

**BIOLOGICAL RESOURCES ASSESSMENT  
AND JURISDICTIONAL DELINEATION**  
HI-DESERT WATER DISTRICT  
PHASE II AND PHASE III SEWER COLLECTION SYSTEM PROJECT

Yucca Valley, CA

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Prepared for:

Hi-Desert Water District  
55439 29 Palms Hwy  
Yucca Valley, California 92284

*Prepared September 2019*

Prepared by:



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Certification: I hereby certify that the statements furnished herein, and in the attached exhibits present data and information required for this Biological Resources Report to the best of my ability, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief. This report was prepared in accordance with professional requirements and standards. Fieldwork conducted for this assessment was performed and/or overseen by me. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project proponent and that I have no financial interest in the project.

A handwritten signature in cursive script, appearing to read "Shay Lawrey", is written over a light gray rectangular background.

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Shay Lawrey, Ecologist/Regulatory Specialist

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# 1 INTRODUCTION

Jericho Systems Inc. is pleased to present the findings of the biological resources assessment (BRA) and jurisdictional waters delineation (JD) conducted for the Hi-Desert Water District (HDWD) to construct approximately 64 miles of PVC sewer pipeline, 1,300 manholes and three lift stations facilities in various areas of its service territory for the purpose of decreasing the reliance on septic systems in their service territory. Pipelines are planned to be between 8 inch and 12 inch in diameter and will connect to its existing system.

The purpose of the BRA was to address potential project-related impacts on designated critical habitats and/or any special status species protected under the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), California Department of Fish and Wildlife (CDFW) and/or California Native Plant Society (CNPS). Jericho assessed the Project site for the potential of occurrence of listed species and species of special concern that have been documented in the vicinity and/or whose habitat requirements are present within the Site. Attention was focused on sensitive species known to occur in the locally in the including the State- and federally-listed as threatened desert tortoise (*Gopherus agassizii*) [DT] burrowing owl (*Athene cunicularia*) [BUOW] and Le Conte's thrasher (*Toxostoma lecontei*) both of which are State Species of Special Concern (SSC).

This report also addresses resources protected under the Migratory Bird Treaty Act, federal Clean Water Act (CWA) regulated by the U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB) respectively; and Section 1602 of the California Fish and Game Code (FCG) administered by the CDFW. The purpose of the field Jurisdictional Delineation was to determine the extent, if any, of State and /or federal jurisdictional waters on site.

## 1.1 Background

The HDWD was originally formed in 1962 and grew as a result of the acquisition of various smaller districts and the formation of many assessment districts, primarily on the mesa. Currently, the HDWD has more than 10,000 active service connections. With a total service area of 57-square miles, the District operates 16 storage tanks, 13 wells, and maintains over 297 miles of pipeline. It provides potable water services to the Town of Yucca Valley and a portion of the unincorporated area of San Bernardino County (Figures 1 and 2).

In 2007, the California State Water Resources Control Board (State Water Board) adopted a resolution identifying the Town of Yucca Valley as a top priority for eliminating the use of septic systems. In 2011, the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) amended its Basin Plan to prohibit discharge from septic systems in Yucca Valley.

In 2009, the HDWD adopted a Wastewater Master Plan (Master Plan), prepared by consultant Montgomery Watson Harza (MWH), for the Town of Yucca Valley. which identifies that the District will own and operate a proposed wastewater collection and treatment system in accordance with the Master Plan. As a result, the District developed a Wastewater Reclamation Project to design, construct, and operate a wastewater collection and treatment system, and remove septic systems within its service area and connect customers to its municipal wastewater collection and treatment system

Phase 1 of the plan consisted of several wastewater treatment systems and pipelines in primarily the core or mostly developed, contiguous areas of Yucca Valley. Construction began in 2017 and is anticipated to be completed in December 2019.

The HDWD is currently planning for the construction of Phases II and III which is primarily the only sewer pipelines for the residential areas that are outside of the core, contiguous area of Yucca Valley over the next 10 years. Phases II and III are identified in the HDWD Sewer Master Plan as *Proposed Alignments Included in Master Plan*, *Proposed Alignments Not Included in Master Plan*, and *Deferred Alignments Included in Master Plan* (refer to Sewer Master Plan, Figure 2 - Sewer Master Plan Alignments vs Phase II & III Proposed/Deferred Alignments, and Figure 3A in this document). HDWD's current plans do not include the Phase II and III alignments identified on the Sewer Master Plan Figure 2 as the *Deferred Alignments Not Included in Master Plan*. Figures 3A and 3B in this document depict the current proposed Project.

## 1.2 Project Location

The Phase II and Phase III proposed sewer pipeline alignments generally occur north and south of the main Yucca Valley community (Figures 3A and 3B). For ease of assessment, the proposed areas were divided into the following areas:

**Section 1 – North and South of SR-62, Vicinity of Blue Skies Country Club.** This Project Area contains three main areas. Areas 1 and 2 are north of SR-62 and Area 3 is south of Area 1, south of SR-62. Areas 1 and 2 are generally bounded by SR-62 on the south, the Blue Skies Country Club on the east, Country Club Drive (northeast), and by Ridge Road (westernmost boundary). Within Areas 1 and 2, an east-west ephemeral wash, approximately 85 feet wide, traverses this section, beginning near the golf course, and ends on the desert floor north of the second residential community. A portion of the planned Project alignment requires a new line to traverse behind homes east of Camino Del Cielo Trail adjacent to the country club grounds, across the wash, and connecting to Martinez Trail, south of the country club grounds.

- Area A – This moderately dense residential community is generally bounded by Rockaway Avenue on the west, the country club grounds on the east, Country Club Road on the north. The terrain is relatively flat with newer paved roads. Main arterials include the north-south Pinon Road and Camino Del Cielo Trail.
- Area B – a residential community located approximately 0.25 mile northwest of Area 1, connected to Area 1 by Pinon Road which turns westerly as it exits the Area 1 area. Area 2 is generally bounded by Ridge Road on the west and Canyon Drive on the east and north. The terrain slopes northwest from Ridge Road, increasing in elevation along Pinon Road.
- Area C – south of SR-62. This area is connected by Pinon Drive and is located south of SR-62. It is generally bordered by Pinon Drive on the east, Chaparral Drive on the west, and the ends of two paved streets south of Navajo Drive on the south. Residences in this area are generally clustered near the four main roadways.

**Section 2 – Old Town North (East of Water Canyon).** This Project section comprises mostly of Sunnyslope Drive, between Pioneertown Road on the west and Apache Trail on the east. A portion of the line is also planned for the northern portion of Apache Trail, north to Crestview Drive. The area is primarily sparsely populated by residential use. Most of Sunnyslope Drive is paved, except for near the connecting points at Pioneertown Road and Apache Trail. The segment of Apache Trail between Sunnyslope and Crestview Drive is a dirt road.

**Section 3 – Mid-Town North.** This Project section consists primarily of two residential communities accessed by Sunnyslope Drive (an east-west street). The first area consists only of a few residences north of Sunnyslope Road in the vicinity Grand Avenue (a north-south street). The second area is approximately 0.25 mile to the east, generally bounded by Sage Avenue to the west, Sunnyslope Drive to

the south, Crestview Drive on the north and SR-247 on the east. Several north-south streets north of Crestview Drive include but are not limited to Barberry Avenue, Dumosa Avenue and Joshua Lane. The Project section generally contains non-paved roadways, except for Sunnyslope Drive.

**Section 4 – SR-247 between Crestview Drive (south) and Buena Suerte Road (north).** This approximate 0.84-mile section of Hwy 247 is the north-south connector within the Yucca Valley region and connects SR-62 with Interstate 15. The road is owned and operated by Caltrans.

**Section 5 – Western Hills Estates and Shatin Heights.** This Project section is dominated by scattered residences built within hills and rock outcroppings, bisected by SR-247, with main arterials including Farrelo Road and Bueno Suerte Road. West of SR-247, this area includes Castro Road on the south, the northern portion of Panchita Road on the west, and approximately to Cobalt Road on the north. Roads in this community are generally paved. East of SR-247, the Project area generally includes the paved roads of Bueno Suerte Road on the south, Bandera Road on the east, and Concho Way on the north.

**Section 6 – Warren Way and Paxton Road.** This smaller Project section captures scattered residences along an approximately 0.25 mile segment of Paxton Road, a paved road, and north of Warren Way, a non-paved road. This section lies approximately 0.25 mile northeast of the Yucca Valley airport, and an ephemeral wash exists on the eastern terminus of this segment. The terrain is relatively flat.

**Section 7 – Paradise Valley North of Yucca Creek.** This section consists of a rural residential community with primarily unpaved roads. It is generally bordered by Nelson Avenue on the south, Yucca Mesa Road (paved), on the east, Carmelita Avenue on the west, and the vicinity of Linda Lee Drive and Hide Lane on the north. Conceptual Project plans identify that this community will be connected to the system by Yucca Mesa Road, south to Barron Drive. An ephemeral wash, approximately 160 feet wide, exists under Yucca Mesa Road, between approximately Nelson Avenue and Barron Drive.

**Section 8 – Upper Sky Harbor.** This section is within the southerneasternmost Project area. It is generally bordered by San Andreas Road on the north, Carmelita Circle on the south, Black Rock Canyon Road and Joshua Lane on the west, and Carmelita Circle and Hermosa Avenue on the east. The terrain is relative flat, and the area has many Joshua trees. The area is moderately populated with existing residences. All of the roads are paved, except for short segments along San Marino Drive and Santa Barbara Drive west of Joshua Lane.

**Section 9 – Sky Harbor.** This Project area is generally bounded by San Andres Road on the south, Paloma Avenue on the east, Warren Vista Avenue and Kaiulni Road on the west, and Joshua Drive on the north. This section would be connected to the wastewater system by a segment to be installed in Palomar Avenue between approximately Onaga Trail on the north and Joshua Drive on the south. This community has a higher density of residences than the other Project areas and mostly paved roads; however, Kaiulni Road is unpaved, and few residences exist along Palomar Avenue.

**Section 10 – Communities South of Onaga Trail.** This Section contains four main areas:

- Copper Hills I (portion) contains a mobile home park and scattered, larger homes, one with recreational uses, such as tennis courts. This area is bounded on the north by Mountain View Trail, on the east by Valley Vista Avenue, on the south by the end of Valley Vista Avenue, and on the west by Elata Avenue. This area has paved roads, although the pavement is in poor condition.
- Copper Hills II – a densely populated, newer subdivision near the Joshua Springs Calvary Chapel. The northern boundary is approximately Joshua Lane and Golden Bee Drive, western boundary is approximately Seeleta Avenue, the southern boundary is approximately San Andreas Avenue

(although does not include infrastructure in San Andreas Avenue at this time), and the eastern boundary is approximately Nagels Street to Kingston Avenue. All areas except for the segment along Nagels Avenue are newer, paved roads.

- Alta Loma, Storey Park and Yucca Valley High School - densely populated, located northwesterly of Copper Hills II, and is connected to Copper Hills II by Joshua Lane, a north-south paved road. It is generally bounded on the north by Onaga Trail, generally on the west by Church Street and a western portion of Joshua Lane, and on the south by Kismet Road. This area includes Joshua Lane, from Onaga Trail on the north, to Golden Bee Drive in Copper Hills II, as well as an area between the Yucca Valley High School ballfields and High School Flood Control Channel.

**Section 11 – Juniper Terrace.** Juniper Terrace – moderately populated area, west of Story Park, with few paved roads. It is bordered generally by Mountain View Trail on the north, Acoma Trail on the east, Golden Bee Drive on the south (not connected to Storey Park), and Jemeza Trail on the west. This area will be connected to the system by Kickapoo Trail (a partially-paved north-south street), between Santa Fe Trail on the north to Mountain View Trail on the south.



## 2 PROPOSED PROJECT

In general, the Project includes construction of 64 miles of wastewater pipeline, and 1,300 manholes and 3 lift stations. Due to the fact these areas are generally outside of the main, contiguous community of Yucca Valley, construction within these areas would likely occur in smaller increments, over 10 to 20 years, to allow for time to design for terrain differences and lift stations that would be needed to connect these outer areas to the main system. Other design considerations for these areas are whether the lines will be gravity flow or forced main. These decisions depend on the amount of flow and terrain.

Construction of the areas would likely begin in a fall season, and end the following fall or summer season, depending on the scope of work.

In general, pipeline installation includes trenching to approximately 10 feet below surface to the desired width for the pipeline. The pipeline would be placed, and the trench would be partially backfilled with gravel, as well as the native soil previously excavated. Manholes will be installed at the same time as the mainline piping, using the same open cut trench. The lift stations will be standard manholes with inset pumps, to force wastewater uphill and into other parts of the gravity system. All lift stations will be connected to permanent electrical power with a hook up for a temporary generator connection.

Project construction will require the use of heavy equipment. While the final types and numbers of construction equipment will be determined by the construction contractor, the type of equipment to be utilized may include:

- Excavator
- Trencher
- Pavement Ripper
- Asphalt Truck
- Pavement Roller
- Concrete Trucks
- Hand tools such as jack hammers, ditch diggers

### **3 ENVIRONMENTAL SETTING**

Yucca Valley, San Bernardino County is located in the Morongo Basin portion of the Mojave Desert, approximately 70 miles east of the City of San Bernardino (Figure 1). Access to the region is by State Route 62 (SR-62) which extends west to Interstate 10 and east to the Colorado River and the Arizona state line from Yucca Valley. Land uses in the Project region consists of a mix of open space, residential, commercial, and limited industrial uses.

The only topographic feature within the Yucca Valley area is an ephemeral desert wash area, vegetated with Joshua tree-creosote scrub, intermixed with Mormon tea. A Joshua tree-creosote woodland plant community occurs in the valley bottom and lower slopes and Joshua tree-juniper woodland at the higher elevations on the north and southeast margins of the project area. Desert tortoise are also known to inhabit the general area. The subsurface of the Project region is generally alluvial deposits derived from the Little San Bernardino Mountains to the south. The alluvial fan slopes to the north and southeast at a 1-2 percent gradient with an elevation range of 3,110 to 3,945 feet above sea level. The Pinto Mountain fault (considered active) is located about one-quarter mile north of the treatment plant site. No other geologic hazards are known to occur in the project area.

#### **3.1 Watershed**

The Project alignment lies within the Southern Mojave Watershed (HUC8) which encompasses a land area of roughly 8,867 square miles. The watershed is located in east Riverside and southeastern San Bernardino Counties and borders Mojave Watershed to the north, Whitewater to the west, Salton Sea Watershed to the southwest, and the Imperial Reservoir Watershed to the southeast. There are no major streams or other water bodies in this area of the watershed.

Figure 4 identifies the streams and waterbodies in the HDWD Service area.

#### **3.2 Bioregion**

The Project lies in the geographically based ecological classification known as the Eastern Mojave Basins and Eastern Mojave low ranges and footslopes ecoregions. The goal of regional ecological classifications is to reduce variability based on spatial covariance in climate, geology, topography, climax vegetation, hydrology, and soils. This ecoregion includes broad basins and scattered mountains that generally are low, warm, and dry. This area is a creosote bush-dominated shrub community, comprised mainly of creosote bush, white bursage, Joshua tree and other yuccas, and black brush. The alkali flats will show saltbush, saltgrass, alkali sacaton, and iodine bush, while the mountain areas will have sagebrush, juniper, and singleleaf pinyon. At high elevations, some ponderosa pine, white fir, limber pine, and bristlecone pine can be found.

#### **3.3 Climate**

The climate in the Project region is that of a subtropical upland desert with annual precipitation less than 10 inches, averaging 6.44 inches. Temperatures can vary from 0°F in winter to above 110°F in the summer. Mean summer temperature is 88°F and in winter is 49°F. Air quality in the region is good, but during the summer, transported pollutants from the South Coast Air Basin (SoCAB) can cause ozone concentrations to violate federal and state standards on rare occasions. The project area is located within the Mojave Desert Air Basin (MOAB) and the Mojave Desert Air Quality Management District (MDAQMD) manages air quality for this Basin.

## 4 REGULATORY SETTING

### 4.1 Clean Water Act (CWA)

The CWA is the principal federal law that governs pollution in the nation's lakes, rivers, and coastal waters. Originally enacted in 1972 as a series of amendments to the Federal Water Pollution Control Act of 1948 the Act was last amended in 1987. The overriding purpose of the CWA is to "restore and maintain the chemical, physical and biological integrity of the nation's waters." Discharges of dredged or fill material in Waters of the U.S (WoUS) are regulated pursuant to Sections 404 and 401 of the CWA. The congressional intent of Section 404 of the CWA as articulated in Section 10 is to "maintain and restore the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA gives the USACE and the U.S. Environmental Protection Agency (EPA) regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters." Permits issued by the USACE in California require certification by the State of California that the proposed discharge complies with the requirements of the California Porter-Cologne Water Quality Control Act. These certifications are issued by the State Water Resources Control Board or one of the nine RWQCBs.

Waters are defined broadly under the CWA to include all traditionally navigable waters, including those used or susceptible for use in interstate commerce, including all waters subject to the ebb and flow of the tide, interstate waters, territorial seas, impoundments and tributaries. Waters may also include wetlands and other waters that are not traditionally navigable such as wetlands that are adjacent to traditionally navigable waters. Wetlands are defined under federal regulations as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Pursuant to Section 404 of the CWA, the US Army Corps of Engineers (USACE) regulates the discharge (temporary or permanent) of dredged or fill material into Waters of the US (WoUS), including wetlands. A discharge of fill material includes, but is not limited to, grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

The limit of USACE jurisdiction, excluding wetlands and tidal waters, is delineated using the Ordinary High Water Mark (OHWM), defined in CFR 328.3(e) as:

*...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

### 4.2 Activities Regulated by the State

A federal permit or license cannot be issued that may result in a discharge to WoUS unless certification under Section 401 of the CWA is granted or waived by EPA, the state, or the tribe where the discharge would originate (EPA 2010).

Pursuant to Section 401 of the CWA:

*...any applicant for a federal permit for activities that involve a discharge to WoUS shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal CWA.*

Therefore, before USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver, as applicable. Under Section 401 of the CWA, all activities that are regulated at the federal level by USACE are also regulated at the state level.

Therefore, state jurisdiction usually includes all waters or tributaries to waters that are determined to be WoUS and, similar to WoUS, are typically delineated at the OHWM. State-regulated WoUS are overseen by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs).

However, if waters are determined not to be WoUS, they may still be subject to state jurisdiction based on the Porter-Cologne Act, which are regulated by the SWRCB and the RWQCBs under California's Porter-Cologne Water Quality Control Act (Porter-Cologne). In April 2019, the SWRCB adopted a state wetlands definition and procedures for the discharge of dredged or fill material into waters of the State (collectively, the Procedures). The Procedures are expected to become effective in mid-2020. The Procedures establish a permit process for discharges to both wetland and non-wetland waters of the State. Under Porter-Cologne and the Procedures, "Waters of the State" are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." Under the Procedures, a water of the State is a wetland "if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both, (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate, and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." This definition varies from the federal definition in several respects, most notably that the state considers unvegetated features, such as mudflats or playas, to constitute wetlands.

### **4.3 California Fish and Game Code**

Sections 1600 to 1616 of the California Fish and Game Code require any person, state, or local government agency or public utility (i.e., an entity) to notify the CDFW before beginning any activity that will divert the flow of or substantially modify a river, stream, or lake or result in the deposit of certain waste materials that may pass into a river, stream or lake. Following receipt of such a notification, CDFW determines whether the activity may affect fish and wildlife resources and, if it will, issues a "Lake and Streambed Alteration Agreement" to be entered into by the entity and CDFW and which authorizes the activity in question. CDFW defines the term "stream" as "a body of water that flows perennially or episodically and that is defined by the area in which water currently flows, or has flowed, over a given course during the historic regime [i.e., 'circa 1800 to the present'], and where the width of its course can reasonably be identified by physical or biological indicators." CDFW regulates rivers and streams to their "maximum expression" on the landscape, often including the entire floodplain. *MESA Field Guide, Mapping Episodic Stream Activity* (2011).

### **4.4 Special Status Species Regulations**

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to the continued existence and existing knowledge of population levels.

## **Federal Endangered Species Act**

The USFWS administers the federal ESA of 1973. The ESA provides a legal mechanism for listing species as either threatened or endangered, and a process of protection for those species listed. Section 9 of the ESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. "Take" can include adverse modification of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act. Take authorization can be obtained under Section 7 or Section 10 of the act.

## **California Endangered Species Act**

### *Wildlife and Birds*

The CDFW, administers the CESA. The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. And a rare species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. Rare species applies to California native plants. Further, all raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code (FGC).

### *Special Status Plants*

The California Native Plant Society (CNPS) Plant Ranking System ranges from presumed extinct species, California Rare Plant Rank (CRPR) 1A to limited distribution species now on a watch list (CRPR 4).

## **The Migratory Bird Treaty Act**

Nesting birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C 703-711). The MBTA provides protection for nesting birds that are both residents and migrants whether or not they are considered sensitive by resource agencies. The MBTA prohibits take of nearly all native birds. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

A nest, as defined above, during the portion of the breeding season as defined below, once birds begin constructing or repairing the nest in readiness for egg-laying. A nest is no longer an "active nest" if abandoned by the adult birds or once nestlings or fledglings are no longer dependent on the nest. Nests which are critical to the life history of the individual (e.g., individuals of species that exhibit site fidelity, colonial nesters and raptors) are considered an Active Nest year-round. The breeding season is identified by the period of the year during which courting, breeding, or nesting occurs, or when breeding adult birds or their nestlings or fledglings are at or near a nest. The breeding season varies among bird species and geographic locations.

#### 4.5 Town of Yucca Valley Desert Native Plant Protection

The Town of Yucca Valley Ordinance No. 140 of the Town of Yucca Valley relates to Desert Native Plant Protection which includes native Joshua Trees, Yuccas, and a number of other native desert plants including but not limited to:

- All species of the genus *Prosopis* (mesquites) with stems two (2) inches or greater in diameter or six (6) feet or greater in height.
- All species of yuccas. Those commonly found in Yucca Valley:
  - Joshua trees (*Yucca brevifolia*)
  - Mohave Yucca (*Yucca schidigera*)
  - Our Lord's Candle (*Yucca whipplei*)
- Creosote (*Larrea tridentata*) Rings, ten (10) feet or greater in diameter.
- California juniper (*Juniperus californica*)
- Desert Willow (*Chilopsis linearis*)
- Pinon Pine (*Pinus monophylla*)
- Palo Verde (*Parkinsonia florida* formerly *Cercidium florida*)
- Manzanita (*Arctostaphylos glauca*)

All plants protected or regulated by the California Desert Native Plants Act (i.e., California Food and Agricultural Code 80001 et. seq.) shall be required to comply with the provisions of those statutes prior to the issuance of any Town development permit or land use application approval. The Community Development Director is responsible for the issuance of the required permit.

## 5 METHODS

### 5.1 Literature Review

Prior to conducting the field study, species and habitat information was gathered from relevant databases for the *Yucca Valley North*, *Joshua Tree North*, *Yucca Valley South* and *Joshua Tree South* USGS quadrangles. The purpose of the database searches was to determine which species and/or habitats would be expected to occur along the alignment. These sources include:

- U.S. Fish and Wildlife (USFWS) threatened and endangered species occurrence GIS overlay;
- USFWS Information for Planning and Consultation System (IPaC);
- California Natural Diversity Database (CNDDDB) *Rarefind 5*;
- CNDDDB Biogeographic Information and Observation System (BIOS);
- California Native Plant Society Electronic Inventory (CNPSEI) database;
- Calflora Database;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey;
- USFWS National Wetland Inventory;
- Environmental Protection Agency (EPA) Water Program “My Waters” data layers
- USFWS Designated Critical Habitat Maps
- Town of Yucca Valley General Plan, Biological Resources

Additionally, literature was reviewed regarding biological resources identified in the June 2009, *Initial Study/Environmental Assessment, Hi-Desert Water District Water Reclamation Facility, Wastewater Treatment Plant and Sewer Collection System Project*.

### 5.2 Field Survey

On July 8, 9, 10, August 11, 12, 2019 Jericho biologists Shay Lawrey, C.J. Fotheringham and Christian Nordal conducted a jurisdictional waters/biological resources assessment and focused botanical survey and of the 11 Project sections throughout the Yucca Valley community. The surveys included primarily the roadways, where the pipelines will be constructed, as well as road shoulders and a 150- foot buffer area where accessible and feasible.

Easements off the public roadways that will be needed to construct the Phase II and Phase III pipelines have not yet been identified. Therefore, the surveys were limited to the identified project areas, and buffer areas. The surveyors conducted pedestrian surveys to gain 100 percent visual coverage of the Project area. A handheld global positioning system (GPS) unit was used, and site photographs were taken during the field survey to catalog representative habitat (See attached photos).

The field surveys were also structured in part to also focus on sensitive species known to occur locally – following specific protocols and guidelines listed below.

#### Desert tortoise

Desert tortoise surveys were conducted in accordance with the protocols described in the USFWS’s 2009 “*Desert Tortoise (Mojave Population) Field Manual: (Gopherus agassizii)*,” the 2010 “*Pre-Project Field Survey Protocol for Potential Desert Tortoise Habitats*,” and the August 31, 2017 survey protocol update, “*Preparing for Any Action That May Occur Within the Range of The Mojave Desert Tortoise (Gopherus agassizii)*”. Per the USFWS survey protocol, 100 percent visual coverage of the survey area was achieved by walking 10-meter (30-foot) wide belt transects over the entire Project site wherever there was

potentially suitable desert tortoise habitat present (i.e. creosote bush scrub and/or allscale scrub habitats), to provide sufficient coverage to find signs of desert tortoise use (e.g., scat, burrows, carcasses, courtship rings, drinking depressions, etc. in addition to live tortoises).

The surveyors conducted a 100 percent coverage of any potentially suitable habitat within the Project area in accordance with the USFWS 2010 *Pre-Project Field Survey Protocol for Potential Desert Tortoise Habitats*. It should be noted that these “zone of influence” transects are no longer required as of the 2017 updated protocol. The transect routes were calculated and downloaded to handheld global positioning system (GPS) units that were used to accurately navigate the transects.

### Burrowing owl

During the site assessment, the surveyors also examined natural and non-natural substrates for burrows to determine size, shape, and aspect for suitability for BUOW and to see if any BUOW individuals or sign (molted feathers, cast pellets, prey remains, and owl whitewash) was present.

Wildlife species were detected during field surveys by sight, calls, tracks, scat, or other sign. In addition to species observed, expected wildlife usage of the site was determined per known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. The focus of the faunal species surveys was to identify potential habitat for special status wildlife within the project area. Disturbance characteristics and all animal sign encountered on the site are recorded in the results section of this report.

### Le Conte’s thrasher

Le Conte’s thrasher is palest thrasher; entirely light tan with whiter throat. Undertail coverts peach colored. Bill is dark and strongly curved. Found in dry flat deserts with open ground, often seen running between patches of low bushes. Shy and difficult to see well. Their song similar to other thrashers, often with doubled or tripled notes; tends to be rather slow. Habitat associated with Le Conte’s thrasher is desert areas consisting of sparse saltbush and creosote bush flats and in areas where there are a few slightly larger mesquites or cholla cactus. Pairs remain together at all seasons on permanent territories. In courtship, male may present female with twig or insect. Male sings to defend territory, beginning in mid-winter; nesting may begin in February or even January, but lasts until June in some areas. Nest: Usually placed less than 5' above the ground. Low, dense cholla cactus favored as nest sites; will also nest in saltbush, mesquite, or other low shrubs. Nest (built by both sexes) is a bulky open cup of thorny twigs, lined with rootlets, leaves, plant fibers, sometimes with softer inner lining of plant down.

The to survey methods for Le Conte’s thrasher relied on auditory and visual behavioral cues. The Survey focused on all suitable habitat for this species. Surveys were conducted by sitting or standing at selected vantage points and observing bird activity and behavior, and then walking systematically through the survey area to detect any thrasher presence. Techniques included visually inspecting vegetation and listening for their calls.

### Jurisdictional Delineation

The site was also evaluated for the presence of jurisdictional waters, i.e. waters of the U.S. as regulated by the USACE and RWQCB, and/or streambed and associated riparian habitat as regulated by the CDFW. Evaluation of potential federal jurisdiction followed the regulations set forth in 33CFR part 328 and the USACE guidance documents and evaluation of potential State jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (CDFW, 2010).



The results of Jericho's field surveys are intended to provide sufficient baseline information to the HDWD and, if required, to federal and State regulatory agencies, including U.S. Fish and Wildlife Service (USFWS) and CDFW, respectively, to determine if impacts will occur, quantify those impacts and to identify mitigation measures to offset any impacts.

## 6 RESULTS

### 6.1 Database results

According to the database results for the *Yucca Valley North*, *Joshua Tree North*, *Yucca Valley South* and *Joshua Tree South* USGS 7.5-minute series quadrangle, 45 sensitive species and three sensitive habitats have been documented in the local vicinity. The Database search results are attached for reference as Appendix A and provides a sensitive specie potential to occur on site in tabular form. Figure 5 identifies general species and habitats within the HDWD’s service area from the Town of Yucca Valley General Plan. Figure 6 identifies special species within a 3-mile radius as identified by the California Natural Diversity Database.

The database search identified 11 potentially sensitive birds, 17 plants, three insects, nine mammals, and five reptiles. Of these, the following State and/or federally sensitive species were identified to have a moderate potential to exist within the Project areas.

**Table 1**  
**Summary of Sensitive Species with Moderate Potential to Occur**

<b>Birds:</b>	
<b>Common Name</b>	<b>Scientific Name</b>
Burrowing Owl	<i>Athene cunicularia</i>
Le Conte's thrasher	<i>Toxostoma lecontei</i>
<b>Plants:</b>	
Latimer's woodland-gilia	<i>Saltugilia latimeri</i>
San Bernardino milk-vetch	<i>Astragalus bernardinus</i>
Little San Bernardino Mtns. Linanthus	<i>Linanthus maculatus ssp. maculatus</i>
Robison's monardella	<i>Monardella robisonii</i>
<b>Mammals:</b>	
Desert tortoise	<i>Gopherus agassizii</i>

#### 6.1.1 Critical Habitat

There is no critical habitat for any species within any of the 11 Project areas.

### 6.2 Field Survey Results

The results of the field surveys of each of the 11 Project areas are described in this section. As discussed in the methodology, the surveys included primarily the roadways, where the pipelines will be constructed, as well as road shoulders and a 150-foot buffer area. Easements off the public roadways that will be needed to construct the Phase II and Phase III pipelines have not yet been identified. Therefore, the general habitat discussions are provided as a general guide to sensitive species and habitat that may occur within areas of off-pavement improvements.

Much of the area where pipelines are going to be installed are in developed, urbanized areas of Yucca Valley. The pipeline installation will involve digging up sections of paved roads where no impacts to native vegetation would occur. However, equipment staging may occur in the road shoulders, adjacent to potentially sensitive habitat.

### 6.2.1 Habitat

Vegetation within the broad project area is best categorized as Joshua tree woodland (*Yucca brevifolia* woodland alliance) (Sawyer, Keeler-Wolf, 2018), with diverse species including Joshua tree, creosote bush (*Larrea tridentata*), catclaw (*Senegalia greggii*), burrow weed (*Ambrosia dumosa*), burrobrush (*Ambrosia salsola*), several species of cholla (*Cylindropuntia* spp.), juniper (*Juniperus californica*), several species in the genus *Ericameria*, and California buckwheat (*Eriogonum fasciculatum*). All species observed were within or adjacent to the proposed alignments. There are Joshua trees outside of but adjacent to the road shoulder edges.

### 6.2.2 Sensitive Plants

Seventeen special status plant species were identified in the database searches. Most have no historical occurrences within the Project areas and, based on the results of the field survey, have a low probability of occurring. Of those, four species described below have a moderate potential to occur within all of the 11 Project areas where there are dirt roads or where native habitat is directly adjacent to an alignment where there is presence of potentially suitable habitat.

- San Bernardino milk-vetch (*Astragalus bernardinus*) is found in Joshua tree woodland, pinyon and juniper woodland habitat. The species has a disjunct with occurrences in the new york and Ivanpah mountains and on the desert slopes of the San Bernardino and Little San Bernardino Mountains. It is a perennial herb, often twining among sagebrush. Plants are slender and sparsely leafy, reaching 1/2m in height. Flowers are pale lilac and purple and open between April and June. The species has no state or federal status but is categorized as 1B.2 by CNPS. There are four historical collections (1914-1957) on the north side of Yucca Valley area near the top of the Highway 247 grade and the airport with the exact locations unknown. The species has a moderate probability of occurring within the project area as suitable habitat occurs in all native vegetation impact areas. Springtime surveys are recommended prior to ground disturbing activity in vegetation impact areas where work will occur within the road shoulder, but not in areas of paved roads.
- Little San Bernardino Mtns. Linanthus (*Linanthus maculatus* ssp. *maculatus*), a dicot, is an annual herb that is native to California, and is endemic (limited) to California. It occurs in dunes, Sonoran desert scrub, Mojavean desert scrub, Joshua tree woodland habitat. at desert foot of the transverse and peninsular ranges from Johnson Valley in the north to Anza Borrego State park in the south. It reaches 1-3cm in stature with small white flowers that are open from March through May. The species has no state or federal status but is categorized as 1B.2 by CNPS. There is one occurrences of this species within the broad perimeter of the project vicinity and numerous occurrences locally. The species has a moderate probability of occurring within the project area as suitable habitat occurs in all native vegetation impact areas. Springtime surveys are recommended prior to ground disturbing activity in vegetation impact areas where work will occur within the road shoulder, but not in areas of paved roads.
- Robison's monardella (*Monardella robisonii*) is found in Desert scrub, Pinyon and juniper woodland and on rocky desert slopes, often among granitic boulders. The species has a disjunct

population with occurrences in the Granite Mountains, Sheephole wilderness and on the desert slopes of the San Bernardino and Little San Bernardino Mountains. It is a subshrub to shrub reaching a height up to ½m. Stems appear gray with long-spreading hairs. Flowers are pale rose to pale blue. Flowers are open between June and September. The species has no state or federal status but is categorized as 1B.3 by CNPS. There is one known occurrence of this species within the broad perimeter of the project on the north side of Yucca Valley area believed near the top of the Highway 247 grade but exact location is unknown. The species has a moderate probability of occurring within the project area as suitable habitat occurs in all native vegetation impact areas. Springtime surveys are recommended prior to ground disturbing activity in vegetation impact areas where work will occur within the road shoulder, but not in areas of paved roads.

- Latimer's woodland-gilia (*Saltugilia latimeri*) is found throughout the Mojave desert in Mojavean desert scrub, pinyon woodland and juniper woodland habitats. It is an annual species reaching 5–30cm in height. Flowers are pink to lavender with darker purple in the throat. Pollen is sky blue. Flowers are open March through June. There are known no occurrences of this species within the broad perimeter of the project, but it has been identified locally. The species has a moderate probability of occurring within the project area as suitable habitat occurs in all native vegetation impact areas. Springtime surveys are recommended prior to ground disturbing activity in vegetation impact areas where work will occur within the road shoulder, but not in areas of paved roads.

### 6.2.3 Regionally Protected Plants and Habitat

A number of desert plants are protected under specific sections of the Codes of Regulations for the Town of Yucca Valley and County of San Bernardino. For the Town of Yucca Valley specifically,

- All species of the genus *Prosopis* (mesquites) with stems two (2) inches or greater in diameter or six (6) feet or greater in height.
- All species of yuccas. Those commonly found in Yucca Valley:
  - Mohave Yucca (*Yucca schidigera*)
  - Our Lord's Candle (*Yucca whipplei*)
- Creosote Rings, ten (10) feet or greater in diameter.
- All Joshua Trees.

There are numerous Joshua Trees and Yuccas within the Project areas. Joshua Trees have the potential to be impacted here depending on construction envelope and staging areas.

### 6.2.4 Wildlife

Wildlife species observed or otherwise detected on site during the surveys included droppings from a species of Leporidae [black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*)] were found on site. Identification of mammals within the project area was generally determined by physical evidence rather than direct visual identification. This is because 1) many of the mammal species that potentially occur onsite are nocturnal and would not have been active during the survey and 2) no mammal trapping was performed. Only common desert species accustomed to urban environments are expected to occur within the project area such as coyote (*Canis latrans*), bobcat (*Lynx rufus*), pocket mouse (*Chaetodipus* sp).

## 6.2.5 Nesting Birds

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C 703-711) provides protection for nesting birds that are both residents and migrants whether or not they are considered sensitive by resource agencies. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered a take under federal law. The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

Vegetation suitable for nesting birds does exist within and adjacent to the Project areas. Most birds are protected by the MBTA. In general, impacts to all bird species (common and special status). Avian species observed or otherwise detected on site during the surveys included house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), common raven (*Corvus corax*), and northern mockingbird (*Mimus polyglottos*). No active nests were found during survey.

## 6.3 Sensitive Wildlife and Birds

Habitat assessments were performed for the species identified in Appendix A that are known to occur locally, or where there was potentially suitable habitat.

Potentially suitable habitat for DT, BUOW and Le Conte's thrasher was identified adjacent to each of the 11 Project areas where open habitat exists. Habitat was marginal for DT, BUOW and Le Conte's thrasher. No DT, BUOW or Le Conte's thrasher individuals were identified during the field surveys and no sign of historic or current occupation was observed. These species are currently absent from the project area.

No other habitat exists for the other wildlife species identified in Appendix A.

### 6.3.1 Desert Tortoise

The DT is a State- and federally listed threatened species. Throughout its range, it is threatened by habitat loss, domestic grazing, predation, collections, and increased mortality rates. The desert tortoise is typically found in creosote bush scrub. They are most often found on level or sloped ground where the substrate is firm but not too rocky. Tortoise burrows are typically found at the base of shrubs, in the sides of washes and in hillsides. Because a single tortoise may have many burrows distributed throughout its home range, it is not possible to predict exact numbers of individuals on a site based upon burrow numbers.

In 1992 the BLM issued the *California Statewide Desert Tortoise Management Policy* which included categorizing habitat into three levels of classification. The management goal for Category I areas is to maintain stable, viable populations and to increase the population where possible. The management goal for Category II areas is to maintain stable, viable populations. The management goal for Category III areas is to limit population declines to the extent feasible. In April 1993, the BLM amended the CDCA plan to delineate these three categories of desert tortoise habitat on public lands. With the adoption of the West Mojave Plan (BLM 2005), all lands that are outside Desert Wildlife Management Areas are characterized as Category 3 Habitat, which is the lowest priority management area for viable populations of the desert tortoise.

DT are documented to occur approximately 2.75 miles northwest of the Project site. There are no desert tortoise occurrences documented on site or directly adjacent to it. Per the USFWS desert tortoise Critical Habitat overlay, the project site is not within any USFWS designated desert tortoise Critical Habitat. Furthermore, the project site is not within a BLM designated Desert Wildlife Management Area (USFWS 2011). Therefore, the habitat surrounding the site would be characterized as Category 3 Habitat, per the BLM categorization of desert tortoise habitat on public lands.

The site surveys were structured, in part, to detect DT. The survey consisted of walking transects spaced approximately 10 meters apart to provide 100 percent visual coverage of the project site, as well as 200-, 400- and 600-meter transects when and where possible.

The result of the field survey was that no evidence of desert tortoise was found in the survey area. Therefore, desert tortoise are currently absent within or adjacent to the various Project limits.

### **6.3.2 Burrowing Owl**

The burrowing owl (BUOW) is a ground dwelling owl typically found in arid prairies, fields, and open areas where vegetation is sparse and low to the ground. The BUOW is heavily dependent upon the presence of mammal burrows, with ground squirrel burrows being a common choice, in its habitat to provide shelter from predators, inclement weather and to provide a nesting place. They are also known to make use of human-created structures, such as cement culverts and pipes, for burrows. BUOW spend a great deal of time standing on dirt mounds at the entrance to a burrow or perched on a fence post or other low to the ground perch from which they hunt for prey. They feed primarily on insects such as grasshoppers, June beetles and moths, but will also take small rodents, birds, and reptiles. They are active during the day and night but are considered a crepuscular owl; generally observed in the early morning hours or at twilight. The breeding season for BUOW is February 1 through August 31.

BUOW have disappeared from significant portions of their range in the last 15 years and, overall, nearly 60% of the breeding groups of owls known to have existed in California during the 1980s had disappeared by the early 1990s (Burrowing Owl Consortium 1993). The BUOW is not listed under the State or federal ESA but is considered both a State and federal SSC. The BUOW is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5).

Per the definition provided in the *2012 CDFG Staff Report on Burrowing Owl Mitigation*, “Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey.” Given this definition, the project site and immediate vicinity contains potentially suitable habitat for BUOW. The assessment survey was structured, in part, to detect BUOW. The survey consisted of walking transects spaced to provide 100% visual coverage of the project alignments and survey buffer.

The result of the survey was that no historical or current evidence of BUOW occupation was found in the survey area. No BUOW individuals or sign including pellets, feathers or white wash were observed. Therefore, BUOW are currently absent from the project area.

### Le Conte's thrasher

The results of the avian auditory and visual survey was that no Le Conte's thrasher were observed or otherwise detected. Therefore, Le Conte's thrasher are currently absent from the project area.

## **6.4 Jurisdictional Waters**

Installation of the pipelines may impact the drainage areas at the following locations. Potentially jurisdictional drainages are identified on Figures 14 and 15.

1. Pinion Drive and Rockaway Avenue
2. Camino Del Cielo Trail
3. Benecia Trail/Martinez Trail
4. Desert Gold Drive
5. Farrelo Road
6. Buena Suerte Road
7. Avila Road
8. Paxton Road
9. Yucca Mesa Road
10. Joshua Drive (four drainage crossings)
11. Joshua Lane
12. Bonanza Dr
13. Carlyle Dr
14. Desert Gold Dr
15. El Dorado Dr
16. Joshua Ln (three drainage crossings)
17. Juarez Dr
18. Lisbon Dr
19. Golden Bee Dr
20. Onaga Trail (two drainage crossings)
21. Sage Ave
22. Barberry Ave
23. Pinto Ct
24. San Rafael Rd
25. Mirlo Rd
26. Santa Barbara Dr
27. Warren Vista Ave
28. San Diego Dr (two drainage crossings)
29. San Andreas Rd (two drainage crossings)

### **6.4.1 Clean Water Act Jurisdictional Drainages**

Yucca Valley is a closed system hydrologically and therefore has no significant nexus to a traditionally navigable water. Therefore, none of the Project locations meet the definition of being a federal water of the U.S. where compliance with the Clean Water Act, Section 404, as administered through the U.S. Army Corps of Engineers, would be required. The Regional Water Quality Control board also administers Section 401 of the Clean Water Act. If a Section 404 compliance is not required, then neither will the Section 401 compliance be required.

### **6.4.2 State Jurisdictional Drainages**

All of the drainage features in the Project areas are subject to the California Fish and Game Code Section 1600. The existing road culverts allow passage of water under the roadways, therefore, any Project that

will impact the drainage and/or require culvert modification will require compliance with the California Fish and Game Code Section 1600 requirements prior to construction.

The Regional Water Quality Control Board also regulates activities that involve “discharging waste, or proposing to discharge waste, within any region that could affect WoS” (California Water Code 13260(a)), pursuant to provisions of the state Porter-Cologne Act. WoS are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code 13050(e)). Such waters may include waters not subject to regulation under Section 404 (i.e., isolated features). These waters may include isolated vernal pools, isolated wetlands, or other aquatic habitats not normally subject to federal regulation under Section 404 of the CWA.

Therefore, if compliance with Section 401 of the Clean Water Act is not required for a project, compliance with the Porter-Cologne Act may be required.



## 7 CONCLUSIONS AND RECOMMENDATIONS

In general, the Project components will occur in paved areas. However, equipment staging and work may occur in road shoulders and yet unidentified undisturbed easements where sensitive habitat may occur. Additionally, various nesting birds have the potential to occur.

To protect plant and wildlife habitat and nesting birds in all Project areas, the following is recommended:

- A qualified biologist shall develop a Worker Environmental Awareness Program (WEAP) that will include information on general and special status species within the project area, identification of these species and their habitats, techniques being implemented during construction to avoid impacts to species, consequences of killing or injuring an individual of a listed species, and reporting procedures when encountering listed or sensitive species. Construction crews, foremen, and other personnel potentially working on site will attend this education program and place their name on a sign-in sheet. This briefing shall include provisions of any requirements required for the project. MWA and its contractor shall implement Worker Environmental Awareness Program training on the first day of work and periodically throughout construction as needed.
- Bird nesting season generally extends from February 1 through September 15 in southern California and specifically, April 15 through August 31 for migratory passerine birds. In general, Projects should be constructed outside of this time to avoid impacts to nesting birds. If a Project cannot be constructed outside of nesting season, the project site shall be surveyed for nesting birds by a qualified avian biologist within three (3) days prior to initiating the construction activities. If active nests are found during the pre-construction nesting bird surveys, a Nesting Bird Plan (NBP) will be prepared and implemented. At a minimum, the NBP will include guidelines for addressing active nests, establishing buffers, monitoring, and reporting. The NBP will include a copy of maps showing the location of all nests and an appropriate buffer zone around each nest sufficient to protect the nest from direct and indirect impact. The size and location of all buffer zones, if required, shall be determined by the biologist, and shall be based on the nesting species, its sensitivity to disturbance, and expected types of disturbance. The nests and buffer zones shall be field checked weekly by a qualified biological monitor. The approved buffer zone shall be marked in the field with construction fencing, within which no vegetation clearing or ground disturbance shall commence until the qualified biologist has determined the young birds have successfully fledged and a monitoring report has been submitted reviewed and approved by the HDWD.
- Preconstruction surveys for BUOW and DT should be conducted at least 30 days prior to new ground disturbance within each alignment.
- Pre-construction springtime botanical surveys are recommended in the following areas for the Latimer's woodland-gilia, San Bernardino milk-vetch, Little San Bernardino Mtns. Linanthus, and Robison's monardella.
  - Section 1 – Blue Skies Area
    - Alignment behind houses and adjacent to golf course between Marinez Trail and Country Club Road.
    - Alignment along Quemada Trail between Yucca Trail and Country Club Road.

- Section 2 – Old Town North
  - Alignment along Apache Trail and in undisturbed area to the north.
- Section 3 – Mid-Town North
  - Four Alignments along north of Crest view Drive 1) Sage Road, 2) Barberry Avenue, 3) Dumosa Avenue and 4) Joshua Lane.
  - Two alignments that cross open areas 1) north of the jog in Sunnyslope road between Sage Road and Barberry Avenue and 2) alignment north of Sunnyslop between Condalia Avenue and Joshua Lane.
- Section 4 – State Route 241
  - Entire alignment along Highway 247.
- Section 5 – Western Hills Estates and Shatin Hills
  - Alignment along San Rafael Drive southeast of Oakwood Drive.
  - Alignment along Farrelo Road between Nogales Court and Pinto Court.
  - Alignment along Mirlo Lane off Mirlo Road southwest of Mirlo Court.
  - Alignment along Concho Way off Bandera Road.
- Section 6 – Warren Way
  - Alignment along Berkely Drive north of Paxton Road.
- Section 7 – Paradise Valley North
  - Four alignments along 1) North-South portion of Linda Lee Drive, 2) East-West portion of Linda Lee Drive, 3) Marvin Road and 3) Nelson Avenue.
  - Four open areas 1) undisturbed area of Williams lane between Linda Lee Drive and Marvin Drive, 2) alignment extending from the terminus of Nelson Avenue to Yucca Mesa Road, 3) East-West alignment north of hide Lane west of Marvin Drive and 4) East-West alignment due east of Hide Lane across Marvin Drive.
- Section 8 – Upper Sky Harbor
  - Alignment along Black Rock Canyon Road north of San Marino Drive.
  - Two in open areas 1) east west alignment west of the intersection of Black Rock Canyon Road and San Marino Drive and open area west of terminus Santa Barbara Drive.
- Section 9 – Sky Harbor
  - Alignments along Kaiulani Road south of South of San Andreas Road 2) alignment along San Andreas Road between Kaiulani Road and Frontera Avenue, and 3) Alignment along Balsa Avenue between San Andreas Road and Cortez Drive.

- Section 10 – South of Onaga Trail
  - Alignment along Elata Avenue
  - Alignments 1) along Nagles Road between Elata Ave and Kingston Avenue, 2) along Ross Court between Elata Avenue and Imel Street and 3) along Imel Street South of Ross Court.
  
- Section 11 – Juniper Terrace Area
  - Alignment along Jemenez Trail
  - Alignment along Inca Trail from Joshua Drive to terminus of Inca Trail
  - Alignment along Iona Lane East of Mariposa Trail.
  - Alignment along Fox Trail south of Highland Trail.
  - Alignment along Highland Trail east of Elk Trail to midway between Deer Trail and Bannock Trail.
  - Alignment along Deer trail between Mountainview Trail and Highland Trail.
  - Alignment along Bannock Trail south of Mountainview Trail
  
- For projects where a drainage crossing is required, once a Project has been designed, the HDWD will perform a jurisdictional waters delineation and obtain all applicable State and federal permitting based on the design to address project impacts.
  
- All Projects should be designed to avoid sensitive and/or protected desert plants as per the City of Yucca Valley and the County of San Bernardino. This includes equipment staging and storage areas. In the event said sensitive desert plants cannot be avoided, the HDWD shall conduct and/or prepare a Native Plant Survey and Relocation Plan in accordance with Ordinance No. 140 of the Town of Yucca Valley to be approved by the Town of Yucca Valley as part of the pre-construction planning. The survey should first identify all Joshua Trees and other native vegetation as recognized by the Town ordinance and assess their type and health. The HDWD should then work to find solutions to avoid these resources; if the resources cannot be avoided, HDWD will develop a relocation plan and obtain permits through applicable entities.

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# FIGURES

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**APPENDIX A**  
**POTENTIAL TO OCCUR**

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**Appendix A.  
Sensitive Species Potential To Occur**

Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<b>Birds</b>					
<i>Accipiter cooperii</i>	Cooper's hawk	None-None		Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Asio otus</i>	long-eared owl	None-None		Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Athene cunicularia</i>	burrowing owl	None-None		Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is moderate. Species not found during survey and is currently absent.
<i>Falco mexicanus</i>	prairie falcon	None-None		Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Potentially suitable foraging habitat occurs in the overall local area but not within the 10 Project areas. Occurrence potential is low. Species not found during survey and is currently absent.
<i>Icteria virens</i>	yellow-breasted chat	None-None		Summer resident; 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 ft of ground.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Myiarchus tyrannulus</i>	brown-crested flycatcher	None-None		Inhabits desert riparian areas along the Colorado River, as well as other desert oases and riparian areas NW to Victorville. Requires riparian thickets, trees, snags, and shrubs for foraging perches, nesting cavities, and cover.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Piranga rubra</i>	summer tanager	None-None		Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts. Requires cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Pyrocephalus rubinus</i>	vermillion flycatcher	None-None		During nesting, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, and other open, mesic areas. Nest in cottonwood, willow, mesquite, and other large desert riparian trees.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.

Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<i>Setophaga petechia</i>	yellow warbler	None-None		Riparian plant associations near 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.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Toxostoma lecontei</i>	Le Conte's thrasher	None-None		Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is moderate. Species not found during survey and is currently absent.
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered-Endangered		Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<b>Plants</b>					
<i>Astragalus bernardinus</i>	San Bernardino milk-vetch	None	1B.2	Joshua tree woodland, pinyon and juniper woodland. Granitic or carbonate substrates. 290-2290 m.	There is a moderate probability of occurrence at some locations. Open sites north of Highway 62 need to be surveyed in the spring prior to actual construction. Species not found during survey and is currently absent.
<i>Astragalus lentiginosus var. coachellae</i>	Coachella Valley milk-vetch	Endangered-None	1B.2	Sonoran desert scrub, desert dunes. Sandy flats, washes, outwash fans, sometimes on dunes. 35-695 m.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Astragalus tricarinatus</i>	triple-ribbed milk-vetch	Endangered-None	1B.2	Joshua tree woodland, Sonoran desert scrub. Hot, rocky slopes in canyons and along edge of boulder-strewn desert washes, with Larrea and Encelia. 455-1585 m. There are known no occurrences of this species within the broad perimeter of the project. Specific habitat (Hot, rocky slopes in canyons and along edge of boulder-strewn desert washes) is not present at any pipeline locations. The nearest collections are south and east of the project area.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low. The species is distinct and readily apparent. Species not found during survey and is currently absent.
<i>Berberis fremontii</i>	Fremont barberry	None-None	2B.3	Pinyon and juniper woodland, Joshua tree woodland. Rocky, sometimes granitic. 1140-1770 m. The nearest collection is on the Burns reserve on a site that is generally more mesic than found in proposed pipeline locations.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low. The species is distinct and readily apparent. Species not found during survey and is currently absent.



Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<i>Boechea dispar</i>	pinyon rockcress	None-None	2B.3	Joshua tree woodland, pinyon and juniper woodland, Mojavean desert scrub. Granitic, gravelly slopes & mesas. Often under desert shrubs which support it as it grows. 1005-2805 m. There are known no occurrences of this species within the broad perimeter of the project. Recent collections south in Joshua Tree N.P.	Typical micro habitat for this species is absent from the 10 Project areas. Occurrence potential is low. Species not found during survey and is currently absent.
<i>Boechea lincolnensis</i>	Lincoln rockcress	None-None	2B.3	Chenopod scrub, Mojavean desert scrub. On limestone. 880-2410 m. There is a recent (2004) collection north of the project area near Pioneertown. The site is atypical for the species as there is no limestone in the area.	Habitat similar to the Pioneertown collection is present in open sites north of Highway 62 on either side of the Highway 247 grade. Occurrence potential is low. Species not found during survey and is currently absent.
<i>Boechea shockleyi</i>	Shockley's rockcress	None-None	2B.2	Pinyon and juniper woodland. On ridges, rocky outcrops and openings on limestone or quartzite. 875-2515 m. There are known no occurrences of this species within the broad perimeter of the project. The nearest locations for this species is more than 10 miles NNE in very different habitat than occurs in the local area.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Chorizanthe xanti var. leucotheca</i>	white-bracted spineflower	None-None	1B.2	Mojavean desert scrub, pinyon and juniper woodland, coastal scrub (alluvial fans). Sandy or gravelly places. 365-1830 m. There are known no occurrences of this species within the broad perimeter of the project. The nearest locations for this species is in Morongo Valley and White Water to the west.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Eriastrum harwoodii</i>	Harwood's eriastrum	None-None	1B.2	Desert dunes. Sandy soils. 15-1100m.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Erigeron parishii</i>	Parish's daisy	Threatened	1B.1	Mojavean desert scrub, pinyon and juniper woodland. Often on carbonate; limestone mountain slopes; often associated with drainages. Sometimes on granite. 1050-2245 m. There are known no occurrences of this species within the broad perimeter of the project. Recent collections south in Joshua Tree N.P. on narrow ridge lines.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Grusonia parishii</i>	Parish's club-cholla	None-None	2B.2	Mojavean desert scrub, Sonoran desert scrub, Joshua tree woodland. Sandy or rocky sites. 840-1600 m. There are known no occurrences of this species within the broad perimeter of the project.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is low based on micro habitat being absent from the Project areas. Species not found during survey and is currently absent.

Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<i>Linanthus bernardinus</i>	Pioneertown linanthus	None-None	1B.2	Joshua tree woodland, pinyon and juniper woodland. 1120-1345 m. The species is restricted to the area around and Pioneer Town and the Burns reserve.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is low based on micro habitat being absent from the Project areas. Species not found during survey and is currently absent.
<i>Linanthus maculatus ssp. maculatus</i>	Little San Bernardino Mtns. linanthus	None-None	1B.2	Desert dunes, Sonoran desert scrub, Mojavean desert scrub, Joshua tree woodland. Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 135-1220 m. There is one occurrences of this species within the broad perimeter of the project. The species is ephemeral and tiny.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is moderate. Species not found during survey and is currently absent.
<i>Monardella robisonii</i>	Robison's monardella	None-None	1B.3	Pinyon and juniper woodland. Rocky desert slopes, often among granitic boulders. 610-1615 m. There is one known occurrences of this species within the broad perimeter of the project on the north side of Yucca Valley area believed near the top of the Highway 247 grade but exact location is unknown.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is moderate. Species not found during survey and is currently absent.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None-None	1B.2	Chaparral, Mojavean desert scrub, pinyon and juniper woodland. Rocky or sandy substrate; sometimes in washes, sometimes limestone. 120-2200 m. There are known no occurrences of this species within the broad perimeter of the project.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is moderate. Species not found during survey and is currently absent.
<i>Calochortus palmeri var. palmeri</i>	Palmer's mariposa-lily	None-None	1B.2	Meadows and seeps, chaparral, lower montane coniferous forest. Vernal moist places in yellow-pine forest, chaparral. 195-2530 m.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Streptanthus campestris</i>	southern jewelflower	None-None	1B.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland. Open, rocky areas. 605-2590 m. There are known no occurrences of this species within the broad perimeter of the project. There is one historical collection somewhere northeast of Pioneer Town. The plant communities it is known to occur in are found at higher elevations than the project area.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<b>Insects</b>					
<i>Bombus crotchii</i>	Crotch bumble bee	None-Candidate		Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Paranomada californica</i>	California cuckoo bee	None-None			Not enough information on this species to decide of occurrence potential.

Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<i>Parnopes borregoensis</i>	Borrego parnopes cuckoo wasp	None-None		Known from San Diego, San Bernardino, and Inyo counties.	
<b>Mammals</b>					
<i>Antrozous pallidus</i>	pallid bat	None-None		Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	None-None		Desert border areas in eastern San Diego County in desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is moderate.
<i>Lasiurus cinereus</i>	hoary bat	None-None		Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low. Species is very sensitive to human disturbance.
<i>Lasiurus xanthinus</i>	western yellow bat	None-None		Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low. Species is very sensitive to human disturbance.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None-None		Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Ovis canadensis nelsoni</i>	desert bighorn sheep	None-None		Widely distributed from the White Mtns in Mono Co. to the Chocolate Mtns in Imperial Co. Open, rocky, steep areas with available water and herbaceous forage.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low. Species is very sensitive to human disturbance.
<i>Perognathus longimembris bangsi</i>	Palm Springs pocket mouse	None-None		Desert riparian, desert scrub, desert wash and sagebrush habitats. Most common in creosote-dominated desert scrub. Rarely found on rocky sites. Occurs in all canopy coverage classes.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low.
<i>Taxidea taxus</i>	American badger	None-None		Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs enough food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Typical habitat for this species is absent from the 10 Project areas. Occurrence potential is low. Species is very sensitive to human disturbance. Species not found during survey and is currently absent.

Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<i>Eremarionta morongoana</i>	Morongo (Colorado) desertsnailed	None-None		Known only from a gulch on the north side of Morongo Pass (type locality), San Bernardino County, near Riverside County line. Found under rocks.	Project site is outside of known range. Occurrence potential is low.
<b>Reptiles</b>		None-None			
<i>Anniella stebbinsi</i>	southern California legless lizard	None-None		Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally, in moist, loose soil. They prefer soils with a high moisture content.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is low due to the level of urbanization and human disturbance along and adjacent to each alignment. Species not found during survey and is currently absent.
<i>Crotalus ruber</i>	red-diamond rattlesnake	None-None		Chaparral, woodland, grassland, & desert areas from coastal San Diego County to the eastern slopes of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is low due to the level of urbanization and human disturbance along and adjacent to each alignment. Species not found during survey and is currently absent.
<i>Gopherus agassizii</i>	desert tortoise	Threatened- Threatened		Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is low to moderate due to the level of urbanization and human disturbance along and adjacent to each alignment. Species not found during survey and is currently absent.
<i>Phrynosoma blainvillii</i>	coast horned lizard	None-None		Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Potentially suitable habitat occurs adjacent to each of the 10 Project areas. Occurrence potential is low due to the level of urbanization and human disturbance along and adjacent to each alignment. Species not found during survey and is currently absent.
<i>Uma inornata</i>	Coachella Valley fringe-toed lizard	Threatened- Endangered		Limited to sandy areas in the Coachella Valley, Riverside County. Requires fine, loose, windblown sand (for burrowing), interspersed with hardpan and widely spaced desert shrubs.	The required habitat type is absent from the Project area. Occurrence potential is low. Species is absent.

Scientific Name	Common Name	Federal-State Status	Rare Plant Status	Habitat	Occurrence potential
<b>Habitat</b>					
Desert Fan Palm Oasis Woodland					Absent
Mesquite Bosque					Absent
Mojave Riparian Forest					Absent

## Coding and Terms

E = Endangered    T = Threatened    C = Candidate    FP = Fully Protected    SSC = Species of Special Concern    R = Rare

**State Species of Special Concern:** An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats. Raptor and owls are protected under section 3502.5 of the California Fish and Game code: "It is unlawful to take, possess or destroy any birds in the orders

### Global Rankings (Species or Natural Community Level):

G1 = Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 = Imperiled – At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

G3 = Vulnerable – At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

G4 = Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

G5 = Secure – Common; widespread and abundant.

**Subspecies Level:** Taxa which are subspecies or varieties receive a taxon rank (T-rank) attached to their G-rank. Where the G-rank reflects the condition of the entire species, the T-rank reflects the global situation of just the subspecies. For example: the Point Reyes mountain beaver, *Aplodontia rufa* ssp. *phaea* is ranked G5T2. The G-rank refers to the whole species range i.e., *Aplodontia rufa*. The T-rank refers only to the global condition of ssp. *phaea*.

### State Ranking:

S1 = Critically Imperiled – Critically imperiled in the State because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.

S2 = Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the State.

S3 = Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the State.

S4 = Apparently Secure – Uncommon but not rare in the State; some cause for long-term concern due to declines or other factors.

S5 = Secure – Common, widespread, and abundant in the State.

### California Rare Plant Rankings (CNPS List):

1A = Plants presumed extirpated in California and either rare or extinct elsewhere.

1B = Plants rare, threatened, or endangered in California and elsewhere.

2A = Plants presumed extirpated in California, but common elsewhere.

2B = Plants rare, threatened, or endangered in California, but more common elsewhere.

3 = Plants about which more information is needed; a review list.

4 = Plants of limited distribution; a watch list.

### Threat Ranks:

.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

# **APPENDIX B**

# **PHOTOS**

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