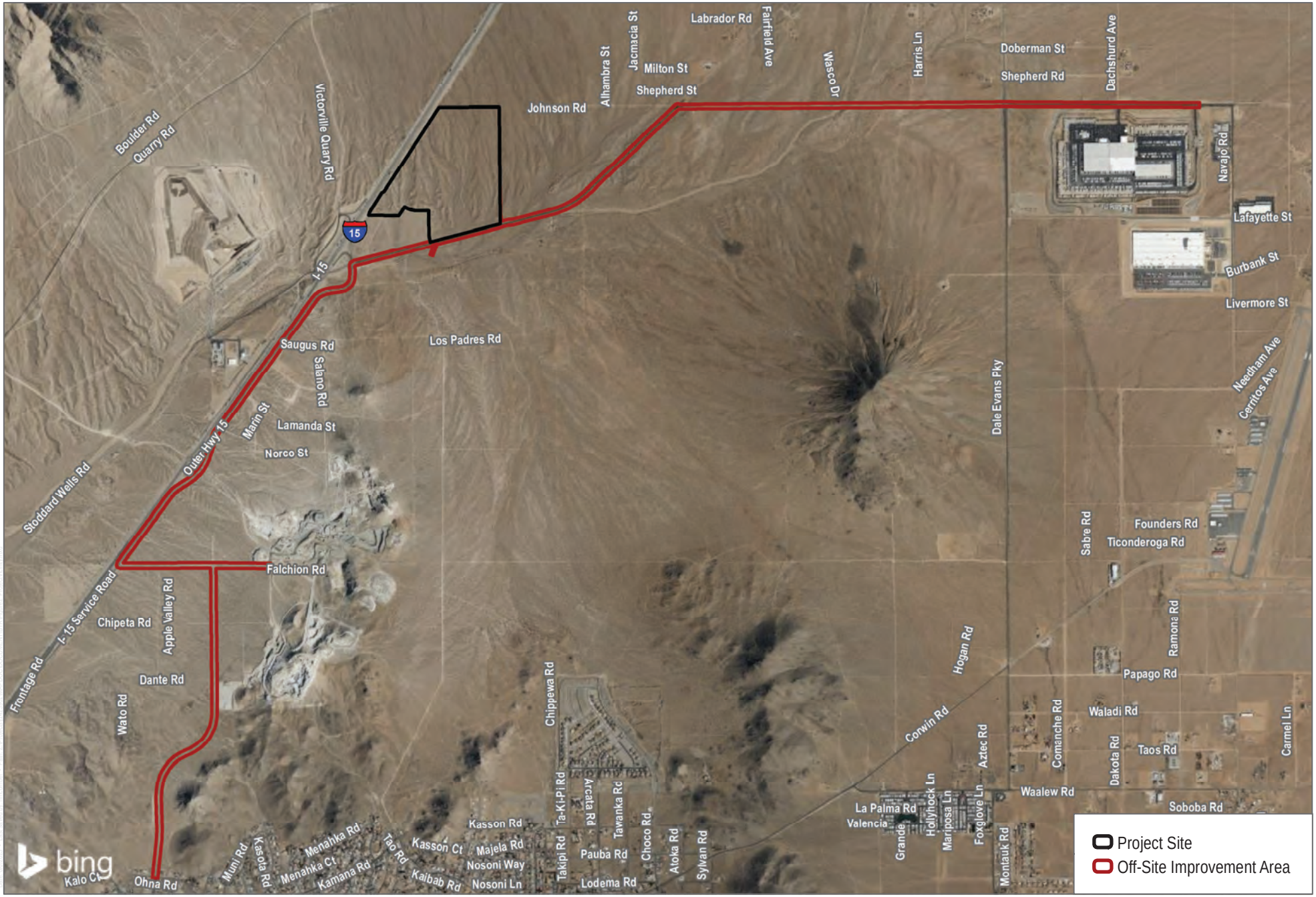
0 1.75 3.5 Miles

FIGURE 1

Regional Map

Apple Valley 143 Project Biological Resources Technical Report

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SOURCE: Bing Maps (accessed 2022)

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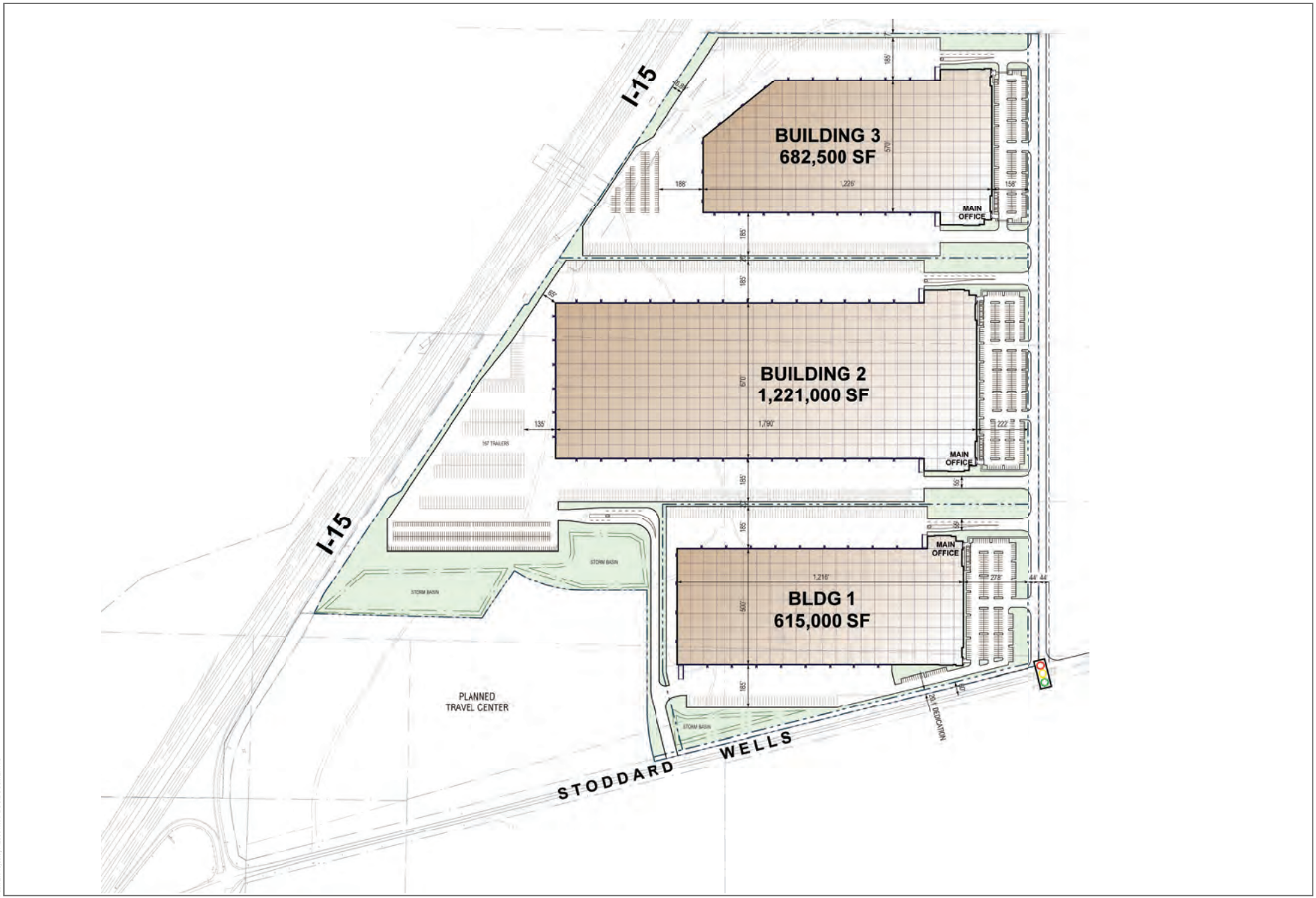
0 1,500 3,000 Feet

FIGURE 2

Project Vicinity

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SOURCE: RGA 2022

FIGURE 3

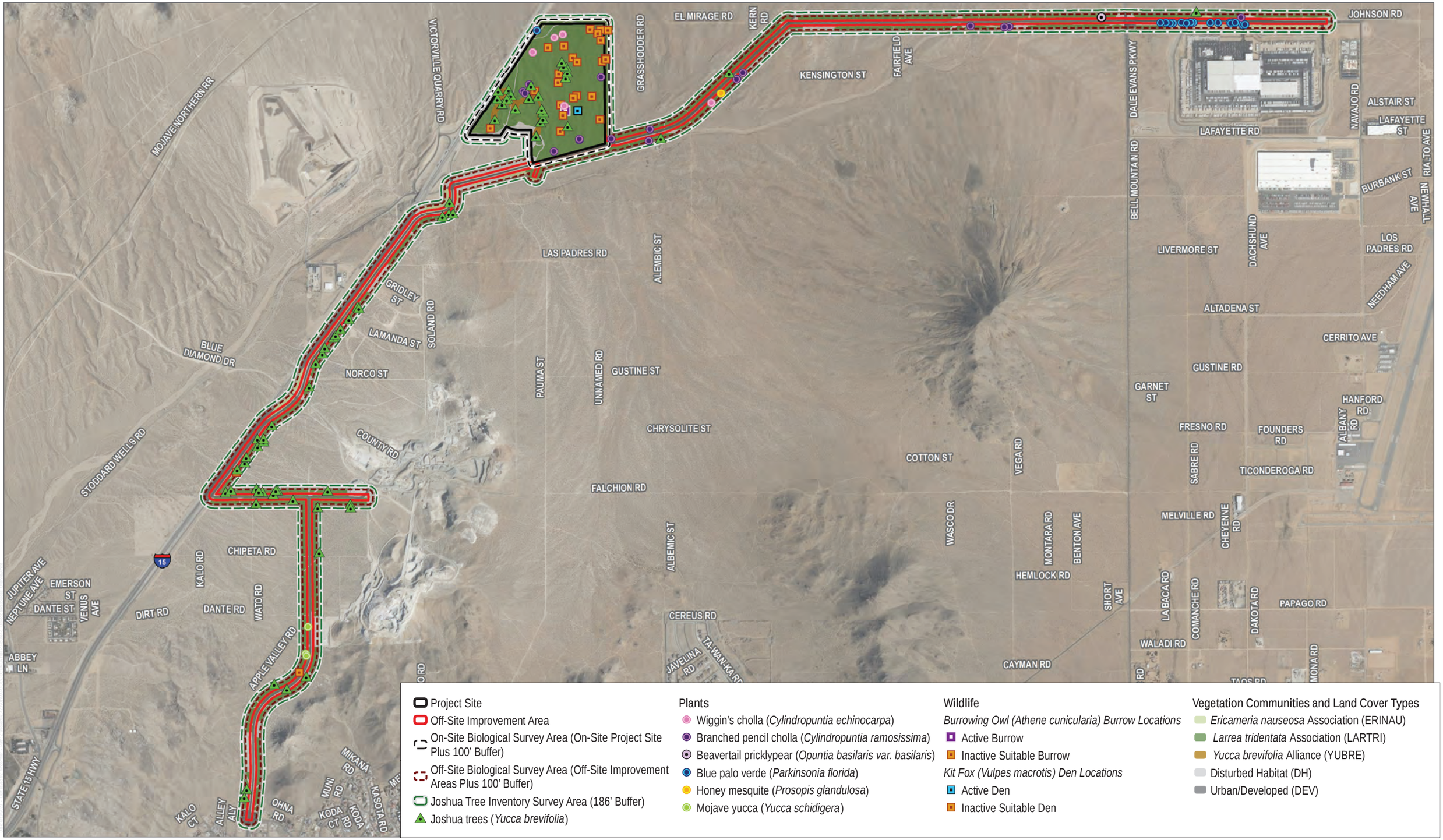
Project Site Plan

Apple Valley 143 Project Biological Technical Report

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SOURCE: Bing Maps (accessed 2022)

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0 1,000 2,000 Feet

FIGURE 4-1

Biological Resources

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SOURCE: Bing Maps (accessed 2022)

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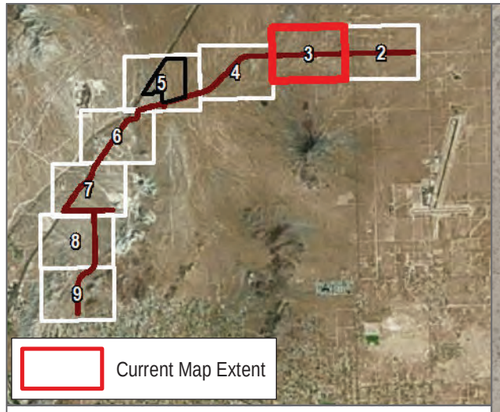
0 200 400 Feet

FIGURE 4-2

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)

Plants

- Branched pencil cholla (*Cylindropuntia ramosissima*)
- Beavertail pricklypear (*Opuntia basilaris var. basilaris*)

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

SOURCE: Bing Maps (accessed 2022)

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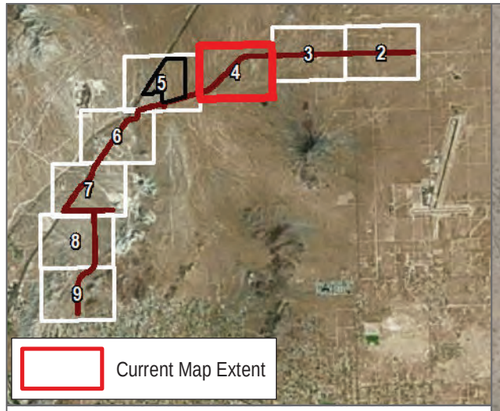
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FIGURE 4-3

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Plants

- Wiggin's cholla (*Cylindropuntia echinocarpa*)
- Branched pencil cholla (*Cylindropuntia ramosissima*)
- Honey mesquite (*Prosopis glandulosa*)

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

SOURCE: Bing Maps (accessed 2022)

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FIGURE 4-4

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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SOURCE: Bing Maps (accessed 2022)

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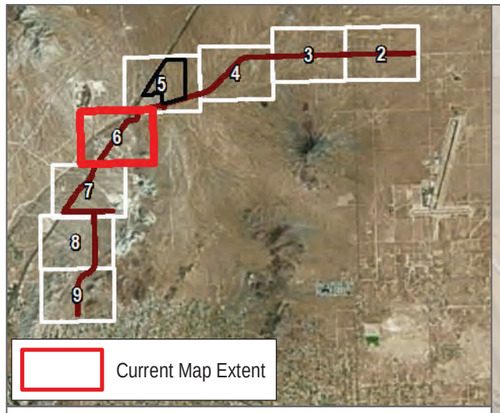
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FIGURE 4-5

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Vegetation Communities and Land Cover Types

- *Ericameria nauseosa* Association (ERINAU)
- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

SOURCE: Bing Maps (accessed 2022)

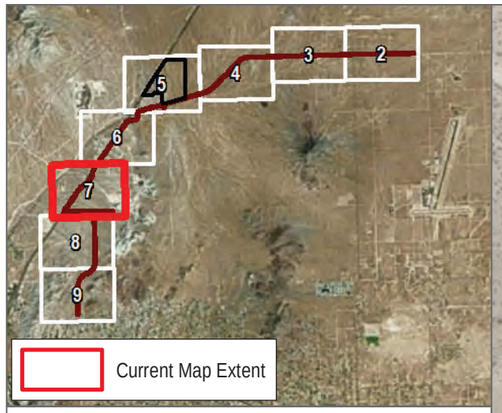
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FIGURE 4-6

Biological Resources

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Wildlife

Burrowing Owl (Athene cunicularia) Burrow Locations

- Inactive Suitable Burrow

Vegetation Communities and Land Cover Types

- *Ericameria nauseosa* Association (ERINAU)
- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

SOURCE: Bing Maps (accessed 2022)

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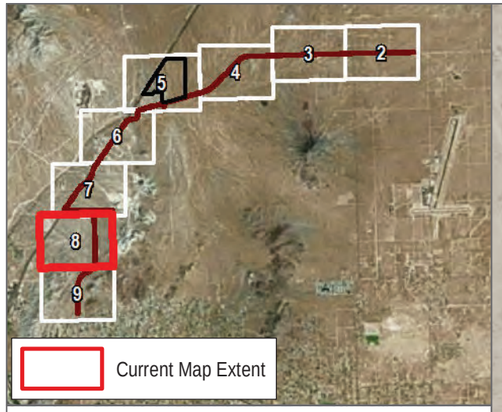
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FIGURE 4-7

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Plants

- Mojave yucca (*Yucca schidigera*)

Wildlife

Burrowing Owl (Athene cunicularia) Burrow Locations

- Inactive Suitable Burrow

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

SOURCE: Bing Maps (accessed 2022)

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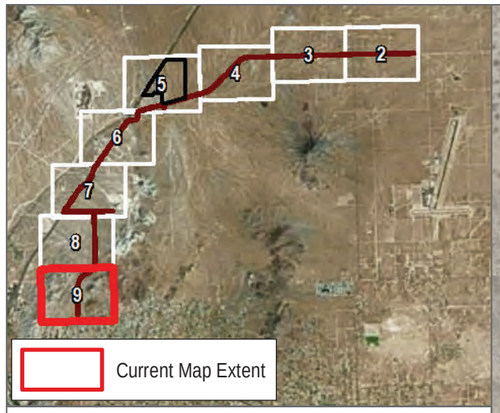
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FIGURE 4-8

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

SOURCE: Bing Maps (accessed 2022)

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FIGURE 4-9

Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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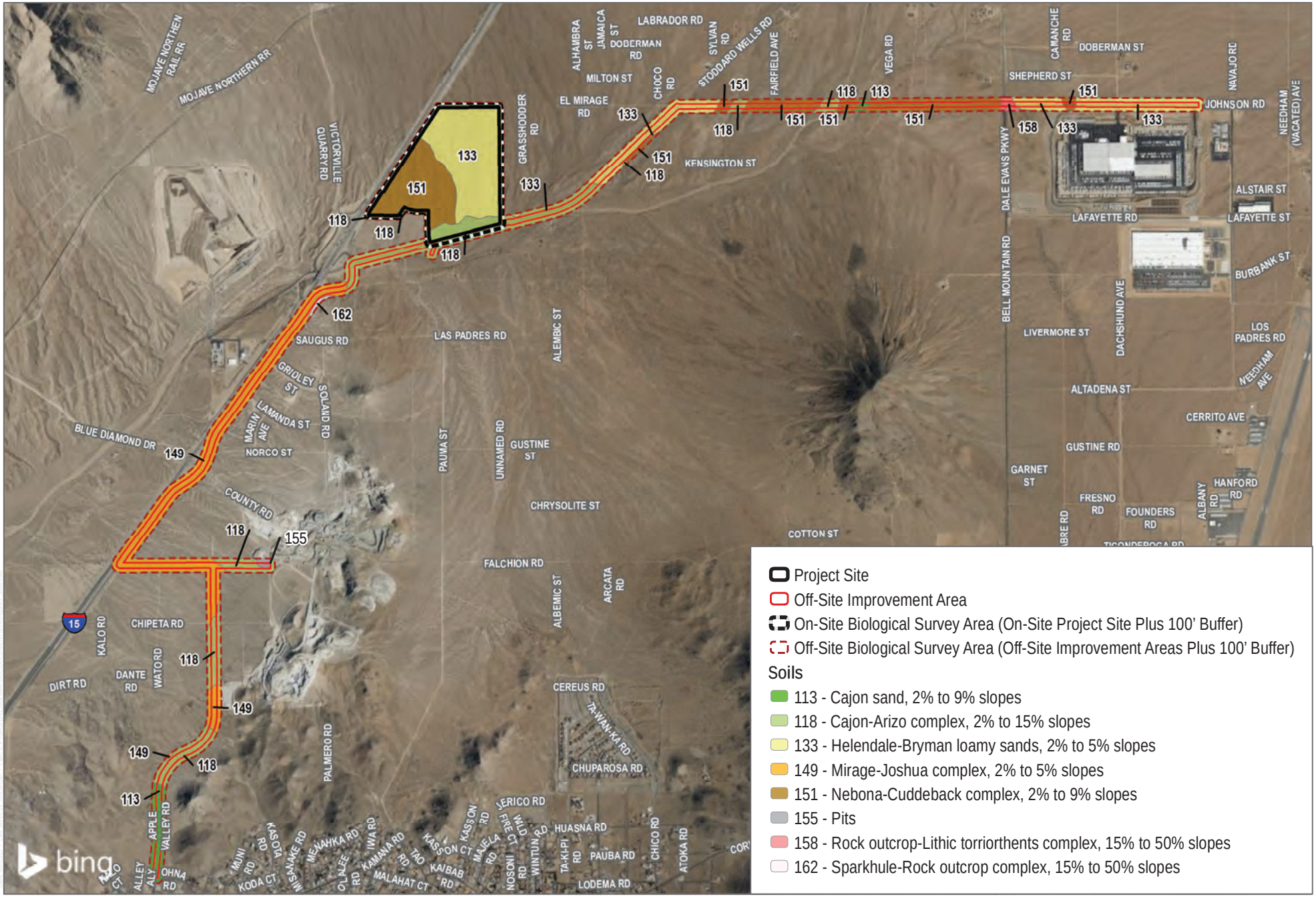


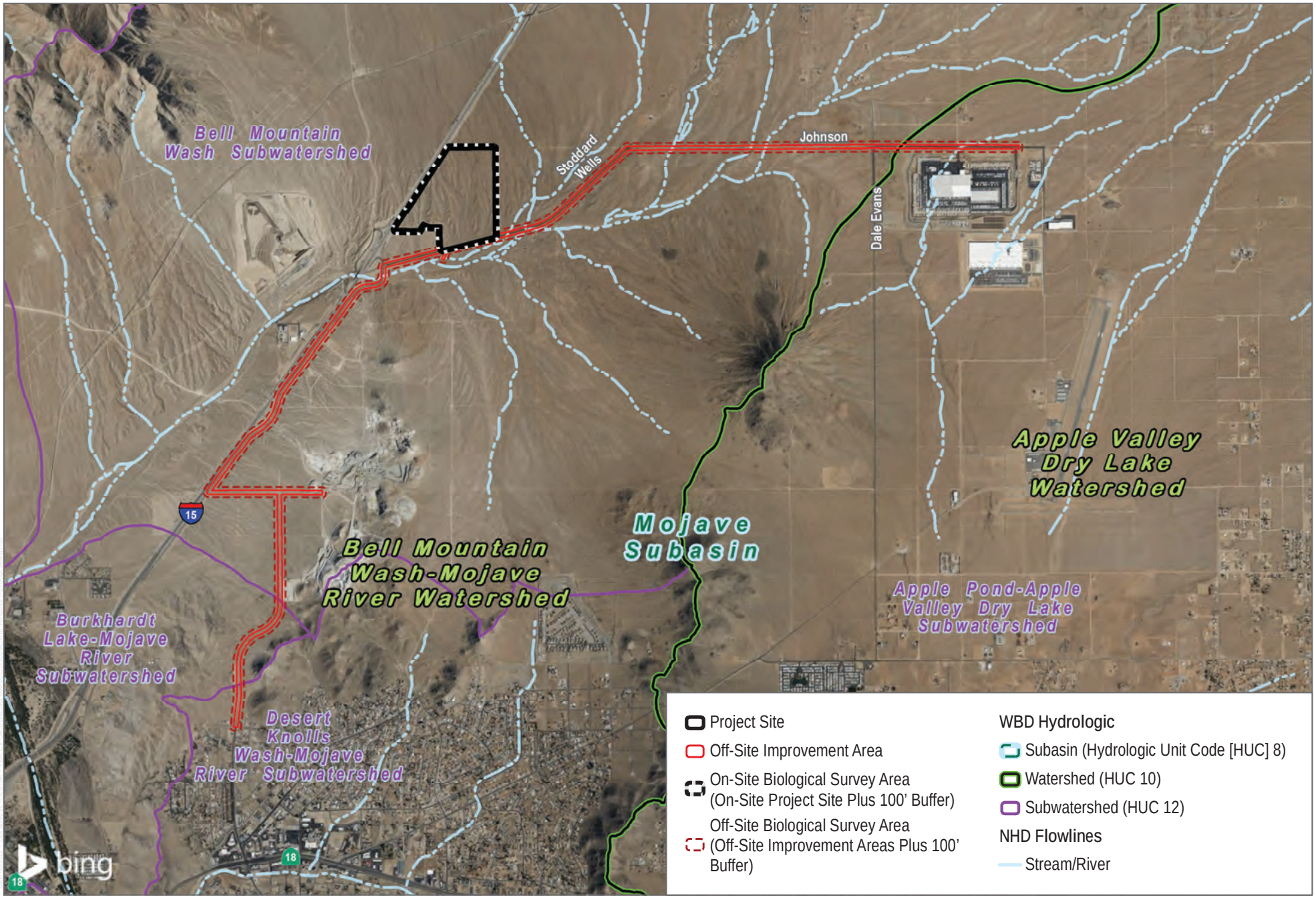
FIGURE 5

Soils

Apple Valley 143 Project Biological Resources Technical Report

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SOURCE: Bing Maps (accessed 2022); WBD 2022; NHD 2022; NWI 2022

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FIGURE 6

Hydrologic Setting

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SOURCE: Noreas 2023

FIGURE 7-1

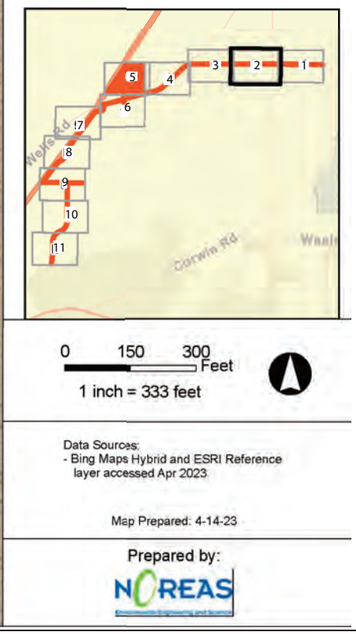
Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

FIGURE 7-2

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

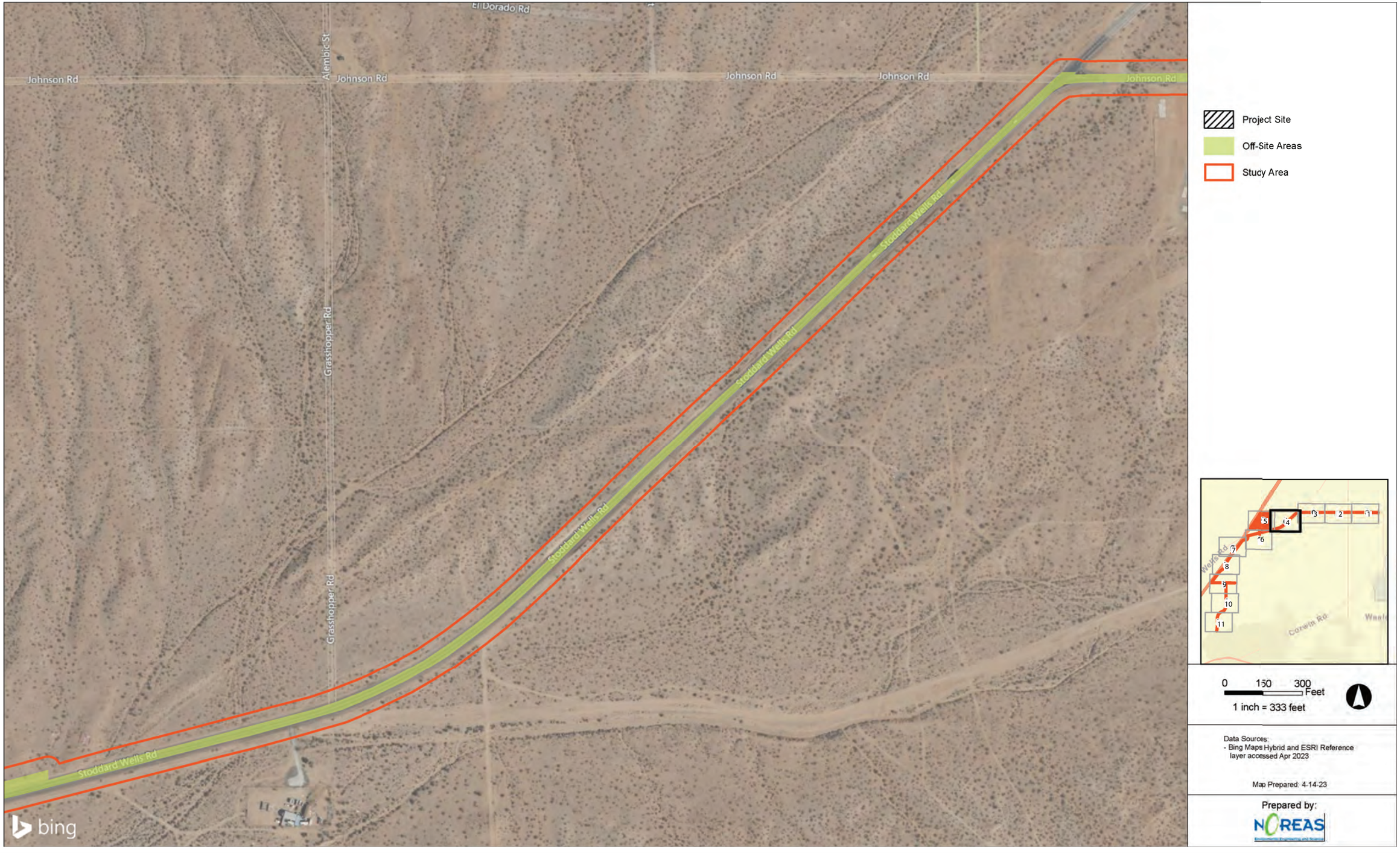
FIGURE 7-3

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

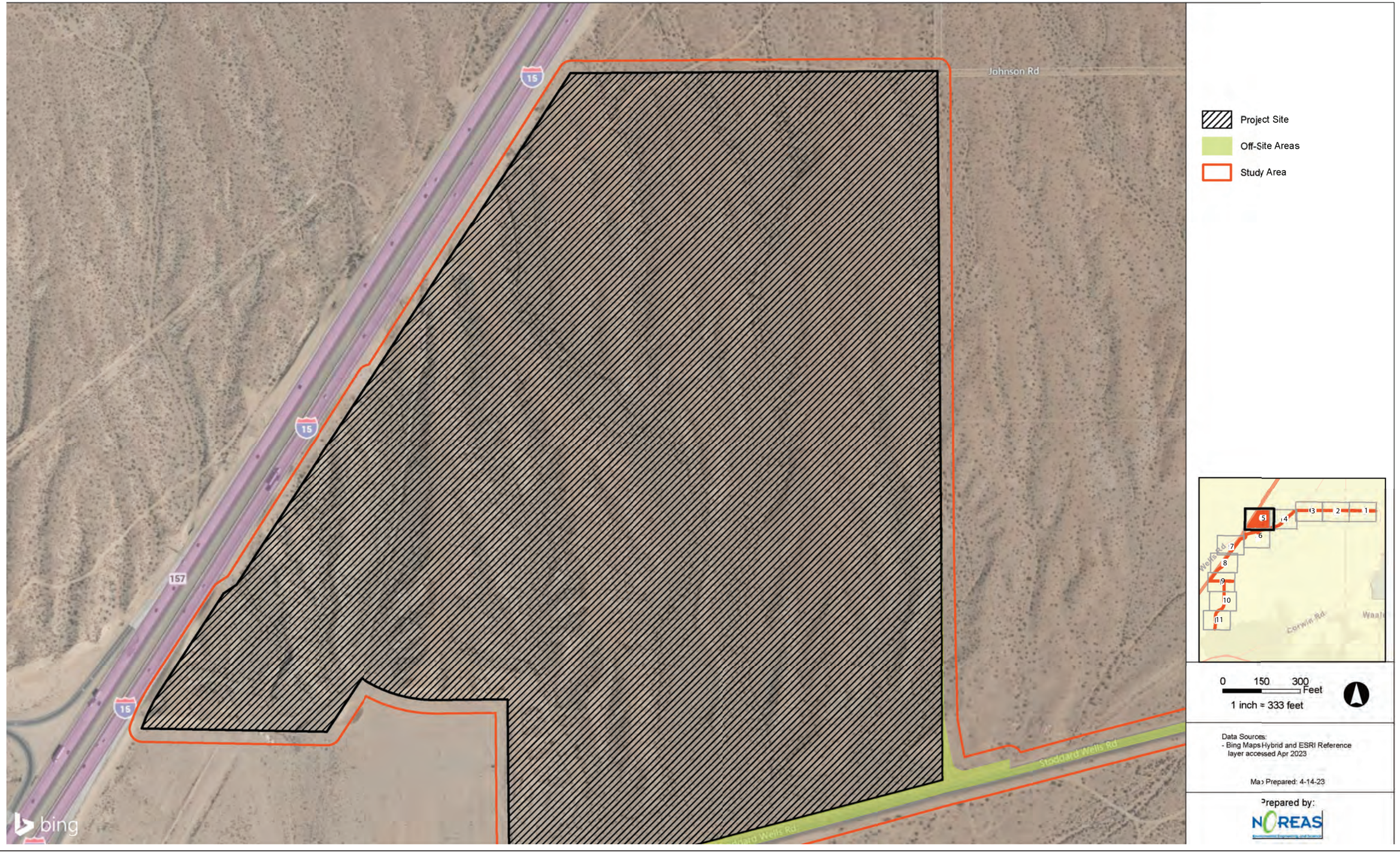
FIGURE 7-4

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

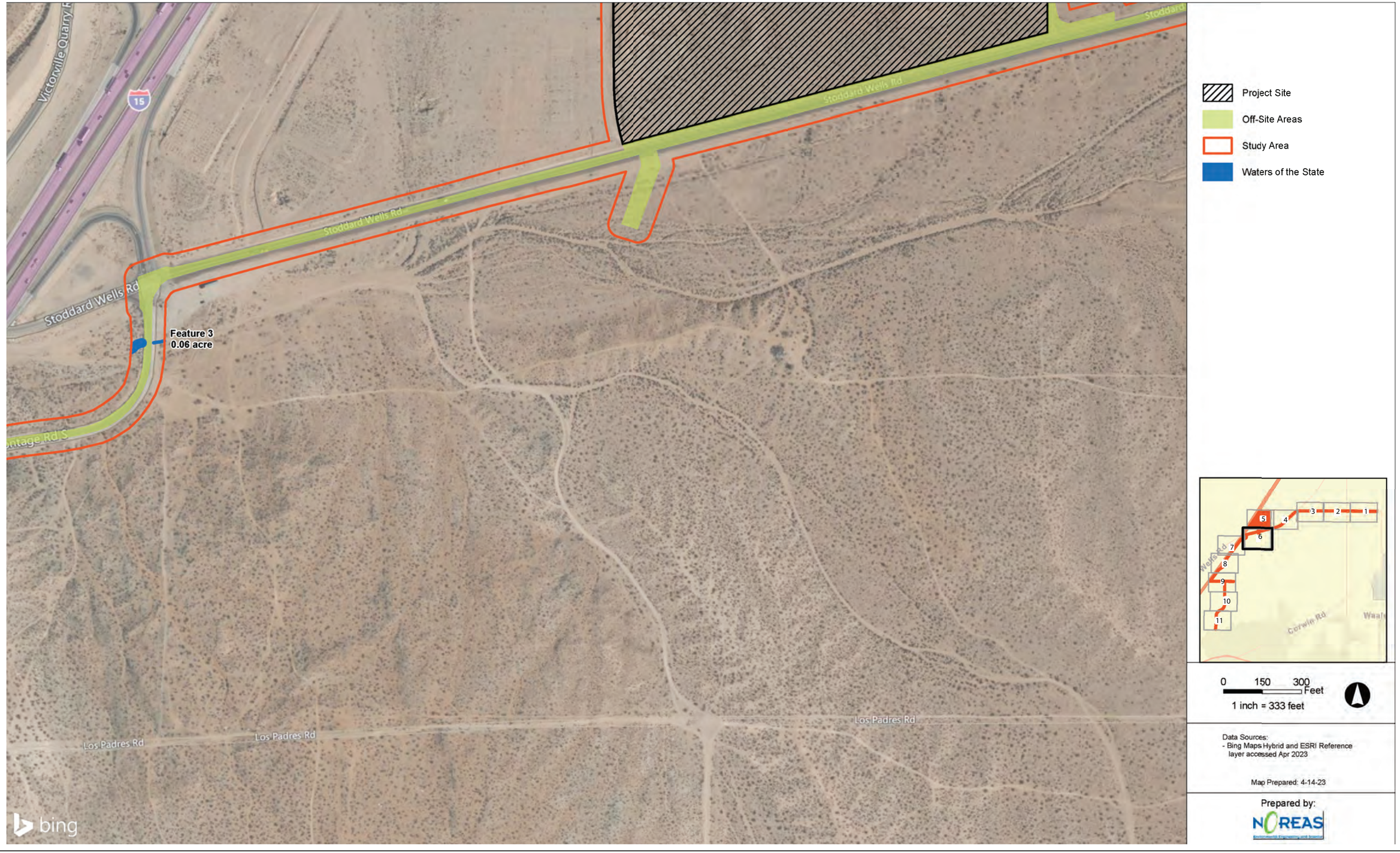
FIGURE 7-5

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

FIGURE 7-6

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

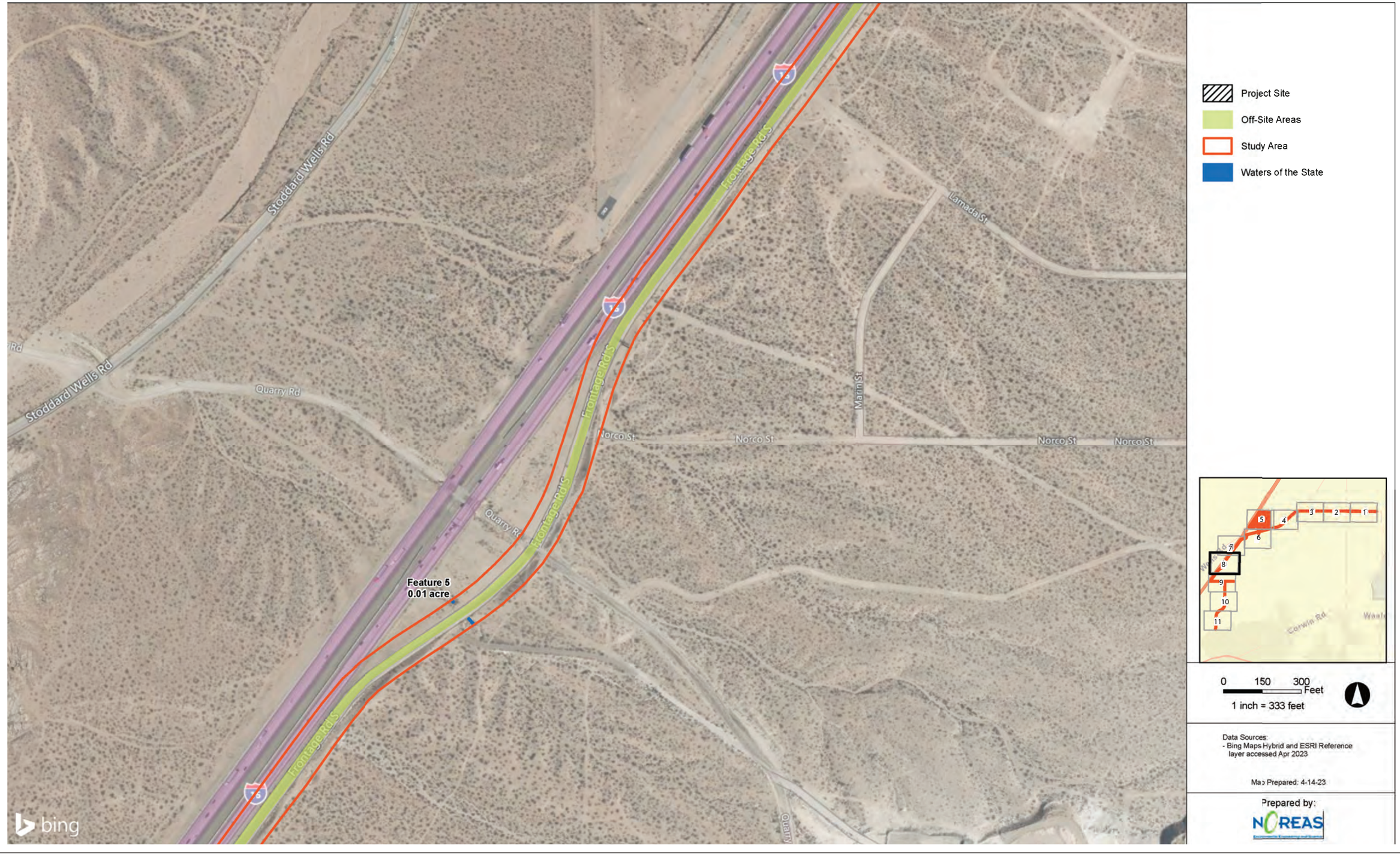
FIGURE 7-7

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

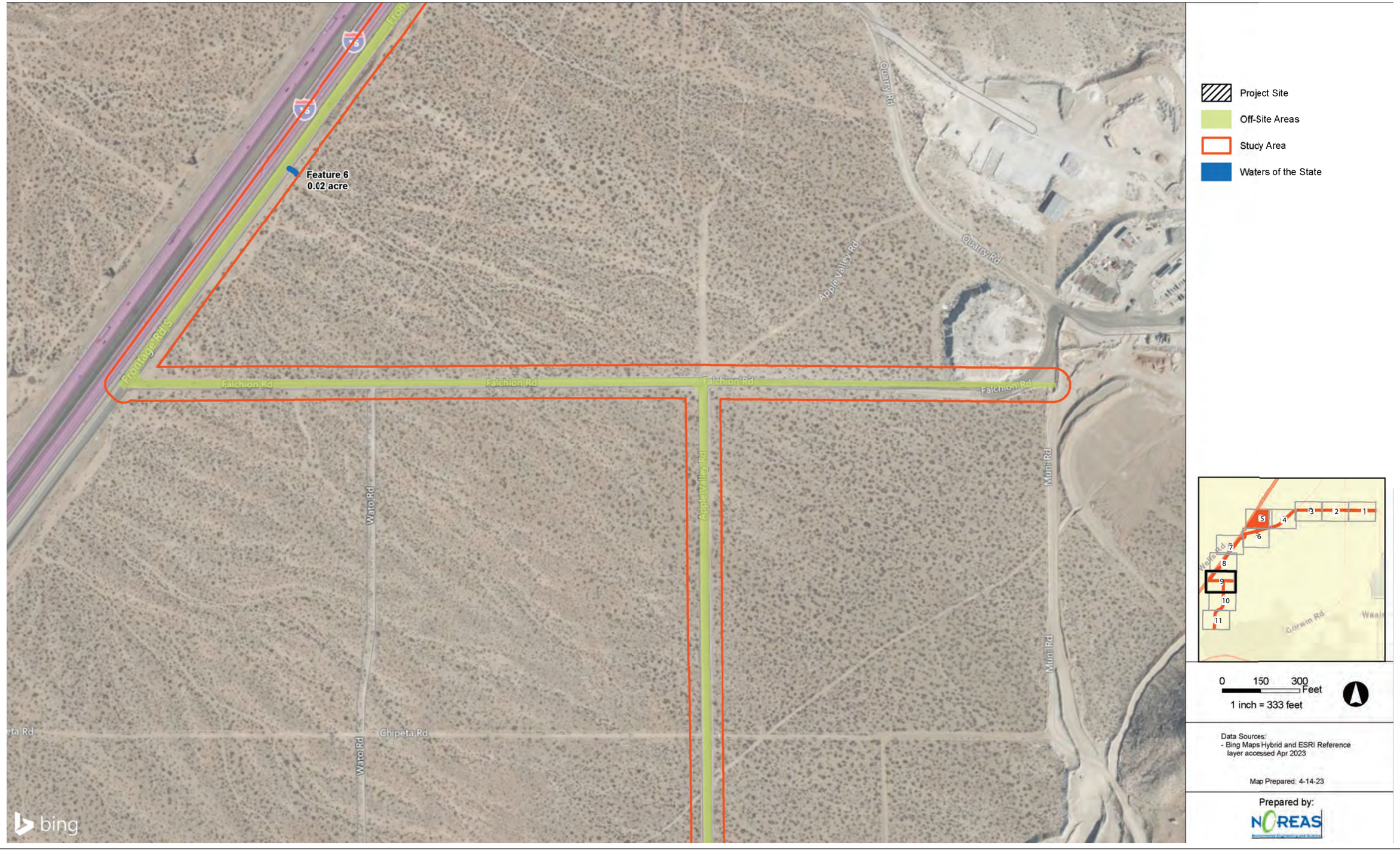
FIGURE 7-8

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

FIGURE 7-9

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

FIGURE 7-10

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Noreas 2023

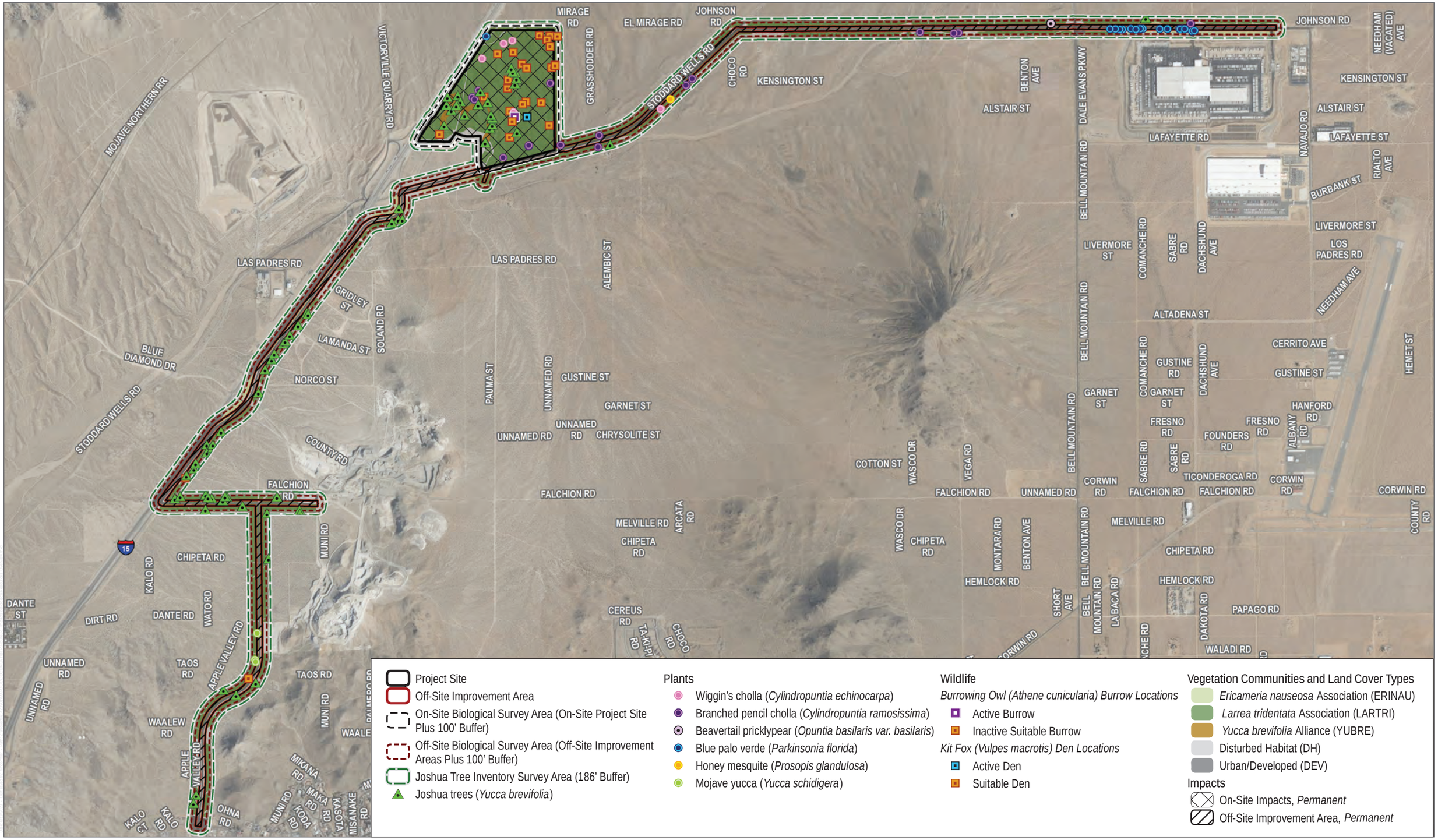
FIGURE 7-11

Aquatic Resources Delineation - Waters of the State

Apple Valley 143 Biological Technical Report

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SOURCE: Bing Maps (accessed 2022)

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0 1,000 2,000 Feet

FIGURE 8-1

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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SOURCE: Bing Maps (accessed 2022)

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FIGURE 8-2

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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SOURCE: Bing Maps (accessed 2022)

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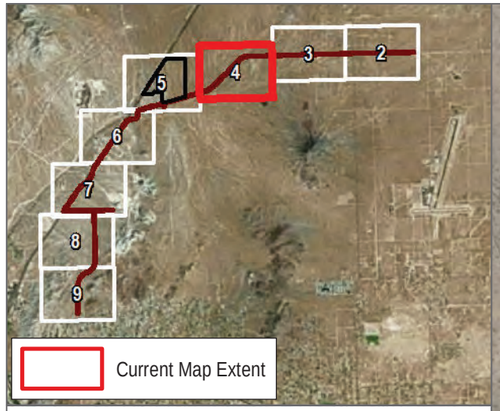
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FIGURE 8-3

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Plants

- Wiggin's cholla (*Cylindropuntia echinocarpa*)
- Branched pencil cholla (*Cylindropuntia ramosissima*)
- Honey mesquite (*Prosopis glandulosa*)

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

Impacts

- Off-Site Improvement Area, *Permanent*

SOURCE: Bing Maps (accessed 2022)

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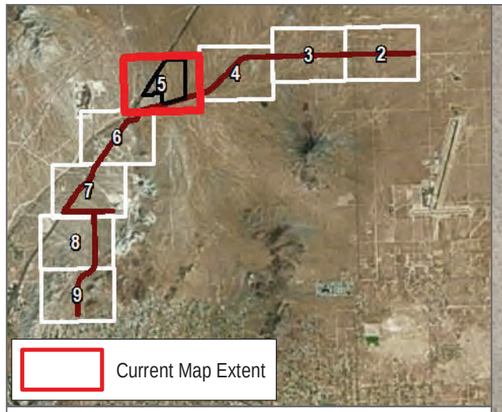
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FIGURE 8-4

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Plants

- Wiggin's cholla (*Cylindropuntia echinocarpa*)
- Branched pencil cholla (*Cylindropuntia ramosissima*)
- Blue palo verde (*Parkinsonia florida*)

Wildlife

Burrowing Owl (Athene cunicularia) Burrow Locations

- Active Burrow
- Inactive Suitable Burrow

Vegetation Communities and Land Cover Types

- *Ericameria nauseosa* Association (ERINAU)
- *Larrea tridentata* Association (LARTRI)
- *Yucca brevifolia* Alliance (YUBRE)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

Impacts

- On-Site Impacts, *Permanent*
- Off-Site Improvement Area, *Permanent*

SOURCE: Bing Maps (accessed 2022)

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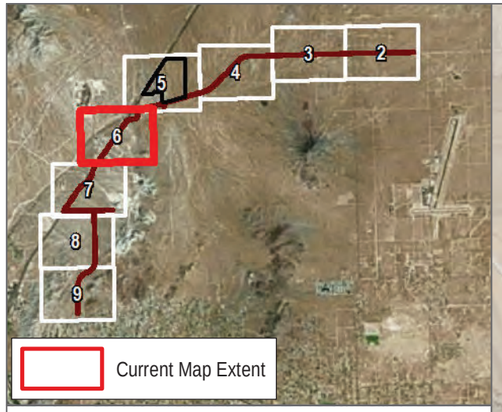
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FIGURE 8-5

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Vegetation Communities and Land Cover Types

- *Ericameria nauseosa* Association (ERINAU)
- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

Impacts

- Off-Site Improvement Area, *Permanent*

SOURCE: Bing Maps (accessed 2022)

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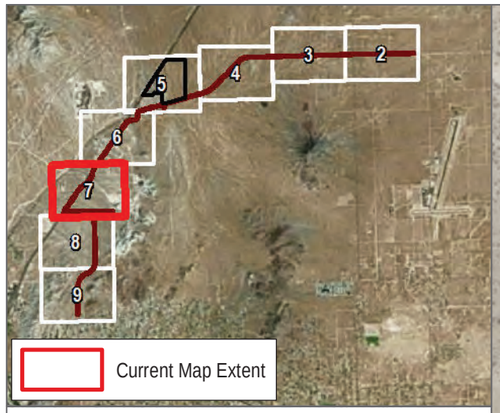
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FIGURE 8-6

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Wildlife

Burrowing Owl (Athene cunicularia) Burrow Locations

- Inactive Suitable Burrow

Vegetation Communities and Land Cover Types

- *Ericameria nauseosa* Association (ERINAU)
- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

Impacts

- Off-Site Improvement Area, *Permanent*

SOURCE: Bing Maps (accessed 2022)

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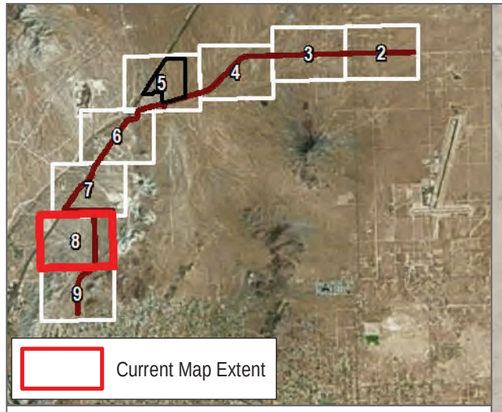
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FIGURE 8-7

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Plants

- Mojave yucca (*Yucca schidigera*)

Wildlife

Burrowing Owl (Athene cunicularia) Burrow Locations

- Inactive Suitable Burrow

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

Impacts

- Off-Site Improvement Area, *Permanent*

SOURCE: Bing Maps (accessed 2022)

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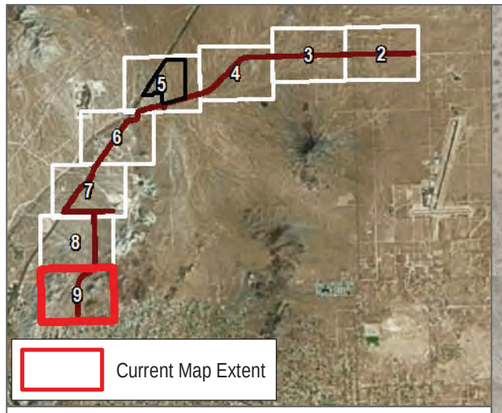
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FIGURE 8-8

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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- Project Site
- Off-Site Improvement Area
- On-Site Biological Survey Area (On-Site Project Site Plus 100' Buffer)
- Off-Site Biological Survey Area (Off-Site Improvement Areas Plus 100' Buffer)
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua trees (*Yucca brevifolia*)

Wildlife

Burrowing Owl (Athene cunicularia) Burrow Locations

- Inactive Suitable Burrow

Vegetation Communities and Land Cover Types

- *Larrea tridentata* Association (LARTRI)
- Disturbed Habitat (DH)
- Urban/Developed (DEV)

Impacts

- Off-Site Improvement Area, *Permanent*

SOURCE: Bing Maps (accessed 2022)

DUDEK

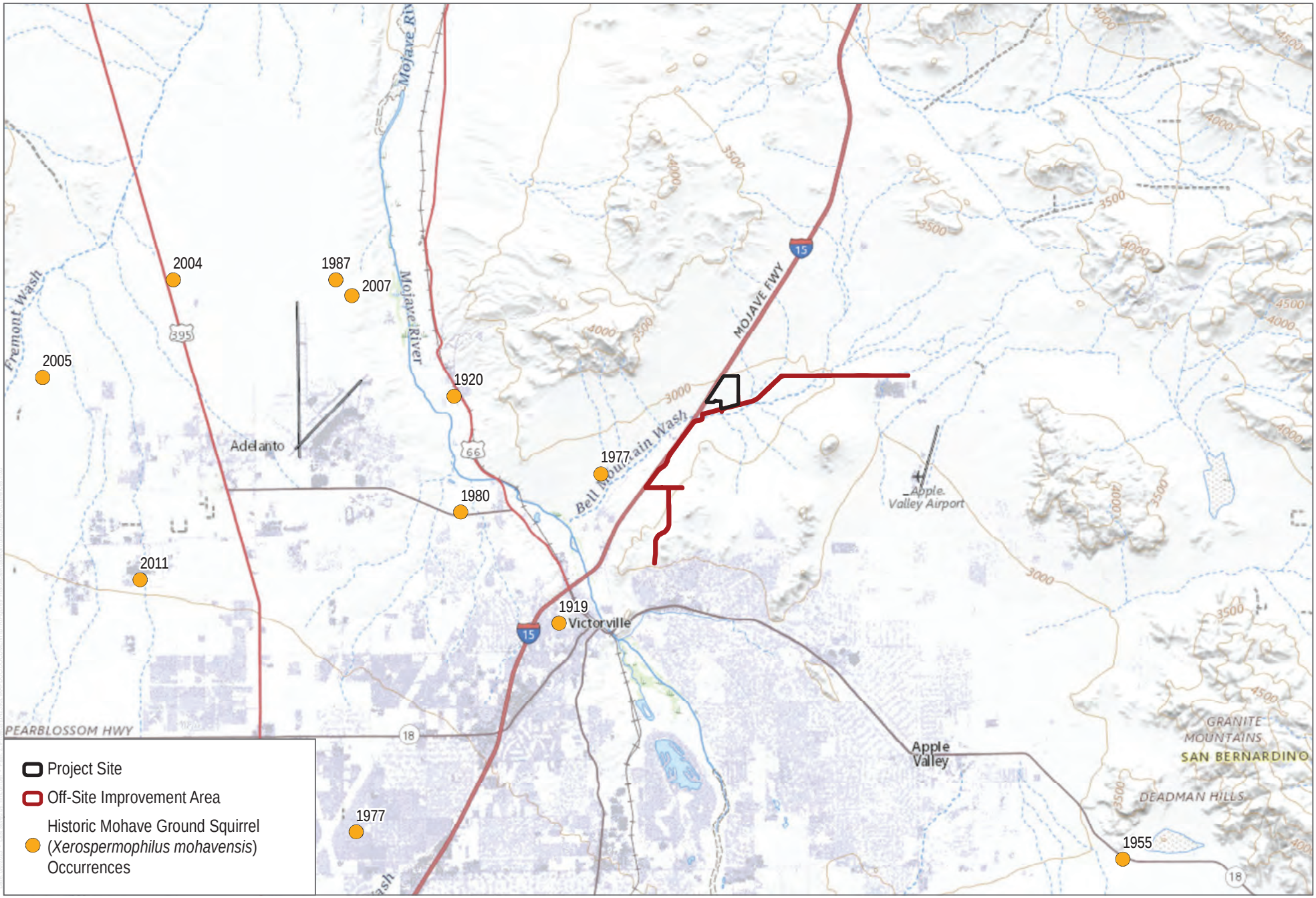
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FIGURE 8-9

Impacts to Biological Resources

Apple Valley 143 Project Biological Resources Technical Report

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SOURCE: Bing Maps (accessed 2022); CNDDB 2022

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FIGURE 9

Historical Mohave Ground Squirrel Occurrences

Apple Valley 143 Project Biological Resources Technical Report

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Appendix A

Jurisdictional Waters Delineation –
Potential Waters of the United States

APPLE VALLEY PROJECT

Jurisdictional Waters of the United States Assessment

June 2023

U.S. Geological Survey 7.5-Minute Victorville and Apple Valley North Quadrangles
West of the Town of Apple Valley, San Bernardino County, California

Prepared By

NOREAS
Environmental Engineering and Science
16361 Scientific Way
Irvine, CA 92618
(949) 467-9116

Certification

The undersigned certify - under penalty of law, that they have personally examined and are familiar with the information submitted in this document and all appendices and that, based on an inquiry of those individuals immediately responsible for obtaining the information, believe that the information is true, accurate, and complete. The undersigned are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Prepared By: Lisa Patterson Date: 6/13/23

Lisa Patterson
Senior Environmental Project Manager & Regulatory Specialist
Jacobs Engineering Group
2600 Michelson Dr Ste 500, Irvine, CA 92612

Prepared By: _____ Date: 6/13/23

Lenny Malo
Senior Environmental Project Manager & Regulatory Specialist
NOREAS, Inc.
16361 Scientific Way
Irvine, CA 92618

Prepared By: _____ Date: 6/13/23

Lincoln Hulse
Senior Environmental Project Manager & Regulatory Specialist
NOREAS, Inc.
16361 Scientific Way
Irvine, CA 92618

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION AND SUMMARY OF FINDINGS 3

2.0 REGULATORY SETTING 4

3.0 METHOD 8

4.0 RESULTS 12

5.0 REFERENCES 16

Tables

Table 1. Summary of Wetland Indicator Status

APPENDICES

Appendix A Figures

Appendix B Photographic Log

COMMON ACRONYMS AND ABBREVIATIONS

BAYVIEW	United States versus Riverside Bayview
CFR	Code of Federal Regulations
CWA	Clean Water Act
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
GPS	Global Positioning Systems
HUC	Hydrologic Unit Code
JACOBS	Jacobs Engineering Group
MESA	Mapping Episodic Stream Activity Field Guide
NOREAS	NOREAS Inc.
NRCS	National Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate Wetland
OHWM	Ordinary High-Water Mark
JA	Jurisdictional Waters of the United States Assessment
RAPANOS	Rapanos versus United States
RHA	Rivers and Harbors Act
RPW	Relatively Permanent Waters– *Term of Art* used for (a) 3 through 5 Waters, that meet the Relatively Permanent Standard
SA	Study Area
SACKETT	Sackett versus Environmental Protection Agency
SWANCC	Solid Waste Agency of Northern Cook County versus Army Corps
SCOTUS	Supreme Court of the United States
TNW	Traditional Navigable Waters - *Term of Art* used for (a) 1 Waters that are tidal or used in Interstate, or foreign commerce
UPL	Upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoUS	Waters of the United States

1.0 INTRODUCTION AND SUMMARY OF FINDINGS

This Jurisdictional Waters of the United States Assessment (Report or JA) was prepared for the Apple Valley Project (hereafter referred to as the Project). This JA evaluates an approximately 144-acre parcel that currently consists of undeveloped land, and Off-Site Improvements Areas for the presence of features that may be subject to regulation by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA). The Study Area (SA) is generally located at the north-east intersection of Interstate Highway 15 (I-15) and Stoddard Wells Road, west of Apple Valley, San Bernardino County, California (Appendix A, Figures 1 and 2). For the purposes of this JA, the 281.10-acre SA is defined as the Project's proposed disturbance footprint (Project Site), Off-Site Improvements Areas (Off-Site Areas) and the surrounding localized watershed. Off-Site Areas involve discrete culvert extensions, and the installation of a water line following developed roadways from the intersection of Johnson Road and Navajo Road, in a western direction along Stoddard Wells Road. The water line would also extends along Stoddard Wells Road to the Interstate 15 Frontage Road, then to Faschion Road, before ultimately heading south on Apple Valley Road to its terminus at Ohna Road.

This JA evaluates the SA for the presence of federal jurisdictional Waters of the United State (WoUS), pursuant to the regulations and regulatory guidance outlined within the existing "2023 WoUS Rule," implemented in March 2023. This evaluation has been completed using data acquired from current and historic imagery, hydrologic databases, analytic tools, and physical on the ground analyses/measurements. This JA provides a description and photo documentation (Appendix A, Figures 9a, 9b and 9c and Appendix B) of the features observed within the SA, and a discussion of their regulatory status.

Please note that this JA was conducted following guidance in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (USACE 2008). The ordinary high-water mark (OHWM) of potential other WoUS were evaluated in the field following the guidance in A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region in the Western United States (USACE 2008). Subject matter experts assessed the SA for the presence of WoUS in December 2022, January, February and March of 2023. These visits were conducted during – and within, a week of multiple day rain events.

The data presented herein implies that there are no WoUS within the SA. Furthermore, there is no evidence that water leaves the Project Site or the Off-Site Areas, and enters Bell Mountain Wash on a relatively permanent - or continuously flowing basis, thus rendering them isolated. This assessment is also based on the fact that no drainage features with an Ordinary High-Water Mark (OHWM) within the Project Site or Off-Site Areas, reach the Mojave River - which, although not an interstate water, nor a tributary to a Traditionally Navigable Water (TNW); is currently being regulated by the USACE. The Project Site and Off-Site Areas are not a tributary to a TNW, nor an Interstate Water. Therefore, no signatures were identified within the Project Site and Off-Site Areas that are subject to federal Clean Water Act jurisdiction.

To that end, this Report presents NOREAS Inc. (NOREAS) and Jacobs Engineering Group (JACOBS) best professional judgment at estimating special aquatic resource area boundaries using the most up-to-date regulations, written policies, and guidance from the USACE.

2.0 REGULATORY SETTING

In a general sense, Section 401 of the Clean Water Act (CWA) requires authorized activities (i.e., those actions that occur deliberately by means of a discretionary permit - or license) which result in a discharge to WoUS, to obtain state certification to safeguard that the discharge will comply with the provisions of the act. In California, the regional water quality control boards (RWQCBs) administer this certification program. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into WoUS. Additionally, Section 404 of the CWA establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) that regulates the discharge of dredged or fill material into WoUS, including wetlands. The USACE's implementing regulations are found in Title 33 Code of Federal Regulations (CFR) Parts 320 to 332.

2.1.1 2023 Waters of the U.S. Rule

The current applicability of the CWA, in accordance with the "2023 WoUS Rule," must be harmonized with the Supreme Court of the United Stated (SCOTUS) rulings on United States versus (v.) Riverside Bayview (BAYVIEW), Solid Waste Agency of Northern Cook County v. USACE (SWANCC), Rapanos v. United States (RAPANOS), and Sackett v Environmental Protection Agency (SACKETT) rulings. To that end, the 2023 rule establishes a definition of "WoUS" that includes three parts:

- Paragraph (a) jurisdictional waters;
- Paragraph (b) exclusions; and
- Paragraph (c) definitions.

The 2023 Rule defines the following WoUS. There are no changes from the Pre-2015 Waters Rule in the definitions of a(1), a(2), and a(4) Waters. However, there are nuance changes to a(3) Waters, and there substantial changes to identifying a(5) Waters. In general, the 2023 Rule does not consider "isolated" as described in SWANCC, nor does it consider a need to have ties to interstate commerce (BAYVIEW). This rule relies entirely on the definitions below for TNWs, and their impoundment and tributaries which are established by having a "Significant Nexus" by contributing to the biological, chemical, or physical characteristics of a TNW.

During the first two months of the 2023 Rule implementation, several court cases have enjoined the use of the rule and subsequently reverted to the Pre-2015 Rule. Currently 27 States are using the Pre-2015 Rule. Nonetheless, California has not been enjoined and continues to fall under jurisdiction of the 2023 Rule. As such, on 26 May 2023 SCOTUS ruled on SACKETT. In general, this ruling found that the CWA's use of "waters" encompasses "only those relatively permanent, standing or continuously flowing bodies of water 'forming geographic[al] features' that are described in ordinary parlance as 'streams, oceans, rivers, and lakes.'" 547 U.S., at 739 (quoting Webster's New International Dictionary 2882 (2d ed. 1954) (Webster's Second); original alterations omitted). The court appears to have struck down the use of the Significant Nexus Analysis, use of "Similarly Situated Waters" being combined to have a biological, chemical, or biological nexus to a TNW. ***Further, the court determined that WoUS extent only to tributaries of TNWs that have Relatively Permanent Flows, such that they flow or are inundated unless there is unusually prolonged drought, or the ebb of a tide.***

On 26 May 2023, the USACE issued the following paragraph: "The U.S. Environmental Protection Agency and USACE (the agencies) are in receipt of SCOTUS's 25 May 2023 decision in SACKETT. In light of this decision, the agencies will interpret the phrase "WoUS" consistent with SCOTUS's decision in SACKETT. The agencies continue to review the decision to determine next steps." Based on the fact that the USACE

states that they will interpret WoUS consistent with the Court Ruling," the likely result will be the changes identified below. However, until formal guidance from the U.S. Environmental Protection Agency and USACE is received, the results of how this decision will affect projects is speculative. All actions will need to be evaluated on a case-by-case basis using the guidance available, at the time.

Below are the 2023 WoUS categories, and the likely effect the SACKETT may have on their jurisdiction.

2023 WoUS Rule Definitions

a(1) Waters - Traditional navigable waters, the territorial seas, and interstate waters. Waters which are currently used or were used in the part or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

These Waters remained unchanged from the "Pre-2015 WoUS Rule" and do not appear to conflict with the WoUS definition from SACKETT.

- ✓ Interstate Waters have been Clarified in the Preamble. They include Lake, ponds, and wetlands crossing state boundaries. These waters are jurisdictional in their entirety.

- ✓ Tributaries crossing interstate boundaries are jurisdictional for those portions of the tributary - of the same stream order, that crosses the state line.

a(2) Impoundments - Waters affected by discrete barriers, like natural or human-made barriers. This applies to both impoundments of previously jurisdictional waters, and impoundments that now qualify at the time of assessment.

These Waters remained unchanged from the "Pre-2015 WoUS Rule" and do not appear to conflict with the WoUS definition from SACKETT.

- ✓ This does not include other (a)5 Waters that become impounded, though they may be jurisdictional under different criteria.

- ✓ Paragraph (a)(2) of the final rule includes impoundments of "WoUS." Impoundments are distinguishable from natural lakes and ponds because they are created by discrete structures like dams or levees that typically have the effect of raising the water surface elevation, creating, or expanding the area of open water, or both.

- ✓ Impoundments can be natural (like beaver ponds) or artificial (like reservoirs). The agencies consider paragraph (a)(2) impoundments to include:
  (1) impoundments created by impounding one of the "WoUS" that was jurisdictional under this rule's definition at the time the impoundment was created; and
  (2) impoundments of waters that at the time of assessment meet the definition of "WoUS" under paragraph (a)(1), (a)(3), or (a)(4) of this rule.

(a)(3) Tributaries - Tributaries include natural, man-altered, or man-made water bodies that flow directly or indirectly into an (a)(1) Water, or an (a)(2) Impoundment. Jurisdictional tributaries must meet the relatively permanent standard (i.e., have flowing or standing water year-round or continuously during certain times of the year [RPW], or have a significant nexus [tributaries that alone - or in combination, significantly affect]) to an (a)(1) Water. For tributaries, interstate waters

include the portion of the tributary - of the same stream order, as the point that crosses or serves as a state line.

SACKETT decision appears to limit the (a)3 Tributaries to only Permanent or Relatively Permanent Waters by excluding the vagaries of significant nexus, and they would need to be evaluated individually and not in conjunction with similarly situated Waters.

- ✓ Tributaries can include rivers, streams, lakes, ponds, and impoundments - as well as ditches and canals. Not all tributaries are jurisdictional under the final rule.

- ✓ To be jurisdictional, tributaries must meet either the relatively permanent standard, or the significant nexus standard. The final rule preamble explains that relatively permanent waters include tributaries that have flowing or standing water year-round - or continuously during certain times of year. Relatively permanent waters do not include tributaries with flowing - or standing water, for only a short duration in direct response to precipitation.

(a)(4) Adjacent Wetlands - No change to the definition of "wetlands," or "adjacent" to an (a)(1) Waters.

SACKETT has greatly affected what qualifies as adjacent. It appears to have constrained adjacent to only an unbroken surface connection.

- ✓ Unbroken surface or shallow subsurface connection - to a jurisdictional water, even though non-jurisdictional features.

- ✓ Are close enough to have significant water quality and aquatic ecosystem effects, alone - or in combination with, other jurisdictional tributaries and adjacent wetlands. It appears the Sackett case would eliminate wetlands that rely on a significant nexus analysis or only have a ground water connection to a WoUS

(a)(5) Waters are not identified in (a)(1) through (4) - Intrastate lakes and ponds, streams, and wetlands not identified as part of earlier qualifications that meet the two tests below. (a)(5) Waters not identified in (a)(1) through (4). It appears the Sackett decision has removed (a)5ii Waters from jurisdiction.

- ✓ Intrastate lakes and ponds, streams, and wetlands not identified as part of earlier qualifications that meet the two tests below.
    - o i. Relatively Permanent Standard - Flowing or standing water year-round, or continuously during certain times of year, indirectly or directly to traditional navigable waterways, territorial seas, interstate waters, or impoundments, OR to relatively permanent tributaries to those waters.

    - o ii. Significant Nexus Standard - Feature can "significantly affect" biological, chemical, or physical characteristics of traditional navigable waterways, territorial seas, and interstate waters. Unlike for tributaries and adjacent wetlands, this must be assessed on an individual basis.

***SACKETT appears to remove these intermittent and ephemeral signatures jurisdiction under the CWA*.**

Summary of probable changes in CWA jurisdiction resulting from the SCOTUS Rulings:

Although the 2023 WoUS Rule includes the (a)(3) tributaries, (a)(4) Adjacent Wetlands, and a(5) Waters - outside the need to be used for interstate commerce, required post BAYVIEW. The final rule preamble notes that the agencies intend to address such waters in a future action.

The court concluded that the RAPANOS plurality[1] was correct: the CWA's use of "waters" encompasses "only those relatively permanent, standing or continuously flowing bodies of water 'forming geographic[al] features' that are described in ordinary parlance as 'streams, oceans, rivers, and lakes," and utilize several dictionary definitions for "waters" as "a. flowing water, or water moving in waves: The river's mighty waters. b. the sea or seas bordering a particular country or continent or located in a particular part of the world." They found in it difficult to reconcile these definitions with classifying "lands," wet or otherwise, as "waters." (RAPANOS plurality opinion) (BAYVIEW).

The SACKETT summation held that the "CWA extends to only those wetlands that are "as a practical matter indistinguishable from WoUS." This requires the party asserting jurisdiction over adjacent wetlands to establish "first, that the adjacent [body of water constitutes] …. 'water[s] of the United States,' (i.e., a relatively permanent body of water).

[1] RAPANOS - Four Justices concluded that the CWA's coverage did not extend beyond two categories: first, certain relatively permanent bodies of water connected to traditional interstate navigable waters and, second, wetlands with such a close physical connection to those waters that they were "as a practical matter indistinguishable from WoUS."

3.0 METHOD

Prior to performing field surveys, documentation relevant to the SA and surrounding area was reviewed using the methods and databases listed below.

3.1 Literature Reviews

Prior to conducting fieldwork, the following information was reviewed to determine watershed characteristics, locations and types of aquatic resources that may be present within the SA:

- Victorville and Apple Valley North, California Topographic Map 7.5-minute USGS Map (USGS 1987);
- 2022 and 2023 color aerial photographs (Bing Maps 2022 and 2023);
- Google Earth version 5.2.1.1588 (February 2022 and March 2023);
- Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2023);
- Natural Resource Conservation Service, Watershed Boundary Dataset (USDA-NRCS 2023b);
- Environmental Protection Agency Enviromapper for Water (EPA 2023);
- Federal Emergency Management Agency (FEMA 2023);
- National Wetlands Inventory (NWI) maintained by the US Fish and Wildlife Service (USFWS 2023);
- 2023 U.S. Environmental Protection Agency (EPA) WATERS GeoViewer Tool (epa.maps.arcgis.com/apps/webappviewer);
- 2023 EPA Antecedent Precipitation Tool (APT) (epa.gov/wotus/antecedent-precipitation-tool-apt); and
- Victorville California National Climate Data Center (NCDC, 2023) Data.

The SA was examined for existing mapped drainages and channel features, and followed to a termination point, or to an (a)1 through 5 Waters - also referred to Traditional Navigable Waters (TNW), Relatively Permanent Waters (RPW), etc. The intent of this database assessment was to determine where water may flow or terminate, and was used to determine efficient locations for visual inspections to occur in the field.

3.1.1 Aerial Photography

Historic and current aerial photography of the SA were reviewed, prior to and during the field assessments. Aerial photography was informative with deference to the state and function of land resources in both the present, and historic context. As, inundation and vegetative signatures on aerial images can imply the presence - or absence, of WoUS, or a stream system within a discrete location.

3.1.2 U.S. Fish and Wildlife Service NWI Data and EPA WATERS GeoViewer Tool

The U.S. Environmental Protection Agency (EPA) WATERS GeoViewer tool provided access to spatial data sets (Appendix A, Figures 4 and 5) - such as interactive Upstream/Downstream search capabilities, and interactive Watershed Delineation, to assist in determining the jurisdictional status of resources detected within the SA (epa.maps.arcgis.com/apps/webappviewer). Additionally, the Federal Emergency Management Agency (FEMA) flood zone is depicted in Appendix A, Figure 6. Furthermore, the National Wetland Inventory (NWI) – which is maintained by the U.S. Fish and Wildlife Service (USFWS), was reviewed to support with the identification of potential aquatic resources within the SA. However, this database (i.e., the NWI) specifically rejects its use for regulatory jurisdictional review.

3.1.3 Antecedent Precipitation Tool

The Antecedent Precipitation Tool (APT) was also utilized to determine whether SA observations are representative of typical climatic conditions (i.e., those that have been experienced over the past thirty years). This tool is also informative when assessing whether certain field conditions are observed during typical, as opposed to atypical rainfall cycles. The APT queries data from weather stations that are located within a 30-mile radius from the SA. That data is then used to calculate precipitation normalcy. In a general sense, this is done by comparing rainfall data from the previous three months, to the same three-month period over a rolling 30-year record. The data is then indexed to give a rating against the normal, or "typical year." An index score of 9 or lower, indicates antecedent precipitation conditions are drier than normal. While a score of 10 to 14 indicates conditions are normal. But a score of 15 or higher, indicates conditions are wetter than normal (EPA APT 2023).

3.1.4 Topography

USGS topographic maps were reviewed as well. These maps tend to illustrate elevation contours, drainage patterns, and hydrography within the SA. USGS 7.5-Minute Topographic Quadrangles "Victorville" and "Apple Valley North" were evaluated to facilitate identification of potential drainage features within the SA - as indicated from topographic changes, blue-line features, or visible drainage patterns in order to characterized features.

3.2 Procedures and Field Data Collection Techniques

The delineation of signatures was conducted within the SA using a combination of on the ground quantification, remote sensing and ground verification via pedestrian surveys of the SA in 2022 and 2023. Assessment of the presence of an OHWM was based on observations - or evidence of flow, and unique characteristics indicating the presence of active water flow, shelving, drift lines, and disturbed vegetation. Or other indicators identified in the "Field Guide to Identification of the OHWM in the Arid West Region of the Western United States" (USACE 2008). OHWM characteristics in this region would primarily consist of sediment sorting, destruction of terrestrial vegetation, and a change in substrate in the feature as compared to the surrounding upland area. However, features were excluded from this assessment if they exhibited swales and erosional characteristics in accordance with USACE CWA Regulations Title 33 CFR Part 328.3(b) Not Waters of the United State[2].

Data collected included digital format GPS locations, photos (Appendix a, Figures 9a, 9b and 9c and Appendix B), graphics, and measurement of the OHWM upstream and downstream of the SA conforming to industry standards. Both a routine off-site and on-site field determination was conducted for USACE-defined wetlands, and non-wetland WoUS and other published guidelines.

Typically, an area must meet criteria for hydrophytic vegetation, hydric soils, and wetland hydrology to be identified as a potential wetland under USACE jurisdiction. Features that did not meet the hydrophytic vegetation wetland criteria are reviewed to determine if they met the definition of other WoUS (i.e., had evidence of an OHWM). Data collected from georeferenced aerial photographs, topographic maps, and soils data are viewed on handheld mobile devices, and used to target areas with potential WoUS. During fieldwork, all accessible areas within the SA were visually surveyed for hydrophytic vegetation, standing

[2] USACE CWA Regulations Title 33 CFR Part 328.3(b) Not Waters of the United States – In summary, b(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow, are not WoUS.

water, scoured areas, etc. Inaccessible areas were viewed from the elevated locales with the aid of binoculars, aerial photographs, and so forth.

Areas that were determined to have an OHWM and/or defined bed/bank and suspected of being WoUS, wetlands or other sensitive riparian/riverine communities were further analyzed for a dominance of hydrophytic vegetation, hydric soils, and hydrology as described below. The evaluation process for USACE-defined wetlands considered vegetation, soils, and hydrological parameters of suspected features. The location of the OHWM was defined based on clear lines visible on banks; shelving; changes in the character of the soil; destruction of terrestrial vegetation; presence of litter and debris; and differences in vegetation species, composition or structure.

Potential USACE-defined wetlands, WoUS and other riverine resources were delineated in the field with a handheld Global Positioning System (GPS) receiver. The surface area of each feature was then calculated within a Geographic Information System (GIS) to determine total jurisdiction area within the SA.

KMZ files and GIS/ESRI shapefiles are available, upon request, as aquatic resource boundaries were not permanently flagged or demarked in the SA at the time of delineation.

3.2.1 Vegetation

Plants observed were identified to the taxonomic level sufficient to determine their wetland indicator status based on the National List of Plant Species that occurs in the Arid West Region National List of Plant Species that Occur in Wetlands (USACE 2018 [https://wetland-plants.sec.usace.army.mil/nwpl_static/v34/home/home.html], EL 1987, Reed 1998, Lichvar 2012, and Table 1). Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded per Baldwin et al. (2012) and Lichvar (2012).

Table 1. Summary of Wetland Indicator Status

Category	Probability
Obligate Wetland (OBL)	Plants that occur almost always (estimated probability > 99%) in wetlands under natural conditions
Facultative Wetland (FACW)	Plants that occur usually (estimated probability >67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in non-wetlands
Facultative (FAC)	Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands
Facultative Upland (FACU)	Plants that occur sometimes (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability >67% to 99%) in non-wetlands
Obligate Upland (UPL)	Plants that occur rarely (estimated probability < 1%) in wetlands, but occur almost always (estimated probability >99%) in non-wetlands under natural conditions
No Indicator (NI)	Wetland indicator status not assigned. Species is assumed to be upland.

Within this Report, the hydrophytic vegetation indicators criterion was met if the USACE's Dominance Test and/or Prevalence Index –using absolute, rather than relative vegetation cover, were satisfied. Vegetation communities were evaluated for each WoUS, wetland and other sensitive riparian / riverine location or water conveyance feature detected within the SA. Evaluations of vegetation communities were primarily limited to regions present within the OHWM and/or top of bed/bank, in addition to the

outer limits of associated riparian / riverine vegetation. Vegetation communities were identified according to the percent cover of dominant plant species observed within each community. Vegetation classifications were based on a visual estimation of characteristic dominant flora within a type following Holland (1986) and/or Sawyer et al. (2009).

3.2.2 Soils

Soil texture, matrix, redoximorphic features (i.e., mottles), and any presence of subsoil layers impervious to water infiltration were documented from hand-excavated soil pits to the greatest extent practical. Soils were examined for positive hydric soil indicators such as low chroma, mottles (e.g., iron or manganese concretions), histic epipedons, organic layers, gleization, sulfidic odor or other primary hydric soil indicators listed on an Arid West Wetland Determination Data Form. Soil color and characteristics were determined from moist soil peds using Munsell Soil Color Book (Munsell Color 2000). If warranted, soils are evaluated in the field to a depth of approximately 8-20 inches, where possible. GPS position data are collected at each soil pit and detailed within Project figures – when this type of sampling is appropriate. If warranted, upland and wetland soil pits are evaluated as well to delineate the wetland/upland boundary – when necessary. Hydric soil assessments were predominately based upon the guidance provided in the Arid West Regional Supplement (USACE 2008b). General soil information for the SA was obtained from the Soil Survey for Riverside County (USDA-NRCS 2023a).

3.2.3 Hydrology & Impounded Features

Hydrology was evaluated in areas suspected of seasonal inundation and/or saturation to the surface during the growing season. Recent precipitation data was analyzed to evaluate the frequency and amount of rainfall events within the SA and on surrounding lands. Hydrological information was also determined for features by signatures on aerial photographs over time, as well as field analysis of the presence/absence of primary - or secondary hydrological indicators (i.e., surface water, saturation, sediment or drift deposits, watermarks, soil cracks, oxidized root channels, and/or biotic or salt crusts). Additionally, impounded features – if observed, were assessed to determine if they possessed natural characteristics with indicators of all three (3) wetland parameters: 1) dominance of hydrophytic vegetation (or Facultative Neutral), 2) possess hydric soils in the upper part, and 3) wetland hydrology.

4.0 RESULTS

The elevation of the SA ranges from approximately 2,912 to 3,010 feet AMSL. With that said, for the purposes of this JA, the SA includes the Project Site, and Off-Site Areas.

4.1 SA Soils

The Web Soil Survey is an online Geographic Information System (GIS) that provides the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) with online soil data (NRCS 2023). This website was used to assess soil characteristics and soil types within the SA. This database was also used to determine if the SA's mapped soils were likely to include any hydrologically influenced areas.

According to the USDA NRCS, the SA consists of several soil complexes:

- Cajon Sand (2 to 9 % slopes);
- Cajon-Arizo complex (2% to 15% slopes);
- Helendale-Bryman loamy sands (2% to 5% slopes);
- Mirage-Joshua Complec (2 to 5 % slopes);
- Nebona-Cuddeback complex (2% to 9% slopes);
- Pit; and
- Rock Outcrop-Lithic Torriorthents Complex (15 to 50 % slopes).

These soil types are generally described below, and are depicted in Appendix A, Figure 7.

The aforementioned soil types are typical within the region; and are assumed to be derived from mixed parent material. All soil types are well drained, and none have a hydric soil rating[3]. The low runoff potential of these local soils - combined with the low frequency of water flow in the region, rapid water dissipation through high evaporation and infiltration rates locally, and the small discrete sub-watersheds detected within the SA, suggest that it is highly unlikely for potential flows from the Project Site or Off-Site Areas, to reach the Bell Mountain Wash on a relatively permanent - or continuously flowing basis.

4.2 SA Hydrology

The SA is located within the Bell Mountain Wash Subwatershed (Hydrologic Unit Code 180902080705), within the Bell Mountain Wash – Mojave River Watershed (Appendix A, Figure 10). In general, channels within this subbasin that flow - flow to the Bell Mountain Wash on an ephemeral basis, which presumably drains southwest to the Mojave River[4]. It is notable, that both EPA WATERS GeoViewer results, and USGS 7.5 Quadrangle Map evidence no stream channels within the Project Site. But in contrast, there are discrete indications of stream channels within isolated locations of the Off-Site Areas. More specifically, where signatures within the Off-Site Areas cross - or are adjacent to, Bell Mountain Wash.

[3] Mapped soil types within the Web Soil Survey are assigned an indicator status of "hydric" or "non-hydric," as well as erosivity characteristics by the National Technical Committee for Hydric Soils.

[4] It is notable that the Mojave River - although not a class (a)(1) through (a)(5) Water, is currently being regulated.

It is also important to notice that although the NWI was reviewed, it was not considered indicative of the resources observed within the SA for the following reasons:

1) NWI users are cautioned that the features displayed therein show wetland type and extent using a biological definition. There is no attempt to define the limits of proprietary jurisdiction of any Federal, State, or local government - or to establish the geographical scope of the regulatory programs of government agencies. Therefore, the data should not be relied upon for jurisdictional identification.
2) NWI maps have been prepared from limited analysis of high-altitude imagery in conjunction with collateral data sources focusing on wetlands. When imagery is conflicting, the Environmental Systems Research Institute (ESRI) Base imagery is used.
3) The erosional features within the SA are relatively small, and do not have obvious vegetation species variability, making they are indistinguishable from other signatures (e.g., off highway vehicle tracks), at high altitude.

4.3 Preliminary Jurisdictional Determination

There are no features within the Project Site or Off-Site Areas, that have a surface connection on a relatively permanent - or continuously flowing basis, to Bell Mountain Wash, the Mojave River, or any TNW in the watershed. It is also important to note, that both EPA WATERS GeoViewer results, and USGS 7.5 Quadrangle Map evidence no stream channels within the Project Site. All soil types mapped within the Project Site and Off-Site Areas are well drained, and none have a hydric soil rating. The low runoff potential of the local soils, combined with low frequency of water flow in the region and rapid dissipation of available water via high evaporation and infiltration rates; imply that SA soils are highly unlikely to support a surface connection extending to Bell Mountain Wash on a relatively permanent - or continuously flowing basis (Appendix A, Figure 7).

Field surveys were conducted during - and within, a week of significant multiple day rain events. The signatures observed within the Project Site and Off-Site Areas are erosional (i.e., ruts, rills, and gullies) and lack a surface connection to Bell Mountain Wash, and never reach the Mojave River. These erosional signatures are characterized as very small depressions – some less than 11.8 inches, while the typical width was under 16 inches, or the size of motorcycle tire ruts. These signatures have small localized watershed areas as well - most ranging from 1 to 6-acres, and they do not possess the OWHM indicators described in the A Field Guide to the Identification no the Ordinary High Water Mark in the Arid West region of the United States (USACE 2008). The aforesaid manual describes the typical indicators for an OHWM in arid lands as follows:

- ✓ In-stream dunes;
- ✓ Crested ripples;
- ✓ Harrow marks;
- ✓ Gravel sheets to rippled sands;
- ✓ Meander bars;
- ✓ Sand tongue;
- ✓ Muddy point bars;
- ✓ Long gravel bars;
- ✓ Cobble bars behind obstructions;
- ✓ Scour holes downstream of obstructions;
- ✓ Obstacle marks;
- ✓ Stepped-bed morphology in gravel;

- ✓ Narrow berms and levees;
- ✓ Streaming lineation;
- ✓ Desiccation/mud cracks;
- ✓ Armored mud balls; and
- ✓ Knick points.

None of these OWHM indicators are present within the Project Site or Off-Site Areas. Features within the Project Site and Off-Site Areas meet the general definition and description for swales and erosional signatures - like those identified in Title 33 CFR a(8) swales and erosional features (e.g., gullies and small washes) characterized by low volume, infrequent, or short duration flow (Appendix B). A commonly accepted definition of gullies is that they are erosion features larger than rills – which are < 0.3 meters deep that can be ploughed out or easily crossed, but smaller than streams, creeks, arroyos, or river channels (Wells 2004). This is a description that actually harkens back to the National Soil Conservation Service of the 1930s.

In context, the SA is within a high desert climate characterized by low humidity, and considerable variation in the occurrence, intensity, and distribution of precipitation. The average annual precipitation for Apple Valley ranges between 1.81 inches to 8.53 inches - averaging 5.17 inches per year. Measurements of the mean annual precipitation in the vicinity of the Project Site and Off-Site Areas were queried from the National Climate Data Center (NCDC) station located in Victorville, California - roughly 3 miles south of the SA. As stated previously, the average total annual precipitation is approximately 5.17 inches and it is reached between December and February. The ATP identifies 2022-2023 to be a normal rain year, over the last 30-year period. But the ATP also suggests that our field work was completed during a wetter than normal period. The data from the ATP is depicted in Appendix A, Figure 8.

The Project Site topography is such that there is a general down gradient from its northern and northwestern portions. But as you travers into the southern quarter of the Project Site, there is a prominent upslope on the north side of Stoddard Wells Road. There is no evidence of water flow leaving the Project Site and crossing Stoddard Wells Road. The Bell Mountain Wash is another 600 to 700 feet to the south of Stoddard Wells Road.

Furthermore, there are no TNWs, Interstate Waters - (a)(1) Waters, or Relatively Permanent Tributaries within, or adjacent to the Project Site or Off-Site Areas. The erosional signatures assessed within the SA do not meet the definition of any (a)(1) Water. As the features do not have past, present, or potential to contribute of interstate or foreign commerce, nor do they have physical capabilities for use by commerce. Additionally, there are no other forms of interstate commerce such as gravel/sand miming, or their commodity extraction that could be manufactures or sold as interstate commerce. The erosional signatures assessed within the Project Site and Off-Site Areas do not meet the definition of water conveyances that are tributary to (a)1 through (a)(5) Waters, nor do they satisfy the "relatively permanent standard."

No water conveyance features within the SA are tributary to (a)(1)-(5) Waters. This JA has determined the Project Site and Off-Site Areas are characterized by erosional signatures that do not have a continuous surface connection to an (a)(1) through (a)(5) WoUS. The Project Site and Off-Site Areas are not tributary to a TNW, nor an Interstate Water. There is no evidence of water leaving the Project Site or the Off-Site Areas, and traversing into Bell Mountain Wash, the Mojave River, or any TNW in the watershed on a relatively permanent - or continuously flowing basis either.

The rational for this conclusion is described as follows:

1. The signatures observed within the Project Site and Off-Site Areas are erosional, swales, gullies, and rills. They do not possess indicators of an OHWM. These features are generally excluded in Title 33 CFR Part 328(b).
2. Erosional signatures detected within the Project Site and Off-Site Areas are isolated, and do not have uninterrupted connections to any (a)(1) through (a)(5) Waters, as described in Title 33 CFR Part 328(a). To assert CWA jurisdiction here needs to be more than a speculative - or insubstantial (i.e., weak or slight) connection.
3. There is no physical evidence of water flows leaving the Project Site or the Off-Site Areas, and reaching Bell Mountain Wash on a relatively permanent - or continuously flowing basis either (Appendix B).

The services performed and documented herein have been conducted in a manner consistent with the level of care, and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied, and no warranty - or guarantee is included or intended in this report, despite due professional care.

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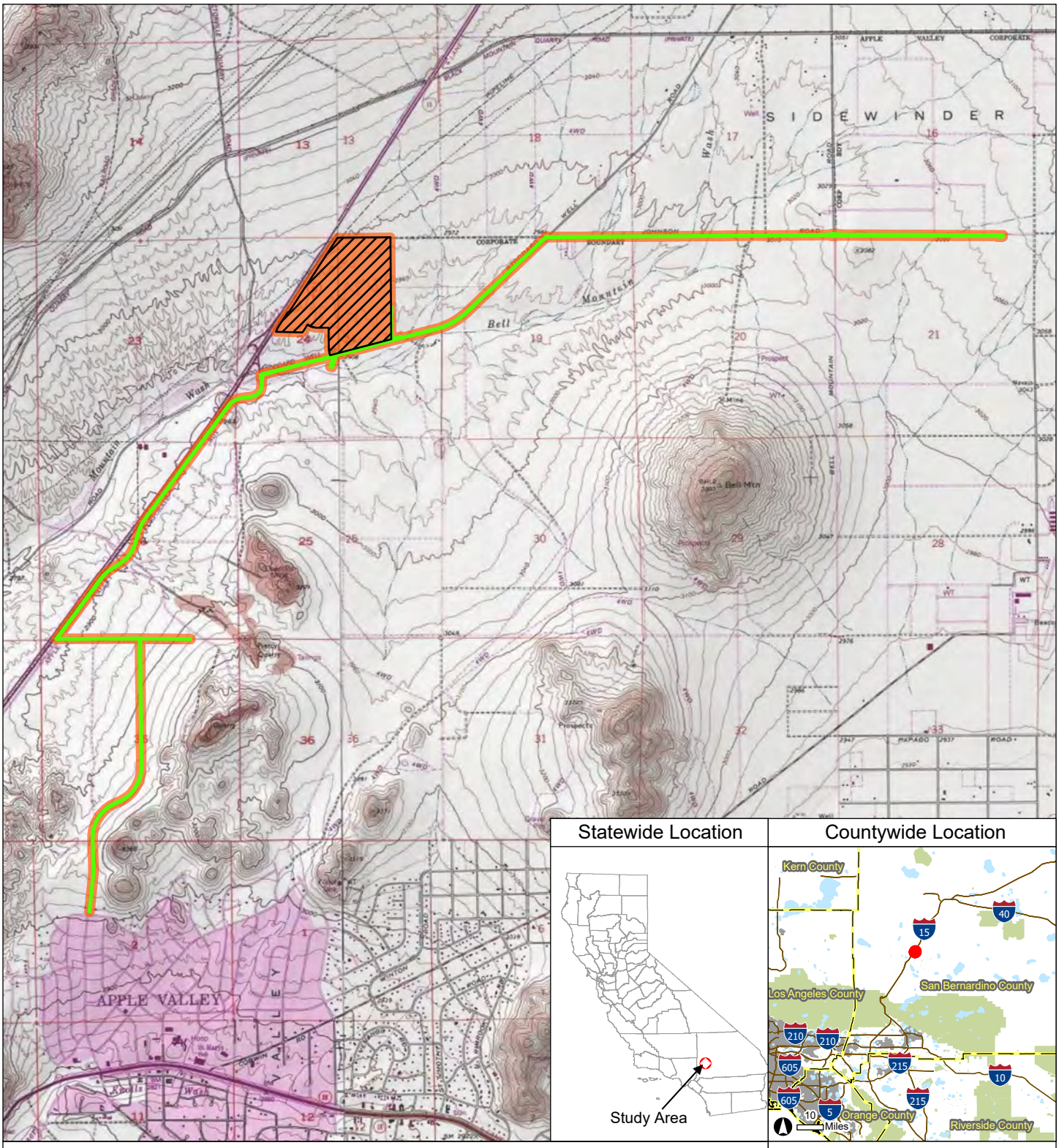
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Appendix A
Figures



Project Site
Off-Site Areas
Study Area

Countywide Location Inset
County Boundary
Urban Area
Interstate or State Highway

Water Body
Park or National Forest

0 0.35 0.7 Miles
1 inch = 0.7 mile

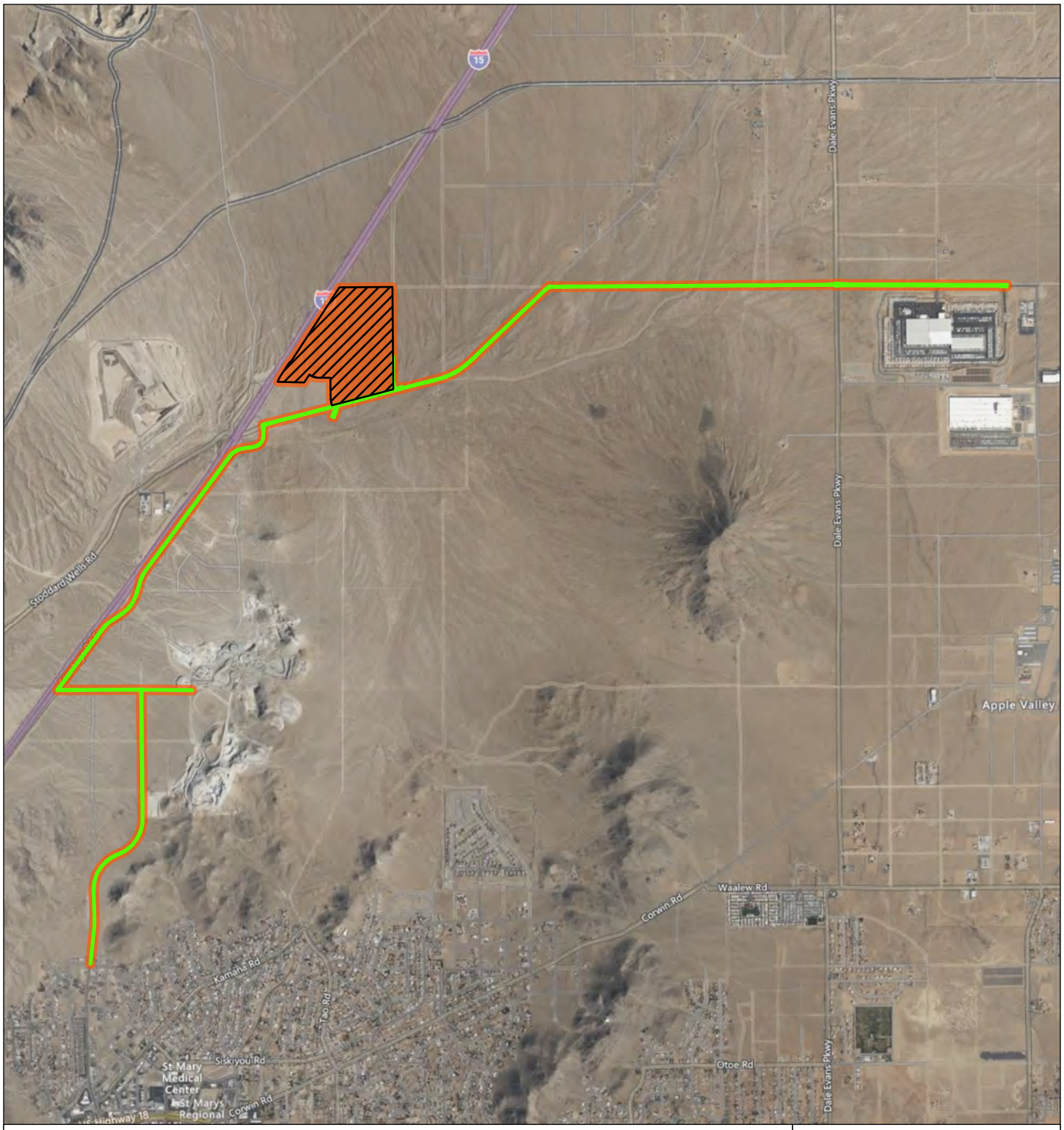
Data Sources:
- Bureau of Land Management Cadastral GIS 2015
- USGS 7.5-minute quadrangle map
- ESRI US Topo Maps accessed Apr 2023

Map Prepared: 4-13-23

Prepared by:
NOREAS
Environmental Engineering and Science

The Study Area is located in San Bernardino County on the Apple Valley North and Victorville USGS 7.5-minute quadrangle maps; San Bernardino Meridian, Townships 5 and 6 North, Ranges 3 and 4 West, in Sections 02, 13, 16, 17, 18, 19, 20, 21, 23, 24, 26, 35
Center coordinate (WGS 1984): 117.234°W 34.576°N

Figure 1. Regional Location



Project Site

Off-Site Areas

Study Area (281.10 acres)

0 0.35 0.7 Miles

1 inch = 0.7 mile

Data Sources:
- Bing Maps Hybrid accessed Apr 2023

Map Prepared: 4-13-23

Prepared by:
NOREAS
Environmental Engineering and Science

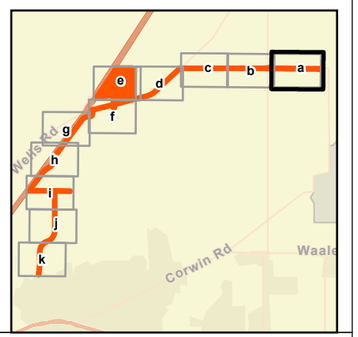
Figure 2. Site Vicinity



Study Area (281.10 ac)

Project Site

Off-Site Areas



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Jun 2023

Map Prepared: 6-8-23

Prepared by:

NOREAS
Environmental Engineering and Science

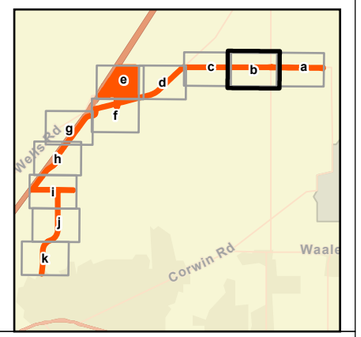
Figure 3a. Jurisdictional Waters of the United States Assessment Study Area



Study Area (281.10 ac)

Project Site

Off-Site Areas



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Jun 2023

Map Prepared: 6-8-23

Prepared by:

NOREAS
Environmental Engineering and Science

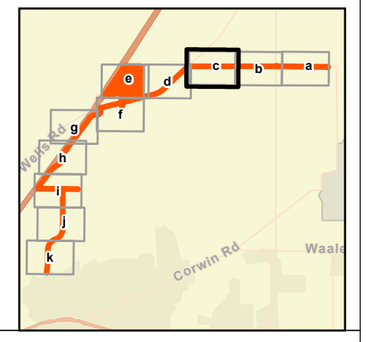
Figure 3b. Jurisdictional Waters of the United States Assessment Study Area



Study Area (281.10 ac)

Project Site

Off-Site Areas



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Jun 2023

Map Prepared: 6-8-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3c. Jurisdictional Waters of the United States Assessment Study Area

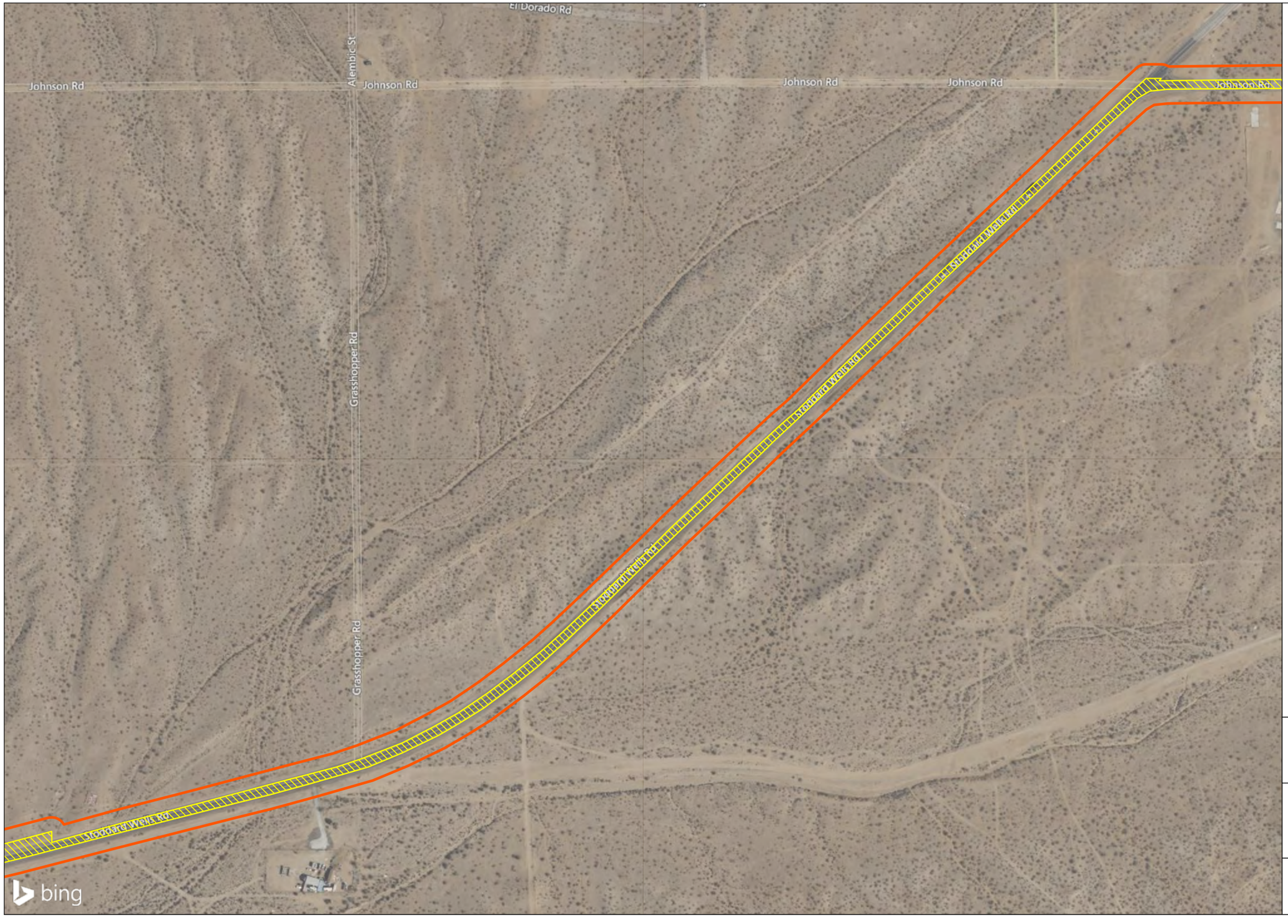


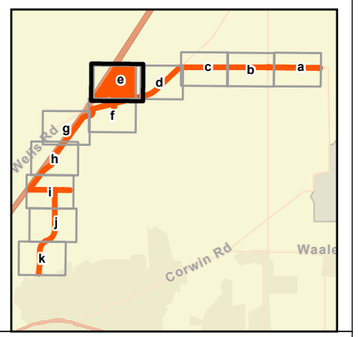
Figure 3d. Jurisdictional Waters of the United States Assessment Study Area



Study Area (281.10 ac)

Project Site

Off-Site Areas



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Jun 2023

Map Prepared: 6-8-23

Prepared by:

NOREAS
Environmental Engineering and Science

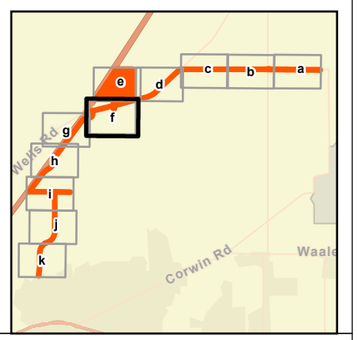
Figure 3e. Jurisdictional Waters of the United States Assessment Study Area



Study Area (281.10 ac)

Project Site

Off-Site Areas



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Jun 2023

Map Prepared: 6-8-23

Prepared by:
NOREAS
Environmental Engineering and Science

Figure 3f. Jurisdictional Waters of the United States Assessment Study Area

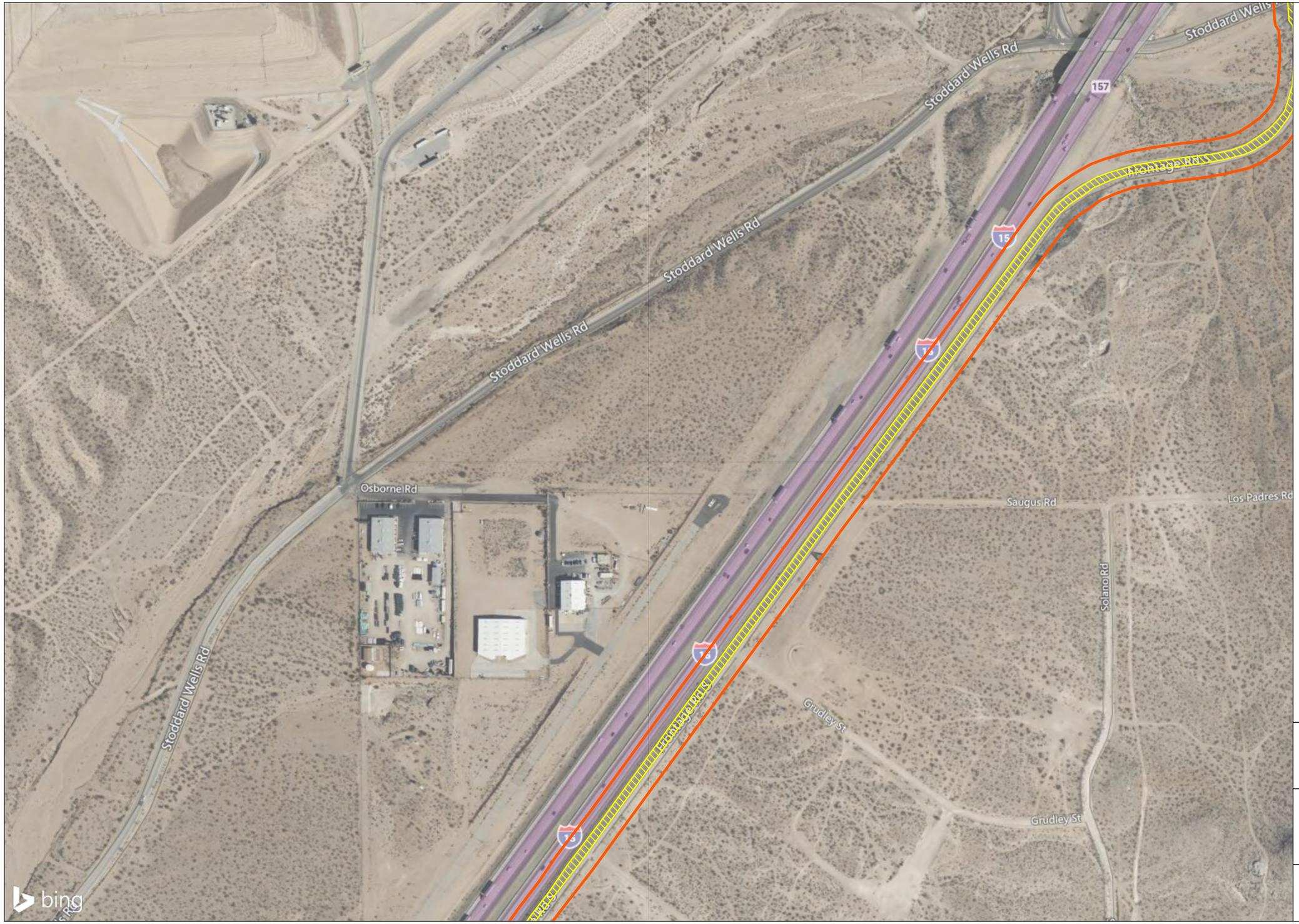


Figure 3g. Jurisdictional Waters of the United States Assessment Study Area



Figure 3h. Jurisdictional Waters of the United States Assessment Study Area



Figure 3i. Jurisdictional Waters of the United States Assessment Study Area



Figure 3j. Jurisdictional Waters of the United States Assessment Study Area



Figure 3k. Jurisdictional Waters of the United States Assessment Study Area

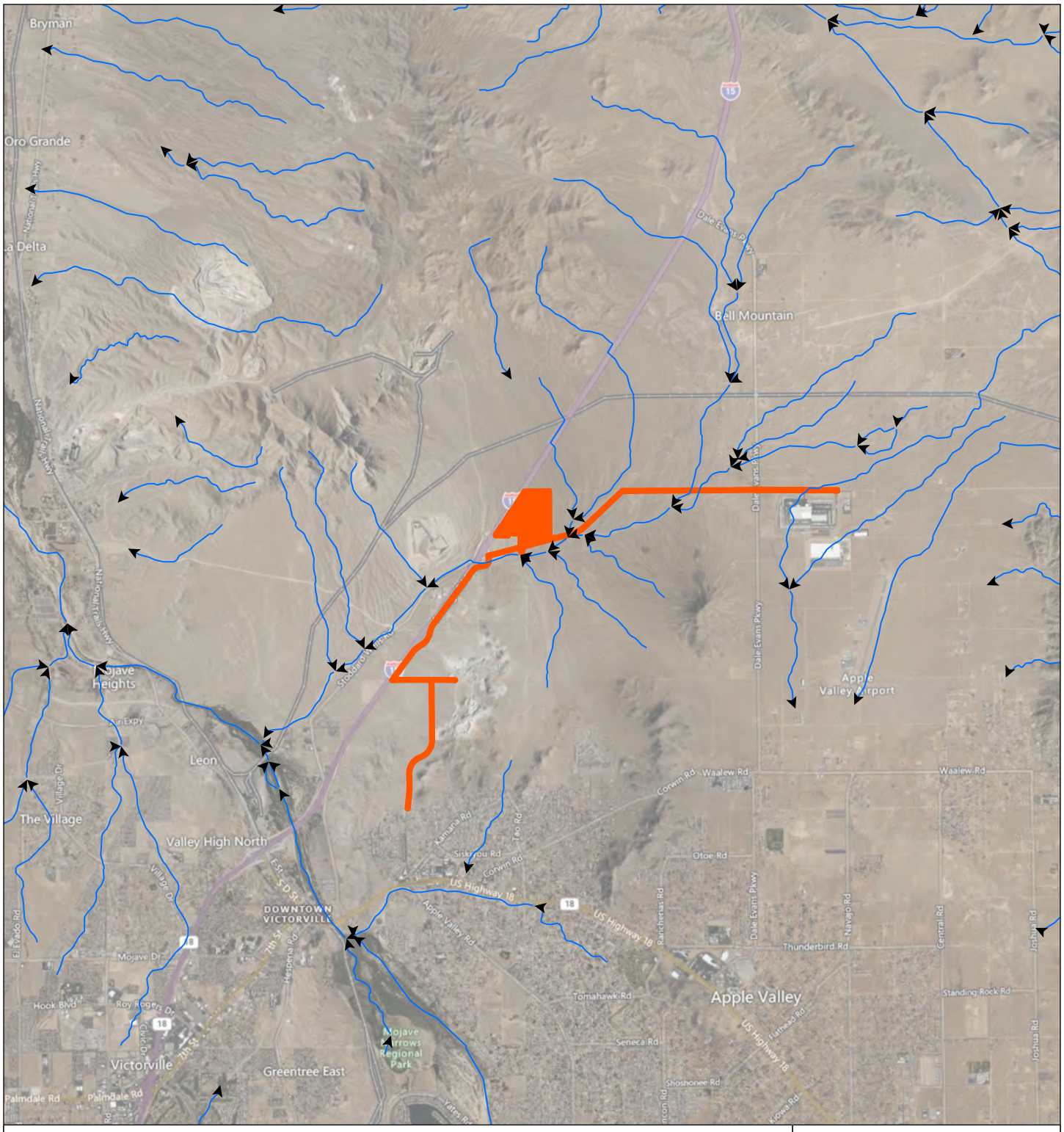
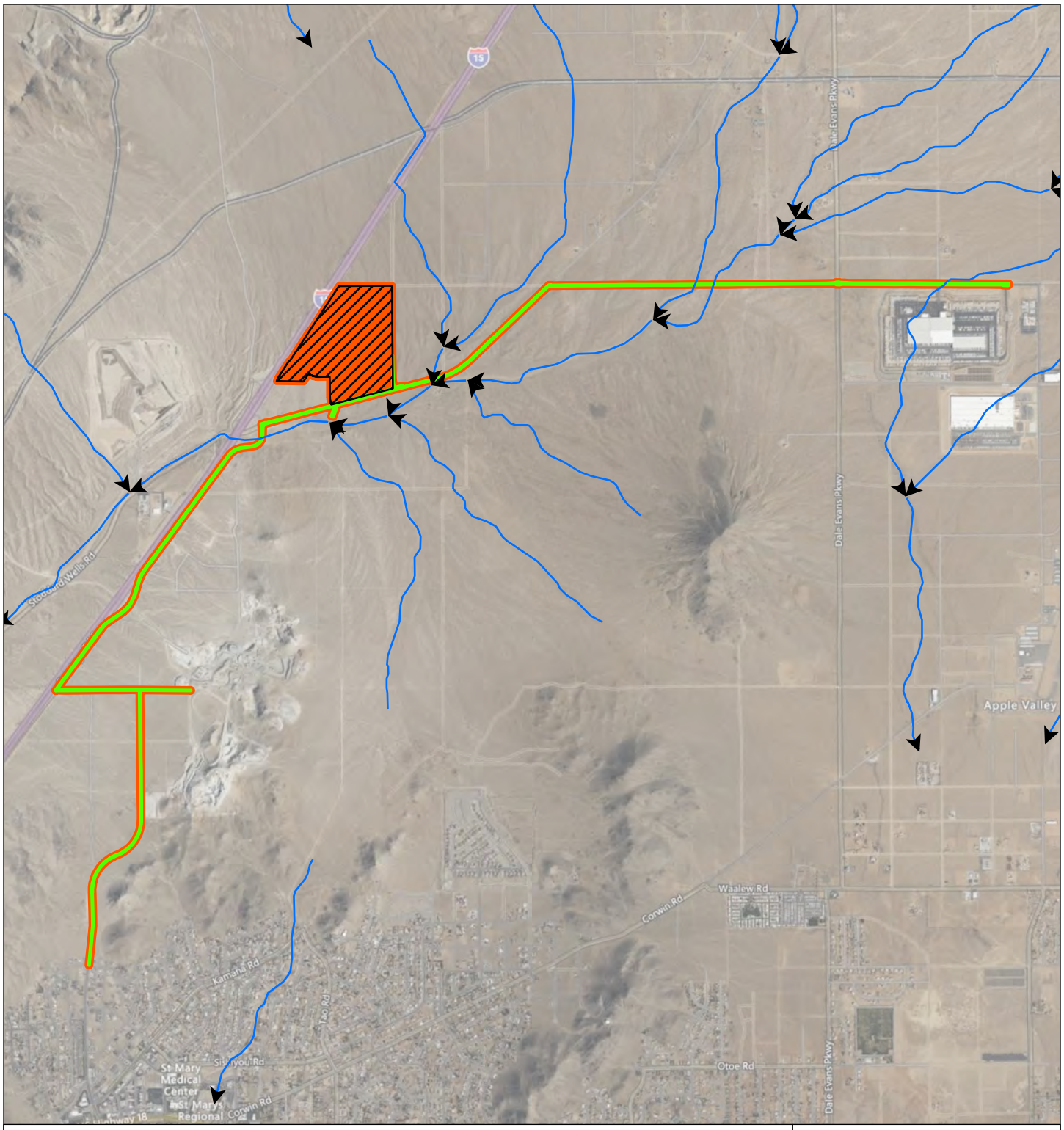


Figure 4. Surface Water Map (Regional Area)



Surface Water Flowlines and Flow Direction

Project Site

Off-Site Areas

Study Area

0 0.35 0.7 Miles

1 inch = 0.7 mile

Data Sources:
- Bing Maps Hybrid accessed Apr 2023
- USGS National Hydrology Dataset Plus Version 2.1 accessed Apr 2023

Map Prepared: 4-13-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 5. Surface Water Map (Local Area)

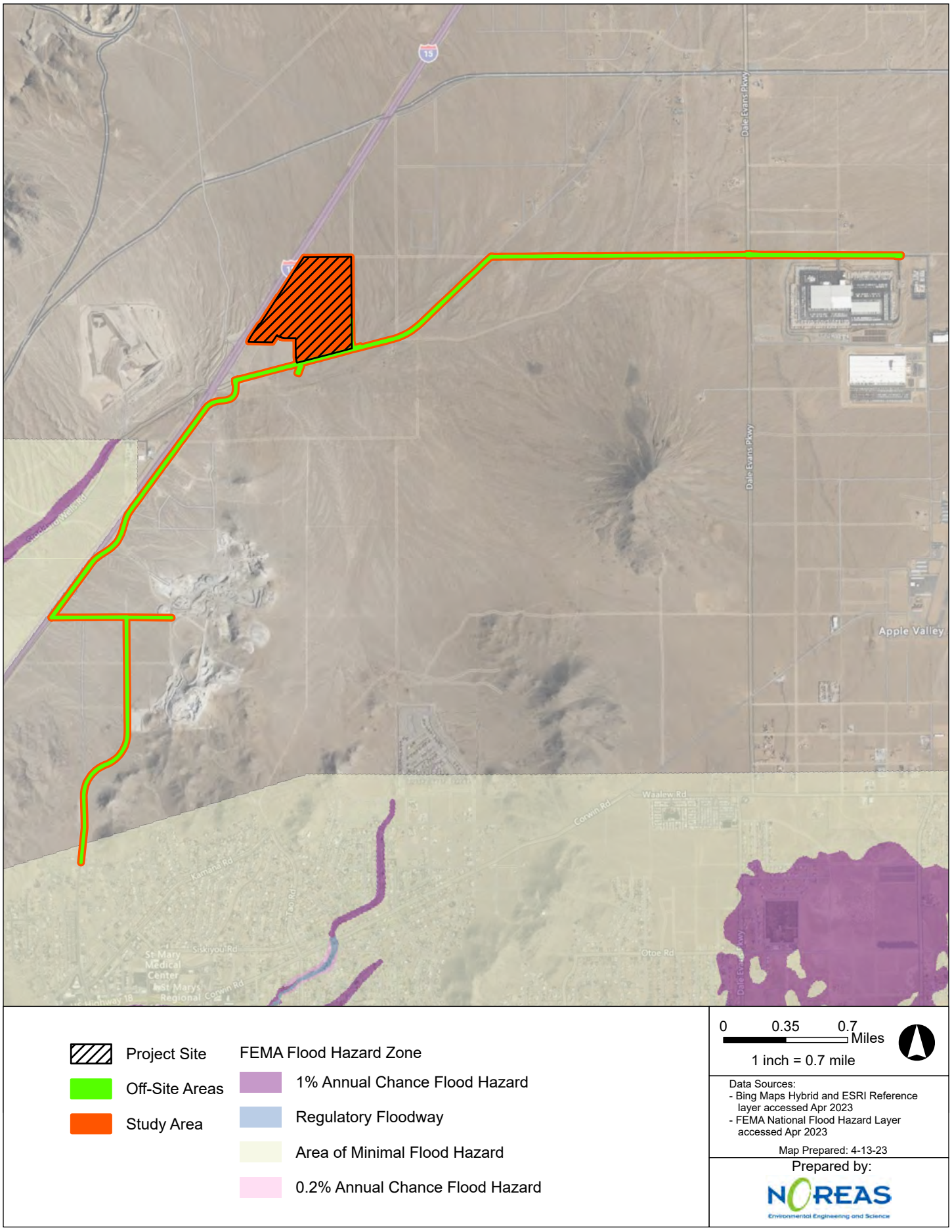


Figure 6. FEMA 100-Year Flood Zone

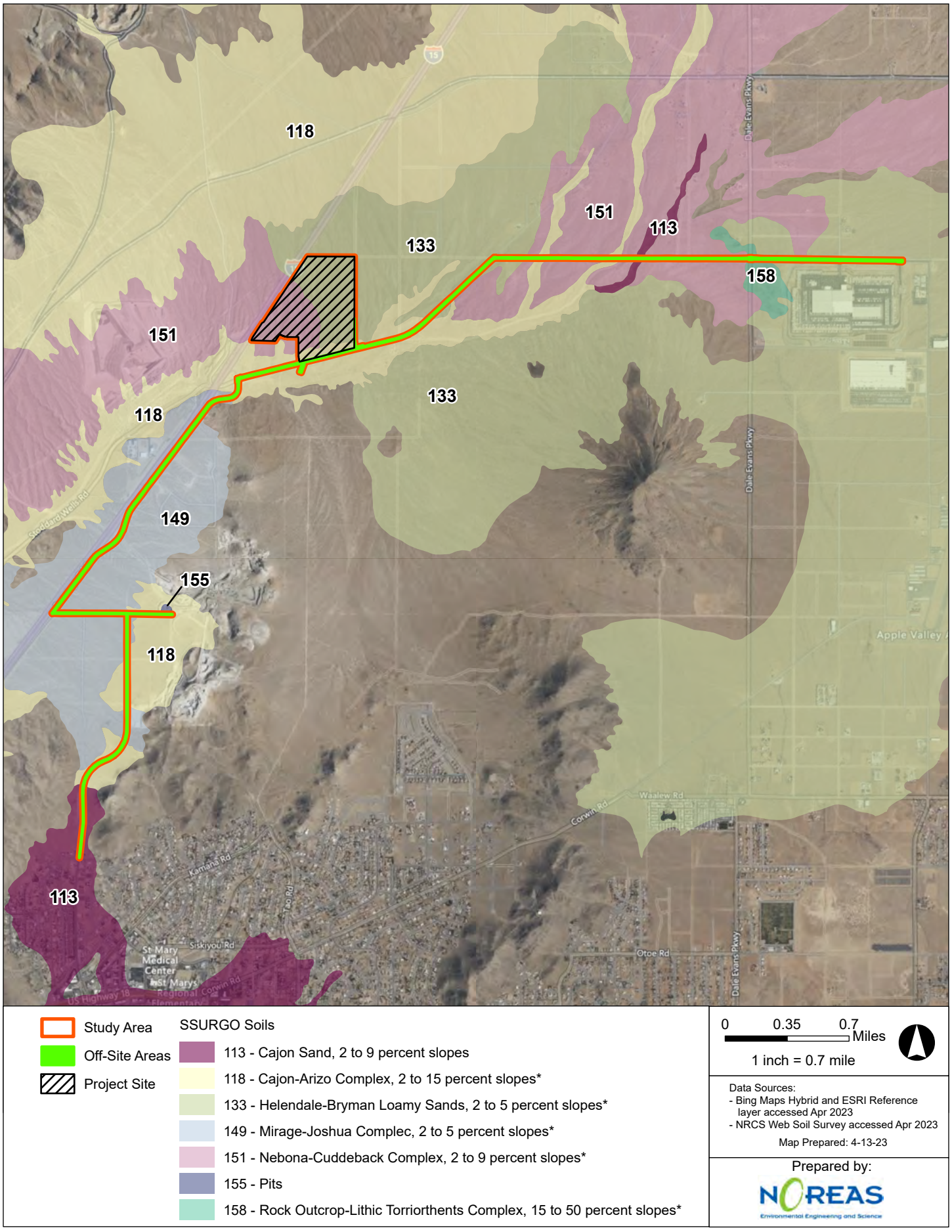
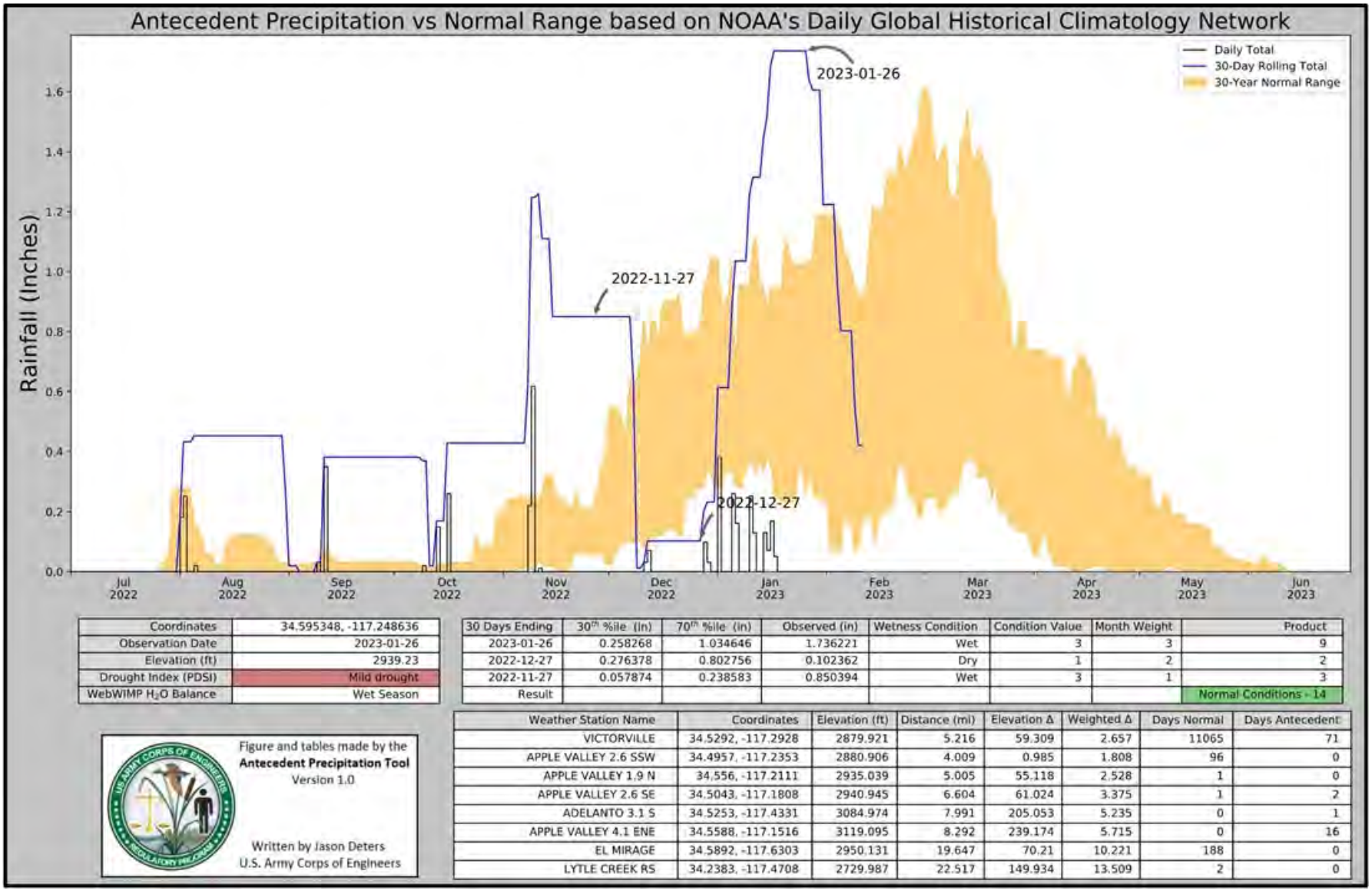


Figure 7. Study Area Soils



Coordinates	34.595348, -117.248636
Observation Date	2023-01-26
Elevation (ft)	2939.23
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-01-26	0.258268	1.034646	1.736221	Wet	3	3	9
2022-12-27	0.276378	0.802756	0.102362	Dry	1	2	2
2022-11-27	0.057874	0.238583	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	5.216	59.309	2.657	11065	71
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	2
ADELANTO 3.1 S	34.5253, -117.4331	3084.974	7.991	205.053	5.235	0	1
APPLE VALLEY 4.1 ENE	34.5588, -117.1516	3119.095	8.292	239.174	5.715	0	16
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

Data Sources:
- U.S. Environmental Protection Agency (EPA). 2023

Map Prepared: 4-13-23

Prepared by:
NOREAS
Environmental Engineering and Science

Figure 8. Antecedent Precipitation Tool

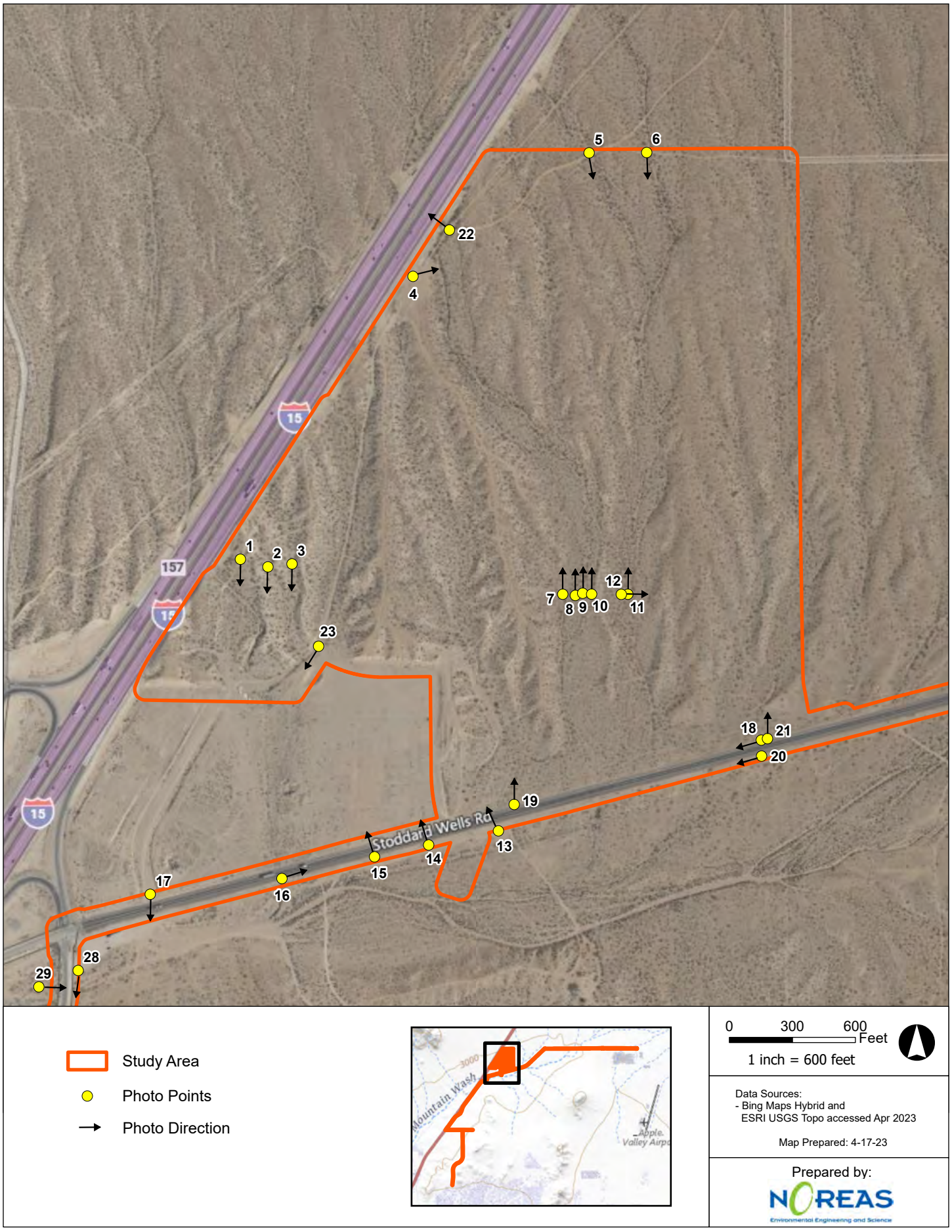


Figure 9a. Photo Reference Index



Study Area

Photo Points

Photo Direction



0 300 600 Feet

1 inch = 600 feet

Data Sources:
- Bing Maps Hybrid and
ESRI USGS Topo accessed Apr 2023

Map Prepared: 4-17-23

Prepared by:
NOREAS
Environmental Engineering and Science

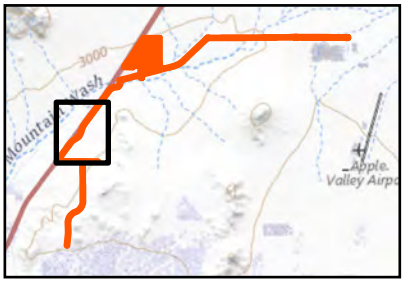
Figure 9b. Photo Reference Index



Study Area

Photo Points

Photo Direction



0 300 600 Feet

1 inch = 600 feet

Data Sources:
- Bing Maps Hybrid and
ESRI USGS Topo accessed Apr 2023

Map Prepared: 4-17-23

Prepared by:

NOREAS
Environmental Engineering and Science

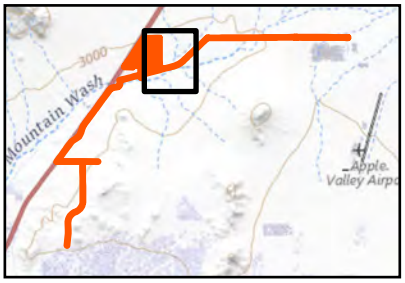
Figure 9c. Photo Reference Index



Study Area

Photo Points

Photo Direction



0 300 600 Feet

1 inch = 600 feet

Data Sources:
- Bing Maps Hybrid and
ESRI USGS Topo accessed Apr 2023

Map Prepared: 4-17-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 9d. Photo Reference Index



Figure 10. Regional Watershed Map

Appendix B
Photographic Log

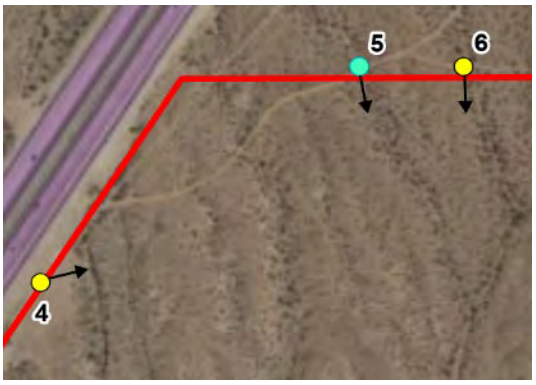
	 Photograph # 1. Photo from western portion of the Project Site, facing south towards the disturbed adjacent parcel abutting Stoddard Wells Road.
	 Photograph # 2. Photo from western portion of the Project Site, facing south towards the disturbed adjacent parcel abutting Stoddard Wells Road. Note rills and ruts in the image.
	 Photograph # 3. Photo from western portion of the Project Site, facing south towards the disturbed adjacent parcel abutting Stoddard Wells Road. Note tire tracks in the image.





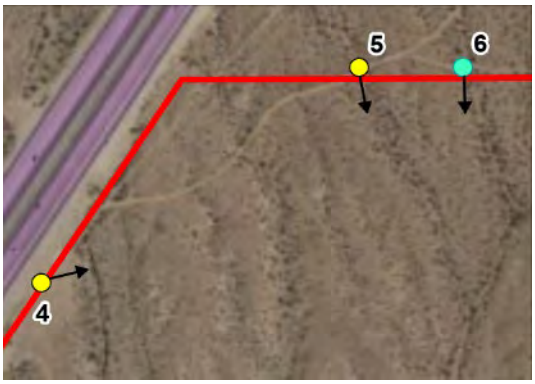
Photograph # 4. Dirt road with tire rills.



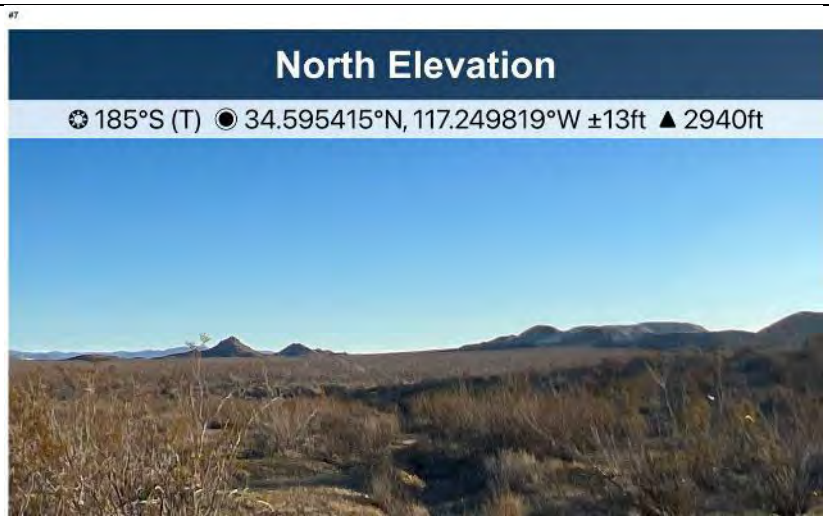


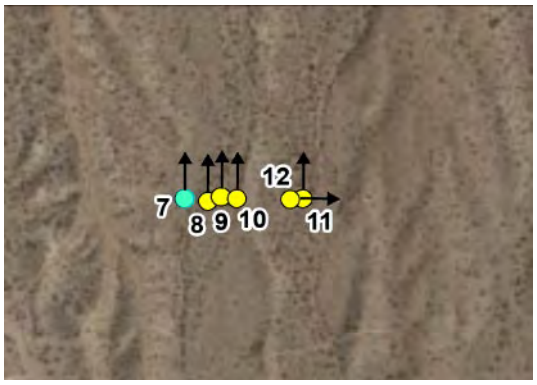
Photograph # 5. Swale - no change in vegetation, cobble or other ordinary high water mark indicators. Signature ended in the middle of the Project Site.



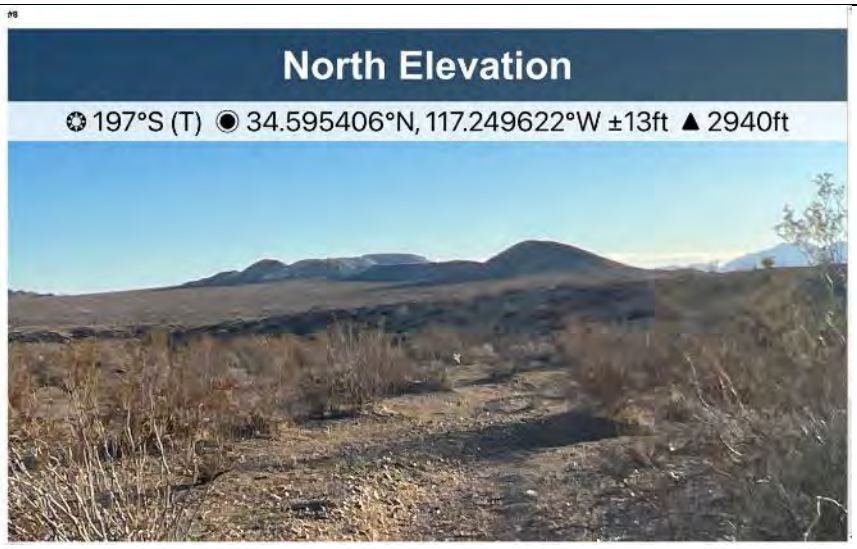


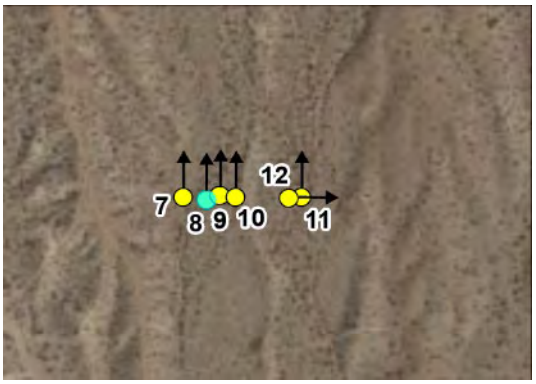
Photograph # 6. Rilling and ponding - no change in vegetation, cobble or other ordinary high water mark indicators. Appears to be an off-highway vehicle tracks. Signature ended in the middle of the Project Site.



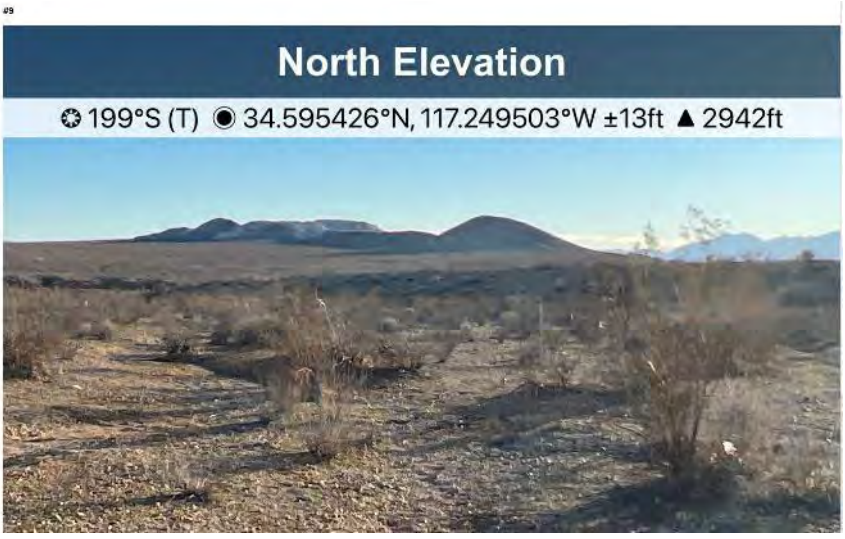


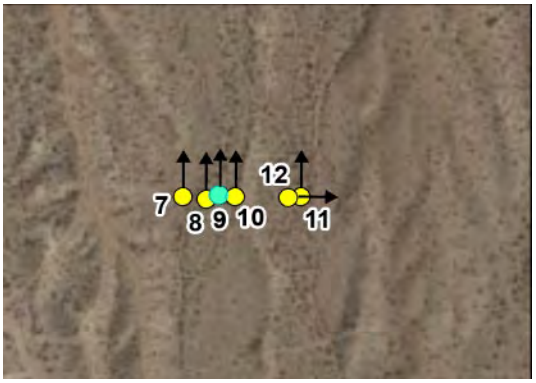
Photograph # 7. Photo from central portion of the Project Site, facing north towards the beginning of an erosional signature.





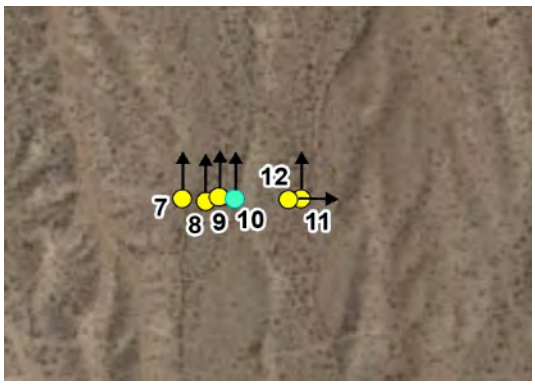
Photograph # 8. Photo from central portion of the Project Site, facing north towards the beginning of an erosional signature.



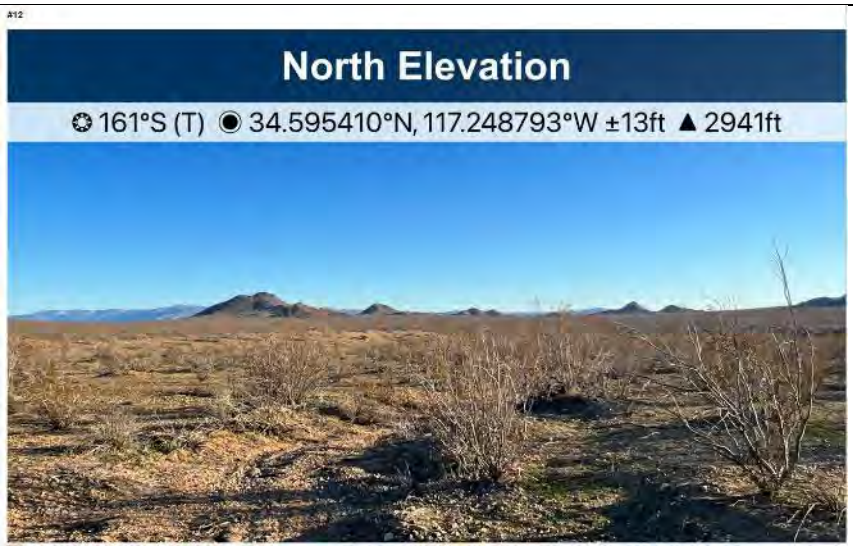


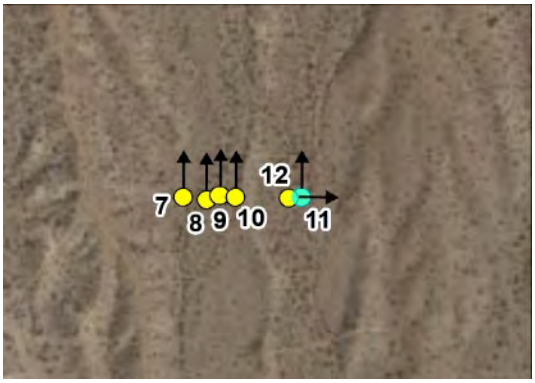
Photograph # 9. Photo from central portion of the Project Site, facing north.



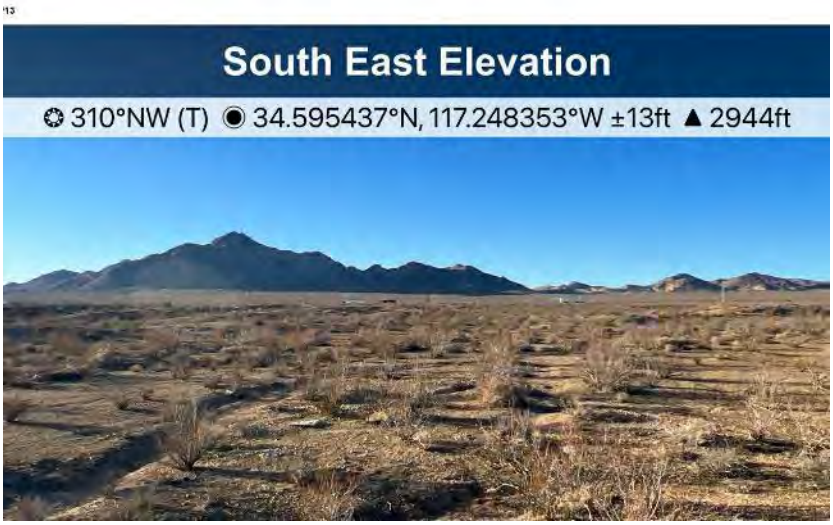


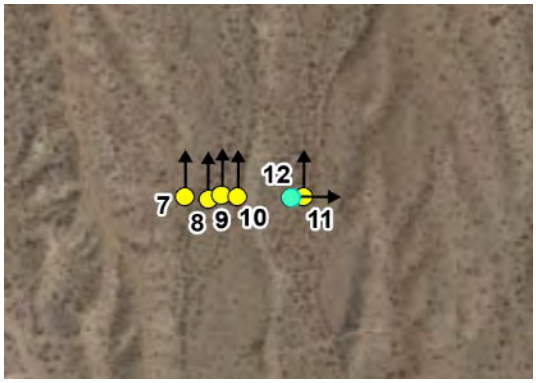
Photograph #10. Photo from central portion of the Project Site, facing north.



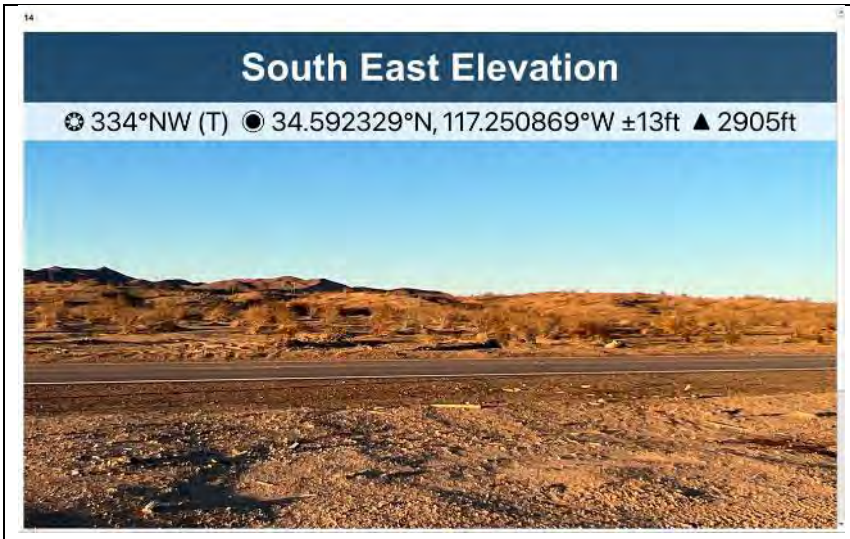


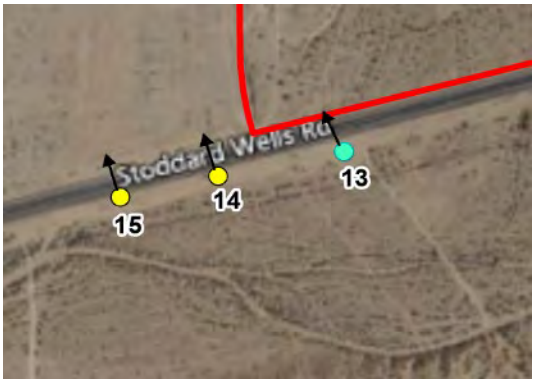
Photograph #11. Photo from central portion of the Project Site, facing north.



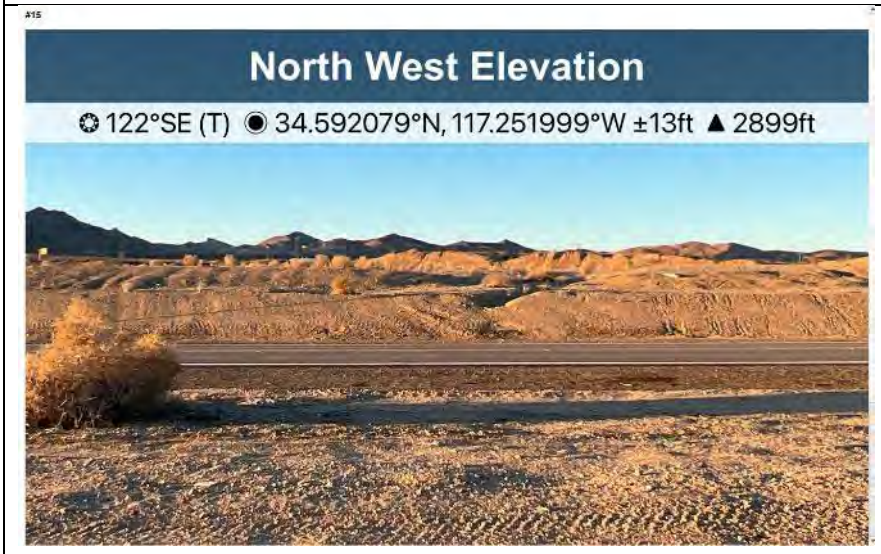


Photograph # 12. Photo from central portion of the Project Site, facing east across an erosional signature.



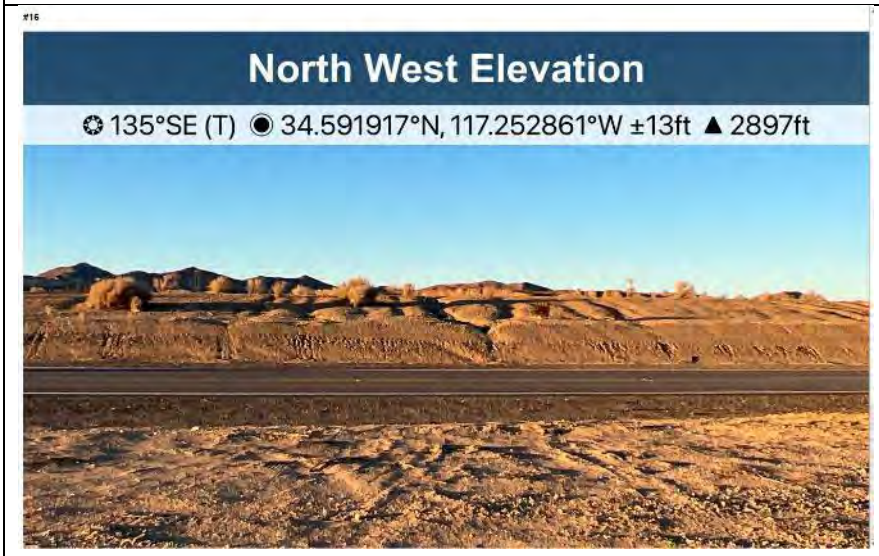


Photograph # 13. Photo depicting no features leaving the Project Site, or crossing Stoddard Wells Road.



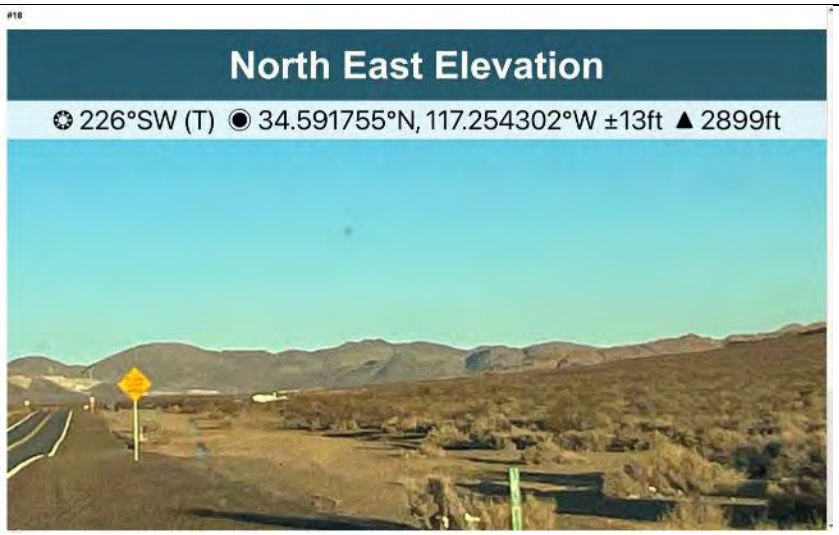


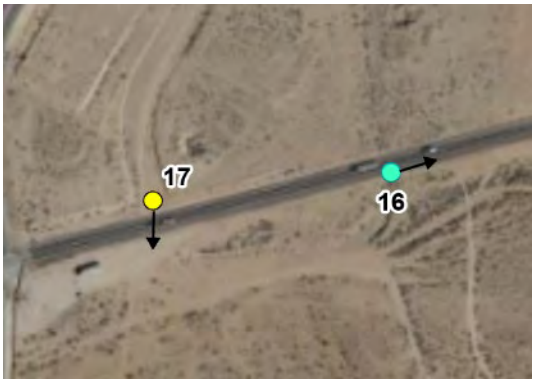
Photograph # 14. Photo depicting rills, however no channel or evidence of flow leaving the Project Site, or crossing Stoddard Wells Road.



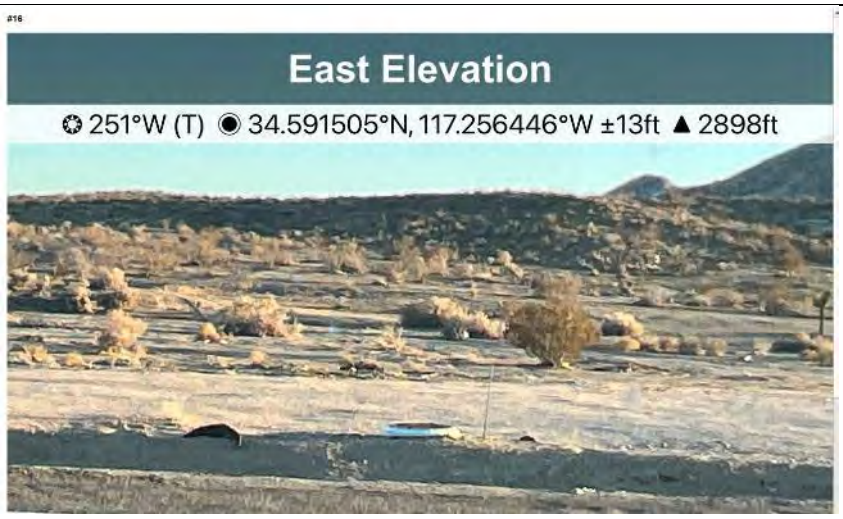


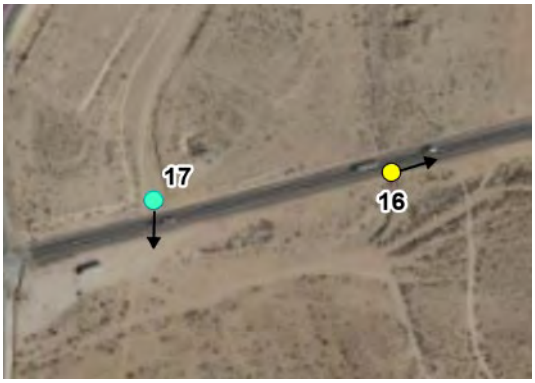
Photograph #15. Photo depicting rills, however no channel or evidence of flow leaving the Project Site, or crossing Stoddard Wells Road.





Photograph # 16. Photo on the south side of Stoddard Wells Road, facing east. No evidence of channels crossing the road perpendicular to Bell Mountain Wash.



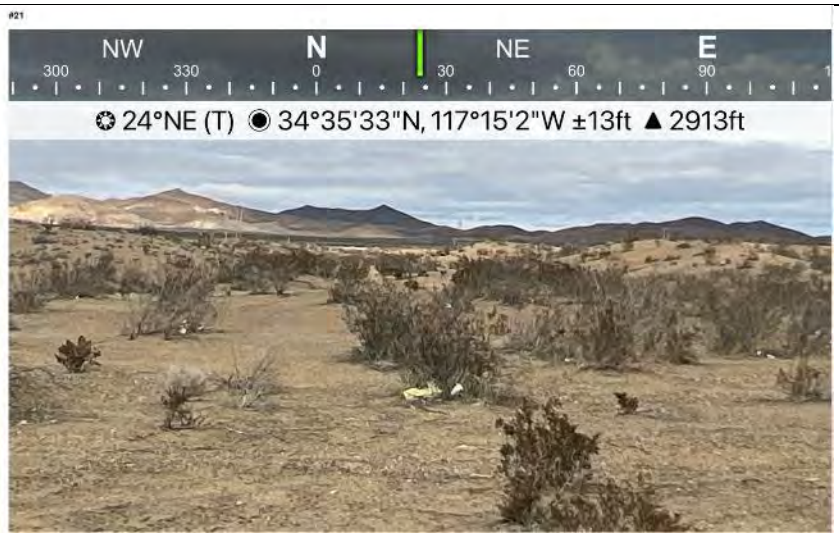


Photograph # 17. Photo facing south from the Project Site, towards Bell Mountain Wash.





Photograph # 18. Photo facing west towards I-15, depicting elevation change and no features crossing Stoddard Wells Road.

	Photograph # 19. Facing north, depicting no erosional features leaving the Project Site.
	Photograph # 20. Looking west, towards I-15 from the south side of Stoddard Wells Road.
	Photograph # 21. Looking north, depicting no erosional signatures leaving the Project Site.

	Photograph # 22. Equalizer Culvert under I-15. Water did not leave the Caltrans right of way during the December 2022 through January 4, 2023 storm events.
	Photograph # 23. Photo depicting the erosion of a trespassing off highway vehicle trail.
	Photograph # 24 (Off-Site Areas). Representative image of an ephemeral drainage associated with Bell Mountain Wash - upstream.

	Photograph # 25 (Off-Site Areas). Representative image of an ephemeral drainage associated with Bell Mountain Wash - downstream.
	Photograph # 26 (Off-Site Areas). Representative image of Bell Mountain Wash - upstream.
	Photograph # 27 (Off-Site Areas). Representative image of Bell Mountain Wash - downstream.

	Photograph # 28 (Off-Site Areas). Representative image of Bell Mountain Wash - upstream
	Photograph # 29 (Off-Site Areas). Representative image of Bell Mountain Wash - downstream.
	Photograph # 30 (Off-Site Areas). Representative image of an ephemeral drainage associated with Bell Mountain Wash - upstream.

	Photograph # 31 (Off-Site Areas). Representative image of an ephemeral drainage associated with Bell Mountain Wash - upstream.
	Photograph # 32 (Off-Site Areas). Representative image of an ephemeral drainage associated with Bell Mountain Wash - upstream.

	Photograph # 33 (Off-Site Areas). Representative image – facing north.
	Photograph # 34 (Off-Site Areas). Representative image – facing south.
	Photograph # 35. Project Site, representative image depicting the lack of ordinary high-water marks.

	Photograph # 36. Project Site photo depicting the lack of ordinary high-water marks.
	Photograph # 37. Erosional signatures, the result of off highway vehicle trespass.





Photograph # 38. View to the south of Stoddard Wells Road. Note the elevation change detailed within the cross-section graphic below.

Appendix B

Jurisdictional Waters Delineation –
Potential Waters of the State

APPLE VALLEY PROJECT

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

June 2023

U.S. Geological Survey 7.5-Minute Victorville and Apple Valley Quadrangles
West of the Town of Apple Valley, San Bernardino County, California

Prepared By

NOREAS
Environmental Engineering and Science
16361 Scientific Way
Irvine, CA 92618
(949) 467-9116

Certification

The undersigned certify - under penalty of law, that they have personally examined and are familiar with the information submitted in this document and all attachments and that, based on an inquiry of those individuals immediately responsible for obtaining the information, believe that the information is true, accurate, and complete. The undersigned are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Prepared By: Lisa Patterson Date: 6/13/23

Lisa Patterson
Senior Environmental Project Manager & Regulatory Specialist
Jacobs Engineering Group
2600 Michelson Dr Ste 500, Irvine, CA 92612

Prepared By: _____ Date: 6/13/23

Lenny Malo
Senior Environmental Project Manager & Regulatory Specialist
NOREAS, Inc.
16361 Scientific Way
Irvine, CA 92618

Prepared By: _____ Date: 6/13/23

Lincoln Hulse
Senior Environmental Project Manager & Regulatory Specialist
NOREAS, Inc.
16361 Scientific Way
Irvine, CA 92618

TABLE OF CONTENTS

Section

1.0 INTRODUCTION AND SUMMARY OF FINDINGS

2.0 METHOD

3.0 RESULTS

4.0 REFERENCES

APPENDICES

Appendix A Figures
Appendix B Photographic Log

COMMON ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
CDFG	California Department of Fish and Game
CFGC	California Fish and Game Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
GIS	Geographic Information System
GPS	Global Positioning Systems
HUC	Hydrologic Unit Code
JACOBS	Jacobs Engineering Group
LRSs	Lake, River, or Streambed subject to Section 1600 of the California Fish and Game Code
MESA	Mapping Episodic Stream Activity Field Guide
NOREAS	NOREAS Inc.
NRCS	National Resources Conservation Service
NWI	National Wetlands Inventory
SA	Study Area
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoS	Waters of the State

1.0 INTRODUCTION AND SUMMARY OF FINDINGS

The following assessment (hereafter referred to as a Jurisdictional Assessment [JA]) is intended to delineate the extent of California Department of Fish and Wildlife (CDFW) jurisdiction - pursuant to Section 1600 (et seq.) of the California Fish and Game Code (CFG Code), for the Apple Valley Project (hereafter referred to as the Project). This JA examines an approximately 144-acre parcel that currently consists of undeveloped land, and Off-Site Improvements Areas. The Study Area (SA) is generally located at the north-east intersection of Interstate Highway 15 (I-15) and Stoddard Wells Road, west of Apple Valley, San Bernardino County, California (Appendix A, Figures 1 and 2). For the purposes of this assessment, the 281.10-acre SA is defined as a proposed 144-acre disturbance footprint (Project Site), Off-Site Improvements Areas (Off-Site Areas) and the surrounding localized watershed. Off-Site Areas involve discrete culvert extensions, and the installation of a water line following developed roadways from the intersection of Johnson Road and Navajo Road, in a western direction along Stoddard Wells Road. The water line also extends along Stoddard Wells Road to the Interstate 15 Frontage Road, then to Faschion Road, before ultimately heading south on Apple Valley Road to its terminus at Ohna Road.

This JA evaluates the SA for the presence of lakes, rivers, or streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code. This evaluation has been completed using data acquired from current and historic imagery, hydrologic databases, analytic tools, physical on the ground analyses/measurements, and a review of the regulations, manuals, and guidance documentation created to identify features regulated under the aforementioned CFG Code Sections.

This JA provides a description and photo documentation of the features within the SA and a discussion of their character and regulatory status. Please note that this assessment was conducted following descriptions in the CFG Code, as well as guidance created by CDFW. Subject matter experts assessed the SA for the presence of lakes, rivers, or streambeds in December 2022, January, February and March of 2023. These visits were conducted during - and within, a week of significant multiple day rain events. The purpose of these visits was to determine the applicability of Section 1600 (et seq.) of the CFG Code in accordance with the descriptions presented in the code. The format of this document has been developed to facilitate the completion of a formal request of Notification of Lake and Streambed Alternation Agreement from the CDFW- should one be warranted.

The data presented herein implies that there are no lakes, rivers, or streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code within the Project Site. This rationale is based on the fact that the erosional signatures observed within the Project Site, do not possess resources that support fish and aquatic wildlife, as described in the CFG Code. To that end, the following summarizes why the Project Site lacks resources that constitutes a stream for the purposes of implementing and enforcing CFG Code Sections 1600 (et seq.):

- The Project Site does not possess any creeks and rivers, as defined in Title 14, CCR, Section 1.72. As there is no riparian vegetation - or aquatic resources, within the Project Site that supports fish or other aquatic life; nor does the Project Site include watercourses having a surface or subsurface flow that supports - or has supported, riparian vegetation;
- There are no intermittent streams, blue-lines, swales, or erosional features that support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife within the Project Site;
- There is no observable difference in the vegetation composition, density, or vigor between the Project Site ’s erosional signatures, and the adjacent lands;
- There are no signatures within the Project Site – erosional or otherwise, that have a surface connection to Bell Mountain Wash, or the Mojave River. All soil types mapped within the SA are well drained, and none have a hydric soil rating;

- The signatures detected within the Project Site are erosional and rills, characterized by very small depressions, or the size of motorcycle tire ruts. These features have small, negligible, localized watershed areas, and they do not possess aquatic resources, or other attributes that would distinguish them functionally - or biologically, from upland habitats;
- There is no aquatic or riparian vegetation, aquatic animals (i.e., fish, amphibians, reptiles and invertebrates), or terrestrial species which derive benefits from a stream system within the Project Site;
- There are no discernable banks, rack lines, shelving, or “in-stream” features within the Project Site;
- The Project Site is not within the 100-year flood plain;
- The native vegetation occurring naturally along the Project Site’s erosional signatures, rills and tire ruts is not the result of increased water availability, or nutrients. Nor does it create an "edge'' - or ecotone between vegetation types that require water on one side, and adjacent upland habitat on the other; nor are there “natural banks” or evidence of confined flows that persist within the Project Site. No streambed indicators are present within the Project Site; and
- Signatures observed within the Project Site meet the general definition and description for ruts and rills, and other erosional features characterized by low volume, infrequent, or short duration flow.

In conclusion, there is also no evidence that water leaves the Project Site, and enters into larger systems that supports aquatic fish and wildlife, thus rendering the Project Site isolated, lacking aquatic fish and wildlife, and lacking aquatic or riparian vegetation/habitat; and not subject to CFG Code Sections 1600 (et seq.) jurisdiction.

In contrast, the Off-Site Areas - at six (6) specific locales, include non-wetland, ephemeral dry desert washes which total 404 linear feet. These washes either cross - or are within, Bell Mountain Wash. These six distinct features associated with the Off-Site Areas, have discernable bank lines with topographic relief, connectivity from Bell Mountain Wash, and subsequently to the Mojave River. As a result, it has been determined that the six features within the Off-Site Areas consist of 0.13-acres of ephemeral streambeds, subject to regulation under Section 1600 (et seq.) of the CFG Code (Appendix A, Figure 3).

To that end, this JA presents NOREAS Inc. (NOREAS) and Jacobs Engineering Group (JACOBS) best professional judgment at estimating special aquatic resource area boundaries using the most up-to-date regulations, written policies, and guidance from the CDFW.

2.0 REGULATORY SETTING

CDFW has provided information and practical guidance for consistent and uniform administration of Section 1600 (et seq.) of the CFG Code within *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (ESD-CDFG 1994). In its most general sense, CFG Code Sections 1600 (et seq.) establishes a fee-based process to safeguard that projects conducted in and around lakes, rivers, or streams do not adversely impact fish, aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife resources. Or, when adverse impacts cannot be avoided, compliance with the aforesaid CFG Code Sections safeguards that adequate mitigation and/or compensation is provided.

While there is no definition for the term lake in the CFG Code or associated regulations, the term stream, which includes creeks and rivers, is defined within Title 14, California Code of Regulations (CCR), Section 1.72:

- "A stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and ***supports fish or other aquatic life***. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

Nonetheless, this definition is not complete with respect to CFG Code Sections 1600 (et seq.) because it does not define the terms bed, channel, or bank and does not define other stream-related features such as aquatic life, riparian vegetation, etc. As a result, CDFW published the following concepts with deference to what constitutes a stream for the purposes of implementing and enforcing CFG Code Sections 1600 (et seq.) (ESD-CDFG 1994).

1. The term stream can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (United States Geological Survey maps, USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be ***considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife***.

2. Biologic components of a stream may ***include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.***

3. As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis) ***but also a bed or channel, a bank and/or levee, instream features such as logs or snags, and various flood plains depending on the return frequency of the flood event being considered (i.e., 10, 50, or 100 years, etc.)***.

4. The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive:

    a. The flood plain of a stream can be the broadest measurement of a stream's lateral extent depending on the return frequency of the flood event used. For most flood control purposes, the 100-year flood event is the standard measurement and maps of the 100-year flood plain exist for many streams. However, the 100-year flood plain may include significant amounts of upland or urban habitat and therefore may not be appropriate in many cases.
    b. The outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable

boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.

c. Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark the lateral extent of a stream.
d. A levee or other artificial stream bank could also be used to mark the lateral extent of a stream. However, in many instances, there can be extensive areas of valuable riparian habitat located behind a levee.

Any of the above criteria could be applicable in determining what constitutes a stream depending on the potential for the proposed activity to adversely affect fish and other stream-dependent wildlife resources.

2.1.1 California Fish and Game Code Sections 1600 - Effective January 1, 2004

1600. The Legislature finds and declares that the protection and conservation of the fish and wildlife resources of this state are of utmost public interest. Fish and wildlife are the property of the people and provide a major contribution to the economy of the state, as well as providing a significant part of the people's food supply; therefore, their conservation is a proper responsibility of the state.

This chapter is enacted to provide conservation for these resources.

1601. The following definitions apply to this chapter:

(a) "Agreement" means a lake or streambed alteration agreement.
(b) "Day" means calendar day.
(c) "Emergency" has the same definition as in Section 21060.3 of the Public Resources Code.
(d) "Entity" means any person, state or local governmental agency, or public utility that is subject to this chapter.

1602. (a) An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement ***where it may pass into any river, stream, or lake***, unless all of the following occur:

(1) The department receives written notification regarding the activity in the manner prescribed by the department. The notification shall include, but is not limited to, all of the following:

(A) A detailed description of the project's location and a map.
(B) The name, if any, of the river, stream, or lake affected.
(C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
(D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
(E) A copy of any other applicable local, state, or federal permit or agreement already issued.
(F) Any other information required by the department.

(2) The department determines the notification is complete in accordance with Chapter 4.5 (commencing with Section 65920) of Division 1 of Title 7 of the Government Code, irrespective of whether the activity constitutes a development project for the purposes of that chapter.

(3) The entity pays the applicable fees, pursuant to Section 1609.

(4) One of the following occurs:

(A)

(i) The department informs the entity, in writing, that the activity will not substantially adversely affect an existing fish or wildlife resource, and that the entity may commence the activity without an

agreement, if the entity conducts the activity as described in the notification, including any measures in the notification that are intended to protect fish and wildlife resources.

(ii) Each region of the department shall log the notifications of activities where no agreement is required. The log shall list the date the notification was received by the department, a brief description of the proposed activity, and the location of the activity. Each item shall remain on the log for one year. Upon written request by any person, a regional office shall send the log to that person monthly for one year. A request made pursuant to this clause may be renewed annually.

(B) The department determines that the activity may substantially adversely affect an existing fish or wildlife resource and issues a final agreement to the entity that includes reasonable measures necessary to protect the resource, and the entity conducts the activity in accordance with the agreement.

(C) A panel of arbitrators issues a final agreement to the entity in accordance with subdivision (b) of Section 1603, and the entity conducts the activity in accordance with the agreement.

(D) The department does not issue a draft agreement to the entity within 60 days from the date notification is complete, and the entity conducts the activity as described in the notification, including any measures in the notification that are intended to protect fish and wildlife resources.

(b) (1) If an activity involves the routine maintenance and operation of water supply, drainage, flood control, or waste treatment and disposal facilities, notice to and agreement with the department shall not be required after the initial notification and agreement, unless the department determines either of the following:

(A) The work described in the agreement has substantially changed.

(B) Conditions affecting fish and wildlife resources have substantially changed, and those resources are adversely affected by the activity conducted under the agreement.

(2) This subdivision applies only if notice to, and agreement with, the department was attained prior to January 1, 1977, and the department has been provided a copy of the agreement or other proof of the existence of the agreement that satisfies the department, if requested.

(c) It is unlawful for any person to violate this chapter.

3.0 METHOD

Prior to performing field surveys, documentation relevant to the SA and surrounding area was reviewed using the methods and databases listed below.

3.1 Literature Reviews

Prior to conducting fieldwork, the following information was reviewed to determine watershed characteristics, locations and types of aquatic resources that may be present within the SA:

- Victorville and Apple Valley North, California Topographic Map 7.5-minute USGS Map (USGS 1987);
- 2022 and 2023 color aerial photographs (Bing Maps 2022 and 2023);
- Google Earth version 5.2.1.1588 (February 2022 and March 2023);
- Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2023);
- Natural Resource Conservation Service, Watershed Boundary Dataset (USDA-NRCS 2023b);
- Environmental Protection Agency Enviromapper for Water (EPA 2023);
- Federal Emergency Management Agency (FEMA 2023);
- National Wetlands Inventory (NWI) maintained by the US Fish and Wildlife Service (USFWS 2023);
- 2023 U.S. Environmental Protection Agency (EPA) WATERS GeoViewer Tool (epa.maps.arcgis.com/apps/webappviewer);
- 2023 EPA Antecedent Precipitation Tool (APT) (epa.gov/wotus/antecedent-precipitation-tool-apt); and
- Victorville California National Climate Data Center (NCDC, 2023) Data.

The SA was examined to assess the presence of a discernable bed and bank, riparian or aquatic habitat, aquatic fish and wildlife resources, or evidence of a change in vegetation type, density, or vigor. The intent of this assessment was to determine where water may flow, or may not flow - or terminate, and was used to determine efficient locations for visual inspections to occur in the field.

3.1.1 Aerial Photography

Historic and current aerial photography of the SA were reviewed, prior to and during the field assessments. Aerial photography was informative with deference to the state and function of land resources in both the present, and historic context. Inundation and vegetative signatures on aerial images can imply the presence - or absence, of lakes, rivers, or streambed systems within a discrete location.

3.1.2 U.S. Fish and Wildlife Service National Wetland Inventory Data and Environmental Protection Agency WATERS GeoViewer

The U.S. Environmental Protection Agency (EPA) WATERS GeoViewer tool provided access to spatial data sets (Appendix A, Figures 4 and 5) - such as interactive Upstream/Downstream search capabilities, and interactive watersheds, to assist in determining the jurisdictional status of resources detected within the SA (epa.maps.arcgis.com/apps/webappviewer). Additionally, the Federal Emergency Management Agency (FEMA) flood zone is depicted in Appendix A, Figure 6. Furthermore, the National Wetland Inventory (NWI) – which is maintained by the U.S. Fish and Wildlife Service (USFWS), was reviewed to support the identification of potential aquatic resources within the SA. However, this database (i.e., the NWI) specifically rejects its use for regulatory jurisdictional review.

3.1.3 Antecedent Precipitation Tool

The Antecedent Precipitation Tool (APT) was also utilized to determine whether SA observations are representative of typical climatic conditions (i.e., those that have been experienced over the past thirty years). This tool is informative when assessing whether certain field conditions are observed during typical, as opposed to atypical rainfall cycles. The APT queries data from weather stations that are located within a 30-mile radius from the SA. That data is then used to calculate precipitation normalcy. In a general sense, this is done by comparing rainfall data from the previous three months, to the same three-month period over a rolling 30-year record. The data is then indexed to give a rating against the normal, or "typical year." An index score of 9 or lower, indicates antecedent precipitation conditions are drier than normal. While a score of 10 to 14 indicates conditions are normal. But a score of 15 or higher, indicates conditions are wetter than normal (EPA APT 2023).

3.1.4 Topography

USGS topographic maps were reviewed as well. These maps tend to illustrate elevation contours, drainage patterns, and hydrography within the SA. USGS 7.5-Minute Topographic Quadrangles "Victorville" and "Apple Valley North" were evaluated to facilitate identification of potential drainage features within the SA - as indicated from topographic changes, blue-line features, or visible drainage patterns in order to characterized features.

3.2 Procedures and Field Data Collection Techniques

A field delineation was conducted within the SA using a combination of on the ground quantification, and remote sensing with on the ground verification via pedestrian survey of the SA in 2022 and 2023. With respect to suspected CFG Code Sections 1600 (et seq.) jurisdictional features; they were assessed in the field for the presence of definable streambeds (i.e., having a bed, bank, and channel) and any associated riparian habitat. Streambeds and suspected riparian habitats were evaluated using the CFGC Section 1600 (et seq.), direction described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (ESD-CDFG 1994) and the recommendations detailed within the Mesa Field Guide: Mapping Episodic Stream Activity (Vyverberg et al. 2014) (MESA).

Accordingly, CFGC Section 1600 (et seq.) jurisdiction is presumed to extend to the following features:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to CFGC provisions.

MESA was also used to assist with identification and mapping of episodic streams; and identification of locations where water is absent and/or has been absent for several years - or more. To that end, total CFGC Section 1600 (et seq.) jurisdictional limits were delineated for around lakes, rivers, streams (i.e., defined bed, bank, and channel) or other land cover types used by fish, aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife resources within the SA. The dimensions (i.e., linear length, width, and area) of each feature were generally determined based on the top-of-bank limits. If adjacent bank, floodplain, and/or terrace areas included cover types that could be used by fish, aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife resources, then the feature plus any associated land cover was mapped and included as part of CFGC Section 1600 (et seq.) jurisdiction.

4.0 RESULTS

The elevation of the SA ranges from approximately 2,912 to 3,010 feet AMSL. For the purposes of this assessment, the 281.10-acre SA includes the Project Site, and Off-Site Areas.

4.1 SA Soils

The Web Soil Survey is an online Geographic Information System (GIS) that provides the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) with online soil data (NRCS 2023). This website was used to assess soil characteristics and soil types within the SA. This database was also used to determine if the SA's mapped soils were likely to include any hydrologically influenced areas.

According to the USDA NRCS, the SA consists of several soil complexes:

- Cajon Sand (2 to 9 % slopes);
- Cajon-Arizo complex (2% to 15% slopes);
- Helendale-Bryman loamy sands (2% to 5% slopes);
- Mirage-Joshua Complec (2 to 5 % slopes);
- Nebona-Cuddeback complex (2% to 9% slopes);
- Pit; and
- Rock Outcrop-Lithic Torriorthents Complex (15 to 50 % slopes).

These soil types are generally described below, and are depicted in Appendix A, Figure 7.

The aforementioned soil types are typical within the region; and are assumed to be derived from mixed parent material. All soil types are well drained, and none have a hydric soil rating[1]. The low runoff potential of these local soils - combined with the low frequency of water flow in the region, rapid water dissipation through high evaporation and infiltration rates locally, and the small discrete sub-watersheds detected within the SA, suggest that it is unlikely for potential flows from the Project Site, to reach the Bell Mountain Wash. However, within discrete locations of the Off-Site Areas, features cross - or are within, the discernable bank lines of Bell Mountain Wash. Suggesting that these distinct features associated with the Off-Site Areas, have downstream connectivity from Bell Mountain Wash, and subsequently to the Mojave River.

4.2 SA Hydrology

The SA is located within the Bell Mountain Wash Subwatershed (Hydrologic Unit Code 180902080705), within the Bell Mountain Wash – Mojave River Watershed (Appendix A, Figure 10). In general, ephemeral channels within this subbasin that flow - flow to the Bell Mountain Wash, which drains southwest to the Mojave River. It is notable, that both EPA WATERS GeoViewer results, and USGS 7.5 Quadrangle Map evidence no stream channels within the Project Site. But in contrast, there are indications of stream channels within distinct locations of the Off-Site Areas. More specifically – at some locations, where features within the Off-Site Areas cross - or are within, the discernable bank lines of Bell Mountain Wash.

[1] Mapped soil types within the Web Soil Survey are assigned an indicator status of "hydric" or "non-hydric," as well as erosivity characteristics by the National Technical Committee for Hydric Soils.

It is also important to notice that although the NWI was reviewed, it was not considered indicative of the resources observed within the SA for the following reasons:

1) NWI users are cautioned that the features displayed therein show wetland type and extent using a biological definition. There is no attempt to define the limits of proprietary jurisdiction of any Federal, State, or local government - or to establish the geographical scope of the regulatory programs of government agencies. Therefore, the data should not be relied upon for jurisdictional identification.
2) NWI maps have been prepared from limited analysis of high-altitude imagery in conjunction with collateral data sources focusing on wetlands. When imagery is conflicting, the Environmental Systems Research Institute (ESRI) Base imagery is used.
3) The erosional features within the SA are relatively small, and do not have obvious vegetation species variability, making they are indistinguishable from other signatures (e.g., off highway vehicle tracks), at high altitude.

4.3 CFGC Section 1600 (et seq.) Jurisdiction - Project Site

In general, ephemeral channels within this subbasin outside of the Project Site that flow - flow to the Bell Mountain Wash, which drains approximately southwest about 4 miles to the Mojave River. There are no features within the Project Site that have a surface connection to Bell Mountain Wash (Appendix A, Figures 3, 4 and 5). It is also notable, that both EPA WATERS GeoViewer results, and USGS 7.5 Quadrangle Map evidence no stream channels within the Project Site.

Although the NWI was reviewed, it was not considered indicative of the resources observed within the Project Site. Additionally, soil types mapped within the Project Site are well drained, and none have a hydric soil rating. The low runoff potential of the soils, combined with low frequency of water flow in the region, and rapid dissipation of available water via high evaporation and infiltration rates; imply that Project Site soils are unlikely to support a surface connection extending to Bell Mountain Wash (Appendix A, Figure 7).

Field surveys were conducted during - and within, a week of significant multiple day rain events. The signatures observed within the Project Site are erosional (i.e., ruts, rills, and gullies) and lack a surface connection to Bell Mountain Wash, and never reach the Mojave River (Appendix A, Figure 9 and Appendix B). These erosional signatures are characterized as very small depressions – some less than 11.8 inches, while the typical width was under 16 inches, or the size of motorcycle tire ruts. These signatures have small, negligible, localized watershed areas as well – most ranging from 1- to 6-acres, and they do not possess aquatic resources or other features, that distinguish them from upland habitats. It is also clear that the Project Site does not possess any creeks and rivers, as defined in Title 14, CCR, Section 1.72. As there is no riparian vegetation, or aquatic resources within the Project Site, that supports fish or other aquatic life; nor does the Project Site include watercourses having a surface - or subsurface flow, that supports, or has supported riparian vegetation.

That said, the following addresses CDFW's published parameters with regard to what establishes a stream for the purposes of implementing and enforcing CFG Code Sections 1600 (et seq.) (ESD-CDFG 1994).

1. The term stream can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (United States Geological Survey maps, USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

There are no intermittent streams, blue-lines, swales, or erosional signatures that support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife within the Project Site. There is no observable difference in the vegetation composition, density, or vigor between the erosional signatures and the adjacent lands.

2. Biologic components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.

There is no aquatic or riparian vegetation, aquatic animals (i.e., fish, amphibians, reptiles and invertebrates), or terrestrial species which derive benefits from a stream system within the Project Site.

3. As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis) but also a bed or channel, a bank and/or levee, instream features such as logs or snags, and various flood plains depending on the return frequency of the flood event being considered (i.e., 10, 50, or 100 years, etc.).

There are no discernable banks, rack lines, shelving, or “in-stream” features within the Project Site. There is not a detectable differentiation between erosional signatures and tire ruts, and the adjacent upland areas.

4. The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive:

    a. The flood plain of a stream can be the broadest measurement of a stream's lateral extent depending on the return frequency of the flood event used. For most flood control purposed, the 100-year flood event is the standard measurement and maps of the 100-year flood plain exist for many streams. However, the 100-year flood plain may include significant amounts of upland or urban habitat and therefore may not be appropriate in many cases.

The Project Site is not within a 100-year flood plain. There are no flood plains within the Project Site.

    b. The outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.

There is no riparian vegetation within the Project Site, nor does it include any aquatic, riparian or riverine resources. As the native vegetation occurring naturally along the Project Site’s erosional signatures, rills and tire ruts are not the result of increased water availability, or nutrients. Nor does it create an "edge'' or ecotone between vegetation types that require water on one side, and adjacent upland habitat on the other.

    c. Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark lateral extent of a stream.

There are no "natural banks" or evidence of confined flows that persist such that there is a detectable differentiation between erosional signatures, tire ruts, rills, and the adjacent upland areas within the Project Site.

The signatures within the Project Site meet the general definition and description for ruts, rills and erosional signatures characterized by low volume, infrequent - or short duration, flow. A commonly accepted definition of gullies is that they are erosion features larger than rills – which are < 0.3 meters deep that can be ploughed out or easily crossed, but smaller than streams, creeks, arroyos, or river channels (Wells, 2004).

In context, the Project Site is within a high desert climate characterized by low humidity, and considerable variation in the occurrence, intensity, and distribution of precipitation. The average annual precipitation for Apple Valley ranges between 1.81 inches to 8.53 inches - averaging 5.17 inches per year. Measurements of the mean annual precipitation in the vicinity of the SA were queried from the National Climate Data Center (NCDC) station located in Victorville, California - roughly 4 miles south of the Project Site. As stated previously, the average total annual precipitation is approximately 5.17 inches and it is reached between December and February. The ATP identifies 2022-2023 to be a normal rain year, over the last 30-year period. But the ATP also suggests that our field work was completed during a wetter than normal period. The data from the ATP is depicted in Appendix A, Figure 8.

4.3.1 "Where it may pass into any river, stream, or lake" - California Fish and Game Code Section 1602. (a)

Project Site topography is such that there is a general down gradient from its northern and northwestern portions. But as you travers into the southern quarter of the Project Site, there is a prominent upslope on the north side of Stoddard Wells Road. There is no evidence of water flow leaving the Project Site and crossing Stoddard Wells Road into any downstream system, Bell Mountain Wash or the Mojave River (Appendix A, Figure 9 and Appendix B). The Bell Mountain Wash is another 600 to 700 feet to the south of Stoddard Wells Road, and the Mojave River is approximately 4 miles Southwest of the Project Site. All unnamed erosional signatures within the Project Site are contained therein. No activity within the Project Site will result in the deposit or disposal of debris, waste, or other material containing crumbled, flaked, or ground pavement into Bell Mountain Wash - or the Mojave River.

4.4 CFGC Section 1600 (et seq.) Jurisdiction – Off-Site Areas

Off-Site Areas are situated approximately 4 miles to the east of the Mojave River. At six (6) specific locales within the Off-Site Areas, there are non-wetland, ephemeral, dry desert washes that total 404 linear feet. These features cross - or are within, Bell Mountain Wash (Table 2).

Table 2. Estimated Amount of Aquatic Resources within the Off-Site Areas

Unique Identifier	Latitude	Longitude	Estimated Amount (Acres)
1	34.601027	-117.218174	0.02
2	34.601022	-117.219598	0.01
3	34.590317	-117.257743	0.06
4	34.584840	-117.264105	0.01
5	34.577202	-117.270258	0.01
6	34.573972	-117.273573	0.02

These distinct features associated with the Off-Site Areas, have discernable bank lines with topographic relief, connectivity from Bell Mountain Wash, and subsequently to the Mojave River. As a result, it has been determined that the six features within the Off-Site Areas consist of 0.13-acres of ephemeral streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code (Appendix A, Figure 3).

4.5 Conclusion

This JA has determined the Project Site is characterized by erosional signatures that do not possess any characteristics identified as riverine, riparian, or aquatic (Appendix A, Figure 9 and Appendix B). Further the Project Site does not include any habitat differentiation in support of terrestrial species that utilize riverine, riparian, or aquatic resources. There is also no discernable differentiation between the erosional signatures and the upland area in vegetation type, species diversity, density, or vigor. Finally, there is no connection - surface or subsurface, to a streambed (Bell Mountain Wash) or river (Mojave River).

The rationale for this conclusion is described as follows:

1. The signatures observed within the Project Site are erosional, swales, gullies, and rills. They do not possess indicators of a bed, bank, or aquatic ecosystems.
2. Erosional signatures detected within the Project Site do not have surface or subsurface connections to any fish or aquatic wildlife resources. To assert 1600 jurisdiction within the Project Site, there needs to be more than a speculative - or unsubstantial effect on aquatic resources.

But in contrast, the Off-Site Areas - at six (6) specific locales, include non-wetland, ephemeral dry desert washes with bank lines that total 404 linear feet. These features either cross - or are within, Bell Mountain Wash. These six distinct features associated with the Off-Site Areas, have discernable bank lines with topographic relief, connectivity from Bell Mountain Wash, and subsequently to the Mojave River. As a result, it has been determined that the six features within the Off-Site Areas consist of 0.13-acres of ephemeral streambeds subject to regulation under Section 1600 (et seq.) of the CFG Code (Appendix A, Figure 3).

5.0 REFERENCES

California Code of Regulations: Title 14, California Code of Regulations (CCR), Section 1.72

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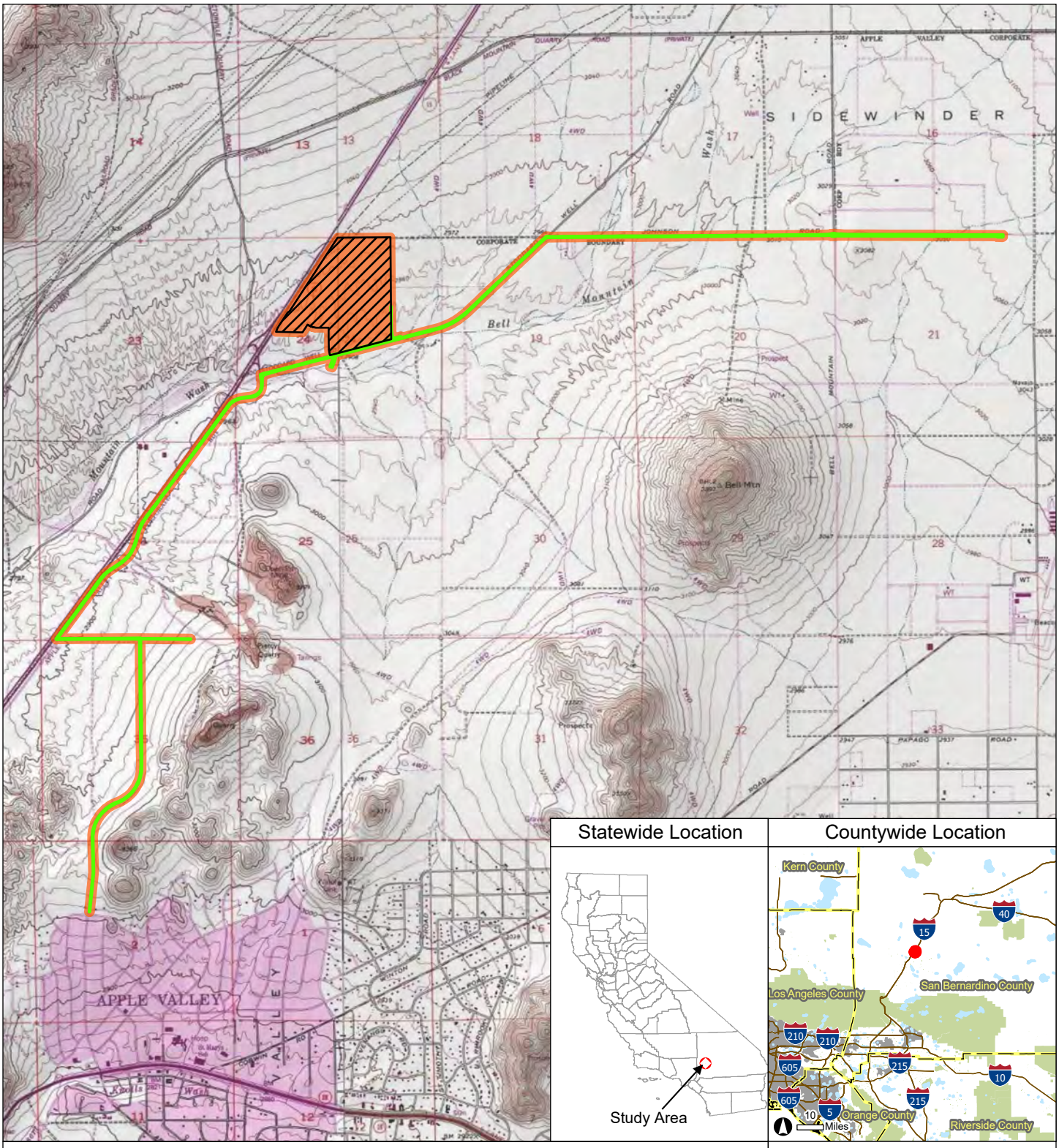
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U.S. Environmental Protection Agency (EPA). 2022. Enviromapper for Water. <URL: http://map24.epa.gov/EMR/ >

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Appendix A
Figures



Project Site
Off-Site Areas
Study Area

Countywide Location Inset
County Boundary
Urban Area
Interstate or State Highway

Water Body
Park or National Forest

0 0.35 0.7 Miles
1 inch = 0.7 mile

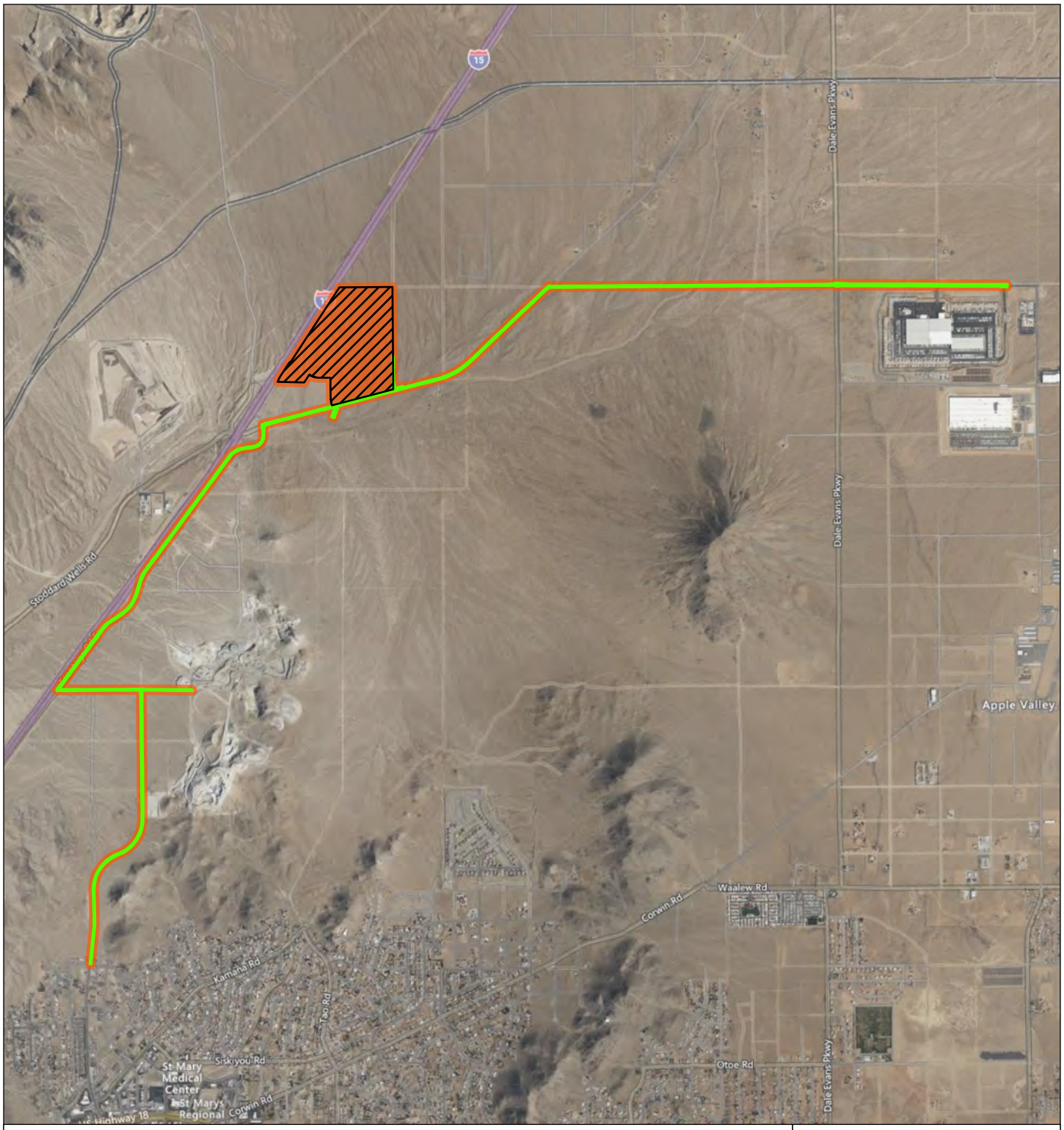
Data Sources:
- Bureau of Land Management Cadastral GIS 2015
- USGS 7.5-minute quadrangle map
- ESRI US Topo Maps accessed Apr 2023

Map Prepared: 4-13-23

Prepared by:
NOREAS
Environmental Engineering and Science

The Study Area is located in San Bernardino County on the Apple Valley North and Victorville USGS 7.5-minute quadrangle maps; San Bernardino Meridian, Townships 5 and 6 North, Ranges 3 and 4 West, in Sections 02, 13, 16, 17, 18, 19, 20, 21, 23, 24, 26, 35
Center coordinate (WGS 1984): 117.234°W 34.576°N

Figure 1. Regional Location



Project Site

Off-Site Areas

Study Area (281.10 acres)

0 0.35 0.7 Miles

1 inch = 0.7 mile

Data Sources:
- Bing Maps Hybrid accessed Apr 2023

Map Prepared: 4-13-23

Prepared by:
NOREAS
Environmental Engineering and Science

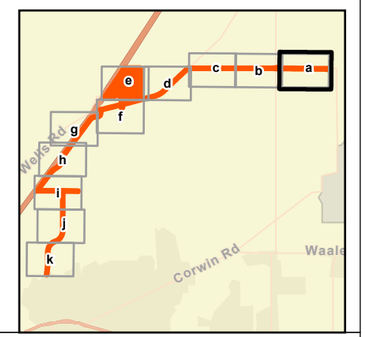
Figure 2. Site Vicinity



Project Site

Off-Site Areas

Study Area



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3a. Delineation

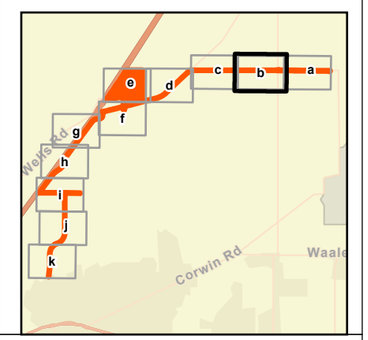


Project Site

Off-Site Areas

Study Area

Waters of the State



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3b. Delineation

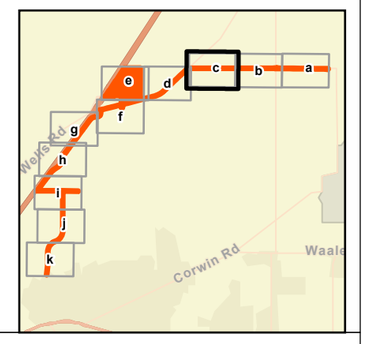


Project Site

Off-Site Areas

Study Area

Waters of the State



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

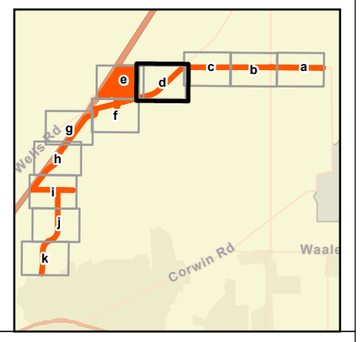
Figure 3c. Delineation



Project Site

Off-Site Areas

Study Area



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

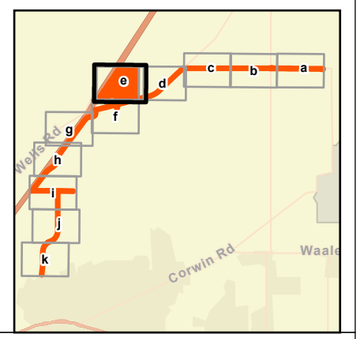
Figure 3d. Delineation



Project Site

Off-Site Areas

Study Area



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3e. Delineation

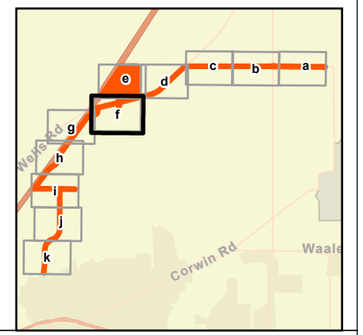


Project Site

Off-Site Areas

Study Area

Waters of the State



0 150 300 Feet

1 inch = 333 feet

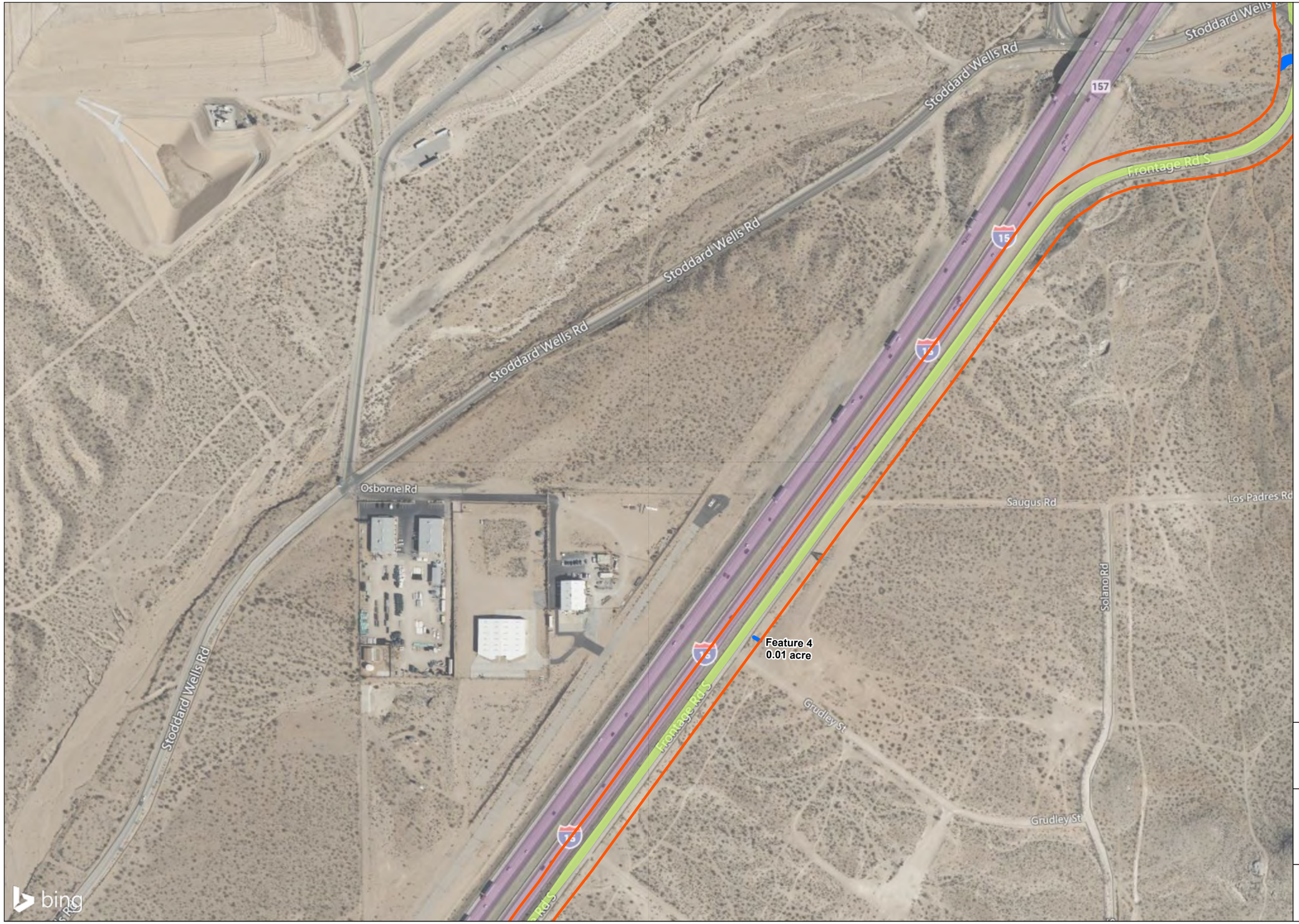
Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

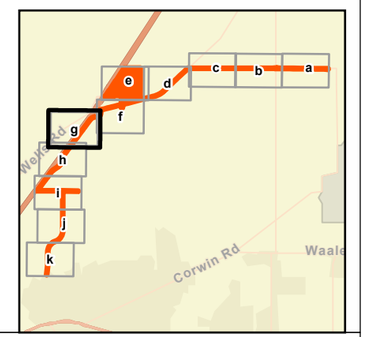
Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3f. Delineation



Project Site
Off-Site Areas
Study Area
Waters of the State



0 150 300 Feet
1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:
NOREAS
Environmental Engineering and Science

Figure 3g. Delineation

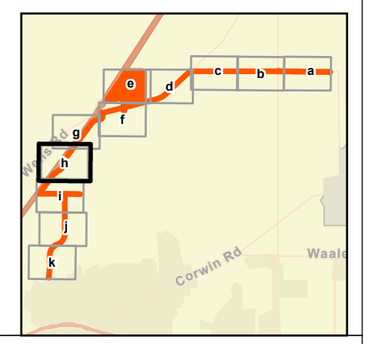


Project Site

Off-Site Areas

Study Area

Waters of the State



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3h. Delineation

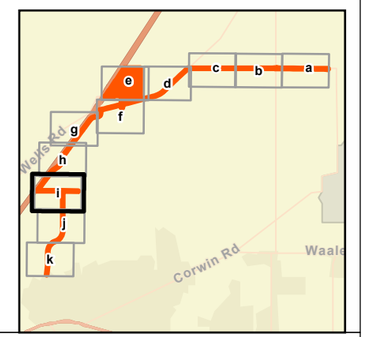


Project Site

Off-Site Areas

Study Area

Waters of the State



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:
NOREAS
Environmental Engineering and Science

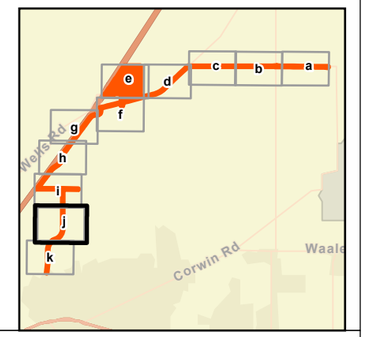
Figure 3i. Delineation



Project Site

Off-Site Areas

Study Area



0 150 300 Feet

1 inch = 333 feet

Data Sources:
- Bing Maps Hybrid and ESRI Reference layer accessed Apr 2023

Map Prepared: 4-14-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3j. Delineation



Figure 3k. Delineation

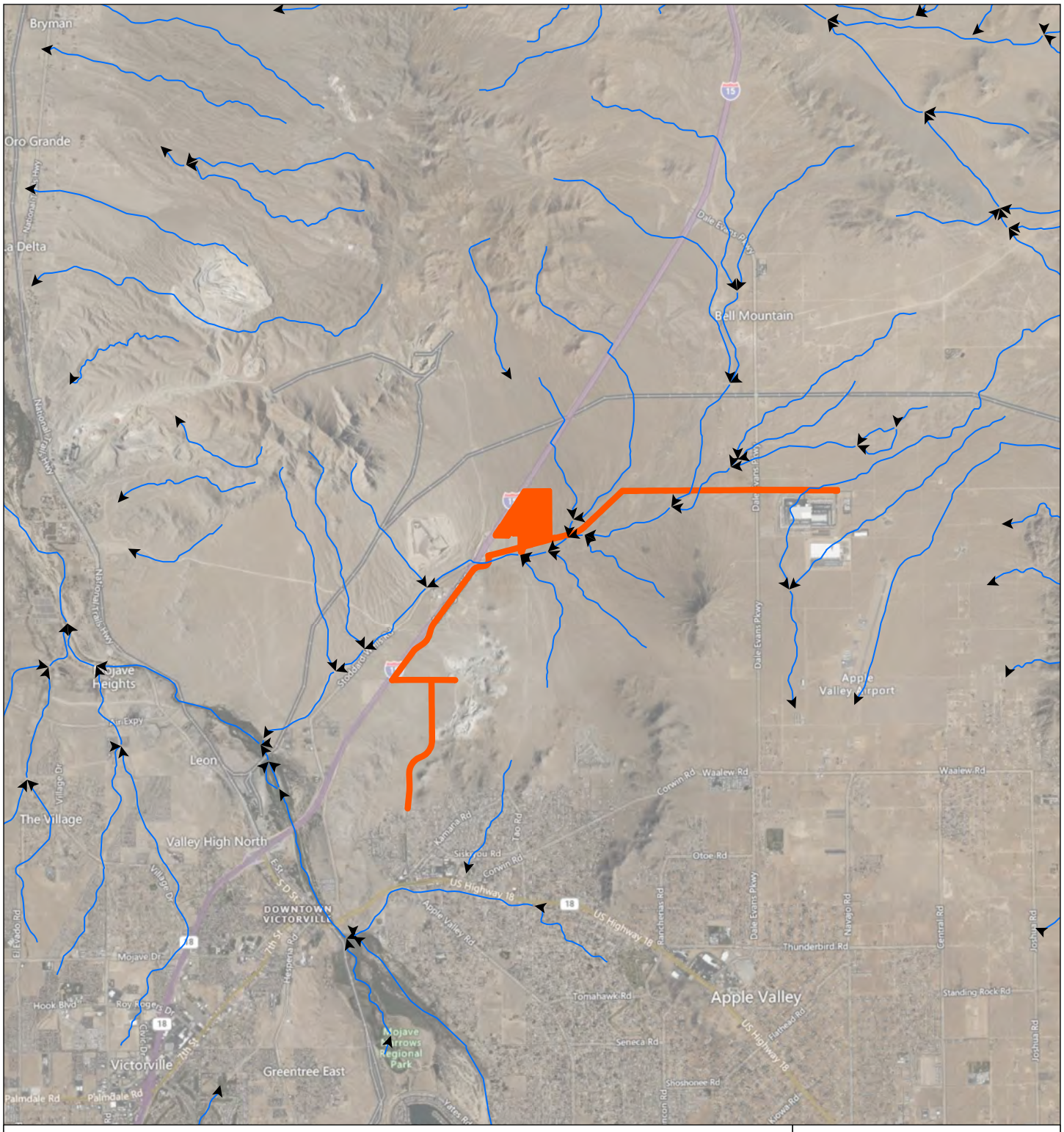
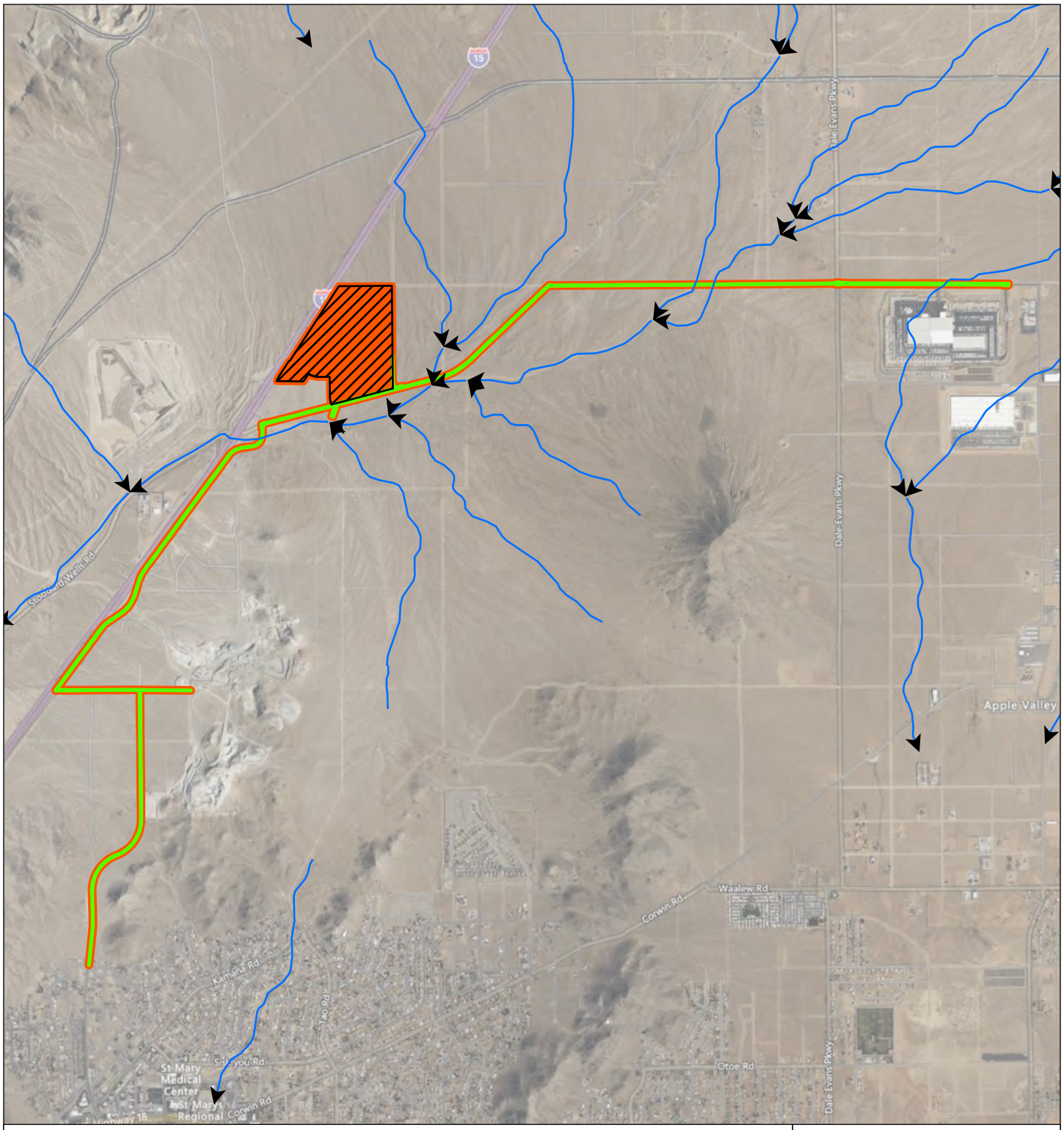


Figure 4. Surface Water Map (Regional Area)



Surface Water Flowlines and Flow Direction

Project Site

Off-Site Areas

Study Area

0 0.35 0.7 Miles

1 inch = 0.7 mile

Data Sources:
- Bing Maps Hybrid accessed Apr 2023
- USGS National Hydrology Dataset Plus Version 2.1 accessed Apr 2023

Map Prepared: 4-13-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 5. Surface Water Map (Local Area)

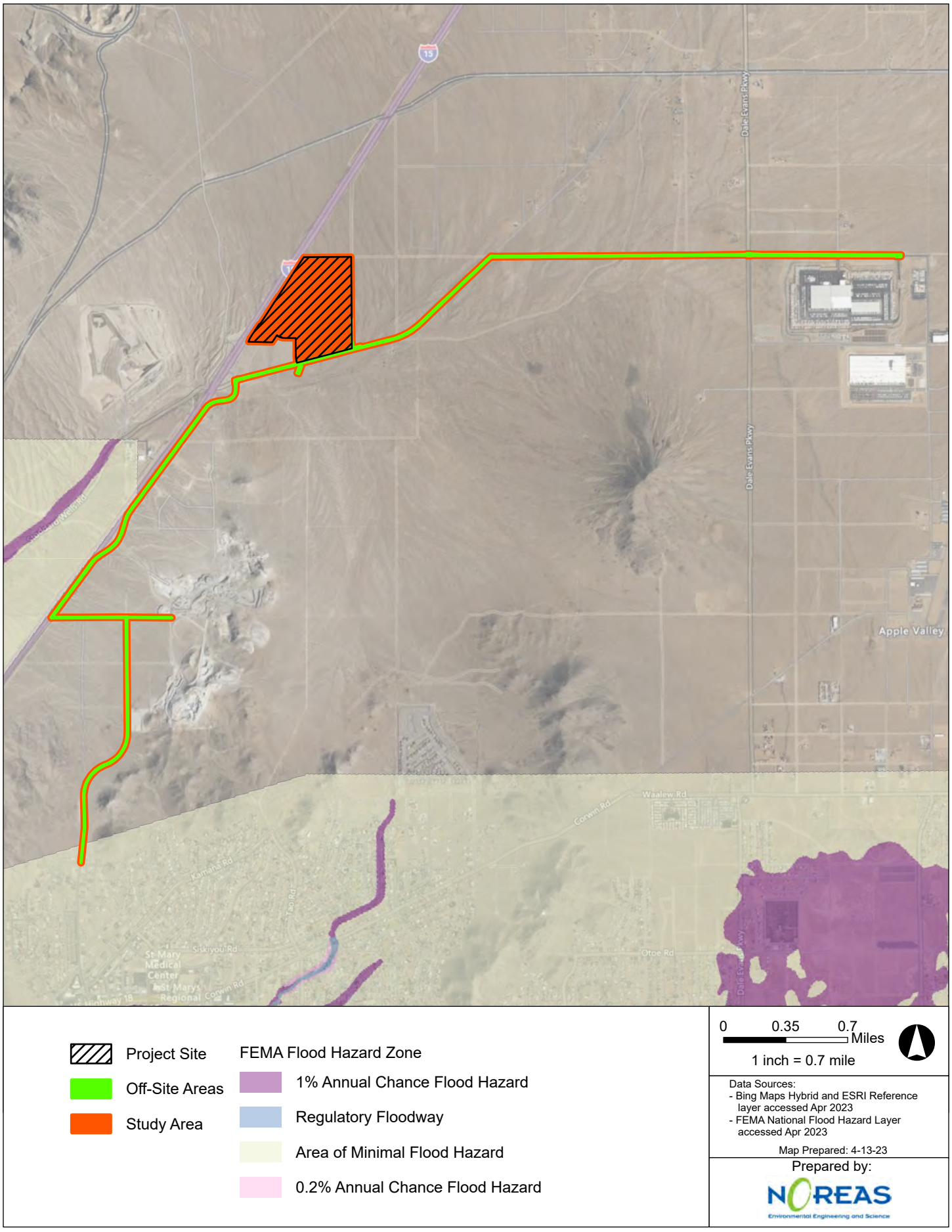


Figure 6. FEMA 100-Year Flood Zone

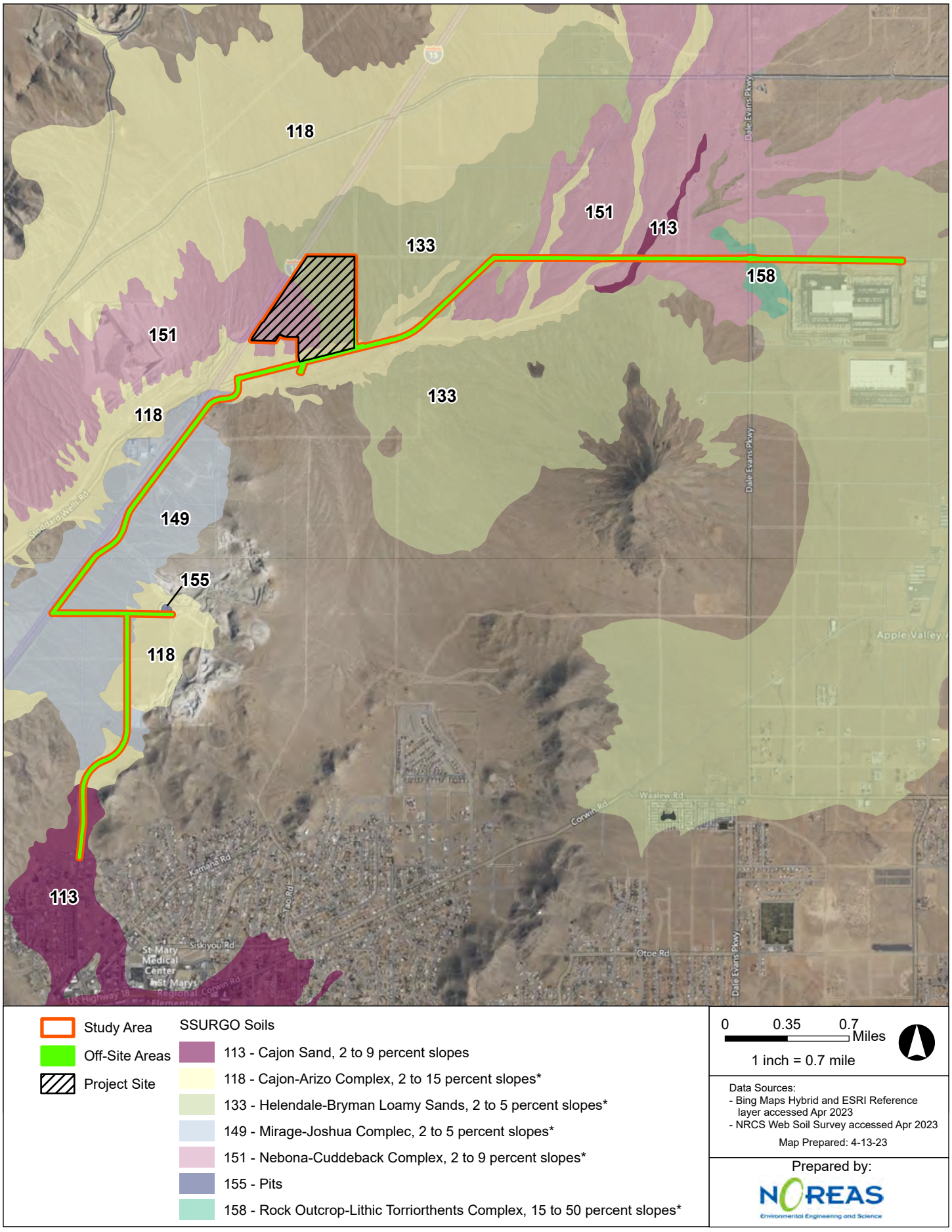
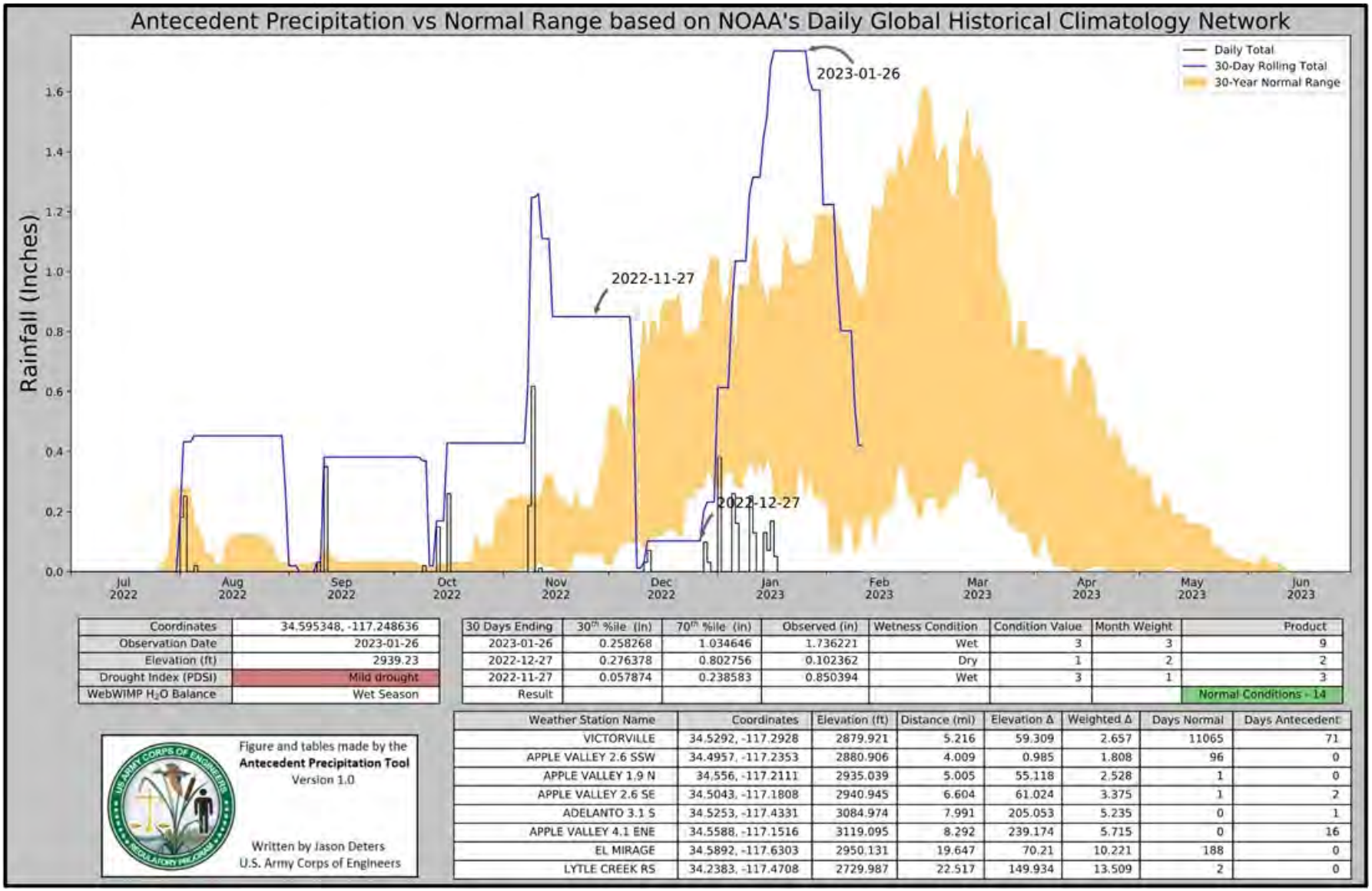


Figure 7. Study Area Soils



Coordinates	34.595348, -117.248636
Observation Date	2023-01-26
Elevation (ft)	2939.23
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-01-26	0.258268	1.034646	1.736221	Wet	3	3	9
2022-12-27	0.276378	0.802756	0.102362	Dry	1	2	2
2022-11-27	0.057874	0.238583	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	5.216	59.309	2.657	11065	71
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	2
ADELANTO 3.1 S	34.5253, -117.4331	3084.974	7.991	205.053	5.235	0	1
APPLE VALLEY 4.1 ENE	34.5588, -117.1516	3119.095	8.292	239.174	5.715	0	16
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

Data Sources:
- U.S. Environmental Protection Agency (EPA). 2023

Map Prepared: 4-13-23

Prepared by:
NOREAS
Environmental Engineering and Science

Figure 8. Antecedent Precipitation Tool

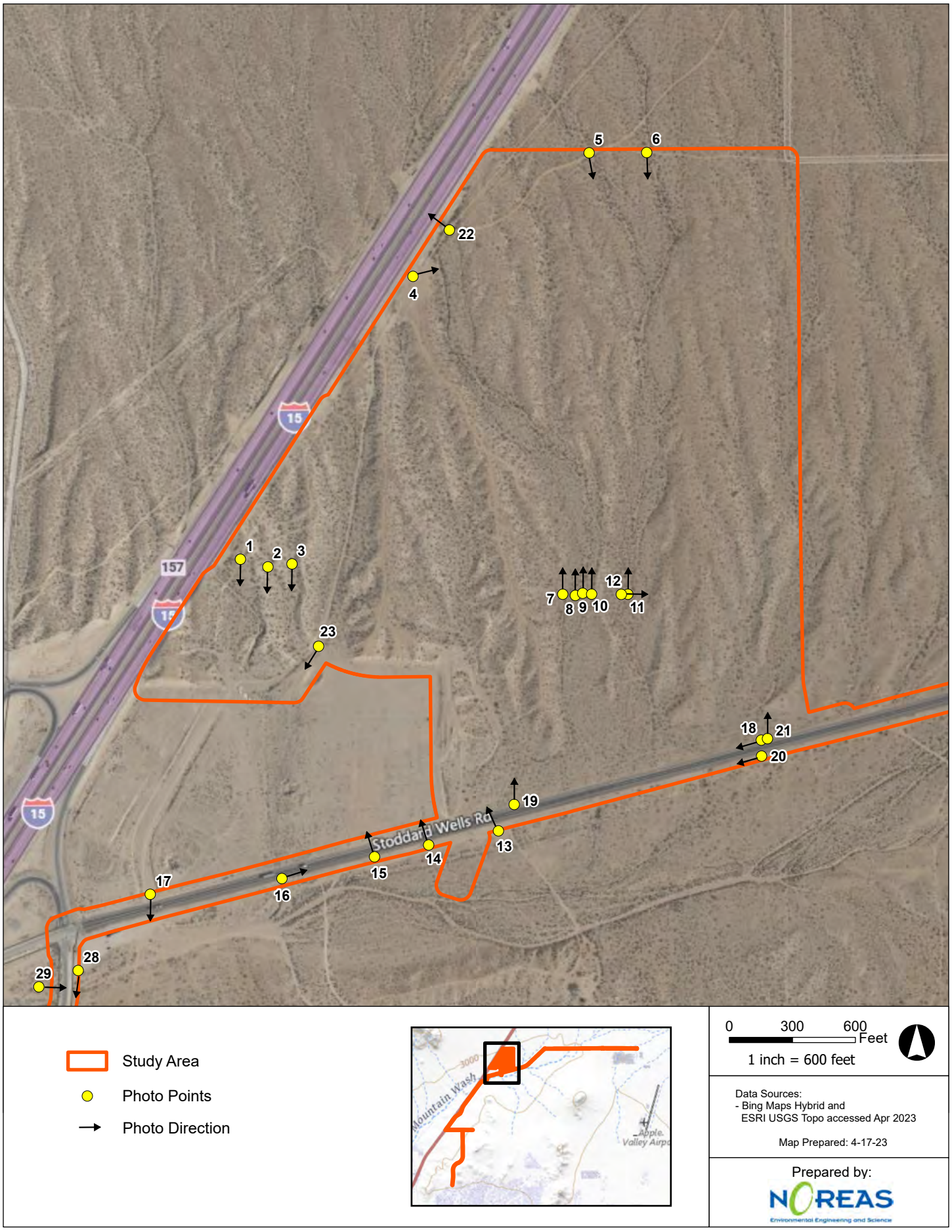


Figure 9a. Photo Reference Index



Study Area

Photo Points

Photo Direction



0 300 600 Feet

1 inch = 600 feet

Data Sources:
- Bing Maps Hybrid and
ESRI USGS Topo accessed Apr 2023

Map Prepared: 4-17-23

Prepared by:
NOREAS
Environmental Engineering and Science

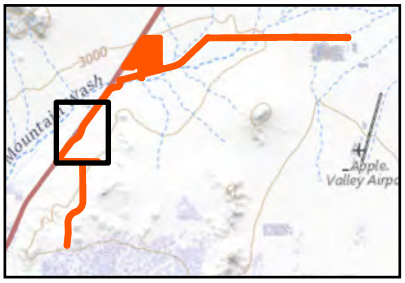
Figure 9b. Photo Reference Index



Study Area

Photo Points

Photo Direction



0 300 600 Feet

1 inch = 600 feet

Data Sources:
- Bing Maps Hybrid and
ESRI USGS Topo accessed Apr 2023

Map Prepared: 4-17-23

Prepared by:

NOREAS
Environmental Engineering and Science

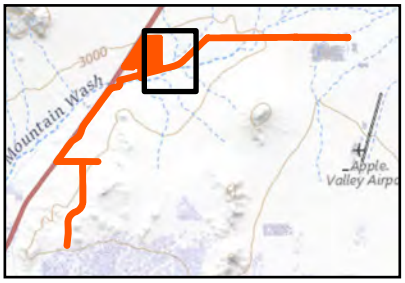
Figure 9c. Photo Reference Index



Study Area

Photo Points

Photo Direction



0 300 600 Feet

1 inch = 600 feet

Data Sources:
- Bing Maps Hybrid and
ESRI USGS Topo accessed Apr 2023

Map Prepared: 4-17-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 9d. Photo Reference Index



Figure 10. Regional Watershed Map

Appendix B
Photographic Log





Photograph # 1. Photo from western portion of the Project Site, facing south towards the disturbed adjacent parcel abutting Stoddard Wells Road.





Photograph # 2. Photo from western portion of the Project Site, facing south towards the disturbed adjacent parcel abutting Stoddard Wells Road. Note rills and ruts in the image.





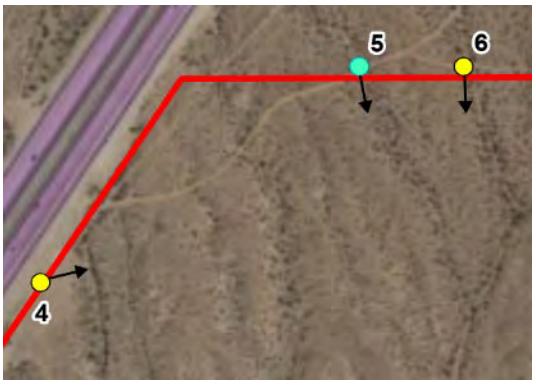
Photograph # 3. Photo from western portion of the Project Site, facing south towards the disturbed adjacent parcel abutting Stoddard Wells Road. Note tire tracks in the image.





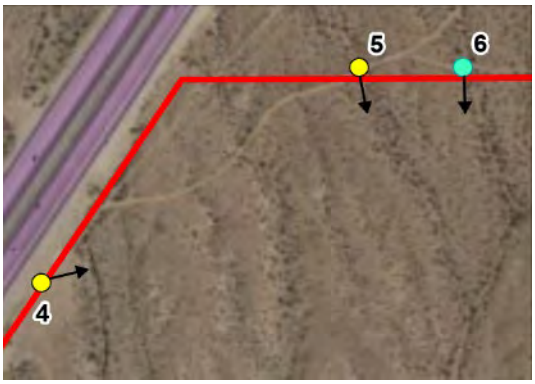
Photograph # 4. Dirt road with tire rills.



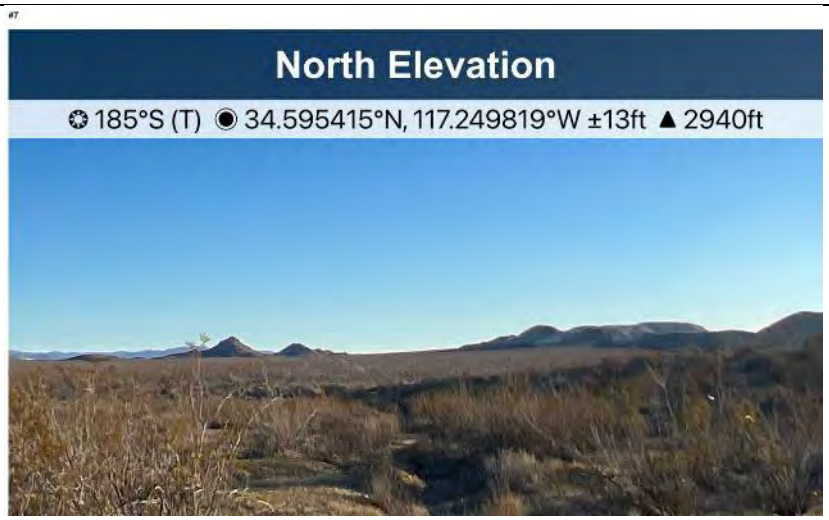


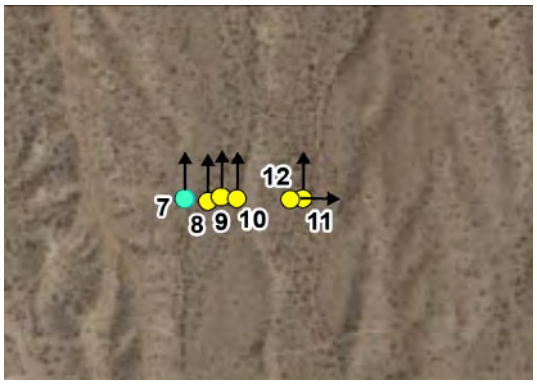
Photograph # 5. Swale - no change in vegetation, cobble or other ordinary high water mark indicators. Signature ended in the middle of the Project Site.



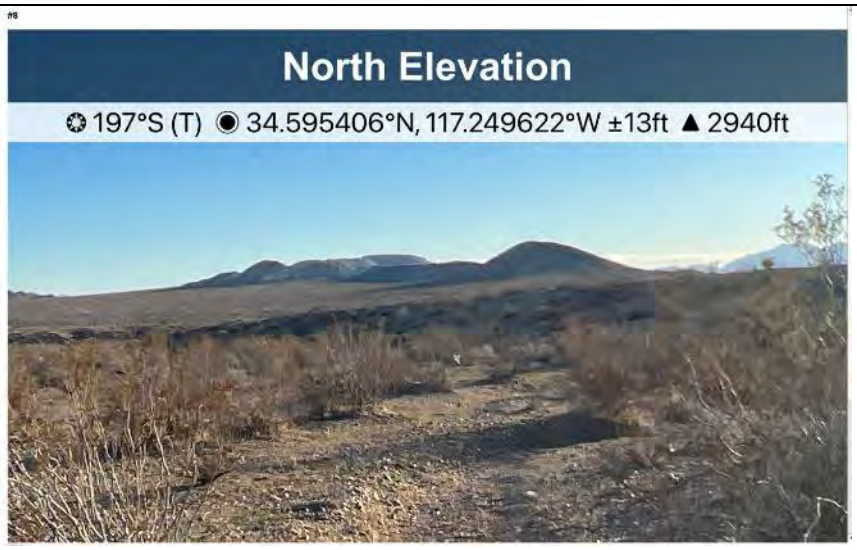


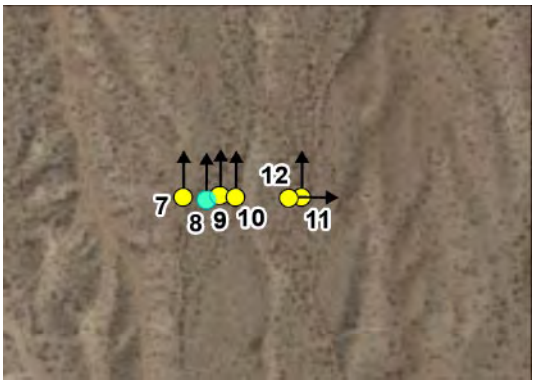
Photograph # 6. Rilling and ponding - no change in vegetation, cobble or other ordinary high water mark indicators. Appears to be an off-highway vehicle tracks. Signature ended in the middle of the Project Site.



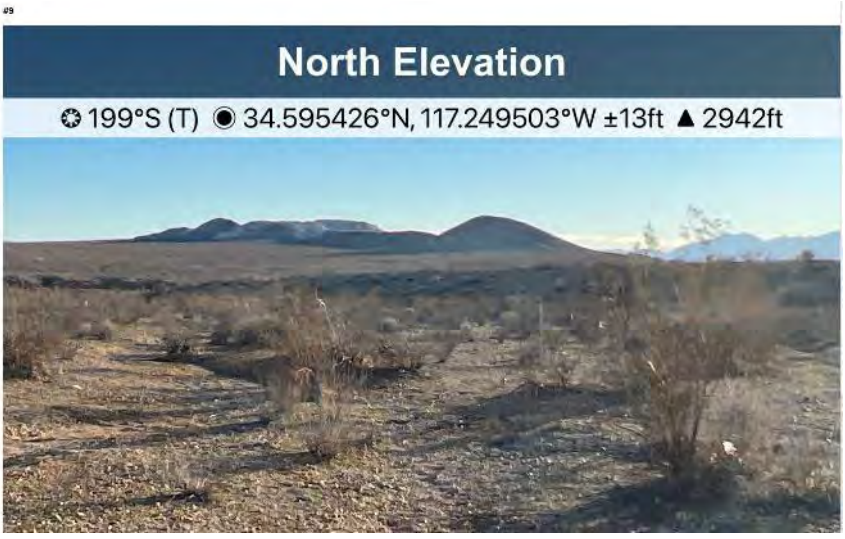


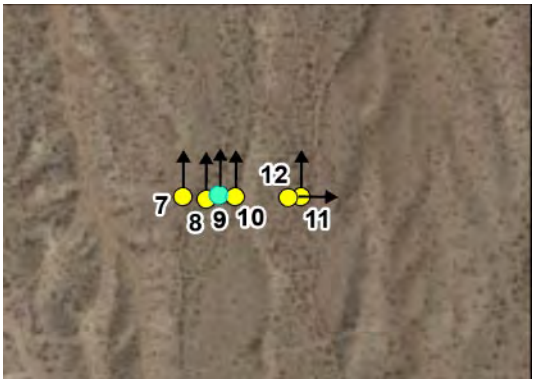
Photograph # 7. Photo from central portion of the Project Site, facing north towards the beginning of an erosional signature.





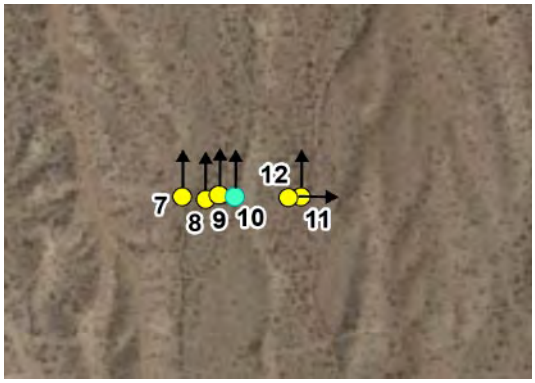
Photograph # 8. Photo from central portion of the Project Site, facing north towards the beginning of an erosional signature.



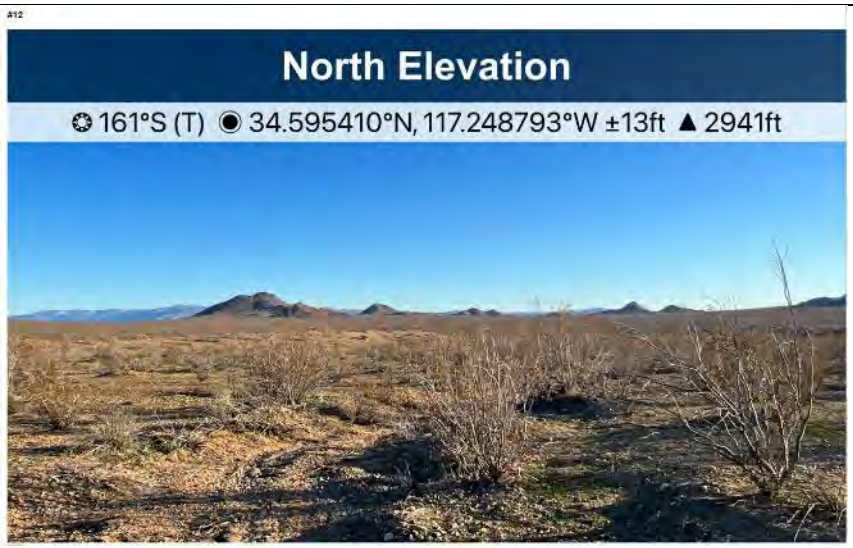


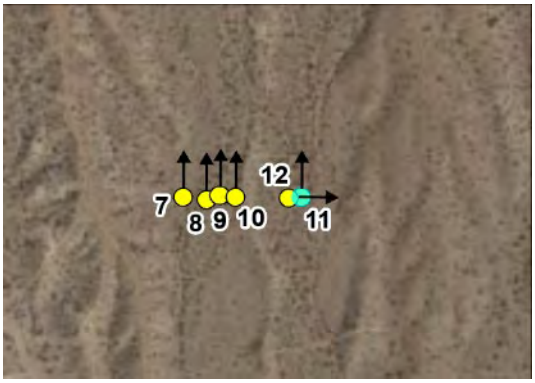
Photograph # 9. Photo from central portion of the Project Site, facing north.



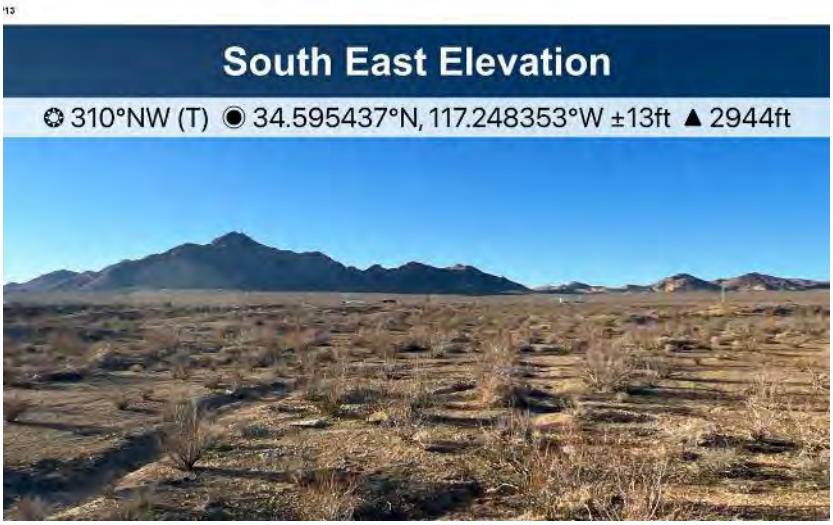


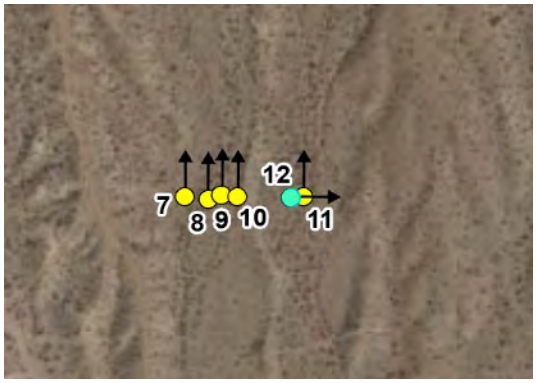
Photograph #10. Photo from central portion of the Project Site, facing north.



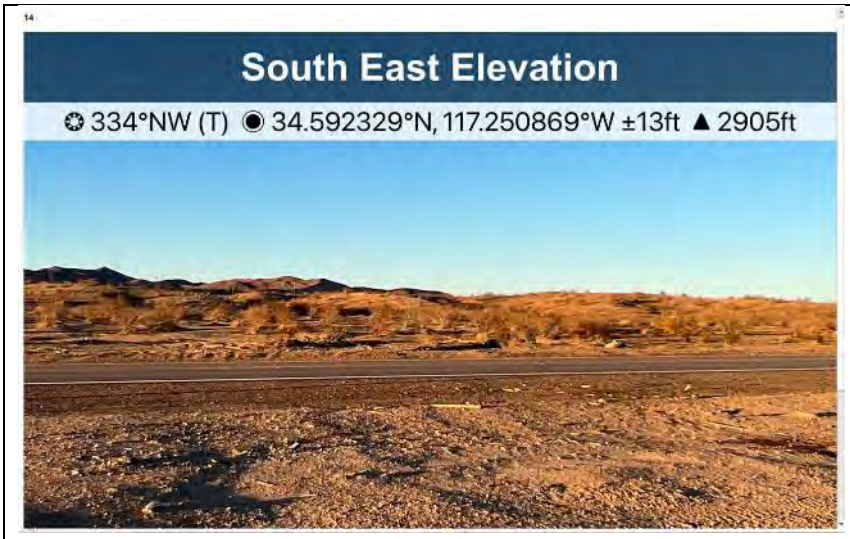


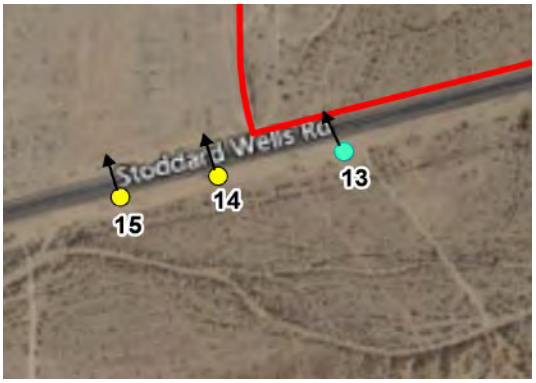
Photograph #11. Photo from central portion of the Project Site, facing north.



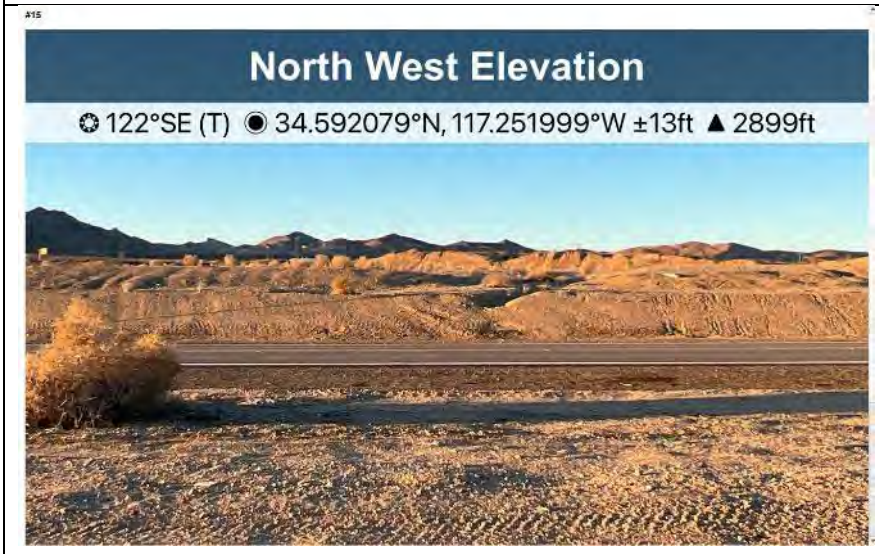


Photograph # 12. Photo from central portion of the Project Site, facing east across an erosional signature.



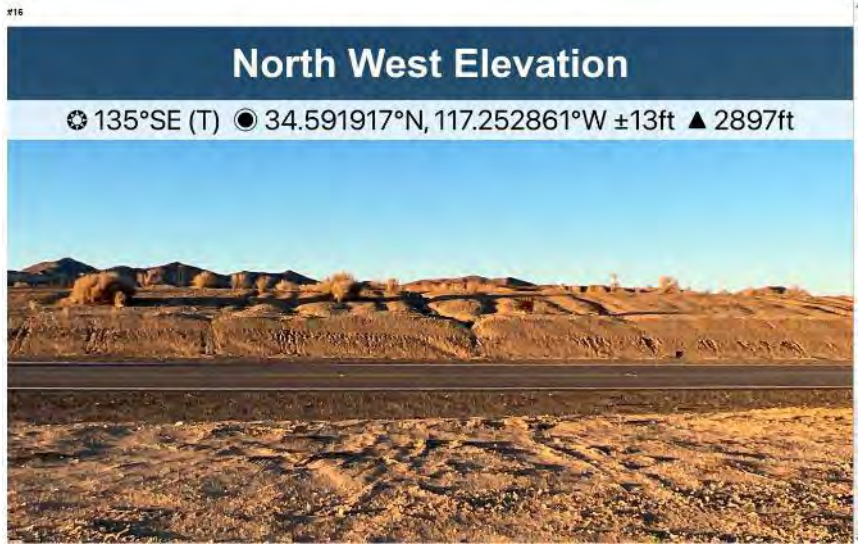


Photograph # 13. Photo depicting no features leaving the Project Site, or crossing Stoddard Wells Road.



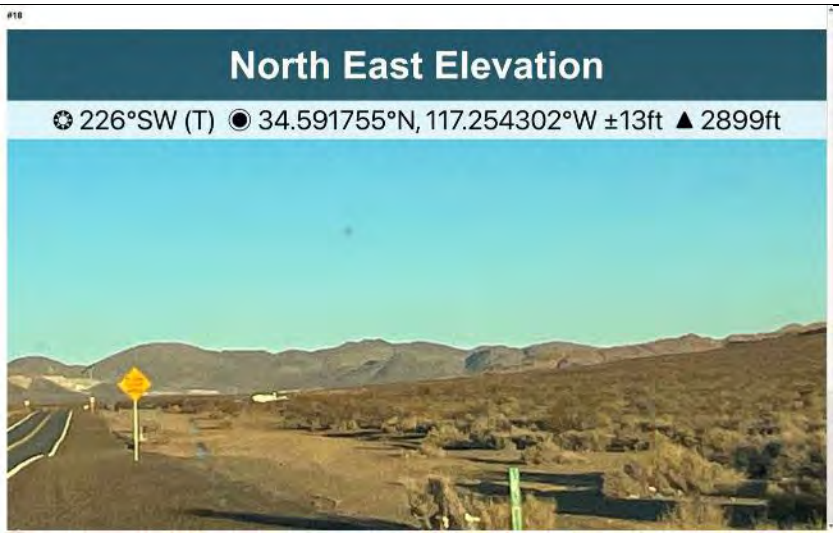


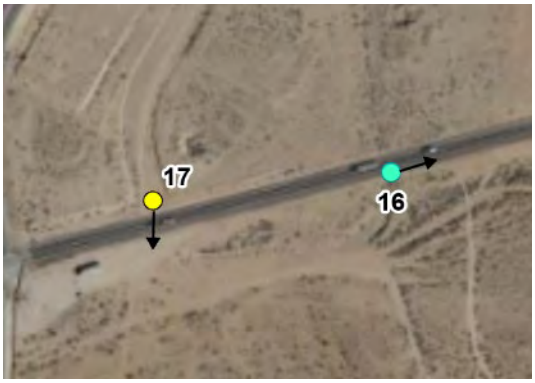
Photograph # 14. Photo depicting rills, however no channel or evidence of flow leaving the Project Site, or crossing Stoddard Wells Road.



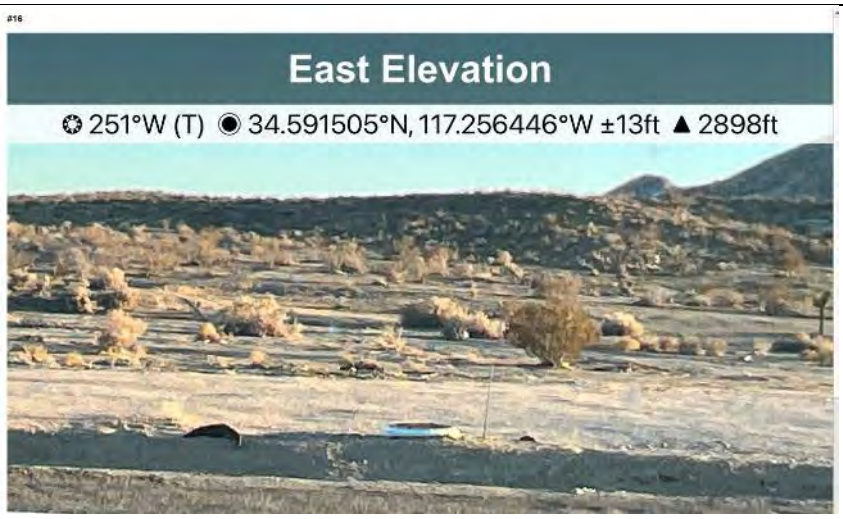


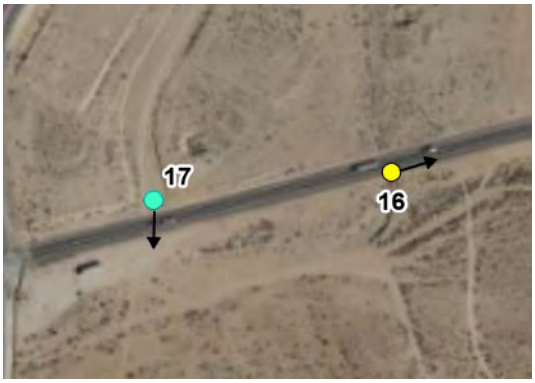
Photograph #15. Photo depicting rills, however no channel or evidence of flow leaving the Project Site, or crossing Stoddard Wells Road.





Photograph # 16. Photo on the south side of Stoddard Wells Road, facing east. No evidence of channels crossing the road perpendicular to Bell Mountain Wash.



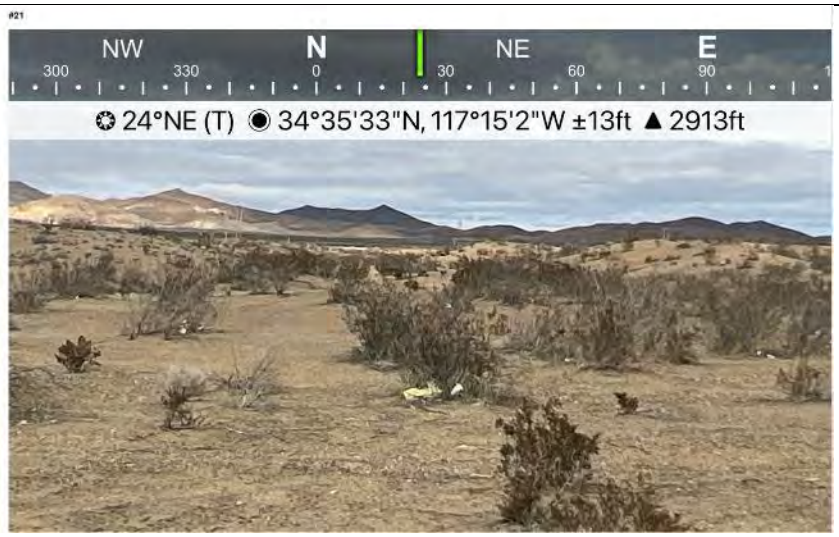


Photograph # 17. Photo facing south from the Project Site, towards Bell Mountain Wash.





Photograph # 18. Photo facing west towards I-15, depicting elevation change and no features crossing Stoddard Wells Road.

	Photograph # 19. Facing north, depicting no erosional features leaving the Project Site.
	Photograph # 20. Looking west, towards I-15 from the south side of Stoddard Wells Road.
	Photograph # 21. Looking north, depicting no erosional signatures leaving the Project Site.

	Photograph # 22. Equalizer Culvert under I-15. Water did not leave the Caltrans right of way during the December 2022 through January 4, 2023 storm events.
	Photograph # 23. Photo depicting the erosion of a trespassing off highway vehicle trail.
	Photograph # 24 (Off-Site Areas). Feature 1. Ephemeral drainage associated with Bell Mountain Wash - upstream.

	Photograph # 25 (Off-Site Areas). Feature 1. Ephemeral drainage associated with Bell Mountain Wash - downstream.
	Photograph # 26 (Off-Site Areas). Feature 2. Bell Mountain Wash - upstream.
	Photograph # 27 (Off-Site Areas). Feature 2. Bell Mountain Wash - downstream.

	Photograph # 28 (Off-Site Areas). Feature 3. Bell Mountain Wash - upstream
	Photograph # 29 (Off-Site Areas). Feature 3. Bell Mountain Wash - downstream.
	Photograph # 30 (Off-Site Areas). Feature 4. Ephemeral drainage associated with Bell Mountain Wash - upstream.

	Photograph # 31 (Off-Site Areas). Feature 5. Ephemeral drainage associated with Bell Mountain Wash - upstream.
	Photograph # 32 (Off-Site Areas). Feature 6. Ephemeral drainage associated with Bell Mountain Wash - upstream.

	Photograph # 33 (Off-Site Areas). Facing north.
	Photograph # 34 (Off-Site Areas). Facing south.
	Photograph # 35. Project Site photo.

	Photograph # 36. Project Site photo.
	Photograph # 37. Erosional signatures, the result of off highway vehicle trespass.





Photograph # 38. View to the south of Stoddard Wells Road. Note the elevation change detailed within the cross-section graphic below.

Appendix C

Mohave Ground Squirrel Protocol Survey Report

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

July 13, 2022

Ronelle Candia
DUDEK
1701 Westwind Drive, Suite 227
Bakersfield, CA 93301
Via email: rcandia@dudek.com

Subject: Results of Mohave Ground Squirrel Protocol Surveys for the Apple Valley 143 Project, Town of Apple Valley, San Bernardino County, California

Dear Ms. Candia:

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 Apple Valley 143 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

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 an additional four miles (31 acres) of utility tie-in alignments totaling 174 acres of project related impacts.

The 143-acre project parcel and 31-acre utility alignment are located within the Town of Apple Valley in San Bernardino County. The parcel is bordered by Stoddard Wells Road on the south, Johnson Road on the north, Interstate 15 on the west, and Grasshopper Road on the east. The alignment consists of a northern and southern portion. The southern alignment extends 1.25 miles northeast along Stoddard Wells Road from the southernmost portion of the parcel to its intersection with Johnson Road. The northern alignment extends 2.75 miles east along Johnson Road from Grasshopper Road to Dachshund Avenue (**Figures 1 and 2**). Both the parcel and the utility alignment are surrounded by undeveloped land consisting of disturbed creosote bush scrub. The primary source of disturbance is past and current off highway vehicle (OHV) activity. Two major distribution centers are located immediately south of the easternmost end of the alignment. The project sites can be found on U.S. Geological Survey (USGS) 7.5-minute Apple Valley North topographic quadrangle map within Section 24, Township 6 North and Range 4 West, as shown in **Figure 1**, Project Location.

Biological Setting

Vegetation communities within the project site include creosote bush scrub (CDFW CA Code 33.010.00) and creosote bush-white bursage scrub (33.140.00). Dominant plants present include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), Anderson's thornbush (*Lycium andersonii*), Cooper's boxthorn (*Lycium cooperi*), cheesebush (*Ambrosia salsola*), Mojave indigo bush (*Psorothamnus arborescens*), Nevada joint-fir (*Ephedra nevadensis*), turpentine broom (*Thamnosa montana*), winterfat (*Krascheninnikovia lanata*), Joshua tree (*Yucca brevifoli*a), blue paloverde (*Parkinsonia florida*), desert aster (*Xylorhiza tortifolia*), pencil cactus (*Cylindropuntia ramosissima*), and silver cholla (*Cylindropuntia echinocarpa*). Herbaceous plants present onsite include red-stemmed filaree (*Erodium cicutarium*), rattlesnake weed (*Euphorbia albomarginata*), fiddleneck (*Amsinckia tessellata*), and desert trumpet (*Eriogonum inflatum*). Soils consist of Helendale/Bryman Loamy Sand (WebSoil 2022). The project site is located at an elevation of approximately 2,827 feet above mean sea level (amsl).

Mohave Ground Squirrel Natural History

Mohave ground squirrels (*Xerospermophilus mohavensis*) 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 misidentified with round-tailed ground squirrels, but this is unlikely to occur with antelope grounds 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).

Methods

Mohave ground squirrel (MGS) Protocol surveys for the Apple Valley 143 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 Independent Researcher Karl Fairchild (SCP S-182820007-18333-001) on March 30, 2022. 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 consisted of setting up two 100-trap 10x10 survey grids (315x315) within the northern and southern portions of the project parcel. Both grids encompassed wash and upland habitat types. Coordinate locations for the northern and southern grids are listed in **Table 1**. 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 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 2.** MGS Survey and Trapping Forms, including weather details, are presented in **Attachment A** and **Attachment B**.

TABLE 1
UTM COORDINATES FOR CORNERS OF NORTH AND SOUTH LIVE TRAPPING GRIDS

Grid	Corner	Zone	Easting	Northing	Surveyor
North	NW	11	477085	3828805	Karla Flores
North	SW	11	477085	3828490	Karla Flores
North	NE	11	477400	3828805	Karla Flores
North	SE	11	477400	3828490	Karla Flores
South	NW	11	477080	3828415	Karl Fairchild
South	SW	11	477080	3828100	Karl Fairchild
South	NE	11	477395	3828415	Karl Fairchild
South	SE	11	477395	3828100	Karl Fairchild

*Datum: WGS 1984

TABLE 2
MOHAVE GROUND SQUIRREL SURVEY DATE AND TYPE

Session	Date	Survey Type
1	March 31-April 4, 2022	LT/CT
2	May 15-19, 2022	LT/CT
3	June 22-26, 2022	LT/CT

LT: Live Trapping CT: Camera Trapping

Camera Trapping

Camera trapping surveys were used to supplement live-trapping efforts and consisted of setting up ten 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 3**.

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 3
COORDINATE LOCATIONS FOR CAMERA TRAP STATIONS

Camera	Zone	Easting	Northing	Camera	Zone	Easting	Northing
1	11	476934	3828283	6	11	477724	3828214
2	11	476961	3828513	7	11	477781	3828889
3	11	477200	3828065	8	11	479313	3828849
4	11	477210	3828620	9	11	480057	3828838
5	11	477190	3828258	10	11	481372	3828859

*Datum: WGS 1984

Results

Visual Survey

Based on the habitat data collected during the visual survey, some MGS habitat is present onsite. Primary MGS food plants such as winterfat (*Krascheninikovia lanata*) are present in small densities along wash habitats. Additionally, other plants identified as being associated with MGS in microhistology and metabarcoding studies (Leitner 2022) are present onsite, these include: creosote bush (*Larrea tridentata*), Anderson's boxthorn (*Lycium andersonii*), Cooper's boxthorn (*Lycium cooperi*), silver cholla (*Cylindropuntia echinocarpa*), Joshua tree (*Yucca brevifolia*), fiddleneck (*Amsinckia tessellata*). Visual observations of burrows and burrow complexes showed that soil onsite is suitable for burrowing.

Live Trapping

No Mohave ground squirrels were captured during the three live-trapping survey periods. Live-trapping captures consisted entirely of non-target species including white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), Great Basin whiptail (*Aspidoscelis tigris*) and black-throated sparrow (*Amphispiza bilineata*) (**Table 4; Figure 4**).

TABLE 4
RESULTS OF MOHAVE GROUND SQUIRREL PROTOCOL SURVEYS

Common name	Scientific name	North Grid			South Grid		
		S1	S2	S3	S1	S2	S3
White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	13	16	10	26	9	18
Great Basin whiptail	*Aspidoscelis tigris*	0	0	1	0	1	0
Black-throated sparrow	*Amphispiza bilineata*	0	0	1	0	2	1
	Total	**13**	**16**	**12**	**26**	**12**	**19**

Camera Trapping

No Mohave ground squirrels were detected in the images collected during the camera trapping surveys. Species observed utilizing the camera trap stations included: white-tailed antelope ground squirrel, Panamint kangaroo rat, black-tailed jackrabbit, little pocket mouse, desert kit fox, coyote, Bell's sparrow, and Great Basin whiptail.

TABLE 5
RESULTS OF MOHAVE GROUND SQUIRREL CAMERA TRAPPING

Common name	Scientific name
Bell's sparrow	*Artemisiospiza belli*
Black-tailed jackrabbit	*Lepus californicus*
Common raven	*Corvus corax*
Coyote	*Canis latrans*
Desert kit fox	*Vulpes macrotis*
Great Basin whiptail	*Aspidoscelis tigris*
Little pocket mouse	*Perognathus longimembris*
Panamint kangaroo rat	*Dipodomys panamintinus*
White-tailed antelope ground squirrel	*Ammospermophilus leucurus*

Conclusions

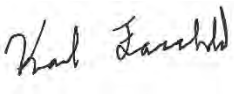
The Apple Valley 143 Project is located in the southern portion of the MGS range where MGS occurrences are rare, and population densities have historically been low. Additionally, the site is located outside of the MGS core population areas, peripheral population areas and linkage areas described in 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, recorded 2.3 miles southwest from the project site, was recorded in 1977 west of Interstate 15 (I-15) which may act as a barrier to MGS dispersal. The nearest MGS occurrence on the east side of I-15 was recorded in 1919, approximately 4.8 miles southwest from the site. The most recent occurrences of MGS have been recorded in 2007 west of the Oro Grande/Mojave River approximately 6.7 miles northwest from the project site.

Although some suitable habitat was detected during the visual survey, including the presence of preferred MGS food plants (winterfat), no MGS were captured 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, 2022.

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
Independent Researcher

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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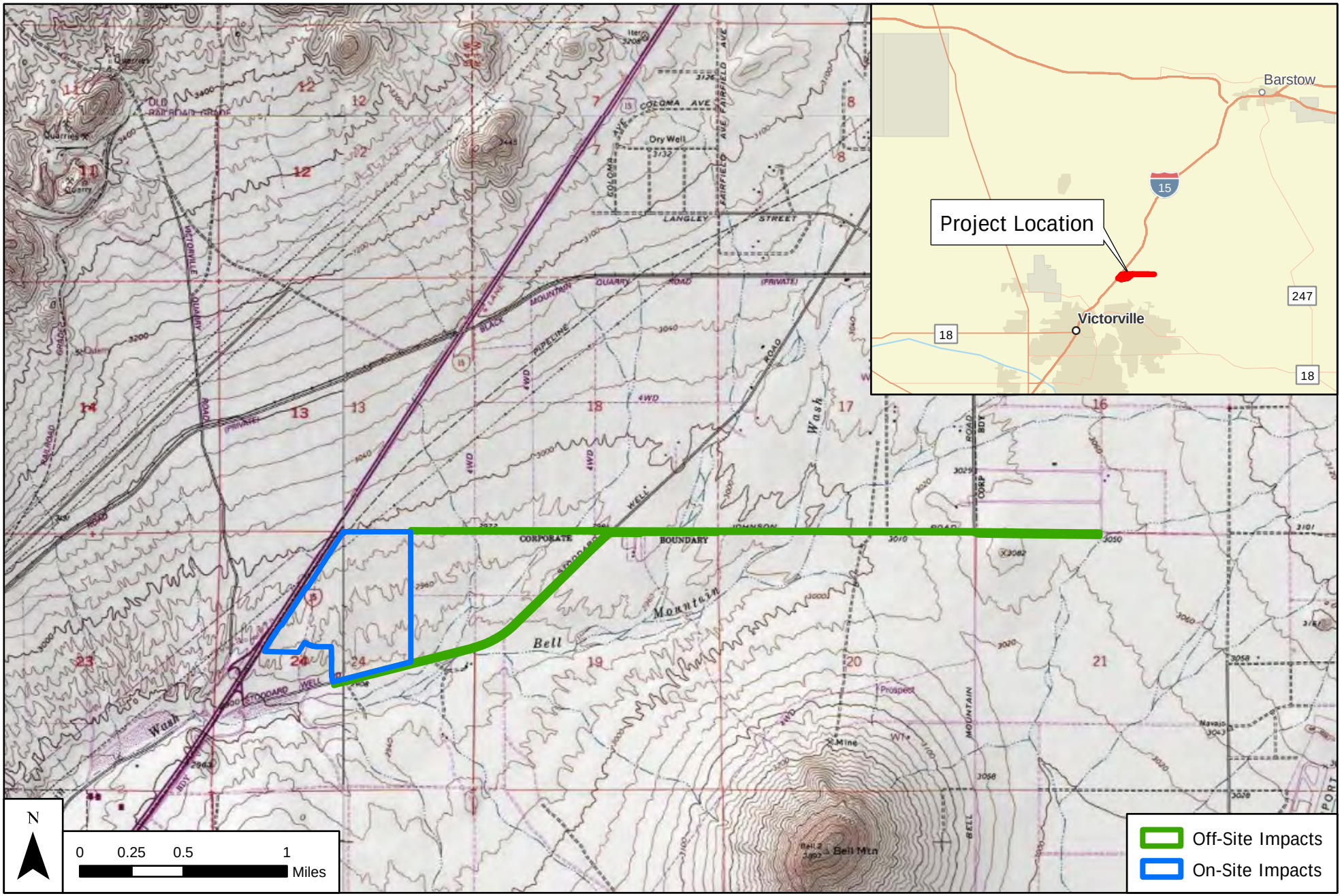
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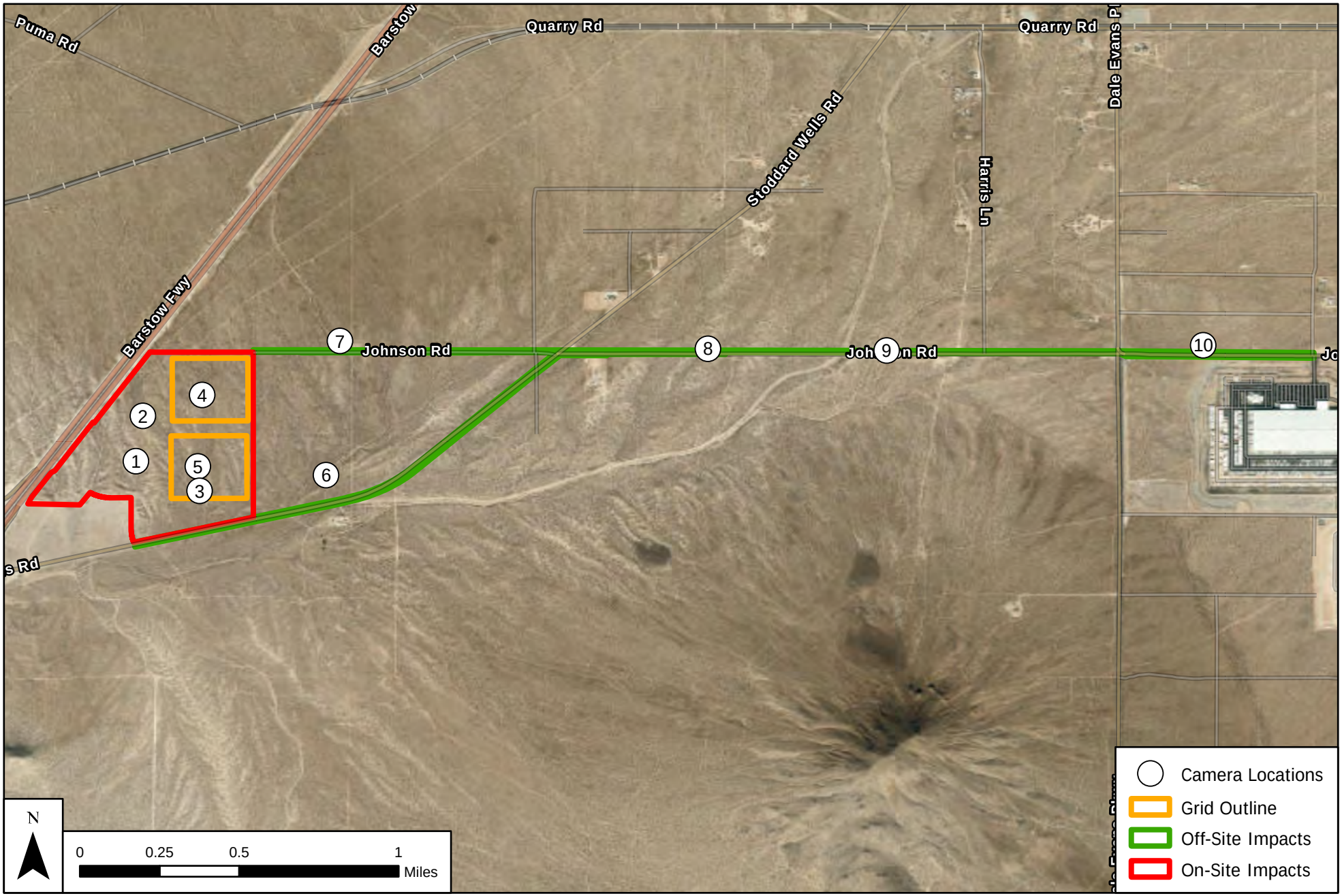
SOURCE: ESRI

Apple Valley 143 Project

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Figure 1

Project Location



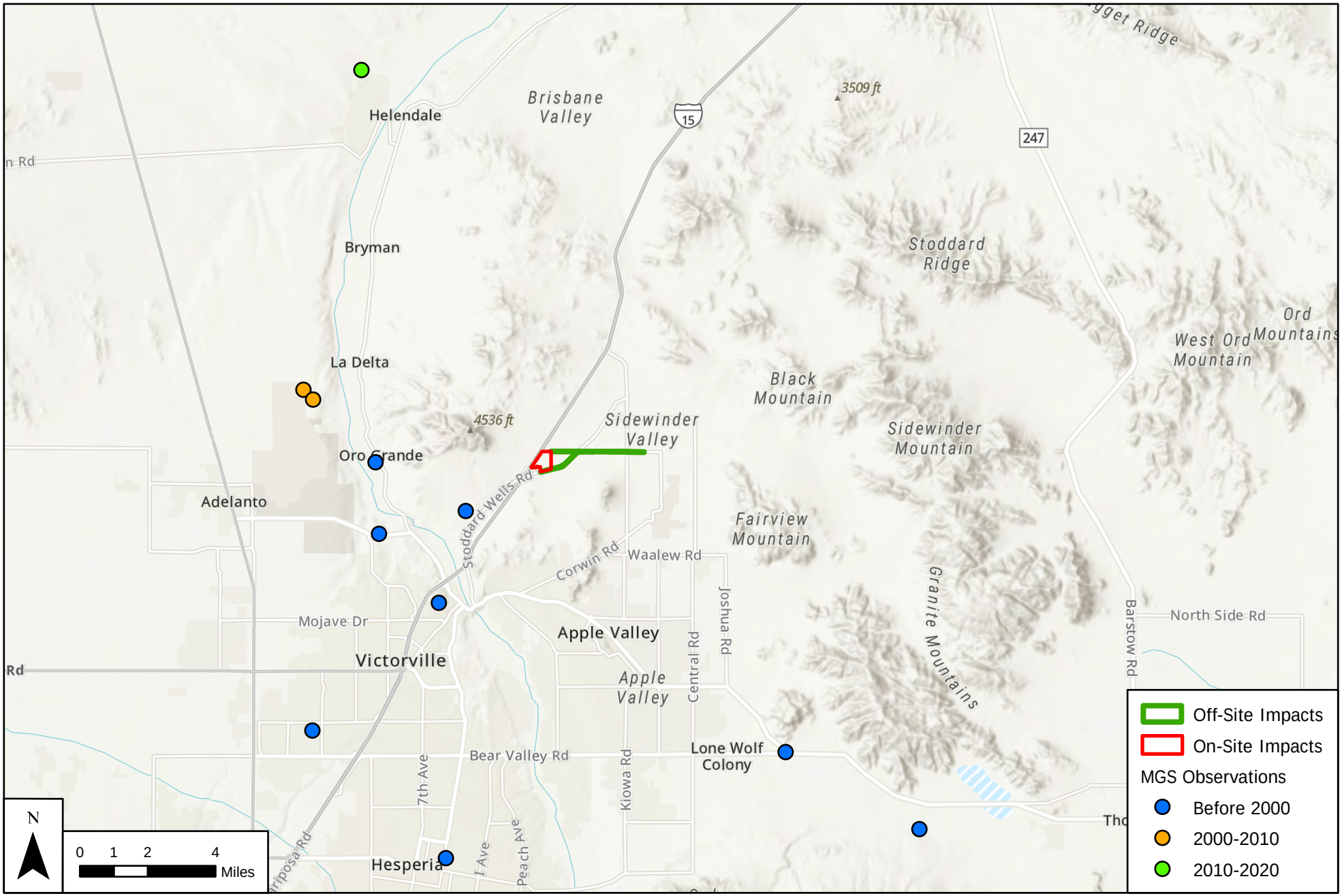
SOURCE: ESRI

Apple Valley 143 Project

DIPODOMYS
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Figure 2

Survey Area



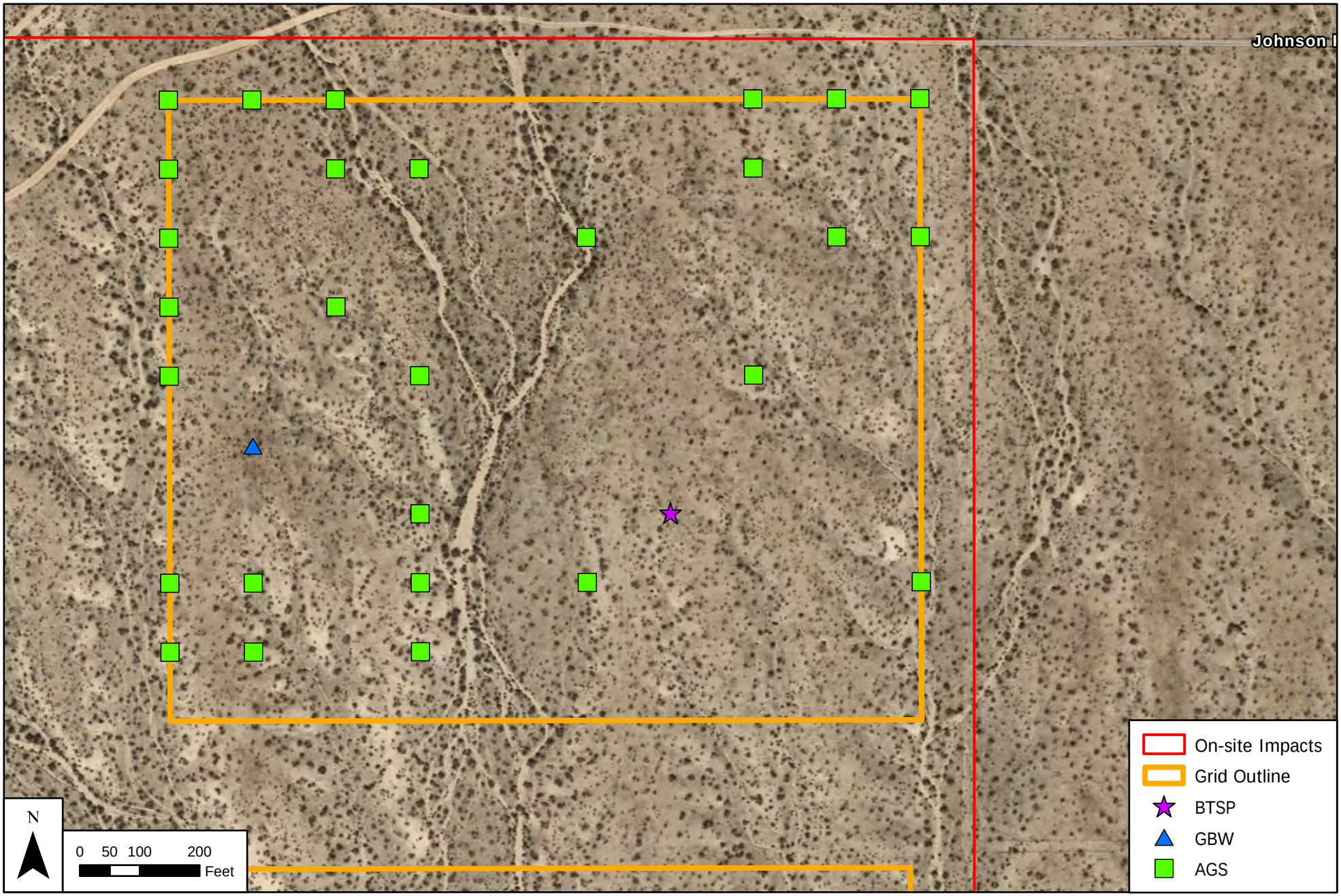
SOURCE: ESRI

Apple Valley 143 Project

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Figure 3

Historical MGS Occurrences



SOURCE: ESRI

Apple Valley 143 Project

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Figure 4a

North Grid Trapping Results



SOURCE: ESRI

Apple Valley 143 Project

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Figure 4b

South Grid Trapping Results

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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: Apple Valley 143 Project-North Grid Property owner: Covington Group, Inc.

Location: Township 06N ; Range 04W ; Section 24 ; ¼ Section _____

Quad map/series: Apple Valley North UTM coordinates: NW:477085 3828805 SW: 477085 3828490 NE: 477400 3828805 SE: 477400 3828490
GPS coordinates of trapping-grid corners

Acreage of Project Site: 174 Acreage of potential MGS habitat on site: 174

Total acreage visually surveyed on project site: 174 Date(s): 3/30/2022
visual surveys

Visual surveys conducted by: Karla Flores; Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 174 Number of sampling grids: 2

Trapping conducted by: Karla Flores; Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST March 31-April 4, 2022 SECOND May 15-19, 2022 THIRD June 22-26, 2022
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: *Larrea tridentata, Yucca brevifolia, Ambrosia dumosa, Ambrosia salsola, Ephedra nevadensis*
other perennials: Lycium cooperi, Lycium andersonii, Thamnosma montana, Psorothamnus arborescens, Xylorhiza tortifolia, Cylindropuntia echinocarpa
dominant annuals: *Erodium cicutarium, Eriogonum inflatum, Euphorbia albomarginata*
other annuals: _____

Land forms (mesa, bajada, wash): Bajada, wash

Soils description: Helendale/Bryman Loamy Sand

Elevation: 2,827 feet Slope: 2-5%

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: Apple Valley 143 Project-South Grid Property owner: Covington Group, Inc.

Location: Township 06N ; Range 04W ; Section 24 ; ¼ Section _____

Quad map/series: Apple Valley North UTM coordinates: NW: 477080 3828415 SW: 477080 3828100 NE: 477395 3828415 SE: 477395 3828100 GPS coordinates of trapping-grid corners

Acreage of Project Site: 174 Acreage of potential MGS habitat on site: 174

Total acreage visually surveyed on project site: 174 Date(s): 3/30/2022 visual surveys

Visual surveys conducted by: Karla Flores; Karl Fairchild names of all persons by date (use back of form, if needed)

Total acres trapped: 174 Number of sampling grids: 2

Trapping conducted by: Karl Fairchild; Karla Flores names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST March 31-April 4, 2022 SECOND May 15-19, 2022 if required THIRD June 22-26, 2022 if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: *Larrea tridentata, Yucca brevifolia, Ambrosia dumosa, Ambrosia salsola, Ephedra nevadensis*

other perennials: *Lycium cooperi, Lycium andersonii, Thamnosma montana, Psorothamnus arborescens, Xylorhiza tortifolia, Cylindropuntia echinocarpa*

dominant annuals: *Erodium cicutarium, Eriogonum inflatum, Euphorbia albomarginata*

other annuals: _____

Land forms (mesa, bajada, wash): Bajada, wash

Soils description: Helendale/Bryman Loamy Sand

Elevation: 2,927 feet Slope: 2-5%

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: 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 º Fahrenheit), soil temperature (min-max º Fahrenheit), wind speed (mph) and percent cloud cover (%).

Date		Air Temperature (°F)		Soil temperature (°F)		Wind (mph)		Cloud Cover (%)	
		Min	Max	Min	Max	Start	End	Start	End
3/31/2022	1	50	80	59	80.7	2.3	4.9	60	20
4/1/2022	1	53.4	81.3	52.9	84.1	1.6	4.6	0	0
4/2/2022	1	58.2	81.2	55.3	82.3	2.1	10.9	0	30
4/3/2022	1	53.8	79.8	60.4	83.7	2.3	8.5	50	60
4/4/2022	1	60.5	85.5	60.7	78.4	3.9	19.3	0	60
5/15/2022	2	80.2	90	69.9	77.5	3.1	5.2	35	5
5/16/2022	2	73.5	90	70.3	79.8	11.9	10	0	0
5/17/2022	2	64.6	90	68	71.5	1.7	8.5	0	0
5/18/2022	2	72.3	90	67.1	71.2	3.4	2.6	0	0
5/19/2022	2	74.1	90	71.7	74.2	3.4	8.6	2	5
6/22/2022	3	74.5	78.5	78.5	92.5	3.2	16.8	75	100
6/23/2022	3	68.2	90	71.1	77.1	2.6	2	5	5
6/24/2022	3	75	90	73.4	80	2.2	9.5	0	0
6/25/2022	3	74.1	90	74.2	78.1	1.4	7.1	0	0
6/26/2022	3	73.9	90	73.3	78.2	1.5	1.1	0	0

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Attachment C

Common name	Scientific Name
Plants	
Anderson's thornbush	*Lycium andersoni*
beavertail	*Opuntia basilaris*
blue paloverde	*Parkinsonia florida*
cheesebush	*Ambrosia salsola*
Cooper's boxthorn	*Lycium cooperi*
creosote bush	*Larrea tridentata*
desert aster	*Xylorhiza tortifolia*
desert trumpet	*Eriogonum inflatum*
Mojave indigo bush	*Psorothamnus arborescens*
Joshua tree	*Yucca brevifolia*
Mojave spineflower	*Chorizanthe sp.*
Mormon tea	*Ephedra nevadensis*
pencil cactus	*Cylindropuntia ramosissima*
silver cholla	*Cylindropuntia echinocarpa*
turpentine broom	*Thamnosa montana*
white bursage	*Ambrosia dumosa*
Birds	
ash-throated flycatcher	*Myiarchus cinerascens*
Bell's sparrow	*Artemisiospiza belli*
black-throated sparrow	*Amphispiza bilineata*
common raven	*Corvus corax*
horned lark	*Eremophila alpestris*
house finch	*Haemorhous mexicanus*
house sparrow	*Passer domesticus*
mourning dove	*Zenaida macroura*
verdin	*Auriparus flaviceps*
western tanager	*Piranga ludoviciana*
white-crowned sparrow	*Zonotrichia leucophrys*
yellow-rumped warbler	*Setophaga coronata*
Mammals	
black-tailed jackrabbit	*Lepus californicus*
coyote	*Canis latrans*
Panamint kangaroo rat	*Dipodomys panamintinus*
white-tailed antelope ground squirrel	*Ammospermophilus leucurus*
Reptiles	
Great Basin whiptail	*Aspidoscelis tigris*
long-nosed leopard lizard	*Gambelia wislizenii*
northern Mohave rattlesnake	*Crotalus scutulatus*
side-blotched lizard	*Uta stansburiana*
southern desert horned lizard	*Phrynosoma platyrhinos*
western zebra-tailed lizard	*Callisaurus draconoides*

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Attachment D



Photograph 1: Representative vegetation at the Apple Valley 143 Project, facing southeast.



Photograph 2: Representative trap station. Station consists of pin flag, XLK Sherman trap and cardboard A-frame to provide artificial shade.



Photograph 3: Representative camera trap station. Camera stations consisted of a Bushnell camera secured to a 36-inch u-post facing a bait tube.



Photograph 4: White-tailed antelope ground squirrel (*Ammospermophilus leucurus*) captured.



Photograph 5: Black-throated sparrow (*Amphispiza bilineata*) captured on the south grid.



Photograph 6: Desert horned lizard (*Phrynosoma platyrhinos*).



Photograph 7: Northern Mohave rattlesnake (*Crotalus scutulatus*), south grid.



Photograph 8: Long-nosed leopard lizard (*Gambelia wislizenii*), south grid.

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

November 27, 2022

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 0.5-acre extension to the 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 0.5-acre extension to 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 an additional four miles (31 acres) of utility tie-in alignments totaling 174 acres of project related impacts, and was recently updated to include a culvert installation, which adds an additional 0.5 acres of off-site impacts. This MGS habitat assessment was conducted to determine the potential for MGS to occur within the culvert installation footprint.

The 0.5-acre project expansion is located within the Town of Apple Valley in San Bernardino County, California. The extension footprint is bordered by Stoddard Wells Road on the north, an unnamed dirt road on the south, Pauma Street on the west, and an unnamed dirt road on the east (**Figures 1-2**). The culvert extension is surrounded by undeveloped land consisting of disturbed creosote bush scrub to the south, and a widened shoulder of Stoddard Wells Road to the east and west, which is frequently used as a rest/staging area for tractor trailers. The primary source of disturbance is past and current off highway vehicle (OHV) activity. The project site is located on the U.S. Geological Survey (USGS) 7.5-minute Victorville topographic quadrangle map within Section 24, Township 6 North and Range 4 West, as shown in **Figure 1**, Project Location.

Mohave Ground Squirrel Natural History

Mohave ground squirrels (*Xerospermophilus mohavensis*) 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 misidentified with round-tailed ground squirrels, but this is unlikely to occur with antelope grounds 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 9-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 November 19, 2022, by permitted biologists Karla Flores (MOU Principal Investigator, Scientific Collection Permit SC-10572) and Karl Fairchild (Independent

Researcher, SCP S-182820007-18333-001). The habitat assessment consisted of walking meandering transects throughout the project footprint while recording vegetation communities and individual plants that provide suitable habitat for MGS. Annuals/forbs associated with MGS were not recorded, because the survey took place outside the flowering season for many of these plants. Comprehensive burrow mapping was also not conducted because the habitat assessment occurred during a period of dormancy for MGS, and any open/observable burrows are unlikely to be MGS burrows (Leitner and LaRue 2014). Nevertheless, the presence of burrows within the survey area was noted as an indication that the soil is friable and suitable for burrowing rodents.

Results

The 9-quad CNDDB query yielded 15 MGS occurrences within the 9-quad search. The most recent of these occurrences was recorded in 2011, approximately 11 miles southwest of the survey area. The closest MGS occurrence was documented in 2007, approximately seven miles northwest of the survey area (**Figure 3**).

The survey area consists of disturbed bare ground and creosote bush scrub (**Figure 4**). The site is traversed by two drainage channels extending across the survey area, with flow in an east to west direction. Shrubs present onsite are scattered and sparse and consist primarily of creosote bush (*Larrea tridentata*), allscale saltbush (*Atriplex polycarpa*), and cheesebush (*Ambrosia salsola*). Other shrubs present in lower densities include Cooper's boxthorn (*Lycium cooperi*) and white bursage (*Ambrosia dumosa*). Annuals present onsite included short-podded mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), fiddleneck (*Amsinckia tessellata*) and red-stemmed filaree (*Erodium cicutarium*). Soils consist of Cajon-Arizo Complex. Elevation onsite is approximately 2776 feet above mean sea level.

Weather conditions during the habitat assessment were generally sunny with temperatures between 54° and 58°F, wind speeds between 8.5 and 10 mph, and 5% cloud cover. Side-blotched lizard (*Uta stansburiana*) was the only wildlife species observed during the habitat assessment.

Conclusions and Recommendations

The 0.5-acre extension to the Apple Valley 143 project footprint consists largely of disturbed creosote bush scrub, a vegetation community associated with MGS occurrences (CDFW 2019). While none of the preferred MGS food plants, such as spiny hopsage or winterfat, are present onsite, other plants known to provide forage for MGS are present onsite. These plants consist of 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 onsite, albeit low quality due to high levels of OHV disturbance.

Results of the CNDDB query showed that the most recent MGS occurrence was documented in 2011, approximately 11 miles southwest 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 2007 seven miles northwest of the project site. Moreover, 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 the 2007 occurrence. This suggests that despite low densities of MGS present in the

southern portion of the MGS range, a relict population may persist. These MGS occurrences, however, are separated from the survey area by I-15 and 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, 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-quality habitat present.

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 generally 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. Presence of MGS is evaluated using established survey protocols.

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, CEO

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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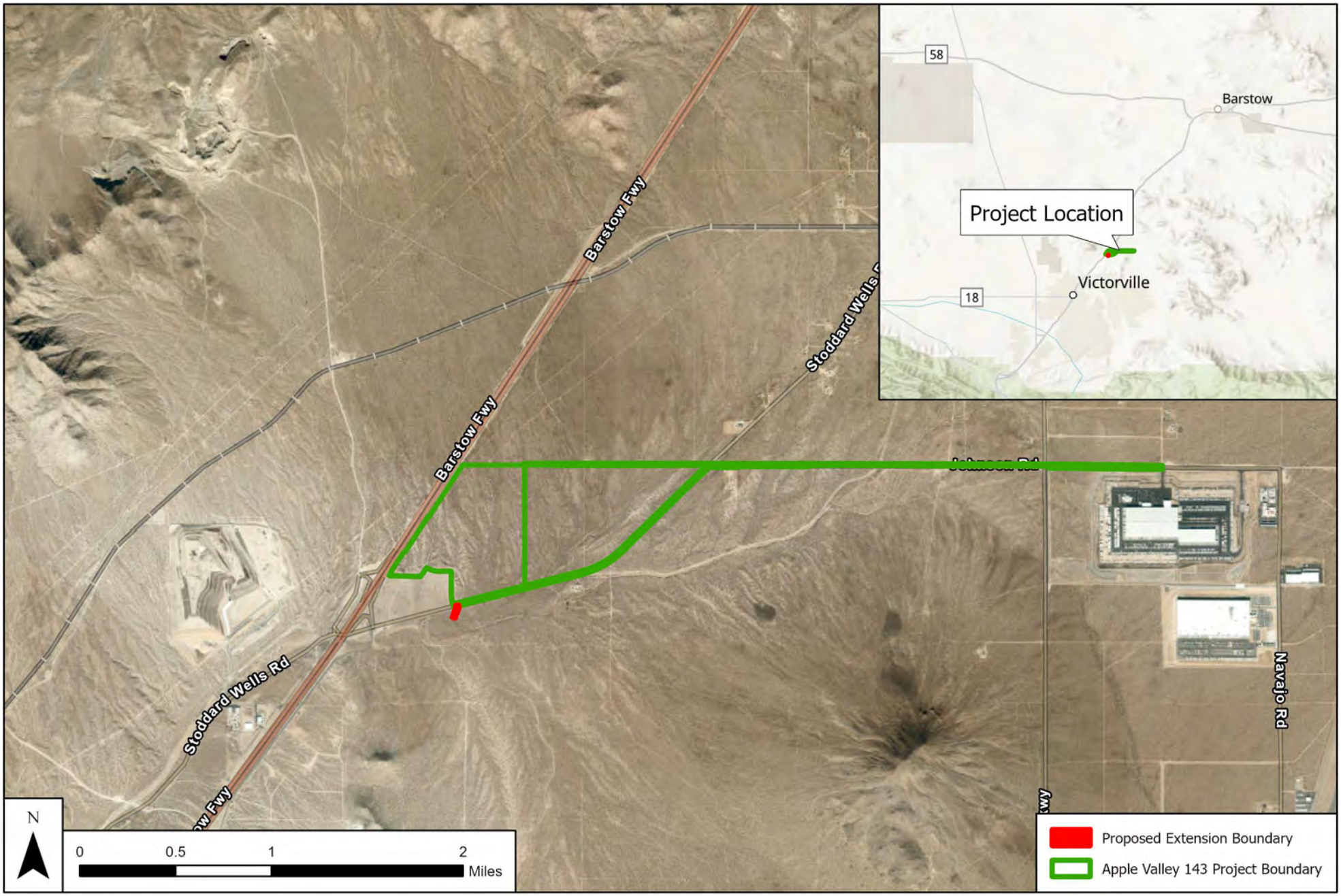
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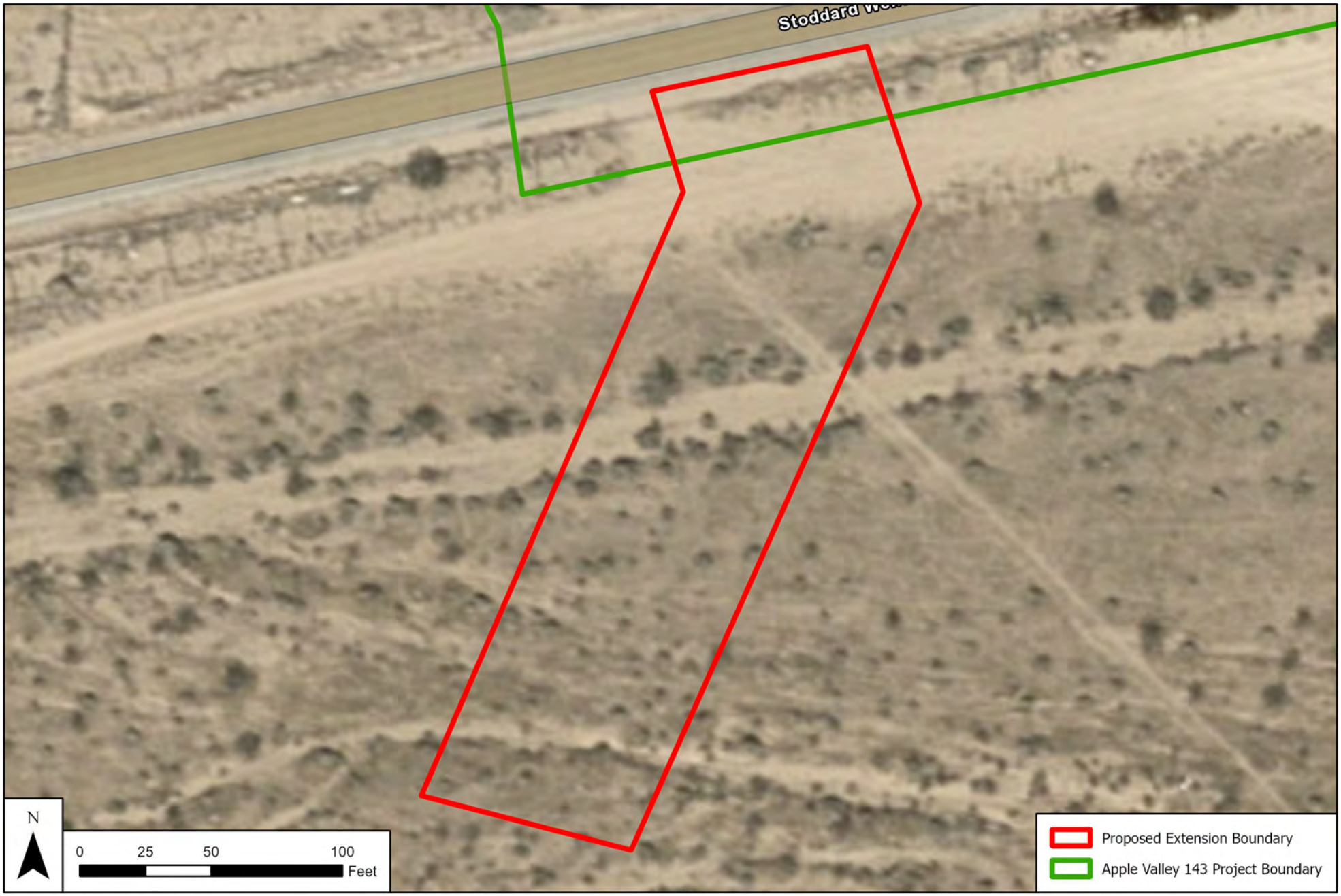
SOURCE: ESRI

Apple Valley 143 Extension Project

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Figure 1

Project Location



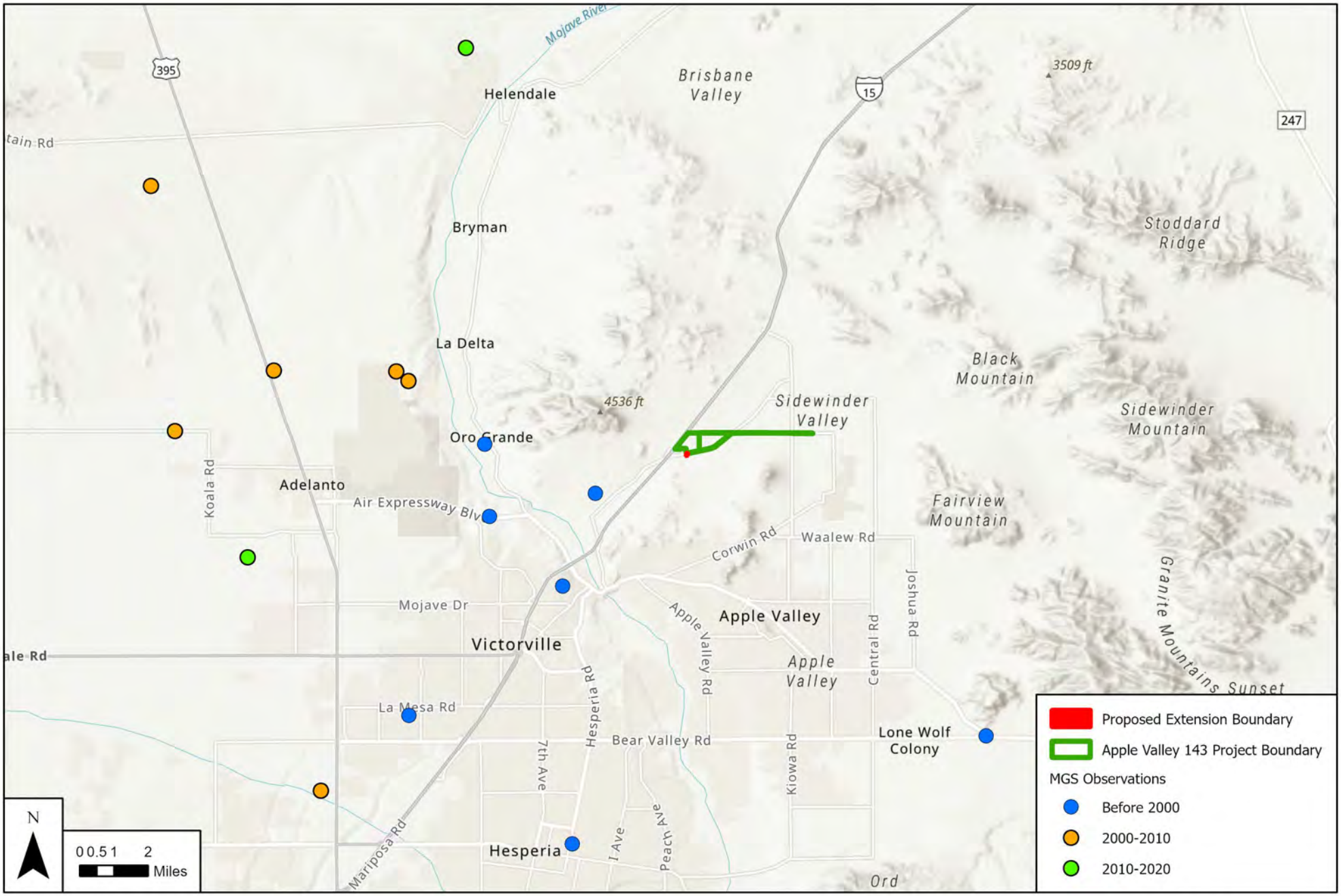
SOURCE: ESRI

Apple Valley 143 Extension Project

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Figure 2

Survey Area



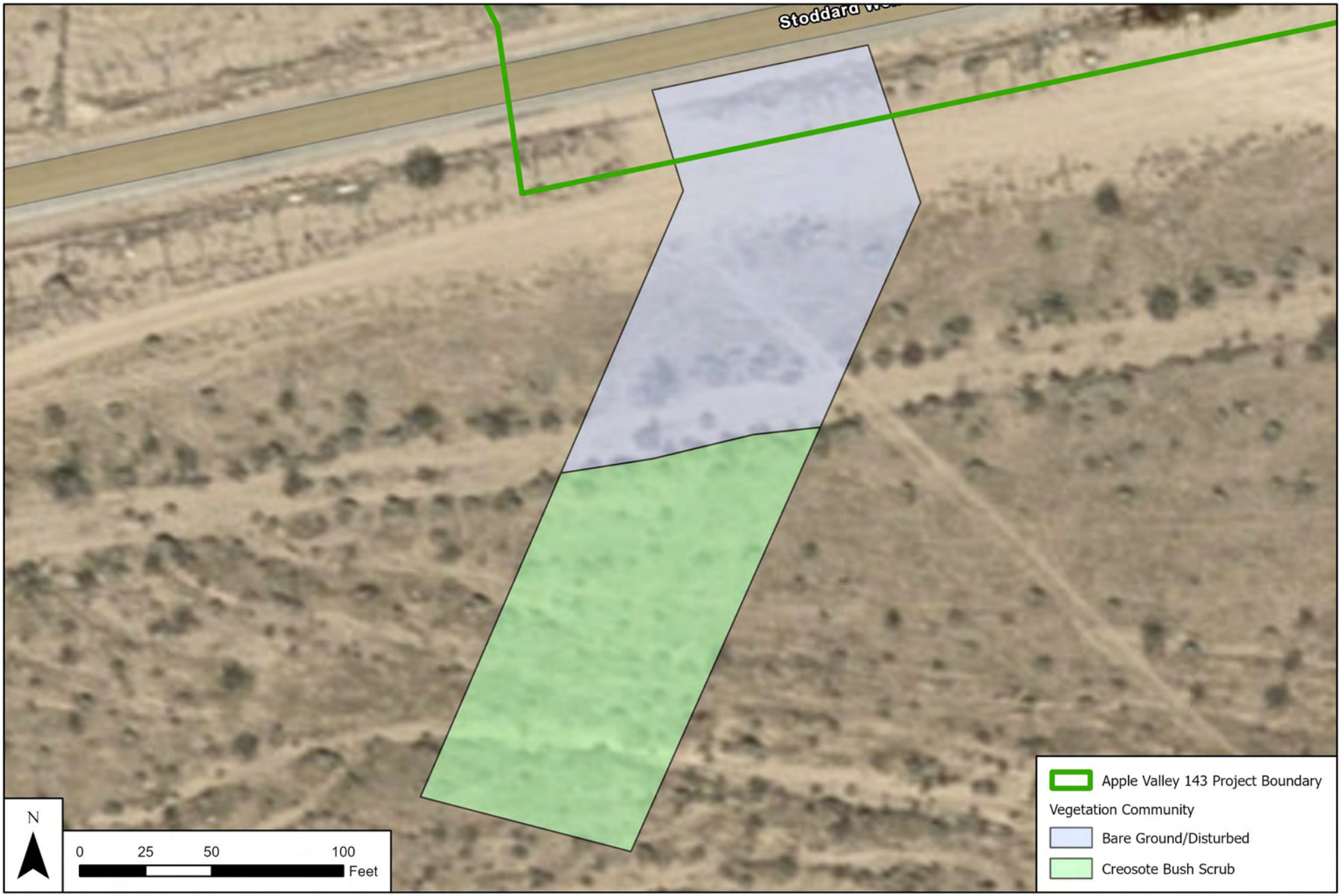
SOURCE: ESRI

Apple Valley 143 Extension Project

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Figure 3

Historical MGS Occurrences



SOURCE: ESRI

Apple Valley 143 Extension Project

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Figure 4

Vegetation Communities

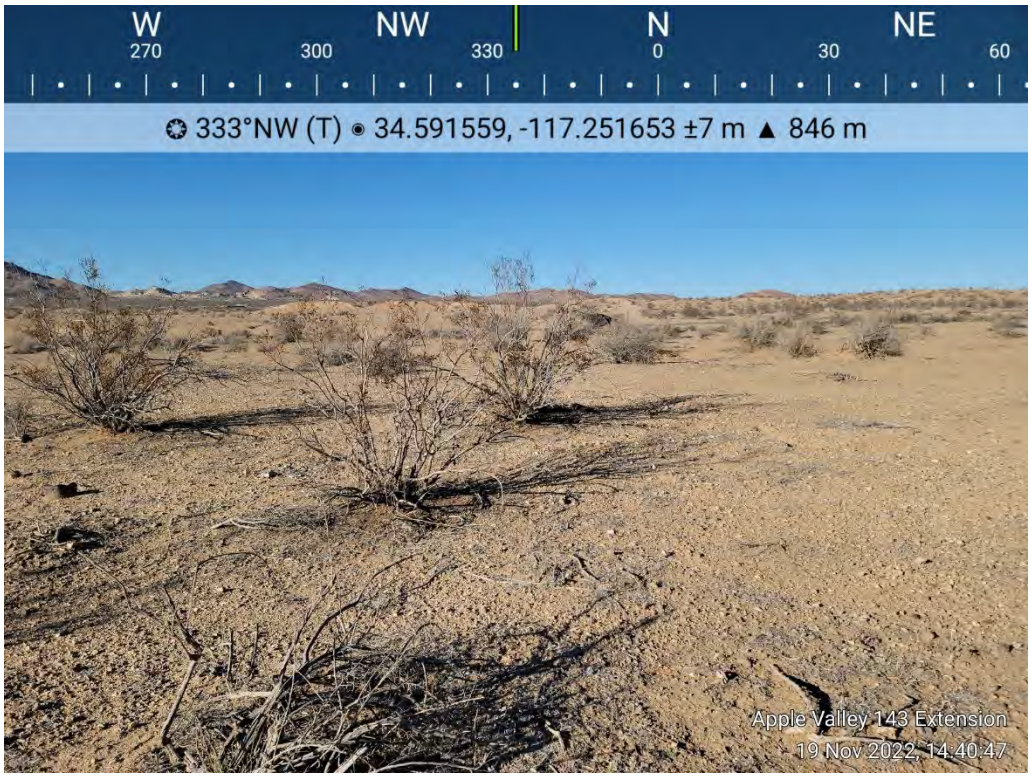


Photo 1: Representative vegetation onsite, facing northwest.



Photo 2: Representative vegetation onsite, facing north.



Photo 3: Representative vegetation onsite, facing south.



Photo 4: Northernmost drainage represented on aerial map within culvert expansion area.



Photo 5: Southernmost drainage represented on aerial map within culvert expansion area.

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

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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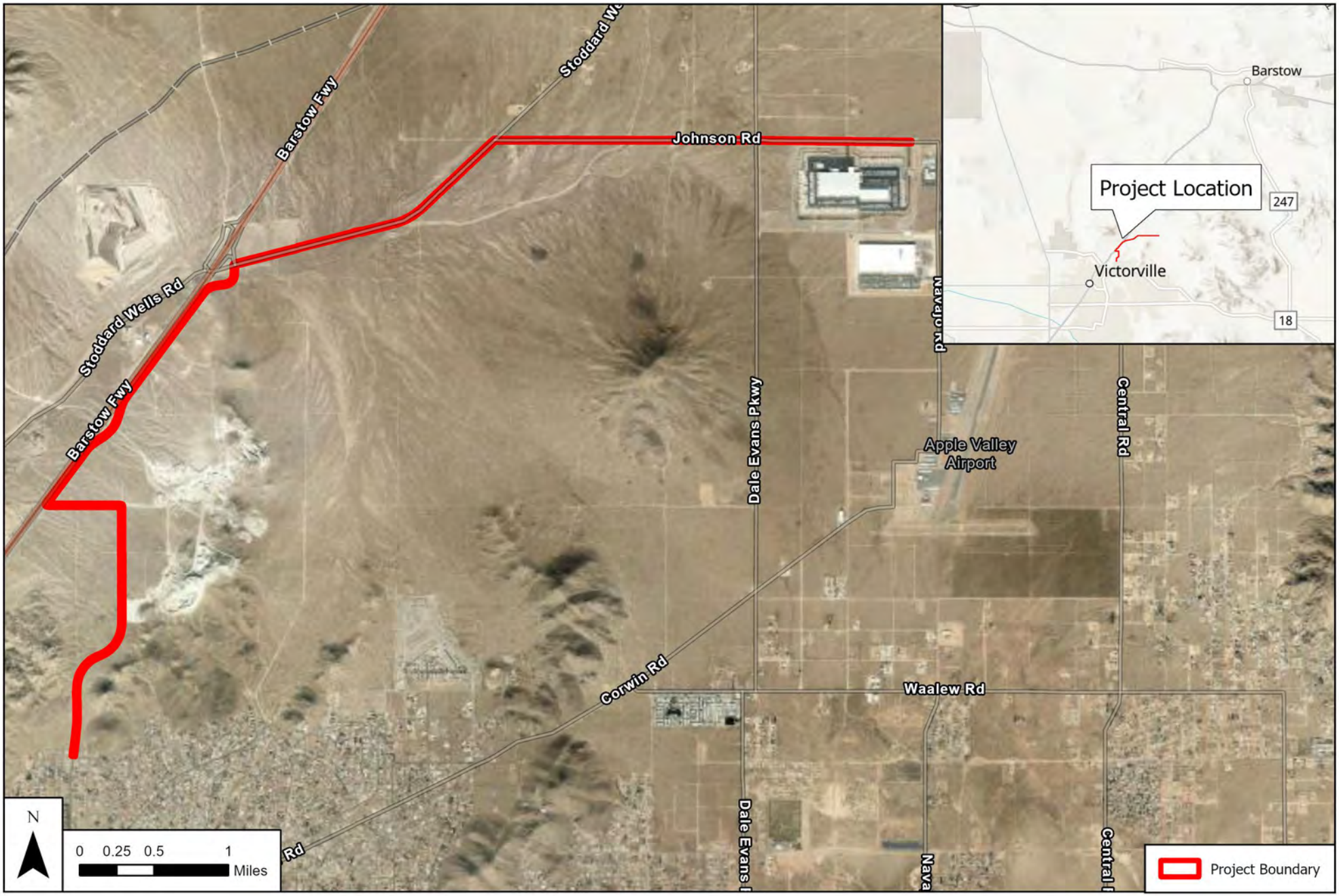
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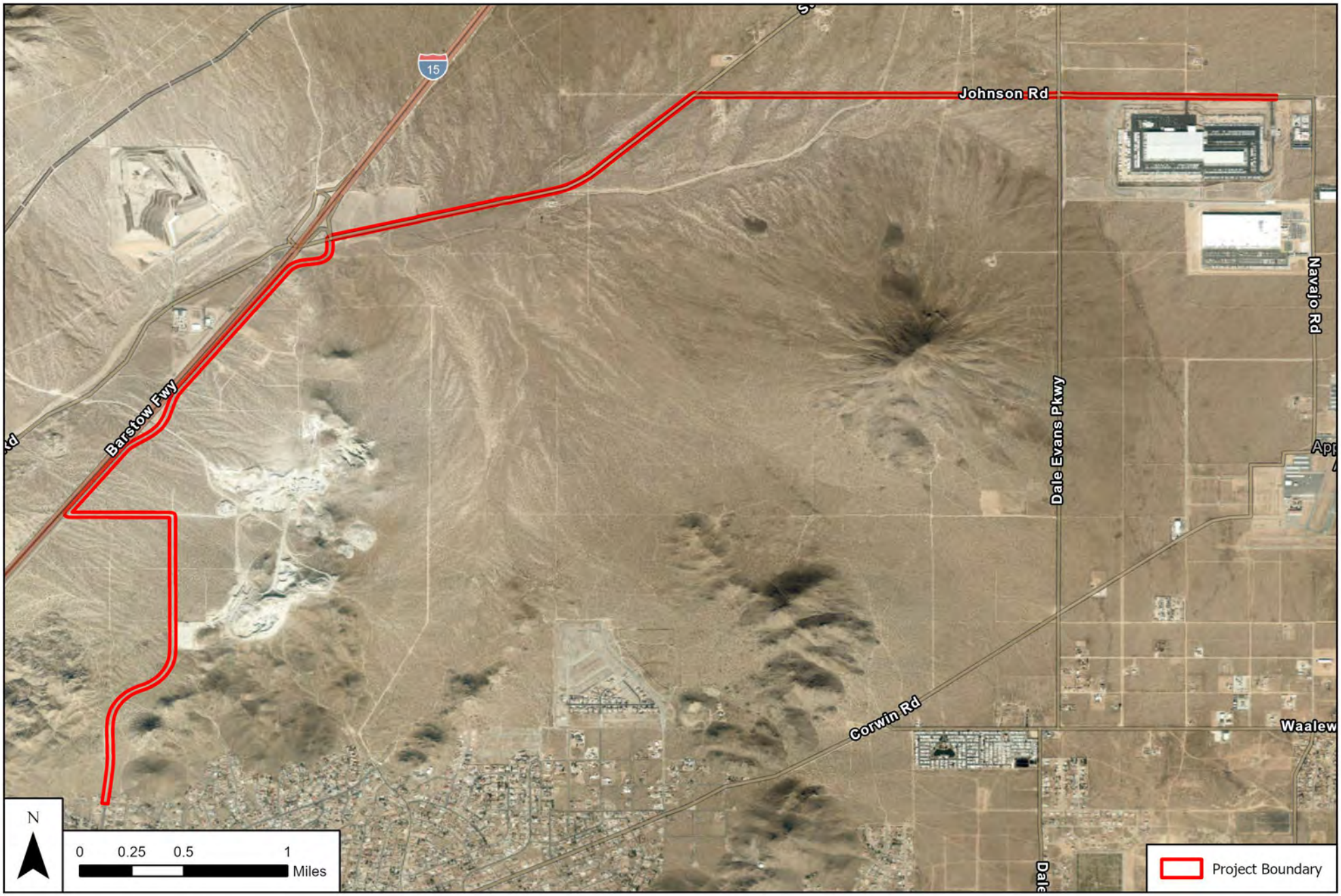
SOURCE: ESRI

Apple Valley 143 Utility Alignment Project

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ECOLOGICAL CONSULTING, LLC

Figure 1

Project Location



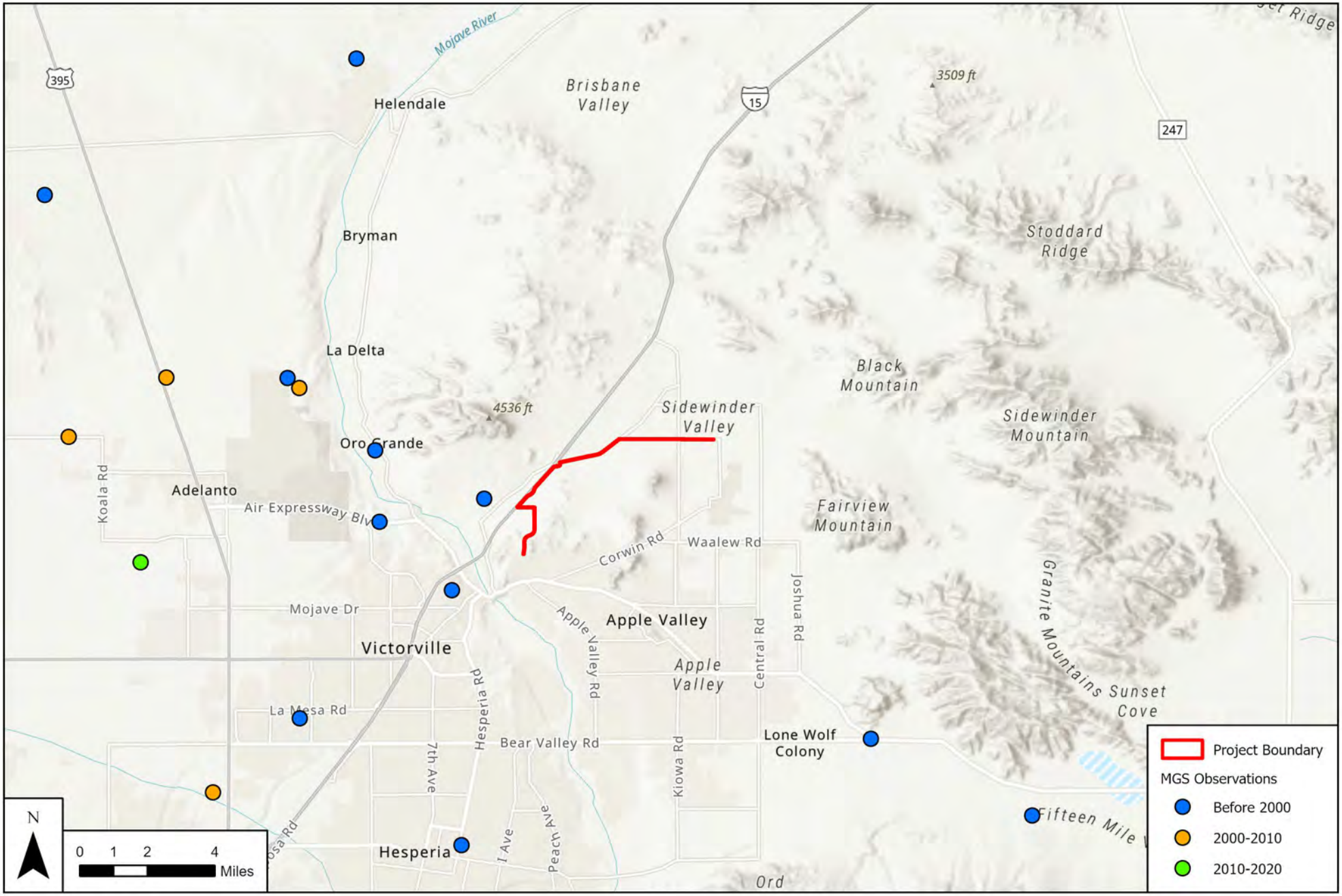
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Apple Valley 143 Utility Alignment Project

Figure 2

Survey Area



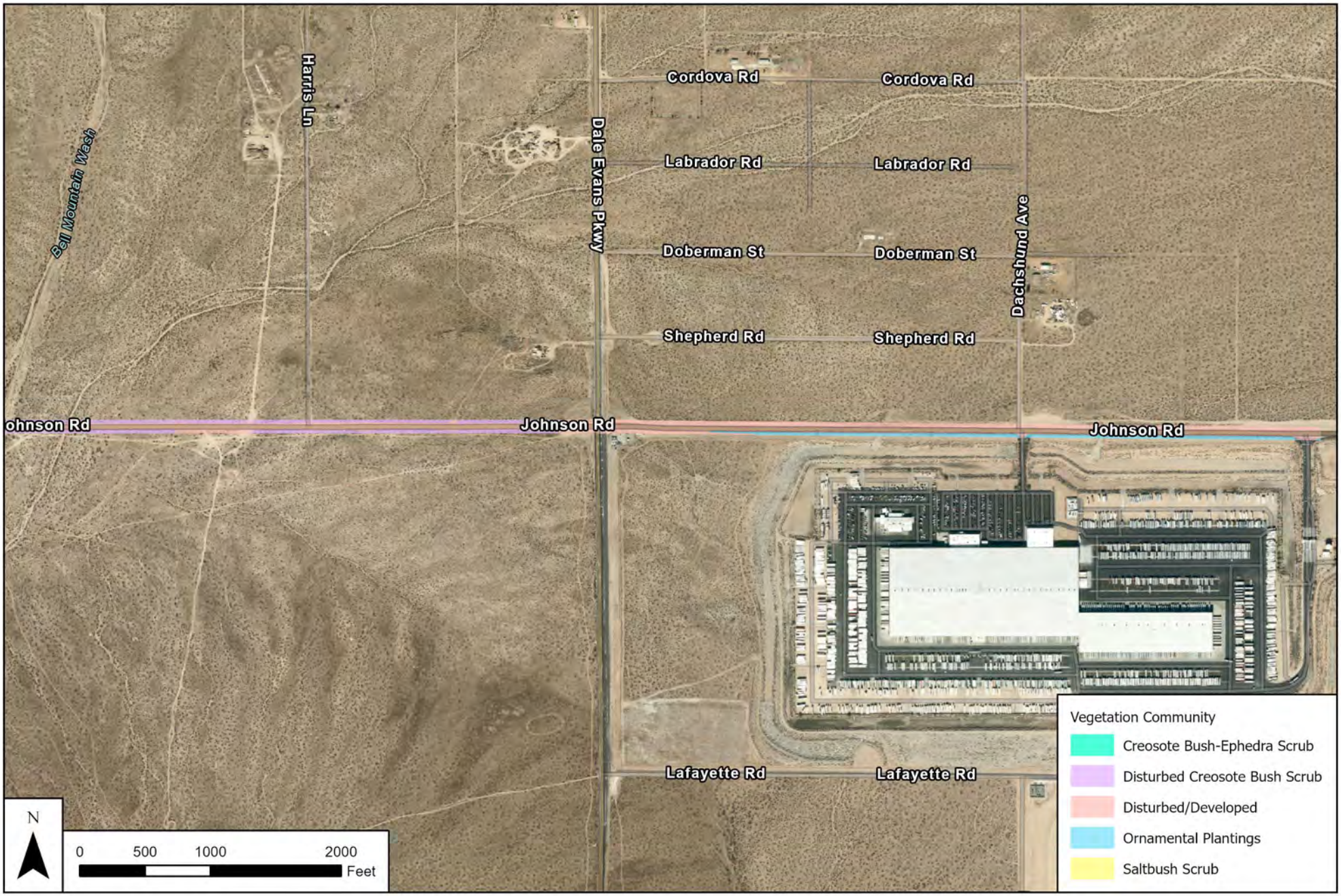
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Apple Valley 143 Utility Alignment Project

Figure 3

Historical MGS Occurrences



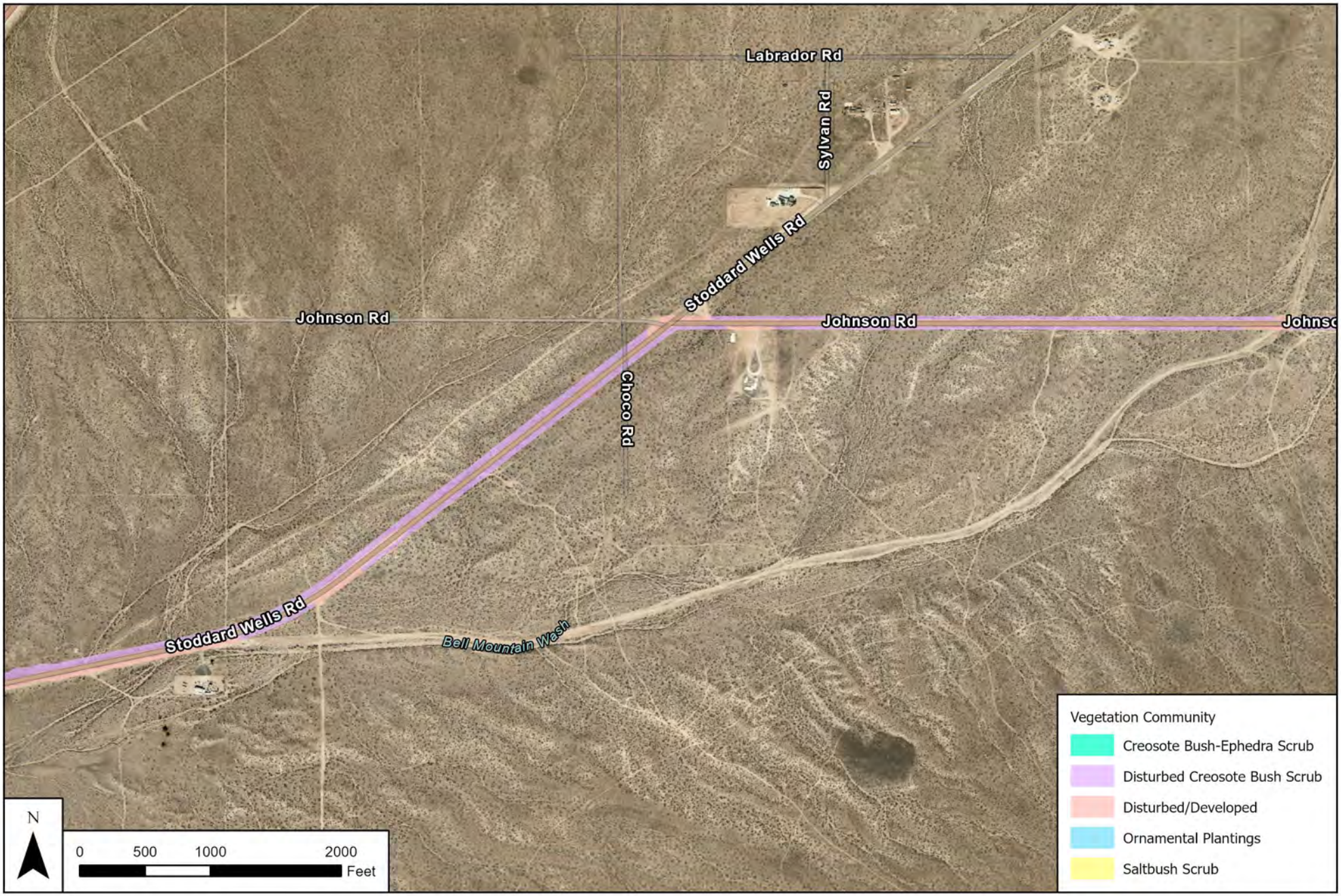
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Apple Valley 143 Utility Alignment Project

Figure 4a

Vegetation Communities



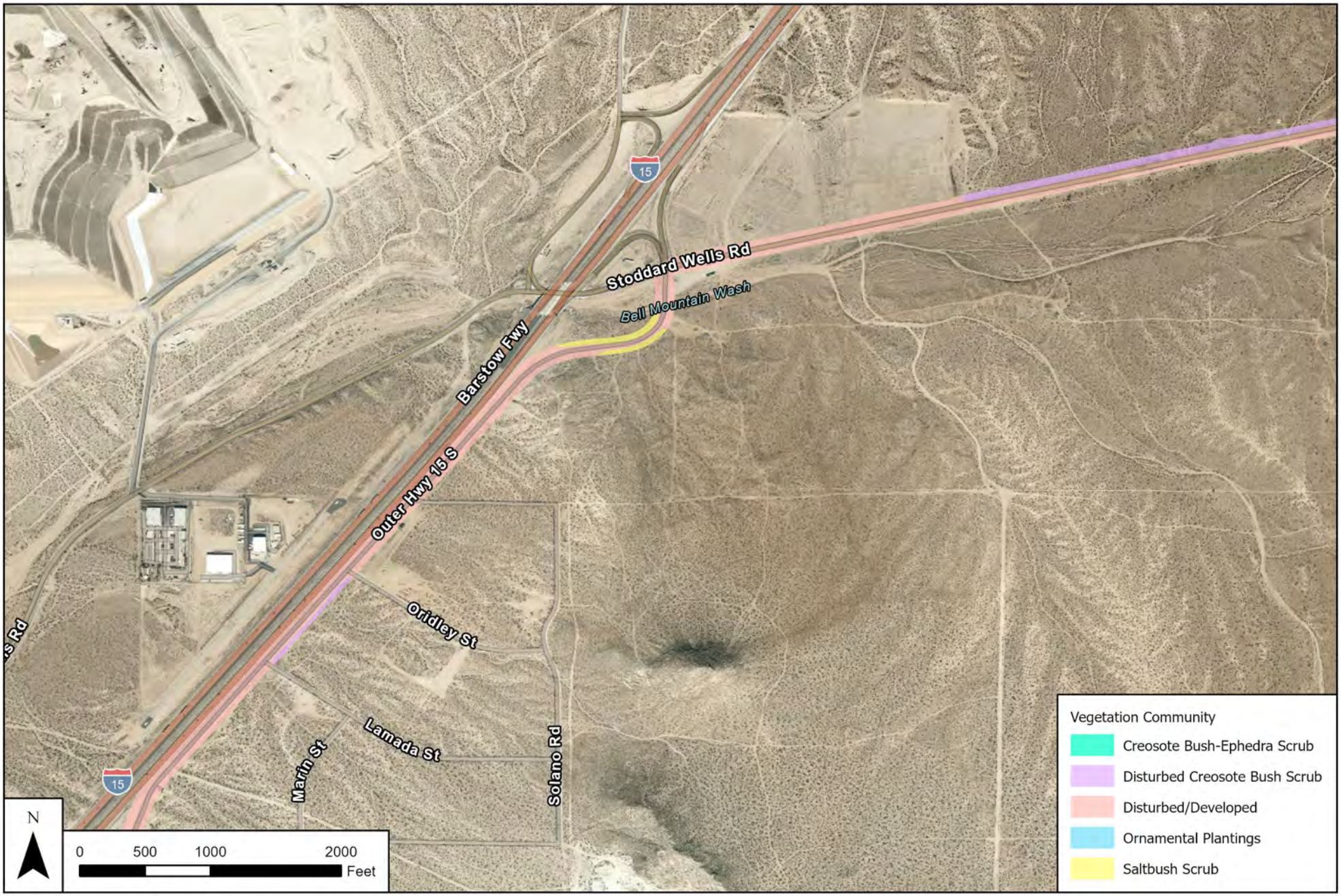
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Apple Valley 143 Utility Alignment Project

Figure 4b

Vegetation Communities



SOURCE: ESRI

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ECOLOGICAL CONSULTING, LLC

Apple Valley 143 Utility Alignment Project

Figure 4c

Vegetation Communities



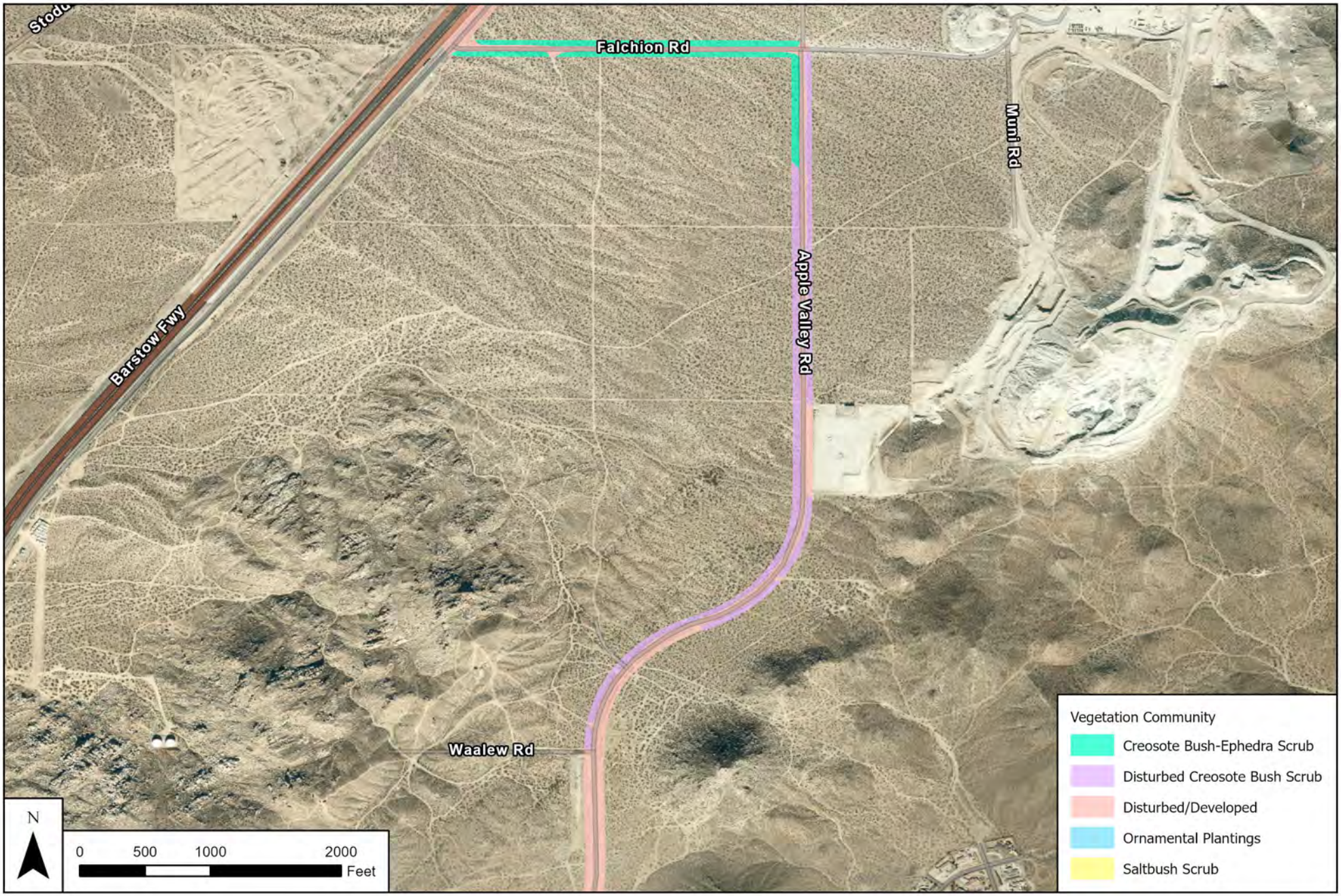
SOURCE: ESRI

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Apple Valley 143 Utility Alignment Project

Figure 4d

Vegetation Communities



SOURCE: ESRI

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Apple Valley 143 Utility Alignment Project

Figure 4e

Vegetation Communities



SOURCE: ESRI

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

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).



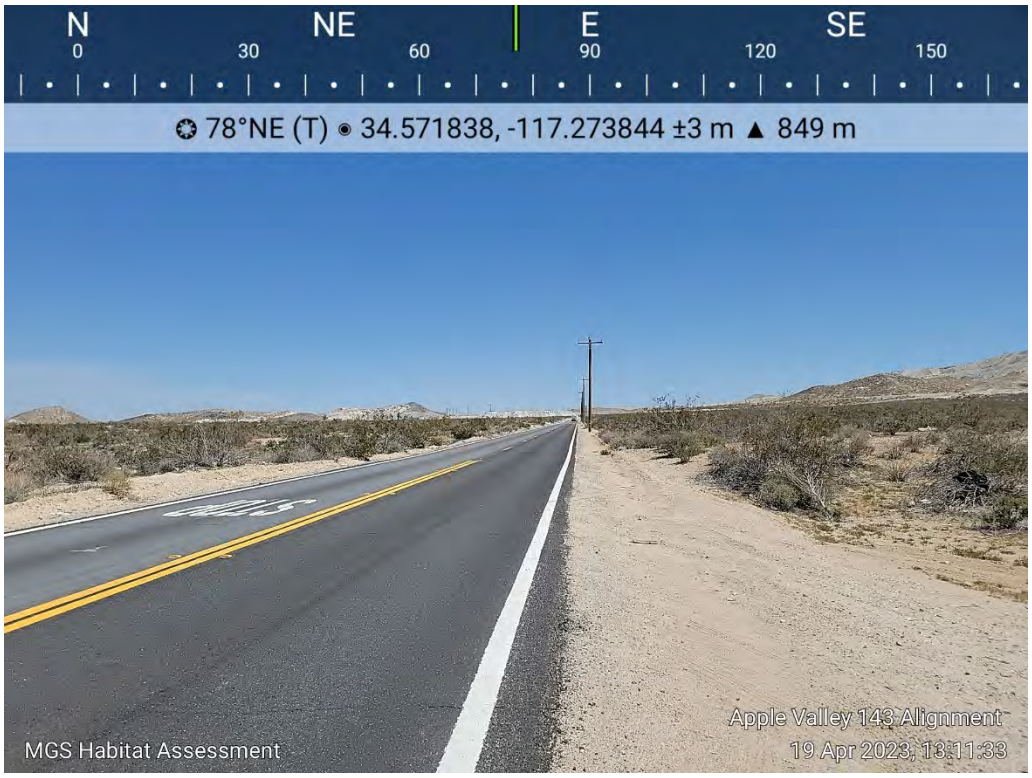
Photograph 2: Disturbed creosote bush scrub along Stoddard Wells Road.



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 D

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

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

Apple Valley 143 Project

JUNE 2023

Prepared for:

COV Apple Valley, LLC
3 Corporate Plaza, Suite 230
Newport Beach, California 92660
Contact: Brandon Gallup

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.**

Acronyms and Abbreviations iii

1 Introduction 1
- 1.1 Applicability 2
- 1.2 Project Location 2
- 1.3 Project Components 2
- 1.4 Site Characteristics 3

2 Policy and Permits 11
- 2.1 Town of Apple Valley 11
  - 2.1.1 Town Policy 11
  - 2.1.2 Town Permits 12
  - 2.1.3 Findings for Removals 13
- 2.2 California Department of Fish and Wildlife 13
  - 2.2.1 CDFW Code Section 2073.3 13

3 Joshua Tree Survey 15
- 3.1 Joshua Tree Survey Methods 15
- 3.2 Joshua Tree Survey Findings 16
- 3.3 Project Impacts – Joshua Trees 16

4 Town of Apple Valley Requirements 19
- 4.1 Plot Plan Requirements 19
- 4.2 Relocation and Protection of Trees 19
- 4.3 Relocation Specifications 19
  - 4.3.1 Salvage 19
  - 4.3.2 Contractor 20
  - 4.3.3 Pre-salvage Meeting 20
  - 4.3.4 Salvage Timing 20
  - 4.3.5 Pre-irrigation 20
  - 4.3.6 Equipment Sanitization 20
  - 4.3.7 Joshua Tree Digging 20
  - 4.3.8 Root Maintenance 21
- 4.4 Storage 21
  - 4.4.1 Storage 21
  - 4.4.2 Storage Direction 21
  - 4.4.3 Stabilization 21
  - 4.4.4 Irrigation 21

4.4.5 Duration 22
4.4.6 Summer Salvage: Temporary Shade Structure 22
4.5 Transplant Planting 22
4.5.1 Site Preparation 22
4.5.2 Pre-watering 22
4.5.3 Planting Direction 23
4.5.4 Planting 23
4.5.5 Post-transplant Stabilization 23
4.6 Post-relocation Care 23
4.6.1 Irrigation 23
4.6.2 Stabilization 24
4.6.3 Fertilization 24
4.7 Monitoring and Reporting 24
4.7.1 Monitoring 24
4.7.2 Reporting 24
4.8 Transplantation Success Criteria 24
5 California Department of Fish and Wildlife Mitigation 27
5.1 Proposed Measures to Minimize and Fully Mitigate the Impacts of the Proposed Taking 27
6 Tree Protection 29
6.1 Tree Protection Measures prior to Construction 29
6.2 Protection and Maintenance during Construction 29
6.3 Maintenance after Construction 30
7 Fees 33
8 Desert Native Plants 35
9 References 37

TABLE

1 Summary of Protected Tree Impact Determinations 17

FIGURES

1 Regional Map 5
2 Vicinity Map 7
3 Project Site plan 9

APPENDICES

A Joshua Tree Locations
B Tree Information Matrix
C Joshua Tree Impacts

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
amsl	above mean sea level
AVDC	Apple Valley Development Code
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
Commission	California Fish and Game Commission
ISA	International Society of Arboriculture
ITP	Incidental Take Permit
Joshua Tree Plan	Joshua Tree Preservation, Protection, and Relocation Plan
project	Apple Valley 143 Project
Town	Town of Apple Valley
WJT	western Joshua Tree

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1 Introduction

The purpose of this Joshua Tree Preservation, Protection, and Relocation Plan (Joshua Tree Plan) for the proposed Apple Valley 143 Project (project) is to provide detailed specifications for COV Apple Valley, LLC to meet the requirements of Chapter 9.76 of the Town of Apple Valley (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 Joshua trees (*Yucca brevifolia*) as a result of the proposed project. 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.[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. The report states that CDFW recommended that the Commission accept the petition for further consideration of western Joshua tree under the California Endangered Species Act (CESA). On September 22, 2020, the Commission approved the petition to accept the candidacy proposal for western Joshua tree, effective October 9, 2020. When a plant or wildlife species is granted candidacy under 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. For this project, take or removal of western Joshua tree would require a 2081 Incidental Take Permit (ITP) from CDFW.

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, the Applicant must identify if the WJT will be protected, relocated, or removed.

[1] On October 21, 2019, the Commission received a petition to list the following as threatened under the California ESA: (1) western Joshua tree (*Yucca brevifolia*) throughout its California range, or, in the event the Commission determines that listing of *Yucca brevifolia* 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 addition to local regulations, per the CDFW, Dudek evaluated all Joshua trees located within 186 feet of the proposed project. Furthermore, as requested by CDFW, Dudek collected seasonal Joshua tree data that included the number of branching terminal flower panicles, and a description of the phenological development of the tree (e.g., young leaves, leaves, flowers, open flowers, fruits, and recent fruit drop.).

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 2081 ITP 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 258.3-acre project, including the 144-acre project site, the 113.9-acre Roadway Off-Site Improvement Areas, and the 0.5-acre Culvert Off-Site Improvement Area, is located in the northern portion of the Town, which is located in the Victor Valley/High Desert region in western San Bernardino County (Figure 1, Regional Map; Figure 2, Vicinity Map). The project is located immediately east of Interstate (I) 15 and north of Stoddard Wells Road with proposed off-site improvements located along Johnson Road, Stoddard Wells Road, Frontage Road South, Falchion Road, and Apple Valley Road. The project consists of Assessor's Parcel Numbers 047-222-206, 047-222-211, 047-221-105, 047-221-106, 047-221-115, 047-221-103, 047-221-207, and 047-222-303 and rights-of-way. Specifically, the project is located in Sections 19, 20, 21, 23, 24, and 26, Township 6 North, Range 3 and 4 West, as depicted on the U.S. Geological Survey Victorville and Apple Valley North, California 7.5-minute topographic quadrangle maps. Regional access to the project is provided via Stoddard Wells Road immediately adjacent to the south and I-15 bordering the western boundary of the project.

1.3 Project Components

The project would include construction of three industrial/warehouse buildings and associated improvements (see Figure 3, Project Site Plan). Building 1, the southernmost building, would be approximately 615,000 square feet; Building 2, the center building, would be approximately 1,220,000 square feet; and Building 3, the northernmost building, would be approximately 793,000 square feet. The project would involve associated improvements, including loading docks, truck and vehicle parking, and landscaped areas.

Off-Site Improvements

The project would involve the installation of approximately 7.9 miles of off-site water line adjacent to the following developed roadways: approximately 1.7 linear miles in Stoddard Wells Road, approximately 2.3 linear miles in Johnson Road, approximately 1.7 linear miles in Outer I-15 Road, approximately 0.67 miles in Falchion Road, and approximately 1.5 miles in Apple Valley Road. In addition, the project involves a culvert extension leading from the southern boundary of the on-site project boundary across Stoddard Wells Road.

Site Access and Circulation

Access to the project site would be provided via Outer I-15 Road on the eastern boundary of the project site, as well as a driveway off Stoddard Wells Road. Paved passenger vehicle parking areas would be provided within areas east of Buildings 1, 2, and 3, while tractor-trailer stalls and loading docks would be surrounding Building 1 to the north and south, and surrounding Buildings 2 and 3 to the north, south, and west. In total, the project would provide approximately 515 loading dock positions, approximately 884 tractor-trailer stalls, roughly 975 passenger vehicle spaces, and approximately 920,000 square feet of landscape area coverage.

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.

Operations

Tenants for the project have not been identified, and the three industrial warehouse buildings are considered speculative. 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.

1.4 Site Characteristics

The project site primarily comprises currently vacant undeveloped property located at the northwestern edge of Apple Valley and east of Victorville. The project site is surrounded by undeveloped desert open space and sparse residential development. I-15 borders a portion of the northwestern boundary. Stoddard Wells Road provides access along the southern boundary of the project site.

According to the Apple Valley's General Plan, the land use and zoning designations for the project site are Regional Commercial (C-R) (Town of Apple Valley 2015, 2021). Additionally, the project site is located within the Warehouse Distribution Regional Commercial (C-R) Overlay. Land uses surrounding the project site primarily consist of vacant land. Specific land uses located in the immediate vicinity of the project site include the following:

- **North:** Johnson Road and vacant land
- **East:** vacant land and Grasshopper Road
- **South:** Stoddard Wells Road and a planned travel center
- **West:** I-15

The project site has a General Plan designation and Zoning classification of Regional Commercial (C-R). Surrounding land uses include vacant land, I-15, single-family residences, CalPortland aggregate plant, the Victorville Landfill, the Apple Valley Airport, and Walmart and Big Lot distribution centers. It will be determined at project kickoff if a change in General Plan designation and zone classification would be required for the project.

Climate

The project site is located in the Apple Valley/High Desert region in western San Bernardino County. Average annual temperature was not available for Apple Valley; however, annual temperatures in Victorville range from 44°F to 78°F (WRCC 2022a). The average annual precipitation for the Apple Valley is 5.17 inches (WRCC 2022b). Periods of extended drought are common throughout the region.

Topography and Soils

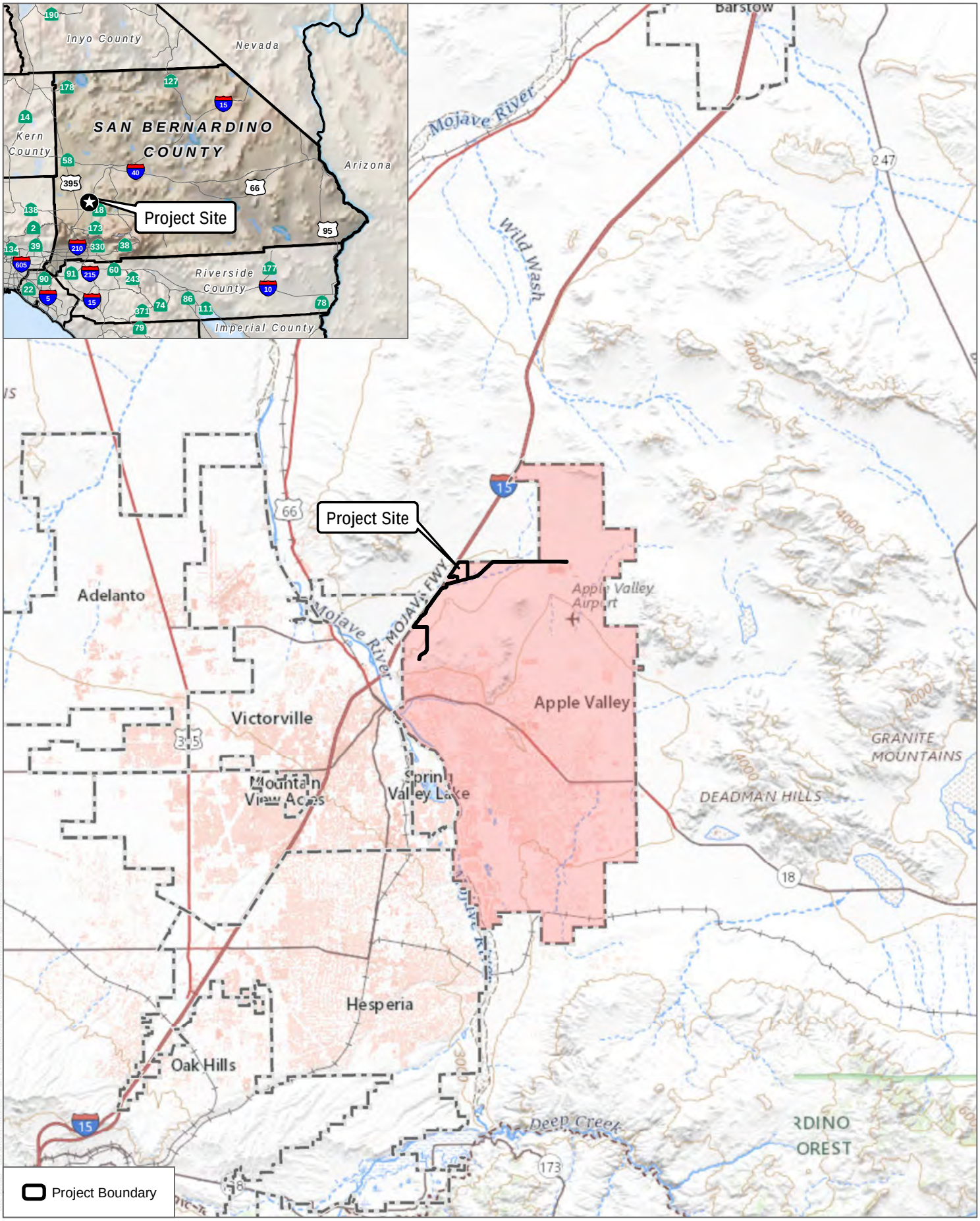
The project site is located just north of Victorville, along Bell Mountain Wash, which lies between Bell Mountain to the east and Quartzite Mountain to the west. The Granite Mountains are approximately 10 miles southeast of the BSA and divide Apple Valley from Lucerne Valley.

The on-site project is composed of undeveloped vacant lands north of Stoddard Wells Road. Off-site roadway improvements are proposed along Johnson Road, Stoddard Wells Road, Frontage Road South, Falchion Road, and Apple Valley Road, and an off-site culvert improvement is proposed south of Stoddard Wells Road and south of the on-site project area. The southern portion of the on-site project is subject to disturbance as a result of illegal dumping and trespassing. These unpermitted activities have led to areas of exposed bare soils (where trails have formed) and several debris piles. The on-site project surface elevation ranges between approximately 2,912 and 3,010 feet above mean sea level (amsl) and gently slopes up from the northwestern corner towards the southern boundary along Stoddard Wells Road. There are several gentle hillsides and washes that flow from north to south through the on-site project. The off-site project's surface elevation range between 3,085 feet amsl at the eastern portion of Johnson Road and slopes gently to 2,980 feet amsl at the western portion of Stoddard Wells Road and continues sloping southwesterly to approximately 2,890 feet amsl at Falchion Road.

According to the USDA Natural Resource Conservation Service's Web Soil Survey (USDA 2022), the BSA occurs within the San Bernardino County, Mojave River Area (CA671). The BSA consists of eight soil complexes: Cajon sand (2% to 9% slopes), Cajon-Arizo complex (2% to 15% slopes), Helendale-Bryman loamy sands (2% to 5% slopes), Mirage-Joshua complex (2% to 5% slopes), Nebona-Cuddeback complex (2% to 9% slopes), rock outcrop-Lithic Torriorthents complex (15% to 50% slopes), and Sparkhule-rock outcrop complex (15% to 50% slopes).

Vegetation

The project site primarily comprises of creosote bush scrub. Other communities present include allscale scrub, rubber rabbitbrush, Joshua tree woodland, disturbed habitat, and urban/developed lands. Dominant plants include creosote bush (*Larrea tridentata*), western Joshua tree *(Yucca brevifolia*), allscale (*Atriplex polycarpa*), rubber rabbitbrush (*Ericameria nauseosa*), and Nevada joint fir (*Ephedra nevadensis*). The herbaceous layer is primary dominated by non-native annuals and grasses such as red-stemmed filaree *(Erodium cicutarium)*, common Mediterranean grass (*Schismus barbatus*) red-brome *(Bromus madritensis)* and cheat grass *(Bromus tectorum)*.



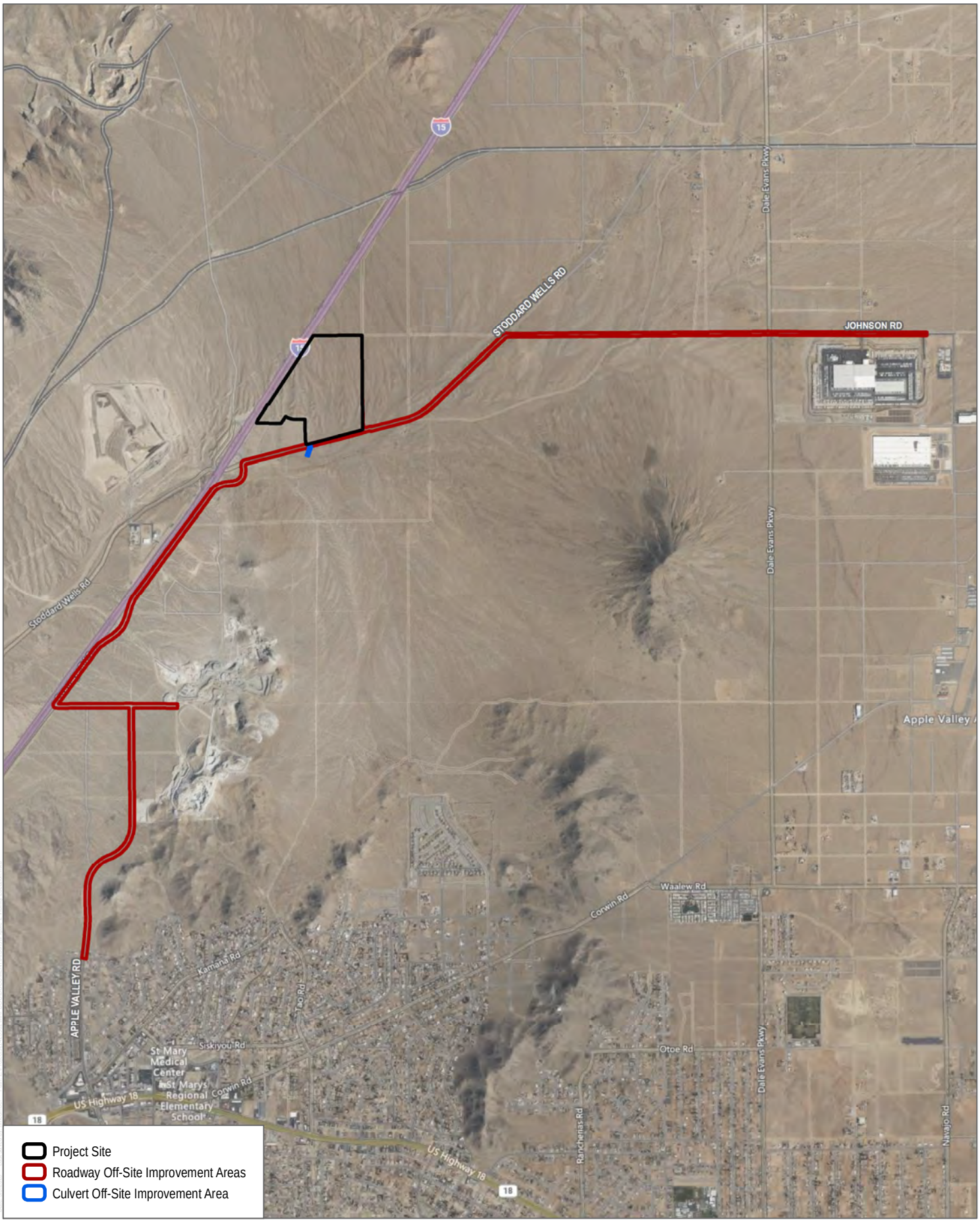
SOURCE: USGS US Topo 2020

FIGURE 1

Regional Map

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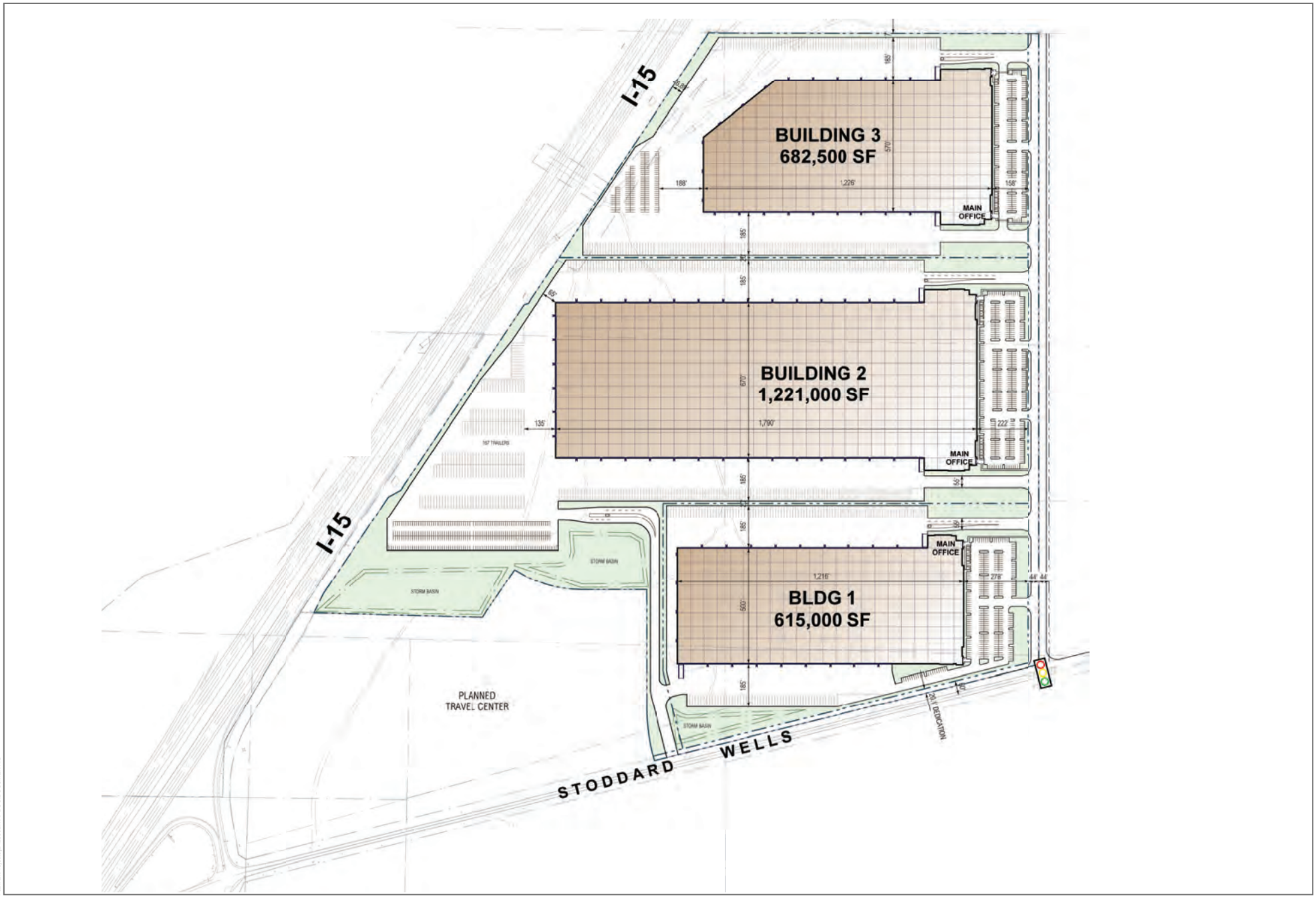
SOURCE: BING MAPPING SERVICE 2021

FIGURE 2

Vicinity Map

DUDEK 0 1,850 3,700 Feet

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SOURCE: RGA 2022

FIGURE 3

Project Site Plan

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2 Policy and Permits

2.1 Town of Apple Valley

2.1.1 Town 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 in Place:
>
> 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 Town 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, mobilehome 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.
6. 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 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 CDFW Code Section 2073.3

Pursuant to the provisions of Section 2073.3 of the California Fish and Game Code (CFGC), the Commission received a petition from the Center for Biological Diversity on October 21, 2019, to list western Joshua tree as a threatened species under CESA. Pursuant to Section 2073 of the CFGC, on November 1, 2019, Commission staff transmitted the petition to the CDFW for review pursuant to Section 2073.5 of said code. After reviewing the petition and other relevant information, CDFW determined that the petition provides sufficient information to indicate that

the petitioned action may be warranted for western Joshua tree and CDFW recommended that the Commission accept the petition for further consideration under CESA.

The Commission has the authority to list certain "species" or "subspecies" as threatened or endangered under CESA (CFGC Sections 2062, 2067, and 2070). The listing process is the same for species and subspecies (CFGC Sections 2070–2079.1). CESA sets forth a two-step process for listing a species as threatened or endangered. First, the Commission determines whether to designate a species as a candidate for listing by evaluating whether the petition provides "sufficient information to indicate that the petitioned action may be warranted" (CFGC Section 2074.2[e][2]). If the petition is accepted for consideration, the second step requires CDFW to produce, within 12 months of the Commission's acceptance of the petition, a peer reviewed report based upon the best scientific information available that indicates whether the petitioned action is warranted (CFGC Section 2074.6). Finally, the Commission, based on that report and other information in the administrative record, determines whether the petitioned action to list the species as threatened or endangered is warranted (CFGC Section 2075.5). A petition to list a species under CESA must include "information regarding the population trend, range, distribution, abundance, and life history of a species, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, the impact of existing management efforts, suggestions for future management, and the availability and sources of information. The petition shall also include information regarding the kind of habitat necessary for species survival, a detailed distribution map, and any other factors that the petitioner deems relevant" (CFGC Section 2072.3; see also 14 CCR 670.1[d][1]). The range of a species for CDFW's petition evaluation and recommendation is the species' California range (California Forestry Association v. California Fish and Game Commission [2007] 156 Cal.App.4th 1535, 1551).

CDFW must evaluate the petition on its face and in relation to other relevant information and submit to the Commission a written evaluation report with one of the following recommendations:

- Based upon the information contained in the petition, there is not sufficient information to indicate that the petitioned action may be warranted, and the petition should be rejected
- Based upon the information contained in the petition, there is sufficient information to indicate that the petitioned action may be warranted, and the petition should be accepted and considered

CDFW's candidacy recommendation to the Commission is based on an evaluation of whether the petition provides sufficient scientific information relevant to the petition components set forth in CFGC Section 2072.3 and the California Code of Regulations, Title 14, Section 670.1(d)(1).

At its June 2020 meeting, after conversations with the petitioner and other interested groups, the Commission continued to its August 2020 meeting the consideration and potential action on the petition to determine whether listing western Joshua tree under the CESA may be warranted. The item was heard at the August 2020 Commission hearing, but once again continued to the September 2020 hearing. On September 22, 2020, the Commission approved the petition to accept the candidacy proposal for western Joshua tree, effective October 9, 2020. Western Joshua tree was made a candidate under CESA to determine whether the species should become listed. At that point, a second recommendation and vote will confer or deny final protection under the law. 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.

3 Joshua Tree Survey

3.1 Joshua Tree Survey Methods

Per the CDFW and the Town's Protected Plants policy, 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 186 feet of the proposed project site. The survey encompassed the entire proposed project site and the associated 186-foot buffer (Appendix A, Joshua Tree Locations). The inventory was conducted by ISA-certified arborists Noah Stamm and Katrina Burritt on November 11, 2021; and Joshua tree phenological data was collected by Katrina Burritt and Kalie Ortiz on April 7, 2022. The off-site data was collected by Aida Castro on August 16, 2022, and by Aida Castro and Sarah Tian on April 27, 2023. During the inventory, the GPS position of each Joshua tree found on site was recorded. Furthermore, the following attributes of each tree were collected:

- Species
- Diameter at standard height (4.5 feet above ground level)
- Height (feet)
- Spread (feet)
- Health (excellent, good, fair, poor, critical, and dead)[2]
- Number of branches
- Clonal status (clone or single trunk)

In addition to the general Joshua tree attributes that were collected, per the CDFW, Dudek collected the following phenological data for each Joshua tree found on site:

- Number of Panicles
- New Growth
- Leaves
- Flowers
- Open flowers
- Presence of fruit

[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.

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).

3.2 Joshua Tree Survey Findings

Dudek's arborists recorded 71 Joshua trees within and adjacent (within 186 feet) to the limits of the proposed project site plan and off-site improvement areas, as presented in Appendix B, Joshua Tree Information Matrix. Of the 71 trees found within the project site and 186-foot buffer, 27 are located within the project site and off-site improvement areas. Trees in the tree survey area vary in size and stature according to age and location. In total, 62 single/multi-trunk Joshua trees and 9 clonal (multiple trunks or those trees within 6 feet of an individual) were mapped throughout the proposed project site. Stem diameter for single and clonal trees range from 1 to 16 inches. Tree heights vary from 0 feet for fallen trees to 25 feet for mature Joshua trees. Tree crown extents range from 1 foot to nearly 18 feet at their widest location for single stemmed trees. The total number of branches on the Joshua trees range from 0 (single trunk) to 30 for mature trees. The health of the Joshua trees varies across the site, and ranges from dead to good. In total, 50 trees (70.42%) exhibit good health, 8 trees (11.27%) exhibited fair health, 4 trees (5.63%) exhibited poor health, 3 trees (4.23%) exhibited very poor health, 1 tree (1.41%) is in critical health, and 5 trees (7.04%) are dead.

In addition to the general tree and health characteristics, Dudek collected baseline phenological data for each tree. In total, 3 trees were observed to have panicles, and new growth was observed on 61 trees, whereas no new growth was observed 10 trees. With the exception of the dead trees, leaves were observed on all of the trees. Flowers were not observed on any of the trees. Fruit was observed on one tree; however, fruit drop was observed below 26 of the trees. Individual attributes of each tree are presented in Appendix B.

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 186 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 retention and removal are graphically presented in Appendix C, Joshua Tree Impacts.

Based on grading and development plans for the proposed project, it is estimated that 28 trees (39.43%) will require removal to accommodate the proposed project. The proposed project would not preserve any of the Joshua trees found on the project site. However, the remaining 43 trees found within 186 feet would be preserved. 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	20	30	50
Fair	1	7	8
Poor	1	3	4
Very poor	3	0	3
Critical	0	1	1
Dead	3	2	5
Total	**28**	**43**	**71**

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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 C 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, 28 Joshua trees would be directly impacted by the proposed project. Of the 28 direct impacts, 19 Joshua trees met the defined criteria for improved likelihood of post-transplant success. As such, per the Town ordinance, relocation and/or mitigation is required for the 19 trees meeting the minimum requirements (described in the following) for relocation. Based on a review of the project site, the project site can accommodate all 19 relocatable Joshua trees in the post development landscape.

Furthermore, based on the impact analysis, none of the Joshua trees on site would be preserved. However, should it be found that any can be preserved, 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 identify the designated storage and relocation locations for the proposed transplanted/ salvaged trees. Details and specifications for the Joshua tree relocation, storage, and care in the post development landscape are also provided in this section.

4.3.1 Salvage

Joshua trees have fragile, shallow root systems that are easily damaged during the salvaging and relocation process. During the excavation of the rootball, it is important that as much of the existing root structure as possible

be captured, so that an intact rootball is maintained during the salvaging and relocation process. The following sections include recommendations to help increase the chances of successful salvage/relocation.

4.3.2 Contractor

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

4.3.3 Pre-salvage Meeting

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

4.3.4 Salvage Timing

To increase the chances of a successful relocation, it is recommended that the trees be relocated from 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 an earlier start date than the recommended October through February salvage period, it is recommended that the salvaged trees be stored in a temporary, on-site, location per the recommendations in Section 4.4, Storage.

4.3.5 Pre-irrigation

Prior to Joshua tree digging, each identified Joshua tree relocation candidate shall be pre-watered. Specifically, each tree shall be pre-watered 24 hours prior to relocation. Pre-watering shall thoroughly soak the rootball of each tree.

4.3.6 Equipment Sanitization

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

4.3.7 Joshua Tree Digging

Tree relocation is best completed with 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 shall capture as much of the rootball as possible; however, due to the trees' shallow root systems, holes do not need to be deep. In general, the digging 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 rootball shall be removed intact, if possible.

4.3.8 Root Maintenance

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

4.4 Storage

All 19 Joshua trees recommended for relocation shall be transplanted to locations throughout the project site. All 19 trees will be stored within a temporary storage location approved by a qualified arborist. The temporary storage location will be based on the development schedule. The storage location will 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), will adhere to the storage recommendation provided in the following section.

4.4.1 Storage

Trees stockpiled for longer than 2 weeks shall be temporarily stored in shallow ditches, backfilled with native soils, and tamped down. The shallow ditches shall be dug prior to tree relocation, and the final depth shall be comparable to the depth at which each Joshua tree is dug. Temporary storage trench depths shall be approximately 12 to 24 inches deep, depending on the size of the trees' root balls. The trench widths shall be 1 foot larger than the rootball of the trees and long enough to accommodate the trees, 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 shall be oriented in the same direction that they were prior to removal. Each Joshua tree is tagged on its northern side and shall be reoriented with the tagged side facing north. Prior to tree relocation, each tag shall be inspected to ensure that it 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 shall 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 rootball for stability). Trees requiring stabilization are identified in Appendix B.

4.4.4 Irrigation

Stored trees shall 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 shall be watered by hand or by temporary irrigation. Should temporary irrigation be installed, the use of drip emitters is recommended. Irrigation emitters shall be spaced according to the watering zone specified for each tree. The watering zone for each tree is identified in Appendix B. The total amount of water required for each tree will be dependent on the season and tree size. Irrigation needs may range from 2 to 20 gallons per watering cycle and will be dependent on ambient daytime

temperatures and rainfall totals. Additionally, persistent wet soil will 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 shall not be stockpiled or stored for longer than 45 days.

4.4.6 Summer Salvage: Temporary Shade Structure

Per Section 4.3.4, Salvage Timing, should project limitations and timing require an earlier start date than the recommended October through February salvage period, it is recommended that the salvaged trees be stored as described in Section 4.3.1, Salvage. Furthermore, to reduce tree stress, and reduce the risk of post-transplant mortality it is recommended that the salvaged trees 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 shall utilize 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. It is recommended that the shade structures be installed per the manufacturer's recommendations. Due to the potential for high winds, it is recommended that the shade be attached to the ground using diagonal dead man cable supports and the concrete post footings. The shade structure shall be of adequate height to cover the trees. For trees that are greater than 10 feet in height (8 trees), 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 shall be relocated and maintained per the recommendations specified throughout Joshua Tree Preservation, Protection, and Relocation Plan for the project.

4.5 Transplant Planting

All 19 salvaged Joshua trees will be relocated into the post construction landscape. The following sections detail transplanting guidelines for the salvaged Joshua trees.

4.5.1 Site Preparation

Prior to transplantation each receiver location shall be dug. Prior to digging, the sites shall be flagged for identification by the project arborist or registered botanist. In general, the digging 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 shall be approximately 1 foot larger than the rootball 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 shall be prepared prior to transplanting the trees. The mixture shall be composed of vitamin B1, which is commonly sold by nurseries. The mixture shall be mixed per the manufacturer's directions,

which is typically 1:250 (B1-to-water ratio). The receiving hole shall 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 shall be clearly marked/tagged prior to digging, and each tree shall 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 shall be inspected by the project arborist to ensure that the planting hole is at minimum 1 foot wider than the rootball and is neither too deep nor too shallow. The hole may require minor adjustments prior to installation. The depth of the hole must be less than the height of the root ball. If the hole was inadvertently dug too deep, soil shall 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 will hasten root growth, translating into quicker establishment. Once the size of the hole is finalized, the tree shall be lowered into the hole in the proper orientation, backfilled with native soil, and watered again. Following backfilling and placement, the rootball shall be tamped down into the hole to eliminate water pockets.

Following planting, a water basin shall be installed approximately 1 foot outside of the predetermined watering zone. The watering basin shall be approximately 3 to 4 inches in height and shall surround the tree. The basin shall 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 shall 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 rootball for stability). Guy-wires shall be removed once the tree is determined to be established by the project arborist. Trees requiring stabilization are identified in Appendix B.

4.6 Post-relocation Care

4.6.1 Irrigation

Trees that have been relocated to their final planting location shall 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 shall 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 will be dependent on the season and tree size. Persistent wet soil will cause mildew and root rot. As such, soil moisture levels shall be routinely checked at the time of watering, and the soil shall be allowed to drain and dry out between watering cycles. Watering shall be accomplished by hand or by a temporary irrigation system. During irrigation, the tree basin shall be filled

and allowed to fully drain. Irrigation needs may range from 2 to 20 gallons per watering. The watering cycle shall be adjusted based on tree health and season. The watering zone for each tree (distance from the trunk) is defined for each tree in Appendix B.

4.6.2 Stabilization

Trees that have been stabilized shall 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 shall 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 on the rootball when the tree is gently pushed. Once the roots are well established, it is important to remove the tree stakes. This will encourage 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 will be monitored by a certified arborist or registered botanist.

4.7.1 Monitoring

The Town does not define a minimum post-transplantation monitoring period. However, an annual inspection and report for 4 years is recommended. As such, for the initial 3 months following transplantation, weekly monitoring by a certified arborist or registered botanist shall occur to ensure that the watering needs of each relocated tree are being met. Following the initial 3-month monitoring period, the relocated trees shall be monitored on a monthly basis for 9 months. Following the first year of monitoring, the trees shall 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 will begin once all 19 trees have been installed.

4.7.2 Reporting

Annual reports shall 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 shall be submitted to the Town. Monitoring will track the location, health, and status of each transplanted Joshua tree. The monitoring arborist or registered botanist shall 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. Due to the low relocation success rate of Joshua trees, 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 70% survivability. As such, based on 19 potential relocation trees, the relocation plan would be considered successful should 13 Joshua trees survive past the 4-year threshold. Should the surviving number of trees drop below 70%, it is recommended that trees be obtained from a local adoption program or from a local nursery to meet the 4-year, 70% threshold. It should be noted that the Town may define an alternative minimum success criteria threshold.

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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 Apple Valley 143 Park Project (Item No. 9).

5.1 Proposed Measures to Minimize and Fully Mitigate the Impacts of the Proposed Taking

Conservation efforts for western Joshua tree should focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site.

Mitigation efforts should contribute to the conservation of large, interconnected Joshua tree woodlands. Larger preserves have several advantages over multiple smaller preserves, even if the total area preserved is the same. Larger preserves have a greater chance of preserving habitat diversity at all scales, supporting larger local populations, helping maintain functioning metapopulations (partially isolated subpopulations of the same species that support immigration and emigration and provide for recolonization following local extirpations), and supporting greater species genetic diversity, and are more likely to maintain intact watershed functions. Larger preserves also have less habitat fragmentation and provide greater protection from edge effects due to a larger area-to-perimeter ratio compared to smaller preserves. Additionally, large preserves usually facilitate more cost-effective land management.

Natural land covers preserved as habitat linkages connect larger habitat tracts that would otherwise be isolated to movement of wildlife and movement of plant species pollinators between preserves (i.e., movement corridors). Movement corridors should be as wide, continuous, natural, and vegetatively diverse as possible to accommodate as many species as possible and protect against adverse edge effects. Some smaller, less-mobile species may actually reside within a linkage, and larger and/or more mobile species may only use each linkage as a movement corridor.

Species populations with larger numbers of individuals are known to be more stable in the long term, less vulnerable to adverse demographic effects caused by environmental stochasticity (probabilistic events such as floods, fires, and disease), and less vulnerable to extirpation (extermination) compared to smaller populations. Larger populations tend to possess higher genetic diversity, which can reduce the chance of genetic bottlenecks, genetic drift, and inbreeding depression. Larger populations better cope with and/or adapt to changing environmental conditions and local stochastic effects due to their greater number of individuals and likely greater genetic heterogeneity.

Mitigation for Direct Impacts

Mitigation for direct impacts to western Joshua trees will be fulfilled through conservation of western Joshua trees at a 1:1 habitat replacement of equal or better functions and values to those impacted by the project. Mitigation can be through purchases of credits at a California Department of Fish and Wildlife-approved mitigation bank for

western Joshua tree or through conservation lands that meet the functions and values criteria. If mitigation is not purchased through a mitigation bank and lands are conserved separately, a cost estimate will be prepared to estimate the initial start-up costs, and ongoing annual costs, of management activities for the management of the conservation easement(s) area in perpetuity. The funding source will be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount will be established following the completion of a project-specific Property Analysis Record to calculate the costs of in perpetuity land management. The Property Analysis Record will take into account all of the management activities required in the ITP to fulfill the requirements of the conservation easement(s), which are currently in review and development.

Additional details related to CDFW requirements can be found within the proposed mitigation program described within the ITP Application for the project.

6 Tree Protection

For Joshua trees that do not require relocation, 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: 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.

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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 Dudek on April 11 and 12, 2022, six blue palo verde (*Parkinsonia florida*), five Wiggin's cholla (*Cylindropuntia echinocarpa*), nine branched pencil cholla (*Cylindropuntia ramosissima*), one beavertail prickly pear (*Opuntia basilaris var. basilaris*), one honey mesquite (*Prosopis glandulosa*), and three (Mojave yucca (*Yucca schidigera*), were identified within the project footprint along with western Joshua trees. In addition, one short-joint beavertail cactus (*Opuntia basilaris* var. *basilaris*) was incidentally observed during the Mohave ground squirrel protocol surveys in 2022. This specimen was small in size, in poor health, and located in the northeastern quadrant of the project 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 blue palo verde, Wiggin's cholla, branched pencil cholla, beavertail prickly pear, honey mesquite, 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 blue palo verde, Wiggin's cholla, branched pencil cholla, beavertail prickly pear, honey mesquite, Mojave yucca, and western Joshua tree once the Town approves it.

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9 References

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.

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Town of Apple Valley. 2021.General Plan.

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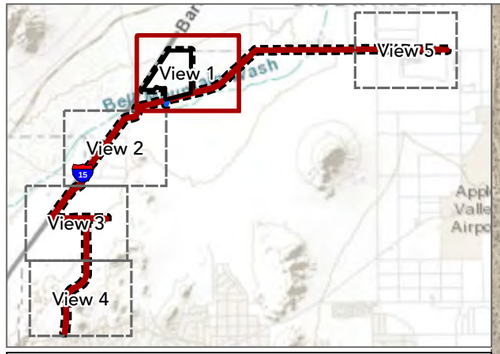
WRCC (Western Regional Climate Center). 2022a. "Victorville, California: Period of Record Monthly Climate Summary." Accessed July 2022. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9325.

WRCC (Western Regional Climate Center). 2022b. "Apple Valley, California: Period of Record Monthly Climate Summary." Accessed July 2022. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0244.

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Appendix A

Joshua Tree Locations



Project Site
Roadway Off-Site Improvement Areas
Culvert Off-Site Improvement Area
Joshua Tree Inventory Survey Area (186' Buffer)
Joshua Tree *(Yucca brevifolia)*

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

Alhambra St
El Dorado Rd
Johnson Rd
Stoddard Wells Rd
Pauma St

SOURCE: Bing Maps (accessed 2022)

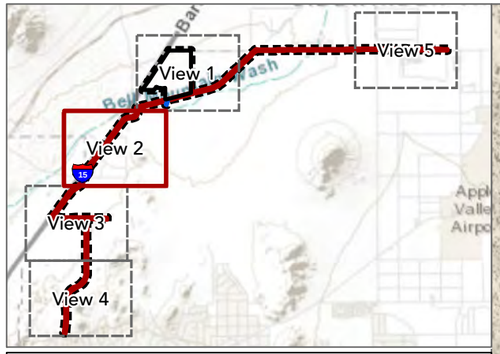
DUDEK

0 250 500 Feet

APPENDIX A, VIEW 1

Joshua Tree Locations

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



Project Site
Roadway Off-Site Improvement Areas
Culvert Off-Site Improvement Area
Joshua Tree Inventory Survey Area (186' Buffer)
Joshua Tree *(Yucca brevifolia)*

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

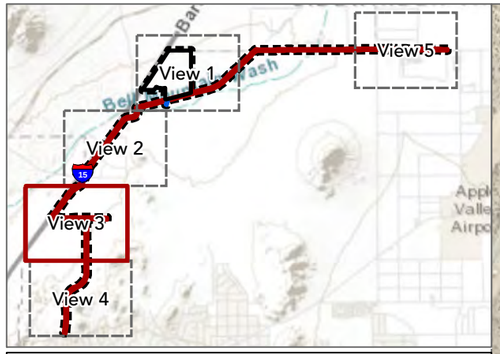
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APPENDIX A, VIEW 2

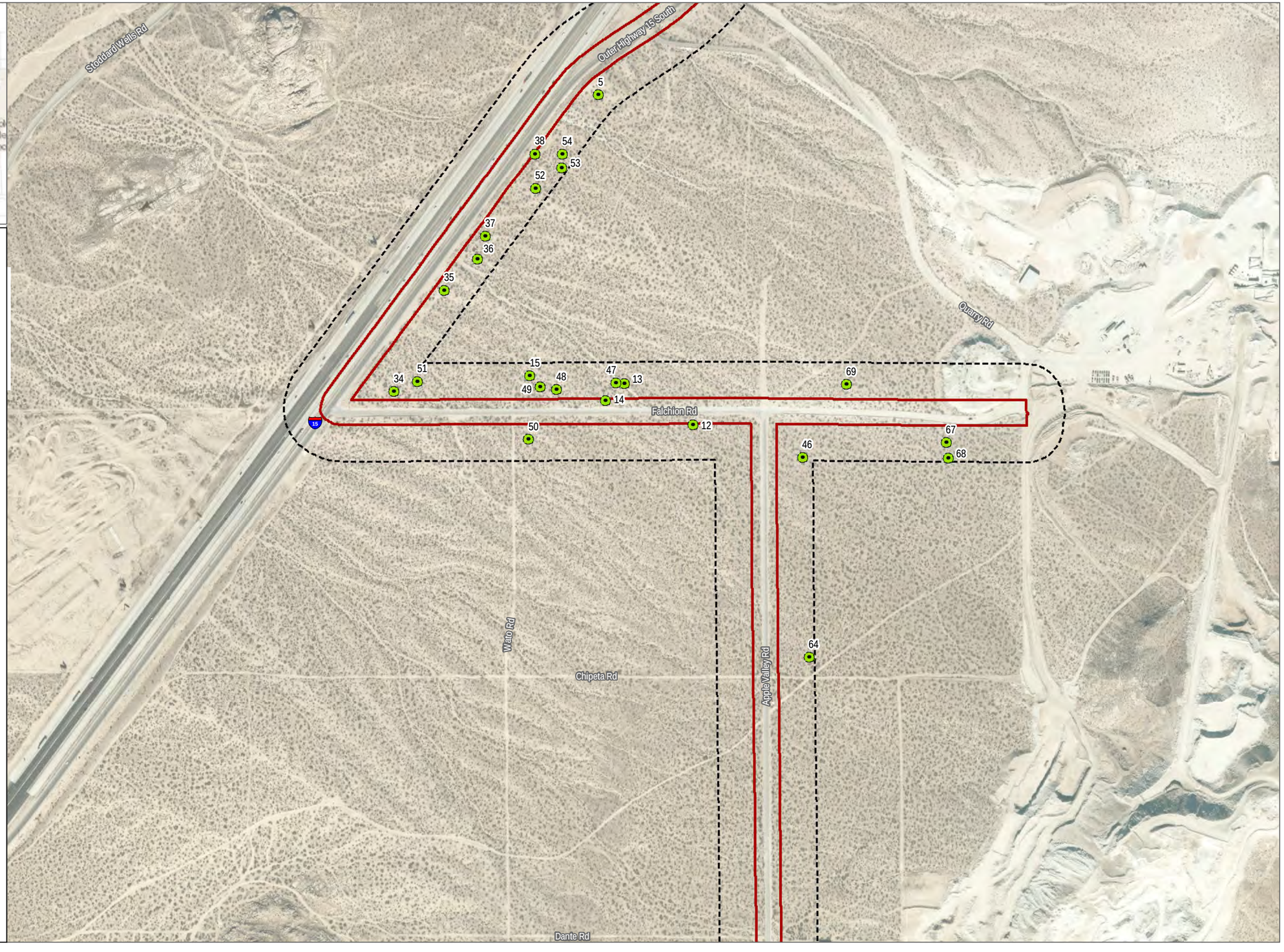
Joshua Tree Locations

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua Tree *(Yucca brevifolia)*

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.



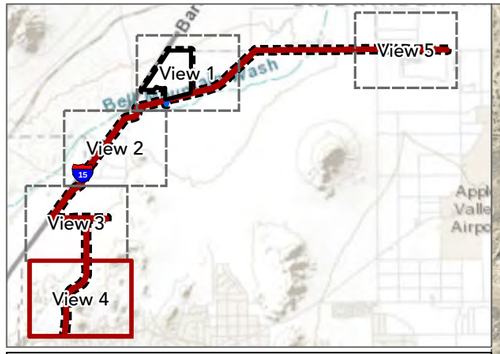
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DUDEK 0 250 500 Feet

APPENDIX A, VIEW 3

Joshua Tree Locations

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua Tree *(Yucca brevifolia)*

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

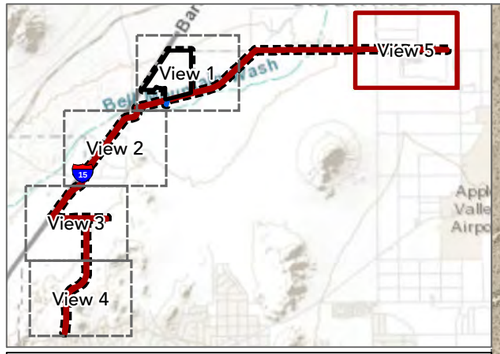
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APPENDIX A, VIEW 4

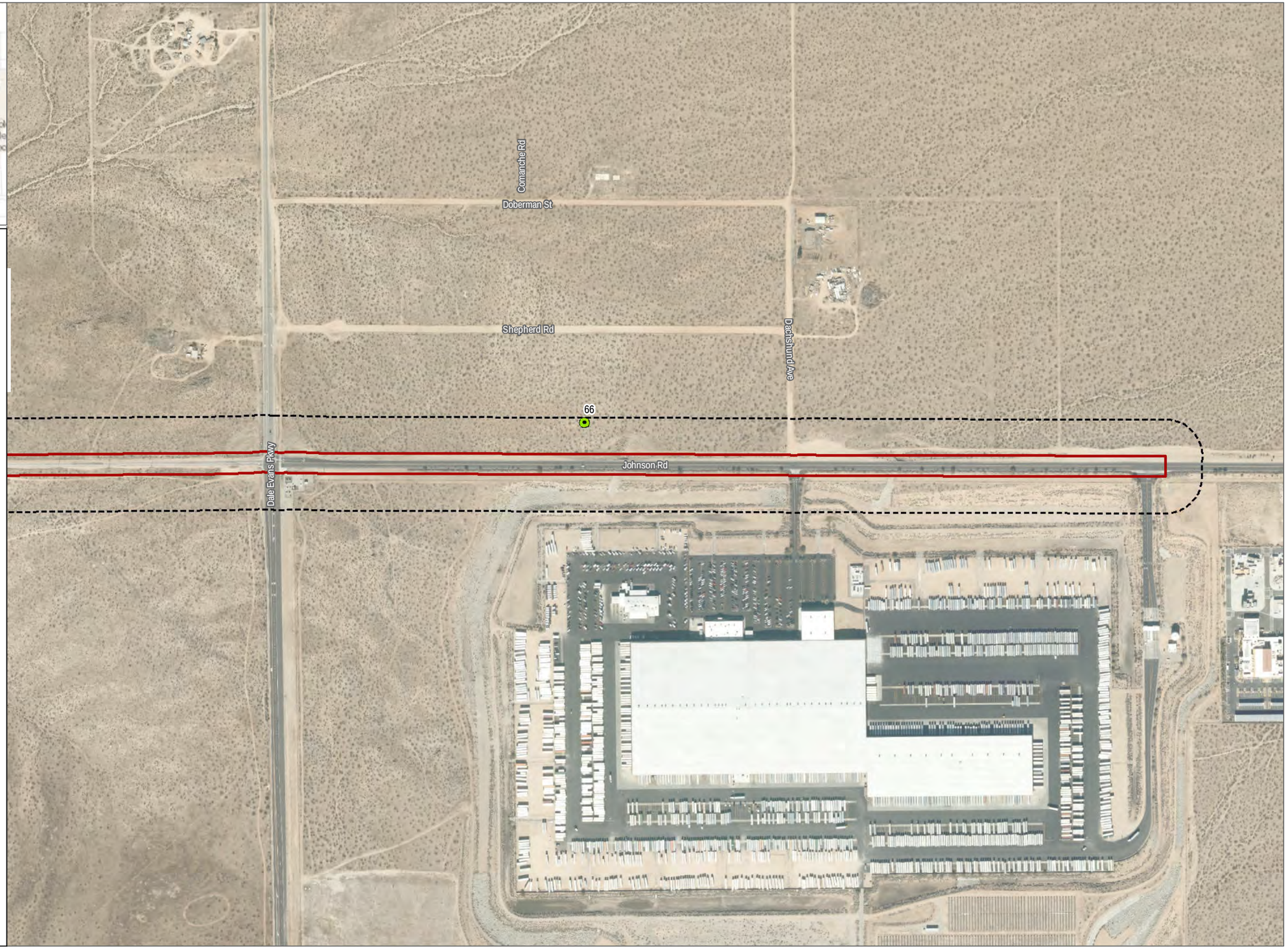
Joshua Tree Locations

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Joshua Tree *(Yucca brevifolia)*

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.



SOURCE: Bing Maps (accessed 2022)

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APPENDIX A, VIEW 5

Joshua Tree Locations

Appendix B

Joshua Tree Information Matrix

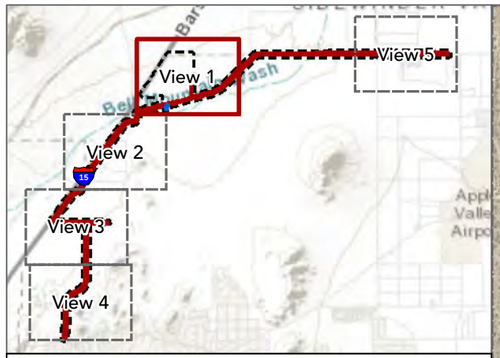
Appendix B - Joshua Tree Information Matrix

Tree No.	Common Name	Botanical Name	Stems	Diameter (in.)	Height (ft.)	Crown Width (ft.)	No. Branches	Clonal	Health	Structure	No. Pannicles	New Growth	Leaves	Flowers	Open Flower	Fruit	Fruit Drop	Notes	Impact Status	Relocation Potential
1	Joshua Tree	*Yucca brevifolia*	1	10	8	6	2	No	Poor	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
2	Joshua Tree	*Yucca brevifolia*	1	9	12	15	18	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
3	Joshua Tree	*Yucca brevifolia*	1	12	20	18	7	Yes	Good	Good	0	Yes	Yes	No	No	No	Yes	5 clone, birds nest	Removal	No
4	Joshua Tree	*Yucca brevifolia*	1	6	6	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
5	Joshua Tree	*Yucca brevifolia*	1	9	10	5	10	No	Very poor	Very Poor	0	No	Yes	No	No	No	Yes	fallen	Removal	No
6	Joshua Tree	*Yucca brevifolia*	1	3	3	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
7	Joshua Tree	*Yucca brevifolia*	1	6	12	4	5	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
8	Joshua Tree	*Yucca brevifolia*	1	10	12	3	3	Yes	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
9	Joshua Tree	*Yucca brevifolia*	1	6	6	4	2	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
10	Joshua Tree	*Yucca brevifolia*	1	11	10	8	11	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
11	Joshua Tree	*Yucca brevifolia*	1	8	4	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
12	Joshua Tree	*Yucca brevifolia*	1	7	4	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
13	Joshua Tree	*Yucca brevifolia*	2	12	15	8	14	No	Poor	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
14	Joshua Tree	*Yucca brevifolia*	1	10	9	3	2	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
15	Joshua Tree	*Yucca brevifolia*	1	9	5	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No	Birds nest in tree	Preserve	N/A
16	Joshua Tree	*Yucca brevifolia*	1	2	1	1	0	No	Dead	Dead	0	No	No	No	No	No	No		Removal	No
17	Joshua Tree	*Yucca brevifolia*	1	11	0	3	5	No	Very poor	Very Poor	0	No	Yes	No	No	No	No	Fallen	Removal	No
18	Joshua Tree	*Yucca brevifolia*	1	2	1	1	0	No	Dead	Dead	0	No	Yes	No	No	No	No		Removal	No
19	Joshua Tree	*Yucca brevifolia*	1	9	8	4	3	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
20	Joshua Tree	*Yucca brevifolia*	1	2	4	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
21	Joshua Tree	*Yucca brevifolia*	1	9	10	5	5	No	Fair	Fair	0	No	Yes	No	No	No	Yes		Removal	No
22	Joshua Tree	*Yucca brevifolia*	1	8	8	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
23	Joshua Tree	*Yucca brevifolia*	1	1	1	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
24	Joshua Tree	*Yucca brevifolia*	1	4	4	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
25	Joshua Tree	*Yucca brevifolia*	1	6	8	2	2	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
26	Joshua Tree	*Yucca brevifolia*	1	12	0	5	4	No	Very poor	Poor	0	No	Yes	No	No	No	No	fallen	Removal	No
27	Joshua Tree	*Yucca brevifolia*	1	5	4	1	0	No	Good	Good	0	No	Yes	No	No	No	No		Removal	Yes
28	Joshua Tree	*Yucca brevifolia*	1	2	3	1	0	Yes	Poor	Fair	0	Yes	Yes	No	No	No	No	1 clone	Removal	No
29	Joshua Tree	*Yucca brevifolia*	1	6	8	2	0	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Removal	Yes
30	Joshua Tree	*Yucca brevifolia*	1	4	3	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
31	Joshua Tree	*Yucca brevifolia*	1	6	8	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
32	Joshua Tree	*Yucca brevifolia*	1	1	2	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
33	Joshua Tree	*Yucca brevifolia*	1	2	2	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Removal	Yes
34	Joshua Tree	*Yucca brevifolia*	1	8	8	3	3	No	Good	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
35	Joshua Tree	*Yucca brevifolia*	1	10	6	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
36	Joshua Tree	*Yucca brevifolia*	1	6	3	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
37	Joshua Tree	*Yucca brevifolia*	1	10	10	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
38	Joshua Tree	*Yucca brevifolia*	1	16	15	5	11	No	Dead	Dead	0	No	No	No	No	No	No	Dead	Preserve	N/A
39	Joshua Tree	*Yucca brevifolia*	1	8	6	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
40	Joshua Tree	*Yucca brevifolia*	1	5	3	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
41	Joshua Tree	*Yucca brevifolia*	1	10	15	6	9	No	Fair	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
42	Joshua Tree	*Yucca brevifolia*	1	10	8	4	3	No	Good	Fair	0	Yes	Yes	No	No	No	No		Preserve	N/A
43	Joshua Tree	*Yucca brevifolia*	1	9	20	8	14	No	Good	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A

Appendix B - Joshua Tree Information Matrix

Tree No.	Common Name	Botanical Name	Stems	Diameter (in.)	Height (ft.)	Crown Width (ft.)	No. Branches	Clonal	Health	Structure	No. Pannicles	New Growth	Leaves	Flowers	Open Flower	Fruit	Fruit Drop	Notes	Impact Status	Relocation Potential
44	Joshua Tree	*Yucca brevifolia*	1	13	10	4	3	No	Dead	Dead	0	No	No	No	No	No	No		Removal	No
45	Joshua Tree	*Yucca brevifolia*	1	16	25	10	30	No	Good	Poor	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
46	Joshua Tree	*Yucca brevifolia*	1	8	5	2	0	No	Poor	Critical	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
47	Joshua Tree	*Yucca brevifolia*	1	12	10	5	6	No	Good	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
48	Joshua Tree	*Yucca brevifolia*	1	10	15	3	3	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
49	Joshua Tree	*Yucca brevifolia*	1	10	10	4	3	No	Fair	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
50	Joshua Tree	*Yucca brevifolia*	2	10	6	4	5	No	Good	Fair	0	Yes	Yes	No	No	No	No		Preserve	N/A
51	Joshua Tree	*Yucca brevifolia*	2	10	7	3	2	No	Good	Fair	0	Yes	Yes	No	No	No	No		Preserve	N/A
52	Joshua Tree	*Yucca brevifolia*	1	12	10	3	2	No	Good	Fair	0	Yes	Yes	No	No	No	No		Preserve	N/A
53	Joshua Tree	*Yucca brevifolia*	1	8	6	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
54	Joshua Tree	*Yucca brevifolia*	1	6	2	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
55	Joshua Tree	*Yucca brevifolia*	1	9	15	5	3	No	Good	Fair	0	Yes	Yes	No	No	No	No		Preserve	N/A
56	Joshua Tree	*Yucca brevifolia*	1	10	6	2	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
57	Joshua Tree	*Yucca brevifolia*	2	9	5	2	2	Yes	Fair	Poor	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
58	Joshua Tree	*Yucca brevifolia*	2	10	5	1	2	Yes	Critical	Poor	0	Yes	Yes	No	No	No	No		Preserve	N/A
59	Joshua Tree	*Yucca brevifolia*	2	6	4	1	2	Yes	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
60	Joshua Tree	*Yucca brevifolia*	1	10	10	3	2	No	Fair	Fair	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
61	Joshua Tree	*Yucca brevifolia*	1	12	10	4	3	No	Good	Good	0	Yes	Yes	No	No	No	Yes		Preserve	N/A
62	Joshua Tree	*Yucca brevifolia*	1	7	3	1	0	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
63	Joshua Tree	*Yucca brevifolia*	1	8	10	4	4	No	Dead	Dead	0	No	Yes	No	No	No	No		Preserve	N/A
64	Joshua Tree	*Yucca brevifolia*	1	9	15	3	2	No	Good	Good	0	Yes	Yes	No	No	No	No		Preserve	N/A
65	Joshua Tree	*Yucca brevifolia*	2	5	3	2	2	No	Good	Fair	0	Yes	Yes	No	No	No	No		Preserve	N/A
66	Joshua Tree	*Yucca brevifolia*	1	10	5	3	2	No	*Fair*	*Fair*	1	Yes	Yes	No	No	No	Yes		Preserve	N/A
67	Joshua Tree	*Yucca brevifolia*	1	6	5	2	1	Yes	*Fair*	*Fair*	0	Yes	Yes	No	No	No	No		Preserve	N/A
68	Joshua Tree	*Yucca brevifolia*	1	5	3	2	1	No	*Good*	*Fair*	0	Yes	Yes	No	No	No	No		Preserve	N/A
69	Joshua Tree	*Yucca brevifolia*	1	8	10	5	4	Yes	*Good*	*Fair*	1	Yes	Yes	No	No	Yes	Yes		Preserve	N/A
70	Joshua Tree	*Yucca brevifolia*	1	8	8	5	2	Yes	*Fair*	*Fair*	1	Yes	Yes	No	No	No	Yes		Preserve	N/A
71	Joshua Tree	*Yucca brevifolia*	1	5	3	1	1	No	*Good*	*Fair*	0	Yes	Yes	No	No	No	No		Preserve	N/A

Appendix C
Joshua Tree Impacts



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Permanent Impacts

Impacts to Joshua Tree

- No Impact, Preserve
- Direct Impact

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

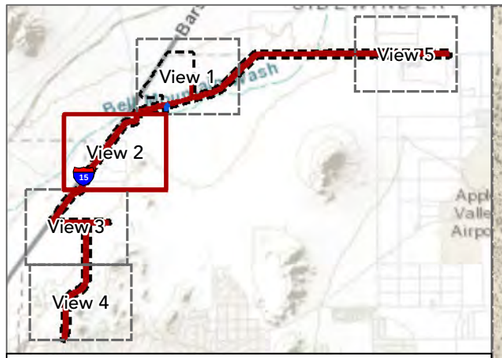
SOURCE: Bing Maps (accessed 2022)

DUDEK 0 250 500 Feet

APPENDIX C, VIEW 1

Joshua Tree Impacts

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Permanent Impacts

Impacts to Joshua Tree

- No Impact, Preserve
- Direct Impact

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

SOURCE: Bing Maps (accessed 2022)

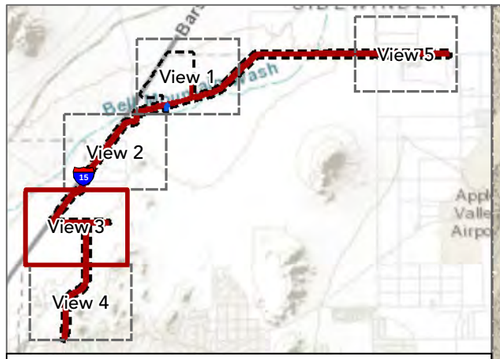
DUDEK

0 250 500 Feet

APPENDIX C, VIEW 2

Joshua Tree Impacts

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Permanent Impacts

Impacts to Joshua Tree

- No Impact, Preserve
- Direct Impact

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

SOURCE: Bing Maps (accessed 2022)

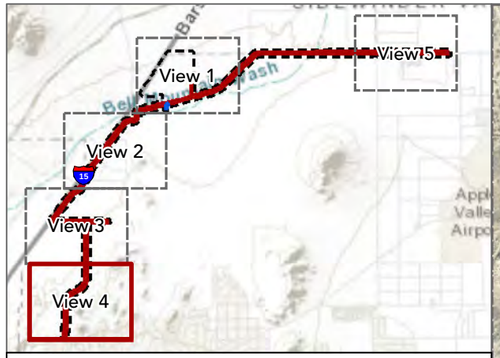
DUDEK

0 250 500 Feet

APPENDIX C, VIEW 3

Joshua Tree Impacts

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Permanent Impacts

Impacts to Joshua Tree

- No Impact, Preserve
- Direct Impact

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

SOURCE: Bing Maps (accessed 2022)

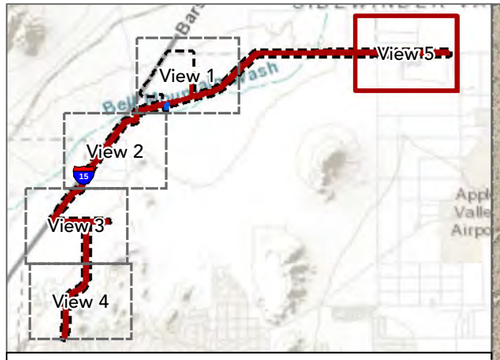
DUDEK

0 250 500 Feet

APPENDIX C, VIEW 4

Joshua Tree Impacts

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project



- Project Site
- Roadway Off-Site Improvement Areas
- Culvert Off-Site Improvement Area
- Joshua Tree Inventory Survey Area (186' Buffer)
- Permanent Impacts

Impacts to Joshua Tree

- No Impact, Preserve
- Direct Impact

*Note: Figures exclusively depict areas where Joshua trees have been observed during field surveys.

66

SOURCE: Bing Maps (accessed 2022)

DUDEK

0 250 500 Feet

APPENDIX C, VIEW 5

Joshua Tree Impacts

Apple Valley 143 - Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan Project

Appendix E
Plant Compendium

Plant Species

Vascular Species

Eudicots

APIACEAE – CARROT FAMILY

Lomatium mohavense – Mojave desertparsley (NL)

ASTERACEAE – SUNFLOWER FAMILY

Acamptopappus sphaerocephalus – rayless goldenhead (NL)
Adenophyllum cooperi – Cooper's dogweed (NL)
Ambrosia acanthicarpa – flatspine bur ragweed (NL)
Ambrosia dumosa – white bursage (NL)
Ambrosia salsola – cheesebush (NL)
Artemisia dracunculus – wild tarragon (NL)
Baccharis pilularis – coyote brush (NL)
Baccharis sarothroides – desertbroom (FACU)
Baileya multiradiata – desert marigold (NL)
Chaenactis xantiana – fleshcolor pincushion (NL)
Ericameria linearifolia – narrowleaf goldenbush (NL)
Ericameria nauseosa – rubber rabbitbrush (NL)
Lasthenia gracilis – needle goldfields (NL)
Lepidospartum squamatum – scale broom (NL)
Malacothrix coulteri – snake's head (NL)
Malacothrix glabrata – smooth desertdandelion (NL)
Peucephyllum schottii – Schott's pygmycedar (NL)
Stephanomeria pauciflora – brownplume wirelettuce (NL)
Tetradymia stenolepis – Mojave cottonthorn (NL)
Xylorhiza tortifolia var. *tortifolia* – Mojave woodyaster (NL)

BIGNONIACEAE – BIGNONIA FAMILY

Chilopsis linearis – desert-willow (FAC)

BORAGINACEAE – BORAGE FAMILY

Amsinckia intermedia – common fiddleneck (NL)
Amsinckia tessellata – bristly fiddleneck (NL)
Cryptantha micrantha – redroot cryptantha (NL)
Greeneocharis circumscissa var. *circumscissa* – cushion cryptantha (NL)
Pectocarya penicillata – sleeping combseed (NL)
Pectocarya platycarpa – broadfruit combseed (NL)

Pectocarya setosa – moth combseed (NL)
Phacelia fremontii – Fremont's phacelia (NL)
Phacelia tanacetifolia – lacy phacelia (NL)

BRASSICACEAE – MUSTARD FAMILY

* *Brassica tournefortii* – Tournefort's mustard (NL)
Caulanthus flavescens – yellow mustard
Caulanthus heterophyllus – California mustard (NL)
Descurainia pinnata – western tansymustard (NL)
* *Descurainia sophia* – herb sophia (NL)
* *Hirschfeldia incana* – shortpod mustard (NL)
Lepidium fremontii – desert pepperweed (NL)
Lepidium lasiocarpum ssp. *lasiocarpum* – shaggyfruit pepperweed (NL)
* *Sisymbrium altissimum* – tall tumblemustard (FACU)
* *Sisymbrium irio* – London rocket (NL)

CACTACEAE – CACTUS FAMILY

Cylindropuntia echinocarpa – Wiggins' cholla (NL)
Cylindropuntia ramosissima – branched pencil cholla (NL)
Opuntia basilaris var. *basilaris* – beavertail pricklypear (NL)

CHENOPODIACEAE – GOOSEFOOT FAMILY

Atriplex canescens – fourwing saltbush (NL)
Atriplex confertifolia – shadscale (NL)
Atriplex polycarpa – allscale (FACU)
Krascheninnikovia lanata – winterfatland (NL)

CUCURBITACEAE – GOURD FAMILY

Cucurbita palmata – coyote gourd (NL)

EUPHORBIACEAE – SPURGE FAMILY

Euphorbia albomarginata – whitemargin sandmat (NL)

FABACEAE – LEGUME FAMILY

Acmispon brachycarpus – foothill deervetch (NL)
Astragalus layneae – widow's milkvetch (NL)
Astragalus lentiginosus – freckled milkvetch (UPL)
Lupinus concinnus – bajada lupine (NL)
Parkinsonia florida – blue palo verde (NL)
Prosopis glandulosa var. *torreyana* – western honey mesquite (FACU)
Psorothamnus arborescens – Mojave indigobush (FACU)
Psorothamnus fremontii var. *fremontii* – Fremont's dalea (NL)

GERANIACEAE – GERANIUM FAMILY

* *Erodium cicutarium* – redstem stork's bill (NL)

LAMIACEAE – MINT FAMILY

Salvia carduacea – thistle sage (NL)

Salvia columbariae – chia (NL)

LOASACEAE – LOASA FAMILY

Mentzelia involucrata – whitebract blazingstar (NL)

Mentzelia jonesii – Jones' blazingstar (NL)

MALVACEAE – MALLOW FAMILY

Eremalche exilis – white mallow (NL)

Sphaeralcea ambigua – desert globemallow (NL)

NYCTAGINACEAE – FOUR O'CLOCK FAMILY

Mirabilis laevis – desert wishbone-bush (NL)

ONAGRACEAE – EVENING PRIMROSE FAMILY

Eremothera boothii ssp. *desertorum* – desert suncup (NL)

PAPAVERACEAE – POPPY FAMILY

Eschscholzia minutiflora – pygmy poppy (NL)

POLEMONIACEAE – PHLOX FAMILY

Eriastrum sapphirinum – sapphire woollystar (NL)

Gilia minor – little gilia (NL)

POLYGONACEAE – BUCKWHEAT FAMILY

Chorizanthe brevicornu – brittle spineflower (NL)

Chorizanthe rigida – rigid spineflower (NL)

Eriogonum angulosum – anglestem buckwheat (NL)

Eriogonum deflexum var. *deflexum* – flatcrown buckwheat (NL)

Eriogonum fasciculatum var. *polifolium* – California buckwheat (NL)

Eriogonum inflatum – desert trumpet (NL)

Eriogonum reniforme – kidneyleaf buckwheat (NL)

RUTACEAE – RUE FAMILY

Thamnosma montana – turpentinebroom (NL)

SOLANACEAE – NIGHTSHADE FAMILY

Lycium andersonii – Anderson's boxthorn (NL)

Lycium cooperi – peach thorn (NL)

ZYGOPHYLLACEAE – CALTROP FAMILY

Larrea tridentata – creosote bush (NL)

Gymnosperms and Gnetophytes

EPHEDRACEAE – EPHEDRA FAMILY

Ephedra nevadensis – Nevada joint fir (NL)

Ephedra viridis – Mormon tea (NL)

Monocots

AGAVACEAE – AGAVE FAMILY

Yucca brevifolia – Joshua tree (NL)

Yucca schidigera – Mojave yucca (NL)

POACEAE – GRASS FAMILY

* *Bromus berteroanus* – Chilean chess (NL)
* *Bromus diandrus* – ripgut brome (NL)
* *Bromus madritensis* – compact brome (UPL)
* *Bromus rubens* – red brome (UPL)
* *Bromus tectorum* – cheatgrass (NL)

Hilaria rigida – big galleta grass (NL)

* *Hordeum murinum* – mouse barley (FACU)
* *Schismus arabicus* – Arabian schismus (NL)
* *Schismus barbatus* – common Mediterranean grass

Stipa hymenoides – Indian rice grass (UPL)

Stipa speciosa – desert needlegrass (NL)

THEMIDACEAE – BRODIAEA FAMILY

Dipterostemon capitatus – bluedicks (FACU)

* signifies introduced (non-native) species

Arid West Wetland Indicator Status

NL = Not Listed

UPL = Upland

FACU = Facultative Upland

FAC = Facultative

Appendix F
Wildlife Compendium

Wildlife Species

Birds

Cardinals, Grosbeaks, and Allies

CARDINALIDAE – CARDINALS AND ALLIES

Piranga ludoviciana – western tanager

Finches

FRINGILLIDAE – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus – house finch

Spinus psaltria – lesser goldfinch

Flycatchers

TYRANNIDAE – TYRANT FLYCATCHERS

Myiarchus cinerascens – ash-throated flycatcher

Jays, Magpies, and Crows

CORVIDAE – CROWS AND JAYS

Corvus brachyrhynchos – American crow

Corvus corax – common raven

Larks

ALAUDIDAE – LARKS

Eremophila alpestris – horned lark

Old World Sparrows

PASSERIDAE – OLD WORLD SPARROWS

* *Passer domesticus* – house sparrow

Old World Warblers and Gnatcatchers

POLIOPTILIDAE – GNATCATCHERS

Polioptila melanura – black-tailed gnatcatcher

Owls

STRIGIDAE – TYPICAL OWLS

Athene cunicularia – burrowing owl

Pigeons and Doves

COLUMBIDAE – PIGEONS AND DOVES

Zenaida macroura – mourning dove

Swallows

HIRUNDINIDAE – SWALLOWS

Stelgidopteryx serripennis – northern rough-winged swallow

Verdin

REMIZIDAE – PENDULINE TITS AND VERDINS

Auriparus flaviceps – verdin

Wood Warblers and Allies

PARULIDAE – WOOD-WARBLERS

Setophaga coronata – yellow-rumped warbler

New World Sparrows

PASSERELLIDAE – NEW WORLD SPARROWS

Amphispiza bilineata – black-throated sparrow

Artemisiospiza belli – Bell's sparrow

Zonotrichia leucophrys – white-crowned sparrow

Mammals

Canids

CANIDAE – WOLVES AND FOXES

Canis latrans – coyote

Vulpes macrotis arsipus – desert kit fox

Hares and Rabbits

LEPORIDAE – HARES AND RABBITS

Lepus californicus – black-tailed jackrabbit

Sylvilagus audubonii – desert cottontail

Kangaroo Rats

HETEROMYIDAE – POCKET MICE AND KANGAROO RATS

Dipodomys panamintinus – Panamint kangaroo rat

Pocket Mice

HETEROMYIDAE – POCKET MICE AND KANGAROO RATS

Perognathus longimembris – little pocket mouse

Squirrels

SCIURIDAE – SQUIRRELS

Ammospermophilus leucurus – white-tailed antelope squirrel

Reptiles

Lizards

PHRYNOSOMATIDAE – IGUANID LIZARDS

Callisaurus draconoides – zebra-tailed lizard

Phrynosoma platyrhinos – desert horned lizard

Uta stansburiana – common side-blotched lizard

TEIIDAE – WHIPTAIL LIZARDS

Aspidoscelis tigris – tiger whiptail

CROTAPHYTIDAE – COLLARED LIZARDS

Gambelia wislizenii – long-nosed leopard lizard

Snakes

VIPERIDAE – VIPERS

Crotalus scutulatus – Mohave rattlesnake

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Appendix G

Special-Status Plants Potentially Occurring within the Biological Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Acanthoscyphus parishii var. *goodmaniana*	Cushenbury oxytheca	FE/None/1B.1	Pinyon and juniper woodland (carbonate, talus); sandy, carbonate/annual herb/May–Oct/ 3,995–7,795	Not expected to occur. The BSA is located outside of the species' known elevation range and there is no suitable vegetation present to support this species.
Boechera dispar	pinyon rockcress	None/None/2B.3	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; granitic, gravelly/ perennial herb/Mar–June/ 3,935–8,330	Not expected to occur. Although suitable Mojavean desert scrub and Joshua trees are present within the BSA, the BSA is located outside of the species' known elevation range.
Cryptantha clokeyi	Clokey's cryptantha	None/None/1B.2	Mojavean desert scrub/annual herb/Apr/2,375–4,475	Not expected to occur. The BSA contains suitable Mojavean desert scrub habitat capable of supporting this species; however, there are no CNDDB occurrence records within 5 miles of the BSA (CDFW 2022). Furthermore, this species was not detected during the April 2022 focused survey.
Cymopterus deserticola	desert cymopterus	None/None/1B.2	Joshua tree woodland, Mojavean desert scrub; sandy/perennial herb/Mar–May/2,065–4,920	Not expected to occur. This species was not detected during the April 2022 focused survey. The BSA contains suitable Mojavean desert scrub habitat capable of supporting this species; however, the nearest CNDDB occurrence record is approximately 4.9 miles southeast of the BSA, was documented in 1988, and is noted to be possibly extirpated. (CDFW 2022).
Cymopterus multinervatus	purple-nerve cymopterus	None/None/2B.2	Mojavean desert scrub, pinyon and juniper woodland; sandy or gravelly/perennial herb/Mar–Apr/ 2,590–5,905	Not expected to occur. This species was not detected during the April 2022 focused survey. The project site contains suitable Mojavean desert scrub habitat capable of supporting this species; however, there are no CNDDB occurrence records within 5 miles of the BSA (CDFW 2022).

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Diplacus mohavensis	Mojave monkeyflower	None/None/1B.2	Joshua tree woodland, Mojavean desert scrub; sandy or gravelly, often in washes/annual herb/ Apr–June/1,965–3,935	Not expected to occur. This species was not detected during the April 2022 focused survey. The BSA contains suitable Mojave desert scrub habitat and scattered Joshua trees capable of supporting this species. There are multiple CNDDB occurrence mapped approximately 2.8 miles northwest of the BSA documented in 1992 and 1998 (CDFW 2021).
Dudleya abramsii ssp. *affinis*	San Bernardino Mountains dudleya	None/None/1B.2	Pebble (Pavement) plain, pinyon and juniper woodland, Upper montane coniferous forest; granitic, quartzite, or carbonate/ perennial herb/Apr–July/ 4,100–8,530	Not expected to occur. The BSA is located outside of the species' known elevation range and there is no suitable vegetation present.
Eremothera boothii ssp. *boothii*	Booth's evening-primrose	None/None/2B.3	Joshua tree woodland, pinyon and juniper woodland/annual herb/ Apr–Sep/2,670–7,870	Not expected to occur. Scattered Joshua trees are present and there are CNDDB occurrence records, with the most recent approximately 3.3 miles southwest of the BSA that was documented in 2014 (CDFW 2022). However, morphology suggests introgression with *E. boothii* ssp. *intermedia*, and additional fieldwork is needed (CDFW 2022). Furthermore, based on locational records (Jepson Flora Project 2022) and the Consortium of California Herbaria (CCH 2022), the species is restricted to wash habitat (such as the Mojave River), which is absent from the BSA.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Eriophyllum mohavense	Barstow woolly sunflower	None/None/1B.2	Chenopod scrub, Mojavean desert scrub, playas/annual herb/ Mar–May/1,640–3,145	Not expected to occur. This species was not detected during the April 2022 focused survey. Suitable Mojavean desert scrub and sandy soils are present and capable of supporting this species; however, no CNDDB occurrence records are mapped within 5 miles of the BSA (CDFW 2022).
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	None/None/2B.2	Desert dunes, great basin scrub, Sonoran desert scrub; sandy/ annual herb/Apr–May/ 2,295–5,295	Not expected to occur. This species was not detected during the April 2022 focused survey. Suitable desert scrub and sandy soils are present. In addition, according to Jepson eFlora (2022), this species occurs on sand and gravel along hills, mesas, and dunes, which are not present in the BSA.
Opuntia basilaris var. *brachyclada*	short-joint beavertail	None/None/1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland/perennial stem succulent/Apr–June(Aug)/ 1,390–5,905	Not expected to occur. This species was not detected during the April 2022 focused survey. Suitable Mojavean desert scrub is present; however, there are no CNDDB occurrence records mapped within 5 miles of the BSA (CDFW 2022).
Pediomelum castoreum	Beaver Dam breadroot	None/None/1B.2	Joshua tree woodland, Mojavean desert scrub; sandy, washes and roadcuts/perennial herb/Apr–May/ 2,000–5,000	Not expected to occur. This species was not detected during the April 2022 focused survey. The project site contains suitable Mojavean desert scrub habitat with scattered Joshua trees and sandy soils capable of supporting this species. The nearest CNDDB occurrence record is mapped approximately 4.2 miles west of the BSA and was documented in 2008 (CDFW 2022).

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet)	Potential to Occur
Saltugilia latimeri	Latimer's woodland-gilia	None/None/1B.2	Chaparral, Mojavean desert scrub, pinyon and juniper woodland; rocky or sandy, often granitic, sometimes washes/annual herb/Mar–June/ 1,310–6,230	Not expected to occur. Although Mojavean desert scrub is present, there are no granitic soils present to support this species and there are no CNDDB occurrence records mapped within 5 miles of the BSA (CDFW 2022). Furthermore, this species was not detected during the April 2022 focused survey.
Scutellaria bolanderi ssp. *austromontana*	southern mountains skullcap	None/None/1B.2	Chaparral, cismontane woodland, lower montane coniferous forest; mesic/perennial rhizomatous herb/June–Aug/1,390–6,560	Not expected to occur. No suitable vegetation present is present to support this species.
Symphyotrichum defoliatum	San Bernardino aster	None/None/1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic); near ditches, streams, springs/ perennial rhizomatous herb/ July–Nov (Dec)/7–6,690	Not expected to occur. No suitable vegetation is present to support this species.
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	Observed. A total of 65 western Joshua tree individuals were observed within the Joshua Tree Inventory Survey Area (Figure 4). Of the 65 trees found within the Joshua Tree Inventory Survey Area, 26 western Joshua tree individuals are located within the project site and off-site improvement areas, with the remaining 39 western Joshua tree individuals located within the associated 186-foot buffer.

Notes: CRPR = California Rare Plant Rank; BSA = biological survey area.
Status Designations
Federal
FE: Federally listed as endangered

State
SC: State listed candidate species
CRPR (California Rare Plant Rank):
1A: Plants presumed extirpated in California and either rare or extinct elsewhere
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Threat Rank:
0.1: seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2: moderately threatened in California (20%–80% of occurrences threatened/moderate degree and immediacy of threat)
0.3: not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

References

CCH (Consortium of California Herbaria). 2022. CCH2: Specimen Data from the Consortium of California Herbaria. Accessed February 2022. https://cch2.org/portal/index.php.

CDFW (California Department of Fish and Wildlife). 2022. RareFind 5, Version 5.2.14. California Natural Diversity Database. Sacramento, California: CDFW, Biogeographic Data Branch. Accessed February 2022. https://map.dfg.ca.gov/rarefind/view/RareFind.aspx.

Jepson Flora Project. 2022. Jepson eFlora. Berkeley, California: University of California. Accessed February 2022. http://ucjeps.berkeley.edu/interchange/index.html.

Appendix H

Special-Status Wildlife Potentially Occurring within the Biological Survey Area

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral, and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. The BSA does contain a few Joshua trees; however, it does not support suitable streams or other aquatic resources required by this species.
Rana draytonii	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby, or emergent vegetation associated with deep, still, or slow-moving water; uses adjacent uplands	Not expected to occur. The BSA does not contain suitable wetland breeding habitat or upland dispersal habitat to support this species.
Reptiles				
Emys marmorata	western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not expected to occur. No suitable wetland or upland habitat is present within the BSA to support this species.
Gopherus agassizii	Mojave desert tortoise	FT/ST	Arid and semi-arid habitats in Mojave and Sonoran Deserts, including sandy or gravelly locations along riverbanks, washes, sandy dunes, canyon bottoms, desert oases, rocky hillsides, creosote flats, and hillsides	Not expected to occur. Desert tortoise was not observed during the 2022 focused protocol-level surveys. The BSA contains suitable sandy soils, ephemeral washes, and creosote scrub; however, the BSA is immediately adjacent to Interstate 15 to the west and bound along the south and east by Stoddard Wells Road. The nearest CNDDB occurrence was from 2004 and is mapped approximately 0.7 miles north of the BSA (CDFW 2022).
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains, including coastal scrub, chaparral,	Not expected to occur. The BSA does not contain suitable vegetation to support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			valley–foothill hardwood, conifer, riparian areas, pine–cypress, juniper, and annual grassland habitats	
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. No suitable vegetation or freshwater habitat is present within the BSA to support this species.
Aquila chrysaetos (nesting and wintering)	golden eagle	BCC/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur. While the BSA does provide open desert habitat, it lacks the hilly topography preferred by the species for wintering. The BSA also lacks large trees and cliffs required for this species to nest.
Asio otus (nesting)	long-eared owl	None/SSC	Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats	Not expected to occur. The BSA does not contain any live oak thickets or other dense stands of trees to support this species.
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Observed in the central portion of the BSA. One burrowing owl was observed flushing from a burrow during a field survey in March 2022. No additional observations were detected during subsequent surveys on the BSA. The BSA contains suitable open scrub habitat with small mammal burrow complexes that are at least 4 inches wide. The nearest CNDDB occurrence record is approximately 2.5 miles south of the project site and is from 2005 (CDFW 2022).
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST	Nests in open woodland and savanna, riparian areas, and in isolated large trees; forages in nearby grasslands	Not expected to occur. No suitable vegetation or riparian habitat is present in the BSA to support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			and agricultural areas such as wheat and alfalfa fields and pasture	
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT, BCC/SE	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. No suitable riparian habitat or woodland vegetation is present in the BSA to support this species.
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. No suitable vegetation is present in the BSA to support this species.
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to occur. No suitable vegetation or riparian habitat is present in the BSA to support this species.
Lanius ludovicianus (nesting)	loggerhead shrike	BCC/SSC	Nests and forages in open habitats with scattered shrubs, trees, or other perches	Moderate potential to occur. The BSA contains potentially suitable habitat (open desert scrub with scattered shrubs) capable of supporting this species. The nearest CNDDB occurrence record is mapped approximately 4.1 miles southwest of the BSA and was documented in 2006 (CDFW 2022).
Piranga rubra (nesting)	summer tanager	None/SSC	Nests and forages in mature desert riparian habitats dominated by cottonwoods and willows	Not expected to occur. The BSA does not contain mature desert riparian habitats dominated by cottonwoods or willows that is required by this species.
Setophaga petechia (nesting)	yellow warbler	BCC/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. No suitable vegetation or riparian habitat is present to support this species
Toxostoma bendirei	Bendire's thrasher	None/SSC	Nests and forages in desert succulent shrub and Joshua tree habitat in Mojave Desert; nests in yucca, cholla, and other thorny scrubs or small trees	Low potential to occur. Scattered Joshua tree habitat potentially capable of supporting this species nesting occurs within the BSA; however, there are no CNDDB occurrence records within 5 miles of the BSA (CDFW 2022).

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Toxostoma lecontei	LeConte's thrasher	BCC/SSC	Nests and forages in desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus	Moderate potential to occur. The BSA contains desert scrub and scattered Joshua tree habitat potentially capable of supporting this species nesting. The nearest CNDDB occurrence record is mapped approximately 3.3 miles southwest of the BSA and was documented in 2017 (CDFW 2022).
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur. The BSA lacks suitable dense riparian thickets to support nesting for this species.
Vireo vicinior (nesting)	gray vireo	BCC/SSC	Nests and forages in pinyon–juniper woodland, oak, and chamise and redshank chaparral	Not expected to occur. The BSA lacks pinyon-juniper woodlands, oaks, chamise, and redshank chaparral, used by this species for nesting.
Fishes				
Siphateles bicolor mohavensis	Mohave tui chub	FE/FP, SE	Lacustrine ponds or pools; 4 feet minimum water depth; freshwater flow; mineralized and alkaline environment; habitat for aquatic invertebrate prey and egg attachment substrate; Ruppia maritima preferred for egg attachment and thermal refuge in summer months	Not expected to occur. The BSA does not have aquatic habitat that could support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/SCT	Open grassland and scrub communities supporting suitable floral resources.	Low potential to occur. While the study area does contain floral resources during the spring blooming period, many of the flower patches are small and disjointed, forming marginal potential habitat for this species. Furthermore, documented occurrences of Crotch bumble bee within the high desert are historical in nature, with the more recent occurrences located along the northern foothills of the San Bernardino Mountains (Richardson 2023); however, further study is needed to understand the full distribution of this species.
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in human-made structures and trees	Not expected to occur. The BSA contains open, dry creosote bush shrubland capable of supporting this species; however, no roosting habitat was observed during the biological reconnaissance. There are no CNDDB species occurrence records within 5 miles of the BSA (CDFW 2022).
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None/SSC	Desert wash, desert scrub, desert succulent scrub, and pinyon–juniper woodland	Low potential to occur. This species is often found in coastal sage scrub but can also be found in desert areas. However, the species was not observed during protocol small mammal surveys, and the CNDDB occurrence records within 5 miles of the BSA are from 100 years ago (CDFW 2022).
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, human-made structures, and tunnels	Not expected to occur; although potentially suitable xeric habitat capable of supporting this species occurs in the BSA, no suitable roosting habitat was observed during the biological reconnaissance. The CNDDB occurrence records that occur within 5 miles of the BSA are from 90 years ago (CDFW 2021).

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Microtus californicus mohavensis	Mojave river vole	None/SSC	Wet, weedy, herbaceous areas along the Mojave River	Not expected to occur. No suitable wet herbaceous vegetation present to support this species.
Spermophilus (Xerospermophilus) mohavensis	Mohave ground squirrel	None/ST	Desert scrub habitats, including those dominated by creosote bush and burrobush, desert sink scrub, and desert saltbush scrub	Not expected to occur. Mohave ground squirrel was not observed during the 2022 focused protocol surveys within the BSA. The BSA contains suitable creosote bush habitat capable of supporting this species, and small mammal burrow complexes were observed during the biological reconnaissance; however, the site is in close proximity to major roads and a highway. The nearest CNDDB occurrence record is approximately 1.9 miles southwest of the BSA, from 1980 (CDFW 2021).
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Moderate potential to occur. The BSA contains suitable open creosote flats with friable soils and potentially suitable burrows were observed and mapped within the BSA.
Vulpes macrotis arsipus	desert kit fox	None/None[1]	Sparse vegetated scrub habitats such as creosote scrub communities that support abundant rodent populations (Center for Biological Diversity 2013)	Observed within the BSA via a camera trap that was deployed as part of the Mohave ground squirrel focused surveys.

Notes: BSA = biological study area; CNDDB = California Natural Diversity Database.

[1] Section 4000 of the California Fish and Game Code defines "kit fox" as a fur-bearing animal.

Status Designations

Federal

BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
FC: Federal candidate for listing
FE: Federally listed as endangered
FT: Federally listed as threatened

State

FP: California Fully Protected species
SE: State listed as endangered
SSC: California Species of Special Concern
ST: State listed as threatened
SCT: State candidate for listing as threatened
WL: California Watch List species

References

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Center for Biological Diversity. 2013. *Before the California Fish and Game Commission, A Petition to List the Desert Kit Fox* (Vulpes macrotis arsipus) *as Threatened under the California Endangered Species Act*. March 10, 2013. https://www.biologicaldiversity.org/species/mammals/desert_kit_fox/pdfs/Desert-kit-fox-CESA-petition-3-10-13.pdf.

Richardson, L.L. Bumble Bees of North America Occurrence Records Database [unpublished database]. Database provided via email from L.L. Richardson to Anna Cassady (Biologist, Dudek). May 3, 2023.

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Appendix I

Desert Tortoise Presence/Absence Surveys

D. Ayers
K. Narel

Version: October 26, 2018

Date of survey: 3-May-22 (day, month, year) Survey biologist(s): S. Greely sgreely@dudek.com, 760-601-3414 (name, email, and phone number)

Site description: Apple Valley 143, Victorville, CA 143-acre site (project name and size; general location)

County: San Bernardino Quad: Victorville + Apple Valley North Location: 11S 477094E 3828368N (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: ~~100% coverage~~ or Sampling Area size to be surveyed: 143 acres Transect #: 98 Transect length: 0.1-0.6 mi

GPS Start-point: 11S 476484E 3828077N 2937ft (easting, northing, elevation in meters) Start time: _____ am/pm

GPS End-point: 11S 477184E 3827945N 2924ft (easting, northing, elevation in meters) End time: _____ am/pm

Start Temp: _____ °C End Temp: _____ °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 tortoises observed.
No sign observed.
No active burrows observed.

A. Anderson
K. Narel

Version: October 26, 2018

Date of survey: 4-May-22 (day, month, year) Survey biologist(s): S. Greely sgreely@dudek.com, 760-601-3414 (name, email, and phone number)

Site description: Apple Valley 143, Victorville, CA 143-acre site (project name and size; general location)

County: San Bernardino Quad: Victorville + Apple Valley North Location: 11S 477094E 3828368N (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 143 acres Transect #: 98 Transect length: 0.1 - 0.6 mi

GPS Start-point: 11S 477184E 3827945N 2924 ft (easting, northing, elevation in meters) Start time: 7:23 (am)/pm

GPS End-point: 11S 477419E 3828004N 2927 ft (easting, northing, elevation in meters) End time: 12:21 am/(pm)

Start Temp: 12.2 °C End Temp: 24.4 °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				
2				
3				
4				
5				
6				
7				
8				

No tortoises observed.
No sign observed.
No active burrows observed.

Date of survey: 31/10/2022 (day, month, year) Survey biologist(s): Britney Schultz; bschultz@dudek.com (name, email, and phone number)

Site description: Apple Valley 143 off-site culvert area; 0.5ac; Victorville, CA (project name and size, general location)

County: San Bernardino Quad: Victorville + AV North Location: 34°35'30.81"N; 117°15'5.34"W (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 0.5ac Transect #: 2 Transect length: 80 m

GPS Start-point: _____ (easting, northing, elevation in meters) Start time: 12:35 am/pm

GPS End-point: _____ (easting, northing, elevation in meters) End time: 1:31 am/pm

Start Temp: 23.3 °C End Temp: 23.8 °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				

NO desert tortoise observed

NO sign observed.

NO active burrows observed.

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 AV 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.

Appendix J
Burrowing Owl Relocation Plan

Burrowing Owl Relocation Plan

Apple Valley 143 Project

JUNE 2023

Prepared for:

COVINGTON DEVELOPMENT PARTNERS
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254
Contact: Brandon Gallup

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Brock Ortega

Brock Ortega
Principal

Printed on 30% post-consumer recycled material.

Table of Contents

SECTION **PAGE NO.**

Acronyms and Abbreviations iii

1 Purpose and Objectives 1
1.1 Mitigation Measure BIO-7 1

2 Background 3
2.1 Project Overview 3
2.2 2021–2022 Survey Results 3
2.3 Mitigation Measures 3
2.4 Qualified Biologist 4

3 Avoidance and Minimization Measures 7
3.1 Pre-Construction Burrowing Owl Surveys 7
3.2 Buffer Distances 7
3.3 Burrow Screening 7
3.4 Excavation of Inactive Burrows 8

4 Passive Displacement 9
4.1 Determining Vacancy 9
4.2 Excavation of Active Burrows 9

5 Monitoring and Reporting 11
5.1 Monitoring Requirements 11
5.2 Reporting Requirements 11

6 References 13

FIGURES

1 Regional Map 15
2 Project Vicinity 17

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
2012 Staff Report	California Department of Fish and Wildlife's 2012 Staff Report on Burrowing Owl Mitigation
BTR	biological resources technical report
CDFW	California Department of Fish and Wildlife
MM	mitigation measure

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1 Purpose and Objectives

The following burrowing owl relocation plan describes the burrowing owl (*Athene cunicularia*) monitoring and reporting requirements during construction of the Apple Valley 143 Project (project) as recommended in the biological resources technical report (BTR) prepared for the project by Dudek (2023). This plan was prepared in accordance with Mitigation Measure (MM) BIO-7 (Pre-Construction Surveys for Burrowing Owl and Avoidance) included in the BTR. The full text of MM-BIO-7 is provided in Section 1.1 for ease of reference.

This burrowing owl relocation plan is intended to identify when passive displacement of burrowing owls will be used, the methods that will be implemented to perform passive displacement, and the monitoring and reporting that will be required if passive displacement is performed. More specifically, this plan includes descriptions of the following requirements for passive displacement procedures:

1. Methods to confirm a burrow is active
2. Measures that could be used to avoid and minimize impacts
3. Methods to be used to determine vacancy and excavation timing
4. Methods for burrow excavation
5. Removal of other potential owl burrow surrogates or refugia
6. Reporting methods of the excavation and closure of burrows
7. Monitoring to evaluate success
8. Reporting methods of long-term burrowing owl deterrence of the impacted site

1.1 Mitigation Measure BIO-7

This plan was prepared in accordance with MM-BIO-7 from the BTR (Dudek 2023). The full text of MM-BIO-7 is provided below.

MM-BIO-7 Pre-Construction Surveys for Burrowing Owl and Avoidance. One pre-construction burrowing owl survey shall be completed no more than 14 days before initiation of site preparation or grading activities, and a second survey shall be completed within 24 hours of the start of site preparation or grading activities. If ground-disturbing activities are delayed or suspended for more than 30 days after the pre-construction surveys, the project site shall be resurveyed. Surveys for burrowing owl shall be conducted in accordance with protocols established in the Staff Report on Burrowing Owl Mitigation (prepared by the California Department of Fish and Game [now California Department of Fish and Wildlife; CDFW]) in 2012 or current version.

If burrowing owls are detected, the burrowing owl relocation plan shall be implemented in consultation with the Town of Apple Valley. As required by the burrowing owl relocation plan, disturbance to burrows shall be avoided during the nesting season (February 1 through August 31). Buffers will be established around occupied burrows as determined by a qualified biologist. No project activities shall be allowed to encroach into established buffers without the consent of a monitoring biologist. The buffer shall remain in place until it is determined that occupied burrows have been vacated or the nesting season has completed.

Outside of the nesting season, passive owl relocation techniques approved by CDFW shall be implemented. Owls shall be excluded from burrows in the immediate project area and within a buffer zone if there is a threat to the surface or subterranean burrow structure by installing one-way doors in burrow entrances. These doors will be placed at least 48 hours prior to ground-disturbing activities. The project area shall be monitored daily for 1 week to confirm owl departure from burrows prior to any ground-disturbing activities. Compensatory mitigation for permanent loss of owl habitat will be provided following the guidance in the CDFW 2012 Staff Report on Burrowing Owl Mitigation or current version.

Where possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into the tunnels during excavation to maintain an escape route for any wildlife inside the burrow.

Should burrowing owl be located during the pre-construction survey, the project would result in the loss of 210.6 acres of suitable habitat for burrowing owl. Mitigation for direct impacts to 144.5 acres shall be fulfilled through conservation of suitable burrowing owl habitat through the purchase of credits at a minimum of 1:1 in-kind habitat replacement of equal or better functions and values to those impacted by the project, for a total of 210.6 acres.

2 Background

2.1 Project Overview

The approximately 258.3-acre project, including the 144-acre project site and the 114.3-acre off-site improvements, is located in the northern part of the Town of Apple Valley, which is located in the Victor Valley/High Desert region in western San Bernardino County (Figure 1, Regional Map; Figure 2, Burrowing Owl Burrow Locations). The project is located immediately northeast of the intersection of Interstate 15 and Stoddard Wells Road.

The project would include the construction of three industrial/warehouse buildings and associated improvements including loading docks, truck and vehicle parking, and landscaped areas. The project site is bound to the south by Stoddard Wells Road, to the north by Johnson Road, and to the west by Interstate 15. Surrounding land uses include vacant land, Interstate 15, single-family residences, CalPortland aggregate plant, the Victorville Landfill, the Apple Valley Airport, and Walmart and Big Lots distribution centers.

Additionally, the project will make roadway improvements along Stoddard Wells Road, Johnson Road, Falchion Road, and Apple Valley Road, including frontage landscaping, pedestrian improvements, and the construction of Outer I-15 Road on the western boundary of the project site, which would be a public road once constructed. The project will also make improvements to a culvert across from the project site and south of Stoddard Wells Road (Figure 2, Burrowing Owl Burrow Locations).

2.2 2021–2022 Survey Results

Biological resource surveys of the project site and off-site areas were conducted between December 2021 and May 2023. During these surveys, one burrowing owl and several suitable burrows (i.e., burrows at least 4 inches in diameter) were observed within the project site (Figure 2). As such, suitable habitat was determined to exist on site, and the species could occupy the project site or off-site areas prior to construction. Pursuant to the California Fish and Game Code and the Migratory Bird Treaty Act, a pre-construction survey in compliance with the California Department of Fish and Wildlife's 2012 Staff Report on Burrowing Owl Mitigation (2012 Staff Report) (CDFG 2012) would be necessary to re-evaluate the locations of potential burrowing owl burrows located within the project limits so that impacts to owls or active owl nests can be avoided or minimized. Consistent with MM-BIO-7, a pre-construction survey for burrowing owl shall be conducted in areas supporting potentially suitable habitat no more than 14 days prior to the start of construction activities, and a second survey shall be completed within 24 hours of the start of site preparation or grading activities.

2.3 Mitigation Measures

The project would result in the loss of 210.6 acres of suitable habitat for burrowing owl. As required by BTR mitigation measure MM-BIO-1 (Conservation of Western Joshua Tree Lands), provided below, mitigation for direct impacts to western Joshua trees will be fulfilled through the purchase of credits at a California Department of Fish and Wildlife (CDFW)-approved mitigation bank or other conservation mechanism approved by the Town of Apple Valley and CDFW. Conservation efforts for western Joshua tree associated with the Western Joshua Tree Mitigation

Fund will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Thus, mitigation for impacts to western Joshua tree will also mitigate for impacts to loss of suitable habitat for burrowing owl.

If passive displacement of burrowing owl is implemented, the previously discussed purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by the Town of Apple Valley and CDFW will mitigate for direct impacts to displaced burrowing owls.

MM-BIO-1 Conservation of Western Joshua Tree Lands. Based on a literature review completed by the California Department of Fish and Wildlife (CDFW), CDFW would like the western Joshua tree locations to be buffered by 186 feet to account for the take of seed bank for western Joshua tree and their associated habitat. Therefore, a 186-foot buffer (or radius) was applied to each western Joshua tree location. The direct impacts to this 186-foot buffer were analyzed, and the project would result in 45.2 acres of impacts to the western Joshua trees, their seed bank, and their associated habitat. Mitigation for direct impacts to 90.4 acres of western Joshua trees and their 186-foot buffer will be fulfilled through conservation of western Joshua trees at a 2:1 habitat replacement of equal or better functions and values to those impacted by the project for a total of 66.0 acres. Mitigation will be accomplished either through off-site conservation or through a CDFW-approved mitigation bank. If mitigation is not purchased through a mitigation bank and lands are conserved separately, a cost estimate will be prepared to estimate the initial start-up costs, and ongoing annual costs, of management activities for the management of the conservation easement(s) area in perpetuity. The funding source will be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount will be established following the completion of a project-specific Property Analysis Record to calculate the costs of in-perpetuity land management. The Property Analysis Record will take into account all management activities required in the Incidental Take Permit to fulfill the requirements of the conservation easement(s), which are currently in review and development.

Additionally, no take of western Joshua tree will occur without authorization from CDFW in the form of an Incidental Take Permit pursuant to California Fish and Game Code 2081. The project applicant will adhere to measures and conditions set forth in the Incidental Take Permit.

2.4 Qualified Biologist

In accordance with the 2012 Staff Report, a qualified biologist meets the following minimum qualifications:

1. Familiarity with the species and its local ecology
2. Experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor
3. Familiarity with the appropriate state and federal statuses related to burrowing owls, scientific research, and conservation
4. Experience with analyzing impacts of development on burrowing owls and their habitat

In accordance with the 2012 Staff Report, a qualified biologist will perform the burrowing owl surveys as outlined in MM-BIO-7. Occupied burrows shall not be disturbed during the nesting season. Occupied burrows shall not be disturbed during the non-nesting season until a qualified biologist verifies that either (1) nesting has not begun or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

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3 Avoidance and Minimization Measures

3.1 Pre-Construction Burrowing Owl Surveys

In accordance with MM-BIO-7, a qualified biologist (see Section 2.4) will conduct the surveys for both permanent and temporary impact areas as well as within a 150-meter (approximately 500-foot) buffer no more than 14 days prior to the start of the construction activities and again within 24 hours of the start of site preparation or grading. The surveys will identify active wintering or breeding burrowing owls within these areas.

The survey methods are detailed in the 2012 Staff Report and will consist of walking parallel transects 7–20 meters apart over the entire survey area and noting all burrowing owls present and any suitably sized burrows (i.e., 4 inches or greater in diameter) with burrowing owl sign (whitewash, feathers, pellets, etc.). The results of the surveys will be submitted to CDFW.

If burrowing owls or active burrowing owl sign are detected during pre-construction surveys, the qualified biologist or monitoring biologist will coordinate with the contractor to avoid and minimize impacts to burrowing owl by implementing the measures described below.

3.2 Buffer Distances

If occupied burrowing owl burrows are detected during the pre-construction surveys, the active burrow will be flagged to include a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season or as otherwise determined by a qualified biologist. The buffer will be staked and flagged. Ground-disturbing activities during the breeding season will be restricted within the buffer. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.

The active burrows will be monitored to ensure that the buffer distance is effective. Effective buffers minimize direct impacts by providing space between the bird and the construction activity. In addition, effective buffers minimize indirect impacts by decreasing sound and visual disturbance for the animal. A monitoring biologist will be present during all initial activities adjacent to burrowing owl buffers to monitor the birds' behavior. In any case where a burrowing owl shows signs of stress or disturbance due to construction activities, all activities in the immediate vicinity will be halted and the buffer distance and construction activities will be re-evaluated. In accordance with MM-BIO-7, no project activities shall be allowed to encroach into established buffers without the consent of a monitoring biologist. The buffer shall remain in place until it is determined that any nesting activity has ended and/or occupied burrows have been vacated.

3.3 Burrow Screening

In cases where it is infeasible to maintain a 160-foot buffer during non-breeding season or a 250-foot buffer during the breeding season due to environmental, topographic, or construction constraints, etc., the buffer may be reduced by screening burrows as a means of minimizing potential impacts to burrowing owls where appropriate and feasible. This strategy involves screening burrows by installing hay bales, plywood, and/or other fencing material to create a visual and auditory barrier between construction activities and the active burrows. Biological monitors will need to determine if the topography of a specific site is appropriate for the use of this technique, and whether this technique will be effective at reducing disturbance.

During the breeding season, hay bales should be stacked three bales high and 50 feet wide. During the non-breeding season, hay bales should be stacked two bales high and 50 feet wide. All hay bales used on the project site will be certified as weed free. Perches near the burrow should remain within the sheltered area of the bales, and the bales should not be closer than 2 or 3 feet from the occupied burrow and should be placed as far from the active burrow as possible, outside the nearest work area. During and following installation of the shelter, biological monitors will be present for all ground-disturbing activities within the area between the recommended buffer and the edge of the reduced buffer. Biological monitors will evaluate and make adjustments to the buffer and/or shelter to ensure impacts to burrowing owl are minimized and the birds are not showing signs of stress or disturbance.

When determining an appropriate buffer setback distance, the qualified biologist will take into consideration any data collected on the individual sensitivities of the burrowing owl present at the project site. This data will be used as a baseline to compare the behavior of burrowing owls within no-disturbance buffers that are smaller than the recommended distances. Biological monitors will have the authority to stop construction or sheltering activities that are disturbing sensitive species and make changes to the shelters and buffers in accordance with these guidelines to increase protection of the burrowing owl if necessary.

Documentation of the installation of a shelter will include the following: where and when the shelter was installed, how long it will be required, anticipated level of construction activity, pictures of the shelter, pictures of installation, a description of the installation, and a description of site conditions. The site conditions that should be included are surrounding vegetation, topography of the area, animals present at the burrow, and line-of-sight conditions between the burrow and construction activities. This information and a status of the shelters in place will be described in the monthly reports (Section 5.2, Reporting Requirements).

3.4 Excavation of Inactive Burrows

Excavation of burrows confirmed inactive based on wildlife camera monitoring will help deter burrowing owls from occupying the construction areas. Pre-construction surveys (described in Section 3.1) will be conducted within the project site to determine if burrows are actively being used. If burrows are suitably sized (i.e., 4 inches or greater in diameter), game cameras will be installed at the entrance for 3 days to confirm lack of burrowing owl presence. Inactive burrows will be excavated and refilled by a qualified biologist. To prevent injury to wildlife that might be inside the burrow, all excavation of inactive burrows will be performed using hand tools, escape routes will be installed (flexible plastic pipe), and a mirror or camera will be used to scope during the excavation of all burrows. The excavation of inactive burrows will occur prior to clearing or grading activities.

4 Passive Displacement

If an active burrow is identified in an area where there is potential for it or its tunnel structure to be destroyed or irreversibly affected by construction, and the owl would be in danger, and shelter in place, setback distances, and avoidance will not be effective or possible, then passive displacement will be implemented. To the extent feasible, passive displacement will take place such that it is in sync with the owls' natural dispersal cycle (i.e., early in the non-breeding season, when owls are less site-faithful) (Le Gouar et al. 2012; Hennessy et al. 2020).

4.1 Determining Vacancy

Passive displacement will only occur outside of the breeding season (September 1 through January 31) after a qualified biologist verifies that juveniles from the burrow are foraging independently and capable of independent survival or the owls have not begun nesting. If exclusion will occur immediately (within 1 week) after the end of the breeding season (August 31), daily monitoring will be conducted for 1 week to confirm that young have fledged prior to exclusion. Similar to the excavation of inactive burrows, a mirror or camera will be used to scope all previously active burrows to ensure burrows are not occupied by eggs or young.

4.2 Excavation of Active Burrows

Burrowing owls will be excluded from currently occupied burrows by installation of a one-way door in the original burrow and in all connected legally accessible surrounding potentially active burrows within 160 feet. One-way doors will remain in place at least 72 hours before excavation. The one-way doors will be monitored for exiting or trapped animals via a game camera. Once a qualified biologist can determine by site surveillance that the old burrow is vacant (i.e., 3 days of negative game camera results), with no sign of fresh use by wildlife, including tracks, scat, or recent excavation, they will be checked with an endoscope immediately prior to excavation to verify status. Sections of flexible plastic pipe will be inserted into the tunnels during excavation to maintain an escape route for any animals that could be located inside the burrow. Each burrow will be refilled with dirt and/or rocks to prevent reoccupation of the burrows. Photographs will be taken of the excavation and closure of the burrow to demonstrate success and sufficiency. Construction will occur as soon as possible following passive relocation and burrow collapse to discourage burrowing owls from re-occupying the disturbance area.

Prior to burrow collapse, the qualified biologist will be required to obtain confirmation that the burrows are empty of wildlife, document the installation of one-way doors 72 hours in advance of burrow excavation, and remove other potential burrow surrogates or refugia on the project site. Burrows that are not threatened by collapse due to the project (i.e., burrows outside the construction area) will not be passively excluded or dismantled.

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5 Monitoring and Reporting

5.1 Monitoring Requirements

In accordance with the 2012 Staff Report, monitoring will occur before, during, and after exclusion of burrowing owls. In accordance with MM-BIO-7, if exclusion occurs, a qualified biologist will conduct daily monitoring for 3 days to confirm owls have vacated the burrows. Monitoring will be performed between 2 hours before sunset to 2 hours following sunset, or 1 hour before sunrise to 2 hours following sunrise, corresponding with the time when burrowing owls are most active; this monitoring time will be extended if owls are active longer. Biologists will examine the collapsed burrow and survey for owl-related impacts and new burrows in the surrounding area. The results of these monitoring efforts and an evaluation of the success of the passive displacement efforts will be included in the monthly compliance reports along with any needed remedial measures to avoid and/or minimize impacts.

5.2 Reporting Requirements

Pre-Construction Clearance Survey Reports

A report will be submitted to the Town of Apple Valley documenting the results of the pre-construction surveys. The report will describe the methods and results of the clearance surveys and will serve as notification as to whether owl passive relocation is necessary.

Monthly Reports

If avoidance or passive relocation is implemented, monthly reports will be prepared for submittal to the Town of Apple Valley and CDFW. The reports will summarize the construction activities with the potential to impact burrowing owls that occurred, any injuries or fatalities of burrowing owls, the effectiveness and practicality of the avoidance and minimization measures implemented, and recommendations for modifying the protection measures. If passive relocation of burrowing owls is performed, the monthly reports will also include the following: the total number and locations of burrows collapsed, a map of those locations, photographs of the excavation and closure of the burrows, the number and activity of the owls observed leaving the burrows to be excavated, and the methods used to continually make the site inhospitable to burrowing owls and fossorial mammals.

Final Compliance Report

A final compliance report will be submitted to the Town of Apple Valley and CDFW summarizing the effectiveness of the mitigation measures and the level of burrowing owl take associated with the project.

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6 References

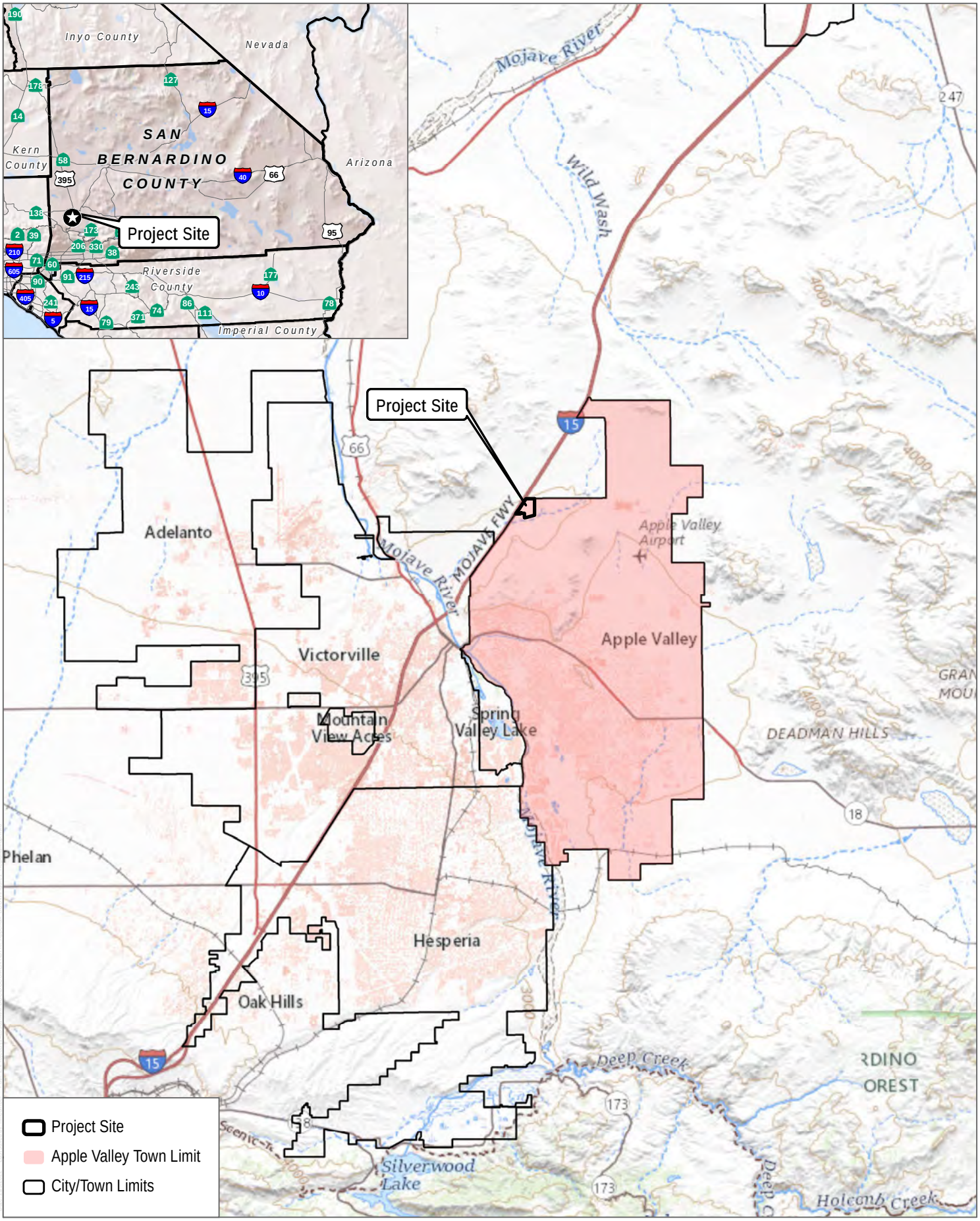
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SOURCE: USGS Topo 2020

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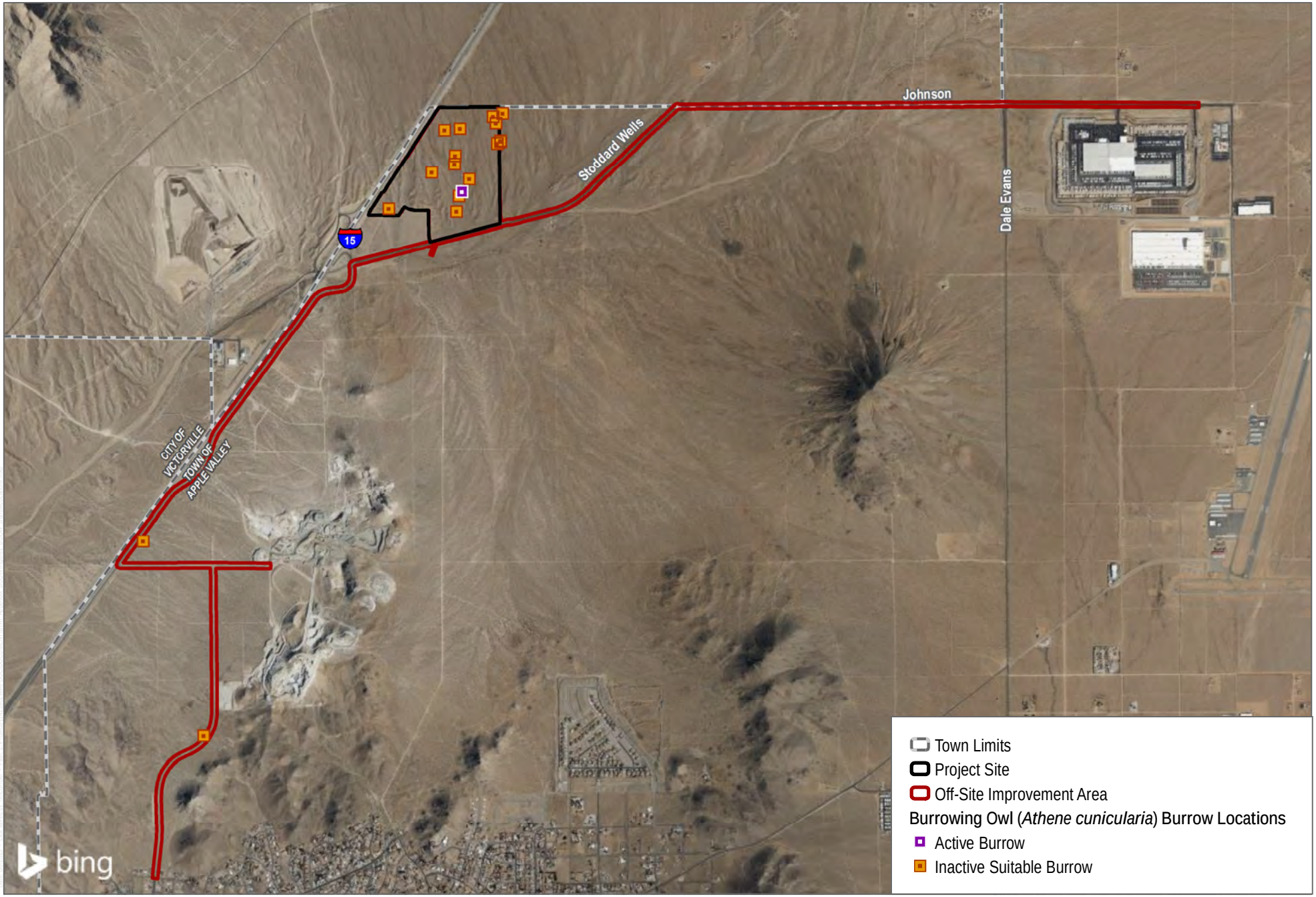
0 1.75 3.5 Miles

FIGURE 1

Regional Map

Apple Valley 143 Project Burrowing Owl Relocation Plan

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SOURCE: Bing Maps (accessed 2022)

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0 1,500 3,000 Feet

FIGURE 2

Burrowing Owl Burrow Locations

Apple Valley 143 Project Burrowing Owl Relocation Plan

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Appendix K

Desert Kit Fox Relocation and Mitigation Plan

Desert Kit Fox Relocation and Mitigation Plan

Apple Valley 143 Project

JUNE 2023

Prepared for:

COVINGTON DEVELOPMENT PARTNERS
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254
Contact: Brandon Gallup

Prepared by:

DUDEK

605 Third Street
Encinitas, California 92024
Contact: Brock Ortega

Brock Ortega
Principal

Printed on 30% post-consumer recycled material.

Table of Contents

SECTION **PAGE NO.**

Acronyms and Abbreviations iii

1 Introduction 1
- 1.1 Potential Impacts to Desert Kit Foxes 1
- 1.2 Purpose and Objectives 1
  - 1.3. Mitigation Measure BIO-11 2

2 Background 3
- 2.1 2022 Focused Survey Results 3
  - 2.1.1 Desert Kit Fox Dens 3
  - 2.1.2 Desert Kit Fox Observations 3

3 Pre-Construction Surveys and Biological Compliance Monitoring 5
- 3.1 Desert Kit Fox Protection Measures 5

4 Passive Desert Kit Fox Relocation Techniques 7
- 4.1 Passive Relocation Methods 7
- 4.2 Desert Kit Fox Return to the Project Site 8

5 Reporting and Notifications 11

6 References 13

TABLE

1 Desert Kit Fox Den Classifications and Protection Measures 9

FIGURES

1 Regional Map 15

2 Desert Kit Fox Den Locations 17

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
CDFW	California Department of Fish and Wildlife
MM	mitigation measure
plan	Desert Kit Fox Relocation and Mitigation Plan
project	Apple Valley 143 Project

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1 Introduction

The Apple Valley 143 Project (project) involves the construction of three industrial/warehouse buildings totaling 2,628,000 square feet of industrial/warehouse space and associated improvements on the 144-acre project site and 114.3 acres of off-site improvements. The project site is located in the northern portion of the Town of Apple Valley, which is located in the Victor Valley/High Desert region in western San Bernardino County (Figure 1, Regional Map). Most of the project site is dominated by creosote bush scrub and provides suitable habitat for the presence of desert kit fox (*Vulpes macrotis arsipus*).

1.1 Potential Impacts to Desert Kit Foxes

While not state or federally listed, nor a California Department of Fish and Wildlife (CDFW) Species of Special Concern, the desert kit fox is protected from take by Title 14 of the California Code of Regulations Section 460. Furthermore, there is heightened concern (since 2014) for desert kit fox and the possible effects from development in the desert because of the discovery of canine distemper virus in foxes on and near a several solar project sites in the Colorado Desert region—specifically, the Genesis Solar Energy Project, Colorado River Substation, and Desert Sunlight Project in the eastern Colorado Desert (Clifford and Rudd 2013).

Without protection measures, desert kit foxes on the project site could be injured or killed during construction activities due to the number of personnel, vehicles and equipment, and processes associated with construction, vegetation mowing, and grading. Denning and foraging habitat will be eliminated on the project site as a result of construction; therefore, any foxes within the project site will need to be relocated off the project site. As a result, direct impacts to foxes and indirect impacts to their local populations may occur, including, but not limited to, disrupted social hierarchies, increased fighting, decreased survival, dispersal of displaced foxes to undesirable areas, and increased disease incidence and/or transmission. No permanent fencing will occur along the project site perimeter that would exclude foxes from area use; however, no suitable habitat will be present for foxes following construction activities.

1.2 Purpose and Objectives

During the course of focused surveys, specifically desert tortoise (*Gopherus agassizii*) protocol surveys and Mohave ground squirrel (*Xerospermophilus mohavensis*) surveys, at least one desert kit fox was observed within the project site. This desert kit fox relocation and mitigation plan (plan) outlines the proposed methods for implementing the relocation of this desert kit fox and any additional individuals inhabiting the project site.

While the Mitigation Measure (MM) BIO-10 (Pre-Construction Survey for Desert Kit Fox and Avoidance) from the project biological resources technical report does not specifically require that a plan be written, it does require consultation with CDFW, and thus a plan would help facilitate this requirement. The primary purpose of this plan is to document the implementation methods for exclusion of foxes. For ease of reference, MM-BIO-10 is provided in Section 1.3.

1.3 Mitigation Measure BIO-10

MM-BIO-10 Pre-Construction Survey for Desert Kit Fox and Avoidance. A pre-construction survey for desert kit fox shall be conducted within 10 days before initiation of site preparation or grading activities to determine the presence/absence of desert kit fox.

If desert kit fox is detected, the desert kit fox relocation and mitigation plan shall be implemented. As required by the desert kit fox relocation and mitigation plan, if an active non-natal desert kit fox den is detected, a 200-foot no disturbance buffer will be established around the active den, unless otherwise authorized by the California Department of Fish and Wildlife (CDFW). Where required buffering will not be feasible, passive relocation, as outlined in the desert kit fox relocation and mitigation plan, is allowed with concurrence from the County of San Bernardino, CDFW, and U.S. Fish and Wildlife Service. If an active natal desert kit fox den is detected, an initial 200-foot no disturbance buffer will be established around the natal den, and this buffer will be maintained until the den can be verified to not host pups. Construction activities will not be permitted in this area until the den has been vacated. Once the den is vacated, and if in danger by construction, it can be collapsed, if deemed necessary by a qualified biologist.

A report to evaluate the success of the relocation efforts and any subsequent re-occupation, if applicable, will be provided (including a comprehensive summary, tables, maps, etc.) at the end of the construction period. Data will be readily available to the CDFW upon request. If an injured, sick, or dead desert kit fox is detected on any area associated with the project, the designated CDFW personnel at both the Ontario office and the Wildlife [Health] Lab will be notified as described within the desert kit fox relocation and mitigation plan.

2 Background

2.1 2022 Focused Survey Results

2.1.1 Desert Kit Fox Dens

On May 3, May 4, and October 31, 2022, and May 2, 2023, Dudek biologists conducted focused protocol surveys for desert tortoise within the project site. Biologists surveyed the site by walking approximately 10-meter-wide (33-foot-wide) transects for 100% coverage of the project site and the off-site improvement areas. A buffer survey was not conducted because there was no legal access to these areas. The intent of the surveys was to record the presence of desert tortoise individuals and suitably sized burrows; however, during the survey, 10 potentially suitable desert kit fox dens were observed within the project site and mapped. Active desert kit fox sign (i.e., freshly dug dirt and canid tracks at the entrance of the den) was observed at one of these dens (Figure 2, Desert Kit Fox Den Locations).

2.1.2 Desert Kit Fox Observations

Dipodomys Ecological Consulting biologists conducted Mohave ground squirrel protocol surveys within the project site between March 15 and June 26, 2022. These surveys included running five camera trap stations. The camera traps documented at least one desert kit fox within the project site.

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3 Pre-Construction Surveys and Biological Compliance Monitoring

In accordance with MM-BIO-10 from the biological resources technical report, biological monitoring pre-construction surveys will commence at the start of surface disturbance to determine if desert kit foxes are in the project site or within 200 feet of the project site where legal access has been granted. This allows for the documentation of active den use within the project site. In addition, biological compliance monitoring shall be conducted by a qualified biologist and consist of walking through habitat prior to grading to search for sensitive biological resources. The biologist shall note any suitably sized dens with fresh desert kit fox sign or presence of desert kit fox. Copies of the desert kit fox survey results will be submitted to CDFW.

If an active non-natal desert kit fox den is detected within the project site or 200-foot survey buffer area during the biological compliance monitoring, a 200-foot buffer will be established around the active den, unless otherwise authorized by CDFW. Where required buffering will not be feasible, passive relocation is allowed with concurrence from the Town of Apple Valley, CDFW, and the U.S. Fish and Wildlife Service.

If an active natal desert kit fox den is detected within the project site or 200-foot survey buffer area during the biological compliance monitoring, an initial 200-foot no-disturbance buffer will be established around the natal den, and this buffer will be maintained until the den can be verified to not host pups. Construction activities will not be permitted in this area until the den has been vacated. Once the den is vacated, and if in danger by construction, it can be collapsed, if deemed necessary by the project lead and/or project biologist.

3.1 Desert Kit Fox Protection Measures

The following protection measures will be implemented for desert kit foxes at the project site:

- The project biologist and/or project lead will be familiar with the approved plan and all methods therein. Both will be the project contacts with CDFW and remain apprised of all issues and conversations relative to desert kit fox associated with the site. All biological monitors assigned to work on this species will be familiar with this plan and approved methods. The project owner will have ultimate responsibility for implementation of the plan.
- Data and results of surveys will be readily available to the agencies, with summary reports provided as outlined in Section 5, Reporting and Notifications.
- The Worker Environmental Awareness Program will include information for all construction workers, and especially nighttime workers, that will (1) educate them sufficiently about desert kit fox biology and nocturnal activity for them to understand why they are requested to follow certain procedures, (2) provide measures for avoiding impacts to desert kit fox, and (3) provide procedures for reporting if they see a live, injured, or dead desert kit fox.
- A speed limit of 15 mph will be observed on the project site for the protection of wildlife and maintenance of air quality.

- All pipes greater than 4 inches in diameter within the project site must be capped and/or covered every evening or when not in use to prevent desert kit foxes or other animals from accessing the pipes or must be inspected by a biological monitor prior to their being moved.
- All steep-walled holes or trenches more than 2 feet deep will be covered at the close of each workday or provided with one or more escape ramps, at maximum 50-foot intervals, constructed of earth fill or wooden planks.
- To preclude any transmission of canine distemper virus and other diseases by project personnel, the CDFW veterinarian's guidance will be incorporated and implemented, including:
  - No pets will be allowed on the site prior to or during site mobilization and construction.
  - Any hazing activities that include the use of chemical or other repellents that could contain disease-bearing substances must be cleared through CDFW prior to use. Animal-based repellents (e.g., coyote urine, bobcat urine) may be used only after testing and approval by CDFW.
  - If canine distemper virus is found at any point during the project, all handling of desert kit foxes and monitoring of dens will observe clean techniques, including, at a minimum, disinfecting or covering shoes after visiting any den, disinfecting equipment that has come into contact with any desert kit fox, and wearing single-use disposable gloves.
- Notification, disease testing, and necropsies will be performed as described in Section 5 for any sick or diseased desert kit fox or for any desert kit fox mortality.

4 Passive Desert Kit Fox Relocation Techniques

Relocation, for the purposes of this plan, will refer to the exclusion of desert kit foxes from the project site to locations off the project site, some or most of which are likely to be already within the individuals' core or extended use areas. Relocation will include both passive and active methods to remove desert kit foxes from the project site during construction. Table 1 provides a detailed set of measures based on the occupancy and condition of desert kit fox dens. Desert kit fox dens with litters or adults raising pups will be avoided until young have left the den. A minimum no-disturbance buffer of 200 feet will be maintained around all active natal dens where young are being reared. This buffer may be reduced through coordination between the project biologist and CDFW. Any active desert kit fox den is considered to be a natal den between February and July, unless shown otherwise by camera monitoring.

4.1 Passive Relocation Methods

Passive relocation is a program of hazing and den collapse to discourage desert kit foxes from continuing to use those dens and prevent re-use of the project site. Note that it is preferable to encourage an animal to leave its den, rather than blocking it out of the den after it has left the den for the evening, as recommended by the U.S. Fish and Wildlife Service (USFWS 2011). Desert kit foxes may succumb to exposure during the day or predation during the night if they are blocked out of a den to which they have returned, expecting refuge. Even if a desert kit fox is known to use dens off the project site, just because a desert kit fox leaves for the night does not mean that it will use off-site dens and not try to return to the project site. By contrast, discouraging use of a den provides a desert kit fox with the opportunity to seek use of another safe den. Hazing techniques will include progressively blocking the den with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) and artificial, non-injurious materials (e.g., filled sandbags, blocks), and/or partially excavating some of the inactive tunnels in a multi-tunneled den. Other techniques that CDFW must approve prior to their use may include approved urine or chemical compounds, non-injurious noise, human activity, recordings of dogs or coyotes, or other techniques. Knowing where desert kit foxes live and the dens that they use, as determined by previous surveys and observations, will help ensure the feasibility of progressive den blocking and continued desert kit fox safety.

Persistent and continued hazing hopefully will result in encouraging most desert kit foxes to move to a den site that is off the project site. However, while den closure may discourage a desert kit fox from using a particular den, it does not prevent the desert kit fox from simply using a different den on the project site, digging a new den, or excavating a former, now-collapsed den (this has been observed at other solar projects). However, an alternative relocation method for desert kit foxes near the project site boundary could include wrapping temporary chain-link fencing around the project site and around the den, forming a "peninsula" of unfenced habitat that will funnel desert kit foxes off the project site, rather than to another location within the project site. This funnel would be wide enough to permit desert kit foxes to escape a coyote. For dens with pups, the width would be 200 feet from the burrow on all sides. Once desert kit foxes have moved off site, the gap would be closed, and the funnel of fencing removed.

Previously, Dudek biologists utilized chain-link fencing by covering an entire den in conjunction with installing commonly available pet doors at each entrance. This was found to be most effective at prohibiting the excavation

of new entrances, leading to eventual den abandonment. Animals were allowed to access the dens for a short period before biologists activated the pet door's one-way function, prohibiting ingress but allowing egress. This is a preferred method and can be employed for large dens or those with multiple entrances, in addition to the techniques described above.

Regardless of the technique used, passive relocation will be timed such that, to the extent feasible, grading and clearing will occur in other portions of the project site first. Leaving a naturally vegetated but relatively narrow path to better off-site areas can be successful. The purpose of this is to make the rest of the site less attractive to exiting desert kit foxes as compared to the adjacent natural habitat. Hopefully, desert kit foxes will choose to leave the site and not establish new dens within the project construction area.

Three nights of inactivity, as proved by camera and track evidence, is sufficient to determine that the passive techniques have been successful. It is imperative that the entire den is excavated, as desert kit fox will find and dig out partially excavated den networks.

4.2 Desert Kit Fox Return to the Project Site

If a desert kit fox attempts to reestablish residency within the project site, it will be passively relocated using techniques described in Table 1. In the event a desert kit fox is spotted within 200 feet of active construction, a monitor will be present to ensure the desert kit fox remains safe. If the monitor determines that the nearby construction is negatively impacting the desert kit fox, construction will be halted until the monitor determines it is safe to continue. Once the desert kit fox moves to a location more than 200 feet away from active construction, construction activities can resume as normal.

Table 1. Desert Kit Fox Den Classifications and Protection Measures

Den Type	Definition	Time Period	Action Required
Potentially and definitely active dens (non-natal): includes all dens on the project site and dens that cannot be avoided during construction	Den of sufficient size and shape/curvature that is active; current or older desert kit fox sign may or may not be present	Any season – Note that between February and July, it must be proven that they are not natal dens (see below)	1. Monitor for up to 3 consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. 1a. During the observation period, the biologist shall determine the need to install a buffer and its appropriate size (if any). 2. If no tracks entering the den are observed in the tracking medium or no photos of the target species entering the den are captured after 3 nights, the den will be excavated completely and backfilled by hand. May be excavated during pre-construction survey period. 3. If tracks are observed, the den will be protected by an appropriate buffer as determined by the biologist; the den will be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) and artificial, non-injurious materials (e.g., filled sandbags, blocks) for the next 3 to 5 nights to discourage the desert kit fox from continued use. In addition to progressively blocking the den, the biologist may employ chain-link fence to cover the den with one-way pet doors at each entrance. Other hazing techniques (e.g., approved urine or chemical compounds, noise, recordings of dogs or coyotes) may be used. After verification that the den is unoccupied, it will be excavated and backfilled by hand to ensure that no desert kit foxes are trapped in the den. If the den is verified to be inactive, then it may be collapsed during whelping/pup-rearing season (February through July) only after consulting with CDFW. 4. If the den remains occupied, the passive hazing and monitoring will be repeated until it is verified the occupant has left the den. Alternatively, the den may be partially excavated when it is temporarily vacant, leaving sufficient depth to provide protection for the desert kit fox but discouraging it from den use.
Active natal or pup-rearing dens: includes all dens on the project site and all dens within the survey area for construction that	Active natal den – A den with pups	During whelping season (February through July)	1. If an active natal den (a den with pups) is detected on the site, the biologist shall determine the appropriate course of action to minimize the potential for animal harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g., is the den in a central area or in a perimeter location), and the pending construction activities proposed near the den. An initial minimum 200-foot no-disturbance buffer will be maintained

Table 1. Desert Kit Fox Den Classifications and Protection Measures

Den Type	Definition	Time Period	Action Required
have been confirmed to be active			around all active natal or pup-rearing dens. Active natal/pup-rearing dens will not be excavated. 1a. If the den is active during the whelping season, even if pups are not seen, a 200-foot no-disturbance buffer will be maintained until the den can be verified to not host pups. 1b. CDFW will be notified of intent to close a den during the pupping season and closures will be in coordination with CDFW. 2. Vehicular access through the buffer area will be permitted at the discretion of the biologist. Other construction activities will not be allowed unless coordinated with CDFW. Each request to enter a buffer is to be made on a case-by-case basis; work is to be performed during daylight hours; and construction personnel will be given an extensive tailgate training by a member of the biological monitoring staff, to include desert kit fox behaviors, den status, and animal stress. The biological monitor has authority to stop work; biological monitors must be present to monitor the den while any work is being performed in the buffer; all work will be stopped or paused upon the biological monitor's instruction if desert kit foxes are observed exhibiting stress or other signs of impacts; and any work activity within a den buffer will be documented and reported in the monthly compliance report. 3. The den will be monitored by non-invasive techniques (e.g., wildlife camera, night-vision binoculars, telemetry if an adult is collared) until the den is vacated. 4. If the situation is unusual and/or not addressed by the approved plan, then the biologist or project lead, in consultation with the biologist, will consult with CDFW to determine the appropriate course of action to minimize the potential for animal harm or mortality.

Note: CDFW = California Department of Fish and Wildlife

5 Reporting and Notifications

- A report to evaluate the success of the relocation efforts and any subsequent re-occupation of the project site will be provided (including a comprehensive summary, tables, maps, etc.) at the end of the construction period. Data will be readily available to CDFW upon request.
- If an injured, sick, or dead desert kit fox is detected on any area associated with the project, the designated CDFW personnel at both the Ontario CDFW office and the CDFW Wildlife Health Lab will be notified as identified in the following.
  - Injured Animals. If a desert kit fox is injured because of any project-related activities, the project lead, project biologist, or approved biological monitor will notify CDFW personnel within 8 hours regarding the capture and transport of the animal to the CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Within 24 hours, a follow-up written notification of the incident will be sent to CDFW containing, at a minimum, the date, time, location, and circumstances of the incident. The project biologist or approved biological monitor will maintain communication with the rehabilitation clinic and/or veterinarian to monitor the animal's progress or demise and will report to CDFW weekly, or sooner if the animal recovers, dies, or is euthanized.

    CDFW will determine the final disposition of the injured animal, whether it requires euthanasia or if it recovers.

    All costs for professional care of the injured animal will be paid by the project owner.
  - Sick Animals. If a sick desert kit fox is observed, the project lead, project biologist, or approved biological monitor will notify CDFW personnel within 8 hours regarding the capture and transport of the animal to the CDFW-approved veterinarian clinic. A follow-up written notification containing a description of the animal's condition, location found, and other relevant data will be sent to CDFW within 24 hours.

    If the animal dies, it will be transferred to the CDFW Wildlife Health Laboratory for a necropsy, if they so choose, to determine the cause of death. The project owner will pay to have the animal transported. A written notification of the incident will be sent to CDFW and contain, at a minimum, the date, time, location, and circumstances of the incident.

    CDFW will determine the final disposition of the animal if it recovers.

    All costs for professional care, including transportation of the dead animal, will be paid by the project owner.
  - Fatalities. If a desert kit fox is killed because of any project-related activities during construction, operation, and closure, or is found dead on the project site, the project lead, project biologist, or approved biological monitor will immediately refrigerate the carcass and notify CDFW personnel within 8 hours of the discovery to receive further instructions on the handling of the animal. Handling and storage of a dead animal will follow the most recently issued guidelines for handling a desert kit fox carcass (currently the CDFW Wildlife Health Laboratory; CDFW 2023). Written information will be sent by the project biologist or approved biological monitor with the carcass that includes a description of the animal's condition, location found, and other relevant data. A necropsy will be performed by the CDFW Wildlife Health Laboratory if they so choose, to determine the cause of death or other health-related factors, even in the case of vehicle collision. The project owner will pay to have the animal transported.
  - Prior to beginning any work related to this plan, CDFW will provide the project owner with the names and contact information of an approved local wildlife veterinarian and wildlife rehabilitation facility. CDFW will also provide names and contact information for relevant personnel from CDFW and the CDFW Wildlife Health Laboratory facility.

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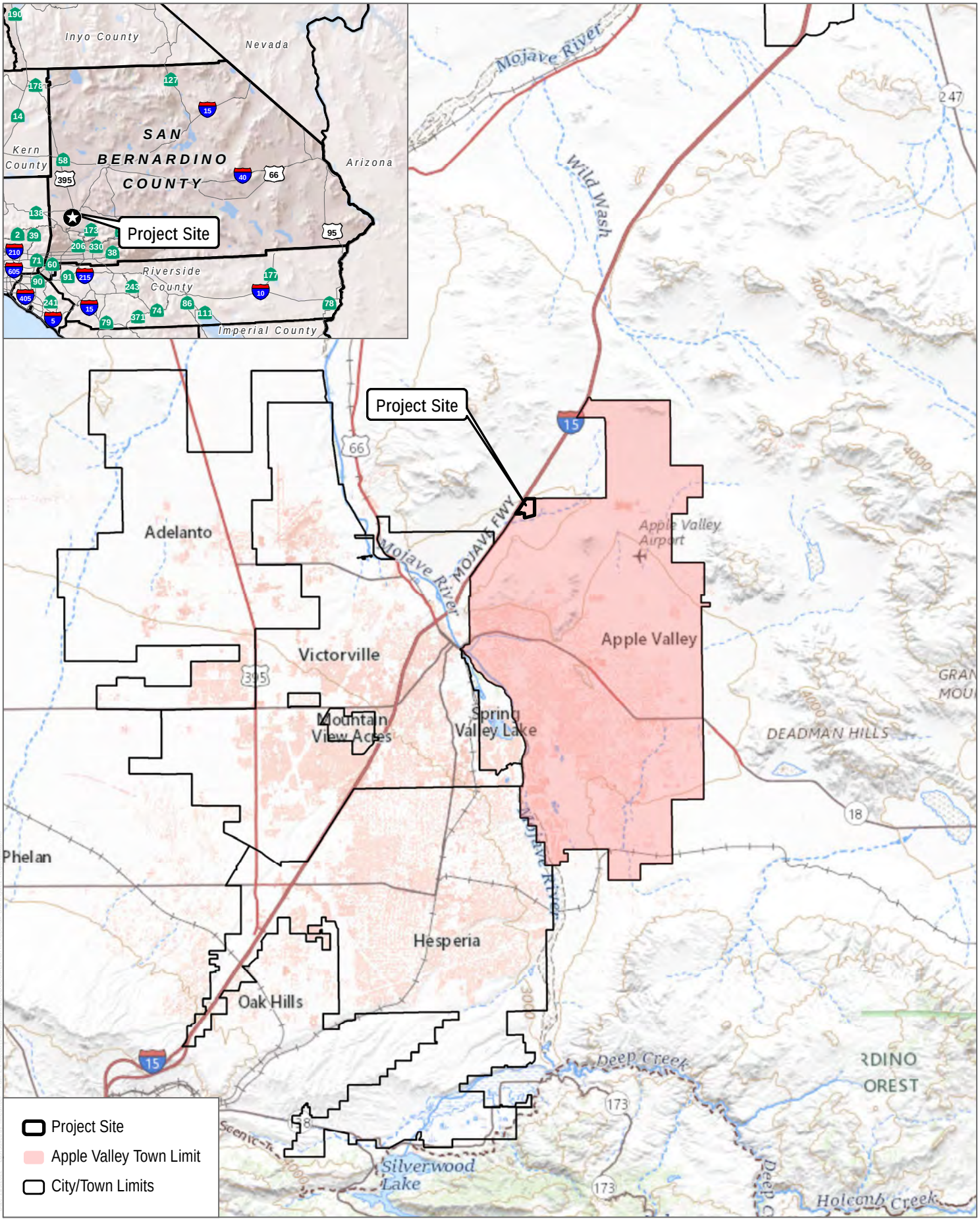
6 References

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SOURCE: USGS Topo 2020

DUDEK

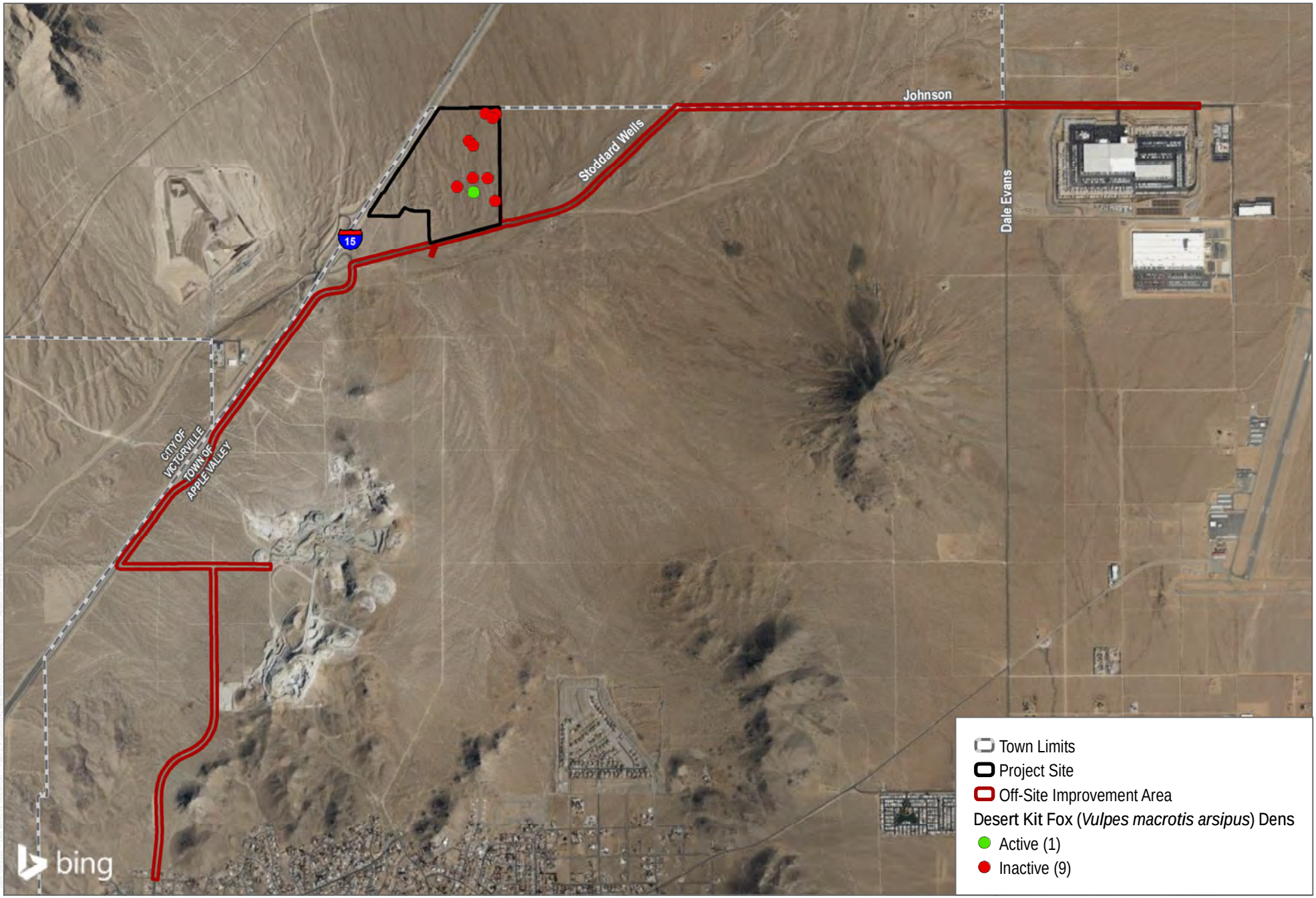
0 1.75 3.5 Miles

FIGURE 1

Regional Map

Apple Valley 143 Project Desert Kit Fox Relocation and Mitigation Plan

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SOURCE: Bing Maps (accessed 2022)

DUDEK

0 1,500 3,000 Feet

FIGURE 2

Desert Kit Fox Den Locations

Apple Valley 143 Project Desert Kit Fox Relocation and Mitigation Plan

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