Biological Resources Technical Report

I-15 Industrial Park Project

APRIL 2022

Prepared for:

POPLAR 35, LLC
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254
Contact: Dana Whitmer

Prepared by:

DUDEK
38 North Marengo Avenue
Pasadena, California 91101
Contact: Megan Enright, Senior Biologist

Printed on 30% post-consumer recycled material.

Table of Contents

SECTION **PAGE NO.**

TABLES

FIGURES

APPENDICES

Acronyms and Abbreviations

Acronym	Definition
amsl	above mean sea level
BMP	best management practice
BSA	biological survey area
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
CEQA Guidelines	State of California CEQA Guidelines
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Bernardino
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DWR	California Department of Water Resources
°F	Fahrenheit
FESA	Federal Endangered Species Act
General Plan	County of San Bernardino General Plan
GIS	geographic information system
HUC	Hydrologic Unit Code
I	Interstate
MBTA	Migratory Bird Treaty Act
OHWM	ordinary high water mark
Project	I-15 Industrial Park Project
RWQCB	regional water quality control board
SWP	California State Water Project
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

INTENTIONALLY LEFT BLANK

1 Introduction

This report documents the results of surveys conducted to identify potential biological resources constraints for the I-15 Industrial Park Project (Project) located in the City of Hesperia, San Bernardino County, California. A cumulative analysis of the Project is provided within this report. Figure 1, Regional Map, shows the regional location of the Project, and 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 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 and County of San Bernardino General Plan and City of Hesperia General Plan and Municipal Code (policies); and (4) specify measures to avoid, minimize, and/or mitigate any significant impacts that would occur to biological resources as a result of Project implementation.

1.1 Project Description

1.1.1 Project Location

The approximately 118.45-acre Project, including the 96.05-acre Project site and 22.40-acre Off-Site Utilities and Street Improvement Area (Off-Site Area), is located in the eastern part of the City of Hesperia (City), which is located in the Victor Valley/High Desert region in western San Bernardino County (Figure 1, Regional Map; Figure 2, Project Vicinity Map). The Project is located on the southwest quadrant of Interstate (I) 15 and Main Street. The Project is located south of Main Street, west of Cataba Road, north of I-15 and Poplar Street, and east of U.S. Highway 395. The Project consists of Assessor's Parcel Numbers (APNs) 306-458-101, 306-462-101, and 306-460-107. Specifically, the Project is located in Section 22, Township 4 North, Range 5 West, as depicted on the U.S. Geological Survey Baldy Mesa, California 7.5-minute topographic quadrangle map. Regional access to the Project is provided via I-15, immediately adjacent to the south, and U.S. Highway 395, bordering the western boundary of the Project.

1.1.2 Project Components

The Project would include construction of two industrial/warehouse buildings and associated improvements (see Figure 3, Site Plan). Building 1, the eastern building, would be 1,108,000 square feet and Building 2, the western building, would be 742,000 square feet. In total, the Project would provide 1,850,000 square feet of industrial/warehouse space and associated improvements, including loading docks, tractor-trailers, passenger vehicle parking spaces, stormwater detention basins, and landscape area.

The Project would include improvements along Mesa Linda Street and Cataba Road, including frontage landscaping and pedestrian improvements. A variety of trees, shrubs, plants, and land covers would be planted within the Project frontage's landscape setback area, as well as within the landscape areas found around the proposed industrial/ warehouse buildings and throughout the Project site.

The Project would also involve the off-site construction of Sultana Street (currently a dirt road) from the northwestern corner of the Building 2 site to Mesa Linda Street, as well as the off-site construction of Lassen Road (also currently a dirt road) from the northwestern corner of the Building 2 site to Poplar Street. The Project would also involve the

widening of the northbound eastern portion of U.S. Highway 395 along the western frontage of the Building 2 site. Additionally, utility lines would be installed within Sultana Street. Other minor street and utility improvements may occur within streets immediately adjacent to the Project site. Together, these off-site improvements are referred to as the Off-Site Street and Utility Improvements and are depicted on Figure 4, On- and Off-Site Improvement Areas.

2 Regulatory Setting

2.1 Federal

2.1.1 Federal Endangered Species Act

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

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

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC 703 et seq.), as amended, prohibits the intentional take of any migratory bird or any part, nest, or eggs of any such bird. Under MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so. In December 2017, Department of the Interior Principal Deputy Solicitor Jorjani issued a memorandum (M-37050) that interprets MBTA's "take" prohibition to apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. Unintentional or accidental take is not prohibited. 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) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project operator for a federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The regional water quality control boards (RWQCBs) administer the certification program in California. Section 402 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 at 33 CFR 320 and 330. 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 system only if there is no practicable alternative that would have less adverse impacts.

Wetlands and Other Waters of the United States

Under Section 404 of the CWA, USACE has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. USACE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function. On January 23, 2020, USACE and the U.S. Environmental Protection Agency finalized the "Navigable Waters Protection Rule," which establishes a new definition of Waters of the United States under the CWA. The new Navigable Waters Protection Rule (Rule) repeals the Obama Administration-era 2015 Clean Water Rule and replaces it with a definition that drastically limits the scope of federal regulation to a much narrower collection of aquatic resource features. Among the greatest changes, the Rule eliminates "significant nexus" determinations to determine if potential tributaries have a significant effect on the "chemical, physical, and biological integrity of downstream traditional navigable waters." The Rule also redefines the term "adjacent." In order for an adjacent wetland to be jurisdictional, it must touch "at least one point or side of a jurisdictional water" or have a direct hydrological surface connection to a traditional navigable waterway. Hydrological connections through groundwater, which have been suggested to maintain federal jurisdiction in the past, are now outside of the scope of federal purview. Most importantly, the Rule identifies four specific categories of aquatic resource features that will be regulated by the federal government under the CWA, leaving oversight for other "excluded" waterbodies to states and tribes. The following four specific categories of aquatic resources are regulated under the CWA:

1. Territorial seas and traditional navigable waters
2. Perennial and intermittent tributaries
3. Certain lakes, ponds, and impoundments
4. Wetlands that are adjacent to jurisdictional waters

The revised Rule does not expand federal regulation to include new categories of aquatic features; however, it does provide a list of excluded features that would no longer be considered waters of the United States under the final Rule. Most significantly, "ephemeral" streams and other features that only flow in direct response to precipitation, and are particularly prevalent in the western United States, would no longer be subject to CWA regulation.

The State Water Resources Control Board has authority over wetlands through Section 401 of the CWA, as well as the Porter–Cologne Water Quality Control Act (Porter–Cologne Act), California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. A request for certification is submitted to the regional board at the same time that an application is filed with USACE.

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 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.

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 the CDFW to maintain viable populations of all native species. Toward that end, the 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.

Section 1600–1616

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

Under California Fish and Game Code, Sections 1600–1616, CDFW has the authority to regulate work that will substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake. CDFW also has the authority to regulate work that will deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all projects. Applications to CDFW must include a complete certified California Environmental Quality Act (CEQA) document.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (see Section 1900 et seq. of the California Fish and Game Code) directed CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. CESA expanded on the original Native Plant Protection Act and enhanced legal protection for plants, but the Native Plant Protection Act remains part of the California Fish and Game Code. To align with federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Because rare plants are not included in CESA, mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

Nesting Birds

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

2.2.3 California Environmental Quality Act

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

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

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

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

2.2.4 Porter–Cologne Water Quality Control Act

Pursuant to provisions of the Porter–Cologne Act, the RWQCBs regulate discharging waste, or proposing to discharge waste, within any region that could affect a water of the state (California Water Code, Section 13260[a]). The State Water Resources Control Board defines a waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). As of April 2019, the State Water Resources Control Board has narrowed their definition of a waters of the state to include the following:

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

All waters of the United States are waters of the state. Wetlands, such as isolated seasonal wetlands, that are not generally considered waters of the United States are considered waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." (SWRCB 2019). If a CWA Section 404 permit is not required for a project, the RWQCB may still require a permit (waste discharge requirements) for impacts to waters of the state under the Porter–Cologne Act.

2.2.5 California Native Desert 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 BLM 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 City of Hesperia General Plan

The City's Conservation and Open Space Elements (City of Hesperia 2010) contain goals and policies that address biological resources. The following goals and policies pertain to biological resources and are relevant to the Project:

Goal CN-3. Minimize development and set aside necessary open space near and along the surface waters as well as those washes and other water passageways located in the City to preserve and protect plant and animal species and their natural habitat dependent on such surface waters and waterways.

Policy CN-3.1. Monitor the development impacts to these surface water resources within the city.

Policy CN 3.2. Preserve areas within the Oro Grande wash and un-named wash #1 that exhibit ideal native habitat in a natural state.

Goal CN 4. Establish policies and regulations to protect the natural environment and habitat of the City's biological resources.

Policy CN-4.1. Preserve pristine open space areas and known wildlife corridors areas for conservation to protect sensitive species and their habitats.

Policy CN-4.2. Encourage the protection, preservation and long-term viability of environmentally sensitive habitats and species in the City.

Policy CN-4.3. Identify lands that are suitable for preservation for sensitive species and their habitats.

Policy CN-4.4. In those areas known as possible habitat for endangered and sensitive species, require proper assessments before authorizing development.

Policy CN-4.5. Where such assessments indicate the presence of endangered or sensitive species, require appropriate actions to preserve the habitat and protect the identified species.

2.3.3 Hesperia Municipal Code, Chapter 16.24 – Protected Plant Policy

Chapter 16.24 of the Hesperia Municipal Code contains the City's Protected Plant Policies. This chapter establishes policies governing the removal of protected plants, including:

1. The following regulated desert native plants with stems two inches or greater in diameter or six feet or greater in height:
   a. *Dalea spinosa* (smoketree);
   b. All species of the family *Agavaceae* (century plants, nolinas, yuccas);
   c. All species of the genus *Prosopis* (mesquites).
2. Creosote rings, ten feet or greater in diameter.
3. All Joshua trees (mature and immature).
4. All plants protected or regulated by the California Desert Native Plants Act.

Additionally, Section 16.24.060 of the Hesperia 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 or grading plan shall be approved by the appropriate City review authority for each site indicating exactly which trees of plants are authorized to be removed. The required information can be added to any other required site plan. Prior to issuance of development permits in areas with native trees or plants that are subject to the provisions of this chapter, a preconstruction inspection shall be conducted by the appropriate authority. Such preconstruction inspections may be combined with any other required inspection.

2.3.3.1 Protected Plant Plan and Relocation/Adoption

Furthermore, the City's Protected Plants policy (City of Hesperia 2009) states the following for Tentative Tract, non-single-family residential developments (i.e., commercial, industrial, and apartment development):

- A protected plant plan shall be prepared by a certified arborist or registered botanist.
- An application and fee shall be completed and paid to the City.
- Healthy, transplantable plants shall be relocated on site or may be placed in an adoption program.

To qualify as an approved adoption program, a developer shall provide a letter on company letterhead, describing the program and the community notification process. The program shall identify the following, as a minimum.

A. A public notice process which may include publication in local newspapers, radio advertisement, hand distributed fliers, and other noticing techniques. Noticing must occur over a period of not less than three weeks.

B. The location where the trees may be viewed by the public and a clearly identified period of at least two weeks (including weekends) when trees/plants are available for adoption.

C. The person that will be available on-site to assist those adopting trees to find the actual trees/plants for removal. An on-site or cell phone number for that person is required.

D. A note that a copy of the City Joshua Tree Transplanting Guidelines will be provided to each adopter.

E. A log showing the name, address, and phone number of each adopter and the number and type of trees/plants they received.

Note: At least 50% of the transplantable trees and plants shall be adopted or the remaining number below 50% shall be purchased at $350 per transplantable tree. Purchased trees must be recycled at Advance Disposal.

2.3.3.2 Findings for Removals

Per Hesperia Municipal Code Section 16.24.040, the reviewing authority must authorize the removal of a native tree or plant subject to the provisions of the Hesperia Municipal Code 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 (flora and fauna), especially those with limited habitats (e.g., eagles).

B. The removal of the native tree or plant is justified for one of the following reasons:

1. The location of the native tree or plant and/or its drip line 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;
2. The location of the native tree or plant and/or its drip line interferes with the planned improvement of a street or development of an approved access to the subject or adjoining private property;
3. The location of the native tree or plant is hazardous to pedestrian or vehicular travel or safety as determined by the director of transportation, flood control and airports or other county reviewing authority;
4. The native tree or plant or its presence interferes with or is causing excessive 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;
5. The condition or location of the native plant or tree is adjacent to and in such close proximity to existing or proposed structure that the native plant or tree has or will sustain significant damage.

C. Joshua trees that are proposed to be removed have been transplanted or stockpiled for future transplanting wherever possible. In the instance of stockpiling the permittee has posted a bond to insure such Joshua trees are transplanted appropriately.

3 Methods

Data regarding biological resources present within the 187.85-acre Biological Survey Area (BSA; see Figure 5, Biological Resources Map)1, which includes the Project site and Off-Site Utilities and Street Improvements Area (Off-Site Area) plus a 100-foot buffer, was obtained through a review of pertinent literature, field reconnaissance, habitat assessments, and protocol/focused surveys, which are described in detail in this section. The BSA includes additional surveyed areas along the western and northern boundaries that were removed from the project disturbance limits after surveys were conducted. 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 the CESA (California Fish and Game Code Section 2050 et seq.) or the FESA (16 USC 1531 et seq.)
  - Species that are candidate species being considered or proposed for listing under FESA or CESA
  - Species that are included on the CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2020), or species with a CRPR of 1 or 2 in the CNPS Inventory of Rare and Endangered Plants of California (CNPS Inventory) (CNPS 2021)
- Special-status wildlife species include:
  - Species designated as either rare, threatened, or endangered by CDFW or USFWS and are protected under either the CESA (California Fish and Game Code Section 2050 et seq.) or the FESA (16 USC 1531 et seq.)
  - Species that are candidate species being considered or proposed for listing under FESA or CESA
  - Species that are included on the CDFW Special Animals List (CDFW 2021b)
  - Species designated as Fish and Game Code Section 4000 fur-bearing animal
- Special-status vegetation communities are those designated as sensitive by the CDFW or those that provide habitat for special-status species.

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 CNDDB and special-status species lists (CDFW 2021a; 2021b; 2021c), and the CNPS Inventory (CNPS 2021). These databases were reviewed to identify sensitive biological resources present or potentially present for the U.S. Geological Survey 7.5-minute quadrangle on which the BSA is located (Baldy Mesa) and the eight surrounding quadrangles (Shadow Mountains SE, Adelanto, Victorville, Hesperia, Cajon, Silverwood Lake, Phelan, and Telegraph Peak). The CDFW occurrence data and critical habitat databases were queried using geographic information system (GIS) software based on a 5-mile buffer around the Project site. Potential and/or historic drainages and aquatic features were investigated based on a review of U.S. Geological Survey topographic maps (1:24,000-scale), aerial photographs, the USFWS National Wetland Inventory database (USFWS 2021a), and the Natural Resource Conservation Service's Web Soil Survey (USDA 2021a).

1 At the time that surveys were conducted, there was a possibility that improvements to Poplar Street between Building 1 and Building 2 could be necessary. As such, to account for potential impacts associated with these improvements, this area was included within the Biological Survey Area. As the Project design was refined, these improvements were determined not to be necessary.

3.2 Field Surveys

Dudek biologists Tommy Molioo and Rachel Swick conducted an initial reconnaissance-level field survey of the BSA to document biological resources and vegetation communities on December 16, 2020. On May 13 and 17, 2021, Dudek biologists Britney Strittmater, Katie Dayton, and Rachel Swick conducted a focused special-status plant survey and desert native plant survey. An aquatic resources jurisdictional delineation (Appendix A) was conducted by Dudek biologists Britney Strittmater and Rachel Swick on May 17, 2021. 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 Water Quality Control Act; and under CDFW jurisdiction, pursuant to Section 1602 of the California Fish and Game Code. Additional field surveys included a focused western Joshua tree (*Yucca brevifolia*) mapping survey, a protocol presence/absence survey for the Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) (Appendix B).

Table 1 lists the dates, focus, scope, conditions, and personnel for each survey. Photos of the Project site can be found in the specific survey reports.

Table 1. Survey Conditions

Date	Biologist	Type of Survey	Times	Weather Conditions
12/16/2020	T. Molioo; R. Swick	Biological Reconnaissance Survey	1:30 PM–3:00 PM	57°F; 20% cloud cover; 4–6 mph wind
02/02/2021	C. LaCroix; N. Stamm	Western Joshua Tree Mapping Survey	N.R.	N.R.
02/11/2021	T. Molioo; R. Swick	Biological Reconnaissance Survey and Western Joshua Tree Mapping Survey	1:30 PM–4:00 PM	65°F–67°F; 30% cloud cover; 5–10 mph wind
04/06/2021	C. LaCroix; N. Stamm	Western Joshua Tree Mapping Survey	N.R.	N.R.
04/19/2021	T. Molioo; R. Swick	Desert Tortoise Protocol Survey	12:30 PM–3:30 PM	79°F–81°F; 0% cloud cover; 1–4 mph wind
05/13/2021	B. Strittmater; K. Dayton	Special-Status Plant Survey and Desert Native Plant Survey	10:00 AM–1:20 PM	82°F–86°F; 0% cloud cover; 1–5 mph wind
05/17/2021	B. Strittmater; R. Swick	Special-Status Plant Survey and Desert Native Plant Survey; Aquatic Resources Delineation	7:52 AM–12:05 PM	55°F–74°F; 0% cloud cover; 2–5 mph wind
03/2021–07/2021[1]	Dipodomys Ecological Consulting	Mohave Ground Squirrel Protocol Surveys	Varied[1]	Varied[1]

Notes: °F = degrees Fahrenheit; cc = cloud cover; mph = miles per hour; N.R. = Not Recorded.

[1] Survey conditions for the Mohave Ground Squirrel Protocol Surveys are provided in Appendix B.

3.2.1 Vegetation Community and Land Cover Mapping

Dudek used CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018) and California Natural Communities List (CDFW 2020), 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 Project site. A 300-scale (i.e., 300 feet = 1 inch) aerial photograph map (Microsoft 2018) with an overlay of the Project boundary was used to map vegetation communities.

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 at 2.2 acres (1 hectare) for communities not considered to be high priority for inventory in the CNDDB; 1 acre for communities that are considered high priority for inventory; 0.25-acres for wetlands; and 2–5 acres for non-floristic breaks, such as disturbance. Visible disturbance factors were also 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 follow the CNPS Inventory (CNPS 2021). 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 2020) and common names follow the U.S. Department of Agriculture's Natural Resources Conservation Service Plants Database (USDA 2020). Plant species observed within the BSA are provided in Appendix C.

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. Wildlife species observed within the BSA are provided in Appendix D.

3.2.4 Special-Status and Regulated Resources

3.2.4.1 Special-Status Plant Survey

Dudek conducted a focused special-status plant survey within the BSA on May 13 and 17, 2021. The survey date, biologist, and weather conditions are included in Table 1. Field survey methods and mapping of rare plants conformed to California Native Plant Society 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). The surveys consisted of one survey pass in May conducted over 2 days that provided 100% coverage of the BSA. Western Joshua tree mapping within the BSA was conducted during a separate focused survey and is further discussed in Section 3.2.4.2, Western Joshua Tree Focused Survey.

Before conducting the surveys, Dudek botanists conducted reference population checks to ensure the focal special-status plant species were in bloom and identifiable. Reference checks were conducted for the following species: white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), Booth's evening primrose (*Eremothera boothii* ssp. *boothii*), and beaver dam breadroot (*Pediomelum castoreum*). It should be noted that short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) is a conspicuous stem succulent species that can be identified outside the blooming period, and therefore was not included in the 2021 reference check.

The first reference check was conducted by Dudek botanist Britney Strittmater on April 1, 2021, which determined that the phenology for white-bracted spineflower was 100% vegetative and therefore not possible to adequately identify, and Booth's evening primrose and beaver dam breadroot were not observed. The second reference check was conducted by Dudek botanist Erin Bergman on May 12, 2021, prior to the start of the survey. During the second reference check, more than 100 white-bracted spineflower individuals were observed in full bloom along the Lytle Creek upper terrace near Keenbrook Road west of I-15, and a few beaver dam breadroot individuals were observed in a vegetative state (i.e., not in bloom but identifiable due to conspicuous leaves) in the Lucerne Valley west of the SR-247. Booth's evening primrose was not observed during the May 13 reference check at record location LA106515 provided by the participants of the Consortium of California Herbaria within Apple Valley, south of Highway 18 along western edge of the City of Victorville. However, based on locational records (Jepson Flora Project 2021) and Consortium of California Herbaria (CCH 2021), the species is restricted to wash habitat (such as the Mojave River), which is absent from the BSA.

3.2.4.2 Western Joshua Tree Focused Survey

The California Fish and Game Commission determined that listing the western Joshua tree (*Yucca brevifolia*) as threatened or endangered under the California Endangered Species Act (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.

On February 11, 2021, Dudek biologists Tommy Molioo and Rachel Swick conducted a focused western Joshua tree survey to document the presence and location of individual western Joshua trees. The biologists surveyed the site by walking approximately 20-meter transects for 100% coverage of the Project area. A buffer survey was not conducted as there was no legal access to these areas. Presence of Joshua trees were collected in the field using a Trimble GeoXT GPS unit or ESRI Collector mobile application with sub-meter accuracy. The geographic extents were digitized in geographic information system based on the GPS data and data collected directly onto field maps into a Project-specific geographic information system using ArcGIS software.

Per the City's Protected Plants policy, Dudek's International Society of Arboriculture (ISA)-certified arborists performed a western Joshua tree survey on February 2 and April 6, 2021, to inventory and evaluate the health and relocation potential for each Joshua tree located on the Project site and a 20-foot buffer. The western Joshua tree survey inventory and evaluation survey methods are provided in Appendix E. The survey encompassed the entire Project site (Appendix A of Appendix E). The inventory was conducted by ISA-certified arborists Chris LaCroix and Noah Stamm on February 2 and April 6, 2021. 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)

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

On May 13 and 17, 2021, a desert native plant survey within the BSA was conducted in accordance with the California Desert Native Plants Act and Chapter 16.24 of the Hesperia 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 City of Hesperia's Municipal Code, Chapter 16.24, the following desert native plants were considered target species:

1. The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:
   a. Dalea, Spinosa (smoketree);

[2] **Health Rating Descriptions:**
Excellent. Tree has excellent health and strong vigor. No damage. Flowering and fruiting expected. Typically, only given to large, high-quality specimens (taller than 15 feet in height). Transplanting generally not recommended due to size.
Good. Tree has good health and vigor. All branches are alive and healthy. Damage is very localized and minimal. Flowering and fruiting likely, if tree is large enough. Tree is transplantable.
Fair. Tree health is average. Some stressors or damage possible, but any damage is minimal to moderate (e.g., rodent grazing, insect damage). No dead/broken branches. Tree is transplantable.
Poor. Tree is under stress, and overall health is in decline, or tree has taken significant damage. Mortality likely unless stressors relieved and/or conditions change. Broken/dead limbs likely present. Tree is generally not transplantable.
Critical. Tree is in extreme decline. One or more branches dead. One or more branches dying. Physical damage likely present. Damage is significant and extensive. Mortality expected within 2 to 4 years. Tree is not transplantable.
Dead. Tree is dead.

b. All species of the family Agavaceae (century plants, nolina, yuccas);
c. All species of the genus Prosopis (mesquites).

2. Creosote rings, ten feet or greater in diameter.
3. All Joshua trees (mature and immature).

In accordance with the California Desert Native Plants Act, 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) cacia 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 the USFWS as threatened (55 FR 12178-12191). Proposed actions within the range of the desert tortoise fall under purview of the FESA. Because the Project lies within the range of the desert tortoise (CDFW 2018c) 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 USFWS 2010 "Pre-project Field Survey Protocol for Potential Desert Tortoise," included in *Preparing for any Action That May Occur Within the Range of the Mojave Desert Tortoise* (*Gopherus agassizii*) (USFWS 2010). Following the protocol, Dudek conducted surveys during April, one of the two periods when tortoise are most active. Biologists surveyed the site by walking approximately 10-meter-wide transects for 100% coverage of the Project area. 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 an initial visual survey within the Project site for Mohave ground squirrel in March 2021. The visual survey was conducted using methods described within the 2003 California Department of Fish and Game Mohave Ground Squirrel Survey Guidelines (CDFG 2003). Field methods are described in detail in Appendix B. Following an initial visual survey, three 5-day live trapping surveys for Mohave ground squirrel were conducted between March 15 and April 30 at the Project site. The methods used for this trapping effort followed the most recent CDFG Mohave Ground Squirrel Survey Guidelines issued in 2003, with minor modifications in 2010 (CDFG 2003). Camera trappings consisted of five camera stations in locations designated by CDFW, and methods are described in detail in Appendix B.

3.2.4.6 Aquatic Resources Delineation

Before conducting fieldwork for the aquatic resources delineation, Dudek reviewed aerial maps from the (1) National Wetlands Inventory (USFWS 2021b), (2) the National Hydrography database (USGS 2021), (3) the Natural Resource Conservation Service (USDA 2021a, 2021b), and (4) historic aerials and topographic maps (Google 2021; Historic Aerials Online 2021). Dudek biologists Britney Strittmater and Rachel Swick conducted an aquatic resources delineation field visit on May 17, 2021. The survey date, biologist, and weather conditions are included in Table 1. Survey datasheets and forms are included in Appendix A. The surveys were conducted on foot to visually cover 100% of the BSA.

Dudek conducted a delineation of state and federal jurisdictional waters and wetlands within the BSA in accordance with current policies. Aquatic resources are assumed to include waters of the state under the jurisdiction of RWQCB and streambeds under the jurisdiction of CDFW. Based on the Navigable Waters Protection Rule released in April 2020 that went into effect on June 22, 2020, ephemeral waters are no longer protected waters of the United States; therefore, waters within the project and vicinity are likely not regulated by the U.S. Army Corps of Engineers (USACE). However, the OHWM was delineated as required by the SWRCB to delineate waters of the state. Should it be determined at a later date that permits from USACE are required, the delineation completed would be adequate to identify waters of the United States. Additionally, based on USACE guidance, a stream duration assessment method was conducted to determine the stream duration (e.g., ephemeral, intermittent, or perennial). Dudek utilized the User Manual for a Beta Streamflow Duration Assessment Method for the Arid West of the United States (USACE 2021) to determine if the stream channels within the BSA are ephemeral and thus should excluded from USACE jurisdiction.

Waters of the state were mapped in accordance with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, adopted April 2, 2019. As described in these procedures, wetland waters of the state were mapped based on the procedures in USACE's 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and its 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a). Non-wetland waters were mapped at the OHWM based on the procedures defined in USACE's 2008 *A Field Guide to Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). CDFW jurisdictional areas were mapped to include the bank of the stream/channel and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602.

To aid in the delineation and in conformance with the USACE 2008 Field Guide, one OHWM datasheets (ODP-1) was recorded at potential non-wetland waters within the BSA to determine the OHWM indicators within those features. OHWM datasheets are included in Appendix A. The jurisdictional delineation did not contain any features that met the State Water Resources Control Board wetland criteria, and due to the lack of hydrophytic vegetation and hydric soils, wetland determination data forms were not completed. In addition, a Streamflow Duration Assessment Method form was completed and is included in Appendix A.

The limits of aquatic resources were collected in the field using a Trimble GeoXT GPS unit or ESRI Collector mobile application with sub-meter accuracy. The geographic extents were digitized in geographic information system based on the GPS data and data collected directly onto field maps into a Project-specific geographic information system using ArcGIS software.

3.2.5 Survey Limitations

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

The average rainfall in 2021 was lower than in 2020, which has potential to limit the growth of flora. However, initial botanical reference surveys were conducted prior to focused sensitive plant surveys, and therefore conditions were monitored prior to collecting data. Surveys for sensitive plant species adequately covered flora that are known to bloom within the vicinity.

3.3 Special-Status Species Habitat Assessment

Appendix F, Special-Status Plants Potentially Occurring within the BSA, and Appendix G, Special-Status Wildlife Potentially Occurring within the BSA, 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.

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 Victor Valley/High Desert region in western San Bernardino County. Average annual temperatures range from 44°F to 81°F. The average annual precipitation is 6.72 inches (WRCC 2021). Periods of extended drought are common throughout the region.

4.2 Geology and Topography

The Project site is composed of two disjointed sites separated by Mesa Linda Street and an undeveloped property. Both sites are 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 site's surface elevation ranges between approximately 3,522 and 3,602 feet above mean sea level (amsl). The Project site and immediate surrounding area is relatively flat with a slight slope towards the northeast, and the southwestern corner of the site slopes moderately downward to the west. The BSA is located 7.5 miles north of Cleghorn Mountain, which occurs above Cajon Pass that divides the San Gabriel Mountains from the San Bernardino Mountains.

4.3 Soils

According to the U.S. Department of Agriculture - Natural Resource Conservation Service's Web Soil Survey (USDA 2021a), the study area occurs within the San Bernardino County, Mojave River Area (CA671). The study area consists of two types of soils: Cajon sand (0% to 2% slopes, 2% to 9% slopes, and 9% to 15% slopes), and Hesperia loamy fine sand (2% to 15% slopes). Both soil types are described in more detail herein.

Cajon Series consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. The Cajon soils are on recent fans and river terraces at elevations of 200 to 4,300 feet amsl. Cajons soils with sandy loam surface textures have moderately rapid to rapid permeability. Creosote bush (*Larrea tridentata*), saltbush (*Atriplex* sp.), Joshua trees, and annual grasses and forbs are common vegetation found on these soils.

Hesperia Series consists of very deep, well drained soils that formed in alluvium derived primarily from granite and related rocks. Hesperia soils are on alluvial fans, valley plains, and stream terraces at elevations of 200 to 4,800 feet amsl. These soils have low runoff and moderately rapid permeability. Creosote bush and annual grasses and forbs are common vegetation found on these soils.

4.4 Surrounding Land Uses

The Project site is located at the southwestern edge of Hesperia and adjacent to Oak Hills to the west and south. The BSA is surrounded by undeveloped desert open space and sparse residential and commercial development. I-15 and U.S. Highway 395 border the east and west boundaries of the BSA. Additional dirt roads provide access through the BSA.

4.5 Watersheds and Hydrology

The BSA is within the Mojave Subbasin Hydrologic Unit Code (HUC) 8 (18090208), Bell Mountain Wash-Mojave River HUC 10 (1809020807), and Oro Grande Wash HUC 12 (180902080704) watersheds. The Mojave Subbasin HUC 8 watershed is approximately 4,618 square miles and consists of several waterbodies, waterways, dry washes, and valleys (UCD SIG 2021). The Oro Grande Wash is a tributary to the Mojave River and is located approximately 0.5 miles northwest of the BSA (USGS 2021).

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

Seven vegetation communities or land cover types were mapped within the BSA (Table 2). The spatial distribution of the vegetation communities and land covers are presented on Figure 5, Biological Resources Map. Off-Site Areas include Sultana Street improvements from the northwestern corner of the Building 2 site to Mesa Linda Street.

Table 2. Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types within the BSA

Floristic Alliance	Association	Vegetation Community[1]	Project Site (Acres)	Off-Site Areas (Acres)	100-Foot Buffer (Acres)	Total BSA (Acres)
N/A	*Brassica nigra* Semi-natural	Black mustard scrub	2.41	0.08	1.76	4.26
Ericameria nauseosa	*Ericameria nauseosa* shrubland	Rubber rabbitbrush scrub	0.17	3.08	9.46	12.71
Juniperus californica	*Juniperus californica*/ annual herbaceous	California juniper woodland	2.64	–	–	2.64
Yucca brevifolia	N/A	Joshua tree woodland	19.04	0.13	–	19.17
N/A	N/A	Unvegetated Channel	–	–	0.01	0.01
N/A	N/A	Disturbed habitat	3.68	2.18	6.14	12.0
Avena spp. – *Bromus* spp. Herbaceous Semi-Natural	Wild oats and annual brome grasslands	Non-native grassland	68.09	2.73	31.29	102.12
N/A	N/A	Urban/Developed	–	14.21	20.73	34.94
		Total	**96.05**	**22.41**	**69.40**	**187.85**

Notes: N/A = Not Applicable; total acreages may not sum exactly due to rounding.

1 The spatial distribution of the vegetation communities and land covers are presented on Figure 5, Biological Resources Map.

CDFW rankings of 1, 2, or 3 are considered high priority for inventory or special-status and impacts to these communities typically require mitigation. One vegetation community, Joshua tree woodland, has a CDFW ranking of 3.2 and is considered special-status.

5.1.1 Black Mustard

Black mustard scrub or *Brassica nigra semi-natural* association is recognized by the Natural Communities List and the communities include black mustard (*Brassica nigra*) as the dominant forb in the herbaceous layer with trees and shrubs that may be present at a low cover (CNPS 2021). Black mustard scrub has an open to continuous herbaceous cover of less than 3 meters (9 feet) in height (Sawyer et al. 2009). The black mustard scrub occurs on fallow fields, rangelands, grasslands, roadsides, levee slopes, disturbed coastal scrub, riparian areas, cleared roadsides, and waste places (Sawyer et al. 2009). Black mustard scrub may occupy clay to sandy loams.

On site, black mustard occurs along the dirt road in the southeastern portion of the BSA. The black mustard scrub association is ranked as State Rarity NA and therefore is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2020).

5.1.2 Rubber Rabbitbrush Scrub

Rubber rabbitbrush scrub or *Ericameria nauseosa shrubland* alliance is recognized by the Natural Communities List and the communities include rubber rabbitbrush (*Ericameria nauseosa*) as the dominant or codominant species in the shrub canopy with a sparse or grassy herbaceous layer (CNPS 2021). Rubber rabbitbrush scrub has an open to continuous shrub canopy of less than 3 meters (9 feet) in height (Sawyer et al. 2009). This alliance consists of at least 2% absolute cover of rubber rabbitbrush or more than 25% relative cover in the shrub canopy (Thomas et al. 2004). The rubber rabbitbrush scrub occurs in disturbed settings on well-drain sands and gravels (Sawyer et al. 2009).

On site, rubber rabbitbrush scrub occurs along the northwestern boundary. The rubber rabbitbrush scrub alliance is ranked as S5 and therefore is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2020).

5.1.3 California Juniper Woodland

California juniper woodland or *Juniperus californica* alliance is recognized by the Natural Communities List and the communities include California juniper (*Juniperus californica*) as the dominant or codominant species in the tree canopy with an open to intermittent shrub layer and sparse to grassy herbaceous layer (CNPS 2021). California juniper woodland has an open to intermittent tree canopy of less than 5 meters (16 feet) in height (Sawyer et al. 2009). This alliance consists of at least 1% absolute cover of California juniper as the dominant shrub (Thomas et al. 2004). The California juniper woodland occurs on ridges, slopes, valleys, alluvial fans, and valley bottoms. California juniper woodland may occupy porous, rocky, coarse, sandy, or silty and often shallow soils (Sawyer et al. 2009).

On site, California juniper woodland occurs along the southeastern boundary adjacent to I-15. The California juniper woodland alliance is ranked as S4 and therefore is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2020).

5.1.4 Joshua Tree Woodland

Joshua tree woodland or *Yucca brevifo*lia alliance is recognized by the Natural Communities List and the communities include western Joshua tree (*Yucca brevifolia*) as an emergent small tree over a shrub or grass layer (CNPS 2021). 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

(Sawyer et al. 2009). 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 tree canopy (Thomas et al. 2004). The Joshua tree woodland alliance occurs on gentle alluvial fans, ridges, and gentle to moderate slopes. Joshua tree woodland may occupy coarse sands, very fine silts, gravel, or sandy loams (Sawyer et al. 2009).

On site, Joshua tree woodland occurs throughout the southeastern and southwestern portions of the BSA. Portions of the southeastern corner of the BSA where individual Joshua trees are located do not meet the minimum requirement of 1% cover and therefore are not mapped as Joshua tree woodland alliance. The Joshua tree woodland alliance is ranked as S3.2 and is considered a sensitive biological resource by CDFW under CEQA (CDFW 2020).

5.1.5 Unvegetated Channel

Open water is not recognized by CDFW (2020); however, open water may be jurisdictional by the USACE pursuant to Section 404 of the Clean Water Act, RWQCB pursuant to Section 401 of the Clean Water Act or Porter Cologne Act, or CDFW pursuant to Section 1602 of the California Fish and Game Code. Thus, unvegetated channel may be considered a sensitive vegetation community under CEQA. On site, unvegetated channel did contain various amounts of rubber rabbitbrush along the banks.

5.1.6 Disturbed Habitat

Although not recognized by the Natural Communities List (CDFW 2020), 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 2020). Within the BSA, disturbed habitat includes the existing dirt roads found throughout the site and generally heading east/west and north/south. These roads are commonly used by hikers or vehicles that need access within the site.

5.1.7 Non-native grassland

Non-native grassland or *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural alliance is recognized by the Natural Communities List and the communities include wild oats (*Avena* spp.) and annual brome (*Bromus* spp.) as the dominant or co-dominant species along with other non-natives in the herbaceous layer (CNPS 2021). Non-native grassland has an open to continuous herbaceous cover of less than 1.2 meters (4 feet) in height (Sawyer et al. 2009). Non-native grassland occurs in foothills, waste places, rangelands, and opening in woodlands (Sawyer et al. 2009).

On site, non-native grassland is the largest community found within the BSA and occurs throughout the site. Non-native grassland is not considered a sensitive biological resource by CDFW under CEQA (CDFW 2020).

5.1.8 Urban/Developed Land

Although not recognized by the Natural Communities List (CDFW 2020), 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 Poplar Street running east/west along the southern boundary, Mesa Linda Street continuing north/south through the center of the BSA, Cataba Road running north/south along the eastern boundary, Main Street running east/west along the northern boundary, and buildings located along the southern and northern boundaries.

5.2 Plants and Wildlife Observed

5.2.1 Plants

A total of 46 species of native or naturalized plants, 29 native (63%) and 17 non-native (37%), were recorded on the site. A full list of plant species observed is provided in Appendix C, Plant Compendium.

5.2.2 Wildlife

A total of 10 wildlife species, consisting of 10 native species (100%) and no non-native species (0%), were recorded within the BSA or vicinity during surveys (Appendix D). Wildlife species detected on or in the immediate vicinity of the BSA included cactus wren (*Campylorhynchus brunneicapillus*), common raven (*Corvus corax*), herring gull (*Larus argentatus*), mountain bluebird (*Sialia currucoides*), western meadowlark (*Sturnella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*), and black-tailed jackrabbit (*Lepus californicus*). In addition, Dipodomys Ecological Consulting biologists observed the following additional mammal species: California ground squirrels (*Otospermophilus beecheyi*), white-tailed antelope ground squirrel (*Otospermophilus beecheyi*), and Panamint kangaroo rat (*Dipodomys panamintinus*)

5.3 Special-Status and Regulated Resources

Appendix F and Appendix G 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 biologists 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, 30 special-status plant species were identified as potentially occurring within the region of the BSA.

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 1-2s were observed during the focused surveys conducted on May 13 and 17, 2021 There are no 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, IPaC, and CNPS Inventory (Appendix F).

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 2021). This species typically blooms between April and May.

A total of 84 western Joshua tree individuals were observed throughout the southwestern and southeastern portions of the BSA within Joshua tree woodland, California Juniper woodland, and non-native grassland (Figure 5).

5.3.3 Desert Native Plants

One desert native plant species, western honey mesquite (*Prosopis glandulosa* var. *torreyana*), was observed within the BSA during the focused desert native plant survey (Figure 5).

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.

Similar to 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. Based on the results of the literature review and database searches, 39 special-status wildlife species were reported in the CNDDB and USFWS databases as occurring in the vicinity of the BSA. Of these, two wildlife species were determined to have a moderate potential to occur within the BSA based on habitat present and previous known locations in the CNDDB and IPaC records (USFWS 2020): burrowing owl (*Athene cunicularia*), and loggerhead shrike (*Lanius ludovicianus*). Protocol surveys for desert tortoise and Mohave ground squirrel were negative. In addition, while desert kit fox (*Vulpes macrotis arsipus*) and American badger (*Taxidea taxus*) are not expected to occur on within the BSA, in an abundance of caution, these species are also included and analyzed. These species are detailed in the following discussion.

Burrowing Owl (Athene cunicularia)

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 (*Spermophilus 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); useable burrows are available; and foraging habitat occurs in close proximity (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can be used for nesting and roosting.

Burrowing owl has moderate potential to occur within the BSA.

Loggerhead Shrike (*Lanius ludovicianus*)

The 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, while shrikes are widespread at the lower elevations in the state, the largest breeding populations are located in portions of the Central Valley, the Coast Ranges, and the southeastern deserts (Humple 2008).

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

Loggerhead shrike has moderate potential to occur within the BSA.

Desert Tortoise (*Gopherus agassizii*)

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 so 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).

Desert tortoise was not observed during focused protocol surveys.

Mohave Ground Squirrel (*Xerospermophilus mohavensis*)

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.

Mohave ground squirrel was not observed during focused protocol surveys.

American Badger and Desert Kit Fox

American badger is a California Species of Special Concern. Desert kit fox is considered a "fur-bearing mammal," protected from take under the California Fish and Game Commission's Mammal Hunting Regulations (Subdivision 2, Chapter 5), which effectively protects it from hunting pressure. Desert kit fox is not listed by the 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, while American badgers prefer open scrub or grassy areas (NPS 2015; USGS 2020). The Project site is predominated by Joshua tree woodland, and lacks creosote bush flats, sand dunes, or larger areas of open scrub or grassy areas. Thus, American badger is not expected to occur within the BSA due to a lack of suitable vegetation to support this species. Desert kit fox is not expected to occur within the BSA due to the surrounding areas that are conducive to stray dogs that further limit the potential for this species to occur. the Project site is not expected to support either desert kit fox or American badger. Furthermore, no desert kit fox or American badger individuals (or sign) were observed during desert tortoise or Mohave ground squirrel surveys or incidentally observed during other focused surveys conducted within the BSA.

Notwithstanding, in an abundance of caution and to ensure that potential impacts to these species are less than significant, these species are analyzed.

5.3.5 Potential Aquatic Resources

The Jurisdictional Delineation identified one ephemeral drainage within the BSA. A field form for the Beta Arid West Streamflow Duration Assessment Method was completed and determined that this feature was ephemeral. This feature is not likely subject to USACE jurisdiction because ephemeral features are excluded as (b)(3) waters ("Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool") per Title 33, Part 328.3 of the Code of Federal Regulations. The results of the jurisdictional delineation concluded there are approximately 0.01 acres (42 linear feet) of jurisdictional aquatic resources within the BSA (Figure 6, Jurisdictional Aquatic Resources Map). Of that total, all 0.01 acres are non-wetland waters of the state under RWQCB and streambeds under CDFW jurisdiction.

The BSA also included a swale south of Poplar Street and an erosional feature south of a dirt road running east/west in the southern portion of the BSA. The swale appears to have been developed to collect seasonal precipitation, but generally lack a defined bed and bank, OHWM, established hydrophytic vegetation, or indicators of hydric soil. This topographical feature would not constitute jurisdictional resources regulated by the CDFW and/or RWQCB. The erosional feature is a result of road runoff flowing across the natural topography of the BSA. This feature does not support beneficial uses or riparian resources; therefore, it was not considered waters of the state under RWQCB jurisdiction or streambeds under CDFW jurisdiction.

5.4 Wildlife Corridors and Habitat Linkages

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

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

The Project site is located in an area of encroaching development and has been regionally isolated by U.S. Highway 395 to the west and by I-15 to the east. All terrestrial species' movement is hindered by I-15 and U.S. Highway 395, and, to a lesser degree, surface streets and paved roads, including Poplar Street running east/west and Mesa Linda Street continuing north/south occur along the southern boundary and through the center of the BSA. As a result, the Project site does not provide for regional wildlife movement or serve as a regional wildlife corridor. However, on a local level, wildlife may move across the site when migrating or foraging/hunting. Since the Project would not significantly alter habitat conditions, it is not expected to contribute to the impediment of local or seasonal movement of wildlife through the surrounding habitat.

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 maintenance activities.

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 zone, including open space and areas within the BSA. 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 118.45 acres, including 96.05-acres within the Project site and 22.40-acres within the Off-Site Areas, would be permanently impacted from the Project (Figure 7, Impacts to Biological Resources Map). Table 3 summarizes permanent direct impacts to vegetation communities and land covers within the Project area. 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, 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, even areas temporarily impacted, are considered permanent impacts to Joshua tree woodland. The Project will result in permanent impacts to 19.17 acres of Joshua tree woodland, which would be considered a significant impact under CEQA absent mitigation.

The Project would also result in permanent impacts to 99.27 acres of vegetation communities and land cover types that are not considered sensitive by CDFW, including black mustard scrub, rubber rabbitbrush scrub, California juniper woodland, disturbed habitat, non-native grassland, and urban/developed lands. Therefore, these direct impacts are considered less than significant under CEQA.

Table 3. 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)	Total Permanent Impacts (Acres)
N/A	*Brassica nigra Semi-natural*	Black mustard scrub	4.26	2.41	0.08	2.50
Ericameria nauseosa	*Ericameria nauseosa shrubland*	Rubber rabbitbrush scrub	12.71	0.17	3.08	3.25
Juniperus californica	*Juniperus californica* / annual herbaceous	California juniper woodland	2.64	2.64	–	2.64
Yucca brevifolia	N/A	Joshua tree woodland	19.17	19.04	0.13	19.17
N/A	N/A	Unvegetated Channel	0.01	–	–	–
N/A	N/A	Disturbed habitat	12.00	3.68	2.18	5.86
Avena spp. – *Bromus* spp. *Herbaceous Semi-Natural*	Wild oats and annual brome grasslands	Non-native grassland	102.12	68.09	2.73	70.82
N/A	N/A	Urban/Developed	27.55	–	14.21	14.21
		Total	**187.85**	**96.05**	**22.40**	**118.45**

Notes: N/A = Not Applicable

6.1.2 Indirect Impacts

Construction-related 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. Indirect impacts to Joshua woodland are considered significant absent mitigation.

6.2 Impacts to Special-Status Plants

6.2.1 Direct Impacts

No non-listed special-status plant species were observed or have high or moderate potential to occur within the BSA; therefore, the Project would have no direct or indirect impacts to non-listed special-status plant species. One listed special-status plant species was observed within the BSA: western Joshua tree.

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 56 western Joshua tree

individuals. All ground-disturbing activities, even areas temporarily impacted, are considered permanent impacts to western Joshua trees. Direct impacts to western Joshua tree are considered significant absent mitigation under CEQA.

6.2.2 Indirect Impacts

Potential construction- and operation-related indirect impacts to western Joshua tree individuals, would be the same as the indirect impacts to Joshua woodland, as described under Section 6.1.2, Indirect Impacts.

With the incorporation of mitigation, and with adherence to both the CDNPA and the Hesperia Municipal Code, impacts associated with Joshua tree woodland would be less than significant.

6.3 Impacts to Special-Status Wildlife

6.3.1 Direct Impacts

The Project site could support two special-status wildlife species: burrowing owl and loggerhead shrike.

Burrowing Owl

Burrowing owl was not observed on the Project site or BSA; however, suitable habitat exists on site, and the species could eventually occupy the Project site or BSA prior to construction.

The Project would result in the loss of 92.63 acres of suitable habitat for burrowing owl, including impacts to California juniper woodland, Joshua tree woodland, and non-native grassland. These potential direct impacts to burrowing owls are considered significant absent mitigation under CEQA.

Loggerhead Shrike

The 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 on the Project site and BSA. Extensive suitable nesting habitat, particularly near western Joshua trees, is present within the Project site and Off-Site Utilities Alignments.

Also, the Project would result in the loss of 21.81 acres of suitable habitat for loggerhead shrike, including impacts to California juniper woodland, and Joshua tree woodland. These potential direct impacts to loggerhead shrike are considered significant absent mitigation under CEQA.

Desert Tortoise

The results of the survey determined that desert tortoise is currently considered absent from the Project site and BSA. The on-site vegetation has been determined to provide low-quality habitat for the desert tortoise. While suitable (albeit low-quality) 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 Project site is located in an area that is cut off from known Mohave ground squirrel populations by I-15 and U.S. Highway 395 to the east and by the California Aqueduct to the north. Disturbances from human presence and fragmentation from surrounding roadways, including off-highway vehicle use and illegal waste dumping within the Project site and BSA has had a negative effect on habitat quality for Mohave ground squirrel. Records from the CNDDB reveal two occurrences of Mohave ground squirrel near the Project site and BSA that were detected in 2005 and 2011 (Figure 8, Historical Mojave Ground Squirrel Occurrences). However, both these records are from sites located across the California Aqueduct, making dispersal to the Project site highly unlikely, because the aqueduct creates a considerable barrier to dispersal.

The visual survey concluded that the Project site and BSA provide marginally suitable habitat for Mohave ground squirrel. Specifically, foraging plants for Mohave ground squirrel such as spiny hopsage, winterfat, Cooper's boxthorn, Anderson's boxthorn, and western Joshua tree were observed throughout the Project site and BSA along with suitable substrate that includes friable soils for burrowing. However, surrounding roadways and various forms of human presence, including off-highway vehicle impacts, have marginalized the habitat quality.

Although marginally suitable Mohave ground squirrel habitat is present on the Project site and BSA, no Mohave ground squirrel were detected at the camera stations or captured during the trapping surveys. Additionally, the high density of California juniper on site is indicative that the area is within the Mohave-transmontane transition zone, an area with low likelihood of use by Mohave ground squirrel. As such, the survey results indicate that Mohave ground squirrel do not inhabit the Project site or BSA.

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

American Badger and Desert Kit Fox

No desert kit fox or American badger individuals (or sign) were observed during desert tortoise or Mohave ground squirrel surveys or incidentally observed during other focused surveys conducted within the BSA. In addition, no suitable habitat exists on site. Disturbances from human presence and fragmentation from surrounding roadways, including off-highway vehicle use and illegal waste dumping within the Project site and BSA has had a negative effect on habitat quality for these species. However, albeit unlikely, these species could eventually occupy the Project site or BSA prior to construction; therefore, potential direct impacts to American badger and kit fox are considered significant absent mitigation,

Nesting Migratory Birds and Raptors

Similar to most other sites containing trees, shrubs, and other vegetation, the Project site 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 Project site 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. Recently, the Department of Interior ruled that the MBTA should apply only to "… affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs" and will not be applied to incidental take of migratory birds pursuant to otherwise lawful activities However, that ruling is now under review as a revision to the MBTA that would include prohibitions to incidental take has recently been proposed. Therefore, impacts to nesting migratory birds and raptors would be considered significant absent mitigation under CEQA.

6.3.2 Indirect Impacts

During construction activities, indirect effects to sensitive wildlife could include construction-related dust, soil erosion, and water runoff decreasing or permanently altering habitat suitability. In the absence of best management practices (BMPs), construction-related minimization measures to control dust, erosion, and runoff; and compliance with National Pollutant Discharge Elimination System requirements, indirect impacts to on-site riparian resources and upland communities could occur. However, standard construction BMPs to control dust, erosion, and runoff, including straw bales and silt fencing, would be implemented to minimize these adverse effects.

Burrowing Owl

Construction activities have the potential to result in 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 night-time lighting. These potential short-term or temporary indirect impacts to burrowing owls are considered significant absent mitigation under CEQA.

Loggerhead Shrike

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

American Badger and Desert Kit Fox

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

6.4 Impacts to Potential Jurisdictional Wetlands and Waters

The BSA supports a total of 0.01 acres (42 linear feet) of ephemeral drainages. The one ephemeral drainage feature is likely subject to CDFW and/or RWQCB jurisdiction based on evidence of bed and bank or ephemeral flow. This feature is not likely subject to USACE jurisdiction because these types of features (e.g., ephemeral) are excluded as (b)(3) waters ("Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool") per Title 33, Part 328.3 of the Code of Federal Regulations. One erosional drainage and swale were also investigated but determined to be non-jurisdictional.

6.4.1 Direct Impacts

There would be no direct impacts to jurisdiction aquatic resources with Project implementation. Therefore, the Project would not result in significant impacts to this resource under CEQA.

6.4.2 Indirect Impacts

Construction-related 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 jurisdiction aquatic resources are considered significant absent mitigation under CEQA.

6.5 Impacts to Wildlife Corridors and Habitat Linkages

6.5.1 Direct Impacts

The Project site is located in an area of encroaching development and has been regionally isolated by U.S. Highway 395 to the west and by I-15 to the east. As a result, the Project site 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 the Oro Grande Wash and La Bureau of Power and Light Road immediately to the west, would not be impacted by the Project. 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

There would be no long-term indirect impacts to wildlife movement as a result of the Project. 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 upland portions of the BSA during and after construction. Work activities are not currently proposed during the nighttime.

6.6 Impacts Associated with Local Policies and Ordinances

California Desert Native Plants

In addition to western Joshua tree, one desert native plant species, western honey mesquite, was recorded on the BSA. One individual was documented within the BSA and would be directly impacted (Figure 7). Because the focused desert native plant survey was positive for western honey mesquite, and in accordance with the California Desert Native Plants Act and the Hesperia Municipal Code, Chapter 16.24, a native plant removal permit must be obtained from the City of Hesperia prior to the removal of western honey mesquite. Additionally, western honey mesquite is addressed in the Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan (Appendix E), prepared to provide detailed specifications for the Project Applicant to meet the requirements of Chapter 16.24 of the Hesperia Municipal Code to protect, preserve, and mitigate impacts to desert native plants.

Joshua Trees

In accordance with Chapter 16.24 of the Hesperia Municipal Code, the preparation of a western Joshua tree and desert native plants relocation plan is required to mitigate impacts to 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 E) was prepared for the Project to provide detailed specifications for the Project Applicant to meet the requirements of Chapter 16.24 of the Hesperia 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 City's Protected Plant Policy and provides details for the initial survey of the Project 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.

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 Draft 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 BLM 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.

INTENTIONALLY LEFT BLANK

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 the 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

7.2.1 Direct Impacts

Western Joshua Tree

As required by **MM-BIO-1**, mitigation for direct impacts to 56 western Joshua trees will be fulfilled through conservation of Western Joshua tree through purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by the City of Hesperia and CDFW. Additionally, as required by **MM-BIO-2** and in accordance with Chapter 16.24 of the Hesperia 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 6.5, Impacts to Wildlife Corridors and Habitat Linkages). As such, a Joshua Tree Preservation, Protection, and Relocation Plan, and California Desert Native Plant Relocation Plan (Appendix E) was prepared to provide detailed specifications for the Project Applicant to meet the requirements of Chapter 16.24 of the Hesperia Municipal Code to protect, preserve, and mitigate impacts to western Joshua trees. Thus, mitigation for impacts to western Joshua tree will also mitigate for impacts to Joshua tree woodland.

Implementation of **MM-BIO-1** (Conservation of Western Joshua Tree Lands) and **MM-BIO-2** (Relocation of Desert Native Plants), would reduce potential direct impacts to western Joshua tree to less than significant.

Burrowing Owl

Pursuant to the California Fish and Game Code and the MBTA, a pre-construction survey in compliance with Staff Report on Burrowing Owl Mitigation, State of California Natural Resource Agency, Department of Fish and Game, May 7, 2012 (CDFW 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-10**, a pre-construction survey for burrowing owl shall be conducted in areas supporting potentially suitable habitat and within 14 days prior to the start of construction activities. A Burrowing Owl Relocation Plan has been prepared to facilitate implementation of this mitigation measure and is attached to this report as Appendix H.

As required by **MM-BIO-1,** mitigation for direct impacts to western Joshua trees will be fulfilled through conservation of western Joshua tree through purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by the City of Hesperia and CDFW. 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 will also mitigate for impacts to loss of suitable habitat for burrowing owl.

Implementation of **MM-BIO-1** (Conservation of Western Joshua Tree Lands) and **MM-BIO-10** (Pre-Construction Surveys for Burrowing Owl and Avoidance), would reduce potential direct impacts to burrowing owl to less than significant.

Loggerhead Shrike

To avoid potential impacts to nesting loggerhead shrike, it is recommended that the 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-13**.

As required by **MM-BIO-1**, mitigation for direct impacts to western Joshua trees will be fulfilled through conservation of Western Joshua tree through purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by the City of Hesperia and CDFW. 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 will also mitigate for impacts to loss of suitable habitat for loggerhead shrike.

Implementation of **MM-BIO-1** (Conservation of Western Joshua Tree Lands) and **MM-BIO-13** (Pre-Construction Nesting Bird Surveys and Avoidance), would reduce potential direct impacts to loggerhead shrike to less than significant.

American Badger and Kit Fox

To avoid potential impacts to American badger and kit fox, it is recommended that a desert kit fox and American badger mitigation and monitoring plan be developed. As such, in an abundance of caution and to ensure that potential impacts to these species are less than significant, the Project Applicant shall prepare a mitigation and monitoring plan that addresses desert kit fox and American badger if either species is determined to occur on the Project site prior to the start of construction, pursuant to **MM-BIO-14**. With the incorporation of mitigation, impacts associated with desert kit fox and American badger would be less than significant

Nesting Migratory Birds and Raptors

To ensure compliance with the California Fish and Game Code and 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-13**. With the incorporation of mitigation, impacts associated with nesting birds, including raptors, would be less than significant.

Implementation of **MM-BIO-13** (Pre-Construction Nesting Bird Surveys and Avoidance), would reduce potential direct impacts to nesting migratory birds and raptors to less than significant.

7.2.2 Indirect Impacts

Western Joshua Tree

Implementation of **MM-BIO-3** gives the Project's Designated Biologist the authority to stop work if construction is not compliant with this CEQA document. **MM-BIO-4** requires that an experienced biologist oversee compliance with the protective measures, including limiting impacts to the Project impact footprint. **MM-BIO-5** would provide construction personnel with training related to western Joshua trees that are present on and adjacent to the impact footprint. **MM-BIO-6** provides for documentation that the education program was administered to applicable personnel. **MM-BIO-7** 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-7 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 the Mojave Desert Air Quality Management District's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

MM-BIO-8 would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and clean-up of any hazardous waste occurs. Thus, implementation of MM-BIO-8 would help to avoid and minimize impacts to western Joshua tree from any construction-related chemical spills.

A Stormwater Pollution Prevention Plan 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 categories employed on site would include erosion control, sediment control, and non-stormwater good housekeeping. Preparation and implementation of a Stormwater Pollution Prevention Plan 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 City of Hesperia 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 City of Hesperia 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-9 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 best management practices 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 (California Green Building Standards Code, CCR, Title 24, 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 best management practices.

Upon completion of Project construction, with adherence to the City of Hesperia's 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 City of Hesperia's Municipal Code, long-term indirect impacts to western Joshua tree associated with increased wildlife risk is not expected to occur.

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-7** (Delineation of Property Boundaries), **MM-BIO-8** (Hazardous Waste), and **MM-BIO-9** (Herbicides), would reduce potential indirect impacts to western Joshua tree to less than significant.

Burrowing Owl

MM-BIO-10 would require 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, night-time lighting, and vehicle collisions. **MM-BIO-11** would require night-time lighting during construction within 50 feet of habitat for special-status species to be shielded downward. Additionally, **MM-BIO-3, MM-BIO-4**, **MM-BIO-5**, and **MM-BIO-6** 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** would require trash and debris to be removed regularly and would require animal-resistant trash receptacles to avoid attracting urban-related, predator species. **MM-BIO-8** would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and clean-up 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 the Mojave Desert Air Quality Management District'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 burrowing owl habitat include nighttime lighting and increased invasive plant species that may degrade habitat. **MM-BIO-11** would require night-time lighting during operations within 50 feet of habitat for special-status species to be shielded downward.

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-8** (Hazardous Waste), **MM-BIO-10** (Pre-Construction Surveys for Burrowing Owl and Avoidance), and **MM-BIO-11** (Lighting), would reduce potential indirect impacts to burrowing owl to less than significant.

Loggerhead Shrike

MM-BIO-13 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, night-time lighting, and vehicle collisions. **MM-BIO-11** would require night-time lighting during construction within 50 feet of habitat for special-status species to be shielded downward. **MM-BIO-3, MM-BIO-4, MM-BIO-5**, and **MM-BIO-6** 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-8** would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and clean-up 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 the Mojave Desert Air Quality Management District'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 loggerhead shrike habitat include nighttime lighting and increased invasive plant species that may degrade habitat. **MM-BIO-11** would require night-time lighting during operations within 50 feet of habitat for special-status species to be shielded downward.

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-8** (Hazardous Waste), **MM-BIO-11** (Lighting), and **MM-BIO-13** (Pre-Construction Nesting Bird Surveys and Avoidance), would reduce potential indirect impacts to burrowing owl to less than significant.

American Badger and Kit Fox

MM-BIO-14 would require a pre-construction survey for American badger and desert kit and if determined present, would result in establishment of an American Badger/Desert Kit Fox Mitigation and Monitoring Plan which shall include shall include avoidance and minimization measures to reduce potential impacts to either species, as well as compensatory mitigation to offset indirect impacts including noise and vibration, increased human presence, night-time lighting, and vehicle collisions. **MM-BIO-11** would require night-time lighting during construction within 50 feet of habitat for special-status species to be shielded downward. **MM-BIO-3, MM-BIO-4, MM-BIO-5**, and **MM-BIO-6** 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-8** would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and clean-up 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 the Mojave Desert Air Quality Management District'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 nighttime lighting and increased invasive plant species that may degrade habitat. **MM-BIO-11** would require night-time lighting during operations within 50 feet of habitat for special-status species to be shielded downward.

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-8** (Hazardous Waste), **MM-BIO-11** (Lighting), and **MM-BIO-13** (Pre-Construction Nesting Bird Surveys and Avoidance), would reduce potential indirect impacts to American badger and kit fox to less than significant.

Nesting Migratory Birds and Raptors

To ensure compliance with the California Fish and Game Code and MBTA and to avoid potential indirect 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 (**MM-BIO-13)** by a qualified biologist is required prior to vegetation removal. Indirect impacts including increased dust, noise and vibration, increased human presence, and night-time lighting, will be offset through implementation of **MM-BIO-11** which would require night-time lighting during construction within 50 feet of habitat for special-status species to be shielded downward. **MM-BIO-3, MM-BIO-4, MM-BIO-5**, and **MM-BIO-6** would require that all workers complete a WEAP training and would require

ongoing biological monitoring and compliance with all biological resource mitigation requirements. 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 the Mojave Desert Air Quality Management District's Rules 401 and 403.2, which limit the amount of fugitive dust generated during construction.

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** (Lighting), and **MM-BIO-13** (Pre-Construction Nesting Bird Surveys and Avoidance), would reduce potential indirect impacts to American badger and kit fox to less than significant.

7.2.3 Mitigation Measures

One candidate for state listing under CESA, western Joshua tree, was observed and would be directly impacted by the Project. Two wildlife species were determined to have a moderate potential to occur within the BSA and could occur during construction of the Project: burrowing owl and loggerhead shrike. Suitable habitat for burrowing owl and loggerhead shrike would be directly impacted by the Project.

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 the CDFW or USFWS, including native desert plants protected under the CNDPA and City of Hesperia Municipal Code, western Joshua trees, burrowing owl, loggerhead shrike, and nesting migratory birds and raptors. Implementation of **MM-BIO-1** through **MM-BIO-13** is required to reduce impacts to **less than significant** level.

MM-BIO-1 Conservation of Western Joshua Tree Lands. 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 (CDFW)-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 (PAR) to calculate the costs of in perpetuity land management. The PAR will take into account all of the 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 Fish and Game Code 2081. The Project Applicant will adhere to measures and conditions set forth within the Incidental Take Permit

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 City of Hesperia for removal or relocation of protected native desert plants under Hesperia Municipal Code Chapter 16.24 as required and

schedule a pre-construction site inspection with the Planning Division and the Building Division. 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 City of Hesperia Municipal Code. Protected plants subject to Hesperia Municipal Code Chapter 16.24 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 outside the permitted impact footprint. Weekly written observation and inspection records that summarize oversight activities and 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 area shall be administered before performing impacts. 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 will 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 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 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-8 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-9 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-10 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] in 2012) or current version.

If burrowing owls are detected, the Burrowing Owl Relocation Plan shall be implemented in consultation with the California Department of Fish and Wildlife (CDFW). 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 in accordance with guidance provided in the Staff Report on Burrowing Owl Mitigation or current version. 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 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 one 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 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.

MM-BIO-11 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-12 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-13 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 Treat 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 (typically 300 feet for passerines and 500 feet for raptors and special-status species). 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 proximately 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 is determined the nestlings have fledged and the nest is no longer considered active.

MM-BIO-14 Pre-construction Survey for American Badger and Desert Kit Fox and Avoidance. A pre-construction survey for American badger and desert kit fox shall be conducted on the Project site and Off-Site areas within 10 days prior to the start of construction to determine the

presence/absence of either species. If either species is discovered during the survey, an American badger/desert kit fox mitigation and monitoring plan shall be developed. The mitigation and monitoring plan shall include avoidance and minimization measures to reduce potential impacts to either species, as well as compensatory mitigation to offset direct or indirect impacts. The plan will be developed in consultation with California Department of Fish and Wildlife. At a minimum, the plan shall:

- Identify pre-construction survey methods for American badger and desert kit fox
- 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 zones for both active and natal burrows
- Coordinate survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations

7.3 Impact BIO-2: Sensitive Vegetation Communities

7.3.1 Direct Impacts

Mitigation for impacts to 19.17 acres of Joshua tree woodland will also mitigate for impacts to western Joshua tree individuals. As required by **MM-BIO-1**, mitigation for direct impacts to 19.17 acres of Joshua tree woodland will be fulfilled through conservation of Western Joshua tree through purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by the City of Hesperia and CDFW. 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 will also mitigate for impacts to Joshua tree woodland.

Additionally, as required by **MM-BIO-2** and in accordance with Chapter 16.24 of the Hesperia 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 (Appendix E) was prepared for Project to provide detailed specifications for the Project Applicant to meet the requirements of Chapter 16.24 of the Hesperia Municipal Code to protect, preserve, and mitigate impacts to Joshua trees. Thus, mitigation for impacts to western Joshua tree will also mitigate for impacts to Joshua tree woodland.

Implementation of **MM-BIO-1** (Conservation of Western Joshua Tree Lands) and **MM-BIO-2** (Relocation of Desert Native Plants), 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-1** (Conservation of Western Joshua Tree Lands) and **MM-BIO-2** (Relocation of Desert Native Plants), and adherence to both the CDNPA and the Hesperia Municipal Code, would reduce potential indirect impacts to sensitive vegetation communities (i.e., 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-1** and **MM-BIO-2** is required to reduce impacts to a **less than significant** level.

7.4 Impact BIO-3: Jurisdictional Wetlands

7.4.1 Direct Impacts

There would be no direct impacts to jurisdiction aquatic resources with Project implementation. Therefore, no direct impacts are anticipated, and implementation of the Project would not result in significant impacts to this resource.

7.4.2 Indirect Impacts

While there would be no direct impacts to jurisdictional non-wetland waters, due to the close proximity of proposed work areas near jurisdictional non-wetland waters, potential indirect impacts would be considered significant absent mitigation. Implementation of **MM-BIO-3** gives the Project's Designated Biologist the authority to stop work if construction is not compliant with this CEQA document. **MM-BIO-4** requires that an experienced biologist oversee compliance with the protective measures, including limiting impacts within the Project footprint. **MM-BIO-5** 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** provides for documentation that the education program was administered to applicable personnel. **MM-BIO-7** 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. Thus, implementation of **MM-BIO-3** through **MM-BIO-7** will enable the Project to avoid and minimize inadvertent spillover impacts outside of the approved impact footprint.

MM-BIO-8 would ensure that a prompt and effective response to any accidental chemical spills will be implemented and that repair and clean-up of any hazardous waste occurs. Thus, implementation of **MM-BIO-8** would help to avoid and minimize impacts to waters of the state from any construction-related chemical spills.

A Stormwater Pollution Prevention Plan 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 Stormwater Pollution Prevention Plan 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 best management practices 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 (California Green Building Standards Code, CCR, Title 24, 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 best management practices.

MM-BIO-8 would ensure that a prompt and effective response to any accidental chemical spills will be implemented, and repair and clean-up of any hazardous waste occurs. Thus, implementation of **MM-BIO-8** would help to avoid and minimize impacts to western Joshua tree from any operations-related chemical spills.

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-7** (Delineation of Property Boundaries), and **MM-BIO-8** (Hazardous Waste), would reduce potential indirect impacts jurisdiction aquatic resources to less than significant.

7.4.3 Mitigation Measures

No significant direct permanent impacts would occur to federally or state-defined wetlands or non-wetland waters as a result of Project activities. Short-term and long-term indirect impacts to 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-8** is required to reduce impacts to a **less-than-significant** level.

7.5 Impact BIO-4: Wildlife Corridors and Migratory Routes

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. Construction activities would not likely result in permanent impacts to wildlife movement because no new structures that would impede wildlife movement are proposed.

During construction activities, temporary disturbance to local species may occur, but would not substantially degrade the quality or use of the vegetation communities in the vicinity. Some indirect impacts to localized wildlife movement could occur during construction activities due to construction-related noise. However, this impact would be temporary and would not be expected to significantly disrupt wildlife movement during and following construction activities.

Therefore, implementation of the Project would not result in significant impacts to this resource.

7.6 Impact BIO-5: Local Policies or Ordinances

California Desert Native Plants and Western Joshua Tree

Pursuant to **MM-BIO-2**, the Project Applicant shall submit an application and applicable fee paid to the City of Hesperia for removal or relocation of protected native desert plants under Hesperia Municipal Code Chapter 16.24. 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 City of Hesperia Municipal Code. The application will include the Joshua Tree Preservation, Protection, and Relocation Plan and Desert Native Plant Relocation Plan (Appendix E). 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 Hesperia 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 plant, western honey mesquite, and western Joshua trees, both of 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 California desert native plants and western Joshua tree to less than significant.

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.

8 References

AOS (American Ornithological Society). 2018. "Check-List of North and Middle American Birds." Accessed October 24, 2018. http://checklist.aou.org/.

BLM (Bureau of Land Management). 1980. *Desert Conservation Area Plan*. 1980. Accessed July 2021. https://eplanning.blm.gov/public_projects/lup/66949/82080/96344/CDCA_Plan.pdf.

BLM. 2005. *West Mojave Plan: A Habitat Conservation and California Desert Conservation Area Plan Amendment. Final Environmental Impact Report and Statement.* Vols. 1 and 2. https://eplanning.blm.gov/eplanning-ui/project/72544/570.

BLM. 2016. *Land Use Plan Amendment to the California Desert Conservation Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan*. BLM/CA/PL-2016/03+1793+8321. Prepared by the BLM. September 2016.

California Green Building Standards Code, 14 California Code of Regulations, Part 11. California Green Building Standards Code — CALGreen. July 2019. Accessed July 2021. https://www.hcd.ca.gov/building-standards/calgreen/index.shtml.

CDFG (California Department of Fish and Game). 2003. Mohave Ground Squirrel Survey Guidelines. January 2003. Accessed January 2021. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83975.

CDFW (California Department of Fish and Wildlife). 2012. *Staff Report on Burrowing Owl Mitigation, State of California Natural Resource Agency, Department of Fish and Game, May 7, 2012*.

CDFW. 2018. *Protocols for Surveying and Evaluating Impacts to Special-Status Native Populations and Natural Communities*. March 20, 2018. Accessed January 2021. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.

CDFW. 2020. "California Natural Communities List." Sacramento, California: CDFW, Vegetation Classification and Mapping Program. September 9, 2020. Accessed January 2021. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline.

CDFW. 2021a. "Special Vascular Plants, Bryophytes, and Lichens List." California Natural Diversity Database. Sacramento, California: CDFW, Biogeographic Data Branch. April 2021. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline.

CDFW. 2021b. "Special Animals List." California Natural Diversity Database. Sacramento, California: CDFW, Biogeographic Data Branch. April 2021. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline=1.

CDFW. 2021c. RareFind 5, Version 5.2.14. California Natural Diversity Database. Sacramento, California: CDFW, Biogeographic Data Branch. Accessed February 2021. https://map.dfg.ca.gov/rarefind/view/RareFind.aspx.

City of Hesperia. 2009. Protected Plant Policy. May 29, 2009. http://www.cityofhesperia.us/DocumentCenter /View/1571/PL-17-protected-plant-policy-5-29-09?bidId=

City of Hesperia. 2010. The City of Hesperia General Plan 2010. Hesperia, California. Accessed July 2021. https://www.cityofhesperia.us/409/Hesperia-General-Plan.

CNPS (California Native Plant Society). 2001. "CNPS Botanical Survey Guidelines." Published December 9, 1983, revised June 2, 2001.

CNPS. 2021. Inventory of Rare and Endangered Plants (online edition, v8-03). Sacramento, California: California Native Plant Society, Rare Plant Program. Accessed February 2021. http://www.rareplants.cnps.org/.

Coulombe, H.N. 1971. "Behavior and Population Ecology of the Burrowing owl, *Speotyto cunicularia*, in the Imperial Valley of California." *Condor* 73:162–176.

County of San Bernardino. 2007a. *2006 General Plan Program, Final Environmental Impact Report and Appendices*. SCH No. 2005101038. February 2007. http://www.sbcounty.gov/Uploads/lus /GeneralPlan/FinalEIR2007.pdf.

County of San Bernardino. 2007b. *County of San Bernardino 2007 Development Code*. Amended 2014. http://www.sbcounty.gov/Uploads/lus/DevelopmentCode/DC011614.pdf.

Cypher, E.A. 2002. "General Rare Plant Survey Guidelines." Bakersfield, California: California State University, Stanislaus, Endangered Species Recovery Program. Revised July 2002. Accessed May 2012. http://www.fws.gov/sacramento/ES/Survey-Protocols-Guidelines/Documents/rare_plant_protocol.pdf.

Gervais, J.A., D.K. Rosenberg, and L.A. Comrack. 2008. "Burrowing Owl (*Athene cunicularia*)." In *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*, edited by W.D. Shuford and T. Gardali, 218–226. Studies of Western Birds no. 1. California: Western Field Ornithologists (Camarillo), and California Department of Fish and Game (Sacramento). February 4, 2008. Accessed December 11, 2012. http://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html.

Google. 2021. Historical Aerials and Topographic Maps. Accessed July 2021.

Green, G.A. and R.G. Anthony. 1989. "Nesting Success and Habitat Relationships of Burrowing owls in the Columbia Basin, Oregon." *Condor* 91:347–354.

Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. "The Burrowing Owl (*Speotyto cunicularia*)." In *The Birds of North America*, edited by A. Poole and F. Gill. Philadelphia, Pennsylvania: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union.

Hesperia Municipal Code. 2021. A Codification of the General Ordinances of the City of Hesperia, California. Chapter 16.24 – Protected Plants. Version July 23, 2021. Accessed July 2021. https://library.municode.com/ca/hesperia/codes/code_of_ordinances?nodeId=HECAMUCO.

Historical Aerials Online. 2021. Historical Aerials by NETRonline. Accessed May 2021. https://www.historicaerials.com/.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California.* Nongame-Heritage Program, California Department of Fish and Game. October 1986.

Humple, D. 2008. "Loggerhead Shrike (*Lanius ludovicianus*)." In *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*, edited by W.D. Shuford and T. Gardali, 271–277. Studies of Western Birds no. 1. California: Western Field Ornithologists (Camarillo) and California Department of Fish and Game (Sacramento). February 4, 2008. Accessed December 11, 2012. http://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html.

Jepson Flora Project. 2020. Jepson eFlora. Berkeley, California: University of California. Accessed December 6, 2020 at http://ucjeps.berkeley.edu/interchange/index.html.

Jepson Flora Project. 2021. "Index to California Plant Names." http://ucjeps.berkeley.edu/db/icpn/.

Lantz, S. J., H. Smith, and D.A. Keinath. 2004. *Species Assessment for Western Burrowing Owl* (Athene cunicularia hypugaea) *in Wyoming*. Prepared for the U.S. Department of Interior and Bureau of Land Management, Wyoming State Office, Cheyenne, Wyoming. September 2004.

Martin, D.J. 1973. "Selected Aspects of Burrowing owl Ecology and Behavior." *Condor* 75: 446–456.

Microsoft. 2018. Bing Aerial Imagery. Geographic Information System database. Accessed July 2021.

NPS (National Park Service). 2015. "Desert Kit Fox." February 28, 2015. https://www.nps.gov/jotr/learn/nature/kitfox.htm.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County.* March 2008.

Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation*. 2nd ed. Sacramento, California: California Native Plant Society.

SWRCB (State Water Resources Control Board). 2019. *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. Adopted April 2, 2019. https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf.

Thomas et al. 2004

UCD SIG (University of California Davis Sustainability Indicators Group). 2021. "Oro Grande Wash." California Water Sustainability. Accessed July 2021. https://indicators.ucdavis.edu/cwip/huc/180902080704.

USACE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual*. Online ed. Environmental Laboratory, Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. January 1987. http://www.cpe.rutgers.edu/Wetlands/1987-Army-Corps-Wetlands-Delineation-Manual.pdf.

USACE. 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* Environmental Laboratory, ERDC/EL TR-08-28. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center. September 2008. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046489.pdf.

USACE. 2008b. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual.* ERDC/CRREL TR-08-12. Prepared by R.W. Lichvar and S.M. McColley. Hanover, New Hampshire: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. August 2008. https://apps.dtic.mil/dtic/tr/fulltext/u2/a486603.pdf.

USACE. 2021. *User Manual for a Beta Streamflow Duration Assessment Method for the Arid West of the United States*. Version 1.0. March 1, 2021. https://www.epa.gov/sites/production/files/2021-03/documents/user_manual_beta_sdam_aw.pdf.

USDA (U.S. Department of Agriculture). 2020. "California." State PLANTS Checklist. Accessed December 6, 2020 at http://plants.usda.gov/dl_state.html.

USDA. 2021a. "Web Soil Survey" USDA, Natural Resources Conservation Service. Accessed February 2021. http://websoilsurvey.nrcs.usda.gov/.

USDA. 2021b. PLANTS Database. USDA Natural Resources Conservation Service. Accessed February 2021. http://plants.usda.gov/java/.

USFWS (U.S Fish and Wildlife Service). 2008. *Draft Revised Recovery Plan for the Mojave Population of the Desert Tortoise* (Gopherus agassizii). California and Nevada Region, Sacramento, California.

USFWS. 2010. *Preparing for any Action That May Occur Within the Range of the Mojave Desert Tortoise* (Gopherus agassizii).

USFWS. 2011. *Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*)*. Sacramento, California: Region 8, Pacific Southwest Region, U.S. Fish and Wildlife Service. May 6, 2011. https://www.fws.gov/nevada/desert_tortoise/documents/recovery_plan/RRP%20for%20the%20Mojave%20Desert%20Tortoise%20-%20May%202011.pdf.

USFWS. 2020. Environmental Conservation Online System, Information for Planning and Conservation Report (online edition, v2.3.2). Accessed December 2020. http://ecos.fws.gov/ipac/.

USFWS. 2021b. "National Wetlands Inventory." U.S. Department of the Interior, USFWS. Accessed May 2021. http://www.fws.gov/wetlands/.

USGS (U.S. Geological Survey). 2020. "American Badgers." Accessed August 2020. https://www.usgs.gov/centers/werc/science/american-badgers-san-diego-county?qt-science_center_objects=0#qt-science_center_objects.

USGS. 2021. Flow Lines, Water Points, Watershed Boundaries for Hydrologic Units, Water Bodies (GIS data). National Hydrology Dataset. Last accessed April 2021. http://nhd.usgs.gov/.

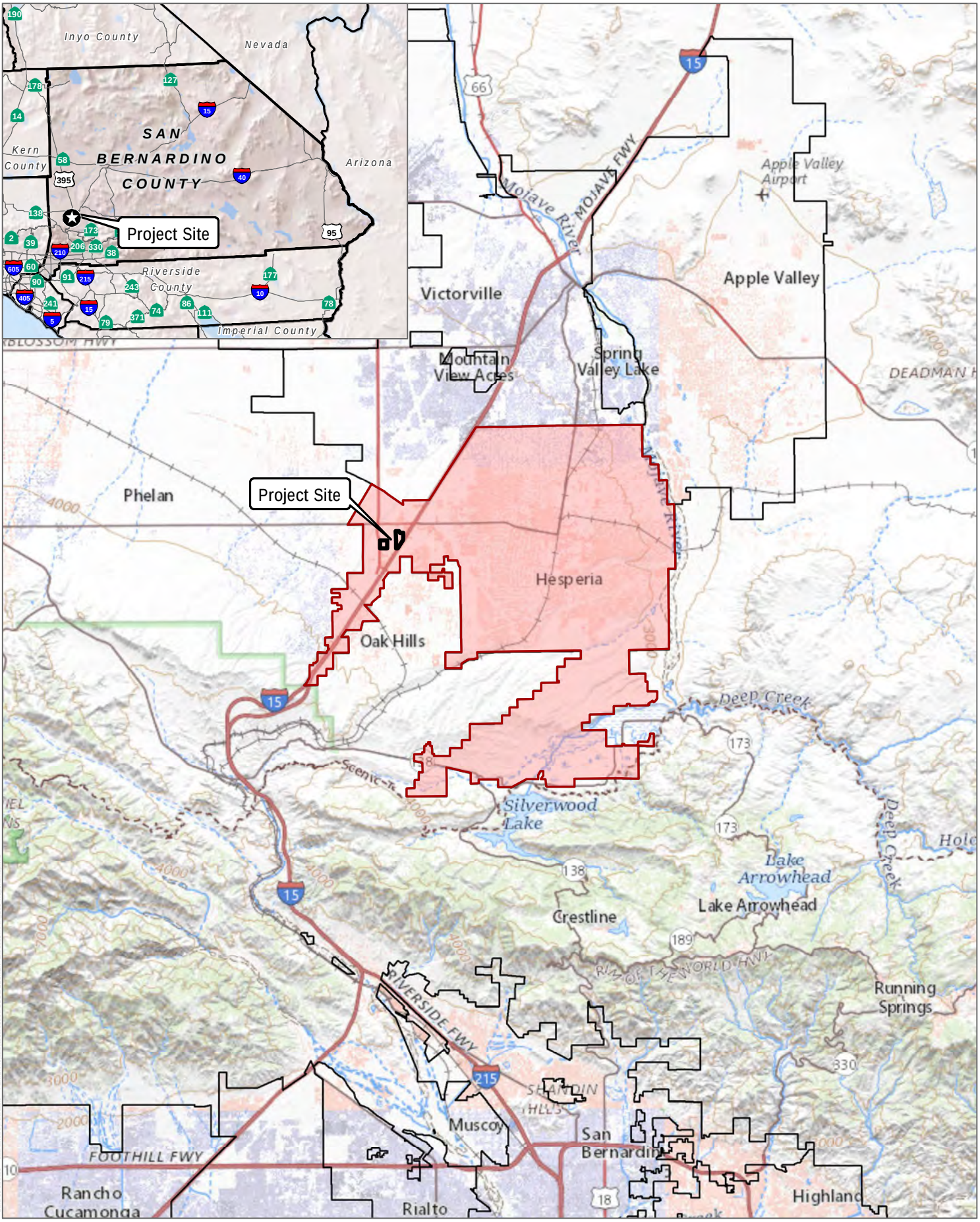
Wilson, D.E., and D.M. Reeder, eds. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference*, 3rd ed. (MSW3 database). http://www.bucknell.edu/msw3/.

WRCC (Western Regional Climate Center). 2021. "Hesperia, California: Period of Record Monthly Climate Summary." Accessed June 2021. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3935.

Yosef, R. 1996. "Loggerhead Shrike." In *The Birds of North America Online*, edited by A. Poole. Ithaca, New York: Cornell Lab of Ornithology. Accessed February 12, 2008. http://bna.birds.cornell.edu/bna/species/231.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife*. Vol. II. Birds. Sacramento, California: California Department of Fish and Game.

INTENTIONALLY LEFT BLANK



SOURCE: USGS US Topo 2020

DUDEK

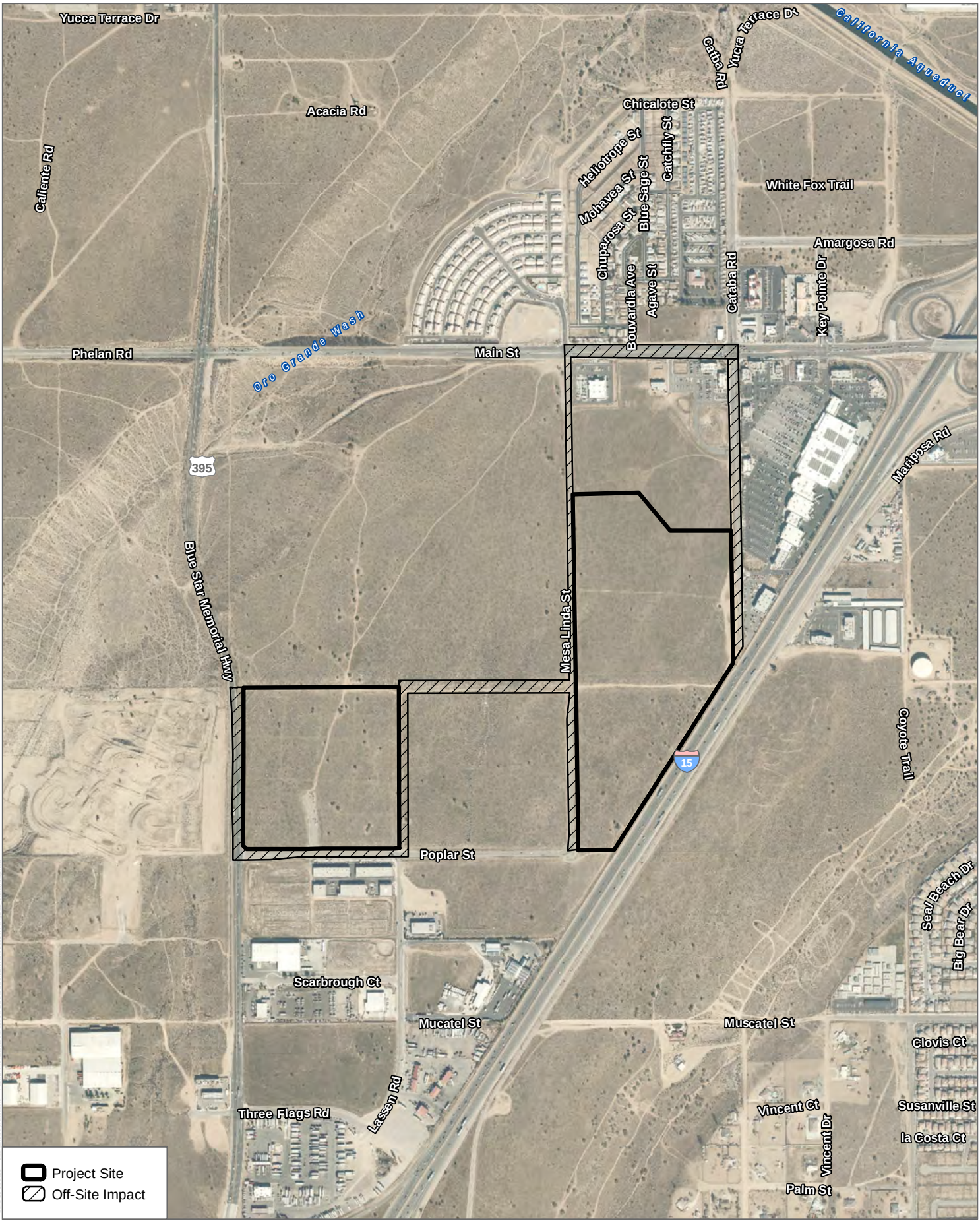
0 1.75 3.5 Miles

Figure 1

Regional Map

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2019; Open Street Map 2019

DUDEK

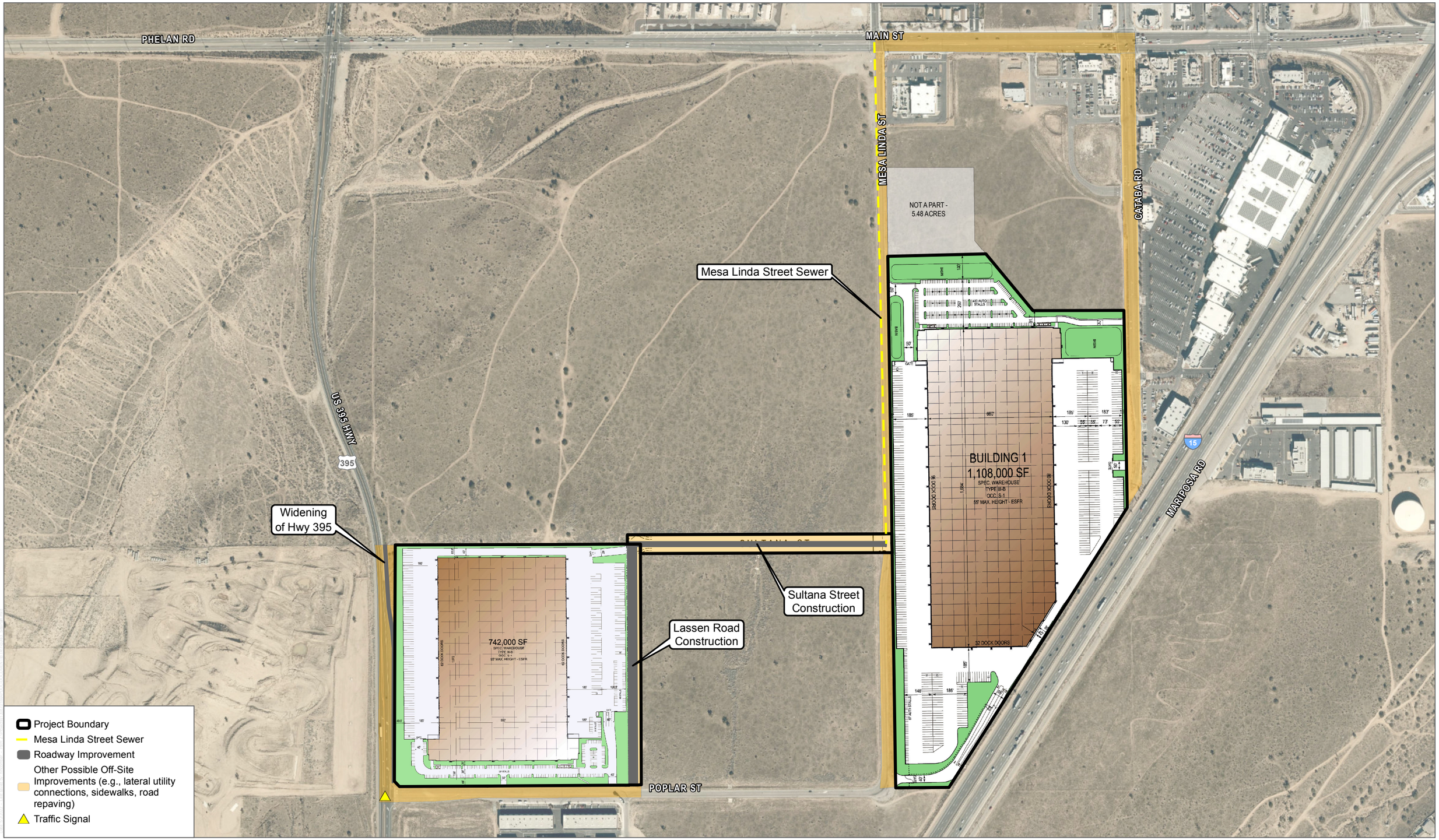
0 500 1,000 Feet

FIGURE 2

Vicinity Map

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2020; County of San Bernardino 2021; RGA 2021

DUDEK

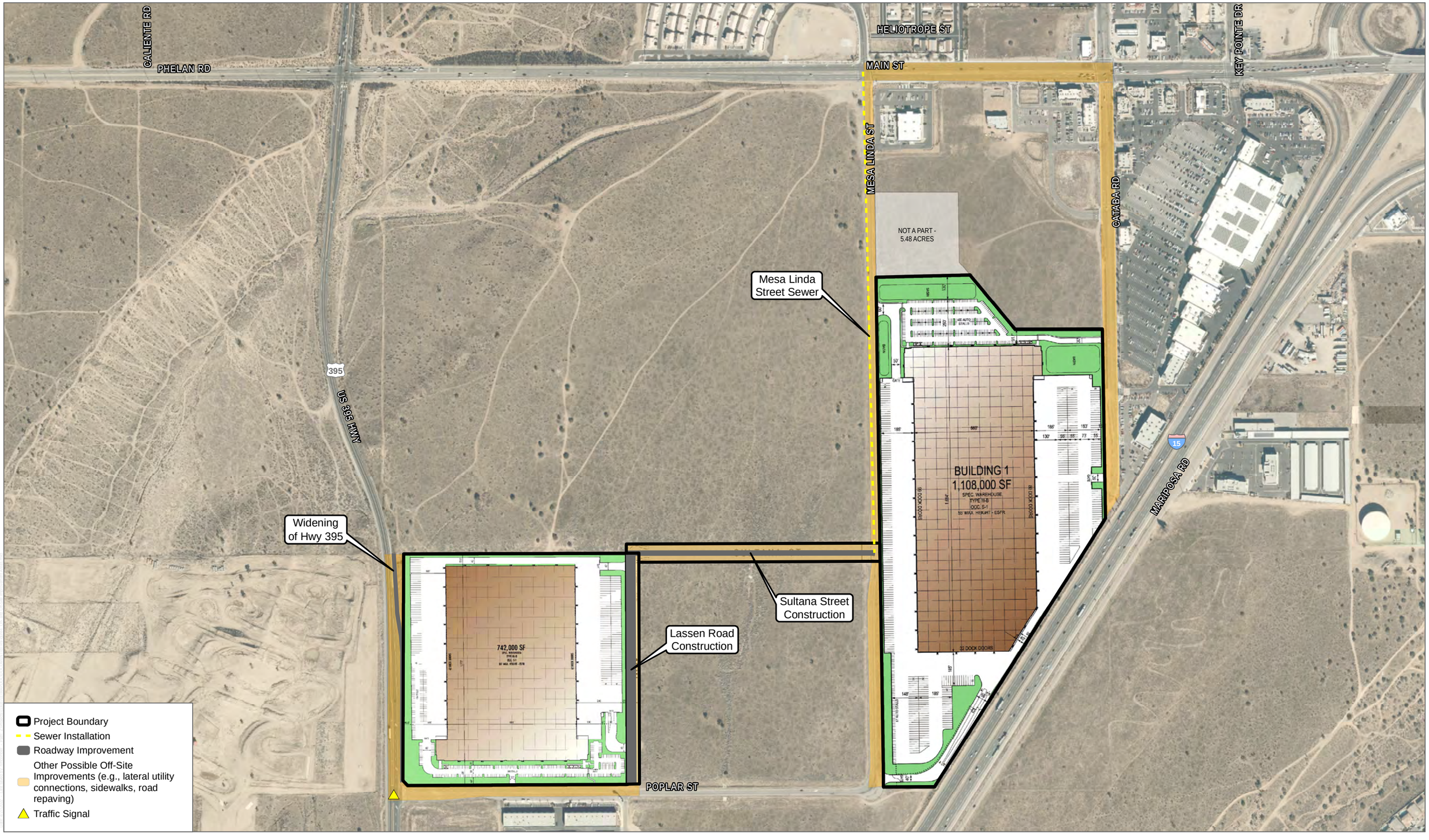
0 235 470 Feet

FIGURE 3

Site Plan

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2020; County of San Bernardino 2021; RGA 2021

DUDEK

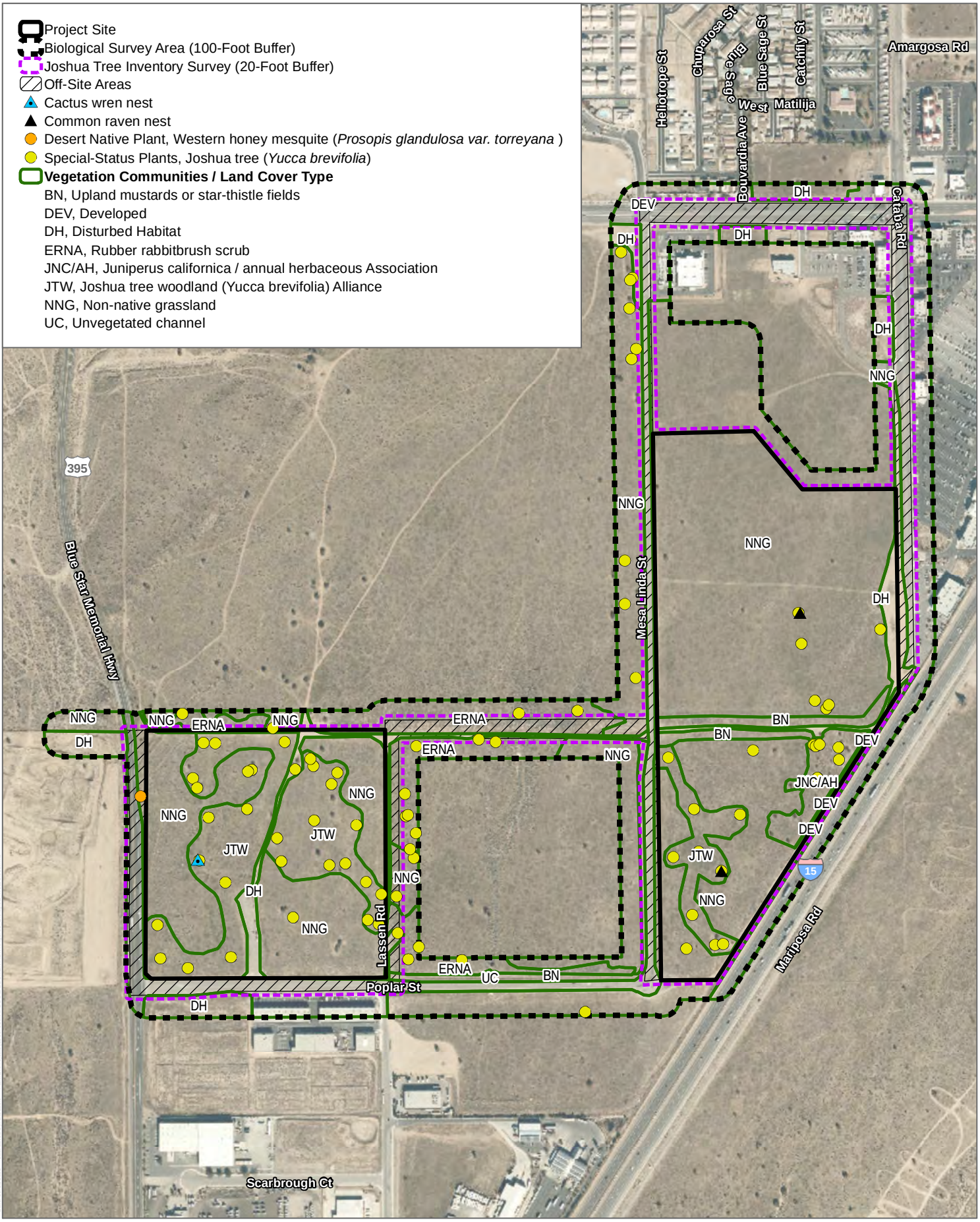
0 245 490 Feet

FIGURE 4

On-Site and Off-Site Improvements

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2019; Open Street Map 2019

DUDEK

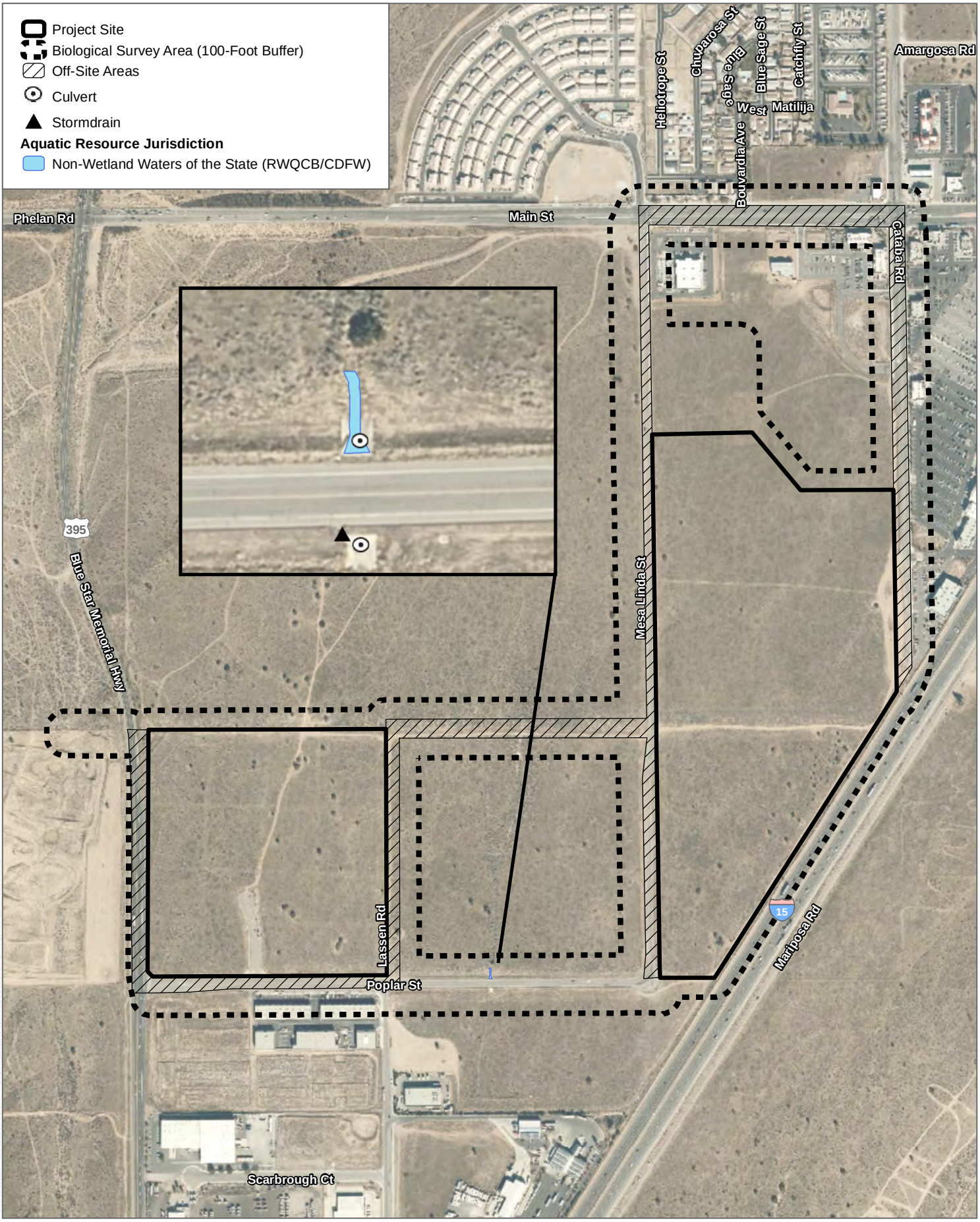
0 325 650 Feet

FIGURE 5

Biological Resources Map

I-15 Industrial Park

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2019; Open Street Map 2019

DUDEK

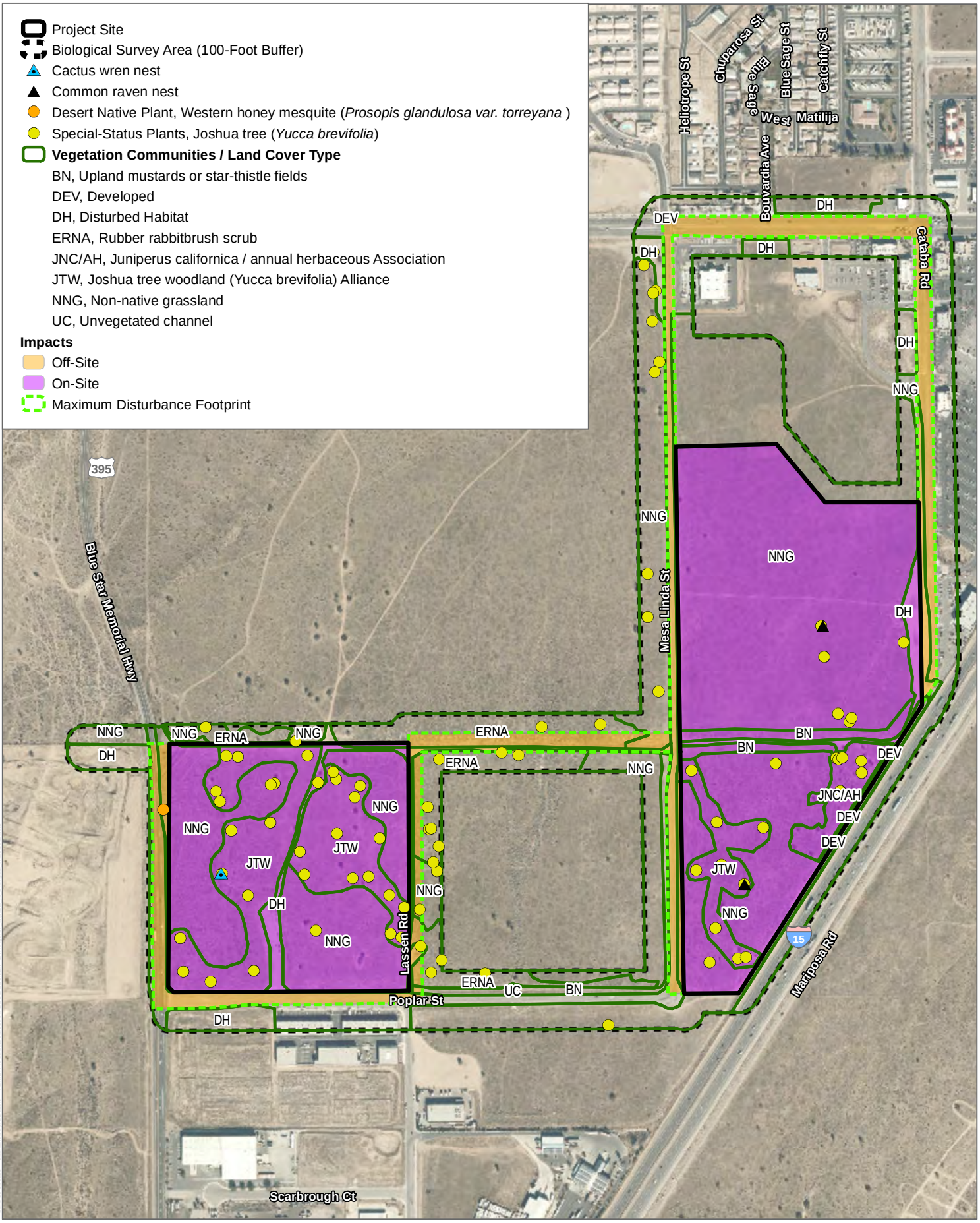
0 330 660 Feet

FIGURE 6

Jurisdictional Aquatic Resources Map

I-15 Industrial Park

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2019; Open Street Map 2019

DUDEK

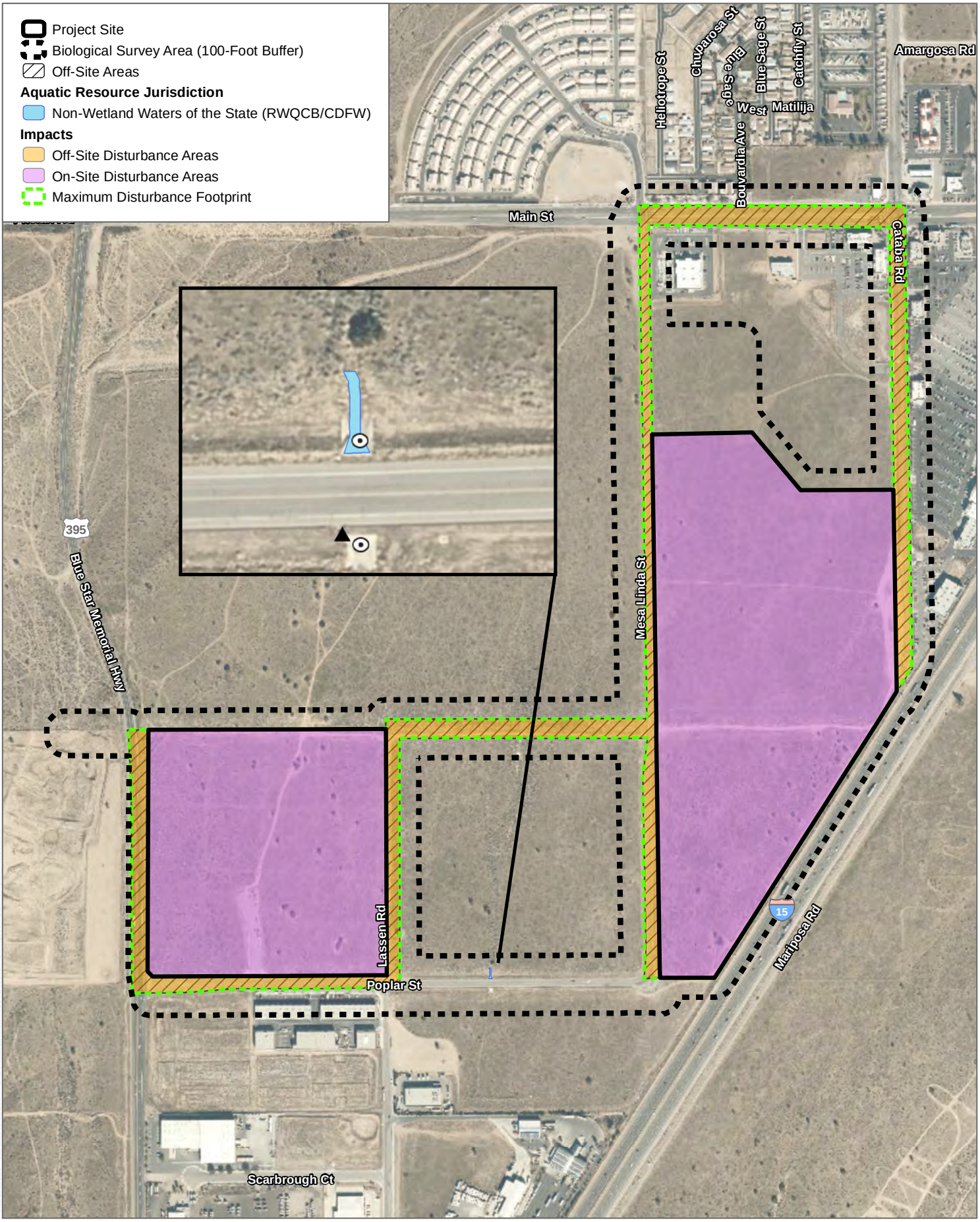
0 325 650 Feet

FIGURE 7

Impacts to Biological Resources Map

I-15 Industrial Park

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2019; Open Street Map 2019

DUDEK

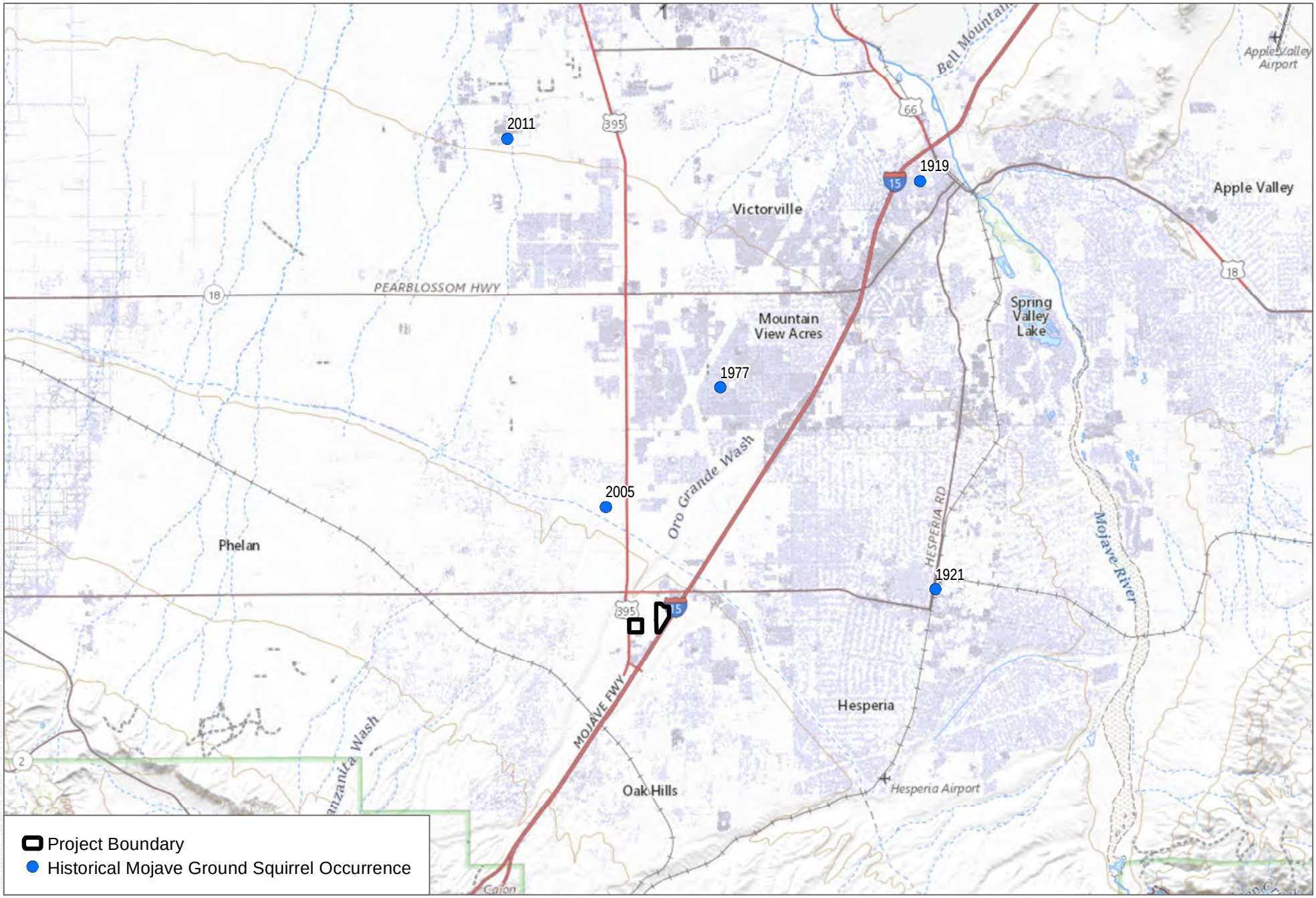
0 330 660 Feet

FIGURE 8

Impacts to Jurisdictional Aquatic Resources

I-15 Industrial Park

INTENTIONALLY LEFT BLANK



SOURCE: CNDDB 2021, USGS

DUDEK

0 6,250 12,500 Feet

FIGURE 9

Historical Mojave Ground Squirrel Occurrences

I-15 Industrial Park

INTENTIONALLY LEFT BLANK

Appendix A

Ordinary High Water Mark (OHWM) and Streamflow Duration Assessment Method (SDAM) Data Sheets

OHWM DATA SHEET

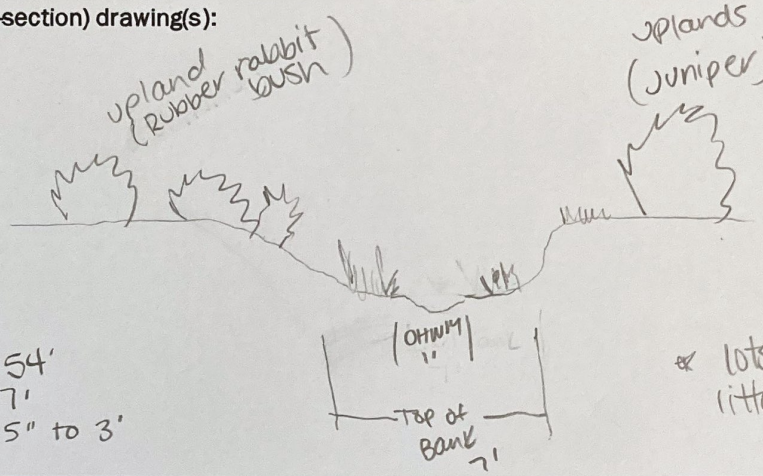
Project: I-15 Date: 5/17/21 Feature ID: NWW-1

Investigator(s): B. Stittmater, R. Swick Transect ID: T-1

Site Location: w/in off-site area; north of Poplar St. at upstream end of feature.

Feature Type: ☒ Ephemeral ☐ Intermittent ☐ Perennial ☐ Other

Transect (cross-section) drawing(s): View Facing: N



☒ Transect length 54'
☒ OHWM width 7'
☒ Channel depth 5" to 3'
☒ Photo

* lots of trash/litter in feature

OHWM Indicators (at OHWM; primary indicators indicated with *)

- ☐ Natural line impressed on the bank
- ☒ Shelving
- ☐ Changes in the character of soil (texture)*
- ☐ Destruction of terrestrial vegetation
- ☐ Presence of litter and debris
- ☐ Wracking
- ☐ Vegetation matted down, bent, or absent
- ☐ Sediment sorting
- ☐ Leaf litter disturbed or washed away
- ☒ Scour
- ☒ Deposition
- ☒ Bed and banks
- ☐ Water staining
- ☐ Change in plant community and/or cover*

☐ Break in Slope at OHWM*: ☐ Sharp (>60°) ☒ Moderate (30-60°) ☒ Gentle (<30°)

Soil Texture

	Clay/Silt	Sand	Gravel	Cobbles	Boulders
Above OHWM	—	15-25%	50-75%	—	—
Below OHWM	—	>75%	5-15%	—	—

Total Vegetation Cover

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	5-15%	15-25%	>75%	1-5%
Below OHWM	0%	5-15%	50-75%	5-15%

Veg Stage: ☐ Early (herbs & seedlings) ☐ Mid (herbs, shrubs, saplings) ☐ Late (herbs, shrubs, mature trees)

Upland Species:	*Bank Species:*	*Emergent Species:* Below OHWM
JUNGAL HIRINC ERINAU BROMUS SPP.	HIRINC ERINAU BROMUS SPP.	HIRINC ERINAU BROMUS SPP.

OHWM DATA SHEET

Condition/Disturbances/Anthropogenic Influences (e.g., erosion, grazing, culverts, etc.):

culverts/stormdrains constructed sometime between 1994 and 2002 (GE). The upstream portion of feature south of Poplar St. was disced/graded in 2013 and no signs of feature after this. (dirt roads only/dist.)

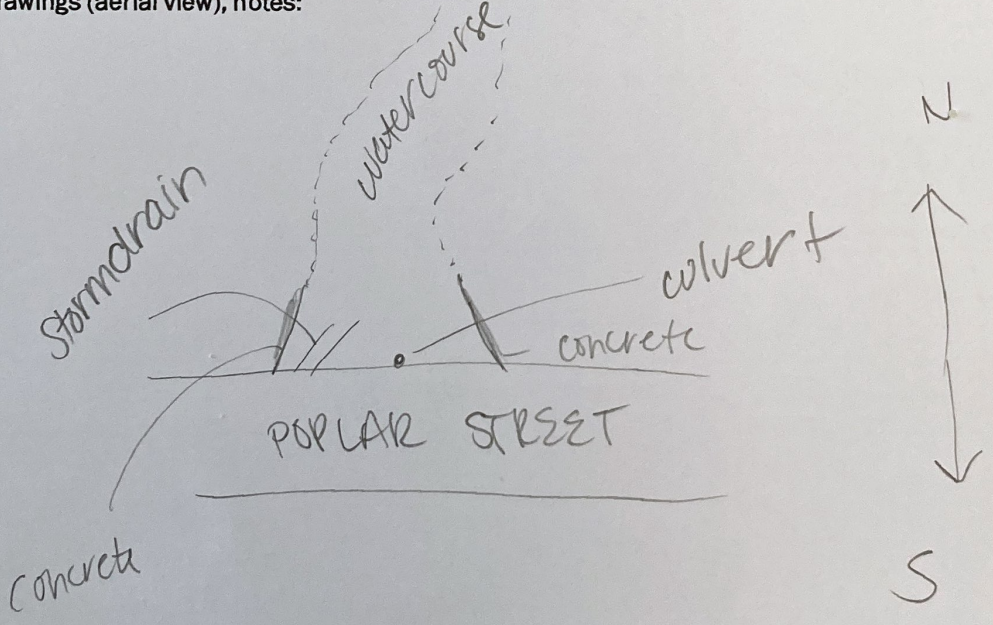
Hydrology

☐ Flowing water	Avg. depth:	Min. depth:
☐ Standing water	Temp:	Max. depth:
☐ Saturated		
☒ Dry		

Checklist of resources (if available):

☒ Aerial photography	☐ Vegetation maps	☒ GPS unit
☐ Remotely-sensed images	☒ Soil maps	☐ Stream gage data
☐ Topographic maps	☐ Rainfall/precipitation data	☐ Other studies:
☐ Geologic maps	☐ Existing delineation(s) for site	

Other drawings (aerial view), notes:



Other forms related to this feature: ☒ Yes ☐ No SOAM

☐ Terrace, fringe, or floodplain wetland (wetland datasheet)

☐ Low flow channel or other representative section (OHWM datasheet)

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number: I-15 Industrial Park	
Site code or identifier:	Assessor(s): B. Strittmater; R. Swick
Waterway name: NWW-1	Visit date:

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

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

Coordinates at downstream end (decimal degrees):
Lat (N): 34° 24' 58" N
Long (W): 117° 23' 35" W
Datum:

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

Describe reach boundaries: generally central portion of channel.

Mean channel width (m)	Reach length (m): 40x width, min 40 m, max 200 m.	Enter photo ID, or check if completed
2 meters	80 meters	Top down: — Mid down: ✓ Mid up: ✓ Bottom up: ✓

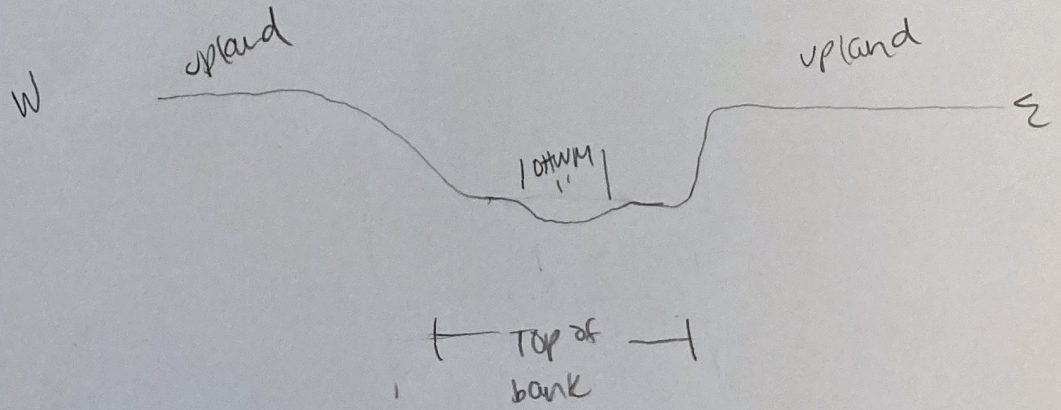
Disturbed or difficult conditions (check all that apply):
- ☐ Recent flood or debris flow
- ☒ Stream modifications (e.g., channelization)
- ☐ Diversions
- ☐ Discharges
- ☒ Drought
- ☐ Vegetation removal/limitations
- ☐ Other (explain in notes)
- ☐ None

Notes on disturbances or difficult site conditions: upstream influence modified by development (Poplar St.) and discing activities south of Poplar St.

Observed hydrology:
- 0 % of reach with surface flow
- 0 % of reach with sub-surface or surface flow
- 0 # of isolated pools

Comments on observed hydrology: hydrology indicators – see OHWM form

Site sketch:



1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area ☒ No hydrophytes in assessment area

Species	Odd distribution?	Notes	Photo ID

Notes on hydrophytic vegetation:

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

Number of individuals quantified: ☒ None ☐ 1 to 19 ☐ 20 +

(Do not count mosquitos)

Photo ID:_____

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes (No)

Ephemeroptera larva
Image credit: Dieter Tracey

Plecoptera larva
Tracey Saxby

Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed? ☐ Check if *all* observed algae appear to be deposited from an upstream source.	☒ Not detected ☐ Yes, < 10% cover ☐ Yes, ≥ 10% (check Yes in single indicator below)	Notes on algae cover:	Photo ID:

5. Are single indicators observed?

Indicator	Present	Notes	Photo ID
Fish	☐ Yes ☒ No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☐ Yes ☒ No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

none

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description
all photos in Collector	

Additional notes about the assessment:

Classification: Ephemeral

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
	Few (1-19)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
Few (1-2)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present	Absent		**At least intermittent**
			Present		**Intermittent**
Many (3+)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent			**At least intermittent**
		Present			**Perennial**
	Many (20+)	Absent			**At least intermittent**
		Present			**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.

Appendix B

Mohave Ground Squirrel Protocol Survey Report

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

August 2, 2021

Mr. Tommy Molioo
27372 Calle Arroyo
San Juan Capistrano, CA, 92675

Subject: Results of Mojave Ground Squirrel Protocol Surveys for the I-15 Industrial Park Project, City of Hesperia, San Bernardino County, California

Dear Mr. Molioo:

This report documents 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 I-15 Industrial Park 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, survey results of trapping efforts for MGS and conclusions.

Project Description and Location

Covington Group, Inc., proposes to develop two speculative industrial distribution warehouses and their associated utility tie-in alignments. The development will occur on two disjunct parcels: a western 35-acre parcel and an eastern 60-acre parcel. Together the parcels encompass a total area of 96.07 acres and have a total study area of 137.64 acres, including utility tie-ins and areas for potential impacts.

The project site is located within the City of Hesperia in San Bernardino County. Both the east and west parcels are located along Mesa Linda Street, between Main Street and Poplar Street. The west parcel is bordered by Highway 395 on the west, and the east parcel is bordered by Interstate 15 on the east (**Figures 1 and 2**). The eastern parcel is surrounded by an undeveloped lot to the west, commercial development to the north and east and by Interstate 15 to the south. The western parcel is surrounded by undeveloped land to the east, west and north, and light industrial development to the south. The project site can be found on U.S. Geological Survey (USGS) 7.5-minute Baldy Mesa topographic quadrangle map within Section 22, Township 4 North and Range 5 West, as shown in **Figure 1**, Project Location.

Biological Setting

The project site is primarily comprised of disturbed California Juniper Woodland- Joshua Tree Woodland Alliance (89.100.00 and 33.170.00, respectively). Although sparse, dominant trees include Joshua tree (*Yucca brevifolia*) and California Juniper (*Juniperus californica*) and are surrounded by a sparse shrub layer consisting of scattered stands of rubber rabbitbrush (*Ericameria nauseosa*), Cooper's goldenbush (*Ericameria cooperi*), Mexican bladdersage (Scutellaria mexicana), and California buckwheat (*Eriogonum fasciculatum*). A dense herbaceous layer consisting of non-native grasses and non-native and native forbs such as red-stemmed filaree (*Erodium cicutarium*), rattlesnake weed (*Euphorbia albomarginata*), Russian thistle (*Salsola tragus*), short-podded mustard (*Hirschfeldia incana*), London

rocket (*Sisymbrium irio*), fiddleneck (*Amsinckia* sp.) and ripgut brome (*Bromus diandrus*) dominate much of the project site. A disturbed wash is present along Sultana Street between the east and west parcels and within the utility tie-in footprint. Soils consist of Cajon sand.

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*), (*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

Protocol surveys for MGS utilized a modified version of the existing 2010 CDFW MGS Survey Guidelines to adequately survey the two disjunct parcels connected by utility tie-in alignments that comprise the project site. The modified survey approach was developed in consultation and coordination with the Region 6 office of the California Department of Fish and Wildlife (CDFW) and was approved on April 16, 2021. The approved survey strategy employed the use of live -trapping and camera trapping techniques and is described in detail below. The approved methodology proposal is also included in **Attachment E**.

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 April 15, 2021. 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. 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 survey grids: a 25-trap 5x5 (140x140 meter) survey grid in the western parcel and a 75-trap 3x25 (70x840 meter) survey grid in the eastern parcel. Coordinate locations for each grid 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. All traps were baited with 4-way live-stock feed and peanut butter powder and were opened within one hour of sunrise and were checked no more than every four hours until they were closed within hour of sunset. All animals captured were released at their capture location and information recorded for each animal included species, weight, age, sex, 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.** The MGS Survey and Trapping Forms, including weather details, are located in **Attachment A** and **Attachment B**.

TABLE 1
UTM COORDINATES FOR CORNERS OF EAST AND WEST LIVE TRAPPING GRIDS

Grid	Corner	Trap Station	Zone	Easting	Northing
West	NW	A1	11	463550	3808665
West	SW	A5	11	463550	3808525
West	NE	E1	11	463690	3808665
West	SE	E5	11	463690	3808525
East	NW	F25	11	464170	3809210
East	SW	F1	11	464170	3808370
East	NE	H25	11	464240	3809210
East	SE	H1	11	464240	3808370

*Datum: WGS 1984

TABLE 2
MOHAVE GROUND SQUIRREL SURVEY DATE AND TYPE

Session	Date	Survey Type	Surveyor
1	April 19-23, 2021	LT/CT	Karla Flores
2	May 27-31, 2021	LT/CT	Karla Flores
3	July 11-15, 2021	LT/CT	Karla Flores

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 concurrently 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	Grid	Zone	Easting	Northing
1	West	11	464338	3808594
2	West	11	464407	3808992
3	West	11	464267	3808915
4	West	11	464245	3809245
5	West	11	463904	3808709
6	East	11	463544	3808558
7	East	11	463419	3808645
8	East	11	463388	3808412
9	East	11	463679	3808667
10	East	11	463638	3808405

Results

Visual Survey

Based on the habitat data collected during the visual survey, the project site supports little to no Mohave ground squirrel habitat. No Mohave ground squirrels food plants were found to occur on the site and the disturbance levels in both the east and west parcels are high. Evidence of vehicle use and transient encampments is also present in both sites.

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 squirrels (*Ammospermophilus leucurus*), California ground squirrels (*Otospermophilus beecheyi*), Panamint kangaroo rat (*Dipodomys panamintinus*) and cactus wren (*Campylorhynchus brunneicapillus*) (**Table 4; Figure 4**).

TABLE 4
RESULTS OF MOHAVE GROUND SQUIRREL PROTOCOL SURVEYS

Common name	Scientific name	East Grid			West Grid			Total
		S1	S2	S3	S1	S2	S3	
White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	5	7	0	0	1	1	14
California ground squirrel	*Otospermophilus beecheyi*	11	5	2	4	7	2	31
Panamint kangaroo rat	*Dipodomys panamintinus*	1	0	1	0	0	0	2
Cactus wren	*Campylorhynchus brunneicapillus*	0	0	0	0	1	1	2
	Total							**49**

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: California ground squirrel, Antelope ground squirrel, Panamint kangaroo rat, black-tailed jackrabbit, common raven, and white-crowned sparrow.

TABLE 5
RESULTS OF MOHAVE GROUND SQUIRREL CAMERA TRAPPING

Common name	Scientific name
White-tailed antelope ground squirrel	*Ammospermophilus leucurus*
Panamint kangaroo rat	*Dipodomys panamintinus*
California ground squirrel	*Otospermophilus beecheyi*
Common raven	*Corvus corax*
White-crowned sparrow	*Zonotrichia leucophrys*

Conclusions

The I-15 Industrial Park Project is located in two highly disturbed vacant lots surrounded by commercial and industrial development, in addition to major roads and highways. The vegetation on site consists primarily of non-native herbaceous plants with sparse stands of native trees and shrubs. Furthermore, the high density of California juniper onsite is indicative that the area is within the Mohave-transmontane transition zone, an area with low likelihood of use by MGS. While the soil at the project site is suitable for burrowing, and burrowing rodents were found, none of the main MGS food plants are present at the project site. In addition, no MGS were captured/observed during the three live-trapping and camera trapping surveys. Capture densities were low for non-target species, suggesting a generally degraded habitat with low habitat suitability for MGS. A historical review of MGS occurrences in the vicinity showed that all documented MGS occurrences near the project site have been recorded north of the California Aqueduct, approximately 2.5 miles away from the project site. Given that the California Aqueduct is a significant barrier to dispersal, it is unlikely that MGS dispersal may occur from the northern sites. Based on this, 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, July 15, 2021.

I hereby certify that the information in this report is true and 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 Investigator

Figures and Attachments
Figure 1-Project Location
Figure 2-Survey Area
Figure 3- Historical MGS Occurrences
Figure 4- Results

Attachment A-CDFW Mohave Ground Squirrel Survey and Trapping Form
Attachment B-Weather Details
Attachment C-Species Compendium
Attachment D-Representative Photographs.
Attachment E-Approved CDFW Survey Methodology

References

California Department of Fish and Game. Mohave Ground Squirrel Survey Guidelines. July 2010.

California Department of Fish and Wildlife. California Natural Diversity Database Rarefind. April 15, 2021.

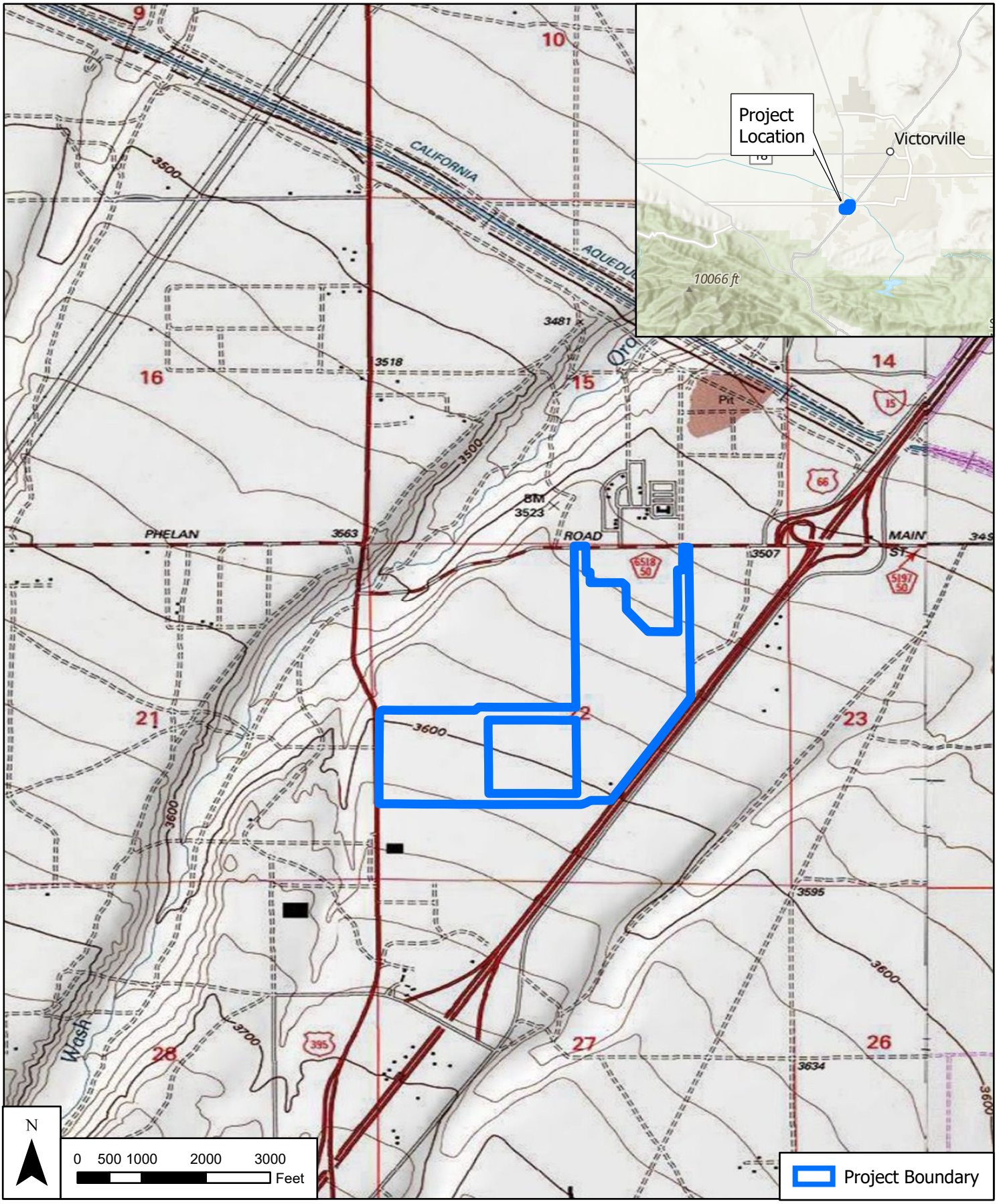
Delaney D.K., Leitner, P. and D. Hacker. 2017. Use of Cameras in Moihave ground Squirrel Studies.

Gustafson, J.R. 1993. A Status Review of the Mohave Ground Squirrel (*Spermophilus mohavensis*). Department of Fish and Game. Nongame Bird and Mammal Report 93-9.

Leitner, P. and B.M. Leitner. 1998. Coso grazing exclosure monitoring study, Mohave ground squirrel study Coso Known Geothermal Resource Area, Major Findings 1988-1996. Final Report.

Leitner, P. and B.M. Leitner. 2017. Diet of the Mohave ground squirrel (*Xerospermophilus mohavensis*) in relation to season and rainfall. *Western North American Naturalist*, 77(1), 1-13.

Recht, M.A. 1977. The biology of the Mohave ground squirrel, *Spermophilus mohavensis*. Ph.D. Dissertation, University of California, Los Angeles. 117 pp.



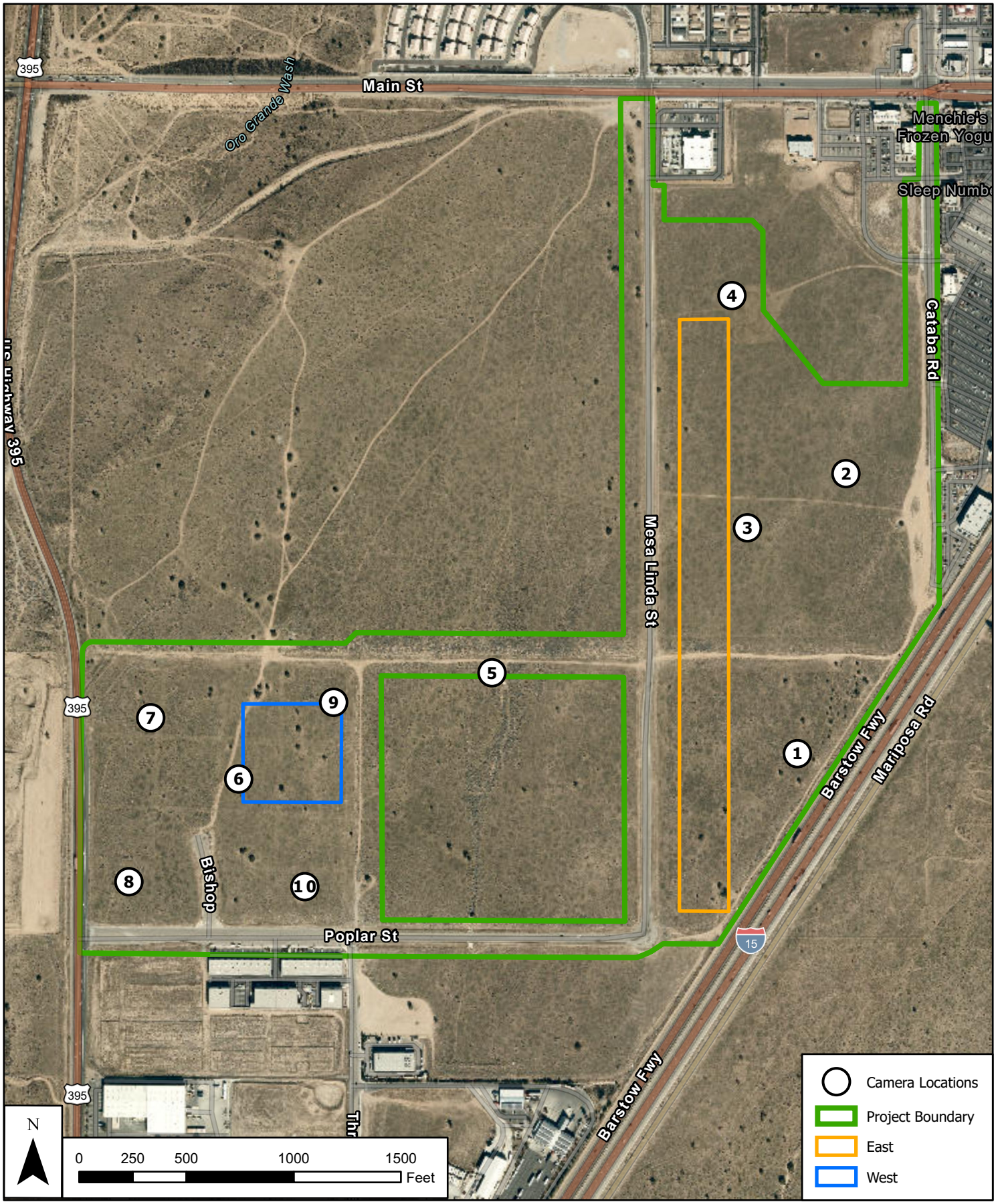
SOURCE: ESRI

I-15 Industrial Park

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 1

Project Location



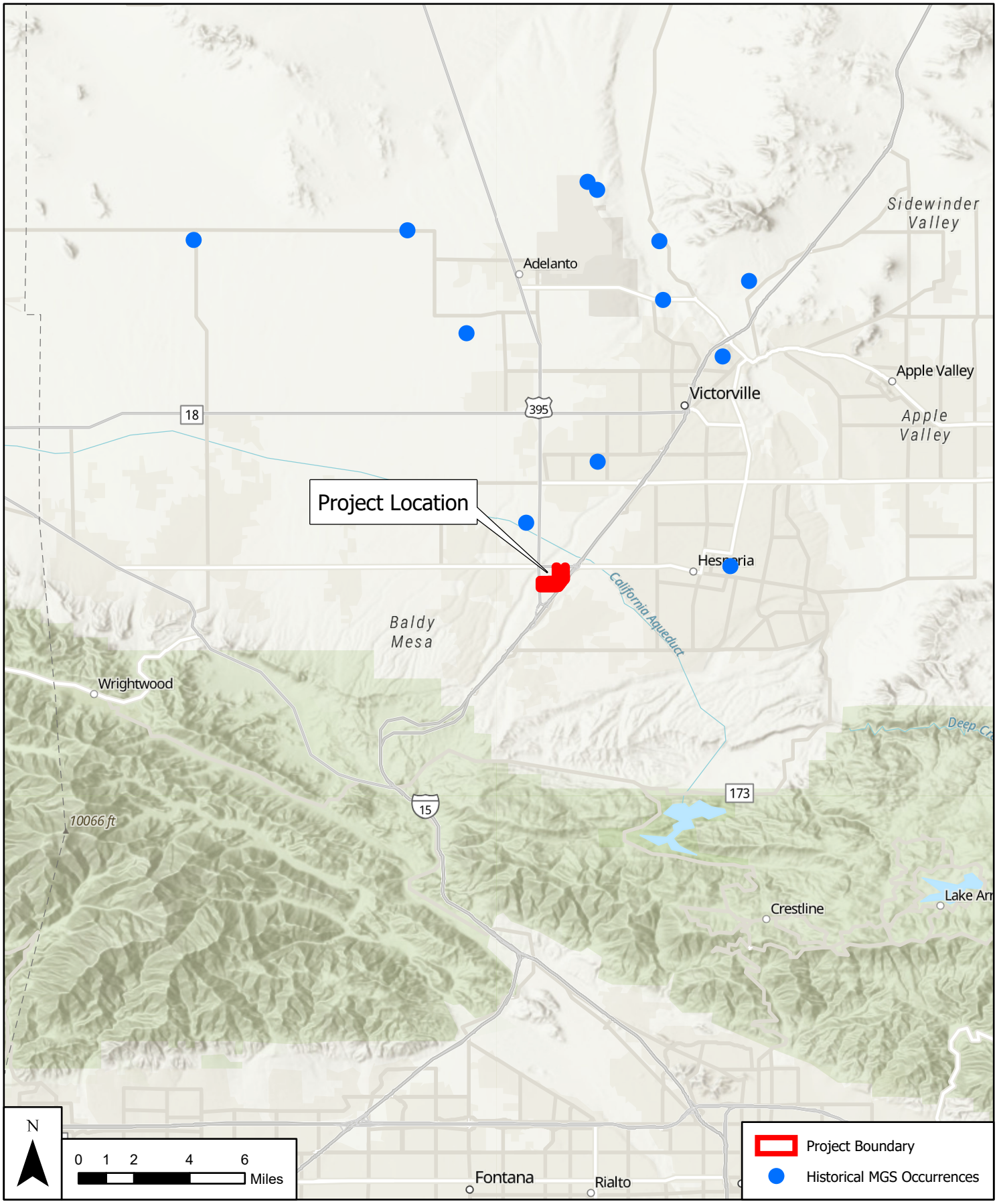
SOURCE: ESRI

I-15 Industrial Park

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 2

Survey Area



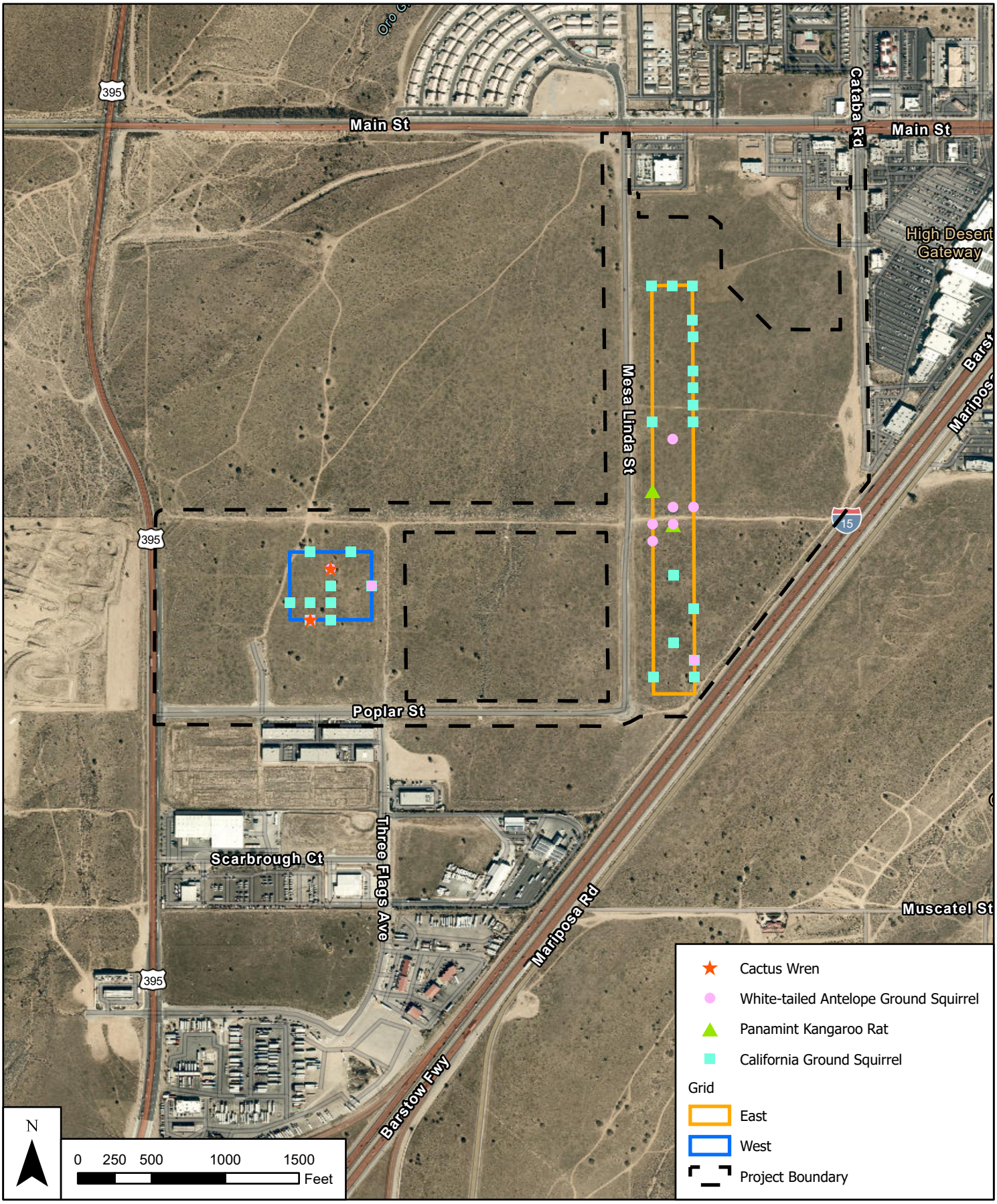
SOURCE: ESRI

I-15 Industrial Park

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 3

Historical MGS Occurrences



SOURCE: ESRI

I-15 Industrial Park

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Figure 4

Trapping Results

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

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: I-15 Industrial Park Project -East Property owner: Covington Group, Inc.

Location: Township 4 North; Range 5 West; Section 22 ; ¼ Section _____

Quad map/series: Baldy Mesa UTM coordinates: SW: 11 464170 3808370 WGS 1984
GPS coordinates of trapping-grid corners

Acreage of Project Site: 96.07/137.64 (study area) Acreage of potential MGS habitat on site: 0

Total acreage visually surveyed on project site: 137.64 acres Date(s): April 15, 2021
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 137.64 acres Number of sampling grids: 2

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 19-23, 2021 SECOND May 27-31, 2021 THIRD July 11-15, 2021
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: California juniper and Joshua tree
other perennials: Mexican bladdersage, rubber rabbitbrush, Cooper's goldenhead, California buckwheat
dominant annuals: Red-stemmed filaree, rattlesnake weed, fidddleneck, short-podded mustard, London rocket
other annuals: Ripgut brome, cheatgrass

Land forms (mesa, bajada, wash): Mesa

Soils description: Hesperia loamy fine sand

Elevation: 3432 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: I-15 Industrial Park Project -West Property owner: Covington Group, Inc.

Location: Township 4 North; Range 5 West; Section 22 ; ¼ Section _____

Quad map/series: Baldy Mesa UTM coordinates: SW: 11 463550 3808525 WGS 1984
GPS coordinates of trapping-grid corners

Acreage of Project Site: 96.07/137.64 (study area) Acreage of potential MGS habitat on site: 0

Total acreage visually surveyed on project site: 137.64 acres Date(s): April 15, 2021
visual surveys

Visual surveys conducted by: Karla Flores and Karl Fairchild
names of all persons by date (use back of form, if needed)

Total acres trapped: 137.64 acres Number of sampling grids: 2

Trapping conducted by: Karla Flores and Karl Fairchild
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST April 19-23, 2021 SECOND May 27-31, 2021 THIRD July 11-15, 2021
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: California juniper and Joshua tree
other perennials: Mexican bladder sage, rubber rabbitbrush
dominant annuals: Red-stemmed filaree, rattlesnake weed, fidddleneck, short-podded mustard, London rocket
other annuals: Ripgut brome, cheatgrass

Land forms (mesa, bajada, wash): Mesa

Soils description: Cajon sand

Elevation: 3451 feet Slope: 0-2%

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

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

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 ° Fahrenheit), soil temperature (min-max ° Fahrenheit), wind speed (mph) and percent cloud cover (%).

Date	Survey	Air Temperature (°F)		Soil temperature (°F)		Wind (mph)		Cloud Cover (%)	
		Min	Max	Min	Max	Start	End	Start	End
4/19/2021	1	74.2	82.4	61.4	65.8	1.5	5.4	0	0
4/20/2021	1	57	67.8	62.5	74.1	3.4	9.3	0	5
4/21/2021	1	60.2	56.3	57.6	64	17.5	14.7	5	5
4/22/2021	1	53	60.8	56.3	64	18.1	11.8	5	5
4/23/2021	1	56.2	60.4	51.3	72.1	9.7	19.6	3	1
5/27/2021	2	69.7	89.9	61.5	91.4	4	3.6	0	0
5/28/2021	2	67.8	90	58.8	71.4	1.2	11	0	0
5/29/2021	2	64.9	73.7	67.5	71.6	10	16.7	35	5
5/30/2021	2	72.8	90.9	61.7	72.7	2.5	4.6	0	0
5/31/2021	2	72.2	92.3	68.9	74.3	2.4	5.2	0	0
7/11/2021	3	76.2	90	79.5	88	7.5	5.8	10	45
7/12/2021	3	81	90	86.4	84.2	4.2	13.6	50	50
7/13/2021	3	75.8	90	80.6	84.7	11.9	11.6	45	60
7/14/2021	3	73	90	77.6	85.5	10.2	15.9	50	5
7/15/2021	3	71.6	88.3	76.5	82.7	5.8	11.6	1	0

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Attachment C

Common name	Scientific name	SSC*
Plants		
Joshua tree	*Yucca brevifolia*	
California juniper	*Juniperus californica*	
Rubber rabbitbrush	*Ericameria nauseosa*	
Cooper's goldenhead	*Ericameria cooperi*	
Mexican bladdersage	*Scutellaria mexicana*	
California buckwheat	*Eriogonum fasciculatum*	
Red-stemmed filaree	*Erodium cicutarium*	
Fiddleneck	*Amsinckia sp.*	
Short-podded mustard	*Hirschfelida incana*	
London rocket	*Sisymbrium irio*	
Russian thistle	*Salsola tragus*	
Rattlesnake week	*Euphorbia albomarginata*	
Cheatgrass	*Bromus tectorum*	
Ripgut brome	*Bromus diandrus*	
Birds		
Cactus wren	*Campylorhynchus brunneicapillus*	
Common raven	*Corvus corax*	
Horned lark	*Eremophila alpestris*	
Savannah sparrow	*Passerculus sandwichensis*	
Northern mockingbird	*Mimus polyglottos*	
Northern harrier*	*Circus hudsonius*	Yes
Bell's sparrow	*Artemisiospiza belli*	
Rock pigeon	*Columba livia*	
European starling	*Sturnus vulgaris*	
Loggerhead shrike*	*Lanius ludovicianus*	Yes
Greater roadrunner	*Geococcyx californianus*	
Mammals		
California ground squirrel	*Otospermophilus beecheyi*	
White-tailed antelope ground squirrel	*Ammospermophilus leucurus*	
Panamint kangaroo rat	*Dipodomys panamintinus*	
Black-tailed jackrabbit	*Lepus californicus*	
Reptiles		
Side-blotch lizard	*Uta stanisburiana*	

*SSC: Species of Special Concern

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Attachment D

Photograph 1: West grid representative vegetation, facing west.

Photograph 2: East grid representative vegetation, facing west.

Photograph 3: Representative camera trap station with bait tube.

Photograph 3: Representative live-trapping station.

Photograph 5: Representative live trapping captures: juvenile white-tailed antelope ground squirrel (left) and cactus wren (right).

DIPODOMYS
ECOLOGICAL CONSULTING, LLC

Attachment E

Memorandum

To: Ashley Rosales, California Department of Fish and Wildlife (CDFW)

From: Karla Flores, Dipodomys Ecological Consulting (DEC)

CC: Karl Fairchild (DEC), Tommy Molioo (Dudek), Megan Enright (Dudek)

Subject: Proposal to conduct California Department of Fish and Wildlife (CDFW) Mohave Ground Squirrel Protocol Surveys for the I-15 Industrial Park Project, in the City of Hesperia, San Bernardino County, California.

Dipodomys Ecological Consulting (DEC) proposes to conduct California Department of Fish and Wildlife (CDFW) Mohave Ground Squirrel (MGS) protocol surveys for the I-15 Industrial Park Project (Project). The project site consists of two disjunct parcels and their associated utility tie-in alignments. Together, the parcels encompass a total of 96.07 acres and have a study area totaling 137.64 acres. The Project site is located along Poplar Street between Highway 395 and Interstate 15 in the City of Hesperia, San Bernardino County, California (**Figure 1**).

DEC proposes to survey the eastern (approximately 60-acre) and western (approximately 35-acre) parcels along with the utility alignments using a combination of live trapping and camera trapping techniques. Because the project consists of two disjunct parcels with their associated utility tie-ins, one 3x25 (70 x 840 meter) live-trapping grid will be established within the eastern parcel and one 5x5 (140x140meter) live trapping grid will be established in the western parcel. Additionally, ten camera trapping stations will be distributed throughout the project site (**Figure 1**). Sites chosen for live-trapping and camera-trapping efforts met the following criteria: (a) representative of the site, (b) provide maximum coverage of the project parcel, and (c) provide suitable habitat for MGS (e.g., substrate and vegetation). Final sampling locations may be adjusted based on field conditions.

MGS Live-trapping and Camera Trapping

Live Trapping

DEC's permitted biologists Karla Flores (SC-10572; MOU Principal Investigator) or Karl Fairchild (SC-11720; Field Investigator) will set up one 75-trap grid using a 3x25 (70 x 840 meter) configuration in the eastern parcel and one 25-trap grid using a 5x5 grid (140x140) configuration in the western parcel. Both grids, totaling 100 traps, will utilize XLK Sherman traps (3 x 3.75 x 12") spaced 35 meters apart. Traps will be baited with a mixture of 4-way livestock feed sprinkled with peanut butter and oats powder. Artificial shade will be provided using A-frame cardboard shade covers. Shade covers will be secured with tent stakes if windy conditions occur.

DEC will first conduct a visual survey to finalize trapping locations. Each sampling location will be surveyed three times during designated survey windows (1st: March 15-April 31; 2nd: May 1-31 and 3rd: June 15-July 15). If an MGS is captured, trapping will cease and CDFW will be notified.

All animals captured during the trapping efforts will be identified to species and released at the capture location. Biometric information such as weight, age class, sex, and reproductive condition will be recorded prior to release.

Camera Trapping

DEC biologists will supplement live-trapping efforts with **ten** camera trapping stations. Five cameras will be installed within the western parcel and five cameras will be installed along the utility alignments. Each camera station will consist of a Bushnell Core Low Glow Trail Camera (Model 119932CB) facing a bait station consisting of a feeding tube to prevent attracting ravens. All bait tubes will be staked to the ground with a 12-inch railroad spike. Camera settings may be adjusted based on onsite weather conditions to minimize wind triggers. Cameras will operate 24 hours per day for five days during the three survey windows established by the CDFW MGS Survey Guidelines.

Photos from the camera traps will be downloaded after every five-day camera trapping session and will be reviewed individually by the Principal Investigator. A list of all species photographed will be included in the report, along with representative photographs.

Camera Specifications (from Delaney et al. 2017)

a.) At least 1 photo per second when triggered
b.) Trigger speed of <0.5 seconds
c.) Recovery speed of ≤1 second
d.) Minimum 60Mb/sec download speed on SD card

Camera Trap Set-Up

a.) 24-hour camera operation
b.) Face camera north
c.) Keep shrubs and other potential wind triggers out of the field of view
d.) Test camera trigger at bait location before leaving
e.) Bait is present every day

If you have any questions, please feel free to contact Karla Flores at 619-972-4319 or kflores@dipodomysecological.com.

Sincerely,

Karla Flores
Principal Investigator

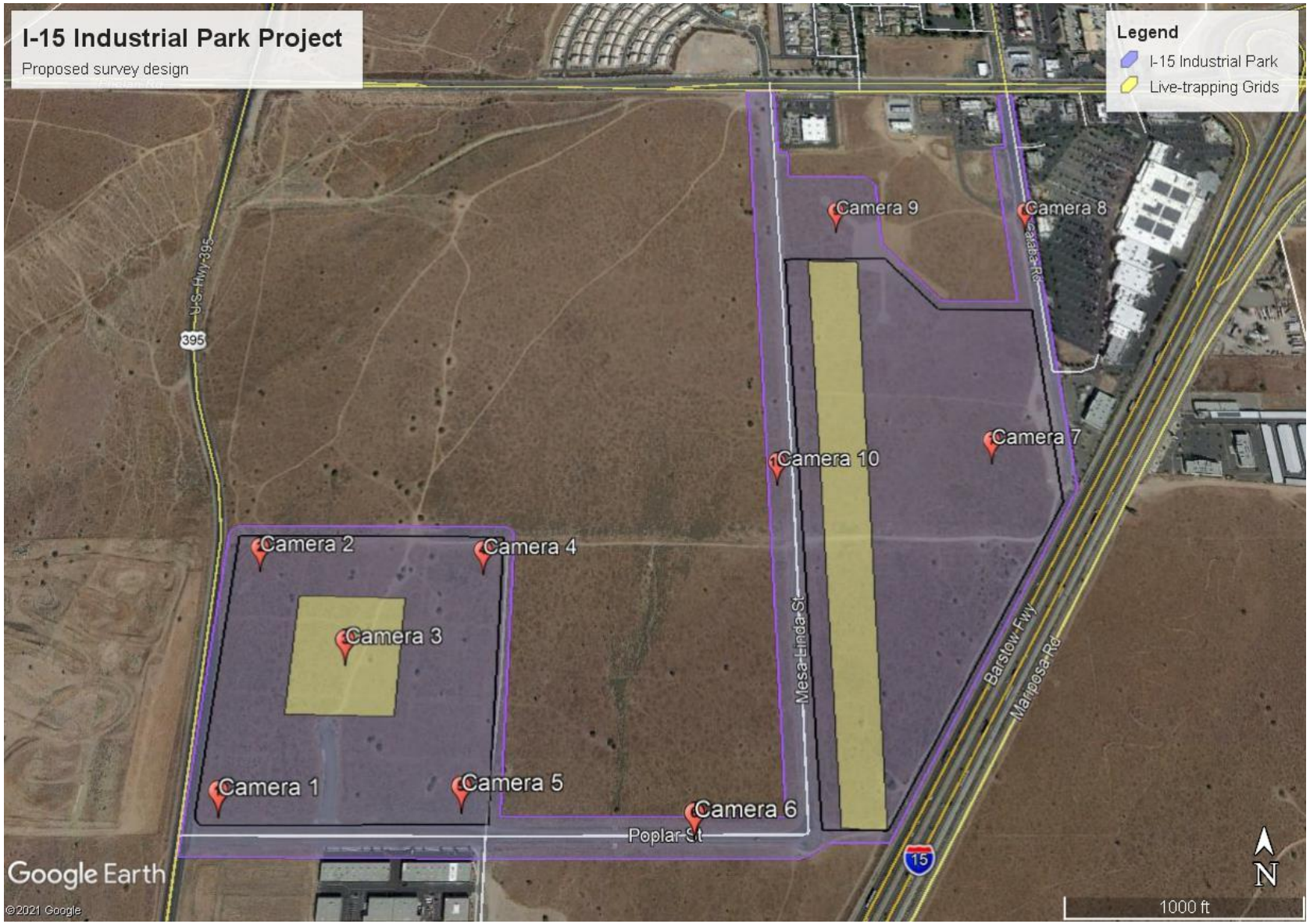


Figure 1. Proposed sampling design for the I-15 Industrial Park Project.

Appendix C
Plant Compendium

Plant Species – Vascular Species

Eudicots

ASTERACEAE—SUNFLOWER FAMILY

Ambrosia acanthicarpa—flatspine bur ragweed
Ambrosia dumosa—white bursage
Ambrosia salsola—cheesebush
* *Centaurea melitensis*—Maltese star-thistle
Ericameria cooperi—Cooper's goldenbush
Ericameria linearifolia—narrowleaf goldenbush
Ericameria nauseosa var. *hololeuca*—rubber rabbitbrush
Gutierrezia sarothrae—broom snakeweed
* *Lactuca serriola*—prickly lettuce
Lessingia glandulifera—valley lessingia
Malacothrix glabrata—smooth desertdandelion
Stephanomeria pauciflora—brownplume wirelettuce
Tetradymia comosa—hairy horsebrush

BORAGINACEAE—BORAGE FAMILY

Amsinckia tessellata—bristly fiddleneck
Pectocarya penicillata—sleeping combseed
Plagiobothrys canescens var. *canescens*—valley popcornflower

BRASSICACEAE—MUSTARD FAMILY

* *Descurainia sophia*—herb sophia
* *Hirschfeldia incana*—shortpod mustard
* *Sisymbrium altissimum*—tall tumblemustard

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Salsola tragus*—prickly Russian thistle

EUPHORBIACEAE—SPURGE FAMILY

Euphorbia albomarginata—whitemargin sandmat
* *Euphorbia maculata*—spotted sandmat
Euphorbia serpyllifolia ssp. *serpyllifolia*—thymeleaf sandmat

FABACEAE—LEGUME FAMILY

Prosopis glandulosa var. *torreyana*—western honey mesquite

GERANIACEAE—GERANIUM FAMILY

* *Erodium botrys*—longbeak stork's bill

* *Erodium cicutarium*—redstem stork's bill

LAMIACEAE—MINT FAMILY

* *Marrubium vulgare*—horehound

Scutellaria mexicana—Mexican bladdersage

MALVACEAE—MALLOW FAMILY

Sphaeralcea ambigua var. *ambigua*—apricot globemallow

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Mirabilis laevis var. *crassifolia*—California four o'clock

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum angulosum—anglestem buckwheat

Eriogonum fasciculatum var. *polifolium*—California buckwheat

SOLANACEAE—NIGHTSHADE FAMILY

Lycium andersonii—anderson’s boxthorn

Lycium cooperi—peach thorn

ZYGOPHYLLACEAE—CALTROP FAMILY

Larrea tridentata—creosote bush

Gymnosperms and Gnetophytes

CUPRESSACEAE—CYPRESS FAMILY

Juniperus californica—California juniper

EPHEDRACEAE—EPHEDRA FAMILY

Ephedra nevadensis—Nevada joint fir

Monocots

AGAVACEAE—AGAVE FAMILY

Yucca brevifolia—Joshua tree

POACEAE—GRASS FAMILY

* *Avena barbata*—slender oat
* *Bromus diandrus*—ripgut brome
* *Bromus madritensis*—compact brome
* *Bromus tectorum*—cheatgrass
* *Cynodon dactylon*—Bermudagrass
* *Hordeum murinum*—mouse barley
* *Schismus arabicus*—Arabian schismus
Stipa speciosa—desert needlegrass

* signifies introduced (non-native) species

INTENTIONALLY LEFT BLANK

Appendix D
Wildlife Compendium

Wildlife Species – Vertebrates

Birds

Blackbirds, Orioles and Allies

ICTERIDAE—BLACKBIRDS

Sturnella neglecta—western meadowlark

Jays, Magpies and Crows

CORVIDAE—CROWS AND JAYS

Corvus corax—common raven

Terns and Gulls

LARIDAE—GULLS, TERNS, AND SKIMMERS

Larus argentatus—herring gull

Thrushes

TURDIDAE—THRUSHES

Sialia currucoides—mountain bluebird

Wrens

TROGLODYTIDAE—WRENS

Campylorhynchus brunneicapillus—cactus wren

New World Sparrows

PASSERELLIDAE—NEW WORLD SPARROWS

Zonotrichia leucophrys—white-crowned sparrow

Mammals

Hares and Rabbits

LEPORIDAE—HARES & RABBITS

Lepus californicus—black-tailed jackrabbit

Kangaroo Rats

HETEROMYIDAE — POCKET MICE & KANGAROO RATS

Dipodomys panamintinus—Panamint kangaroo rat[1]

Squirrels

SCIURIDAE—SQUIRRELS

Ammospermophilus leucurus—white-tailed antelope squirrel[1]

Spermophilus (Otospermophilus) beecheyi—California ground squirrel[1]

[1] Species observed by Dipodomys Ecological Consulting biologists.

Appendix E

Joshua Tree Preservation, Protection, and Relocation Plan, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

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

I-15 Industrial Park Project

OCTOBER 2021

Prepared for:

Poplar 35, LLC
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254
Contact: Dana Whitmer

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.

TABLE

FIGURES

APPENDICES

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
City	City of Hesperia
HMC	Hesperia Municipal Code
ISA	International Society of Arboriculture
MM	Mitigation Measure
project	I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK

1 Introduction

The purpose of this Joshua Tree Preservation, Protection, and Relocation Plan (Joshua Tree Plan) for the proposed I-15 Industrial Park Project (project) is to provide detailed specifications for Poplar 35, LLC to meet the requirements of Chapter 16.24 of the City of Hesperia (City) Municipal Code (City of Hesperia 2020) 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 the California Department of Fish and Wildlife (CDFW) for evaluation. CDFW evaluated the scientific information presented in the petition and other relevant information possessed by CDFW at the time of review and prepared a report for submittal to the Commission (CDFW 2020). The report states that CDFW recommended that the Commission accept the petition for further consideration of western Joshua tree under the California Endangered Species Act. 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 the California Endangered Species Act, 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 California Endangered Species Act is warranted. For this project, take or removal of western Joshua tree would require a 2081 ITP from CDFW.

Furthermore, chapter 16.24 of the Hesperia Municipal Code (HMC) states that "it is in the public interest to preserve and protect specified desert native plants and provide for the conservation and wise use of our desert resources, through regulation, guidelines and enforcement that manage the removal or harvesting of such plants. They are also necessary to augment and coordinate with the State Department of Food and Agriculture in its efforts to implement and enforce the Desert Native Plant Act." Furthermore, the City's Protected Plants policy (HMC 16.24) states the following for Tentative Tract, non-single-family residential (commercial, industrial, apartments):

- A protected plant plan shall be prepared by a certified arborist or registered botanist.
- An application and fee shall be completed and paid to the City.
- Healthy, transplantable plants shall be relocated on site or may be placed in an adoption program.

As such, this Joshua Tree Plan addresses the requirements of the City's Protected Plants policy 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 City of Hesperia, California, as defined in the City's Protected Plants policy (HMC 16.24).

[1] On October 21, 2019, the Commission received a petition to list the following as threatened under the California Endangered Species Act: (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.

1.2 Project Location

The approximately 118.5-acre Project, including the 96.1-acre Project site and 22.4-acre Off-Site Utilities and Street Improvement Area (Off-Site Area), is located in the eastern part of the City of Hesperia (City), 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 site is located on the southwest quadrant of I-15 and Main Street. The Project site is located south of Main Street, west of Cataba Road, north of I-15 and Poplar Street, and east of U.S. Highway 395. The Project consists of Assessor's Parcel Numbers (APNs) 306-458-101, 306-462-101, and 306-460-107. Specifically, the Project site is located in Section 22, Township 4 North, Range 5 West, as depicted on the U.S. Geological Survey Baldy Mesa, California 7.5-minute topographic quadrangle map. Regional access to the Project site is provided via I-15, immediately adjacent to the south, and U.S. Highway 395, bordering the western boundary of the Project site.

1.3 Project Characteristics

The Project would include construction of two industrial/warehouse buildings and associated improvements on 96.1 acres of vacant land (see Figure 3, Site Plan). Building 1, the eastern building, would be 1,108,000 square feet and Building 2, the western building, would be 742,000 square feet. In total, the project would provide 1,850,000 square feet of industrial/warehouse space and associated improvements, including loading docks, tractor-trailers, passenger vehicle parking spaces, stormwater detention basins, and landscape area.

The Project would include improvements along Mesa Linda Street and Cataba Road, including frontage landscaping and pedestrian improvements. A variety of trees, shrubs, plants, and land covers would be planted within the project frontage's landscape setback area, as well as within the landscape areas found around the proposed industrial/warehouse buildings and throughout the Project site.

Tenants for the Project have not been identified and the two industrial warehouse buildings are considered speculative. Business operations would be expected to be conducted within the enclosed buildings, with the exception of the 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 areas, 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. Cold storage would not be permitted in any of the proposed buildings.

Off-Site Roadway and Utility Improvements

The Project would involve the construction of several off-site roadway and utility improvements. Sultana Street (which is currently a dirt road) would be constructed from the northwestern corner of the Building 2 site to Mesa Linda Street, and Lassen Road (also currently a dirt road) would be constructed from the northwestern corner of the Building 2 site to Poplar Street. The Project would also involve the widening of the northbound eastern portion of U.S. Highway 395 along the western frontage of the Building 2 site.

Other wet and dry utilities, including domestic water, sanitary sewer, and electricity, would also be extended onto the project site from their existing locations along the Project's frontage. Other roadway and pedestrian improvements may be necessary (such as road repaving or the installation of sidewalks along each building frontage).

storm drain line would be installed within the existing Cataba Road from the northeastern corner of Building 1 to an existing storm drain line approximately 1,360 feet north of the north of the northeastern corner of Building 1.

Other wet and dry utilities, including domestic water, sanitary sewer, and electricity, would also be extended onto the project site from their existing locations along the Project's frontage. Other roadway and pedestrian improvements may be necessary (such as road repaving or the installation of sidewalks along each building frontage).

To account for the maximum potential disturbance associated with all these improvements, a maximum disturbance footprint has been developed, as shown on Figure 3, Site Plan. Specific, known improvements are depicted on this figure. Areas in which lateral utility connections may occur or where other roadway and pedestrian improvements may be necessary are also depicted.

Together, these off-site improvements are referred to as the Off-Site Street and Utility Improvements.

1.4 Site Characteristics

The Project site is composed of two disjointed sites separated by Mesa Linda Street and an undeveloped property. These two sites collectively constitute the Project site. The site for Building 1 is located west of Mesa Linda Street, east of Cataba Road, and north of Interstate 15. The site is irregularly shaped and located on two parcels (APNs 306-462-101 and 306-460-107) that total 66.33 acres (gross); an approximately 4.98-acre portion at the northern end of the Building 1 site (APN 306-460-107) is not included in the Project. After deducting the 4.98-acre area that is not a part of the Project, the Building 1 site's area totals 61.34 acres (gross). The Building 2 site is located on one parcel (APN 306-458-101) and is 36.3 acres (gross). It is bound by U.S. Highway 395 to the west, Poplar Street to the south, and Lassen Road to the east, which is currently a dirt road. Both the Building 1 site and the Building 2 sites are vacant and undeveloped, with the exception of an approximately 440-foot segment of Bishop Street that terminates in a cul-de-sac being located on the Building 2 site.

Ground surface cover consists of moderate native brush and shrub growth, with occasional Juniper and Joshua trees located throughout the site. Both sites are 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.

Climate

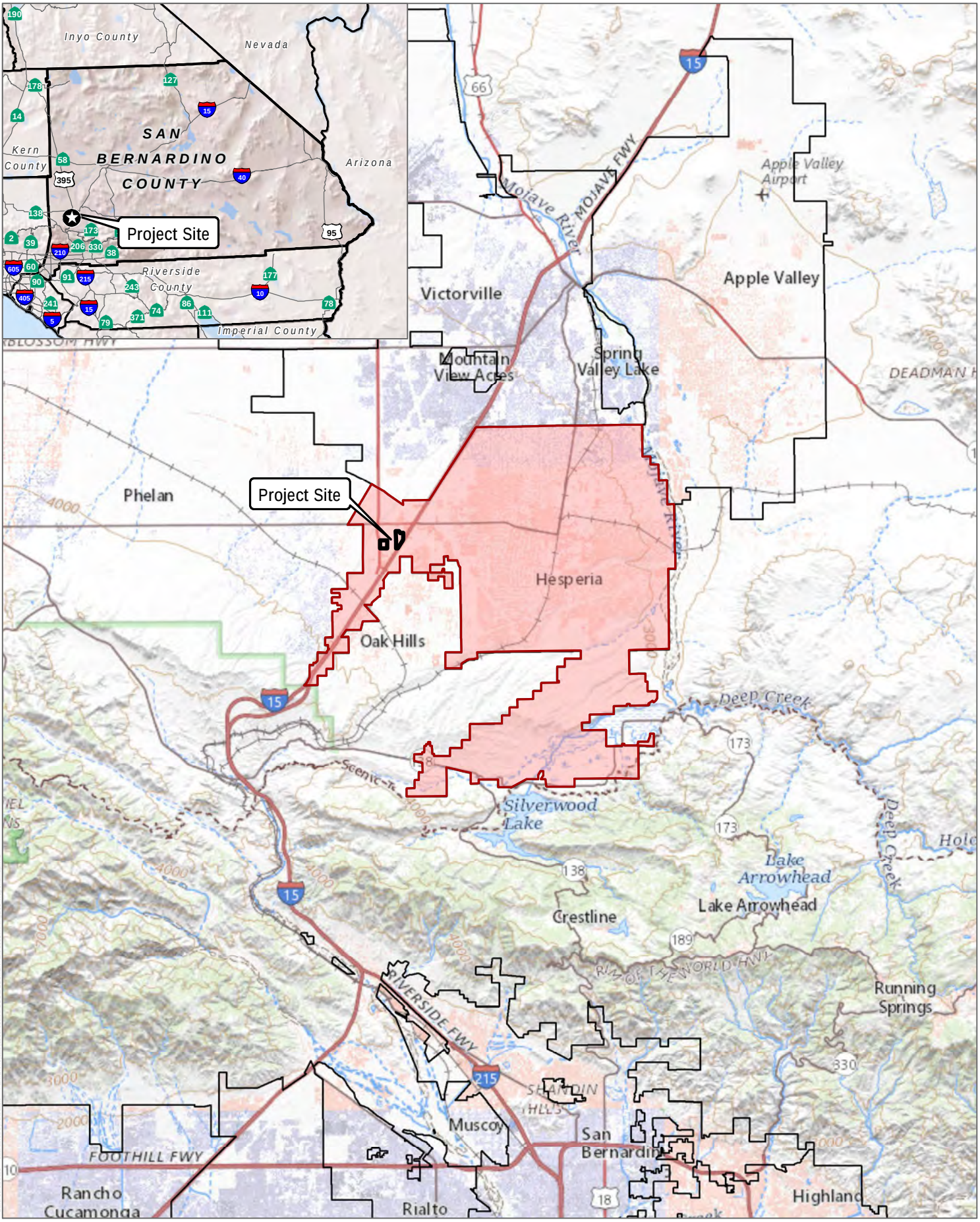
The Project is located in Victor Valley/High Desert region in western San Bernardino County. Average annual temperatures range from 44° Fahrenheit (°F) to 81°F. The average annual precipitation is 6.72 inches (Western Regional Climate Center 2021). Periods of extended drought are common throughout the region.

Topography and Soils

The Project site is composed of two disjointed sites separated by Mesa Linda Street and an undeveloped property. Both sites are 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 site's surface elevation ranges between approximately 3,522 and 3,602 feet above mean sea level (AMSL). The Project site and immediate surrounding area is relatively flat with a slight slope towards the northeast, and the southwestern corner of the site slopes moderately downward to the west. The project is located 7.5 miles north of Cleghorn Mountain, which occurs above Cajon Pass that divides the San Gabriel Mountains from the San Bernardino Mountains.

Vegetation

The Project site is primarily comprised of non-native grassland and Joshua tree woodland. Dominant plants include Joshua tree *(Yucca brevifolia*), slender oat (*Avena barbata*), and annual brome (*Bromus* sp.), followed by California juniper *(Juniperus californica)*, black mustard (*Brassica nigra*), rubber rabbitbrush (*Ericameria nauseosa*), Nevada joint fir (*Ephedra nevadensis*), and California buckwheat (*Eriogonum fasciculatum* var. *polifolium*). The herbaceous layer is primary dominated by non-native annuals and grasses such as red-stemmed filaree *(Erodium cicutarium)*, longbeak stork's bill (*Erodium botrys*), ripgut brome (*Bromus diandrus*), red-brome *(Bromus madritensis)* and cheat grass *(Bromus tectorum)*. Vegetation within the southwestern portion in addition to along the southern boundary and through the center of the Project site is more sparse and disturbed due to human activity, including existing dirt roads and paved roads.



SOURCE: USGS US Topo 2020

DUDEK

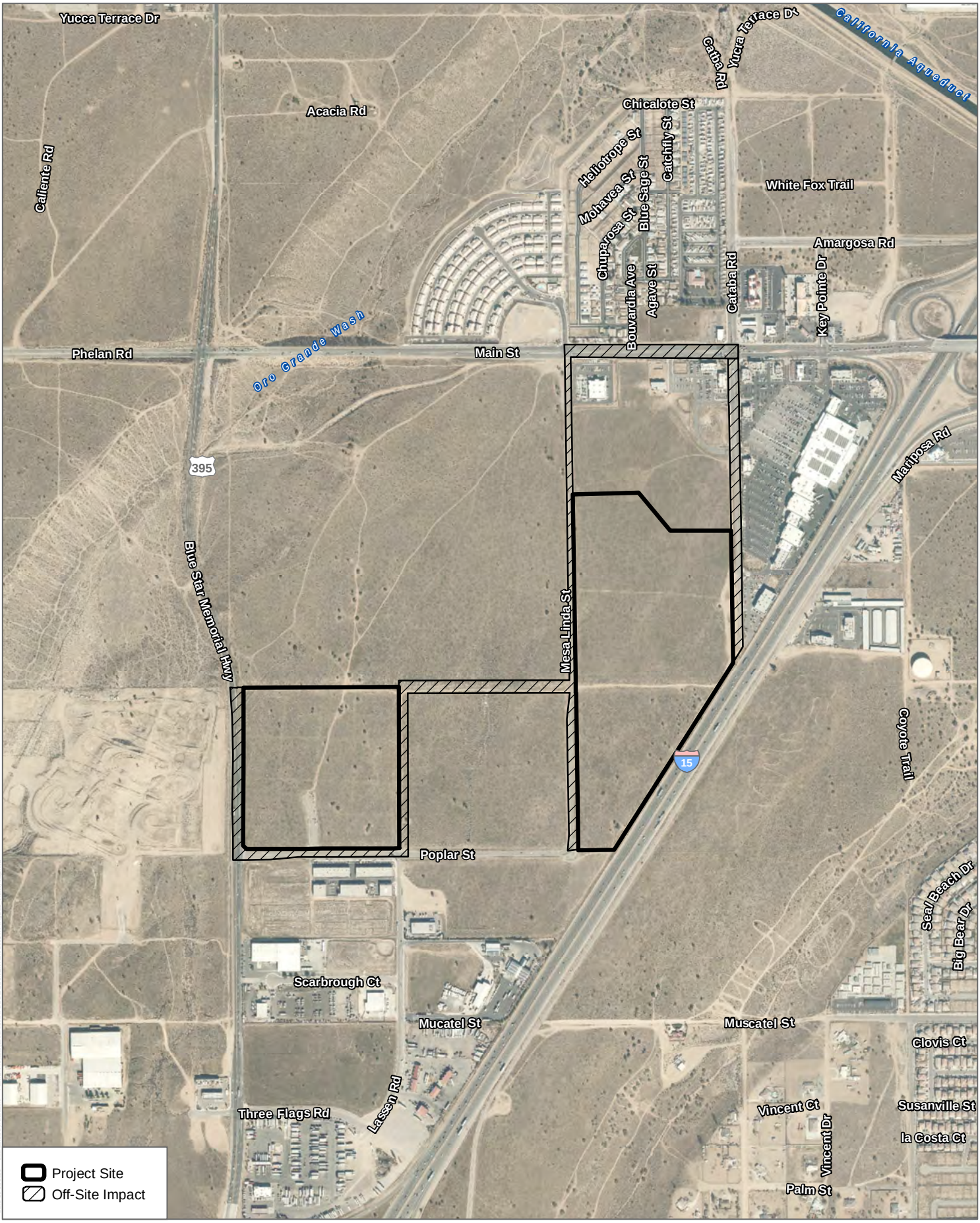
0 1.75 3.5 Miles

Figure 1

Regional Map

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2019; Open Street Map 2019

DUDEK

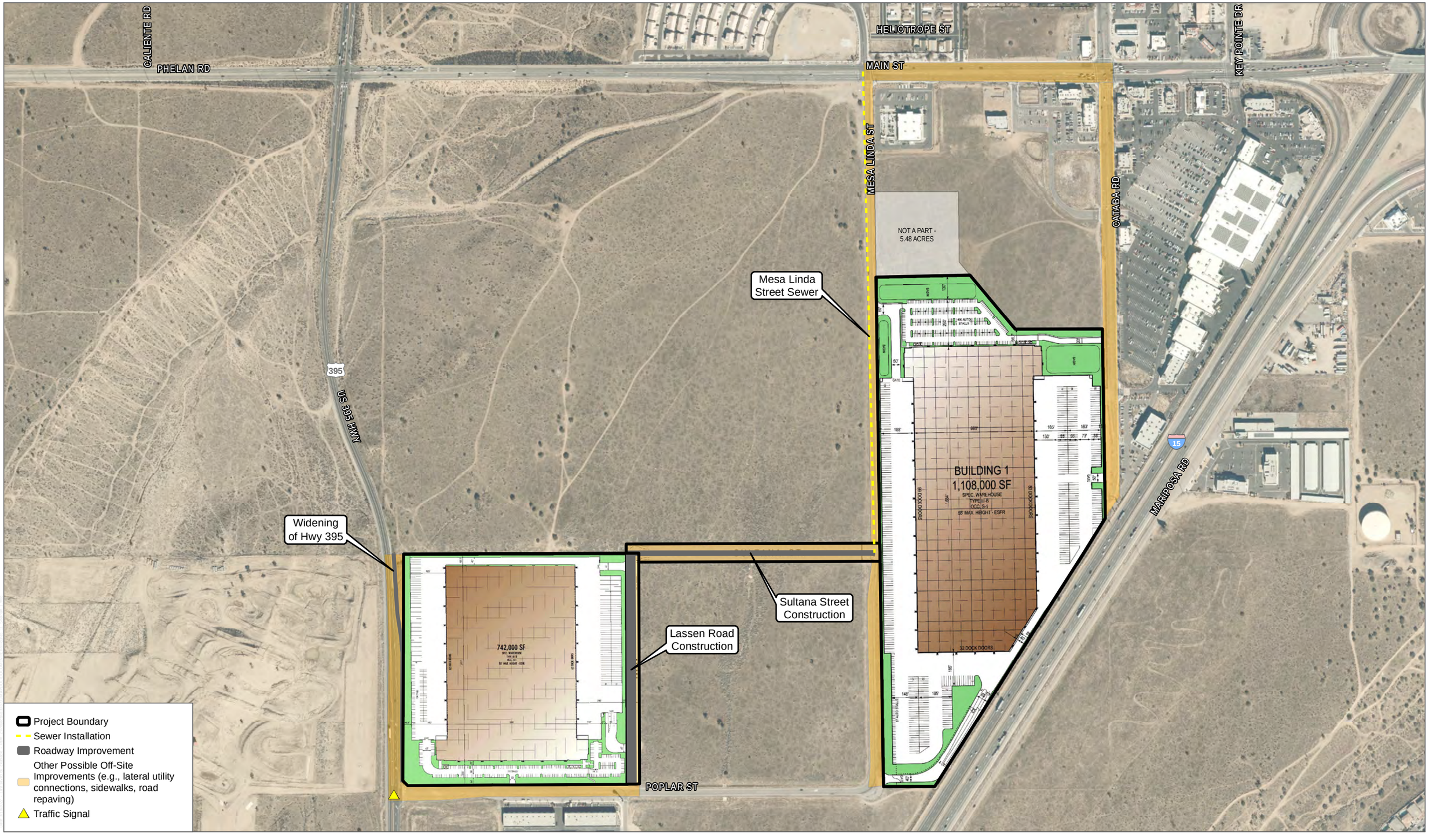
0 500 1,000 Feet

FIGURE 2

Vicinity Map

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



SOURCE: Esri World Imagery 2020; County of San Bernardino 2021; RGA 2021

DUDEK

0 245 490 Feet

FIGURE 3

Site Plan

I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK

2 Policy and Permits

2.1 City of Hesperia

2.1.1 City Policy

Per the City's Protected Plants policy (HMC 16.24), the City seeks to preserve the natural environment in the City while respecting the lawful development of private property. As such, native protected plants create a dilemma because of their high public appeal coupled with very limited transplant success and potential safety concerns for the public. Furthermore, HMC 16.24 states the following regarding Tentative Tract, non-single-family residential (commercial, industrial, apartments):

- A protected plant plan shall be prepared by a certified arborist or registered botanist.
- An application and fee shall be completed and paid to the City.
- Healthy, transplantable plants shall be relocated on site or may be placed in an adoption program.

In addition to the requirements previously stated, HMC 16.24 discusses approval of an adoption program, as follows:

1. Approved Adoption Program

   To qualify as an approved adoption program the developer shall provide a letter on company letterhead, describing the program and the community notification process. The program shall identify the following, as a minimum:

   A. A public notice process which may include publication in local newspapers, radio advertisement, hand distributed fliers, and other noticing techniques. Noticing must occur over a period of not less than three weeks.
   B. The location where the trees may be viewed by the public and a clearly identified period of at least two weeks (including weekends) when trees/plants are available for adoption.
   C. The person that will be available on-site to assist those adopting trees to find the actual trees/plants for removal. An on-site or cell phone number for that person is required.
   D. A note that a copy of the City Joshua Tree Transplanting Guidelines will be provided to each adopter.
   E. A log showing the name, address, and phone number of each adopter and the number and type of trees/plants they received.

Note: At least 50% of the transplantable trees and plants shall be adopted or the remaining number below 50% shall be purchased at $350 per transplantable tree. Purchased trees must be recycled at Advance Disposal.

2.1.2 City Permits

Per the City's Protected Plants policy (HMC 16.24), a Joshua tree relocation and removal application must be completed and fee paid to the City prior to initiation of removal and/or relocation of Joshua trees. HMC Section 16.24.040, Removal Permit, states the following:

A. A removal permit shall be required for the removal of any native tree or plant that is subject to the provisions of this chapter.

B. A land use application, a building permit and all other development permits (e.g., grading, mobile home set downs, etc.), shall consider and include a review of any proposed native tree or plant removal. Any approved land use application and/or development permit shall be a permit for the removal of native 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.

C. 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 article.

D. 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 either the county agricultural commission or the fire marshal, subject to the provisions of this article.

E. The building official shall require a preconstruction inspection prior to approval of development permits.

F. 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 removal permits.

2.1.3 Findings for Removals

Per HMC Section 16.24.040, the reviewing authority must authorize the removal of a native tree or plant subject to the provisions of the HMC 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 (flora and fauna), especially those with limited habitats (e.g., eagles).

B. The removal of the native tree or plant is justified for one of the following reasons:

   1. The location of the native tree or plant and/or its drip line 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;

   2. The location of the native tree or plant and/or its drip line interferes with the planned improvement of a street or development of an approved access to the subject or adjoining private property;

   3. The location of the native tree or plant is hazardous to pedestrian or vehicular travel or safety as determined by the director of transportation, flood control and airports or other county reviewing authority;

4. The native tree or plant or its presence interferes with or is causing excessive 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;
5. The condition or location of the native plant or tree is adjacent to and in such close proximity to existing or proposed structure that the native plant or tree has or will sustain significant damage.

C. Joshua trees that are proposed to be removed have been transplanted or stockpiled for future transplanting wherever possible. In the instance of stockpiling the permittee has posted a bond to ensure such Joshua trees are transplanted appropriately.

2.2 California Department of Fish and Wildlife

2.1.1 CDFW Code Section 2073.3

Pursuant to the provisions of Section 2073.3 of the California Fish and Game Code, 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 the CESA. Pursuant to Section 2073 of the California Fish and Game Code, 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 (California Fish and Game Code Sections 2062, 2067, and 2070). The listing process is the same for species and subspecies (California Fish and Game Code 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" (California Fish and Game Code 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 (California Fish and Game Code 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 (California Fish and Game Code 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" (California Fish and Game Code 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; or
- 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 California Fish and Game Code 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 stakeholders, 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 City'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 the proposed project site. The survey encompassed the entire proposed project site (Appendix A, Joshua Tree Locations). The inventory was conducted by ISA-certified arborists; Chris LaCroix, and Noah Stamm on February 2 and April 6, 2021. 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)

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 59 Joshua trees within the limits of the proposed project site plan, as presented in Appendix B, Tree Information Matrix. Trees in the tree survey area vary in size and stature according to age and location. In total, 31 single-trunk Joshua trees and 28 clonal (multiple trunks or those trees within 3 feet of an individual) were mapped throughout the proposed project site. Stem diameter for single and clonal trees range from 2 to 24 inches. Tree heights vary from 2 feet for younger trees to 37 feet for mature Joshua trees. Tree crown

[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.

extents range from 1 foot to nearly 25 feet at their widest location for single stemmed trees, and up to 25 feet across for clonal groupings. The total number of branches on the Joshua trees range from 0 (single trunk) to 7.

The health of the Joshua trees varies across the site, and ranges from good condition to dead. In total, 31 trees (52.5%) exhibit good health, 24 trees (40.7%) show signs of fair health, 1 tree (0.93%) exhibits poor health, 1 tree (1.69%) exhibit critical health, and 2 trees (1.69%) are dead. Individual attributes of each tree are presented in Appendix B and representative photographs are presented in Appendix C, Site Photographs.

3.3 Project Impacts – Joshua Trees

There is wide variation in tolerance to construction impacts among tree species, and the response of an individual tree to impacts also varies with age and condition. Impacts assessed for the proposed project include those trees with protected zones within 20 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 D, Tree Impacts.

Based on grading and development plans for the proposed project, it is estimated that 56 trees (94.9%) will require removal to accommodate the proposed project. The proposed project would preserve the remaining 3 trees (5.1%) that would remain in place. Table 1 summarizes impact determinations for Joshua trees within the tree survey area that are subject to regulation under Section 16.24.060, Plot Plan Requirements, of the HMC.

Table 1. Summary of Protected Tree Impact Determinations

Health	Impact Determination		Total (number)
	Removal (number)	No Impact (number)	
Good	31	0	31
Fair	21	3	24
Poor	1	0	1
Critical	1	0	1
Dead	2	0	2
Total	**56**	**3**	**59**

4 City of Hesperia Requirements

4.1 Plot Plan Requirements

Section 16.24.060 of the HMC 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 or grading plan shall be approved by the appropriate City review authority for each site indicating exactly which trees or plants are authorized to be removed. The required information can be added to any other required site plan. Prior to issuance of development permits in areas with native trees or plants that are subject to the provisions of this chapter, a preconstruction inspection shall be conducted by the appropriate authority. Such preconstruction inspections may be combined with any other required inspection.

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

4.2 Relocation and Protection Trees

Per Section 16.24.060 of the HMC, 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, 59 Joshua trees would be directly impacted by the proposed project. Of the 56 direct impacts, 15 Joshua trees met the defined criteria for improved likelihood of post-transplant success. As such, per the City ordinance relocation and/or mitigation is required for the 15 trees meeting the minimum requirements for relocation. The project site can accommodate all 15 relocatable Joshua trees.

Furthermore, based on the impact analysis, 3 Joshua trees would not be directly impacted by the proposed project. As such, it is recommended that the 3 non-impacted trees be protected in place in accordance with the tree protection measures identified in this Joshua Tree Plan. The locations of the 15 Joshua trees recommended for relocation and 3 preservation are shown in Appendix D. Per Section 16.24.060 of the HMC, 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, 56 Joshua trees would be directly impacted by the proposed project. Of the 56 direct impacts, 15 Joshua trees met the defined criteria for improved likelihood of post-transplant success. As such, per the City ordinance relocation and/or mitigation is required for the 15 trees meeting the minimum requirements for relocation. The project site can accommodate all 15 relocatable Joshua trees. The locations of the 15 Joshua trees recommended for relocation and 3 preservation are shown in Appendix D and should be incorporated into the project's final landscape 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 4.2, 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 through the use of machinery. A front-end loader or hydraulic tree spade is recommended. The hydraulic tree spade may be best used in instances where the soil type is sandy or silty. However, hand-digging of smaller Joshua trees (1 to 2 feet in height) is acceptable. The goal of relocation is to maintain a high root-to-shoot ratio. Joshua tree excavation 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 15 Joshua trees recommended for relocation shall be transplanted to locations throughout the project site. All 15 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 dats 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 two 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' rootballs. 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 1 to 2 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 4.1.3, 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 4.1, 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 as well as 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 I-15 Industrial Park Project.

4.5 Transplant Planting

All 15 salvaged Joshua trees will be relocated into the post construction landscape. The 15 final planting locations will be finalized once the final landscape plan has been developed and approved. 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. The locations of the receiver sites are presented in Appendix E. 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 pre-determined 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 1 to 2 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 City 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 15 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 City. 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 City 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 15 potential relocation trees, the relocation plan would be considered successful should 11 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 City may define an alternative minimum success criteria threshold.

INTENTIONALLY LEFT BLANK

5 California Department of Fish and Wildlife Mitigation

The following section details the proposed mitigation program described within the Incidental Take Permit Application for the I-15 Industrial 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 (PAR) to calculate the costs of in perpetuity land management. The PAR will take into account all of the management activities required in the Incidental Take Permit to fulfill the requirements of the conservation easement(s), which are currently in review and development.

Furthermore, the ITP states that western Joshua trees will be relocated and planted on site, as feasible. Additional details related to CDFW requirements can be found within the proposed mitigation program described within the ITP Application for the I-15 Industrial Park 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.

Pre-Construction Meeting: A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, and builders) and an ISA-certified arborist or registered botanist. The meeting shall focus on instructing the contractors on tree protection practices and on answering any questions. All equipment operators and spotters, assistants, and those directing operators from the ground shall provide written acknowledgment of having received tree protection training. This training shall include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish these tasks.

6.2 Protection and Maintenance during Construction

Once construction activities have begun, the following protection measures shall be followed:

Equipment Operation and Storage: Contractors shall avoid heavy equipment operation around protected trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and consequently reduces water penetration into the soil. All heavy equipment and vehicles shall, at minimum, stay out of the fenced protected tree zone except where specifically approved in writing and under the supervision of a certified arborist or registered botanist.

Materials Storage and Disposal: Contractors shall not store or discard any supplies or materials, including paint, lumber, and concrete overflow, within the protected zone, and shall remove all foreign debris within the protected zone. However, the contractors shall leave the duff, mulch, chips, and other organic material around the retained trees for water retention and nutrient supply. In addition, the contractors shall avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline; diesel; oils; hydraulic, brake, and transmission fluids;

paint; paint thinners; and glycol (anti-freeze) shall be disposed of properly. Contractors shall ensure that equipment is parked at outside of the protected zone to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the trees could result in tree decline and mortality.

Grade Changes: Contractors shall ensure that grade changes, including adding fill, are not permitted within the protected zone without special written authorization and under supervision by an ISA-certified arborist or registered botanist. Lowering the grade within the protected zone would necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the trees. Adding soil, even temporarily, on top of the existing grade would compact the soil further and decrease water and air availability to the tree roots. Contractors shall ensure that grade changes made outside of the protected tree zone will not create conditions that allow water to pond at the base of the tree. Water trapped at the base of a tree could lead to root rot and other detrimental tree impacts.

Moving Construction Materials: Contractors shall ensure that care is exercised when moving construction equipment and supplies near undisturbed Joshua trees, especially overhead. Contractors shall ensure that damage to the trees is avoided when transporting or moving construction materials and working around trees (even outside of the fenced protected zone). Contractors shall flag aboveground tree parts that could be damaged (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as fluorescent red or orange flagging.

Trenching: Except where specifically approved in writing beforehand, all trenching shall be outside the fenced protected zone. Where trenching is necessary in areas that contain roots from retained trees, contractors shall use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade to limit root impacts. An ISA-certified arborist or registered botanist shall ensure that all pruning cuts are clean and sharp to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may result in tree mortality. Use of root-pruning and Air-Spade equipment shall be accompanied only by hand removal of soil from trench locations. The trench shall be made no deeper than necessary to accommodate the intended materials.

Irrigation/Hand Watering: Irrigation/hand watering of retained Joshua trees on site shall seek to mimic natural rainfall patterns in Southern California. As such, irrigation/hand watering is not required unless recommended by the monitoring ISA-certified arborist or registered botanist.

Inspection/Reporting: An ISA-certified arborist or registered botanist shall inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the proposed project's construction period. A site observation report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage shall be submitted by the ISA-certified arborist or registered botanist following each inspection. Annual monitoring reports to document year-end conditions shall also be submitted.

6.3 Maintenance after Construction

Following completion of the construction activity within 20 feet of the protected zones of undisturbed Joshua trees, the tree protection fencing may be removed, and the following measures may be performed to sustain and enhance the vigor of the trees:

Pruning: Regular pruning of the trees is not required.

Watering: The retained trees should not require regular irrigation/hand watering, other than during the 12 months following substantial root pruning, if applicable. Supplemental irrigation/hand watering for the retained trees that sustained root pruning and any newly planted trees may be necessary, especially in years with low winter rainfall.

Watering Adjacent Plant Material: All watering near retained Joshua trees and adjacent vegetation should mimic natural rainfall patterns. Supplemental irrigation of adjacent plant material should not be required.

Monitoring: For the initial 3 months, weekly monitoring by an ISA-certified arborist or registered botanist is recommended to ensure that the watering needs of each tree is being met. Following the initial 3-month monitoring period, it is recommended that the trees be monitored on a monthly basis for 9 months. Following the first year of monitoring, it is recommended that the trees be monitored quarterly (every 3 months) for 3 years. Following each monitoring visit, a site observation report summarizing site conditions, observations, tree health, and recommendations for promoting tree health should be submitted. Any tree mortality will be noted, and any tree dying during the monitoring period will be replaced with the same species as specified per City replacement standards.

INTENTIONALLY LEFT BLANK

7 Fees

Per HMC Section 16.24.080, 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 City's fee schedule.

INTENTIONALLY LEFT BLANK

8 Desert Native Plants

In addition to Joshua trees, the site contains other desert native plants that are protected by the City of Hesperia's Protected Plant Ordinance (City Ordinance Chapter 16.24 et seq.), 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 May 13 and 17, 2021, one western honey mesquite (*Prosopis glandulosa* var. *torreyana*) was identified within the project footprint along with Joshua trees.

In accordance with the California Desert Native Plants Act and HMC Chapter 16.24.040 (Protected Plant Ordinance), a native plant removal permit must be obtained from the City of Hesperia prior to the removal of western honey mesquite. 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 western honey mesquite once the City approves it.

INTENTIONALLY LEFT BLANK

9 References

City of Hesperia. 2021. *Environmental Impact Report for the I-15 Industrial Park Project*. October 2021.

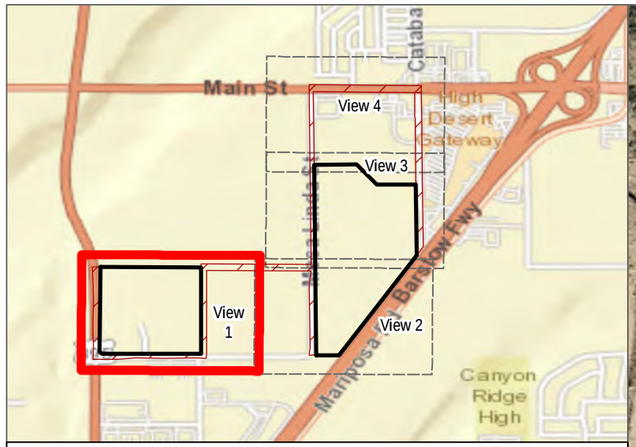
City of Hesperia. 2020. Hesperia, California, Municipal Code: Chapter 16.24 – Protected Plants. Last updated January 24, 2020. https://library.municode.com/ca/hesperia/codes/code_of_ordinances?nodeId=TIT16DECO_CH16.24PRPL&showChanges=true.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.

USGS (U.S. Geological Survey). 2007. Baldy Mesa, California, U.S. Geological Survey 7.5-Minute Topographic Quadrangle Map.

INTENTIONALLY LEFT BLANK

Appendix A
Joshua Tree Locations



- Tree Location
- Project Site
- Roadway/ Utility Alignments
- 20-Ft Buffer

SOURCE: BING MAPPING SERVICE 2020

DUDEK

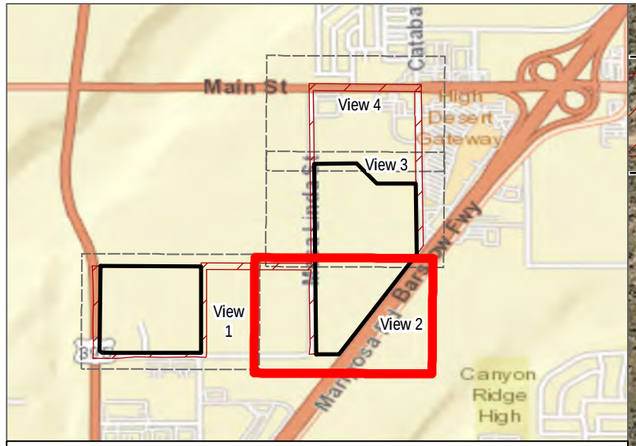
0 90 180 Feet

APPENDIX A

Joshua Tree Location Map - View 1

Joshua Tree Preservation, Protection, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



- Tree Location
- Project Site
- Roadway/ Utility Alignments
- 20-Ft Buffer

SOURCE: BING MAPPING SERVICE 2020

DUDEK

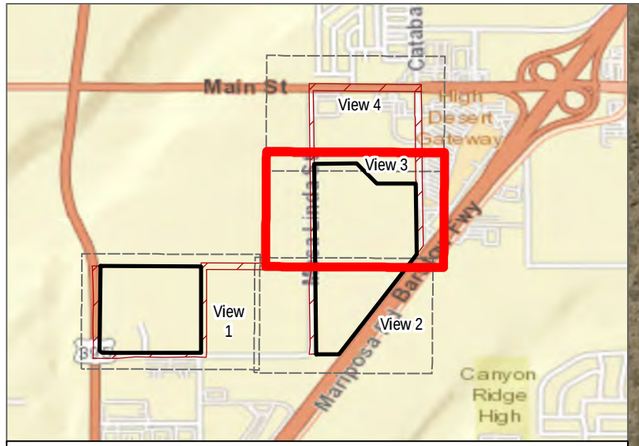
0 90 180 Feet

APPENDIX A

Joshua Tree Location Map - View 2

Joshua Tree Preservation, Protection, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



- Tree Location
- Project Site
- Roadway/ Utility Alignments
- 20-Ft Buffer

SOURCE: BING MAPPING SERVICE 2020

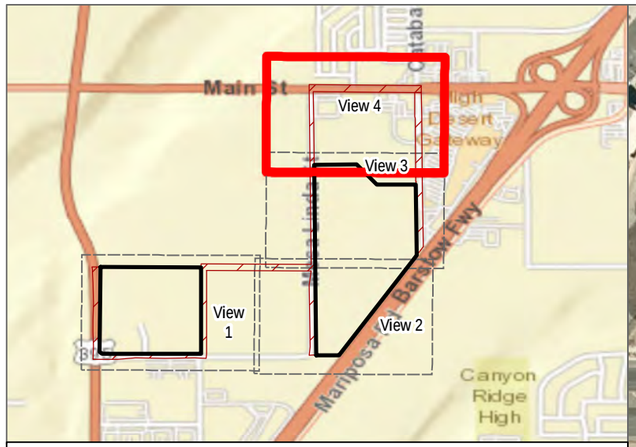
DUDEK 0 90 180 Feet

APPENDIX A

Joshua Tree Location Map - View 3

Joshua Tree Preservation, Protection, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



- Tree Location
- Project Site
- Roadway/ Utility Alignments
- 20-Ft Buffer

SOURCE: BING MAPPING SERVICE 2020

DUDEK

0 90 180 Feet

APPENDIX A

Joshua Tree Location Map - View 4

Joshua Tree Preservation, Protection, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK

Appendix B
Tree Information Matrix

Tree No.[1]	Botanical Name	Common Name	D.S.H (inches)	Height (feet)	Spread (feet)	Health[2]	Number of Branches	Clonal Status	Number of Clones	Relocation Potential	Impact Disposition	X - Coordinate	Y- Coordinate
1	*Yucca brevifolia*	Joshua Tree	10	20	11	Fair (60)	2	Single Trunk	0	No	Removal - Onsite	6743331.2496	1974788.8511
2	*Yucca brevifolia*	Joshua Tree	4	7	3	Fair (60)	1	Single Trunk	0	No	Removal - Onsite	6743279.2000	1975502.8522
3	*Yucca brevifolia*	Joshua Tree	12	23	11	Good (80)	3	Clone	1	No	Removal - Onsite	6743217.9639	1975506.2796
4	*Yucca brevifolia*	Joshua Tree	13	16	10	Good (80)	3	Clone	1	No	Removal - Onsite	6743164.7027	1975324.0978
5	*Yucca brevifolia*	Joshua Tree	3	3	0	Good (80)	1	Clone	1	No	Removal - Onsite	6743185.2554	1975272.8933
6	*Yucca brevifolia*	Joshua Tree	15	10	6	Good (80)	3	Clone	2	No	Removal - Onsite	6743243.9292	1975123.0253
7	*Yucca brevifolia*	Joshua Tree	12	15	7	Fair (60)	4	Single Trunk	0	No	Removal - Onsite	6743196.7601	1974901.6768
8	*Yucca brevifolia*	Joshua Tree	7	11	1	Critical (10)	1	Single Trunk	0	No	Removal - Onsite	6743360.1660	1974404.3552
9	*Yucca brevifolia*	Joshua Tree	4	5	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6743138.2701	1974347.8169
10	*Yucca brevifolia*	Joshua Tree	7	16	5	Fair (60)	4	Single Trunk	0	No	Removal - Onsite	6742997.7465	1974398.8227
11	*Yucca brevifolia*	Joshua Tree	8	15	7	Fair (60)	2	Clone	1	No	Removal - Onsite	6742982.0681	1974569.4622
12	*Yucca brevifolia*	Joshua Tree	12	25	10	Fair (60)	3	Clone	13	No	Removal - Onsite	6743466.7510	1975366.0091
13	*Yucca brevifolia*	Joshua Tree	6	12	4	Fair (60)	3	Clone	1	No	Removal - Onsite	6743447.8099	1975358.0694
14	*Yucca brevifolia*	Joshua Tree	8	16	4	Good (80)	2	Single Trunk	0	Yes	Removal - Onsite	6743444.6689	1975164.7651
15	*Yucca brevifolia*	Joshua Tree	10	20	9	Good (80)	2	Single Trunk	0	Yes	Removal - Onsite	6743597.4572	1975015.0902
16	*Yucca brevifolia*	Joshua Tree	6	18	4	Good (80)	2	Clone	2	No	Removal - Onsite	6743620.1441	1974896.6816
17	*Yucca brevifolia*	Joshua Tree	6	10	4	Fair (60)	1	Single Trunk	0	No	Removal - Onsite	6743949.1855	1974886.6771
18	*Yucca brevifolia*	Joshua Tree	5	12	2	Good (80)	3	Single Trunk	0	Yes	Removal - Onsite	6743867.0878	1974877.1765
19	*Yucca brevifolia*	Joshua Tree	12	3	7	Fair (60)	3	Clone	3	No	Removal - Onsite	6743788.2125	1975107.4102
20	*Yucca brevifolia*	Joshua Tree	22	35	20	Fair (60)	2	Single Trunk	0	No	Removal - Onsite	6743877.9600	1975293.3847
21	*Yucca brevifolia*	Joshua Tree	8	12	3	Good (80)	4	Single Trunk	0	Yes	Removal - Onsite	6743907.4016	1975352.5934
22	*Yucca brevifolia*	Joshua Tree	11	16	6	Good (80)	5	Clone	3	No	Removal - Onsite	6743784.0441	1975386.7432
23	*Yucca brevifolia*	Joshua Tree	3	4	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6743768.7169	1975423.8519
24	*Yucca brevifolia*	Joshua Tree	22	35	25	Fair (60)	4	Clone	10	No	Removal - Onsite	6743690.5101	1975369.8783
25	*Yucca brevifolia*	Joshua Tree	10	14	6	Dead (0)	3	Clone	3	No	Removal - Onsite	6743636.5357	1975509.3390
26	*Yucca brevifolia*	Joshua Tree	12	25	7	Fair (60)	3	Single Trunk	0	No	Preserve - Offsite	6743575.6736	1975581.3116
27	*Yucca brevifolia*	Joshua Tree	20	23	18	Good (80)	3	Clone	6	No	Removal - Onsite	6744005.4941	1975083.4513
28	*Yucca brevifolia*	Joshua Tree	3	4	1	Good (80)	1	Clone	1	No	Removal - Onsite	6744055.8369	1974791.4203
29	*Yucca brevifolia*	Joshua Tree	18	26	17	Good (80)	4	Single Trunk	0	Yes	Removal - Onsite	6744132.6257	1974727.6137
30	*Yucca brevifolia*	Joshua Tree	8	17	2	Good (80)	1	Clone	2	No	Removal - Onsite	6744063.7326	1974594.9797
31	*Yucca brevifolia*	Joshua Tree	6	15	2	Good (80)	3	Single Trunk	0	Yes	Removal - Onsite	6744120.1747	1974574.4133
32	*Yucca brevifolia*	Joshua Tree	4	2	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6743679.6565	1974608.9864
33	*Yucca brevifolia*	Joshua Tree	15	15	15	Good (80)	4	Clone	15	No	Removal - Onsite	6745607.2217	1975430.4657
34	*Yucca brevifolia*	Joshua Tree	6	15	3	Good (80)	3	Clone	6	No	Removal - Onsite	6745632.4206	1974918.5118
35	*Yucca brevifolia*	Joshua Tree	15	20	9	Fair (60)	5	Single Trunk	0	No	Removal - Onsite	6745730.4109	1974621.5231
36	*Yucca brevifolia*	Joshua Tree	5	8	3	Fair (60)	2	Single Trunk	0	No	Removal - Onsite	6745846.4364	1974467.0151
37	*Yucca brevifolia*	Joshua Tree	24	37	18	Fair (60)	2	Single Trunk	0	No	Removal - Onsite	6745888.1615	1974472.3733
38	*Yucca brevifolia*	Joshua Tree	24	30	20	Good (80)	4	Single Trunk	0	Yes	Removal - Onsite	6745879.0188	1974847.9320
39	*Yucca brevifolia*	Joshua Tree	4	9	1	Good (80)	1	Clone	1	No	Removal - Onsite	6745761.5140	1974947.6768
40	*Yucca brevifolia*	Joshua Tree	4	6	1	Fair (60)	1	Single Trunk	0	No	Removal - Onsite	6745975.5462	1975138.1396
41	*Yucca brevifolia*	Joshua Tree	13	22	9	Good (80)	3	Clone	5	No	Removal - Onsite	6745738.0436	1975166.4185

Tree No.[1]	Botanical Name	Common Name	D.S.H (inches)	Height (feet)	Spread (feet)	Health[2]	Number of Branches	Clonal Status	Number of Clones	Relocation Potential	Impact Disposition	X - Coordinate	Y- Coordinate
42	*Yucca brevifolia*	Joshua Tree	4	7	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6746041.5738	1975466.4652
43	*Yucca brevifolia*	Joshua Tree	3	4	1	Good (80)	1	Clone	3	No	Removal - Onsite	6746352.7928	1975494.7851
44	*Yucca brevifolia*	Joshua Tree	3	3	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6746364.2052	1975488.2475
45	*Yucca brevifolia*	Joshua Tree	3	3	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6746383.4913	1975497.9481
46	*Yucca brevifolia*	Joshua Tree	3	8	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6746480.6074	1975480.7509
47	*Yucca brevifolia*	Joshua Tree	4	5	1	Good (80)	1	Single Trunk	0	Yes	Removal - Onsite	6746372.5217	1975326.8114
48	*Yucca brevifolia*	Joshua Tree	12	17	8	Fair (60)	3	Single Trunk	0	No	Removal - Onsite	6746482.9963	1975419.1599
49	*Yucca brevifolia*	Joshua Tree	4	9	1	Fair (60)	1	Single Trunk	0	No	Removal - Onsite	6746419.5308	1975681.2411
50	*Yucca brevifolia*	Joshua Tree	4	6	1	Fair (60)	1	Clone	2	No	Removal - Onsite	6746430.8463	1975701.6351
51	*Yucca brevifolia*	Joshua Tree	4	6	1	Fair (60)	1	Clone	5	No	Removal - Onsite	6746361.3206	1975722.0665
52	*Yucca brevifolia*	Joshua Tree	4	8	1	Good (80)	1	Clone	3	No	Removal - Onsite	6746290.9036	1976014.7737
53	*Yucca brevifolia*	Joshua Tree	12	20	6	Good (80)	3	Clone	3	No	Removal - Onsite	6746275.7026	1976173.6346
54	*Yucca brevifolia*	Joshua Tree	5	15	3	Fair (60)	5	Clone	3	No	Removal - Onsite	6746696.4353	1976089.2386
55	*Yucca brevifolia*	Joshua Tree	4	6	3	Dead (0)	1	Single Trunk	0	No	Removal - Onsite	6745700.5300	1974447.7257
74	*Yucca brevifolia*	Joshua Tree	2	5	2	Fair (60)	1	Single Trunk	0	No	Preserve - Offsite	6744719.0825	1975511.0692
77	*Yucca brevifolia*	Joshua Tree	7	10	5	Fair (60)	5	Clone	3	No	Preserve - Offsite	6744632.6527	1975523.5483
94	*Yucca brevifolia*	Joshua Tree	21	18	25	Fair (60)	6	Clone	11	No	Removal - Onsite	6744217.6080	1974528.7954
111	*Yucca brevifolia*	Joshua Tree	5	4	2	Poor (40)	1	Clone	1	No	Removal - Onsite	6744211.2315	1974717.3917

Note: D.S.H. = diameter at standard height (4.5 feet above ground level)

1 Tree No. corresponds with tree numbers in Appendix A, Joshua Tree Locations and Appendix D, Joshua Tree Impacts.

2 The health of trees are graded on a scale of 0-100, with trees with a 100 rating being in excellent health and trees with a 0 rating being dead. Additional health ratings are described as follows:
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.

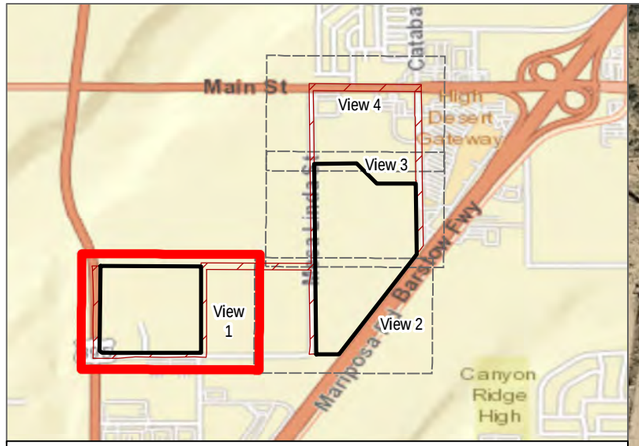
Appendix C
Site Photographs

Photograph 1: Site Overview

Photograph 2: Secondary Site Overview

Photograph 3: Alternate Site Overview

Appendix D
Joshua Tree Impacts



Project Site

Roadway/ Utility Alignments

20-Ft Buffer

Disposition

Removal - Onsite

Preserve - Offsite

SOURCE: BING MAPPING SERVICE 2020

DUDEK

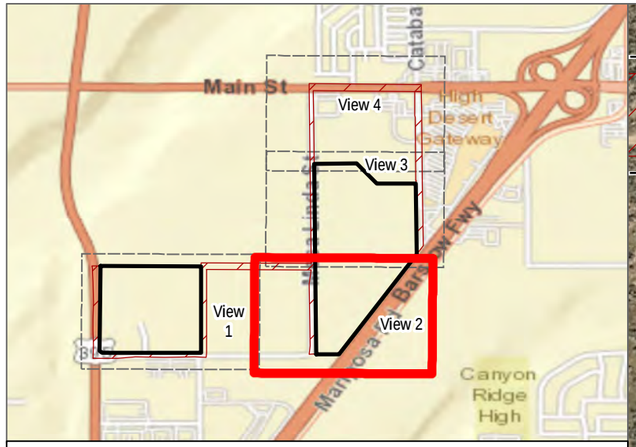
0 90 180 Feet

APPENDIX D

Joshua Tree Impacts Map - View 1

Joshua Tree Preservation, Protection, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



Project Site

Roadway/ Utility Alignments

20-Ft Buffer

Disposition

Removal - Onsite

Preserve - Offsite

SOURCE: BING MAPPING SERVICE 2020

DUDEK

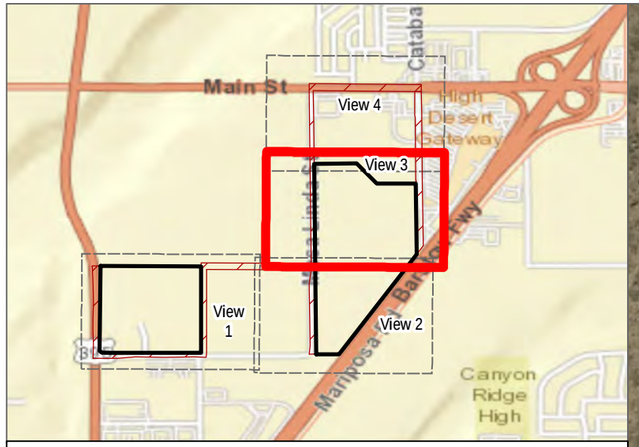
0 90 180 Feet

APPENDIX D

Joshua Tree Impacts Map - View 2

Joshua Tree Preservation, Protection, and Desert Native Plant Relocation Plan for the I-15 Industrial Park Project

INTENTIONALLY LEFT BLANK



Project Site
Roadway/ Utility Alignments
20-Ft Buffer

Disposition

Removal - Onsite
Preserve - Offsite

SOURCE: BING MAPPING SERVICE 2020

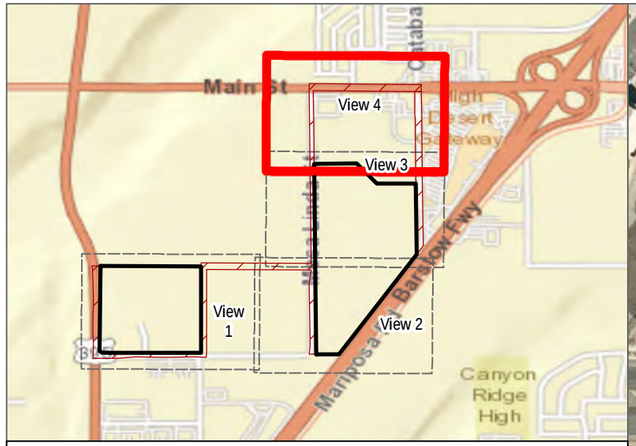
DUDEK

0 90 180 Feet

APPENDIX D

Joshua Tree Impacts Map - View 3

INTENTIONALLY LEFT BLANK



Project Site

Roadway/ Utility Alignments

20-Ft Buffer

Disposition

Removal - Onsite

Preserve - Offsite

SOURCE: BING MAPPING SERVICE 2020

DUDEK

0 90 180 Feet

APPENDIX D

Joshua Tree Impacts Map - View 4

INTENTIONALLY LEFT BLANK

Appendix F

Special-Status Plants Potentially Occurring within the BSA

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Asclepias nyctaginifolia	Mojave milkweed	None/None/2B.1	Mojavean desert scrub, Pinyon and juniper woodland/perennial herb/May–June/2,870–5,575	Low potential to occur. While the study area is within the known elevation range for this species, it does not contain suitable desert scrub vegetation and a small patch of California juniper; however, the nearest documented CNDDB occurrence is from 1916 and located approximately 5 miles to the south (CDFW 2021). In addition, according to Jepson eFlora (2021), this species occurs on arroyos and dry slopes which are not present in the study area.
Astragalus lentiginosus var. *antonius*	San Antonio milk-vetch	None/None/1B.3	Lower montane coniferous forest, Upper montane coniferous forest/perennial herb/Apr–July/4,920–8,530	Not expected to occur. The study area is outside of the species' known elevation range and there is no suitable vegetation present.
Astragalus leucolobus	Big Bear Valley woollypod	None/None/1B.2	Lower montane coniferous forest, Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest; rocky/perennial herb/May–July/3,605–9,465	Low potential to occur. While the study area is within the known elevation range for this species and does contain a small amount of scattered California juniper, it does not contain suitable rocky soils or pebble plains habitat which the species is commonly associated with.
Botrychium ascendens	upswept moonwort	None/None/2B.3	Lower montane coniferous forest, Meadows and seeps; mesic/perennial rhizomatous herb/(June)July–Aug/3,655–9,990	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain suitable vegetation communities or mesic conditions to support this species.
Botrychium crenulatum	scalloped moonwort	None/None/2B.2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps (freshwater), Upper montane coniferous forest/perennial	Not expected to occur. The study area is outside of the species' known elevation range and there is no suitable vegetation present to support this species.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			rhizomatous herb/June–Sep/4,160–10,760	
Calochortus palmeri var. *palmeri*	Palmer's mariposa lily	None/None/1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps; mesic/perennial bulbiferous herb/Apr–July/2,325–7,840	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain suitable vegetation communities nor mesic habitat to support this species.
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	None/None/1B.2	Chaparral, Meadows and seeps, Pebble (Pavement) plain, Riparian woodland, Upper montane coniferous forest; mesic/annual herb (hemiparasitic)/May–Aug/4,265–7,840	Not expected to occur. The study area is outside of the species' known elevation range and there is no suitable vegetation present to support this species.
Chorizanthe xanti var. *leucotheca*	white-bracted spineflower	None/None/1B.2	Coastal scrub (alluvial fans), Mojavean desert scrub, Pinyon and juniper woodland; sandy or gravelly/annual herb/Apr–June/984–3,935	Low potential to occur. The study area is within the appropriate elevation range, contains loamy sand soils, and contains suitable desert scrub vegetation. The site also contains areas of bare or mostly bare ground. However, the study area shows evidence of previous disturbance and is fragmented from other undeveloped areas by Interstate 15 to the southeast. The nearest documented occurrence is from 1993 and located approximately 7 miles to the south (CDFW 2021).
Claytonia peirsonii ssp. *peirsonii*	Peirson's spring beauty	None/None/1B.2	subalpine coniferous forest, upper montane coniferous forest; granitic, metamorphic, scree, talus/perennial herb/(Mar) May–June/4,950–9,005	Not expected to occur. The study area is outside of the species' known elevation range and there is no suitable vegetation present.
Deinandra mohavensis	Mojave tarplant	None/SE/1B.3	Chaparral, Coastal scrub, Riparian scrub; mesic/annual	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			herb/(May)June–Oct(Jan)/2,095–5,245	suitable vegetation communities nor mesic habitat and the nearest documented occurrence is from 1998 and located approximately 14.5 miles to the north (CDFW 2021).
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	Low potential to occur. The study area is within the appropriate elevation range, contains loamy sand soils, and contains suitable desert scrub shrub vegetation. However, the study area does not contain any desert washes preferred by this species. The nearest documented occurrence is from 1998 and located approximately 13.5 miles north (CDFW 2021).
Dodecahema leptoceras	slender-horned spineflower	FE/SE/1B.1	Chaparral, Cismontane woodland, Coastal scrub (alluvial fan); sandy/annual herb/Apr–June/656–2,490	Not expected to occur. The study area is outside of the species' known elevation range and there is no suitable vegetation/alluvial fans present to support this species. There are no known occurrences within 15 miles of the study area (CDFW 2021).
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	Low potential to occur. The study area is within the appropriate elevation range, and contains limited suitable vegetation (i.e., some scattered Joshua trees and California juniper are present). However, the site shows evidence of previous disturbance, and is fragmented by Interstate 15 to the east. The nearest documented occurrence is located approximately 9.5 miles northeast (CDFW 2021).

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	None/None/1A	Marshes and swamps (coastal salt and freshwater)/perennial rhizomatous herb/Aug–Oct/33–5,000	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain suitable vegetation to support this species.
Heuchera parishii	Parish's alumroot	None/None/1B.3	Alpine boulder and rock field, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest; rocky, sometimes carbonate/perennial rhizomatous herb/June–Aug/4,920–12,465	Not expected to occur. The study area is outside of the species' known elevation range and does not contain suitable vegetation or carbonate soils to support this species.
Lilium parryi	lemon lily	None/None/1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest; mesic/perennial bulbiferous herb/July–Aug/4,000–9,005	Not expected to occur. The study area is outside of the species' known elevation range and does not contain suitable vegetation or mesic conditions to support this species.
Linanthus concinnus	San Gabriel linanthus	None/None/1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; rocky, openings/annual herb/Apr–July/4,985–9,185	Not expected to occur. The study area is outside of the species' known elevation range and does not contain suitable vegetation to support this species.
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	Low potential to occur. While the site is within the known elevation range for this species, it does not contain suitable vegetation communities. The nearest documented occurrence is located approximately 5 miles northwest (CDFW 2021).
Lycium parishii	Parish's desert-thorn	None/None/2B.3	Coastal scrub, Sonoran desert scrub/perennial shrub/Mar–Apr/443–3,280	Not expected to occur. The study area is outside of the species' known elevation range and this conspicuous perennial shrub would likely have been detected during the reconnaissance survey if

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				present. The nearest documented occurrence is located approximately 10 miles south (CDFW 2021).
Monardella australis ssp. *jokerstii*	Jokerst's monardella	None/None/1B.1	Chaparral, Lower montane coniferous forest; Steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes./perennial rhizomatous herb/July–Sep/4,425–5,740	Not expected to occur. The study area is outside of the species' known elevation range and does not contain suitable vegetation to support this species.
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	Low potential to occur. The study area is within the appropriate elevation range for this species and contains suitable vegetation. The nearest documented occurrence is located approximately 1 mile south (CDFW 2021).
Oreonana vestita	woolly mountain-parsley	None/None/1B.3	Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest; gravel or talus/perennial herb/Mar–Sep/5,295–11,480	Not expected to occur. The study area is outside of the species' known elevation range and does not contain suitable vegetation to support this species.
Orobanche valida ssp. *valida*	Rock Creek broomrape	None/None/1B.2	Chaparral, Pinyon and juniper woodland; granitic/perennial herb (parasitic)/May–Sep/3,375–6,560	Not expected to occur. While the study area is within the known elevation range for this species and does contain some scattered California juniper, suitable granitic soils are absent.
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	Low potential to occur. The study area is within the appropriate elevation range for this species, contains limited suitable desert scrub vegetation, and sandy soils. However, the study area does not contain any desert washes or roadcuts preferred by the species. The nearest documented

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				occurrence is from 1992 and located approximately 10.2 miles southeast (CDFW 2021).
Schoenus nigricans	black bog-rush	None/None/2B.2	Marshes and swamps (often alkaline)/perennial herb/Aug–Sep/492–6,560	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain suitable vegetation nor alkaline soils to support this species.
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. While the study area is within the known elevation range for this species, it does not contain suitable vegetation nor mesic habitat 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. While the study area is within the known elevation range for this species, it does not contain suitable vegetation nor wetland habitat/mesic conditions to support this species.
Symphyotrichum greatae	Greata's aster	None/None/1B.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland; mesic/perennial rhizomatous herb/June–Oct/984–6,590	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain suitable vegetation nor mesic habitat to support this species.
Viola purpurea ssp. *aurea*	golden violet	None/None/2B.2	Great Basin scrub, Pinyon and juniper woodland; sandy/perennial herb/Apr–June/3,280–8,200	Not expected to occur. While the study area is within the known elevation range for this species, it does not contain suitable vegetation communities. and does contain some scattered California juniper, suitable granitic soils are absent.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
				There are no known occurrences within 15 miles (CDFW 2021).
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. This species was observed throughout the southwestern and southeastern portions of the project site.

Status Designations
FE: Federally listed as endangered
SE: State listed as endangered
SR: State listed as rare
SC: State listed candidate species
CRPR (California Rare Plant Rank):
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California, but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 3: Plants about which more information is needed – a review list
CRPR 4: Plants of limited distribution – a watch list
Threat Rank:
1: seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
2: moderately threatened in California (20%–80% of occurrences threatened/moderate degree and immediacy of threat)
3: not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
Notes: CRPR = California Rare Plant Rank; amsl = above mean sea level; CNDDB = California Natural Diversity Database; BSA = biological survey area.

References

CDFW. 2021. RareFind 5, Version 5.2.14. California Natural Diversity Database. Sacramento, California: CDFW, Biogeographic Data Branch. Accessed February 2021. https://map.dfg.ca.gov/rarefind/view/RareFind.aspx.

Jepson Flora Project. 2021. Jepson eFlora. Berkeley, California: University of California. Accessed February 2021 at http://ucjeps.berkeley.edu/interchange/index.html.

Appendix G

Special-Status Wildlife Potentially Occurring within the BSA

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 study area does not have aquatic habitat that could support 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 study area does not have aquatic habitat that could support this species.
Rana muscosa	mountain yellow-legged frog	FE/SE, WL	Lakes, ponds, meadow streams, isolated pools, and open riverbanks; rocky canyons in narrow canyons and in chaparral	Not expected to occur. The study area does not have aquatic habitat that could support this species.
Reptiles				
Actinemys marmorata	northwestern 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. The study area does not have aquatic habitat that could support this species.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Not expected to occur. The study area does not contain chaparral, woodland, or riparian habitat that could 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	Low potential to occur. The study area contains sandy soils, and limited desert scrub vegetation. However, there are no desert washes, dunes, or other topographic features preferred by this species. The study area is also located at the most western boundary of the species'

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				range and surrounded by major roads including Interstate-15. The nearest CNDDB occurrence is undated and located approximately 2.1 miles southwest (CDFW 2021).
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Not expected to occur. While the study area contains sandy soils, there is no suitable vegetation that could support this species. The nearest CNDDB occurrence is from 2008 and located approximately 4.2 miles southeast (CDFW 2021).
Thamnophis hammondii	two-striped gartersnake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur. The study area does not have aquatic habitat that could support this species.
Birds				
Accipiter cooperii (nesting)	Cooper's hawk	None/WL	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Not expected to occur. The study area does not contain suitable vegetation that could support this species.
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	Not expected to occur. The study area does not contain suitable vegetation nor aquatic habitat that could support this species.
Aquila chrysaetos (nesting & 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 nest, low potential to forage. The study area contains semi-open areas with shrub and grassland vegetation. However, there are no large trees or cliffs for this species to use as nesting sites. There are no CNDDB occurrences located within 5 miles of the study area (CDFW 2021).
Artemisiospiza belli belli	Bell's sage sparrow	BCC/WL	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense	Not expected to occur. The study area does not contain suitable vegetation that could support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			patches but uses more open habitat in winter	
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 study area does not contain suitable vegetation that could support this species.
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Moderate potential to occur. The study area contains flat, open scrub habitat that could support this species. While an official burrow survey was not conducted, no burrows were noted during the initial biological reconnaissance. The nearest CNDDB occurrence is from 1989 and located approximately 1 mile southwest (CDFW 2021). Several more recent occurrences have been documented within 5 miles north of the study area.
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not expected to occur. The study area does not contain suitable vegetation that could support this species.
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. The study area does not contain suitable vegetation that could 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. The study area does not contain suitable vegetation that could support this species.
Haliaeetus leucocephalus (nesting & wintering)	bald eagle	FDL, BCC/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Not expected to occur. The study area does not contain suitable vegetation that could support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
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. The study area does not contain suitable vegetation that could 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 study area contains open habitat that contains tall shrubs (e.g. Joshua tree, California juniper) that can be used for perching and nesting. The nearest CNDDB occurrence is from 2007 and located approximately 2.4 miles north (CDFW 2021).
Pandion haliaetus (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Not expected to occur. The study area does not contain suitable vegetation nor aquatic habitat that could support this species.
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 study area does not contain suitable vegetation that could support 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. The study area does not contain suitable vegetation that could support this species.
Toxostoma lecontei	LeConte's thrasher	BCC/SSC	Nests and forages in desert wash, desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus	Low potential to occur. The study area contains limited desert scrub and Joshua tree habitat that could support this species. The study area does contain Mormon tea that could support nesting for this species. The nearest CNDDB occurrence is undated and located approximately 5.5 miles east (CDFW 2021).
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;	Not expected to occur. The study area does not contain suitable vegetation that could support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			forages in riparian and adjacent shrubland late in nesting season	
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 study area does not contain suitable vegetation that could support this species.
Fishes				
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	None/SSC	Headwaters of the Santa Ana and San Gabriel Rivers; may be extirpated from the Los Angeles River system	Not expected to occur. The study area does not have aquatic habitat that could support this species.
Siphateles bicolor mohavensis	Mohave tui chub	FE/FP, SE	Lacustrine ponds or pools; 4 feet min 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 study area does not have aquatic habitat that could support 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 man-made structures and trees	Not expected to roost, low potential to forage. The study area contains grassland and shrubland vegetation that could support foraging efforts of this species. There are no CNDDB occurrences within 5 miles of the study area (CDFW 2021).
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None/SSC	Desert wash, desert scrub, desert succulent scrub, and pinyon–juniper woodland	Not expected to occur. The study area does not contain vegetation that could support this species. There are no CNDDB occurrences within 5 miles of the study area (CDFW 2021).
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	Not expected to roost or forage. The study area does not contain suitable vegetation or mesic habitat that could support this species.

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			tubes, man-made structures, and tunnels	
Eumops perotis californicus	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Not expected to roost or forage. The study area does not contain suitable vegetation, cliffs, or tall trees that could support this species.
Glaucomys oregonensis californicus	San Bernardino flying squirrel	None/SSC	Coniferous and deciduous forests, including riparian forests	Not expected to occur. The study area does not contain suitable vegetation that could support this species.
Microtus californicus mohavensis	Mojave river vole	None/SSC	Wet, weedy, herbaceous areas along the Mojave River	Not expected to occur. The study area does not contain suitable vegetation that could support this species. The study area is also not along the Mojave River.
Ovis canadensis nelsoni	Nelson's bighorn sheep	None/FP	Steep slopes and cliffs, rough and rocky topography, sparse vegetation; also canyons, washes, and alluvial fans	Not expected to occur. The study area does not contain suitable topography or vegetation that could 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	Moderate potential to occur. The study area contains desert scrub habitat with some creosote bush that could support this species. However, the site does show evidence of previous disturbance and is in close proximity to major roads. The nearest CNDDB occurrence is from 2005 and located approximately 2 miles northwest (CDFW 2021).
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. The study area does not contain suitable vegetation to support this species.
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).	Not expected to occur. The study area does contain sparse vegetated scrub habitats such as rubber rabbitbrush scrub; however, areas surrounding the

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
				study area are conducive to stray dogs and further limit desert kit fox habitat potential in the area
Invertebrates				
Bombus crotchii	Crotch bumble bee	None/PSE	Open grassland and scrub communities supporting suitable floral resources.	Not expected to occur. The study area does not contain suitable floral resources that could support this species. There are no CNDDB occurrences within 5 miles of the study area (CDFW 2021).
Euphydryas editha quino	quino checkerspot butterfly	FE/None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, Antirrhinum coulterianum, and Plantago patagonica (Silverado Occurrence Complex)	Not expected to occur. None of the host plants for this species were observed during the biological reconnaissance survey. Additionally, the study area does not contain clay soils.

Status Designations:
FE: Federally listed as endangered
FT: Federally listed as threatened
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
SSC: California Species of Special Concern
FP: California Fully Protected species
WL: California Watch List species
SE: State listed as endangered
ST: State listed as threatened
SDL: State delisted
SS: Listed on Special Animals List, but no other status
County of San Diego Group1: Species with a high level of sensitivity, listed as threatened or endangered, or with a natural history requirement that increases their sensitivity.
County of San Diego Group 2: Species that are becoming less common but are not so rare that extinction is imminent without immediate action.

Notes: amsl = above mean sea level; BSA = biological study area; CNDDB = California Natural Diversity Database.

[1] Section 4000 of the Fish and Game Code defines "kit fox" as a fur-bearing animal.

References

CDFW. 2021. RareFind 5, Version 5.2.14. California Natural Diversity Database. Sacramento, California: CDFW, Biogeographic Data Branch. Accessed February 2021. https://map.dfg.ca.gov/rarefind/view/RareFind.aspx.

Appendix H
Burrowing Owl Relocation Plan

Burrowing Owl Relocation Plan

I-15 Industrial Park Project

APRIL 2022

Prepared for:

POPLAR 35, LLC.
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254
Contact: Dana Whitmer

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Megan Enright

Printed on 30% post-consumer recycled material.

Table of Contents

SECTION **PAGE NO.**

TABLE

INTENTIONALLY LEFT BLANK

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
BORP	Burrowing Owl Relocation Plan
BUOW	Burrowing Owl
CDFW	California Department of Fish and Wildlife
DEIR	Draft Environmental Impact Report
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
Project	I-15 Industrial Park Project
2012 Staff Report	May 2012 California Department of Fish and Wildlife Staff Report

INTENTIONALLY LEFT BLANK

1 Purpose and Objectives

The following Burrowing Owl Relocation Plan (BORP) describes the burrowing owl (BUOW; *Athene cunicularia*) monitoring and reporting requirements during construction of the I-15 Industrial Park Project (Project) as suggested in comments received on the Draft Environmental Impact Report (DEIR; 2021) prepared for the Project by the City of Hesperia Planning Department and Dudek. This plan was prepared in accordance with Mitigation Measure BIO-10 included in the DEIR. The full text of MM-BIO-10 is provided in Section 1.1 for ease of reference.

This BORP is intended to identify when passive displacement of BUOW 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) scoping methods that would be used to avoid 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 closer of burrows, (7) monitoring to evaluate success and (8) reporting methods of long-term burrowing owl deterrence of the impacted site.

1.1 Mitigation Measure BIO-10

MM-BIO-10 **Pre-Construction Surveys for Burrowing Owl and Avoidance.** One pre-construction burrowing owl clearance 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 (CDFW 2012) or current version.

If burrowing owls are detected, disturbance to burrows shall be avoided during the nesting season (February 1 through August 31). Buffers will be established around occupied burrows in accordance with guidance provided in the Staff Report on Burrowing Owl Mitigation (CDFW 2012) or current version. 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 the California Department of Fish and Wildlife (CDFW) shall be implemented. Owls shall be excluded from burrows in the immediate Project area and within a buffer zone by installing one-way doors in burrow entrances. These doors will be placed at least 48 hours prior to ground-disturbing activities. Compensatory mitigation for permanent loss of owl habitat will be provided following the guidance in the Staff Report on Burrowing Owl Mitigation (CDFW 2012) or current version. The Project area shall be monitored daily for one week to confirm owl departure from burrows prior to any ground-disturbing activities.

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.

See Burrowing Owl Relocation Plan for more details on avoidance buffers and relocation methods.

1.2 Tiered Protection Approach

The following protection measures may be implemented to avoid and minimize impacts to BUOW on the Project:

1. **Avoidance** – During the BUOW breeding season (i.e., nesting season; February 1 – August 31)[1], active burrows will be avoided by establishing setback distances around active burrows. A monitoring program will be implemented (see Section 3.2) to determine the effectiveness of the buffer distances and help inform any adaptive management strategies.
2. **Shelter in Place** – If the established buffer is not effective, the buffer will be increased where possible to a point where project activities cease to cause disturbance. Sheltering with sound and visual barriers made of hay bales or other materials may be used as appropriate to provide necessary protection from disturbance when an established avoidance buffer is determined not to be effective or a buffer distance must be reduced because avoiding construction in the area is not feasible. If a qualified biologist determines that the use of barriers will not cause disturbance to the bird(s) and the setup of the barriers is far enough away so the setup or the presence of the barrier does not cause disruption to the bird(s), this will be the primary protective measure that will be used, as it is the ideal strategy to minimize disturbance and keep existing burrows intact.
3. **Passive Displacement** – The exclusion of BUOWs from occupied burrows within the areas of disturbance using one-way doors will be used during non-breeding season (September 1 –January 31) when shelter in place is not feasible. Passive Displacement will only be implemented where the owls or their burrows are in physical danger by construction.

Further details on the implementation of the first two approaches are provided in Section 3 of this plan. Details on the passive displacement approach are provided in Section 4 of this plan. Although the focus of this BORP is on the Passive Displacement approach, the intent of this tiered approach is to create an adaptive management process for protecting BUOW by allowing the flexibility to make improvements based on site conditions at the time of construction. The adaptive management strategy will allow for adjustments to mitigation and monitoring techniques provided the results are beneficial to the species. In addition, this BORP should be adjusted to include any improved techniques or methods that may become available during its implementation.

[1] The Staff Report on Burrowing Owl Mitigation (CDFG 2012) defines breeding (nesting) season to include pairing, egg-laying and incubation, and nestling and fledgling stages from February 1 through August 31. However, breeding activities may vary with latitude and climatic conditions.

2 Introduction

2.1 Project Overview

The Project would involve construction and operation of two industrial/warehouse buildings. Building 1, the eastern building, would be 1,108,000 square feet and Building 2, the western building, would be 742,000 square feet. In total, the Project would provide 1,850,000 square feet of industrial/warehouse space and associated improvements, including loading docks, tractor-trailers, passenger vehicle parking spaces, stormwater detention basins, and landscape area. The Project would also include improvements along Mesa Linda Street and Cataba Road, including frontage landscaping and pedestrian improvements. The Project would also involve the off-site construction of Sultana Street (currently a dirt road) from the northwestern corner of the Building 2 site to Mesa Linda Street, as well as the off-site construction of Lassen Street (also currently a dirt road) from the northwestern corner of the Building 2 site to Poplar Street. The Project would also involve the widening of the northbound eastern portion of U.S. Highway 395 along the western frontage of the Building 2 site. Additionally, utility lines would be installed within Sultana Street, Mesa Linda, and Cataba Road.

The Project site is composed of two disjointed sites separated by Mesa Linda Street and an undeveloped property. These two sites collectively constitute the Project site. The site for Building 1 is located west of Mesa Linda Street, east of Cataba Road, and north of Interstate 15. The Building 2 is bound by U.S. Highway 395 to the west, Poplar Street to the south, and Lassen Road to the east, which has not yet been constructed but is a planned Arterial Road in the City's Circulation Element. Both the Building 1 site and the Building 2 sites are vacant and undeveloped, with the exception of an approximately 440-foot segment of Bishop Street that terminates in a cul-de-sac being located on the Building 2 site. Both sites are 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 Project site is located on the western edge of the City of Hesperia. Although development intensities around the Project site are low, it is located within the existing urban fabric of the City of Hesperia and is surrounded by varying levels of development and disturbance.

2.2 Burrowing Owl Surveys and Mitigation

Biological resource surveys of the Project site and surrounding area were conducted in 2021. During these surveys, BUOW was not observed on the Project site or Off-Site Utilities Alignments; however, suitable habitat exists on site, and the species could eventually occupy the Project site or Off-Site Utilities Alignments prior to construction. Pursuant to the California Fish and Game Code and the MBTA, a pre-construction survey in compliance with Staff Report on Burrowing Owl Mitigation, State of California Natural Resource Agency, Department of Fish and Game, May 7, 2012 (CDFW 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-10**, a pre-construction survey for burrowing owl shall be conducted in areas supporting potentially suitable habitat and within 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.

The Project would result in the loss of 104 acres of suitable habitat for burrowing owl. As required by **MM-BIO-1,** mitigation for direct impacts to western Joshua trees will be fulfilled through conservation of Western Joshua tree

through purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by the City of Hesperia 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 BUOW is implemented, at least two artificial or natural surrogate burrows will be built, enhanced, or identified for every entrance to the burrow that will be collapsed (see Section 4). If artificial burrows need to be installed, they will be established according to the recommendations in the 2012 Staff Report prior to excluding BUOW.

2.3 Qualified Biologist

In accordance with the May 2012 California Department of Fish and Wildlife Staff Report (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 BUOW surveys as outlined in **MM-BIO-10**. 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.

3 Avoidance and Minimization Measures

3.1 Pre-Construction Burrowing Owl Surveys

In accordance with **MM-BIO-10,** a Qualified Biologist (see Section 2.3) will conduct the surveys of both permanent and temporary impact areas as well as within a 150-meter buffer no more than fourteen 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 BUOWs 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 BUOWs present and any potential burrows with BUOW sign. The results of the surveys will be submitted to CDFW.

If BUOWs are detected during pre-construction surveys, the Qualified Biologist or monitoring biologist will coordinate with the contractor to avoid and minimize impacts to BUOW by implementing the measures described below.

3.2 Setback Distances

Based on the results of the pre-construction surveys, levels of construction disturbance, stage of nesting/breeding season, and applicable mitigation measures outlined in the 2012 Staff Report, setback distances will be determined and implemented surrounding the occupied BUOW burrows. Ground disturbing activities will be restricted within these distances to avoid and minimize potential impacts to BUOW.

In order to determine an appropriate and effective setback distance, the site-specific determination methods described in the 2012 Staff Report will be used to decide if the suggested buffer distances are appropriate. The setback distances will also be determined based on any shelter in place actions taken (see Section 3.3). The Qualified Biologist will use the following information to determine the appropriate buffer distances:

- Time of year, activity of the burrow, and the level of disturbance that will occur (summarized in the 2012 Staff Report and **Table 1** below)

Table 1. Burrowing Owl Burrow Buffers (California Department of Fish and Wildlife Staff Report 2012)

Resource	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting sites	April 1 - Aug 15	656 ft	1640 ft	1640 ft
Nesting sites	Aug 16 - Oct 15	656 ft	656 ft	1640 ft
Any occupied burrow	Oct 16 - Mar 31	164 ft	328 ft	1640 ft

- Topography
- The individual BUOW's sensitivities and ability to habituate to stimuli

- Shelter in place and barrier activities occurring (see Section 3.3)
- Existing vegetation
- Near-by land use and tolerance level of the BUOW to surrounding activities
- The level of disturbance associated with specific work activities
- Biological monitor presence

A monitoring program will be implemented when any setback distance is applied to active burrows to ensure that the distance is an effective buffer. 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 of the animal. A monitoring biologist will be present during all initial activities adjacent to BUOW buffers to monitor the birds' behavior. In any case where a BUOW 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 reevaluated. In accordance with **MM-BIO-10**, 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 Shelter in Place

A shelter in place strategy may be implemented to minimize potential impacts to BUOW 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 burrow. Biological monitors will need to determine if a specific site, especially the site's topography, is appropriate for the use of these techniques and whether or not these techniques will be effective at reducing disturbance. Where appropriate, setback buffers can be reduced by screening burrows as a way to reduce indirect impacts.

During the breeding season, hay bales can be stacked three bales high and 50 feet wide. During the non-breeding season, hay bales can 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 two or three 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 2012 Staff Report guideline buffer (Table 1) and the edge of the reduced buffer.

Biological monitors will be present to evaluate and make adjustments to the buffer and/or shelter to make sure impacts to BUOW are minimized and the birds are not showing signs of stress or disturbance. When determining an appropriate setback distance, the Qualified Biologist will take into consideration any data collected on the individual sensitivities of the BUOW present at the Project site. This data will be used as a baseline to compare the behavior of BUOW within no-disturbance buffers that are smaller than the 2012 Staff Report guideline 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 BUOW if necessary.

Documentation of the installation of a shelter will include where and when the shelter was installed and 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).

3.4 Excavation of Inactive Burrows

Excavation of inactive burrows, confirmed inactive based on wildlife camera monitoring, will help deter BUOW from occupying the construction areas. Pre-construction surveys (described above) will be conducted within the Project site to determine if burrows are actively being used. If burrows are suitably sized, game cameras will be installed at the entrance for three days to confirm lack of 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 any burrow which was previously classified as active or potentially active. The excavation of inactive burrows will occur prior to clearing or grading activities.

INTENTIONALLY LEFT BLANK

4 Passive Displacement

If an active burrow is identified in an area where there is potential for it or the 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; passive displacement will be implemented. 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 one week) after the end of the breeding season (August 31), daily monitoring will be conducted for one 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.

BUOWs will be excluded from currently occupied burrows by installation of a one-way door in the original burrow, and all legally accessible surrounding potentially active burrows within 160 feet, that will remain in place at least 48 hours before excavation. The one-way doors will be monitored for exiting or trapped animals. Once a Qualified Biologist can determine by site surveillance that the old burrow is vacant, with no sign of fresh use by wildlife including tracks, scat, or recent excavation, the burrow will be excavated according to the guidelines in the previous section. Each burrow will be refilled with dirt and/or rocks to prevent reoccupation of the burrows.

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 48 hours in advance of burrow excavation, the location of artificial or natural relocation burrows, and the removal of other potential burrow surrogates or refugia on the Project site. Prior to passive displacement being implemented, at least two artificial or natural surrogate burrows will be built, enhanced, or identified for every entrance that will be collapsed. Ideally, exclusion and burrow closure would be employed only where there are adjacent natural burrows and non-impacted, sufficient habitat for burrowing owls to occupy with permanent protection mechanisms in place. However, if artificial burrows need to be installed, they will be established according to the recommendations in the 2012 Staff Report and can be either above or below ground. Additional details on each type of artificial burrow are provided below.

4.1 Below Ground Artificial Burrows

A backhoe or similar equipment will be used to excavate a trench for the entrance and exit openings, access-way, and nesting chamber. The bottom of the nest box will be four feet below the ground surface. Hardware cloth or cement board will be installed below the nest box to prevent digging predators access. An access tunnel will extend for a minimum of twelve feet from the nest and will be made of 4-inch flexible perforated irrigation hose to prevent flooding. The first six feet of hose near the nest box will be level with the box and the last six feet will angle up at least 30 degrees to the ground level. A rigid 6-inch pipe will be used as a protective sleeve over the irrigation hose to prevent predation. Each opening will also have an apron of dirt spread by hand to mimic the original burrow. White-painted stakes will be placed around the burrow openings to mark its location and attract BUOWs. These stakes should be visible from within the opening and not be placed behind the opening as predators may perch on these.

4.2 Above Ground Artificial Burrows

The artificial nest box and entrance tubes will be placed flat on the ground surface when constructing an above ground burrow. Soil will be applied, first by hand to stabilize the structure followed by larger equipment, to build a 5-foot mound on top of the nest. Perches consisting of wooden 'T' stakes can be placed near the burrow entrance for both above and below ground burrows to potentially reduce the flushing distance of a disturbed owl. Both types of artificial burrows will also include rock armoring or concrete block armoring to protect tunnels and nest chambers from predators and will not impact existing burrows.

5 Monitoring and Reporting

5.1 Relocation Monitoring

In accordance with the 2012 Staff Report, monitoring will occur before, during, and after exclusion of burrowing owls to ensure take is avoided. In accordance with **MM-BIO-10**, if exclusion occurs, a Qualified Biologist will conduct daily monitoring for one week to confirm owls have vacated the burrows. Biologists will examine the collapsed burrow and survey for owl-related impacts and new burrows in the surrounding area. If the artificial burrows are found to be unusable during any monitoring visit, repairs and maintenance to restore function to the burrow or the installation of a new burrow at the same location will be required. The results of these monitoring efforts and an evaluation of the success of the relocation efforts will be included in the monthly compliance reports along with any needed remedial measures to avoid take.

5.2 Reporting Requirements

Preconstruction Clearance Survey Reports

A report will be submitted to CDFW documenting the results of the preconstruction surveys. The report will describe the methods and results of the clearance surveys and will serve as notification as to whether owl relocation is necessary.

Monthly Reports

If avoidance or passive relocation is implemented, monthly reports will be prepared for submittal to CDFW. The reports will summarize the construction activities that occurred with the potential to impact BUOW, any injuries or fatalities of BUOW, 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 total number and locations of burrows collapsed, a map of those locations, the total number and locations of artificial or natural surrogate burrows installed or enhanced, including a map, photographs of the excavation and closure of the burrows, photographs of artificial or natural surrogate burrows, the number and activity of the owls observed leaving the burrows to be excavated, the methods used to continually make the site inhospitable to burrowing owls and fossorial mammals, and the monitoring results of passive relocation and mitigation areas.

Final Compliance Report

A final compliance report will be submitted to CDFW summarizing the effectiveness of the mitigation measures and the level of BUOW take associated with the Project.

INTENTIONALLY LEFT BLANK

6 References

California Burrowing Owl Consortium (CBOC). 1993. Burrowing owl survey protocol and mitigation guidelines. Available at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html

California Department of Fish and Game (CDFG). 2012. Staff report on burrowing owl mitigation. State of California, Natural Resources Agency. Retrieved from: http://www.dfg.ca.gov/wildlife /nongame/survey_monitor.html

Dudek. 2021. Biological Resources Technical Report for the I-15 Industrial Park Project. October.

Dudek. 2021. Draft Environmental Impact Report for the I-15 Industrial Park Project. October.

INTENTIONALLY LEFT BLANK