

Biological Resource Assessment of  
APN 3154-002-094  
Lancaster, California

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## **Abstract**

Development has been proposed for APN 3154-002-094, Lancaster, California. The approximately 20 acre (8 ha) study area was located south of Avenue H-8, and east of 20th Street East, T7N, R11W, the N1/2 of the NW1/4 of the SW1/4 of Section 7, S.B.B.M. A line transect survey was conducted on 25 and 26 July 2025 to inventory biological resources. The study site was characteristic of a highly disturbed saltbush (*Atriplex* sp.) scrub plant community. A total of 29 plant species and 19 wildlife species or their sign were observed during the line transect survey. No desert tortoises (*Gopherus agassizii*) or their sign were observed within the study area. The study area did not provide suitable habitat for Mohave ground squirrels (*Xerospermophilus mohavensis*). No desert kit foxes (*Vulpes macrotis*) or their sign were observed within the study area. No burrowing owls (*Athene cunicularia*) or their sign were observed within the study area. California ground squirrels (*Citellus beecheyi*) and their burrows were observed within the study area. California ground squirrel burrows can provide future potential cover sites for burrowing owls. Vegetation within the study area provided potential nesting sites for migratory birds. A Swainson's hawk (*Buteo swainsoni*) nest was documented at Avenue L and 50th Street East in 2020 and juvenile birds in the vicinity of Avenue L and 50th Street East in the years following. However, no suitable nesting or foraging habitat for Swainson's hawk was present on the site. No bumble bees were observed during the field surveys. Western Joshua trees (*Yucca brevifolia*) were present within the study area. Potential alkali mariposa lily (*Calochortus striatus*) habitat was present within the study site. No other sensitive plants, specifically, desert cymopterus (*Cymopterus deserticola*), and Barstow woolly sunflower (*Eriophyllum mohanense*) are expected to occur within the study area due to the lack of suitable habitat. No other state or federal listed species are expected to occur within the study area. Clay pans and ephemeral drainages were observed within and adjacent to the study area.

## **Recommended Protection Measures:**

Coordination with the California Department of Fish and Wildlife (CDFW) and submission of WJT census and an application for an Incidental Take Permit (ITP) is necessary for take of WJT. Compensation and mitigation for impacts to WJTs will be determined either through the Section 2081 permit process and development of a California Endangered Species Act (CESA) ITP or under the Western Joshua Tree Conservation Act (WJTCA) ITP process.

An area that has any of the following characteristics which will be impacted by development: distinct bed, bank, channel, signs of scouring, evidence of water flow, may require a Lake and Streambed Alteration (LSA) agreement from the CDFW prior to development activities. A jurisdictional delineation of the ephemeral washes would be required as part of the LSA process. It would be determined through the LSA process whether mitigation for the ephemeral washes is required. Potential impacts to alkali mariposa lilies (*Calochortus striatus*) would be included in the mitigation for the LSA agreement.

A take avoidance (preconstruction) burrowing owl (*Athene cunicularia*) survey will be accomplished no more than 30 days prior to ground disturbance activities to ensure no owls have moved into the study site. If burrowing owls are found to have moved into the site, an Incidental Take Permit will be obtained prior to ground disturbing activities.

Preconstruction surveys to determine the presence of any bumble bee species will be conducted. If bumble bees are observed a more focused survey will be conducted to identify the species. If Crotch's bumble bee (*Bombus crotchii*) is found to occur, an Incidental Take Permit will be obtained prior to ground disturbing activities.

If possible, removal of vegetation will occur outside the breeding season for migratory birds. Breeding generally lasts from February to July but may extend beyond this time frame. If vegetation removal will occur during or close to the nesting season, a qualified biologist will survey all potential nesting areas to be disturbed as close as possible but no more than one week prior to removal. If active bird nests are found, impacts to nests will be avoided by either delaying work or establishing initial buffer areas of a minimum of 50 feet around active migratory bird species nests. The project biologist will determine if the buffer areas should be increased or decreased based on the nesting bird response to disturbances.

**Significance:** Given the lack of sensitive species, adjacent land uses, and highly impacted condition of the study area this project would not result in an adverse impact to biological resources.

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Development has been proposed for APN 3154-002-094 (Figure 1). Development may include installation of access roads, parking, and utilities (water, sewer, electric, etc.). The entire project area would be graded prior to construction activities.

An assessment of biological resources is an integral part of environmental analyses (Gilbert and Dodds 1987). The purpose of this study was to provide an assessment of biological resources potentially occurring within or utilizing the proposed project area. Specific focus was on the presence/absence of protected, rare, threatened, and endangered species of plants and wildlife that would be expected to use the existing habitat. Species of concern included the desert tortoise (*Gopherus agassizii*), Mohave ground squirrel (MGS) (*Xerospermophilus mohavensis*), desert kit fox (*Vulpes macrotis*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), Crotch's bumblebee (*Bombus crotchii*), Western Joshua Tree (WJT) (*Yucca brevifolia*), alkali mariposa lily (*Calochortus striatus*), desert cymopterus (*Cymopterus deserticola*), and Barstow woolly sunflower (*Eriophyllum mohanense*).



## Study Area

The approximately 20 acre (8 ha) study area was located south of Avenue H-8, and east of 20th Street East, T7N, R11W, the N1/2 of the NW1/4 of the SW1/4 of Section 7, S.B.B.M. (Figures 2 and 3). Saltbush (*Atriplex* sp.) scrub habitat occurred adjacent to the southern boundary of the study site. Residential housing was further south of the saltbush habitat. The western boundary of the study area was formed by 20th Street East. Highly disturbed fields and a single-family house were present west of 20th Street East. The northern boundary of the study area was formed by Avenue H-8, a dirt road. Highly disturbed fields were present north of Avenue H-8. The eastern boundary of the study area was formed by an existing residential area.

## Methods

A line transect survey was conducted to inventory plant and wildlife species occurring within the proposed project area (Cooperrider et al. 1986, Davis 1990). The USFWS (2010) has provided recommendations for survey methodology to determine presence/absence and abundance/distribution of desert tortoises. Line transects were walked in an east-west orientation. Line transects were 1320 feet (402 m) long and were spaced about 50 feet (15 m) apart (U.S. Fish & Wildlife Service 2010). The California Department of Fish and Game (2012) prepared recommendations for burrowing owl survey methodology. Consistent with the survey protocol the entire site was surveyed and adjacent areas were evaluated (CDFG 2012). A habitat assessment was conducted for Mohave ground squirrels (MGS) to determine whether suitable habitat was present for the species (CDFW 2019, Leitner and Leitner 2017, Leitner 2021).

All observations of plant and animal species were recorded in field notes. Field guides were used to aid in the identification of plant and animal species (Arnett and Jacques 1981, Blatt 2019, Borror and White 1970, Burt and Grossenheider 1976, Gould 1981, Jaeger 1969, Knobel 1980, Robbins et al. 1983, Stark 2000). Observations were aided with the use of 10x42 binoculars. Observations of animal tracks, scat, and burrows were also utilized to determine the presence of wildlife species inhabiting the study site (Cooperrider et al. 1986, Halfpenny 1986, Lowrey 2006, Murie 1974). Aerial photos, eBird (2025), California Natural Diversity Database (2024) and USGS topographic map were reviewed. Photographs of the study site were taken (Figure 4).

## Results

A total of 12 line transects were walked on 25 and 26 July 2025. Weather conditions consisted of warm temperatures (estimated 70-80 degrees F), 5-10% cloud cover, and light/moderate west-southwest winds, estimated 10 mph (16kph). The site was characteristic of clay pan and dune topography with sandy loam and clay surface soil textures observed throughout the study area. Topography of the study site was approximately 2,370 feet (722 m) above sea level. No blue line streams were delineated on the U.S.G.S. topographic map within the study area. Clay pans and ephemeral drainages were observed within and adjacent to the study area.

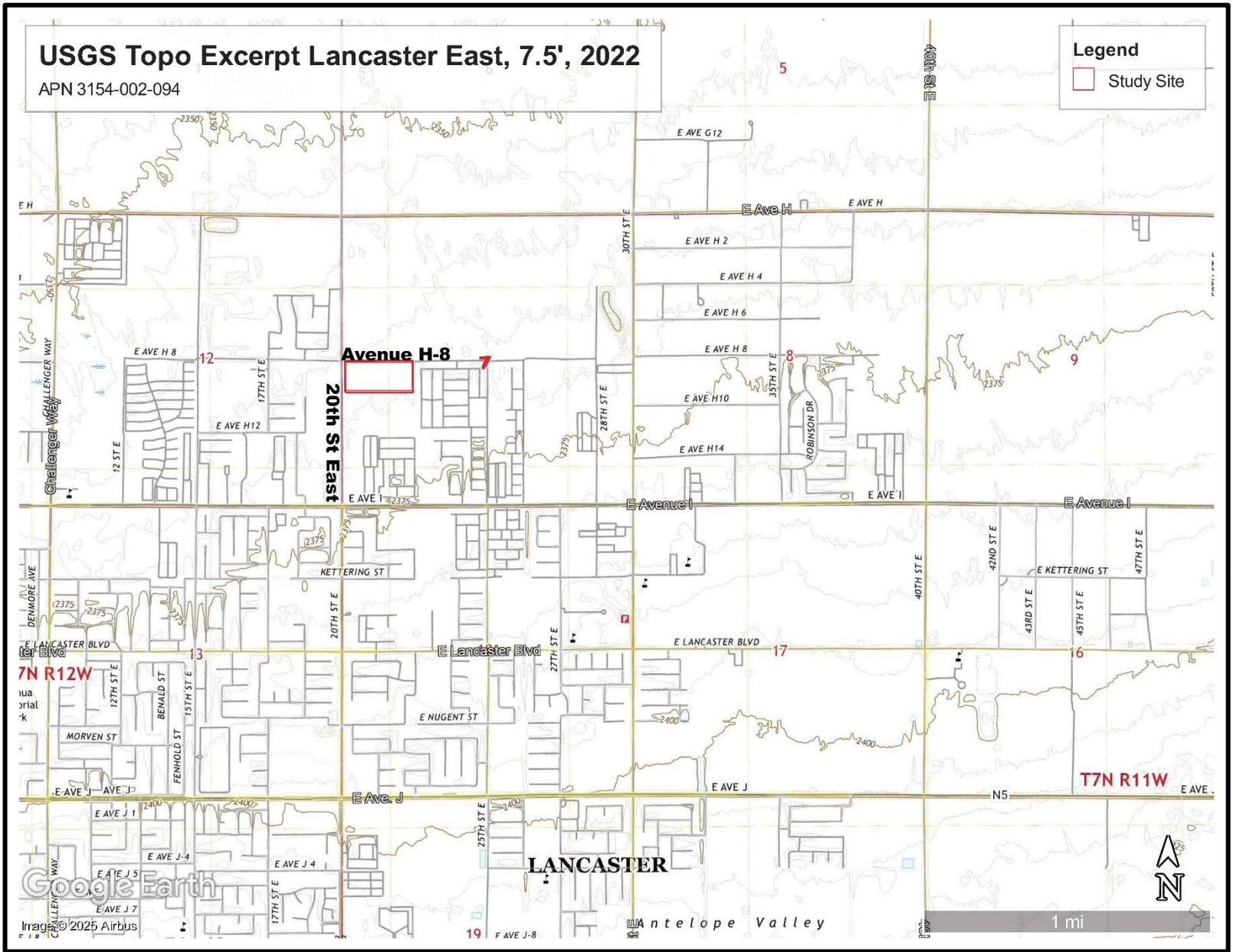


Figure 2. Approximate location of study area as depicted on excerpt from USGS Quadrangle, Lancaster East, California, 7.5' 2022.

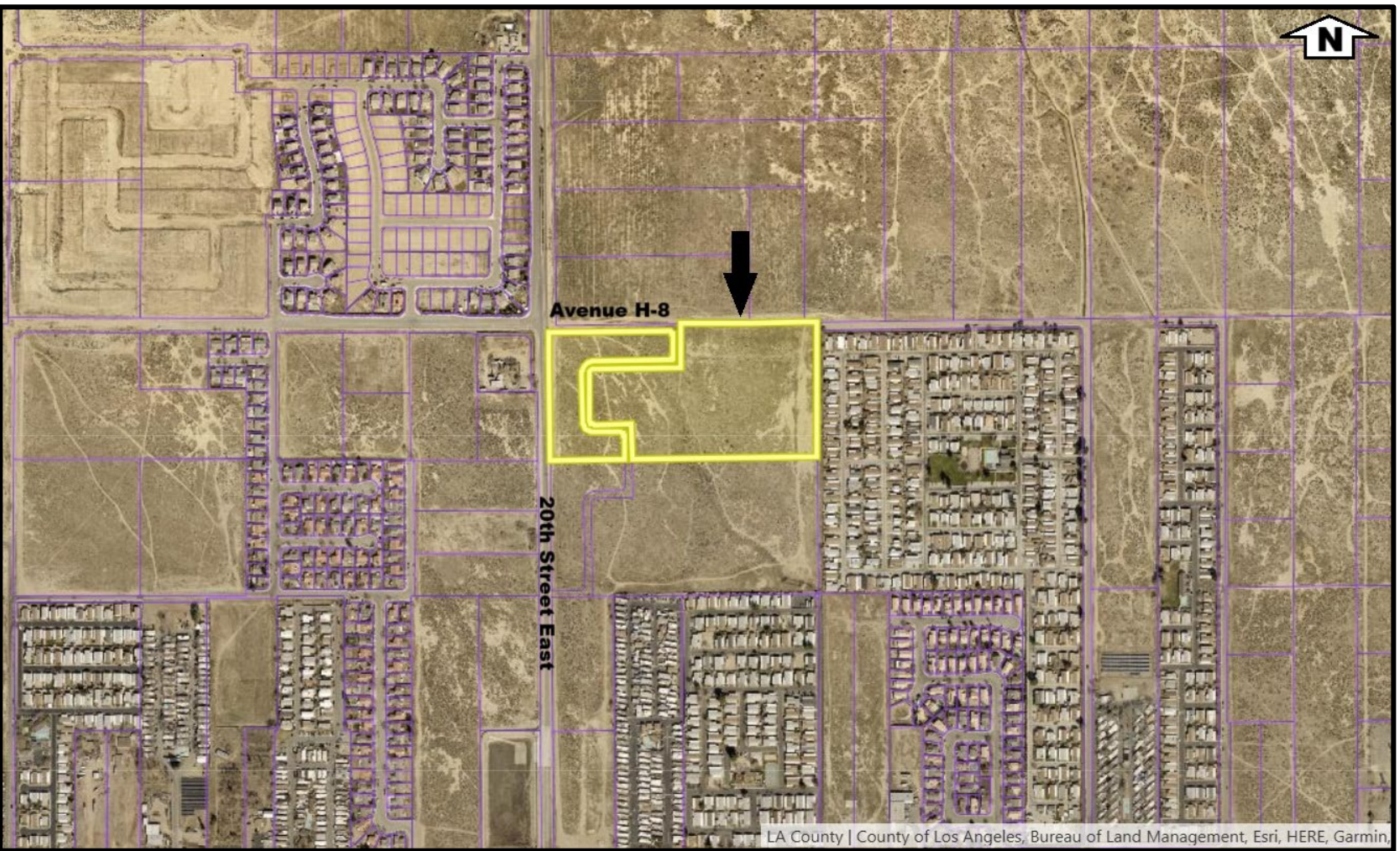


Figure 3. Approximate location of study area, Google Earth, February 2025, showing surrounding land use.



Figure 4. Representative photographs of the study site.

The study site was characteristic of a highly disturbed saltbush (*Atriplex* sp.) plant community (Barbour and Major 1988, Barbour et al. 2007). A total of 29 plant species were observed during the line transect survey (Table 1). The dominant perennial shrub species throughout the study area were saltbush (*Atriplex* spp.). Grasses were the dominant annual species within the study area. A total of 27 Western Joshua trees (WJT) were observed within the study area (Table 2). Potential alkali mariposa lily habitat was present within the study site. No Barstow woolly sunflowers, desert cymopterus, or suitable habitat were observed within the study area.

Nineteen wildlife species or their sign were observed during the line transect survey (Table 3). No desert tortoises or their sign were observed during the field survey. No burrowing owls or their sign were observed within the study site during the field survey. California ground squirrels (CGS) (*Citellus beecheyi*) and their burrows were observed within the study site. No bird nests were observed within the study area. Vegetation within the study site provides suitable migratory bird nesting habitat. A Swainson's hawk nest was documented at Avenue L and 50th Street East in 2020 and juvenile birds in the vicinity of Avenue L and 50th Street East in the years following (eBird 2025). No suitable nesting or foraging habitat for Swainson's hawk was present on the site. No desert kit foxes, dens, or tracks were observed within the study area. No suitable Mohave ground squirrel habitat was present within the study area (CDFW 2019, Leitner and Leitner 2017, Leitner 2021).

Several dump sites were observed within the study site along dirt roads and along the eastern boundary. Scattered litter was observed within the study site. Dirt roads intersected the study area. People were observed walking along the northern boundary. Some people were observed parking and riding off-road vehicles within the study area. A vehicle was observed driving through the study area from a homeless encampment located to the south. Vehicle tracks and ruts were observed throughout the study area. Sewer mains (manholes) were observed within the eastern portion of the study area. A hive of European honey bees (Order Hymenoptera) was observed at one of the sewer main manholes.

## **Discussion**

It is likely that some annual species were not visible during the time the field survey was performed. Nearly all the remnant annuals on the study site were invasive or weedy species. The study area was highly disturbed from human impacts. Although not observed, several common wildlife species would be expected to occur within the proposed project area (Table 4).

Human impacts within the study area are expected to continue. Habitat in the general area consisted of an urban environment. Burrowing animals within the study site are not expected to survive construction activities. More mobile species, such as birds, are expected to survive construction activities. Development of this site will result in a minimal loss of cover and foraging opportunities for the common wildlife species occurring within and adjacent to the study area.

Table 1. List of plant species that were observed during the line transect survey of APN 3154-002-094, Lancaster, California.

<u>Common Name</u>	<u>Scientific Name</u>
Joshua Tree	<i>Yucca brevifolia</i>
Great basin sagebrush	<i>Artemisia tridentata</i>
Five-hook bassia	<i>Bassia hyssopifolia</i>
Four-wing saltbush	<i>Atriplex canescens</i>
Shadscale	<i>Atriplex confertifolia</i>
Arrow scale	<i>Atriplex phyllostegia</i>
Allscale	<i>Atriplex polycarpa</i>
Silverscale	<i>Atriplex argentea</i>
Spinescale	<i>Atriplex spinifera</i>
Quail bush	<i>Atriplex lentiformis</i>
Peachthorn	<i>Lycium cooperi</i>
Anderson thorn	<i>Lycium andersonii</i>
Mormon tea	<i>Ephedra nevadensis</i>
Rabbit brush	<i>Chrysothamnus nauseosis</i>
Prickly lettuce	<i>Lactuca seriola</i>
Goldfields	<i>Lasthenia californica</i>
Turkey mullein	<i>Eremocarpus setigerus</i>
Fiddleneck	<i>Amsinckia tessellata</i>
Wild cucumber.	<i>Marah macrocarpus</i>
Rattlesnake weed	<i>Euphorbia albomarginata</i>
Tumble mustard	<i>Sisymbrium altissimum</i>
Red-stem filaree	<i>Erodium cicutarium</i>
Russian thistle	<i>Salsola iberica</i>
Barb-wire tumble weed	<i>Salsola paulensii</i>
Saltgrass	<i>Distichlis spicata</i>
Foxtail barley	<i>Hordeum leporinum</i>
Schismus	<i>Schismus</i> sp.
Red brome	<i>Bromus rubens</i>
Cheatgrass	<i>Bromus tectorum</i>

Table 2. Number of Joshua trees observed during the line transect survey of APN 3154-002-094, Lancaster, California.

Size Class	Alive	Dead	Total
Class A	1	4	5
Class B	13	8	21
Class C	1	0	1
Total	15	12	27

Table 3. List of wildlife species, or their sign, that were observed during the line transect survey of APN 3154-002-094, Lancaster, California.

<u>Common Name</u>	<u>Scientific Name</u>
Rodents	Order: Rodentia
Kangaroo rat	<i>Dipodomys</i> sp.
California ground squirrel	<i>Citellus beecheyi</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
Desert cottontail	<i>Sylvilagus auduboni</i>
Coyote	<i>Canis latrans</i>
Domestic dog	<i>Canis familiaris</i>
Rock dove	<i>Columba livia</i>
Common raven	<i>Corvus corax</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Horned lark	<i>Eremophila alpestris</i>
House finch	<i>Carpodacus mexicanus</i>
Western whiptail	<i>Cnemidophorus tigris</i>
European honey bees	Order: Hymenoptera
Harvester ants	Order: Hymenoptera
Ants, small, black	Order: Hymenoptera
Spider	Order: Araneida
Dragonfly	Order: Odonata
Grasshopper	Order: Orthoptera

Table 4. List of wildlife species that may occur within the proposed study area, APN 3154-002-094, Lancaster, California.

Common Name	Scientific Name
Deer mouse	<i>Peromyscus maniculatus</i>
Merriam kangaroo rat	<i>Dipodomys merriami</i>
Pocket gopher	<i>Thomomys bottae</i>
California quail	<i>Callipepla californica</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Mourning dove	<i>Zenaida macroura</i>
Black-chinned hummingbird	<i>Archilochus alexandri</i>
Say's phoebe	<i>Sayornis saya</i>
House sparrow	<i>Passer domesticus</i>
White crowned sparrow	<i>Zonotrichia leucophrys</i>
Side blotched lizard	<i>Uta stansburiana</i>
Desert spiny lizard	<i>Sceloporus magister</i>
Gopher snake	<i>Pituophis melanoleucus</i>
Mojave rattlesnake	<i>Crotalus scutulatus</i>
Coachwhip	<i>Masticophis flagellum</i>
Darkling beetle	<i>Coelocnemis californicus</i>
Cabbage white butterfly	<i>Pieris rapae</i>
Butterfly (orange,black,white)	Order: Lepidoptera
Painted lady butterfly	<i>Vanessa cardui</i>
Fly	Order: Diptera

The desert tortoise is a state endangered and federally listed threatened species. The study site was located within the geographic range of the desert tortoise. The study site was not located in critical habitat designated for the Mojave population of the desert tortoise. Desert tortoises are not present within the study area. No protection measures are recommended for desert tortoises.

The Mohave ground squirrel (MGS) is a state listed threatened species. The study area was located within the geographic range of MGS. MGS habitat consists of a variety of desert scrub habitats, to include a specific assemblage of required shrub and annual species within those habitats, none of which occur within the project site. MGS foraging behavior changes depending on season and whether it has been a dry or wet season. Stems and leaves from shrubs are necessary to provide forage during times annuals are unavailable. The lack of preferred shrubs within and around the study site precludes MGS presence. A table listing MGS habitats and a discussion of required shrubs and annuals can be found in the 2019 CDFW publication titled "A Conservation Strategy for the Mohave Ground Squirrel." California ground squirrels (CGS) are

present within the study site. Since MGS prefer natural habitats, interactions with CGS would not occur often (CDFW 2019). CGS are larger and more aggressive than MGS which would seem to indicate they would be unlikely to coexist (CDFW 2019). Based on review of the 2019 CDFW publication and Leitner's review of MGS data results from 2013 to 2020 no MGS are expected to be present within the study area (CDFW 2019, Leitner 2021). Given the lack of suitable habitat, presence of CGS, and historical data, no protection measures are recommended for MGS.

The CDFW administers the Fish and Game Code Section 1602, Lake and Streambed Alteration Program. An area that has any of the following characteristics which will be impacted by development: distinct bed, bank, channel, signs of scouring, evidence of water flow, may require a Streambed Alteration Agreement from the CDFW prior to development activities. Any project that may impact a water resource either by changing its course or depositing material into it is required to be reviewed under Section 1602.

Burrowing owls are a candidate species for listing as state threatened or endangered. No burrowing owls or their sign were observed within the study area. CGS burrows provide future potential cover sites for burrowing owls.

Swainson's hawk are state listed as threatened. No Swainson's hawks were observed during the field surveys. No suitable nesting or foraging habitat was present within the study site. Swainson's hawks nesting and foraging activities appear to be closely tied to areas with active agricultural fields and row trees based on a review of eBird observations and the California Natural Diversity Database within the Antelope Valley. Swainson's hawks are frequently observed in flight over the Antelope Valley with the highest frequency on the east side of Lancaster and Palmdale between 50th and 90th Street East. Nearly all nesting sites are associated with the active agricultural fields in that area. A Swainson's hawk nest was documented at Avenue L and 50th Street East in 2020 and juvenile birds in the vicinity of Avenue L and 50th Street East in the following years. Given that no suitable nesting or foraging habitat is present on the site and this is not the type of area that has been historically used for nesting and foraging (eBird 2025), no mitigation measures for Swainson's hawk are recommended.

Crotch's bumble bees are a candidate species for listing as state threatened or endangered. Crotch's bumble bee has a life cycle based on the survival of the queens produced each year. The colony completely dies out each year except for the new queens. The new queens hibernate and restart individual colonies in the spring. Having enough floristic resources during a colony's entire life span is imperative to ensuring the new queen's survival to mate, hibernate, and start a new colony. If flowers have died out and no perennials are blooming the colony is left with no way to persist. No bumble bees were observed and no floristic resources were available for Crotch's bumble bee within this study site.

A honey bee hive was observed within the study site. The following information was taken from the 2018 Xerces Society listing petition (Fish and Game Commission 2018). "A single honey bee colony requires substantial resources to survive. Estimates of single hive consumption vary from 20-130 lbs/year for pollen and 45-330 lbs/year of honey – representing 120-900 lbs/year of nectar (Goulson 2003, and references therein). Cane and Tepedino (2016)

estimate that in three months a 40 hive apiary would remove enough pollen resources from the surrounding area that would have supported the development of 4,000,000 native bees.” The petition further goes on to indicate that recent research has documented (under controlled conditions) that honey bees displace native bees from flowers, alter the suite of flowers native bees visit, and had a negative impact on native bee populations. Although these results are recognized to vary by location, time of year, species involved, floral abundance, etc. the research strongly indicates that the presence of honey bees are a detriment to native bee populations.

No documented observations have occurred within 6 miles of this project site, the lack of limited to no floristic resources, and the presence of a honey bee hive supports the expectation that Crotch’s bumblebee is not likely to be present.

The Western Joshua Tree (WJT) is a candidate species under the California Endangered Species Act (CESA) and is also fully protected under the Western Joshua Tree Conservation Act (WJTCA). Coordination with the California Department of Fish and Wildlife (CDFW), a WJT census, and submission of an application for an Incidental Take Permit (ITP) are necessary for take of WJT. An ITP can be applied for either through the Section 2081 permit process and development of a CESA ITP or under the WJTCA ITP process. Compensation and mitigation for impacts to WJTs will be determined through one of these processes.

Potential alkali mariposa lily habitat was present within the study site. Based on the results of the field survey no other sensitive plant species are expected to occur within the study area and no protection measures are recommended. No other state or federal listed species are expected to occur within the proposed project area (California Natural Diversity Database 2025a, California Natural Diversity Database 2025b).

Landscape design should incorporate the use of native plants to the maximum extent feasible. Native plants that have food and cover value to wildlife should be used in landscape design (Adams and Dove 1989). Diversity of native plants should be maximized in landscape design (Adams and Dove 1989).

### **Recommended Protection Measures:**

Coordination with the California Department of Fish and Wildlife (CDFW) and submission of WJT census and an application for an Incidental Take Permit (ITP) is necessary for take of WJT. Compensation and mitigation for impacts to WJTs will be determined either through the Section 2081 permit process and development of a California Endangered Species Act (CESA) ITP or under the Western Joshua Tree Conservation Act (WJTCA) ITP process.

An area that has any of the following characteristics which will be impacted by development: distinct bed, bank, channel, signs of scouring, evidence of water flow, may require a Lake and Streambed Alteration (LSA) agreement from the CDFW prior to development activities. A jurisdictional delineation of the ephemeral washes would be required as part of the LSA process. It would be determined through the LSA process whether mitigation for the ephemeral washes is required. Potential impacts to alkali mariposa lilies (*Calochortus striatus*) would be included in the mitigation for the LSA agreement.

A take avoidance (preconstruction) burrowing owl (*Athene cunicularia*) survey will be accomplished no more than 30 days prior to ground disturbance activities to ensure no owls have moved into the study site. If burrowing owls are found to have moved into the site, an Incidental Take Permit will be obtained prior to ground disturbing activities.

Preconstruction surveys to determine the presence of any bumble bee species will be conducted. If bumble bees are observed a more focused survey will be conducted to identify the species. If Crotch's bumble bee (*Bombus crotchii*) is found to occur, an Incidental Take Permit will be obtained prior to ground disturbing activities.

If possible, removal of vegetation will occur outside the breeding season for migratory birds. Breeding generally lasts from February to July but may extend beyond this time frame. If vegetation removal will occur during or close to the nesting season, a qualified biologist will survey all potential nesting areas to be disturbed as close as possible but no more than one week prior to removal. If active bird nests are found, impacts to nests will be avoided by either delaying work or establishing initial buffer areas of a minimum of 50 feet around active migratory bird species nests. The project biologist will determine if the buffer areas should be increased or decreased based on the nesting bird response to disturbances.

**Significance:** Given the lack of sensitive species, adjacent land uses, and highly impacted condition of the study area this project would not result in an adverse impact to biological resources.

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