General Biological Resource Assessment and Preliminary Jurisdictional Delineation Report Seneca and Hampton Tract 20723

Lead Agency

City of Adelanto
11600 Air Expressway P.O Box 10
Adelanto CA 92301

Project Proponent

Prepared By:

Marsh and Mallow Land Resources Consulting
195 Eureka Place.
Upland, CA 91786

November 24, 2024

Table of Contents

Figures

Tables

Appendices

1.0 Introduction

Marsh and Mallow Land Resources Consulting (MMLRC) biologist Darian Wong conducted a biological habitat assessment at two contiguous parcels (Assessor's Parcel Number: 3103-361-05 and 3103-361-06) totaling approximately 10 acres within the city of Adelanto, CA. The purpose of these surveys is to determine whether the proposed project Seneca and Hampton Tract 20723 subdivision project (Project) will affect any biological natural resources as analyzed in the California Environmental Quality Act (CEQA). Specifically, CEQA analyzes how the construction, operation and maintenance of a project will affect federal, state, regional and local biological resource regulations such as the Federal Endangered Species Act (FESA), California Endangered Species ACT (CESA), Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.

1.1 Project Location and Description

The project is located north of State Route 18, east of State Route 395 within the City of Adelanto. It is bordered to the north by Seneca Rd and the East by Hacienda Rd. Figures 1 and 2 below show the regional location and project location. The parcels lie within the U.S. Geological Survey (USGS) 7.5-minute Adelanto topographic quadrangle, section 19 of Township 5 north, and range 5 west. The elevation of the of the project site is about 3,153 ft above mean sea level (msl).

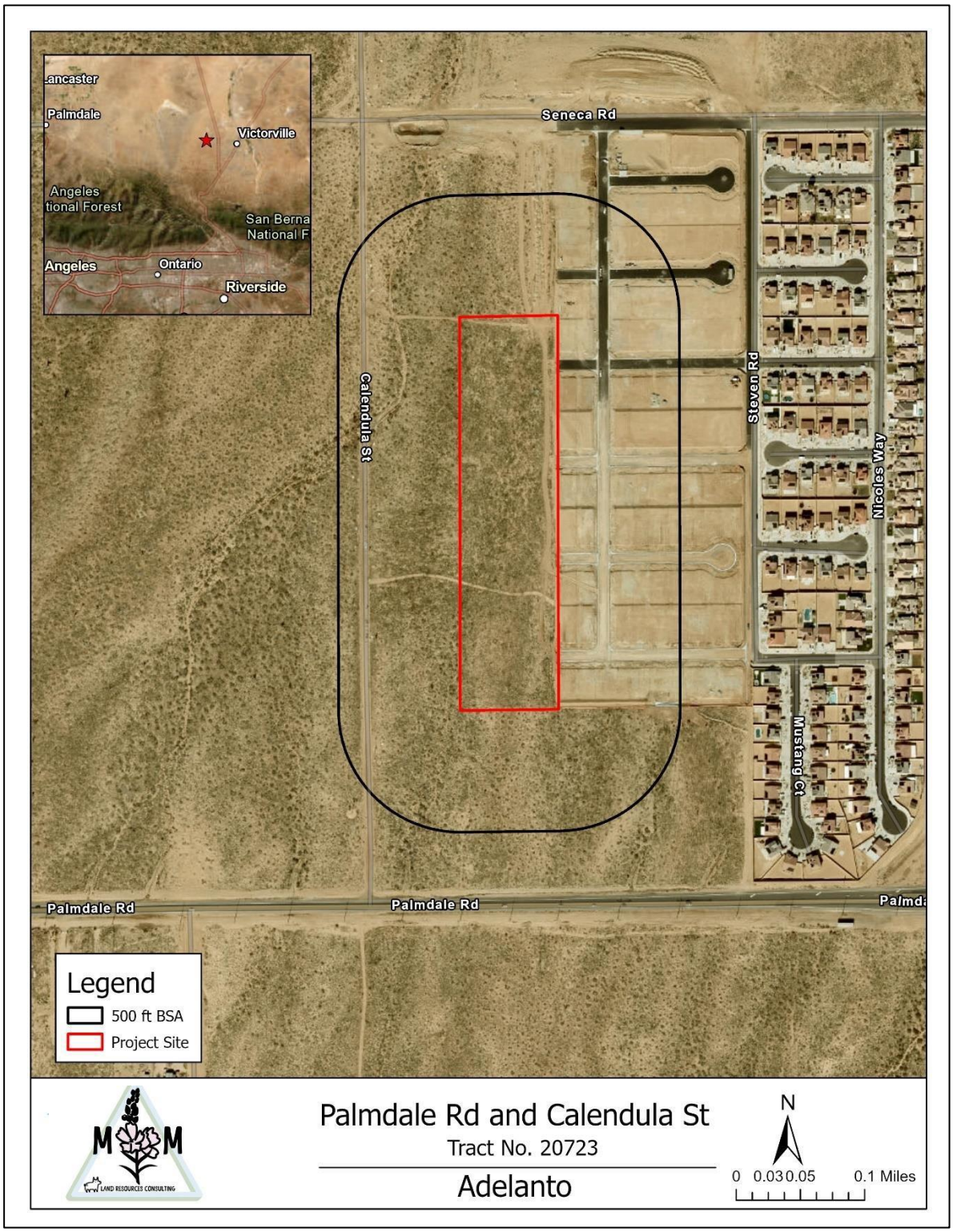
The Project will develop the two parcels into 48 subdivisions in which single family residential buildings will be built on. Additional public street dedications will be built to accommodate the new residents.

Project activities include clearing and grubbing, grading, utility installation, paving, residential structure construction, landscaping. During operation, the project site will consist of 48 single family homes with its associated residential activities.

Figure 1: Regional Map

Marsh & Mallow
Land Resources Consulting

Figure 2: Project Site Aerial View



2.0 Study Methods

MMLRC biologist Darian Wong conducted a biological desktop survey which included literature review of similar projects in the area, database search, aerial imagery analysis and policy research. Additionally, a general field survey of the project site was conducted by Biologist Darian Wong to assess habitats within the site and to determine whether it can support special status species and to determine the presence of protected natural resources.

2.1 Regulatory Requirements

Section 401 and 404 of the Clean Water Act of 1972

The Federal Clean Water Act (CWA) Sections 401 and 404 are administered by the Regional Water Quality Control Board (RWQCB) and U.S. Army Corps of Engineers (USACE), respectively to provide guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. These regulations are described more thoroughly below.

Under Section 404, the USACE regulates discharge of dredged or fill material into Waters of the U.S. including, but not limited to, the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 Code of Federal Regulations (CFR) Section 328.2(f)].

The state of California has established water quality control regulations under Section 401 of the CWA (33 U.S. Code [USC] 1341), that are administered by the RWQCB and require any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. Section 401 Certification, “gives states and authorized tribes the authority to grant or waive certification of proposed federal licenses or permits that may discharge into waters of the US” (33 USC 1251).

On September 27, 2023, the EPA published its final 2023 Clean Water Act Section 401 Quarter Quality Certification Improvement Rule (88 Fed. Reg. 66558.) The final 2023 Rule revises and replaces the 2020 Rule’s regulatory requirements for water quality certification that were adopted by the prior federal administration. The updates realign the scope of the Section 401 certification process with established practices, while also restoring the roles of states, territories, and authorized Tribes as certifying agencies.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) defines and lists species, subspecies, and distinct population segments as “endangered” and “threatened” and provides regulatory protection for listed species. FESA provides a program for conservation and recovery of threatened and endangered species; it also ensures the conservation of designated critical habitat the U.S. Fish and Wildlife Service (USFWS) has determined is required for the survival and recovery of these listed species. Section 9 of FESA prohibits the “take” of species listed by USFWS as threatened or endangered. Take is defined as follows: “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct.” In recognition that take cannot always be avoided, Section 10(a) of FESA includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities.

Section 10 allows an individual or private citizen to “take” a listed species if they develop a Habitat Conservation Plan (HCP). This is in contrast to Section 7 of the ESA, which regulates federal government actions. The purpose of the HCP process and issuance of Incidental Take Permits (ITPs) is to authorize the incidental take of threatened or endangered species, not to authorize the underlying activities that result in take (typically the CEQA process will identify the potential need for a HCP in California).

Migratory Bird Treaty Act of 1918

This treaty with Canada, Mexico and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests occupied by migratory birds during the breeding season. California Fish and Game Code Sections 3503 and 3503.5 (protection of birds’ nests) and 3513 (taking Migratory Bird Treaty Act birds) also prohibit the destruction of any nest, egg, or nestling.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), enacted in 1940, and amended several times since, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part (including feathers), nest, or egg thereof."

The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Regulations further define "disturb" as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding,

feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.6).

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that the significant environmental impacts of proposed projects or actions undertaken, funded, or requiring an issuance of a permit by a State or local agency are identified, government decision makers and the public are informed about the effects of those actions and that steps are taken in order to avoid or mitigate those environmental impacts, if feasible.

California Code of Regulations Title 14 Section 15064.7 establishes the thresholds of significance required for CEQA. Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.

California Code of Regulations Title 14 Section 15380 defines Endangered, Rare or Threatened Species" as part of the CEQA Guidelines. This section also mandates lead agencies to consider a species endangered, rare, or threatened if it can be shown to meet the qualifying criteria described therein, even when the species is not listed under either the California Endangered Species Act (CESA) or federal Endangered Species Act (ESA). Public agencies serving as a CEQA lead or responsible agency carry the responsibility to consider a species' qualification as endangered, rare, or threatened under CEQA based on the facts of the project. This responsibility raises important issues for the environmental practitioner.

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code [FGC] §§ 2050 et seq.) (California Legislative Info 2019) prohibits the take of listed species, except as otherwise provided in state law. Take under CESA is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Unlike FESA, CESA also applies the take prohibitions to species that are candidates for listing, as well as listed species. State lead agencies are required to consult with the CDFW to ensure that any actions undertaken by the lead agency are not likely to jeopardize the continued existence of any state-listed species or result in destruction or degradation of required habitat. Permits for incidental take of species protected pursuant to CESA are available under certain circumstances as described in Sections 2080 and 2081 of the California Fish and Game Code.

Section 2080 of the California Fish and Game Code states, “No person shall import into this state (California), export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission (State Fish and Game Commission) determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter (Chapter 1.5, Endangered Species), or the Native Plant Protection Act, or the California Desert Native Plants Act.” Pursuant to Section 2081 of the California Fish and Game Code, CDFW may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species through permits as follows: (1) if the take is incidental to an otherwise lawful activity, (2) if impacts of the authorized take are minimized and fully mitigated, (3) if the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (4) if the applicant ensures adequate funding to implement the measures required by CDFW. CDFW shall make this determination based on available scientific information and shall include consideration of the ability of the species to survive and reproduce.

California Desert Native Plants Act

Division 23 of the California Food and Agriculture Code, the California Desert Native Plants Act (CDNPA) Sections 80001–80201 (California Legislative Information 2018a) serves to protect certain species of California desert native plants from unlawful harvesting on both public and privately-owned lands. The act only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties. Section 80117 states that this act does not prevent:

“The clearing or removal of native plants from a canal, lateral ditch, survey line, building site, or road or other right-of-way by the landowner or his or her agent, if the native plants are not to be transported from the land or offered for sale and if the commissioner is given at least 10 days’ notice of such activity.”

Furthermore,

“This division does not apply to a public agency or to a publicly- or privately-owned public utility when acting in the performance of its obligation to provide service to the public. This section does not prevent the landowner or his or her agent from complying with any other federal, State, or local laws or regulations.”

California Fish and Game Code

Native Plant Protection Act

The Native Plant Protection Act, California Fish and Game Code Sections 1900–1913 includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the Native

Plant Protection Act includes those listed as rare and endangered under CESA. The Native Plant Protection Act provides limitations that no person would import into this state—or take, possess, or sell within the State of California—any rare or endangered native plant, except in compliance with provisions of the act. Where individual landowners have been notified by CDFW that rare or native plants are growing on their land, the landowners are required to notify CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

California Fish and Game Code Sections 3503-3503.5

It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation adopted pursuant thereto. With the implementation of avoidance and minimization measures the proposed project would not be in violation of FGC § 3503.

It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. With the implementation of avoidance and minimization measures take of birds-of-prey, their nest or eggs as defined by FGC § 3503.5 would not occur.

Fully Protected Species

California Fish and Game Code Sections 3511, 4700, 5050 and 5515 designate 37 species of wildlife as Fully Protected in California. The classification of Fully Protected provides additional protection to those animals that are rare or face possible extinction. Most Fully Protected Species have also been listed as threatened or endangered species under CESA. Fully Protected species may not be taken or possessed at any time and **no licenses or permits may be issued for their** take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock, or if the fully protected species is listed as a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (NCCP).

CDFW may authorize the take of fully protected species that is incidental to a project only for the five types of projects listed below.

- A maintenance, repair, or improvement project to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources.
- A maintenance, repair, or improvement project to critical regional or local water agency infrastructure.
- A transportation project, including any associated habitat connectivity and wildlife crossing project, undertaken by a state, regional, or local agency, that does not increase highway or street capacity for automobile or truck travel.
- A wind project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is

- located in the state to a point of junction with any California-based balancing authority.
- A solar photovoltaic project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the state to a point of junction with any California-based balancing authority.

Natural Communities Conservation Planning Act

California has a number of formal acts in statute. Fish and Game Code Division 3, Chapter 10 provides the Natural Community Conservation Planning Act, which is contained in Section 2800 to 2835. Chapter 10 was added in 2002 by Chapter 4. Section 2800 names the Act.

CDFW's Natural Community Conservation Planning (NCCP) program is an unprecedented effort by the State of California, and numerous private and public partners, that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The NCCP program began in 1991 as a cooperative effort to protect habitats and species. It is broader in its orientation and objectives than the California and Federal Endangered Species Acts(opens in new tab), as these laws are designed to identify and protect individual species that have already declined in number significantly.

California Fish and Game Code (Sec. 1600-1603)

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 through 1603 of the California Fish and Game Code and require a Lake or Streambed Alteration Agreement (LSA) (California Department of Fish and Game [CDFG] 2004). Pursuant to the Code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that support or have supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial waterways valuable to fish and wildlife are also subject to CDFW jurisdiction. The CDFW must be notified of an LSA for any project that may impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding potential impact, requiring replacement of lost habitats on at least an acre-for-acre ratio.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires “any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge” with the RWQCB through State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to

Waters of the State (Procedures) (California Code of Regulations [CCR], title 23, § 3855) (State Water Resources Control Board [SWRCB] 2024). Waters of the State is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (California Water Code § 13050[e]).

Western Joshua Tree Conservation Act

In July 2023, the State of California enacted the Western Joshua Tree Conservation Act (WJTCA) which prohibits take, export, possession, purchase, sale or importation of any western Joshua tree. It also establishes California Department of Fish and Wildlife as the regulatory agency who issues permits regarding any take of Joshua tree.

Local

San Bernardino County Development Code- Plant Protection and Management (Chapter 88.01)

The County of San Bernardino established a Plant Protection and Management Code (Chapter 88.01) to help protect and preserve desert vegetation, which include: all Joshua trees, smoketree (Dalea spinosa), all species of the genus Prosopis (mesquites), all species of the family Agavaceae (century plants, nolinas, yuccas), creosote rings, ten feet or greater in diameter, and any part of the following species, whether living or dead, desert ironwood (Olneya tesota) and all species of the genus Cercidium (palo verdes). Chapter 88.01.060 provides regulations for the removal or harvesting of specified desert native plants to preserve and protect the plants and to provide for the conservation and wise use of desert resources. The provisions are intended to augment and coordinate with the Desert Native Plants Act (Food and Agricultural Code §§ 80001 et seq.) and the efforts of the State Department of Food and Agriculture to implement and enforce the Act.

2.2 Literature Review

A literature review was conducted by MMLRC Biologist Darian Wong to identify previously reported special status species and habitats within the project area. The search included the 10-acre project site as well as a 500-foot biological study area (BSA) to identify resources that may be impacted indirectly by different project components such as noise or light pollution. The following databases and sources were reviewed:

- California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (2024)
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (2024)
- Calflora (2024)

- US Fish and Wildlife Service (USFWS) Threatened & Endangered Species Active Critical Habitat Report Online Mapper (2024)
- California Desert Native Plant Protection Act list of regulated plant species
- San Bernardino County Development Code Chapter 88.01 Plant Protection and Management (2007)
- The University and Jepson Herbaria- Jepson eFlora (2024)
- Countywide – All Biotic Resources Overlay Map (County of San Bernardino 2012)
- USFWS National Wetlands Inventory (NWI) Wetlands Mapper (2024)
- US Department of Agriculture Natural Resources Conservation Service (NRCS)(2024) and National Hydric Soils List (2024)

A CNDDB query search was conducted for the USGS 7.5-minute Adelanto quadrangle as well as the surrounding 8 topographic quadrangles to identify previously recorded occurrences of special-status species in the area. This information as well as other database searches was used in the field surveys.

2.3 Biological Habitat Assessment and Reconnaissance Survey

A biological survey was conducted by MMLRC biologist Darian Wong on Friday September 6, 2024. The survey consisted of meandering transects that covered the immediate project impact area as well as the 500 BSA to identify existing habitats onsite as well as record any plant and wildlife species observed. Habitat assessments were conducted for special status species listed from the CNDDB search that were determined to have potential to occur within the study area.

Plant species were identified in the field based on the nomenclature described in Jepson eFlora (2024). Bird species were identified through visual and audio recognition. Reptiles and amphibians were searched for by carefully replacing potential shelter like cardboard, rocks and other debris. Mammal species were identified through visual and audio recognition of individuals or through certain diagnostic signs like burrows and scat. Nomenclature of wildlife species were based on the Special Animals List (CDFW 2024), Sibley Field Guide to Birds of Western North America (Sibley 2016), Mammals of California (Jameson, 2004), and Field guide to Amphibians and Reptiles of California (Stebbins and Mcginnis, 2012)

2.4 Preliminary Aquatic Resources Delineation

Prior to conducting the field portion of the preliminary aquatic resource delineation, aerial imagery and various databases were reviewed to determine whether there were previously mapped aquatic resources including any wetland hydrology, hydrophytic plants and hydric soils which are indicators of wetland habitat as defined by the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). The field survey consisted of a meandering transect throughout

the site and BSA to determine the presence of the aquatic resources listed above. Additionally, to assess the presence of non-wetland waters, signs of ordinary high water mark (OHWM) as defined by the *A Field Guide to the Identification of the Ordinary High Wate Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual* (Lichvar and McColley 2008) were surveyed for.

2.5 Western Joshua Tree Census

A Western Joshua Tree (*Yucca brevifolia)* was conducted on Sunday 11/10/2024 by MMLRC biologist Darian Wong. The survey consisted of parallel survey transects of up to 15 meters apart to ensure coverage of the site. An additional 50 foot buffer from the project borders were also covered. All individuals of Western Joshua tree, dead or alive were documented and measured in accordance with CDFW's WJT Census instructions (CDFW 2024).

According to the CDFW's WJT Census instructions, the observed trees were then organized into three classifications: A (trees less than 1 meter tall), B (trees that are at least 1 meter but less than 5 meter tall), C (trees that are more than 5 meter tall). Additionally, trees that are mature or have flowers or fruit will also need to have that information recorded.

3.0 Results: Environmental Setting

The biological habitat assessment and preliminary jurisdictional delineation was conducted by MMLRC Biologist Darian Wong on September 6, 2024. Mr. Wong has extensive experience conducting biological surveys for special-status species and habitat assessment while working with public agencies and private entities. Mr. Wong conducted meandering transects to identify habitats that exist within the Project site and to determine whether any special status species listed in table 3 would be impacted by the project. Additionally, Mr. Wong recorded current site conditions through photographs and noted the location of sensitive biological resources with a Global Position System (GPS) unit. Table 1 notes the start and end time of the survey, and the weather conditions observed during the survey.

Table 1: September 6th Survey Weather Conditions

Date	Beginning to End	Beginning Weather	End Weather
09/06/2024	06:30-11:30	74 °F, 3mph wind, 80% cloud cover	101 °F, 5mph wind, 80% cloud cover

3.1 Physical Environmental Setting

The Project is located within the Western Mojave subregion of the Mojave Desert within the City of Adelanto. The City of Adelanto is in the southeastern portion of the Mojave Desert in an area typically dubbed as the "high desert". The city's elevation is approximately 3,400 ft above MSL and generally has climate indicative to California deserts which include average precipitation of 3 to 6 inches, average temperatures ranging from 59°F to 63°F. The soils mapped within the site is 100% Bryman Loamy Fine San with 0 to 2 percent sloping. A detailed soil map is attached as Appendix 5.

The Project site and BSA is located on relatively flat topography with little changes in elevation. It is undeveloped with residential buildings to the east, open space and a roadway to the south, open space to the west and north. An unnamed blueline stream occurs to the northwest corner of the BSA.

3.2 Biological Condition

Surveys conducted by Biologist Darian Wong found the Project site and BSA is dominated by disturbed creosote bush (*Larrea tridentata)* scrub habitat. This habitat is characterized by dispersed creosote bush, invasive grasses and the occasional Joshua tree (*Yucca brevifolia*). The Project site has significantly deteriorated due to nearby residential activities, off-highway vehicles (OHV), invasive weeds and illegal dumping. Aside from the dominant species of creosote bush (*Larrea tridentata),* other plant species observed include California buckwheat (*Eriogonum fasciculatum*), rubber rabbitbrush (*Ericameria nauseosa),* Cheesebush (*Ambrosia salsola),* red brome *(Bromus rubens),* black mustard (*Brassica nigra)* and Joshua tree (*Yucca brevifolia)*. The only other ground cover that exists within the Project site is bare ground which exists due to excessive vehicular traffic. Table 2 below is a comprehensive compendium of species observed onsite.

Wildlife species observed were indicative of a highly disturbed habitat with bird species like common ravens *(Covus corax),* and rock dove (*Columba livia)* being most common. Other bird species observed included the white-crowned sparrow (*Zonotrichia leucophrys)*, European starling (*Sturnus vulgaris)* and mourning dove (*Zenaida macroura)*. Mammal species observed included the white-tailed antelope squirrel (Ammospermophilus leucurus), and California ground squirrel (*Otospermophilus beecheyi)*. Only one reptile, western fence lizard (*Sceloporus occidentalis)* was observed onsite.

Table 2: Species observed onsite

Scientific Name	Common Name
Plants	
Amaranthus albus	tumbleweed
Ambrosia dumosa	burrobush
Brassica nigra	Black mustard
Bromus rubens	Red brome
Larrea tridentata	Creosote Bush
Salsola tragus	Russian thistle
Tribulus terrestris	Puncturevine
Yucca brevifolia	Western Joshua Tree
Ambrosia salsola	Cheesebush
Eriogonum fasciculatum	California buckwheat
Ericameria nauseosa	Rubber rabbitbush
Birds	
Covus corax	common ravens
Columba livia	rock dove
Zonotrichia leucophrys	white-crowned sparrow
Sturnus vulgaris	European starling
Zenaida macroura	mourning dove

Scientific Name	Common Name
Reptiles	
Sceloporus occidentalis	western fence lizard
Mammals	
Otospermophilus beecheyi	California ground squirrel
Ammospermophilus leucurus	antelope squirrel

3.3 Habitat Connectivity

Habitat connectivity allows for uninterrupted wildlife movement throughout their range. Wildlife movement is essential to their survival as it allows for day-to-day activities such as feeding, seasonal migration and offspring dispersal. Examples of habitat that would facilitate movement and dispersal include undisturbed scrublands that would provide adequate vegetation cover to shelter large and small wildlife species or drainages and riparian areas which provide cover and food for various species. By disrupting this connectivity, impacts to wildlife include loss of gene flow and increased competition for resources. In recent days, increased development, human activity, habitat conversion and new infrastructure has impacted habitat connectivity and thus isolating population and decreasing food and other resources to wildlife species.

Survey of the Project site found that it was low quality for wildlife movement. Although it contained vegetation and potential shelter for wildlife, there were no major drainages or washes that provided connectivity to other higher quality habitats. Additionally, the site is bordered by an active road to the south, and residential buildings to the east. Habitat in the north and east of the site also include more disturbed creosote bush scrubland that has been highly disturbed by anthropogenic activities such as illegal dumping and off-road vehicular travel.

Table 3: Listed, Proposed Species, Natural Communities and Critical Habitat potentially occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Rationale
Plants					
white pygmy-poppy	*Canbya candida*	CNPS 4.2	Found in gravelly, sandy, granitic places within Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at 600-1,460 meters (~1,969-4,790 feet) in elevation. Bloom Period: April to May	HP	The study area contains marginally suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.
Mojave monkeyflower	*Diplacus mohavensis*	CNPS 1B.2	Found within dry, sandy, or rocky desert washes along the Mojave River within Joshua tree woodland or Mojavean desert scrub habitats at 660-1,270 meters (~2,165-4,167 feet) in elevation. Bloom Period: April to May	HP	The study area contains marginally suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.
Booth's evening-primrose	*Eremothera boothii* ssp. *boothii*	CNSP 2B.3	Found within Joshua tree woodland or pinyon and juniper woodland habitats at	HP	The study area contains marginally suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB

			285-2,290 meters (~935-7,513 feet) in elevation. Bloom Period: June to August		documented occurrences in the study area.
sagebrush loeflingia	*Loeflingia squarrosa* var. *artemisiarum*	CNPS 2B.2	Found within dune habitats, sagebrush scrub, and creosote bush scrub. Bloom Period: April to May	HP	The study area contains marginally suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.
short-joint beavertail	*Opuntia basilaris* var. *brachyclada*	CNPS 1B.2	Found on sandy soil or coarse, granitic loam within chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at 425-2,015 meters (~1,394-6,611 feet) in elevation. Bloom Period: April to June	A	Although the study area contains marginally suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland, no individuals were observed in the study area during habitat assessment surveys. There are no CNDDB documented occurrences in the study area or vicinity.
Beaver Dam breadroot	*Pediomelum castoreum*	CNPS 1B.2	Found in sandy soils, washes, and roadcuts within desert washes, Joshua tree woodland, and Mojavean desert scrub at 605-1,485 meters (~1,985-4,872 feet) in elevation. Bloom Period: April to May	HP	The study area contains marginally suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.
southern mountains skullcap	*Scutellaria bolanderi* ssp. *austromontana*	CNPS 1B.2	Occurs usually in wetlands, occasionally in non-wetlands within yellow pine	A	The study area does not contain suitable wetland-riparian or woodland

			forest, foothill woodland, chaparral, and wetland-riparian habitats. Bloom Period: June to August		habitats capable of supporting this species and is outside species range.
San Bernardino aster	*Symphyotrichum defoliatum*	CNPS 1B.2	Inhabits meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, and valley and foothill grassland habitats. Occurs in vernally mesic grassland or near ditches, streams and springs, and disturbed areas at 3-2,045 meters (~10-6,709 feet) in elevation. Bloom Period: July to November	A	The study area does not suitable coastal, wetland or mountain habitats capable of supporting this species.
Joshua Tree	*Yucca brevifolia*	WJTCA protected	Inhabits Joshua tree woodlands, Mojavean desert scrub, Joshua tree grasslands, Joshua tree – Great Basin sage scrub, Mojavean California juniper woodland in elevations ranging from 1,600 ft to 6600 ft.	P	The study area contains suitable disturbed Mojavean desert scrub and Joshua tree woodland. Several individuals of Joshua tree were documented within the project area.

Invertebrates					
Crotch's bumble bee	*Bombus crotchii*	SCE	Inhabits coastal California, east to the Sierra-Cascade crest, and south into Mexico. Food preference includes *Antirrhinum, Phacelia, Clarkia, Dendromeco, Eschscholzia*, and *Eriogonum* species.	A	The study area does not contain coastal habitats capable of support this species and is outside species range.
Fish					
Mohave tui chub	*Siphateles bicolor mohavensis*	FE, SE, FP	Endemic to the Mojave River basin within aquatic habitats and both artificial flowing and standing waters. Adapted to alkaline, mineralized waters. Species needs deep pools, ponds, or slough-like areas as well as vegetation for spawning.	A	Perennial waters necessary for obligate-aquatic fish species, fish passage, and/or spawning habitat are absent from the study area.
Amphibians					
arroyo toad	*Anaxyrus californicus*	FT, SSC	Inhabits desert washes, riparian scrub, riparian woodland, south coast flowing waters, and south coast standing waters. Found in semi-arid regions near washes or intermittent streams; valley-foothill and desert riparian; rivers with sandy banks; willows; cottonwoods; and	A	The study area does not contain suitable desert wash, riparian or intermittent streams capable of supporting this species and is outside the species range.

			sycamores; as well as gravelly areas of streams in drier parts of its range.		
California red-legged frog	*Rana draytonii*	FT, SSC	Inhabits a variety of aquatic environments, including both standing and flowing waters, marshes and swamps, riparian areas, and wetlands. Found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	A	The study area does not contain suitable aquatic or wetland habitats capable of supporting this species and is outside species range.
Reptiles					
western pond turtle	*Actinemys pallida*	FPT, SSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking.	A	The study area does not contain suitable aquatic habitats capable of supporting this species and is outside species range.

			May enter brackish water and even seawater.		
desert tortoise	*Gopherus agassizii*	FT, ST	Occurs in almost every desert habitat. Inhabits Joshua tree woodland, Mojavean desert scrub, and Sonoran Desert scrub habitats, and washes. Require friable soil for burrow and nest construction; creosote bush habitat with large annual wildflower blooms is preferred.	HP	The study area contains potentially suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.
coast horned lizard	*Phrynosoma blainvillii*	SSC	Frequents a variety of habitats, including chaparral; cismontane woodland; coastal bluff scrub; coastal scrub; desert wash; pinon & juniper woodlands; riparian scrub; riparian woodland; and valley & foothill grassland habitats. Most common in lowlands along sandy washes with scattered low bushes.	A	The study area does not contain suitable desert wash, cismontane woodland, coastal scrub and grassland habitats capable of supporting this species and is outside species range.
Birds					
tricolored black bird	*Agelaius tricolor*	ST, SSC	Largely endemic to California. Inhabits freshwater marsh, marsh	A	The study area does not contain suitable wetland habitats capable of

			and swamp, swamp, and wetland habitats. Species is highly colonial and most numerous in the Central Valley & vicinity. Species requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.		supporting this species and is outside species range.
golden eagle	Aquila chrysaetos	FP	Inhabits broadleaved upland forest; cismontane woodland; coastal prairie; Great Basin grassland; Great Basin scrub; lower montane coniferous forest; pinon & juniper woodlands; upper montane coniferous forest; and valley & foothill grassland habitats, especially rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons and large trees in open areas provide nesting habitat in most parts of range.	HP	The study area contains potentially suitable foraging habitat (low potential). There are no CNDDB documented occurrences in the study area.
long-eared owl	*Asio otus*	SSC	Inhabits cismontane woodland; Great Basin scrub; riparian forest; riparian woodland; and	A	The study does not contain suitable woodland and riparian habitats capable of supporting this species and is outside species range.

			upper montane coniferous forest. Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Species requires adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.		
burrowing owl	*Athene cunicularia*	SSC	Found within coastal prarie; coastal scrub; Great Basin grassland; Great Basin scrub; Mojavean desert scrub; Sonora Desert scrub; and valley and foothill grassland, often within dry annual or perennial grasslands, deserts, and scrublands with low-growing vegetation; depends on other mammal burrows, particularly the California ground squirrel.	HP	The study area contains potentially suitable (moderate potential) disturbed Mojavean desert scrub and Joshua tree woodland. Potentially suitable small mammal burrows and diagnostic signs were observed during habitat assessment surveys. There are no CNDDB documented occurrences in the study area.
Swainson's hawk	Buteo swainsoni	ST	Inhabits Great Basin grassland, riparian forest, riparian woodland, and valley and foothill grassland habitats. Species breeds in grasslands with scattered	A	The study area does not contain suitable foraging or nesting habitat capable of supporting this species and is outside species range.

			trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.		
mountain plover	*Charadrius montanus*	SSC	Nests in shortgrass prairies and in high, open, semidesert habitats (up to nearly 11,000 feet elevation) in western North America. Sometimes nests in fallow or tilled fields. Winters in similar agricultural habitats, prairies, and alkaline flats.	A	The study area does not contain suitable prairie or plains habitat capable of supporting this species and are not typically found in true desert environments.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT, SE	Found within riparian forest. A riparian forest nester that nests along broad, lower flood-bottoms of larger river systems. Species nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	A	The study area does not contain suitable riparian forest habitat capable of supporting this species and is outside species range.

southwestern willow flycatcher	*Empidonax traillii extimus*	FE, SE	Occurs within riparian woodlands of Southern California.	A	The study area does not contain suitable riparian habitats capable of supporting this species and is outside species range.
yellow-breasted chat	*Icteria virens*	SSC	A summer resident; Inhabits riparian forest, riparian scrub, and riparian woodland habitats. Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of the ground.	A	The study area does not contain suitable riparian habitats capable of supporting this species and is outside species range.
loggerhead shrike	*Lanius ludovicianus*	SSC	Open country with scattered shrubs and trees is the typical habitat of Loggerhead Shrike, but the species can also be found in more heavily wooded habitats with large openings and in very short habitats with few or no trees.	HP	The study area contains marginally suitable (lo potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.
summer tanager	*Piranga rubra*	SSC	Inhabits riparian forest, a summer resident of desert riparian along lower Colorado River, and locally elsewhere in California	A	The study area does not contain suitable desert riparian habitats capable of supporting this species and is outside species range.

			deserts. Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.		
yellow warbler	*Setophaga petechia*	SSC	Inhabits riparian forest, riparian scrub, and riparian woodland habitats. Riparian plant associations are in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	A	The study area does not contain suitable riparian habitats capable of supporting this species and is outside species range.
Le Conte's thrasher	*Toxostoma lecontei*	SSC	A desert resident, species inhabits desert wash, Mojavean desert scrub and Sonoran Desert scrub habitats. Can be found primarily within open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or	HP	The study area contains marginally suitable disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.

			densely branched cactus in desert wash habitat, usually 2-8 feet above ground.		
least Bell's vireo	*Vireo bellii pusillus*	FE, SE	A summer resident of Southern California within riparian forest, riparian scrub, or riparian woodland habitats; nests are along margins of bushes or twigs projecting into pathways, usually willow, *Baccharis*, or mesquite species, in low riparian in vicinity of water or in dry river bottoms below 2,000 feet in elevation.	A	The study area does not contain suitable riparian habitats capable of supporting this species and is outside species range.
gray vireo	*Vireo vicinior*	SSC	Inhabits pinyon-juniper woodland and scrub oak woodland.	A	The study area does not contain suitable pinyon-juniper or scrub oak woodland capable of supporting this species.
Mammals					
pallid bat	*Antrozous pallidus*	SSC	Inhabits chaparral; coastal scrub; desert wash; Great Basin grassland; Great Basin scrub; Mojavean desert scrub; riparian woodland; Sonoran Desert scrub; upper montane coniferous forest; and valley & foothill grassland habitats. Most common in open, dry habitats with rocky areas for	HP	The study area contains potentially suitable (low potential) foraging habitat. There are no CNDDB documented occurrences in the study area.

			roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.		
Townsend's big-eared bat	*Corynorhinus townsendii*	SSC	Found throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	A	The study area does not contain suitable roosting or foraging habitat in mesic sites capable of supporting this species.
western mastiff bat	*Eumops perotis californicus*	SSC	Found in many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	HP	The study area contains potentially suitable (low potential) foraging habitat. There are no CNDDB documented occurrences in the study area.
Mohave river vole	*Microtus californicus mohavensis*	SSC	The Mojave River vole likes habitat that is moist, including meadows, freshwater marshes and irrigated pastures in location surrounding the Mojave River between elevations of 750-823 meters. This vole has been found between	A	The study area does not contain suitable Mojave River wetland habitats capable of supporting this species.

			Victorville and Helendale. Appropriate habitat may also exist upstream of Victorville towards Hesperia.		
Mohave ground squirrel	*Xerospermophilus mohavensis*	ST	Restricted to the Mojave Desert. Found in open desert scrub, chenopod scrub, Mojavean desert scrub, alkali scrub, and Joshua tree woodland. Also feeds in annual grasslands. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	HP	The study area contains potentially suitable (low potential) disturbed Mojavean desert scrub and Joshua tree woodland. There are no CNDDB documented occurrences in the study area.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Candidate Endangered (SCE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS). Western Joshua Tree Conservation Act {WJTCA) Protected

4.0 Results: Biological Resources, Discussion of Impacts and Mitigation

4.1 Habitats and Natural Communities of Special Concern

Field survey of the BSA conducted on September 6th found that the Project site was dominated by disturbed creosote bush (*Larrea tridentata)* scrub. The project is outside of any USFWS- designated Critical Habitat and does not contain natural communities of special concern as listed by CDFW. A preliminary jurisdictional delineation was conducted and found no sensitive habitats such as wetlands or vernal pools were within the Project site. The northwest corner of the 500 ft BSA contains a blue-line stream identified in the National Wetland Inventory (NWI) as a riverine feature that experiences surface flooding intermittently.

4.1.1 Project impacts

Sensitive Natural Communities

The Project proposes to subdivide the two parcels into 48 subdivisions with residential structures constructed. Project components include clearing, grubbing, grading, paving utility installation and construction of permanent structures throughout the entire project site. Since there are no critical habitats or any natural communities of special concern within the project site, the project is anticipated to have no impact on any of these resources.

State and Federally Protected Wetlands and Waters of the United States

A riverine feature was found within the 500 ft BSA shown in figure 5 below. Since project activities will be limited to the immediate project site there is no potential impact expected to occur to aquatic resources.

Habitat Connectivity, Wildlife Corridor and Nursery Sites

Surveys of the project site and BSA found that the Project site serves as low quality habitat for wildlife movement due to the high disturbance and human activity on and near the site. A busy roadway exists to the south, a residential tract to the east, and more disturbed open space to the north and west.

4.1.2 Avoidance and Minimization Efforts

This project is not anticipated to impact any sensitive natural communities, state or federally protected wetlands and habitat connectivity, wildlife corridors and nursery sites. Therefore, no mitigation measures are recommended for these resources.

4.2 Special Status Plant Species

Table 3 provides a summary of special status plants reported to occur within the Project region. It lists the protection status as well as identifies how likely it would occur within the project site. The desktop and field surveys identified suitable habitat for the following 6 species: white pygmy poppy, Mojave monkeyflower,

Booth's evening-primrose, sagebrush loeflingia, Beaver Dam breadroot. During survey of the project site and BSA, the only species listed on table 3 observed onsite is the western Joshua tree (*Yucca brevifolia)*.

Western Joshua Tree

Western Joshua trees (*Yucca brevifolia)* are endemic to the Mojave Desert and its range extends throughout the desert regions of California into Utah, Nevada and Arizona. It is currently threatened by drought, fire, habitat loss and climate change. In July 2023, the Western Joshua Tree Conservation Act (WJTCA) was passed in California which protects the species from take unless authorized by CDFW.

A Western Joshua Tree (WJT) Census was conducted to identify if any individuals would be directly or indirectly be affected by project activities. Table 4 below identifies the results of the census survey as well as documents the condition of the trees. Appendix 4 also includes a compendium of photos along with the identified trees.

A total of 38 WJT were identified within the project area and 50 foot buffer surveyed for the Census. Of these, a total of 15 were alive and 23 were dead. Take of 3 WJT will be inevitable as they are within the project area. Additionally, 12 WJT will potentially be impacted as they are within 50 feet of the project site. See figures 3 and 4 below for locations of observed WJT.

CDFW may also require relocation of live individuals based on their class and health. CDFW's Western Joshua Tree Relocation Guidelines and Protocols outlines two methods of relocations: tree spade and bare root. Bare root relocation typically involves using hand tools or heavy equipment to excavate the tree's root ball by trenching around the individual and salvaging as much root and the surrounding soil as possible. The tree spade relocation method involves using heavy equipment to fully encapsulate the tree and roots and lift it out of its original position. It will then be transported to a recipient site. (CDFW 2024).

Figure 3: Western Joshua Tree Census North

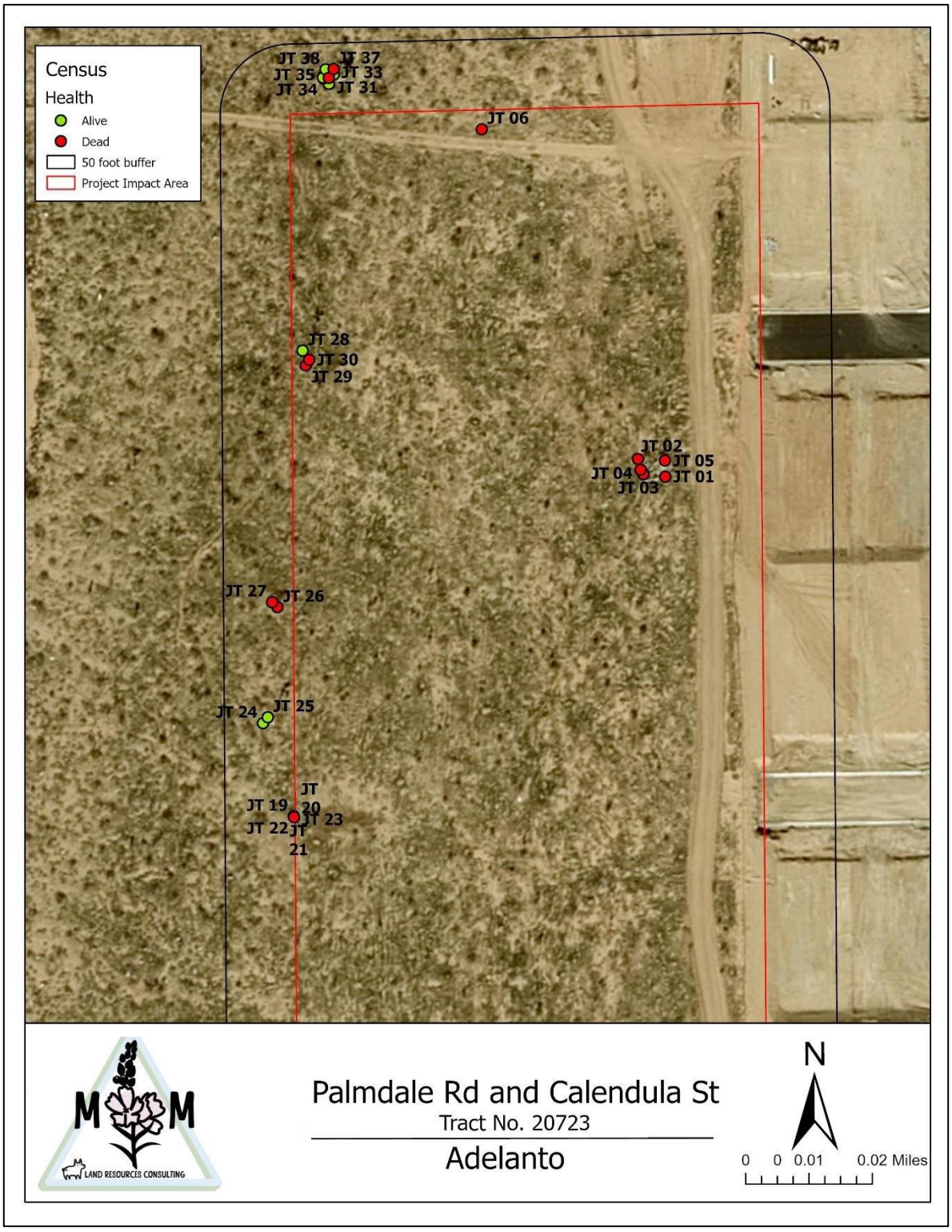


Figure 4: Western Joshua Tree Census South

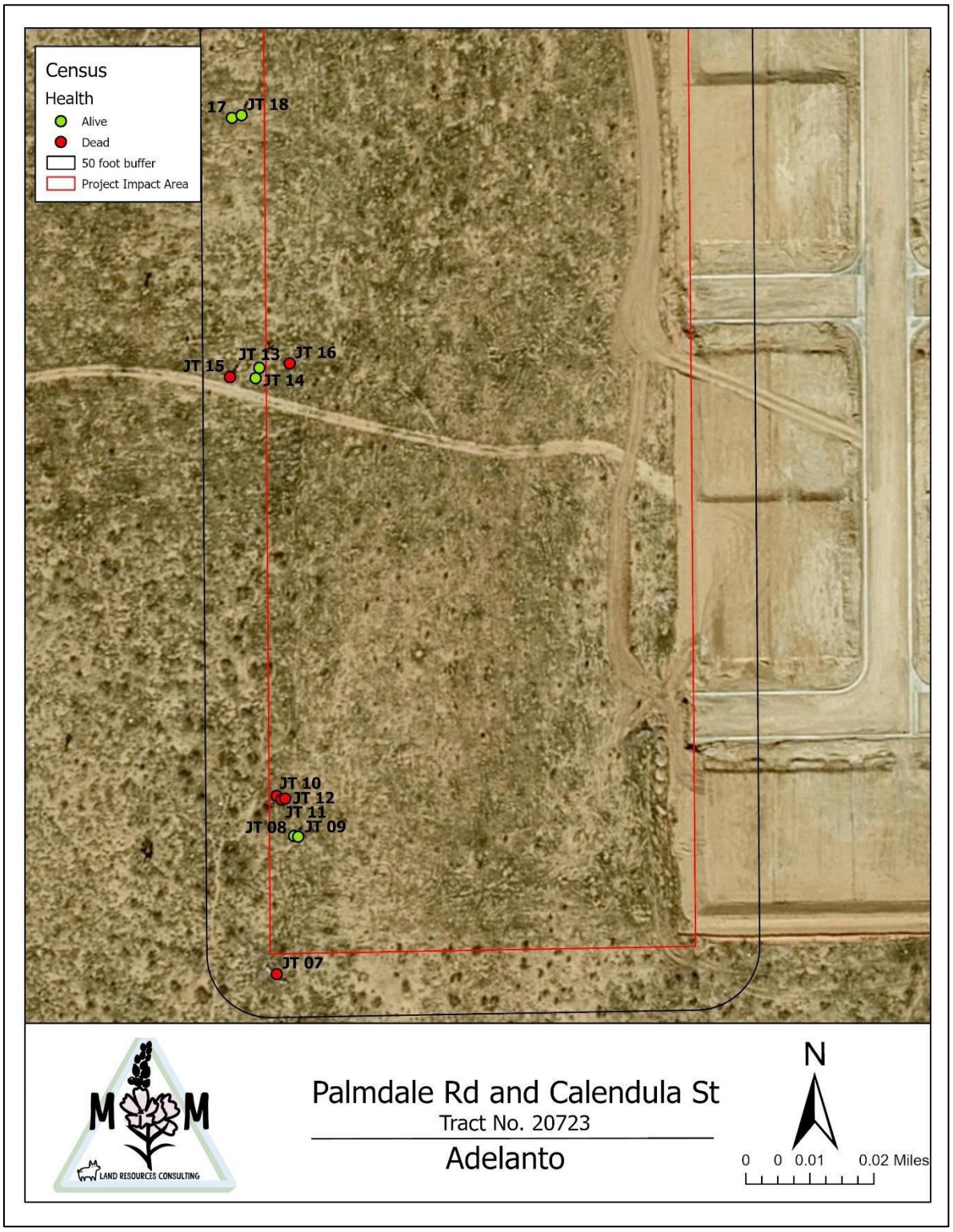


Table 4: Joshua Tree Census Results

Joshua Tree ID	Latitude	Longitude	Health	Mature	Class	Fruits/Flowers/None	Notes
JT 01	34.51130196	-117.441563	Dead	Mature	B	None	
JT 02	34.51133685	-117.441627	Dead	Mature	B	None	
JT 03	34.51130682	-117.441614	Dead	Not Mature	B	None	
JT 04	34.51131566	-117.441621	Dead	Not Mature	B	None	
JT 05	34.51133318	-117.441564	Dead	Mature	B	None	
JT 06	34.51198115	-117.44199	Dead	Mature	B	None	
JT 07	34.50832004	-117.442419	Dead	Mature	C	None	
JT 08	34.50861772	-117.442371	Alive	Not Mature	B	None	
JT 09	34.50861708	-117.442367	Alive	Not Mature	B	None	
JT 10	34.50870409	-117.442415	Dead	Mature	B	None	
JT 11	34.50869626	-117.442403	Dead	Mature	B	None	
JT 12	34.50869867	-117.442393	Dead	Mature	B	None	
JT 13	34.50962833	-117.442454	Alive	Mature	B	None	
JT 14	34.50960575	-117.442465	Alive	Not Mature	A	None	

JT 15	34.50960857	-117.442531	Dead	Mature	B	None	
JT 16	34.50963685	-117.442376	Dead	Mature	C	None	
Jt 17	34.51016729	-117.442522	Alive	Mature	B	None	
JT 18	34.51017272	-117.442497	Alive	Not Mature	B	None	
JT 19	34.51064236	-117.442444	Dead	Mature	B	None	
JT 20	34.51064236	-117.442444	Dead	Mature	B	None	
JT 21	34.51064236	-117.442444	Dead	Mature	B	None	
JT 22	34.51064236	-117.442444	Dead	Mature	B	None	
JT 23	34.51064236	-117.442444	Dead	Mature	B	None	
JT 24	34.51082574	-117.442513	Alive	Not Mature	B	None	
JT 25	34.51083017	-117.442508	Alive	Mature	C	None	
JT 26	34.5110517	-117.442478	Dead	Mature	B	None	
JT 27	34.51106176	-117.44249	Dead	Mature	B	None	
JT 28	34.51155168	-117.442415	Alive	Mature	C	None	Has inactive nest in tree
JT 29	34.51152252	-117.442408	Dead	Mature	B	None	
JT 30	34.51152676	-117.442406	Dead	Mature	B	None	

JT 31	34.51208396	-117.442347	Alive	Not Mature	B	None	
JT 32	34.51208423	-117.442345	Dead	Mature	B	None	
JT 33	34.51208446	-117.442344	Alive	Mature	B	None	
JT 34	34.51208357	-117.442356	Alive	Not Mature	B	None	
JT 35	34.51208357	-117.442356	Alive	Mature	B	None	
JT 36	34.51208357	-117.442356	Alive	Not Mature	B	None	
JT 37	34.51209641	-117.442352	Dead	Mature	B	None	
JT 38	34.51209934	-117.442358	Alive	Not Mature	A	None	

4.2.1 Project impacts

The Project proposes to subdivide the two parcels totaling approximately 10 acres into 48 subdivisions with single family residential homes constructed. Project components include clearing, grubbing, grading, paving, utility installation and construction of permanent structures throughout the entire project site.

Since the whole site will be converted to residential subdivisions, there will be direct impacts to the western Joshua trees along the boundaries of the site. Take of western Joshua tree will be inevitable, and a WJTCA incidental take permit (ITP) must be applied for and issued before any western Joshua trees are taken. Additionally, **MM-BIO-1** western Joshua tree in-lieu mitigation fee will require the project to pay a fee to CDFW to offset the removal of western Joshua tree. The project location is within the WJTCA reduced fee area as defined in subsection (d) (CDFW 2024). The Project may also need to comply with the Western Joshua Tree Conservation Act relocation requirements which outlines methods to salvage WJT and provides resources to calculate the number of individuals to move to a recipient site. Table 5 below outlines the number of individuals to be relocated using the different methods; bare root or tree spade.

To avoid taking any rare or protected plant species, **MM-BIO-2** preconstruction rare plant survey will reduce the risk of any inadvertent take of rare or listed plant species by requiring a biologist to clear the site before construction begins.

4.2.2 Avoidance and Minimization Measures

MM-BIO-1 Western Joshua tree inventory and in-lieu mitigation fee: In compliance with the Western Joshua Tree Conservation Act, a formal inventory for western Joshua tree must be completed in accordance with CDFW guidelines. If any western Joshua tree must be removed or relocated due to project activities, an incidental take permit (ITP) must be applied for in consultation with CDFW and an in-lieu mitigation fee must be paid to mitigate for the take of the species.

MM-BIO-2 pre-construction rare plant survey: Within the blooming season (February 15 to May 15) prior to construction start, a pre-construction survey must be completed to determine presence of rare or listed protected plant species. If any rare plants or protected plant species are found, consultation with CDFW will be required and a plan will be developed to protect these species.

4.3 Special Status Bird Species

Table 3 provides a summary of special status bird species reported to occur within the Project region. It lists the protection status as well as identifies how likely it

would occur within the project site. During the survey of the project site and BSA, no listed individuals were observed on site but diagnostic evidence for burrowing owl (*Athene cunicularia)* nesting was found. Additionally, although low quality, habitat does exist for Swainson's hawk (*Buteo swainonii)*, yellow-breasted chat (*Icteria virens),* loggerhead shrike (*Lanius ludovicianus),* and Le Conte's thrasher (*Toxostoma lecontei)*, there is still low potential for their presence at the project site.

4.3.1 Project impacts

The Project proposes to subdivide the two parcels totaling approximately 10 acres into 48 subdivisions with single family residential homes constructed. Project components include clearing, grubbing, grading, paving utility installation and construction of permanent structures throughout the entire project site. Although the habitat is disturbed, it may still provide foraging and nesting habitat for the identified bird species. Since construction work is projected to impact the entirety of the project site, any birds nesting onsite will be impacted. Additionally, construction noise, debris and pollutants will impact any sensitive bird resources outside of the project area. **MM-BIO-3** Preconstruction bird survey and **MM-BIO-4** Preconstruction burrowing owl survey will require qualified biologists to conduct survey prior to construction start. If any nesting birds or sensitive birds are found onsite, a construction buffer will be implemented, and further mitigation and avoidance plans may be required. The proposed mitigation measures will help avoid impacts to nesting birds or sensitive birds.

4.3.2 Avoidance and Minimization Measures

MM-BIO-3 Preconstruction nesting bird survey: If work occurs within nesting bird season (February 1st to August 30th), a qualified biologist will be required to conduct a pre-construction nesting bird survey within 7 days of construction. The survey will include the entire project area and surrounding 500ft. If any active nests are found, a construction buffer will be established, 300ft for passerines and 500ft for raptors. A biologist will monitor the active nest once a week until nesting has ceased, or the fledglings have fledged.

MM-BIO-4 Preconstruction burrowing owl survey: A CDFW protocol burrowing owl survey will be completed by a qualified biologist within 7 days of construction start. If it is determined that burrowing owls are nesting or utilizing the site, work must cease and a burrowing owl plan consistent with CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) will be prepared. The plan will identify burrowing owl habitat that is being disturbed, avoidance measures including construction buffer. Consultation with CDFW will be required if relocation of any burrowing owl will be necessary.

4.4 Special Status Invertebrate Species

Table 3 provides a summary of special status bird species reported to occur within the Project region. Desktop surveys and field surveys did not yield any positive results for habitat or presence of the listed Crotch bumblebee (*Bombus crotchii),* a species of special concern in California.

4.4.1 Project impacts

Since there was no habitat or presence of any listed invertebrate species within the project site and BSA, there will be no impacts on any listed or protected invertebrate species.

4.4.2 Avoidance and Minimization Measures

No avoidance and minimization measure necessary.

4.5 Special Status Fish Species

Table 3 provides a summary of special status fish species reported to occur within the Project region. The literature and database search only found one special status species, the federally endangered, state endangered and state fully protected species Mohave tui chub (*Siphateles bicolor mohavensis)* that may occur within the region. However, desktop surveys and field surveys did not yield any positive results for habitat or presence of the listed Mohave tui chub.

4.5.1 Project impacts

Since there was no habitat or presence of any listed invertebrate species within the project site and BSA, there will be no impacts on any listed or protected fish species.

4.5.2 Avoidance and Minimization Measures

No avoidance and minimization measure necessary.

4.6 Special Status Reptile Species

Table 3 provides a summary of special status reptile species reported to occur within the Project region. Desktop surveys and field surveys found potential habitat for desert tortoise (*Gopherus agassizii)* a state and federally threatened species. No individuals were observed. It was determined that no habitat was present for the western pond turtle (*Actinemys pallida)* and coast horned lizard (*Phrynosoma blainvillii)*.

4.6.1 Project impacts

The Project proposes to subdivide the two parcels totaling approximately 10 acres into 48 subdivisions with single family residential homes constructed. Project

components include clearing, grubbing, grading, paving utility installation and construction of permanent structures throughout the entire project site. Although the habitat is disturbed, there exists low quality habitat for desert tortoise (*Gopherus agassizii).* To avoid impacts to desert tortoise, **MM-BIO-5** will require a pre-construction clearance survey to determine presence of desert tortoise.

4.6.2 Avoidance and Minimization Measures

MM-BIO-5 Preconstruction desert tortoise survey: Prior to construction, a pre-construction survey must be completed by a qualified biologist to determine presence of desert tortoise. If any signs or individuals of desert tortoise are identified, consultation with USFWS and CDFW will be required.

4.7 Special Status Amphibian Species

Table 3 provides a summary of special status reptile species reported to occur within the Project region. Desktop surveys and field surveys found no potential habitat for the two species: arroyo toad (*Anaxyrus californicus)* and California red-legged frog (*Rana draytonii)* as they require suitable aquatic habitats to support their various life stages.

4.7.1 Project impacts

Since there was no habitat or presence of any listed amphibian species within the project site and BSA, there will be no impacts on any listed or protected fish species.

4.7.2 Avoidance and Minimization Measures

No avoidance and minimization measure necessary.

4.8 Special Status Mammal Species

Table 3 provides a summary of special status mammal species reported to occur within the Project region. Desktop surveys and field surveys found potential habitat for pallid bat (*Antrozous pallidus),* western mastiff bat (*Eumops perotis californicus)* and Mohave ground squirrel *(Xerospermophilus mohavensis).* The project site contains potential foraging habitat for the bat species and mammal burrows found onsite indicate suitability for Mohave ground squirrel. Field surveys did not yield any results for any of the listed mammal species.

4.8.1 Project impacts

The Project proposes to subdivide the two parcels totaling approximately 10 acres into 48 subdivisions with single family residential homes constructed. Project components include clearing, grubbing, grading, paving utility installation and

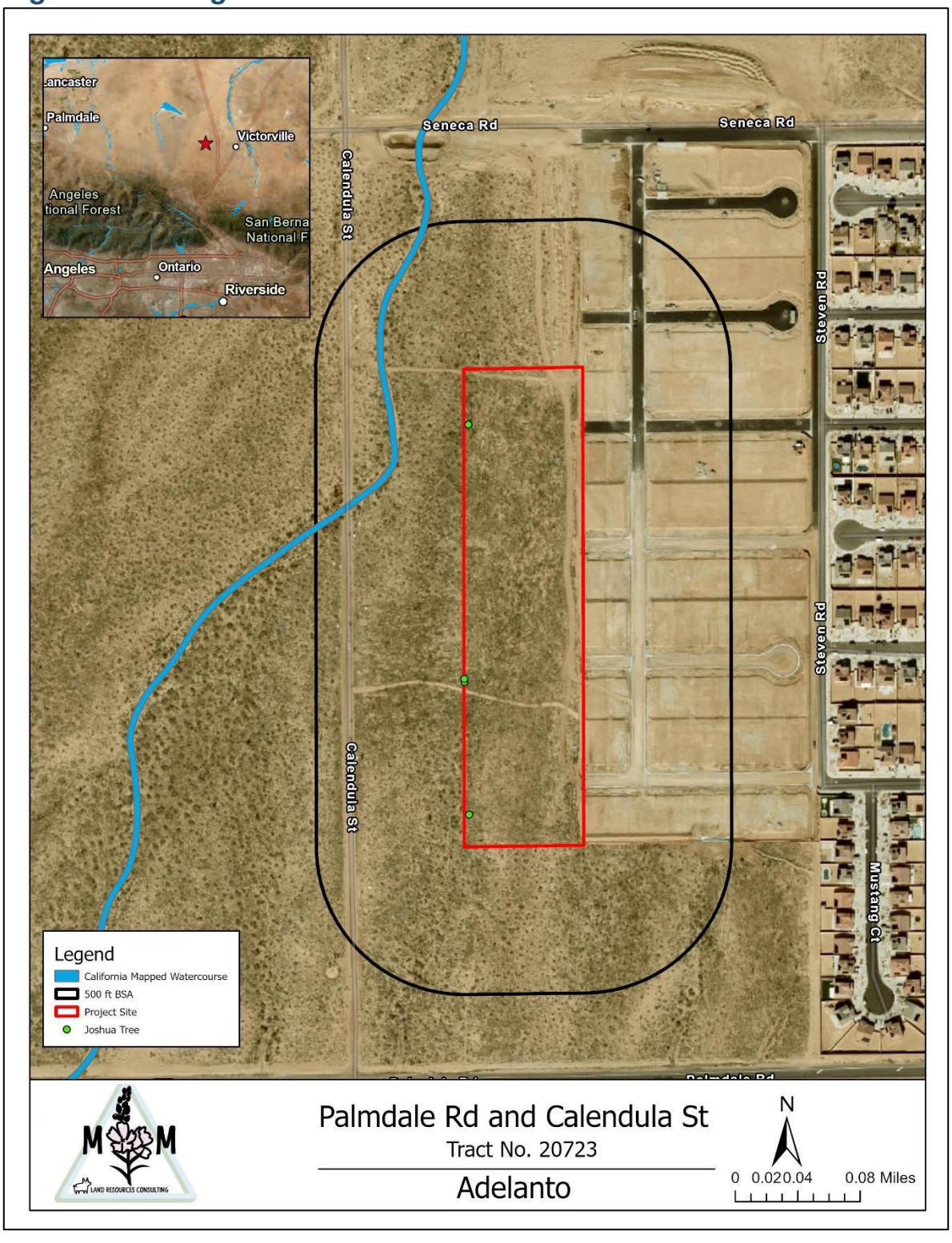
construction of permanent structures throughout the entire project site. Since the project site supports potential habitat for pallid bats, western mastiff bats and Mohave ground squirrel, **MM-BIO-6** pre-construction survey for Mohave ground squirrel and **MM-BIO-7** pre-construction bat survey

4.8.2 Avoidance and Minimization Measures

MM-BIO-6 Preconstruction Mohave ground squirrel survey: Prior to construction, a pre-construction survey must be completed by a qualified biologist to determine the presence of Mohave ground squirrel. If any signs or individuals of Mohave ground squirrel are identified, consultation with USFWS and CDFW will be required before conducting work.

MM-BIO-7 Preconstruction bat survey: Prior to construction, a pre-construction survey must be completed by a qualified biologist to determine the presence of bats within the project site. If any signs or individuals of special status bats are identified, a bat management plan will be drafted which outlines additional surveys and additional measures to avoid impacting the special status bat species.

Figure 5: Biological resources



5.0 Conclusions

The entire proposed project site is classified as disturbed creosote scrub, characterized by sparse creosote brush (*Larrea tridentata)* dispersed throughout the project site. The site is dominated by invasive grasses and bare soil that were introduced due to anthropogenic influences such as nearby residential activity, off-highway vehicles and illegal dumping. Because of the disturbance, the habitat is considered low quality for sensitive or special status species. Field surveys yielded positive identification of western Joshua tree (*Yucca brevifolia)* along the border of the project site with many additional individuals within the 500 foot biological buffer. Additionally, the field survey found evidence of burrowing owl (*Athene cunicularia)* nesting activity within the project area. **MM-BIO-1** and **MM-BIO-4** will require surveys to identify the special status species within the project area and require additional methods to mitigate or avoid impacts to the protected species. Desktop and field surveys also determined that habitat exists for Swainson's hawk (*Buteo swainonii)*, yellow-breasted chat (*Icteria virens),* loggerhead shrike (*Lanius ludovicianus),* Le Conte's thrasher (*Toxostoma lecontei),* desert tortoise (*Gopherus agassizii),* pallid bat (*Antrozous pallidus),* western mastiff bat (*Eumops perotis californicus)* and Mohave ground squirrel *(Xerospermophilus mohavensis).* To avoid any impacts to these species, **MM-BIO-2, MM-BIO-3, MM-BIO-5, MM-BIO-6, MM-BIO-7** will require additional surveys prior to construction to determine presence of the listed species. Construction buffers will be required if any are found additional consultation may be required with the appropriate natural resource agency.

A preliminary jurisdictional delineation was conducted within the project site and surrounding BSA. This included a desktop analysis of aerial imagery and database as well as a field survey. The surveys yielded no evidence of any federal or state jurisdictional wetland or watercourse within the project area. However, a mapped blue lined stream is located within the 500 ft biological study area. Considering the proposed project activities and components, there will be no impact on the riverine feature, or any protected wetlands as defined by section 404 of the Clean Water Act. Additionally, there is no sensitive riparian feature or natural community within the project site.

After analysis of the project site, it was determined that it does not serve as a migratory corridor and wildlife nursery as it is bordered by residential buildings to the east, roadways and other commercial buildings to the south and open space to the north and west. Additionally, the project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan or any other approved local, regional, or state habitat conservation plan.

Works Cited

Baldwin, Bruce G, et al. *The Jepson Manual : Vascular Plants of California*. Berkeley, Calif., University Of California Press, 2012.

California Department of Fish and Wildlife, CDFW. “Natural Communities.” *California Natural Communities List*, 2018, wildlife.ca.gov/Data/VegCAMP/Natural-Communities. Accessed 27 Sept. 2024.

California Invasive Plant Counsil), Cal-IPC . “California Invasive Plant Council.” *California Invasive Plant Council*, www.cal-ipc.org.

CDFW. “CNDDB Maps and Data.” *Ca.gov*, 2019, wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

ebird. “Online Bird Guide, Bird ID Help, Life History, Bird Sounds from Cornell.” *All about Birds*, 2019, www.allaboutbirds.org.

Everett Williams Jameson, and Hans J Peeters. *Mammals of California*. Univ of California Press, 2004.

iNaturalist. “INaturalist a Community for Naturalists.” *INaturalist*, 2023, www.inaturalist.org.

NatureServe. “NatureServe Explorer 2.0.” *Explorer.natureserve.org*, explorer.natureserve.org.

NRCS. “Web Soil Survey.” *Usda.gov*, 2019, websoilsurvey.nrcs.usda.gov/app/.

San Bernardino County. *PROTECTED PLANT PRESERVATION PLAN*. 2021.

Sibley, David. *Sibley Birds. West : Field Guide to Birds of Western North America*. New York, Alfred A. Knopf, 2016.

Stebbins, Robert C, and Samuel M McGinnis. *Field Guide to Amphibians and Reptiles of California*. Univ of California Press, 4 Sept. 2012.

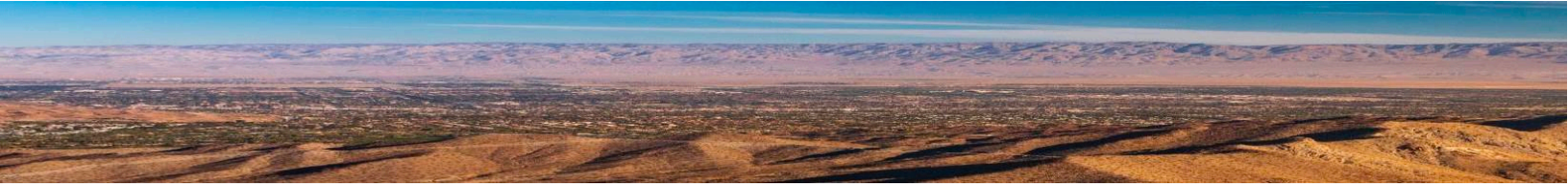
U S Department Of Agriculture. *Field Indicators of Hydric Soils in the United States - a Guide for Identifying and ... Delineating Hydric Soils - Version 8.2, 2018.* 2019.

UC Berkeley. “California Flora, Jepson EFlora Main Page.” *Ucjeps.berkeley.edu*, ucjeps.berkeley.edu/eflora/.

USACE. “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 – California Water Library.” *Cawaterlibrary.net*, 2024, cawaterlibrary.net/document/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/. Accessed 1 Sept. 2024.

USFWS. “National Wetlands Inventory.” *Usgs.gov*, 2022, fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/.



CERTIFICATION:

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

Date: 11/24/2024

Signed: Darian Wong
Wildlife biologist

Marsh and Mallow Land Resources Consulting

Appendix 1: CNDDB Special Status Species List

Selected !Elements by Scientific Name

Cal'iisornilaDepall1ment of !Filsh and Wildlife

Ca'lifomia **l'llstur sl Diversiily** Daiiiaba:s:e

Quccry Criteria,: Quad'"•pom ='c r,Red/>- IS -< an>iA,:h,l;,nlc (3411754],<spar>slyle,="ttik,r:Rcd'>- OR .:JsparvBaldr Mi=, C,34117441'"•1'''' siyi,,z"c::ibr:R..d':,.OR .:J,pa,.,,Vicinl'lill,.(3411T5l)'"ISJI'''' si.yi:e:'coiar.Red'.» OR «lsp ,.Viclon,i i'JW t3'111764).:,p,m 5fyl'''''''cda1:Fl:e,l'>- OR '"• .m,.Sham::rw,**mUIEllllli•** C,34117651'"•1'''' •l lc<="a:iklr:Recf:,. OR <fa.ipa,.,.Slna.d'''' Mc,.mtain., SE! (:1411765).cspan sl:,,io,='o:ili,r:Rod.,. OR ''''I''''''Ph<!lan (3411746}"spa11,sfyi,,="ttik,r:Rclil',. OR .:J,pa,.,.l-leh,•n!bi,, (Il4117S3)"5pan sl:,,I''''o:ilor:Rod.,. OR **.,** • **H** elri.lJ {3<1117 3))

Specie,.	E!IIOTilcml **Cu,dc**	1'°1**Sclcml** Sfat,.,,.	statost...1.ia..	G'lobal Ran'k	st,.ti, Rank	!R:aro,!Plant !R:amk/CDFW SSC **o FP**
,ti.,,.,(pik,r C'<l<lJ!ICil'.U Ooopeo'tl !>a#.	ABNKC12040	crni,	Ne-mo,	GS	S4	Wt.
,lh;t/it,,mjy,;;pit/litlfi, i;il!!lti'YNQ t;m r,,-nd t!,1!11	AR,V,,1J02 OJ2	Propo Threau.nied	No,111,	G:2G3	R	SSC
Ages!'lii,it,s *tl1ro/.or* irIDOlored l::&tc hird	ABli'IBXB>ll020	one	TIYeetened	G1G2	52	55.C
All i/tQmleltil at.ro,JO INd	Nli'l9*BQ*12.j0	!EnaangGlf'OO	Noo	GiOO	S,2	esc
A,i -11,1; p Jl/ '$ i:,al d boal	AIMCC10010	on	N,;,n	G4	$3	.$$<;
Aqt1Ma cmys-•ll'lb,. ""1(100 8a!N	ABNKC22010	cm''	Nomi,	GS	S3	FP
Ai!i;; oW.S k)ng-rmj QWJ	AB!',,ISB 3010	Oii,!;	Noo,;;	GS	S:3?	SSC
.lllt!llt'ile ,ct.rr'Jrwlll#ii oo!ID'Mng awl	ABN00l0010	one	N,:,ne	G'1	52	SSC
B'Qmi;,1is "r,;,1;,,ti/1 Crolch"s bunr,tle, t;e.;.	IIH'l'M24'!13(),	one	Cllfl!liGate laJl(Japg8f'8d	G2	S,2	
B tli>Cl :i; Q..111 !IIII'l''s-hawlt	AeNKC-19070	on	'Tl-l.ii.ll>1n,r;,J	G5'	$4	
c..nby.,"nrd/d;J wnlte pygfl'l)'-IX'r.c:iY	IPDP/iEI06!l,21ll	cm''	Nomi,	G3G4	S3S4	.2
CIJ8'1! **fll**/J;d'JI*p;illitfu;,.* p;Jh,;:I $;;:m Di'-'91!> ptdwt mi;,,,,,,,..	AMA.f'005(]32	o.r,,;;	Noo,;;	GST3T4	S:3S4	
C'lJltll *dJ''nrs* Jl'lO.l!'anl#!! noounl., **11** pbver	ABNNBl)J100	None	N,:,ne	GJ	52	55C
CQQel(i''ffll -8lll'(l 1'llS'™' l'lt /h;, we.iter,, ¢ led *cl.d:oo*	ABNl'':BlJ.iit.li!Z	ihr01Mr-.,	Mf!gl3f'OO	G.!.'iTm	$1	
C,:iryn,g,, C,;,-...n; TD'll'ffif!'l'lCl'8 lli!1-!:'<l'fl!llla1	AIMco:)0010	on	N,;,n	G4	$,I	.$SC
lJ/phnsu!1. mnt,,.,.,.,s,f,,- r.-,oJEWe fJK!r,l,,fll'fl 'Etl	IPDSCR1B1VO	Nem''	Nomi,	G2	S2	1B.2
Eitopjd'DJlll'Jl *tn,ilm* e,tiim.,1$ ·i;il!llli'YNQ t with;,... , ▪	ABP.'Ae:3 3043	E1ldar,:;) e:l	!Elitl!i1 ered	G5,T2	S:3	
cf.&IJK!'ll'lera Mol'Jt/i.15;9pM,. ol'JWJ'' Bo<>ll:,'!, .,.,.,.,;119 pnmro,.,	l'DO\IAl).Jlll52:	one	N,:,ne	GST	53	26.J

-Selected Elements by Scientifle Name

Collf,oml\a Department Qf Filsh and Wildlife

Ca:lifornia l'!lahn.al Diver51it t Daiiaoase

	Element Code	Federal Status	State Status	Global Rank	State Rank	ftil'I 11"l!1 ft.;mlti(:CFW !ilSC orff'
E!Jmop.s pf/m!JlJ eiirl/i;lmr - Fil m-i- . bi, L	AMACD02011	None	None	G4G5T4	S3S4	
co ffIIlXk -.i; i=mi'ii! IiilGOl'I	P.Bf'lKO ·,ocio	t.!oq	N,;o,	(;';.5,	$4	Wl
Go,DJ\il!l'1llS.o.11.:issi:rlJ 00 8 art lorl.'":;e	ARAJiFl'.i o;2	Thrc;u,oood	11-m,.,i,,no,1	—	S2SJ	
ff<"lm/,i YJ!ila .,;,,;./;la .im:!o \ll r,,111:! ,P,C"Jlil · ar;,;l	IIAGASC 234()	CUi'!!	Nooi>	G1	S1	
kte;ri,a >'-iFNts ycllcw-bn,;,sl<>:l chat	ABPJ3X2,.1010	NOIl0	Nooe,	G5	841	
.Jrfflf,Parell' · mr,iibJJl'.9 jun"per n'!;,eali.:. ,.'Di>d-bt:>rin ii,e,;Ue	IIOOU<:0010	on0	Nooe,	<;.2	51	
;!, IIK/oy, I'Ir.i - IDOOE!ihaad sMk.0	,/1,81'18 11):?iiJ	t.!oq	N,;o,a,	G.<i	$4	
lu.....,.f<itl!ri.sPJac-lnlilpn.s BIMIl-l'IBIl<lld Il,;/I	AMAOD'.121'.111'.1	None	NClilei	G4	S3S4	
Lasiurus cinereus t,,;:,Ell'Ybi!t	AfM.OD'J 5(132	Ncu,e	Nooi>	G3G4	S4!	
l.<! N.tll(l,ts·8dllllf'lllll3:II 'l<llf, <! ;a.mm s;,gob1,rnhb, efli ia	PDCAlvlIE011	NOIl0	Nooe,	G5 3	S2	:28..:2
M.WOtitSl .:-a!iiomfowi r.11(1 WM;S\ll; Mohii•!!li'l'B..-ale-	ArAA.rf11001	on0	Nooe,	G5,,	51	
OP-ltlnl'il bi!$l"t. .: v,l'f;. /;l•!l<'l!Yol'ildil eoolil-fol1L bi!8W!rllil	PCiC,b,C(I (1!3-	t.!oq	N,;o,a,	(;;.5.n	$3	
Pl!dl\amclum ""1sl<lu,11m Beaver Dam lllreeoroot	l'DFABfiLJl50	one	NClilei		S2	
PJ;,y,,c-.. m.f.ilniriJ.li"i oost hl)l'Tl0,:I "l!ll'd	AR!\CF12100	NOil!!	Nooi!	Gil	S4l	SSC
pjf'lt/tf,l 11.i!il'!!l slllll'Tlm,,,- t;:m;og	ABPJ3:.:45DJO	NOIl0	Nooe,	G5	51	SSC
f'l8'1:Nfllm! tm i,lllTOnfi!l &;,- Eirigdii>blue bulle	IIUEPJJ;i"l}1Q	0!10	Nooe,	(j1G,2	5182	
,Il',1JNi dr,11)'1WJD CBIll.:mia r.io>h! (ll&i:11	AAA Hl}-11)1!2	ihf'Eli!Wl!lill:l	N,;o,a,	G.ilG3	$2$3	
S1a1ti,,\!am, tiai'.7.11'<11,uj SSJl•, '1U"1ramar,!.lr,a< BOIlJlt!BITI mooll(aln.'i 1!031)	I'DL 1IJI'.IA1	None	NC11i11>	G4T3	S3	
SM ;tl'lii<lrnl.ii 1,,.,,. W-xiblllr	ABPB>:03010	NOil!!	Nooi!	GS.	83	
Siphtll""1li!cMcoror mo.1u 1W.J M<,h., ., 1ui diub	AFCJB1'3D3H	End81'!i!e.:-0d	Ei],19flQi!fe-:I	G<!T1	51	
5,Vl'11:ll'r'.l lmm d"!fio!lii(WI Sllf Ber, idiiiO a!ll<li	PDA5TBIOCO	0!10	Nooe,	<;.2	S2	1EU

	Element Code	Federal Status	State Status	Global R,m k	Stat Rllnk	Riiil" IF'lolillt ftill DfW ialSC orlFP
Toil\08 mm11 ,:,of!f,tl Le Crnll!!'s ilhmsmer	ABFIBK.061()0	one	Nooe,	G4	S3	
1/irw *li>9tlll p /11'!!!* le-ast BEilre 'lirtto	ABPBW01114	Endangered	Endangered			
1/i'rc,o ""1nrar VI!'I:IO	ABPJlWQ 1140	Ncm,	None		S2	
U.0¥"il"rlrophl milM'l'ii,a;J_;; Ma:?hi! '!l•,o,,,ndqp1r,Ql	Af.W-B0515D	Ncu,e	Threatened	G3	S2	

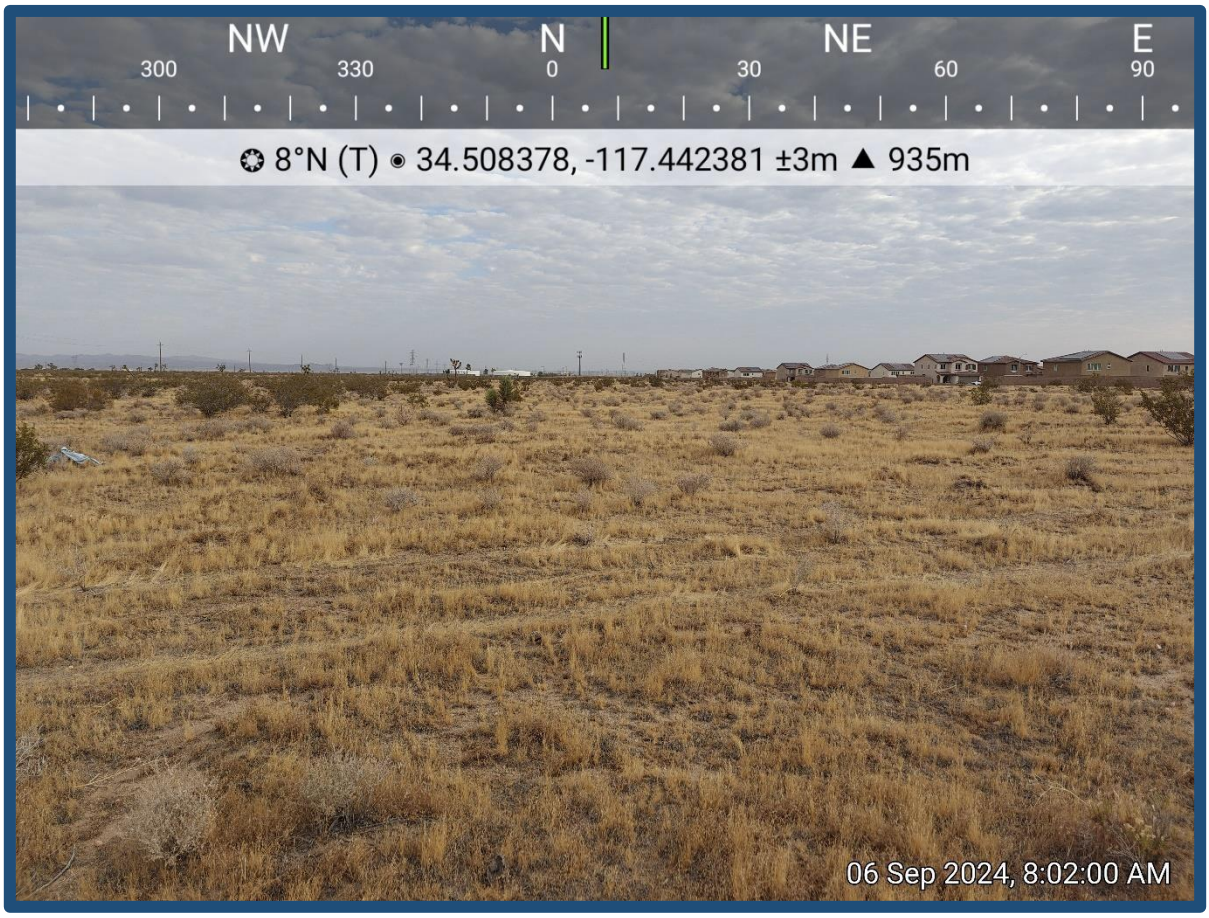
Record Count: 43

Appendix 2: Site Photographs

Photo 1: Taken from Northwest corner of site facing Southeast

Picture 2: Taken from Northeast corner of site facing West

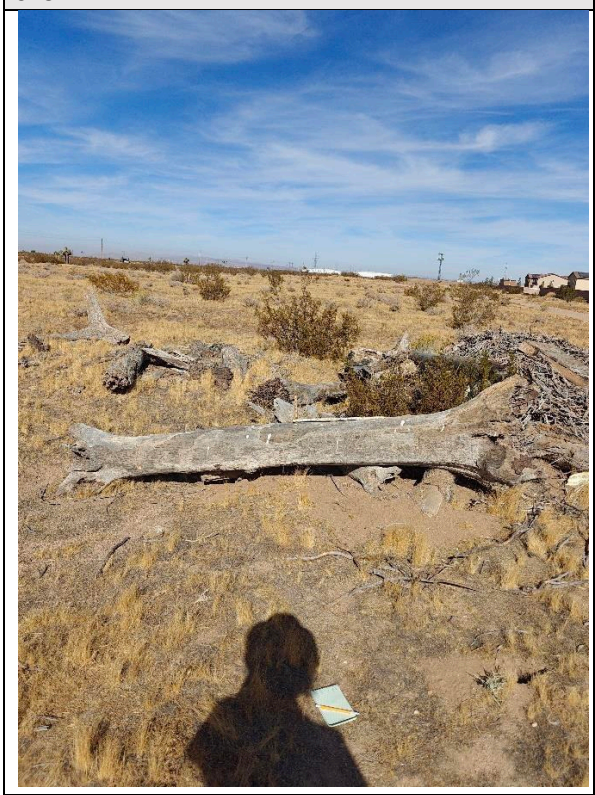
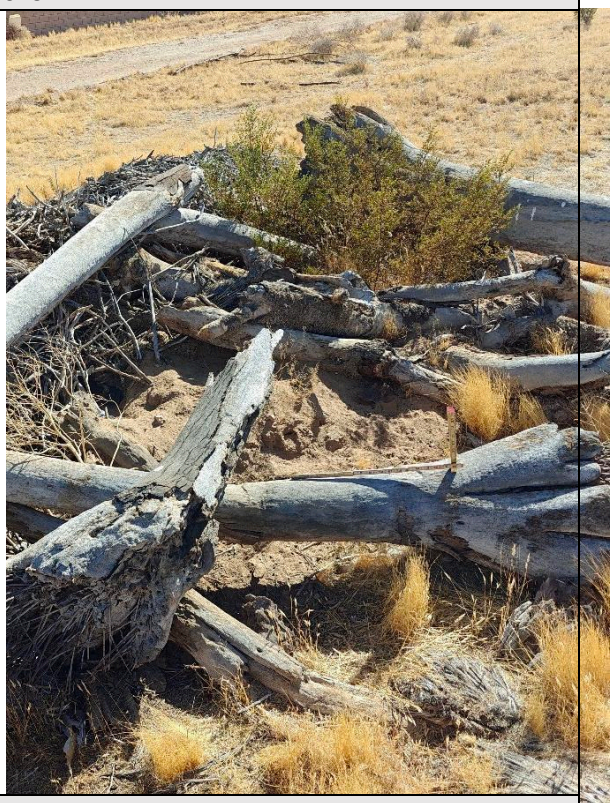
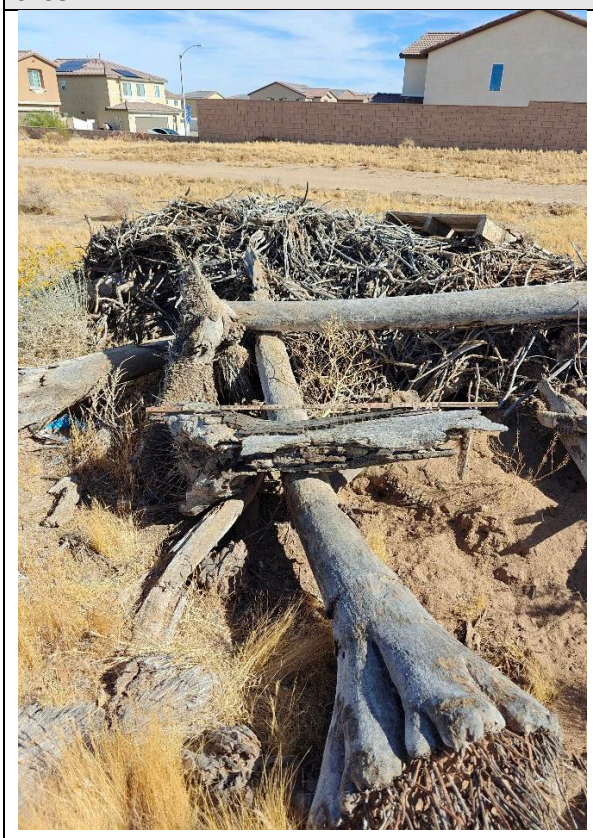
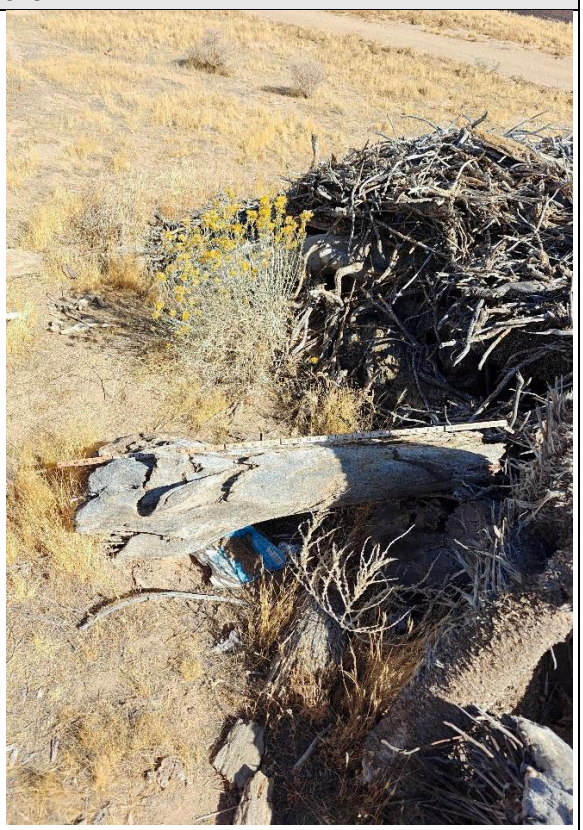
Picture 3: Taken from Southeast corner of site facing Northwest



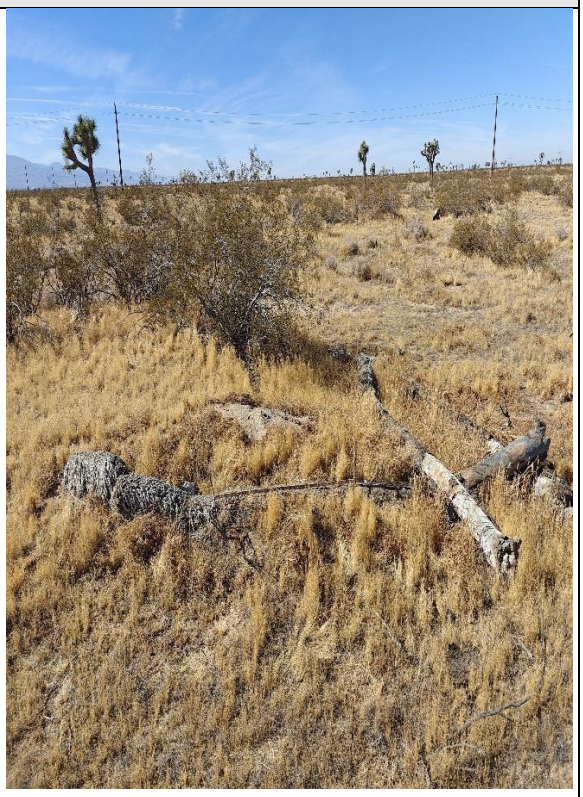
Picture 4: Taken from Southwest corner of site facing Northeast

Appendix 3: Project Plans

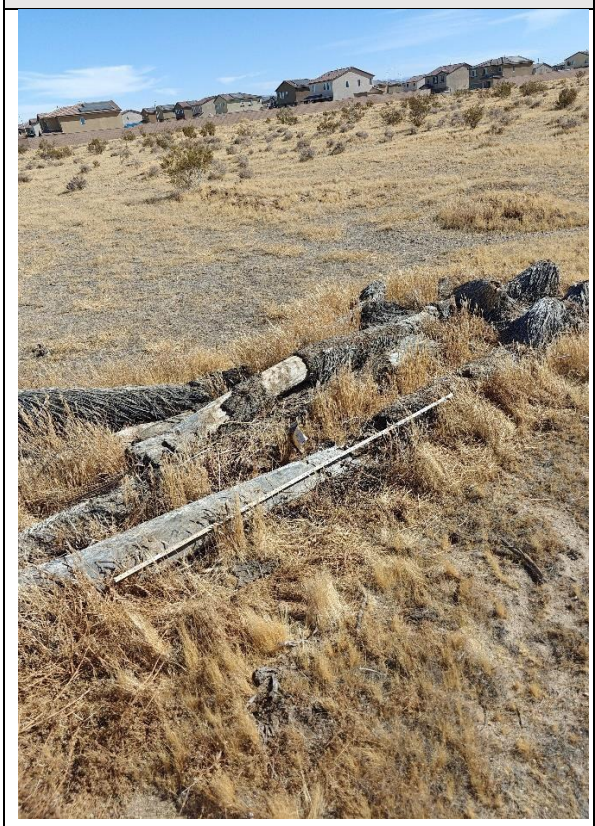
Appendix 4: Western Joshua Tree Pictures

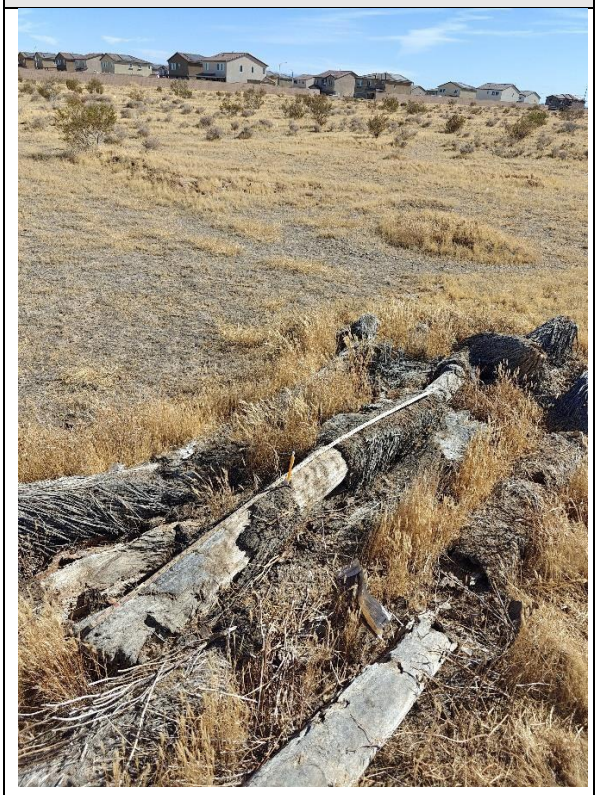
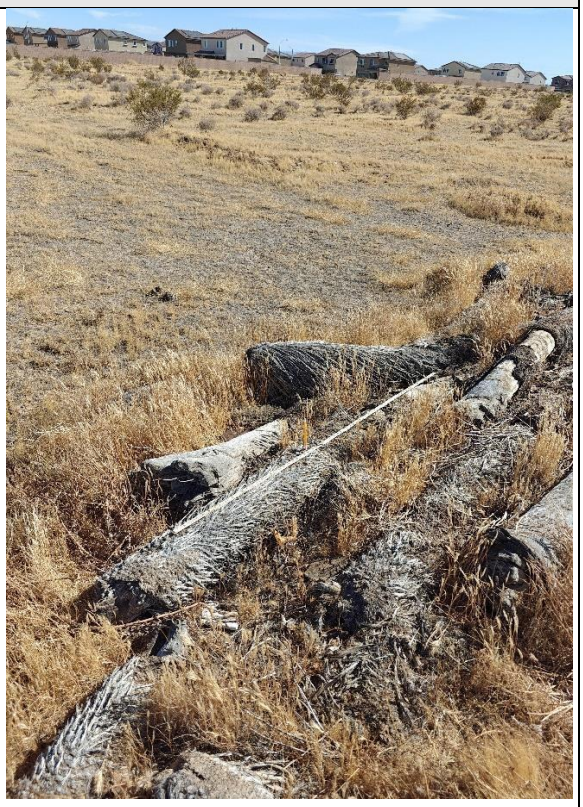
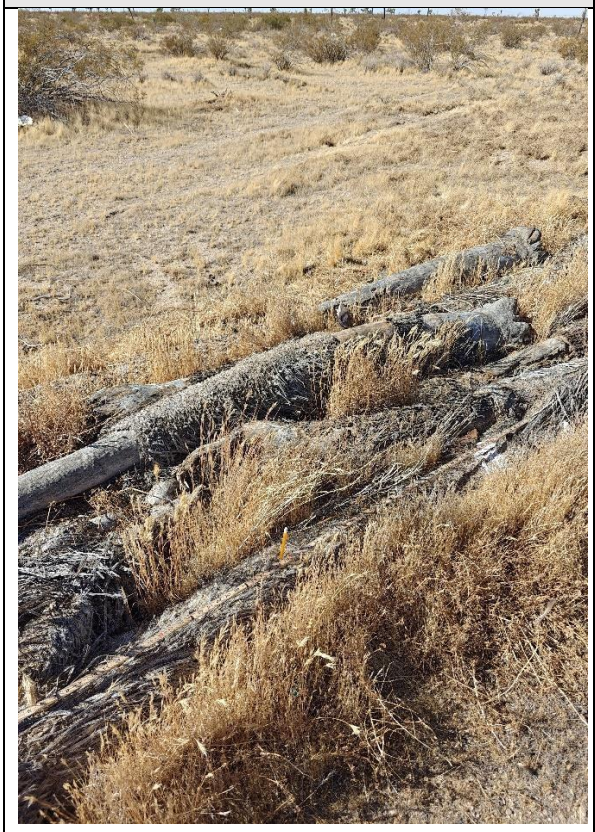
JT01	JT02
	
JT03	**JT04**
	

JT05	JT06
	
JT07	**JT08**
	

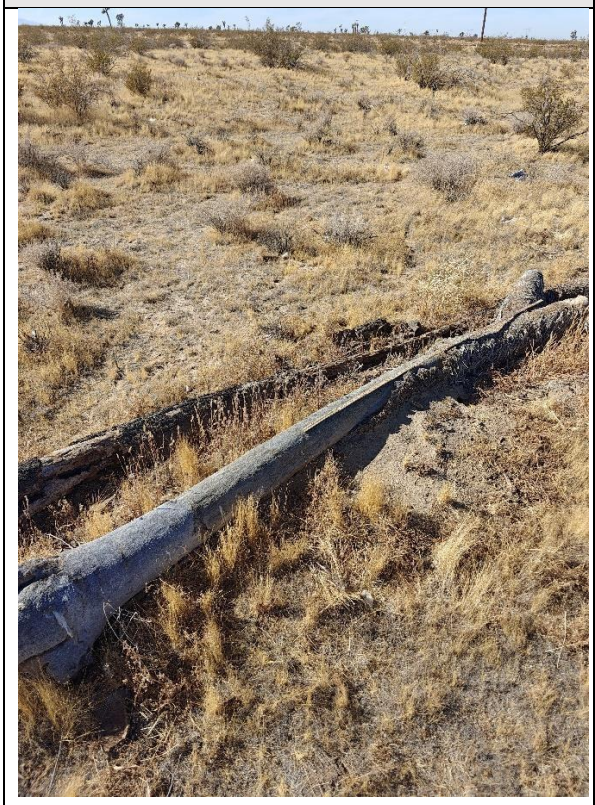
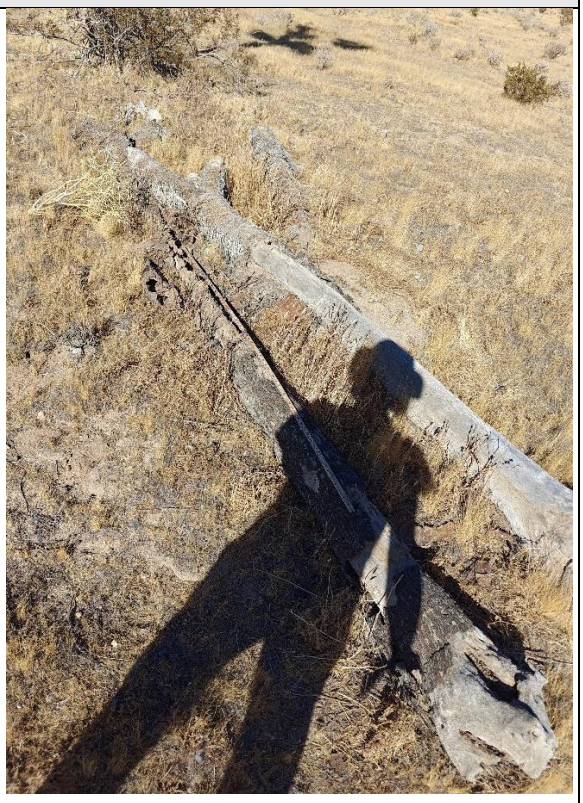
JT09	JT10
	
JT11	**JT12**
	

JT13	JT14
	
JT15	**JT16**
	

JT17	JT18
	
JT19	**JT20**
	

JT21	JT22
	
JT23	**JT24**
	

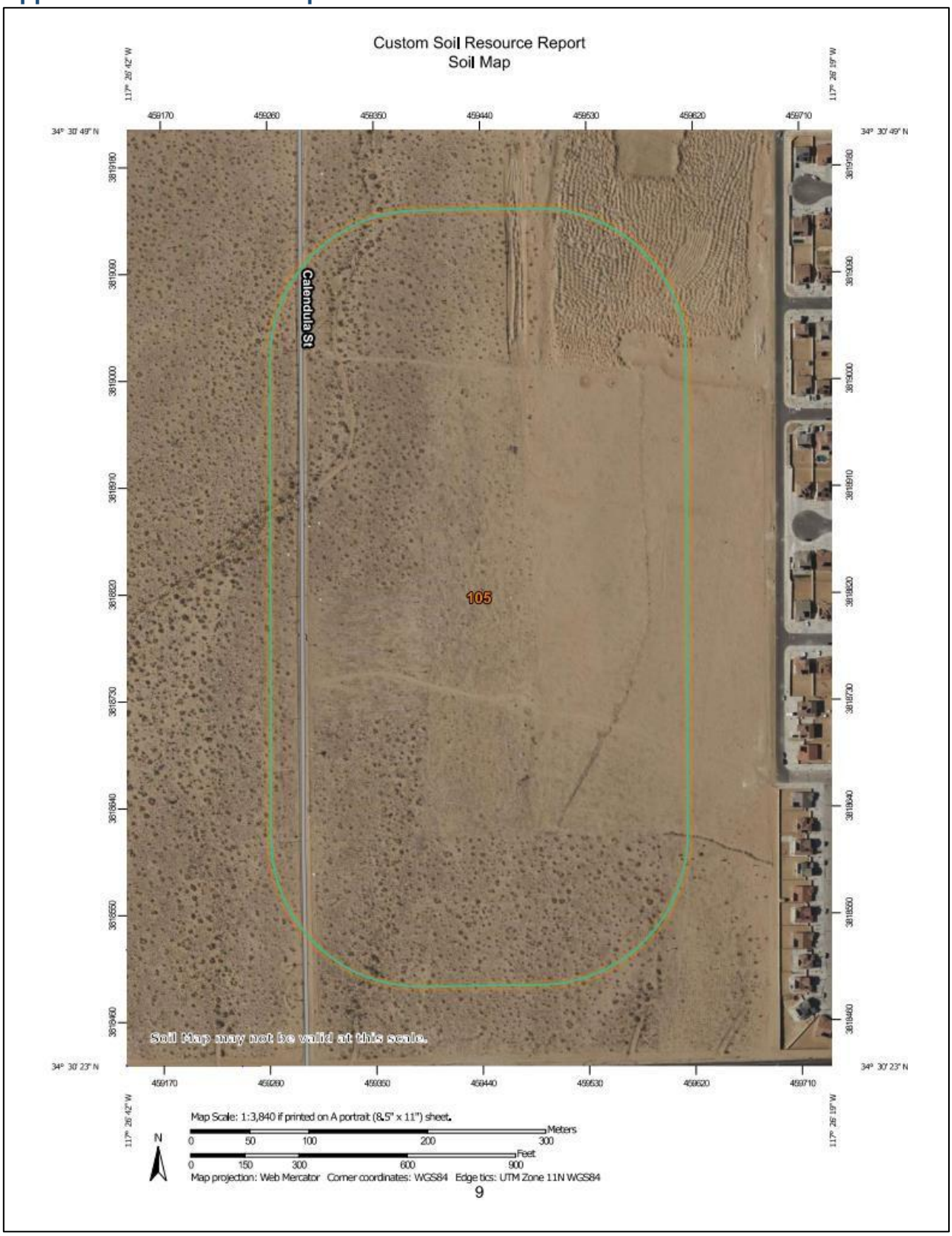
JT25	JT26
	
JT27	**JT28**
	

JT29	JT30
	
JT31	**JT32**
	

JT33	JT34
	
JT35	**JT36**
	

JT37	JT38
	

Appendix 5: USDA Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2022—Jun 12, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

10

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
105	BRYMAN LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES	53.8	100.0%
Totals for Area of Interest		**53.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Bernardino County, California, Mojave River Area

105—BRYMAN LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkr9
Elevation: 2,800 to 3,200 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bryman and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bryman

Setting

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

Typical profile

H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 12 inches: sandy loam
H3 - 12 to 32 inches: sandy clay loam
H4 - 32 to 46 inches: sandy loam
H5 - 46 to 99 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

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

Minor Components

Bryman, gravelly surface
Percent of map unit: 5 percent
Hydric soil rating: No

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

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

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