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March 15, 2018

Issa Kattan
2020 Story Avenue
La Habra, CA 90631

RE: BIOLOGICAL RESOURCES ASSESSMENT
TENTATIVE PARCEL MAP (TMP 19911) - APN 3064-491-14
OAK HILLS, CA - SAN BERNARDINO COUNTY

Dear Mr. Kattan,

Jericho Systems, Inc. (Jericho) is pleased to provide the results of the general biological resources assessment of APN 3064-491-14 for the purposes of the Tentative Parcel Map (TMP 19911) to subdivide 5.04 acres into two parcels within the Oak Hills Community Plan/Rural Living Land Use Zoning District (Project). The purpose of the assessment was to identify biological resources that occur within or adjacent to the Project footprint and to determine if project-related impacts may result to those resources.

This report is designed to address potential effects of the proposed Project to designated critical habitat and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) or the California Native Plant Society (CNPS). This report is also specifically focused on the State-Threatened Mohave ground squirrel (*Xerospermophilus mohavensis*) and the State- and federally-Threatened desert tortoise (*Gopherus agassizii*), as identified in the County of San Bernardino Biotic Resources Overlay.

PROJECT DESCRIPTION

This biological resources report was undertaken for the purposes of examining the land associated with APN 3064-491-14 and complying with requirements from the County of San Bernardino for the processing of a Tentative Tract Map for future development.

PROJECT LOCATION

The Project is located in an unincorporated area in San Bernardino County, California, just east of Interstate-15/State Highway-395 split, south of the California Aqueduct and north of the Union Pacific Railroad (Appendix A; Figure 1). The project site is depicted on the *Baldy Mesa* quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 21, Township 4 North, Range 5 West.

METHODS

Data regarding biological resources in the Project area were obtained through literature review and field investigations. Background information was gathered prior to visiting the site in order to determine which

species would be expected in the Project vicinity. For the database search, the *Baldy Mesa* was used. The Project area's proximity to the *Hesperia* and *Cajon* USGS 7.5-minute series quadrangle led to their inclusion in the database search as well.

The California Natural Diversity Database (CNDDB) *Rarefind 5* and the CNPS *Electronic Inventory of Rare, Endangered, and Threatened Plants of California* (CNPSEI) were reviewed for USGS's *Baldy Mesa, Cajon* and *Hesperia* 7.5-minute quadrangles. These databases contain records of reported occurrences of State and/or federally-listed endangered or threatened species, proposed endangered or threatened species, California Species of Special Concern (SSC), or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Project. Literature detailing biological resources previously observed in the vicinity of the Project and historical land uses were reviewed to understand the extent of disturbances to the habitats within the proposed project area.

Jericho biologist Shannon Dye surveyed the Project site on March 13, 2018. Plant communities were evaluated for their potential to support sensitive plant and wildlife species. The site was surveyed via pedestrian survey, with transects placed every 50 feet (15 meters) to ensure 100 percent visual coverage of the site. A 200-foot buffer was also surveyed to identify if there were adjacent occurrences. Particular attention was given to burrows, which were evaluated with regard to size, tracks, and other markings for their potential to house sensitive species.

DATABASE RESULTS

According to the CNDDB, 33 sensitive species (20 vertebrate species, 12 plant species, and 1 invertebrate species) have been documented to occur in the *Baldy Mesa, Cajon* and *Hesperia* USGS 7.5-minute series quadrangles. Refer to Appendix C, Potential to Occur Table, for a complete list of the sensitive species documented within the *Baldy Mesa, Cajon* and *Hesperia* quads. The attached table also identifies the potential for each species to occur on or near the project site.

Critical Habitat

There is no critical habitat present within the Project site. The nearest critical habitat is approximately 7 miles to the south, and is for arroyo toad (*Anaxyrus californicus*) associated with the Mojave River in the foothills of the mountains.

FIELD RESULTS

The land to the north, south, and east is developed into residential plots, and the western boundary is a dirt road and then an adjacent vacant lot.

Habitat

The Project site habitat is characterized by burrobush (*Ambrosia salsola*), rubber rabbitbrush (*Ericameria nauseosa*), Joshua trees (*Yucca brevifolia*), and California juniper (*Juniperus californica*).

Several bird species, including song sparrow (*Melospiza melodia*), raven (*Corvus corax*), white-crowned sparrow (*Zonotrichia leucophrys*), and California towhee (*Melozone crissalis*), were observed on the project site. Reptiles observed onsite include side-blotched lizard (*Uta stansburiana*) and desert night lizard (*Xantusia vigilis*), and mammals observed include California ground squirrel (*Otospermophilus beecheyi*) and desert cottontail (*Sylvilagus audubonii*).

Special Status Species

Species of particular interest to the regulatory agencies that occur on habitat similar to that found on the project site include Mohave ground squirrel, desert tortoise, and burrowing owl (*Athene cuniculara*; BUOW). Figure 3 identifies the most recent documented occurrences for desert tortoise and Mohave ground squirrel.

Mohave Ground Squirrel

The Mohave ground squirrel is a State-listed threatened species. This small, grayish, diurnal ground squirrel is endemic to two million hectares in the western Mojave Desert. It typically inhabits sandy soils of alkali sink and creosote bush scrub habitat. Mohave ground squirrel forage on leaves and seeds and aestivate/hibernate for long periods of the year. Plants documented as forage for this species include: fiddleneck (*Amsinckia tessellata*), allscale (*Atriplex canescens* and *A. polycarpa*), desert holly (*A. hymenelytra*), coreopsis (*Coreopsis* sp.), spiny hopsage (*Grayia spinosa*), winterfat (*Krascheninnikovia lanata*), wolfberry (*Lycium andersonii*), Joshua tree (*Yucca brevifolia*) and the seeds of Joshua tree. It is suspected that Mohave ground squirrel forage on the plant species with the highest water content available at the time.

Findings: Although a focused Mohave ground squirrel trapping survey was not performed, Jericho conducted a Mohave ground squirrel habitat suitability assessment of the subject parcel. The habitat assessment included a pedestrian field assessment, review of reported occurrences of the Mohave ground squirrel in the region (CNDDB, 2018), and adherence to CDFW's criteria for assessing potential impacts to the Mohave ground squirrel. The criteria questions are as follows:

1. *Is the site within the range of the Mohave ground squirrel?;*

2. *Is there native habitat with a relatively diverse shrub component?; and*

3. *Is the site surrounded by development and therefore isolated from potentially occupied habitat?*

The subject Project site is within the historic range of the Mohave ground squirrel but is located outside, to the south, of the Mohave ground squirrel Conservation Area set forth in the West Mojave Plan (BLM 2005). As per the CNDDB, there are two recent and historic Mohave ground squirrel occurrences documented in the *Baldy Mesa, Cajon,* and *Hesperia* quads. The nearest occurrence of Mohave ground squirrel was documented in 2005, approximately 1.8 miles to the northeast of the Project site, where one individual was found just north of the California Aqueduct and west of the Interstate 15 (I-15) Freeway. Several protocol Mohave ground squirrel trapping grids were sampled in the vicinity of the Project site between 1998 and 2012. Mohave ground squirrel were not detected and were considered absent during those trapping sessions (Leitner 2015). The near vicinity has been surveyed to protocol level on numerous occasions yet there is no compelling evidence showing that Mohave ground squirrel occur or have occurred recently in the Project vicinity.

The habitat on site is dominated by burrobush, rubber rabbitbrush and creosote, with California juniper present as well. Although two small Joshua trees and one boxthorn (*Lycium* sp.) were found on site, the project area is devoid of any other plant species that Mohave ground squirrel are known to forage on (i.e. fiddleneck, allscale, desert holly, coreopsis, spiny hopsage, or winterfat).

Additionally, the Project site is within a mostly developed area and relatively isolated from any contiguous areas of suitable Mohave ground squirrel habitat. The Project site is surrounded by development on the north, south, and west sides of the site. Furthermore, the California aqueduct and I-15, which are located approximately 1.5 miles north and 1.7 miles east, respectively, both serve as physical barriers between the Project site and the nearest documented Mohave ground squirrel occurrence (Figure 4).

Therefore, the Project site would not be considered suitable to support Mohave ground squirrel for the following reasons:

1. *Except for two small Joshua trees and one boxthorn, no other plant species that Mohave ground squirrel are known to forage on occur on site;*

2. *The Project site is almost completely isolated, due to surrounding development, and is separated from any documented Mohave ground squirrel occurrences in the vicinity by the California aqueduct and I-15, both of which are physical barriers to Mohave ground squirrel movement; and*

3. *Despite numerous protocol-level trapping surveys conducted between 1998 and 2012, Mohave ground have not been detected in the project vicinity, except for one documented occurrence from 2005, which is separated from the Project site by the California aqueduct, approximately 1.5 miles north of the site.*

Thus, the Project site would not be considered suitable to support Mohave ground squirrel and this species is not likely to occur within the Project site or surrounding area.

Desert Tortoise

Desert tortoise are listed as Threatened under both the CESA and the ESA. Desert tortoise are known to occur in the general vicinity of the project site, and marginally suitable habitat exists on the project. However, the known occurrences are south of the Union Pacific Railroad, which serves as a barrier to desert tortoise movement from their location south of the railroad to the Project site. The survey of the Project site did not locate any signs of desert tortoise, or burrows of sufficient size or appropriate aspect. Therefore, there are no desert tortoise on the Project site, and no desert tortoise are expected to occur.

Burrowing Owl

BUOW are a State Species of Special Concern and are protected federally under the Migratory Bird Treaty Act. The pedestrian survey of the site was designed to visually detect BUOW and/or sign of BUOW use of the project site. No BUOW individuals or sign, including feathers, casting, whitewash, or burrows were observed in the survey. Suitable burrows were observed on the project site, however, and suitable habitat does exist on the project site. The nearest recorded BUOW is less than 1 mile to the southwest, in the adjacent open space (Figure 3).

CONCLUSIONS

<u>Special Status Species</u>

No State- and or federally-listed threatened or endangered species were observed on the project site and none are expected to occur. The Project site is not suitable to support desert tortoise or Mohave ground squirrel and focused protocol-level surveys for these species are not warranted or recommended.

BUOW were not observed on the project site. However, they do have the potential to move into the project area, as suitable habitat exists onsite. As such, should future development occur on this site, further BUOW surveys are recommended to ensure no BUOW individuals have moved onto the site in the intervening time. Likewise, several Joshua trees were observed onsite. These are protected under County ordinances, and relocation permits would be needed for development to occur. There are two large Joshua trees within the project area (Figure 2), with several scattered seedlings growing throughout the site.

Critical Habitat

No critical habitat exists on the project site. No action would be required.

Migratory Birds

Migratory birds that are not sensitive to human disturbance have the potential to occur on the project site. Nesting habitat exists onsite, and nesting bird surveys prior to ground disturbance are recommended should future development occur.

CERTIFICATION

I hereby certify that the statements furnished herein, and in the attached exhibits present data and information required for this analysis 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 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.

_____
Shay Lawrey, Ecologist/Regulatory Specialist

Appendices:

Appendix A. Figures
Appendix B. Site Photographs
Appendix C. Potential to Occur Table

Figure 1. Regional and Site Vicinity

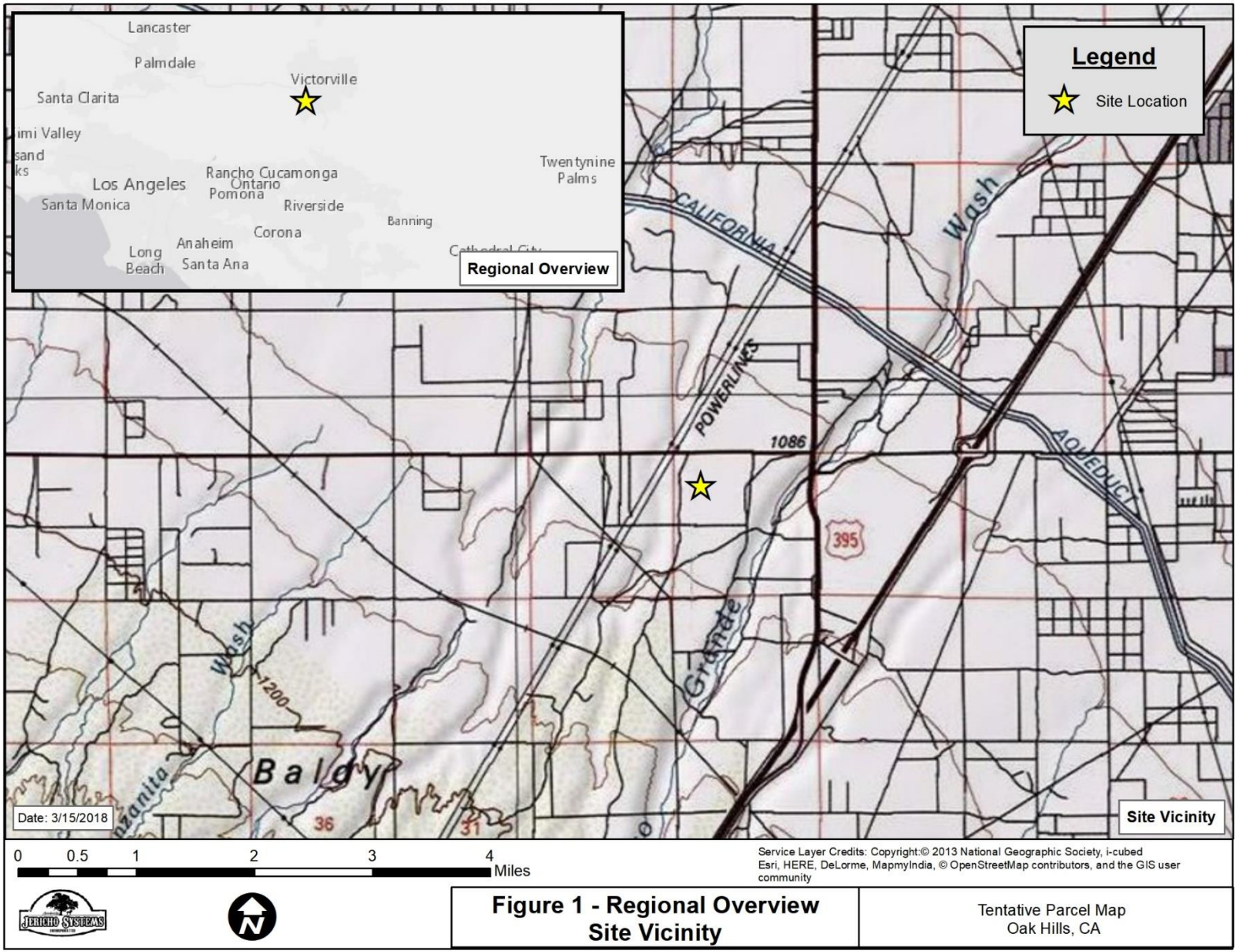

Figure 2. Site Aerial and Joshua Tree Locations

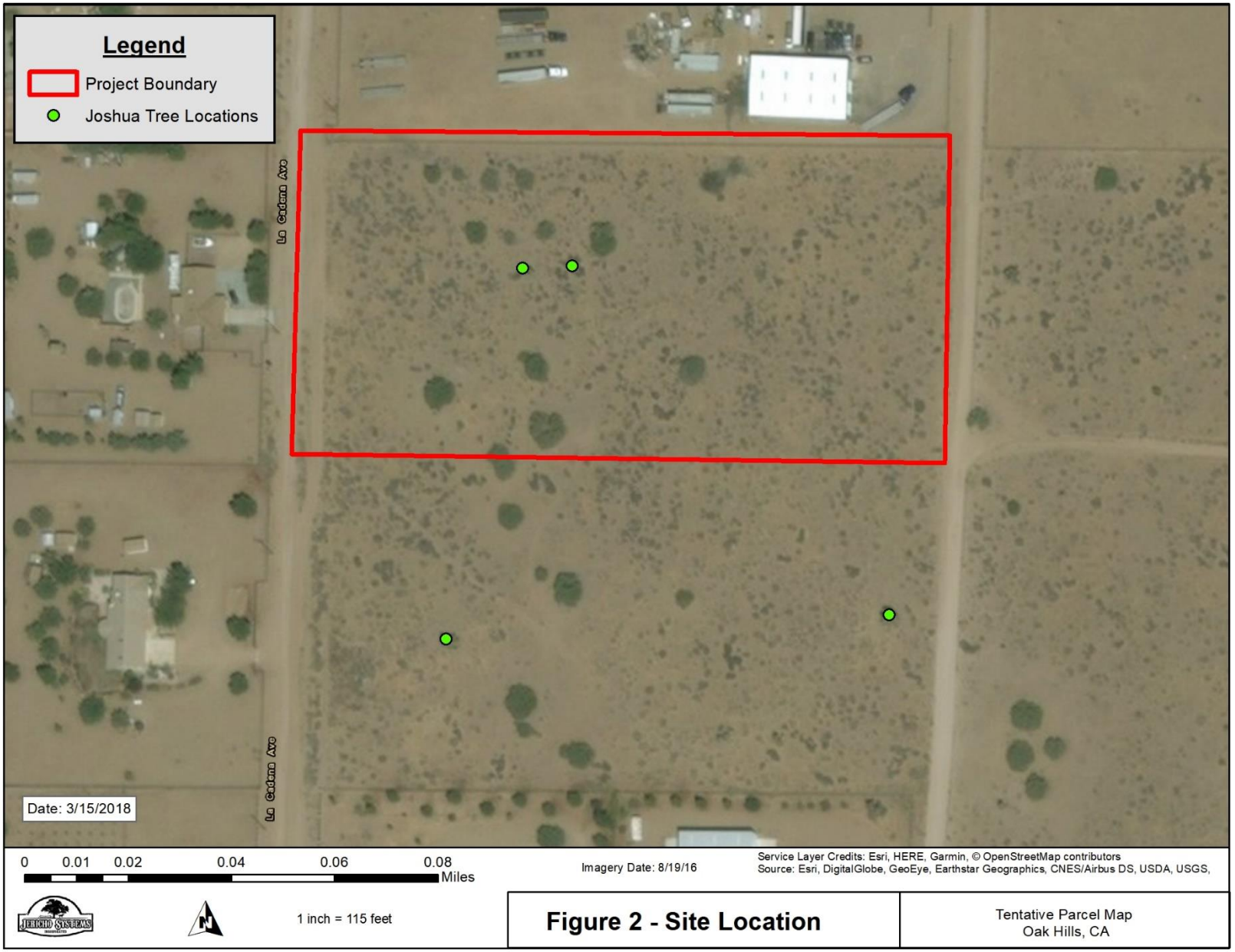

Figure 3. BUOW and Desert Tortoise Locations

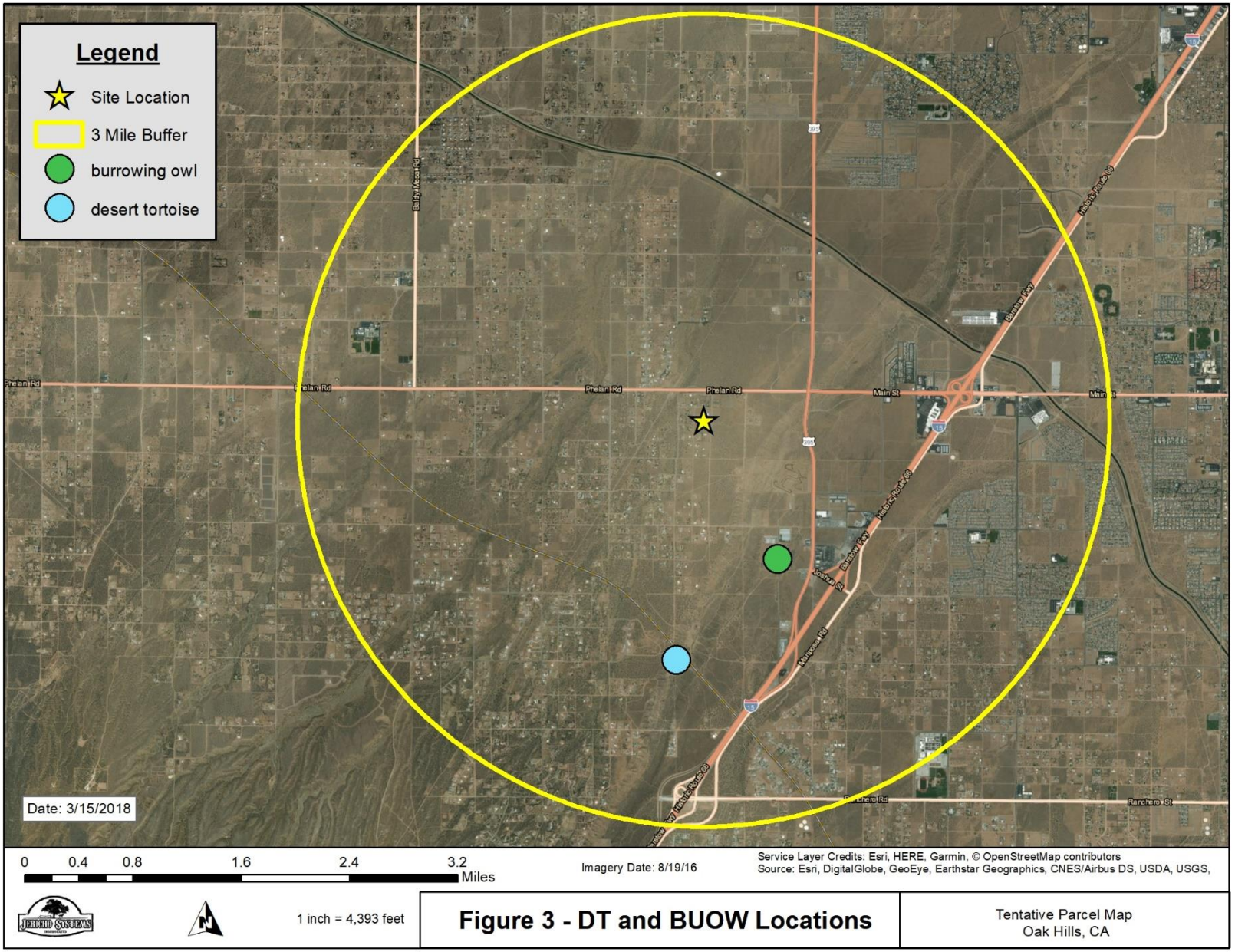

Figure 4. Mohave Ground Squirrel Locations and Barriers to Movement

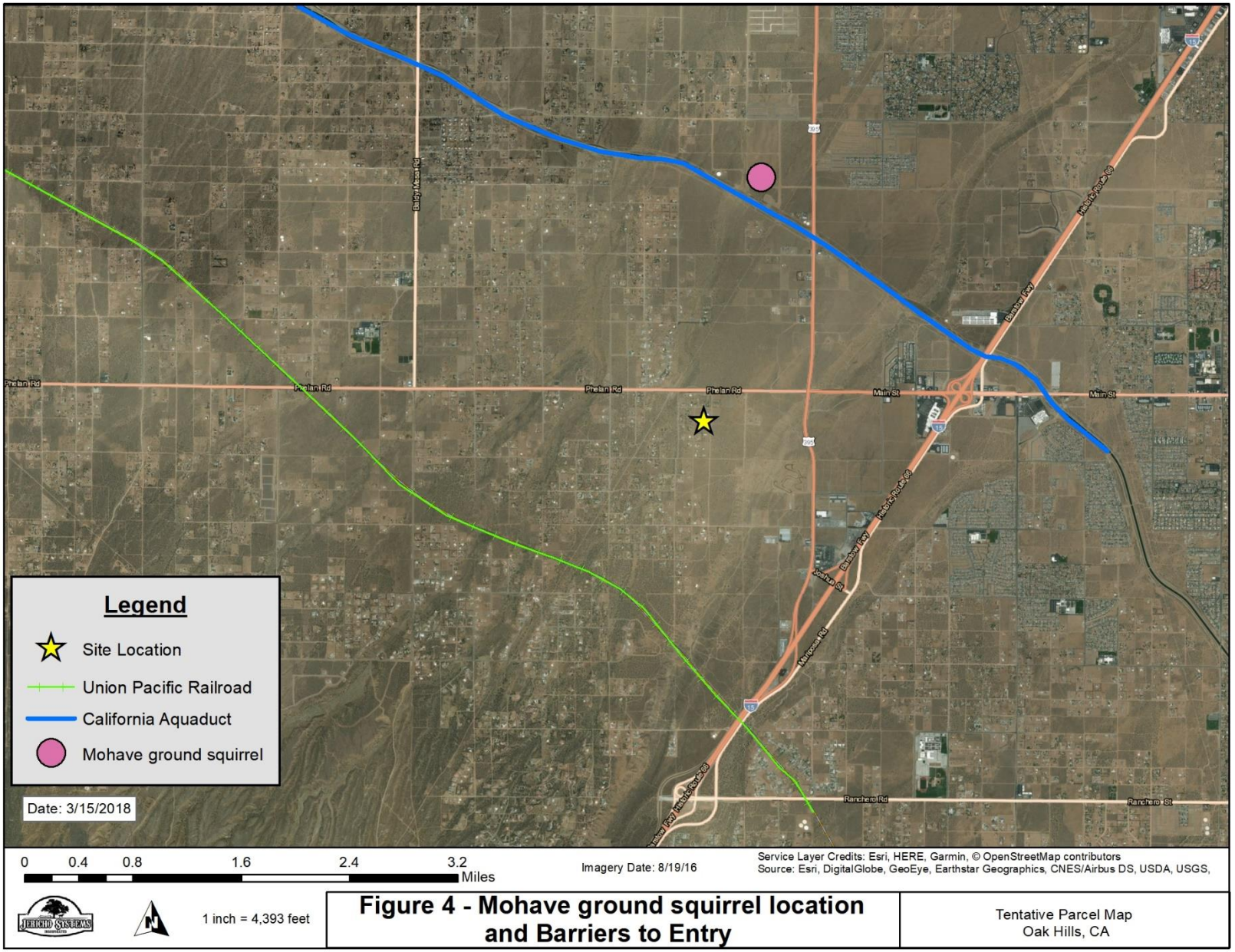

	**Photo 1.** Northwest corner of project site facing east
	**Photo 2.** Joshua Trees near the center of the site

	**Photo 3.** Typical vegetation on the project site
	**Photo 4.** Juniper trees on project site

Scientific Name	Common Name	Federal/State Ranking	Other Rankings	Habitat	Potential to Occur
Accipiter cooperii	Cooper's hawk	None/None	G5, S4	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Suitable nesting habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Anaxyrus californicus	arroyo toad	Endangered/ None	G2G3, S2S3, SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Antrozous pallidus	pallid bat	None/None	G5, S3, SSC	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.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Artemisiospiza belli belli	Bell's sage sparrow	None/None	G5T2T4, S3	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Asclepias nyctaginifolia	Mojave milkweed	None/None	G4G5, S2, CNPS 2B.1	Mojavean desert scrub, pinyon-juniper woodland. 875-1700 m.	Potentially suitable habitat exists for this species exists on site. However, the nearest know occurrence of this species is approximately 6 miles to the south, in the foothills of the mountains. Potential for this species to occur is **low**.

Asio otus	long-eared owl	None/None	G5, S3?, SSC	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.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Aspidoscelis tigris stejnegeri	coastal whiptail	None/None	G5T5, S3, SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky.	Site is at the northernmost edge of its range. Potential for this species to occur is **low**.
Athene cunicularia	burrowing owl	None/None	G4, S3, SSC	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.	Site was surveyed for this animal. No individuals or sign was observed. Species is documented in adjacent habitat. Future surveys recommended to determine full presence or absence.
Bombus crotchii	Crotch bumble bee	None/None	G3G4, S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia,* and *Eriogonum*.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	None/None	G3T2, S2, CNPS 1B.2	Meadows and seeps, chaparral, lower montane coniferous forest. Vernally moist places in yellow-pine forest, chaparral. 485-2500 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Calochortus plummerae	Plummer's mariposa-lily	None/None	G4, S4, CNPS 4.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 60-2500 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Canbya candida	white pygmy-poppy	None/None	G3G4, S3S4, CNPS 4.2	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland.	Suitable soils for this species does not occur

				Gravelly, sandy, granitic places. 600-1460 m.	onsite. Potential for this species to occur is **low**.
Chorizanthe xanti var. leucotheca	white-bracted spineflower	None/None	G4T3, S3, CNPS 1B.2	Mojavean desert scrub, pinyon and juniper woodland, coastal scrub (alluvial fans). Sandy or gravelly places. 365-1830 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Empidonax traillii extimus	southwestern willow flycatcher	Endangered/ Endangered	G5T2, S1	Riparian woodlands in Southern California.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Eremothera boothii ssp. boothii	Booth's evening-primrose	None/None	G5T4, S2, CNPS 2B.3	Joshua tree woodland, pinyon and juniper woodland. 290-2410 m.	Occurrences for this species are associated with the Mojave River. Potential for this species to occur is **low**.
Gopherus agassizii	desert tortoise	Threatened/ Threatened	G3, S2S3	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.	The site was surveyed for any sign of this species, including tracks, burrows, and individuals. No such sign was detected. Potential for this species to occur onsite is **low.**
Heuchera parishii	Parish's alumroot	None/None	G3, S3, CNPS 1B.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest, alpine boulder & rock field. Rocky places. Sometimes on carbonate. 1340-3505 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Lanius ludovicianus	loggerhead shrike	None/None	G4, S4, SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Loeflingia squarrosa var. artemisiarum	sagebrush loeflingia	None/None	G5T3, S2, CNPS 2B.2	Great Basin scrub, Sonoran Desert scrub, desert dunes. Sandy flats and dunes. Sandy areas around clay slicks	Suitable habitat for this species does not occur

				w/*Sarcobatus, Atriplex, Tetradymia*, etc. 700-1615 m.	onsite. Potential for this species to occur is **low**.
Opuntia basilaris var. brachyclada	short-joint beavertail	None/None	G5T3, S3, CNPS 1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland. Sandy soil or coarse, granitic loam. 425-1800 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Phrynosoma blainvillii	coast horned lizard	None/None	G3G4, S3S4, SSC	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.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	None/None	G5T1, S1, SSC	Headwaters of the Santa Ana and San Gabriel rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temps of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Schoenus nigricans	black bog-rush	None/None	G4, S2, CNPS 2B.2	Marshes and swamps. Often in alkaline marshes. 120-1525 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Setophaga petechia	yellow warbler	None/None	G5, S3S4, SSC	Riparian plant associations 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.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Siphateles bicolor mohavensis	Mohave tui chub	Endangered/ Endangered	G4T1, S1, FP	Endemic to the Mojave River basin, adapted to alkaline, mineralized waters. Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Symphyotrichum defoliatum	San Bernardino aster	None/None	G2, S2, CNPS 1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane	Suitable habitat for this species does not occur

				coniferous forest, marshes and swamps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040 m.	onsite. Potential for this species to occur is **low**.
Symphyotrichum greatae	Greata's aster	None/None	G2, S2, CNPS 1B.3	Chaparral, cismontane woodland, broadleafed upland forest, lower montane coniferous forest, riparian woodland. Mesic canyons. 335-2015 m.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Taxidea taxus	American badger	None/None	G5, S3, SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Thamnophis hammondii	two-striped gartersnake	None/None	G4, S3S4, SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Toxostoma lecontei	Le Conte's thrasher	None/None	G4, S3, SSC	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.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Vireo bellii pusillus	least Bell's vireo	Endangered/ Endangered	G5T2, S2	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.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.
Vireo vicinior	gray vireo	None/None	G4, S2, SSC	Dry chaparral; west of desert, in chamise-dominated habitat; mountains of Mojave Desert, associated with juniper &	Suitable habitat for this species does not occur

				Artemisia. Forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 ft above ground.	onsite. Potential for this species to occur is **low**.
Xerospermophilus mohavensis	Mohave ground squirrel	None/ Threatened	G2G3, S2S3	Open desert scrub, alkali scrub & Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	Suitable habitat for this species does not occur onsite. Potential for this species to occur is **low**.