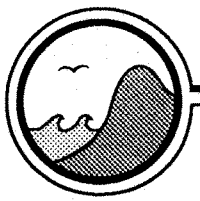
APPENDIX 5.4

Technical Biological Studies

AMARGOSA CREEK
DEVELOPMENT PROJECT

BIOTIC STUDY



H. T. HARVEY & ASSOCIATES

ECOLOGICAL CONSULTANTS

AMARGOSA CREEK DEVELOPMENT PROJECT

BIOTIC STUDY

Prepared by:

H.T. Harvey & Associates

Patrick J. Boursier, Ph.D., Principal-in-Charge
Scott B. Terrill, Ph.D., Principal
Brian B. Boroski, Ph.D., Wildlife Division Head
Daniel G. Duke. J.D., Assistant Project Manager
Lisa Infante, M.S., Plant Ecologist
Randy Sisk, M.S., Wildlife Biologist
Howard O. Clark, Jr., M.S., Wildlife Biologist

Prepared for:

Mr. Brian S. Ludicke
City of Lancaster
44933 N. Fern Avenue
Lancaster, CA 93534

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Project No. 2509-01

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EXECUTIVE SUMMARY

The City of Lancaster is proposing to develop an approximately 165-acre (66.7-ha) parcel extending from 10th Street West southeast to Avenue L. Development activities in the area may potentially include modifications to portions of Amargosa Creek.

The Amargosa Creek project site has very limited plant species diversity due to the disturbed nature of the existing property and presence of non-native species. Three habitats occur on the project site: non-native herbaceous vegetation, disturbed desert scrub, and dry riverbed / desert wash.

Impacts to non-native herbaceous and disturbed desert scrub habitats will not be significant. These habitats are locally and regionally common and are not protected by any state, local, or federal laws. Project implementation could result in significant direct, indirect, and cumulative impacts to sensitive desert-wash resources on the project site. These impacts would be reduced to a less-than-significant level through recommended mitigation measures. Conversion of reaches of Amargosa Creek with a storm-drain, concrete-box structure will require offsite preservation of CDFG-approved desert-wash habitat.

Silvery legless lizards could occur on the project site, but impacts would be less than significant. Project implementation will not substantially reduce the habitat of this species, restrict its range, or cause its regional population to drop below a self-sustaining level.

Burrowing Owls, though not observed during field surveys, could inhabit the project site prior to construction. A pre-construction survey for Burrowing Owls should occur prior to construction activities within the project area. If pre-construction surveys confirm occupation by Burrowing Owls, implementation of the mitigation measures outlined will reduce potential project related impacts to Burrowing Owls to a less-than-significant level and avoid "take" of the species; thereby, conforming to federal and state regulations protecting raptors.

ENVIRONMENTAL SETTING

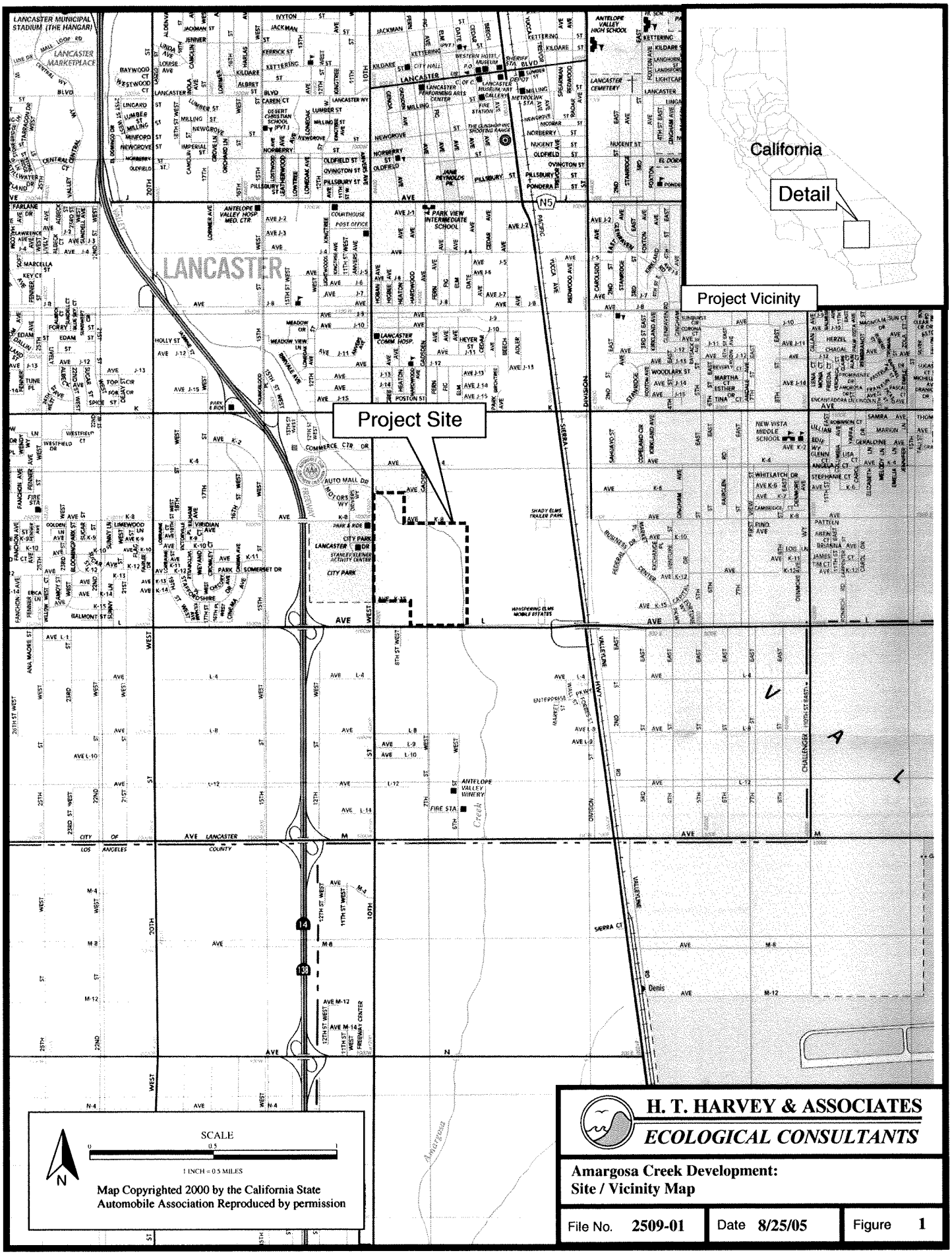
PROJECT DESCRIPTION

The City of Lancaster is proposing to develop an approximately 165-acre (66.7-ha) parcel extending from 10th Street West southeast to Avenue L. Development activities in the area may potentially include modifications to portions of Amargosa Creek. The section of Amargosa Creek within the project site extends for approximately two-thirds of a mile and is currently an earthen channel. The creek immediately to the north of the study area exists as an underground, storm-drain box that is underneath a commercial shopping center. The area to the south is currently an earthen channel. As mentioned above, the City of Lancaster is proposing development on the project site, which may include replacement of portions of the earthen channel of Amargosa Creek with a storm-drain concrete "box" structure.

GENERAL PROJECT AREA DESCRIPTION

The City of Lancaster is situated at an elevation of approximately 2,400 feet (730 m) in the Antelope Valley region of the western Mojave Desert. The Antelope Valley is an internally drained basin bordered by the San Gabriel and Tehachapi Mountains. Near the center of the Valley, the dry basins, or playas, of Rosamond and Rogers Lakes form the dominant natural landscape feature of the Valley. Historically, much of the Lancaster area was cultivated with alfalfa and small grain crops before groundwater withdrawals were reduced in 1950 due to a reduction in aquifer levels. However, extensive areas of undisturbed saltbush scrub (*Atriplex* spp.) and Joshua tree (*Yucca brevifolia*) habitats occur in areas where high soil salinity/alkalinity renders the land unsuitable for agriculture. Surface flows from the mountainous watersheds to the west and south move overland towards Rosamond Lake as sheet flow, or within natural or artificial channels. One of these natural channels, Amargosa Creek, bisects the project site and is a major northerly conduit for surface flows to Rosamond Lake.

The Amargosa Creek development project site is located in the southwest section of Lancaster, in Los Angeles County, California (Figure 1). The project site is located in the United States Geological Survey (USGS) Lancaster West quadrangle. A residential subdivision is located adjacent to the northern boundary of the site, and disturbed native habitat adjoins the site to the east (Figure 2). This area of Los Angeles County receives an average of 4 to 9 inches (10 to 23 cm) of rainfall annually, and annual temperatures average 62 degrees Fahrenheit (°F) (17 degrees Celsius [°C]). Soils underlying the project site are fine, sandy loams of the Hesperia and Rosamond Series, which are moderately well drained soils of low alluvial fans (Natural Resources Conservation Service 2002).



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Amargosa Creek Development:
Site / Vicinity Map

File No. **2509-01**	Date **8/25/05**	Figure **1**


Legend
Project Boundary
15TH ST W
10TH ST W
W AVENUE K
E AVENUE K
SIERRA HWY
W AVENUE L
W AVENUE L
STATE HWY 14
W AVENUE M
N
0
1,500
3,000
Feet
Background: USGS DOQQ Aerial: 1/6/94
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Amargosa Creek Development: Project Site Details
File No. 2509-01
Date 8/25/05
Figure 2

BIOTIC SURVEYS

Reconnaissance-level field surveys of the project site were conducted on April 6, 2005. The purpose of these surveys was to document biotic resources associated with the site that may pose constraints to the proposed development. Specifically, surveys were conducted to: 1) describe existing biotic habitats; 2) assess the site for its potential to support special-status species and their habitats; and 3) identify potential jurisdictional habitats, including Waters of the U.S., riparian habitat, and ordinance trees.

Protocol-level surveys were then conducted for special-status plants on April 6 and May 24, 2005. These surveys were timed to coincide with the flowering periods of special-status plants with the potential to occur on the site, and otherwise conformed to the California Department of Fish and Game's (CDFG) *Guidelines of Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities* (CDFG 2000). All plant species observed on-site were identified and recorded (Appendix A).

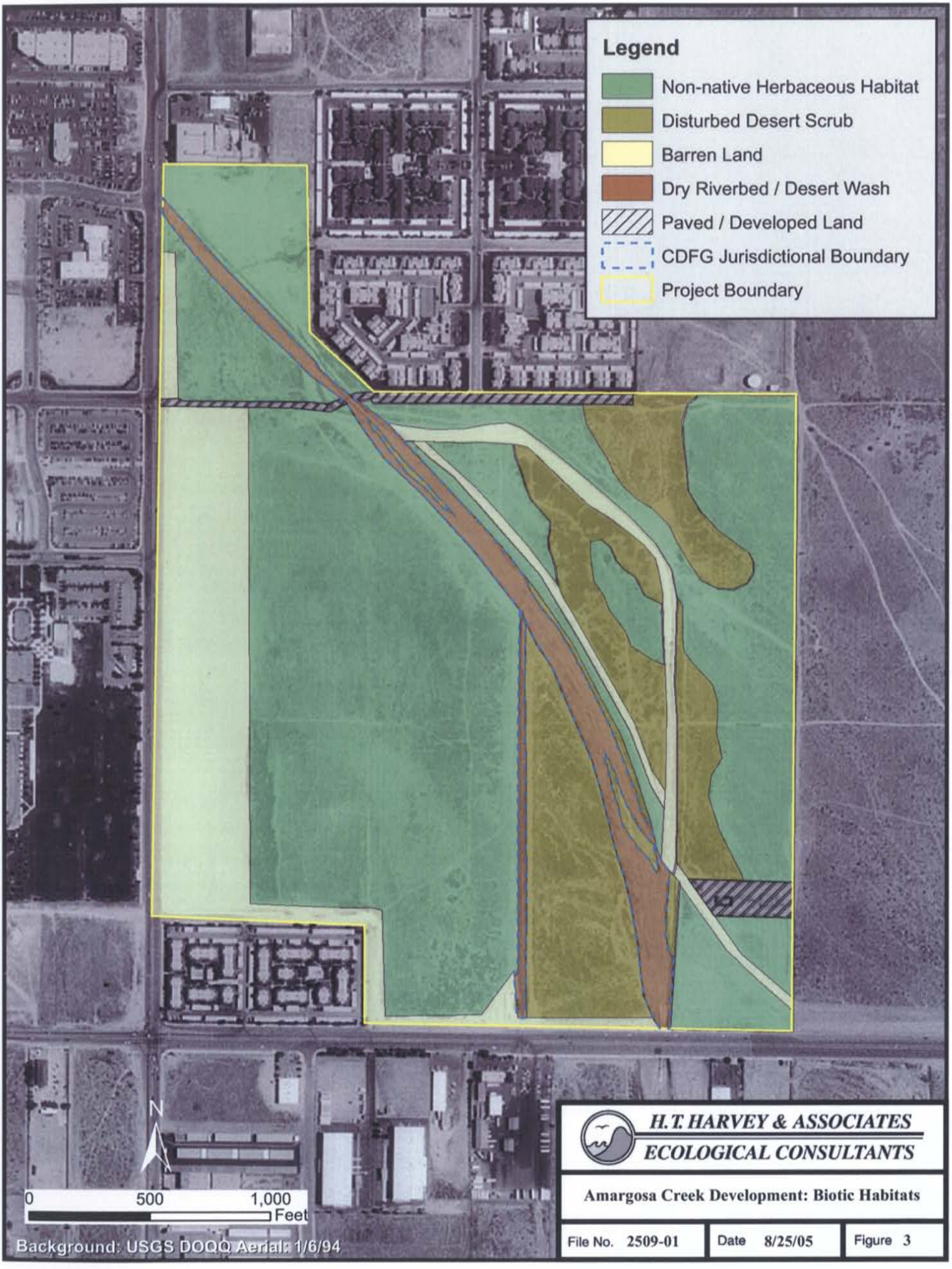
The project area falls within the known range of the state-threatened Mohave ground squirrel (*Spermophilus mohavensis*). Therefore, in compliance with CDFG protocol and a Memorandum of Understanding (MOU), a protocol-level survey for the Mohave ground squirrel was conducted on April 15, 2005 (CDFG 2003), and subsequent trapping surveys were conducted during the weeks of April 18, May 9, and July 11, 2005. Mohave ground squirrel surveys and trapping were conducted concurrently with surveys for other wildlife species on the project site. The details of these surveys and the Mohave ground squirrel trapping are described below.

BIOTIC HABITATS

Surveys for botanically sensitive habitats were conducted concurrently with special-status plant surveys. Three biotic habitats occur on the project site: non-native herbaceous vegetation, disturbed desert scrub, and dry riverbed/desert wash (Table 1). Barren land and paved/developed areas also occur on the property. These biotic habitats and associated vegetation and wildlife are described in further detail below. Plant communities were described in terms of dominant tree, shrub, and herbaceous vegetation composition and, wherever possible, classified according to the nomenclature of Holland (1986), and Sawyer and Keeler-Wolf (1995). Figure 3 shows the distribution of these habitats and land use types.

Table 1. Summary of Biotic Habitats and Land Use Types Present on the Amargosa Creek Project Site.

Biotic Habitat/Land Use Type	Area (ac)	Percent of Total
Non-native herbaceous vegetation	96.0	58.1%
Disturbed desert scrub	28.0	16.9%
Dry riverbed/Desert wash	9.9	6.0%
Barren	28.5	17.2%
Paved/Developed	3.0	1.8%
Total	**165.4**	**100%**



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Amargosa Creek Development: Biotic Habitats

File No. 2509-01	Date 8/25/05	Figure 3

BIOTIC HABITATS AND EXISTING FACILITIES

NON-NATIVE HERBACEOUS

Vegetation

Non-native, herbaceous plant species associated with disturbed soils comprise the majority of the project site (96 acres [9 ha], or approximately 58 percent of the project site). Dominant species included red brome (*Bromus madritensis* var. *rubens*), cheatgrass (*Bromus tectorum*), filaree (*Erodium cicutarium*), tumble mustard (*Sisymbrium altissimum*), and common fireweed (*Amsinckia menziesii* var. *intermedia*), and these species were abundant in areas west of the Amargosa Creek channel. Although the high densities of weeds observed during the 2005 surveys were likely a result of above-average rainfall from the previous winter, the highly disturbed soils underlying these areas are unsuitable for supporting most native species. As a result, no special-status plants were observed, nor are they expected to occur, in non-native herbaceous habitat on the project site.

Wildlife

Non-native, herbaceous habitats provide breeding and foraging habitat for common mammalian species, including California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), and chisel-toothed kangaroo rat (*Dipodomys microps*). Feral cats (*Felis domesticus*) and dogs (*Canis familiaris*) may use the area. Common reptiles occurring within this habitat include side-blotched lizard (*Uta stansburiana*), desert night lizard (*Xantusia vigilis*), western whiptail (*Cnemidophorus* tigris), western longnose snake (*Rhinocheilus lecontei lecontei*), red coachwhip (*Masticophis flagellum piceus*), Mojave rattlesnake (*Crotalus scutulatus*), and Great Basin gopher snake (*Pituophis catenifer deserticola*). Common bird species include residents such as Common Ravens (*Corvus corax*), House Sparrows (*Passer domesticus*), and Northern Mockingbirds (*Mimus polyglottos*), migrants such as Wilson's (*Wilsonia pusilla*) and Orange-crowned (*Vermivora celata*) warblers and wintering birds, such as the White-crowned Sparrow (*Zonotrichia leucophrys*).

DISTURBED DESERT SCRUB

Vegetation

Disturbed desert scrub habitat comprises approximately 28 acres (11 ha) (or approximately 17 percent of the project site), along the banks of Amargosa Creek, and in the eastern portion of the project site. This habitat is somewhat less disturbed than the non-native herbaceous areas, and supports a native shrubby overstory. The rabbitbrush-big sagebrush association, a type of desert wash scrub, occurs within the bed and banks of Amargosa Creek and the drainage channel to the west. In these areas, rubber rabbitbrush (*Chrysothamnus nauseosus*) and big sagebrush (*Artemisia tridentata*) form a sparse cover over bare, course-grained alluvium, with occasional

stands of cheatgrass or tumble mustard in sheltered areas. Within finer soils along the upper creek banks and on the floodplain between Amargosa Creek and the drainage channel, shadscale (*Atriplex canescens*) becomes prominent, and rabbitbrush ceases to occur. The shadscale-big sagebrush association also occurs in fairly extensive patches within non-native herbaceous habitat east of Amargosa Creek. Weedy herbaceous vegetation, particularly red brome and cheatgrass, dominate the understory. However, invasive weeds sparsely colonize some areas, and a few natives were observed, including goldfields (*Lasthenia californica*) and Fremont's phacelia (*Phacelia fremontii*).

Wildlife

Desert scrub habitats provide breeding and foraging habitat for common mammalian wildlife species including California ground squirrel, desert cottontail, black-tailed hare, deer mouse, and chisel-toothed kangaroo rat. Common reptiles include side-blotched lizard, desert night lizard, western whiptail, western longnose snake, red coachwhip, Mojave rattlesnake, and Great Basin gopher snake. Common bird species include Common Raven, House Sparrow, Northern Mockingbird and Horned Larks (*Eremophila alpestris*).

DRY RIVERBED / DESERT WASH

Vegetation

Due to recent scouring, the dry channel of Amargosa Creek was devoid of vegetation during the survey period. Sparse big sagebrush-rabbitbrush scrub, described above, occurs within the drainage channel. The channel is narrow and highly incised, with steep eroded banks. Rabbitbrush scrub is a common vegetation community in the Lancaster area and grows in many disturbed habitats. No special-status plant species were observed, or are expected to occur, within this habitat on the project site.

Wildlife

The dry riverbed / desert wash habitat on the project site provides habitat for the same suite of common species occurring in the disturbed desert scrub habitat.

PAVED / DEVELOPED

The paved and developed areas were devoid of vegetation. Areas surveyed included a pedestrian/bike path and a road along the northern project boundary, and a utility pad in a southeast portion of the site. Paved habitats are used primarily as transit sites for wildlife. Occasionally, species such as the Common Raven will forage on dead animals on pavement and some species, especially herptiles, absorb re-radiated heat from paved surfaces.

BARREN

The barren land on the project site was also devoid of vegetation. Areas surveyed included a cleared area along the western project boundary, dirt access roads, and an old diversion channel of Amargosa Creek. Very few species of wildlife use such habitats. Exceptions include a few species such as the Horned Lark and Killdeer (*Charadrius vociferus*).

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

SPECIAL-STATUS SPECIES REGULATIONS OVERVIEW

Federal and state endangered species legislation gives special status to several plant and animal species known to occur in the vicinity of the project site. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the vicinity of the project site. Such species are referred to collectively as "species of special status" and include plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); animals listed as "fully protected" under the California Fish and Game Code; animals designated as "Species of Special Concern" by the CDFG; and plants listed as rare or endangered by the California Native Plant Society (CNPS) in the *Inventory of Rare and Endangered Plants of California* (2001).

ESA provisions protect federally listed threatened and endangered species and their habitats from unlawful take. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The U.S. Fish & Wildlife Service's (USFWS) regulations define harm to mean "an act which actually kills or injures wildlife." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR § 17.3). Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species May 11, 2005 (50 CFR Part 17). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

Provisions of CESA protect state-listed threatened and endangered species. CDFG regulates activities that may result in "take" of individuals (*i.e.*, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and state-listed species, the CDFG also has produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection. USFWS also uses the label, Species of Concern, as an informal term that refers to those species that might be in need of concentrated conservation actions. Species of Concern receive no legal protection as a result of their designation as Species of Special Concern, and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species. However, most, if not all, of these species are currently protected by state and federal laws.

Raptors (*e.g.*, eagles, hawks, and owls) and their nests are protected under both federal and state regulations. The federal Migratory Bird Treaty Act[1] (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are protected in California under the State Fish and Game Code.[2] Section 3503.5 states it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG.

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under state endangered species legislation, are defined as follows:

- List 1A Plants considered by the CNPS to be extinct in California.
- List 1B Plants rare, threatened, or endangered in California and elsewhere.
- List 2 Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3 Plants about which we need more information – a review list.

SPECIAL-STATUS PLANT SPECIES

Protocol-level surveys were conducted on April 6 and May 24, 2005, for habitats capable of supporting special-status plant species. Prior to the site surveys, information concerning the known distribution of threatened, endangered, or other special-status plant species with potential to occur in the area was collected from several sources and reviewed. The sources included the CDFG's Natural Diversity Database (CNDDB 2005) and information available through the USFWS, CDFG, and technical publications. The CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001) and *The Jepson Manual* (Hickman 1993) supplied information regarding the distribution and habitats of vascular plants in the vicinity.

A query of special-status plants in the CNDDB was first performed for the USGS Lancaster West topographical quadrangle map in which the project site occurs, as well as the eight quadrangles surrounding the project site. The CNPS Inventory was then queried to produce a similar list for Los Angeles County. The specific habitats included in the query were desert-chenopod scrub, Mojave Desert scrub, and Joshua tree woodland. These habitats were chosen based on the similarity of their constituent species to those occurring on the project site. The habitat requirements of each special-status plant species were the principal criteria used for inclusion in the list of species potentially occurring on site.

[1] 16 U.S.C., Sec. 703, Supp. I, 1989.
[2] Section 3503.5, 1992.

Many of the special-status plant species that occur in Los Angeles County are associated with habitat types that don't occur on the project site, such as chaparral, valley grassland, coastal scrub, and cismontane woodland. Seventeen species associated with Mojave Desert scrub were analyzed for rarity; three of which were identified as potentially occurring in the project vicinity: alkali mariposa lily (*Calochortus striatus*), Hoover's woolly-star (*Eriastrum hooveri*), and Mason's nest straw (*Stylocline masonii*). Their potential to occur within the project area is summarized in Table 2. The remaining fourteen were rejected from consideration due to the degraded nature of habitat on site, the lack of associated native species, and/or the absence of specific microhabitat variables such as soil type, elevation, or hydrology (Appendix B).

Alkali mariposa lily (*Calochortus striatus*) Federal Listing Status: None; State Listing Status: None; CNPS Status: List 1B.

Alkali mariposa lily is a rare, bulbiferous perennial associated with moist, alkaline soils of the southern Sierra Nevada and Mojave Desert regions. Like all members of the genus *Calochortus,* alkali mariposa lilies appear in the late winter as long, narrow, grass-like leaves from a small, scaly, deep-seated corm (Hickman 1993). An umbel-like inflorescence, 3.94 to 19.69 inches (10 to 50 cm) in height, arises in spring, and distinctive, purple-veined flowers are produced from April through June.

Lily populations in the Lancaster area are associated with areas where surface water runoff to Rosamond Lake collects and persists over clay soils that retain moisture longer than sandy soils. Alkali mariposa lilies typically occur on moist shallow-sand drifts or low-stabilized dunes around the perimeter of barren-clay pans. This "dune and pan" microtopography is associated with Sunrise, Pond, Oban, Tray, and Rosamond loam soils within and around Edwards Air Force Base. All known occurrences of alkali mariposa lily are found on these soils within the Lancaster area (H. T. Harvey & Associates 2004a).

H. T. Harvey & Associates analyzed the habitat suitability of lands within the Lancaster Sphere of Influence for supporting the alkali mariposa lily (H. T. Harvey & Associates 2004a). The results of the survey concluded that up to 43,891 acres (17,762 ha) of suitable habitat[3] exist within the Lancaster Sphere of Influence, including the City limits. Based on the results of that study, the Amargosa Creek project site is not suitable habitat because it is significantly disturbed and lacks suitable alkaline clay soils, and dune and pan microtopography. Protocol-level surveys confirmed the results of the study. The Alkali mariposa lily was not observed during protocol-level surveys of the project site.

[3] This includes approximately 30,409 acres (12,306 ha) of "highly suitable habitat" (i.e, sites demonstrating intact hydrology, conditions similar to those of occupied habitat, and areas likely to support significant colonies important to population viability), 9,076 acres (3,673 ha) of "moderately suitable habitat" (sites lacking intact hydrology and suitable microtopography, but containing saltbush-scrub habitat with suitable soils), and 4,406 acres (1,783 ha) of "marginally suitable habitat" (sites where suitable soils are present, but that lack intact hydrology and any saltbush scrub habitat on the site is disturbed).

Table 2. Special-status Plant and Wildlife Species, Their Status, and Potential Occurrence at the Amargosa Creek Project Site.

NAME	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE ON-SITE
Federal or State Endangered or Threatened Species			
Mohave ground squirrel *Spermophilus mohavensis*	ST	Desert scrub habitats, usually on flat to gently sloping terrain with alluvial soils.	Determined to be absent: Project site occurs within the squirrel's range, however no individuals were observed during surveys and trapping efforts.
Desert tortoise *Gopherus agassizii*	ST, FT	Inhabits semi-arid grasslands, gravelly desert washes, canyon bottoms and rocky hillsides.	Determined to be absent: Habitat type not suitable – extremely thick ruderal grassland unsuitable for species.
California Species of Special Concern			
Silvery legless lizard *Anniella pulchra pulchra*	CSSC	Sandy or loose loamy soils covered by sparse vegetation.	The species is cryptic and could occur on site: Project site contains suitable foraging and breeding habitat and species records exist from the Lancaster area. Neither the species nor signs of their presence were observed during surveys.
Southwestern pond turtle *Emys (Clemmys) marmorata pallida*	CSSC	In and around a wide variety of permanent or nearly permanent aquatic habitats.	Determined to be absent: Habitat is disturbed and marginal due to a lack of water retention along Amargosa Creek. No individuals were observed during site surveys.
San Diego horned lizard *Phrynosoma coronatum blainvillei*	CSSC	Loose sandy loam and alkaline soils in habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands.	Determined to be absent: Habitat is poor due to the dense growth of understory vegetation that covers much of the site.
California horned lizard *Phrynosoma coronatum frontale*	CSSC	Loose sandy loam and alkaline soils in habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands.	Determined to be absent: Habitat is poor due to the dense growth of understory vegetation that covers much of the site.
Two-striped garter snake *Thamnophis hammondii*	CSSC	In or near permanent freshwater, more commonly in pools of streams with a rocky substrate, bordered by riparian vegetation.	Determined to be absent: Habitat is disturbed and marginal due to a lack of water retention along Amargosa Creek. No individuals were observed during site surveys.

NAME	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE ON-SITE
Western Burrowing Owl *Athene cunicularia*	CSSC	Found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals, such as ground squirrels.	Could occupy site prior to construction: Project site contains suitable foraging habitat and California ground squirrel burrows that could provide breeding habitat. Neither the species nor signs of their presence were observed during surveys.
State Protected Species or CNPS Species			
Alkali mariposa lily *Calochortus striatus*	CNPS List 1B	Alkali seeps, clay soils within chenopod scrub. In the Lancaster area, associated with "dune and pan" microtopography within the natural floodplain of Rosamond Lake.	Determined to be absent: Associated soils and microtopography absent from the project site. Not observed during protocol-level surveys.
Hoover's woolly-star *Eriastrum hooveri*	CNPS List 4	Sandy or silty soils within rolling plains and grassland. In the Lancaster area, associated with clay soils north of the city to Rosamond Lake.	Determined to be absent: Associated soils absent from the project site. Disturbed soils not expected to support this species. Not observed during protocol-level surveys.
Mason's nest straw *Stylocline masonii*	CNPS List 1B	Sandy washes within chenopod scrub and pinyon-juniper woodland.	Determined to be absent: Marginally-suitable habitat present within the dry channel of Amargosa Creek, but species not known from the Antelope Valley area, and it was not observed during protocol-level surveys.

***LISTING STATUS**

FE	=	Federally listed Endangered
FT	=	Federally listed Threatened
FD	=	Federally delisted
FC	=	Federal Candidate. Sufficient biological information to support a proposal to list the species as Endangered or Threatened
SE	=	State listed Endangered
ST		State listed Threatened
CSSC	=	California Species of Special Concern
SP	=	State Protected Species
CNPS 1B	=	Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere
CNPS 2	=	Plants rare, threatened, or endangered in California, but more numerous elsewhere
CNPS 3	=	Plants about which we need more information - A review list.
CNPS 4	=	Plants of limited distribution

Hoover's woolly-star (*Eriastrum hooveri*). Federal Status: None (delisted); State Status: None; CNPS Status: List 4.

Hoover's woolly-star is a small, wiry, inconspicuous annual in the phlox family (*Polemoniaceae*) flowering from March through June. Seedlings of this species emerge in late winter or spring, typically in sandy, open areas within alkali sinks, washes, and other sparsely vegetated habitats. Associated species include saltbush, seepweed (*Suaeda moquinii*), and matchweed (*Gutierrezia californica*) (USFWS 1998). Hoover's woolly-star is known to be locally common in many microhabitats in the Lancaster vicinity, and has been found on semi-barren, disturbed sites with reduced shrub or herbaceous cover (USFWS 1998).

Hoover's woolly-star was listed as threatened under the ESA in 1990 (Fed. Reg. 55:29361-29370). However, the USFWS delisted this species in October 2003 (Fed. Reg. 68:57829-57837). The determination to delist the species was based on the discovery of new populations and implementation of recovery actions that contributed substantially towards meeting delisting criteria outlined in the *Recovery Plan For Upland Species of the San Joaquin Valley, California* (USFWS 1998).

No suitable habitat for this species is located on, or near, the project site. The absence of Hoover's woolly-star on the project site was confirmed during blooming-period surveys in 2005.

Mason's nest straw (*Stylocline masonii*). Federal Listing Status: None; State Listing Status: None; CNPS Status: List 1B.

Mason's nest straw is a small, spreading, annual herb in the sunflower family (*Asteraceae*) with grayish foliage and rounded, woolly flower heads. This species is differentiated from the smaller ovate flowering heads (0.1 inch-wide [2.5 mm]) of the common nest straw within the Mojave region (Hickman 1993). Populations of Mason's nest straw are associated with sandy washes within desert-chenopod scrub and juniper woodland (*Juniperus* spp.) (CNDDB 2005).

One population of Mason's nest straw occurs in Soledad Canyon, Los Angeles County. Plants are located in a broad, sandy wash associated with big sagebrush. However, this species is not known to occur in the Antelope Valley, and only marginally suitable habitat occurs within the dry channel / desert wash of Amargosa Creek. The absence of Mason's nest straw on the project site was confirmed during blooming-period surveys in 2005.

SPECIAL-STATUS WILDLIFE SPECIES

Surveys were conducted on the project site for habitats capable of supporting special-status wildlife species. Prior to the site surveys, information concerning the known distribution of threatened, endangered, or other special-status and significant wildlife species with potential to occur in the area was collected from several sources and reviewed. The sources included the CDFG's Natural Diversity Database (CNDDB 2005) and information available through the USFWS, CDFG, Museum of Vertebrate Zoology, and California Academy of Sciences. Jennings and Hayes' (1994) *Amphibian and Reptile Species of Special Concern in California* provided additional information regarding the distribution and habitats of California Species of Special Concern in the vicinity.

The CNDDB was queried for occurrences of special-status wildlife species within the USGS Lancaster West topographical quadrangle map in which the project site occurs and the eight surrounding quadrangles. The specific habitat requirements and the locations of known occurrences of each special-status wildlife species were the principal criteria used for inclusion in the list of species potentially occurring on site.

The special-status wildlife species that occur locally in habitats similar to those found on the project site are described below. The legal status and likelihood of occurrence of these species on site are given in Table 2. Expanded descriptions are included for those species for which suitable breeding habitat is available, where specific surveys were conducted, or where the resource agencies have expressed particular concern. Several species of special concern may occasionally fly over or forage over the site (e.g. transient raptors), but none of these species are expected to breed on the site and site development will not result in significant impacts to any of them. Thirteen species were rejected from consideration due to lack of suitable aquatic or terrestrial habitat. Wildlife species considered but rejected for occurrence are listed in Appendix B.

Federal or State Endangered or Threatened Species

Desert tortoise (*Gopherus agassizii*). Federal Listing Status: Threatened; State Listing Status: Threatened.

The desert tortoise (*Gopherus agassizii*) is an herbivore that may attain a length of 9 to 15 inches (23 to 38 cm) in carapace length. The tortoise is able to live where ground surface temperature may exceed 140°F (60°C) because of its ability to dig burrows and escape the heat. At least 95 percent of its life is spent in burrows. Within these burrows, desert tortoises are protected from freezing during the dormant periods ranging from November through February or March (USFWS 1994).

The presence of soil suitable for digging burrows is a limiting factor to desert tortoise distribution (USFWS 1994). Some of their burrows extend just beyond the shell of the tortoise, while others extend for several feet. A single tortoise may have a dozen or more burrows distributed over its home range. Different tortoises may use these burrows at different times.

Desert tortoises inhabit semi-arid grasslands, gravelly desert washes, canyon bottoms, and rocky hillsides (USFWS 1994).

The diet of the desert tortoise varies throughout the species' range. If winter rainfall has been sufficient to result in germination of annuals, the annuals are consumed heavily when the tortoise emerges from winter torpor (USFWS 1994). Other herbs, grasses, some shrubs, and the new growth of cacti and their flowers comprise a major portion of the diet. If there is no summer rain, tortoises will utilize dry forage (USFWS 1994). Natural predators of the tortoise include the Common Raven (*Corvus corax*), Gila monster (*Heloderma suspectum*), desert kit fox (*Vulpes macrotis*), North American badger (*Taxidea taxus*), Roadrunner (*Geococcyx californianus*), and coyote (*Canis latrans*).

Plant species play a major role in defining desert tortoise habitat. Creosote bush (*Larrea tridentata*), burrobush (*Ambrosia dumosa*), Mojave yucca (*Yucca schidigera*), and blackbrush (*Coleogyne ramosissima*) generally distinguish desert tortoise habitat. At higher altitudes, Joshua tree and galleta grass (*Pleuraphis rigida*) are common plant indicators (USFWS 1994).

On June 13, 2005, a focused survey was conducted at the site for desert tortoise or signs of their presence. Occurrence data listed in the CNDDB (2005) indicate that the project area lies approximately 16 miles (25.7 km) southwest and west of the nearest known desert tortoise localities. The extremely dense growth of ruderal vegetation that covers much of the project site is unsuitable for desert tortoises. No tortoises or signs of their presence were detected during the focused desert tortoise survey. Desert tortoises are absent from the project site.

Mohave ground squirrel (*Spermophilus mohavensis*). Federal Listing Status: None; State Listing Status: Threatened.

The Mohave ground squirrel (*Spermophilus mohavensis*) is restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties and is rare throughout its range. Optimal breeding habitats include open desert scrub, alkali desert scrub, and Joshua tree associations. The Mohave ground squirrel is also known to forage in annual grasslands (Best 1995). The squirrel prefers sandy to gravelly soils, and avoids rocky areas, urban development, areas of off-road vehicle use, and agriculture.

The Mohave ground squirrel is active above ground in the spring and early summer. Squirrels begin aestivation in July or August, and depending on elevation, emergence dates vary from March to June. Young squirrels are born from March to May with birth rates peaking in April. The diet of the Mohave ground squirrel consists of a wide variety of green vegetation, seeds, and fruits (Best 1995). Squirrels forage on the ground and in shrubs, and use burrows at the base of shrubs for cover. Predators of the Mohave ground squirrel include carnivores and raptors including the desert kit fox, coyote, North American badger, bobcat (*Lynx rufus*), Prairie Falcon (*Falco mexicanus*), Golden Eagle (*Aquila chrysaetos*), and Red-tailed Hawk (*Buteo jamaicensis*) (Best 1995).

During the protocol-level field survey of the project site on April 15, 2005, Mohave ground squirrels were not observed; however, it was determined that approximately 40 acres (16 ha) of

the site contained marginal habitat for the squirrel. CDFG recommends a trapping survey to be undertaken when potential habitat for the Mojave ground squirrel is present and the presence of the squirrel on the project site is unknown. Potential habitat consists of land supporting desert scrub vegetation within, or adjacent to, the geographic range of the squirrel. Therefore, CDFG's trapping recommendations for the Mohave ground squirrel were implemented because the project site supports potential habitat and presence of the squirrel was unknown.

A Memorandum of Understanding (MOU) with the Habitat Conservation Planning Branch of CDFG authorized trapping for the squirrel on the project site (H.T. Harvey & Associates 2004b). Suitable habitat was not uniformly distributed so trapping was performed in four small grids pre-approved by CDFG. Fifty traps were deployed and operated by a qualified wildlife biologist (MOU holder) on the project site during the weeks of April 18, May 9, and July 11, 2005. Mohave ground squirrels were not observed or captured during the surveys (H.T. Harvey & Associates 2005).

In the circumstance of a negative trapping result, CDFG will normally stipulate that the project site harbors no Mohave ground squirrels. This stipulation (CDFG 2003) typically expires one year from the ending date of the last trapping period on the project site, in this case July 15, 2005. If construction will not commence by July 15, 2006, an extension of the current findings should be requested from CDFG or another trapping session should be executed per CDFG guidelines.

California Species of Special Concern and State Protected Species

Silvery Legless Lizard (*Anniella pulchra pulchra*). Federal Status: None; State Status: California Species of Special Concern.

The silvery legless lizard (*Anniella pulchra pulchra*) is found in sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, desert, pine-oak woodland, or under sycamores, cottonwoods, or oaks that grow on stream terraces. Legless lizards forage for insects and spiders underneath leaf litter or underneath sandy soil, usually at the base of shrubs or other vegetation (Jennings and Hayes 1994). Their adaptation for burrowing, which requires soils with a high sand fraction, makes legless lizards vulnerable to ground disturbing activities such as agriculture. The CNDDB (2005) lists three records for silvery legless lizards within the Lancaster West quadrangle containing the project site and the Ritter Ridge quadrangle immediately to the south. One record from 1988 is estimated to be approximately 1.7 miles (2.7 km) from the project site. The other two records, from 1988 and 1995, are located approximately 4.8 and 6.4 miles (7.7 and 10.3 km) from the project site, respectively. Although not observed during any biological survey conducted at the site and not observed during the Mohave ground squirrel trapping conducted during the spring and summer of 2005, silvery legless lizards are fossorial and relatively cryptic, and could occur on the project site.

California Horned Lizard (*Phyrnosoma coranatum frontale*). Federal Status: None; State Status: California Species of Special Concern. San Diego Horned Lizard (*Phyrnosoma coranatum blainvillei*). Federal Status: None; State Status: California Species of Special Concern.

The California horned lizard (*Phyrnosoma coranatum frontale*) and San Diego horned lizard (*Phyrnosoma coranatum blainvillei*) are subspecies of the coast horned lizard; both state Species of Special Concern. They occupy loose sandy loam and alkaline soils in a variety of habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands. The California horned lizard and San Diego horned lizard primarily eat insects such as ants and beetles. Once habitants of the Central Valley and coastal southern California, these species have disappeared from much of their former range. Their population decline is mainly attributed to conversion of land for agricultural purposes. The human introduction of non-native Argentine ants (*Linepithema humile*), which are inedible to horned lizards and tend to displace the native carpenter ants (*Camponotus spp*) that are a food source of horned lizards, is another factor in their decline. California horned lizards and San Diego horned lizards have been recorded from the vicinity of the project site; however, the extremely dense growth of ruderal vegetation that covers much of the project site is unsuitable for horned lizards. There were no horned lizards observed at the site during any biological survey or during the Mojave ground squirrel trapping that was conducted during the spring and summer of 2005. California and San Diego horned lizards are absent from the project site.

Southwestern Pond Turtle (*Emys* [*Clemmys*] *marmorata*). Federal Status: None; State Status: Species of Special Concern.

The southwestern pond turtle (*Emys* [*Clemmys*] *marmorata*) is a medium-sized brown or olive-colored aquatic turtle. It is found in non-desert areas west of the Sacramento-San Joaquin Delta, and south to the northern part of Baja California. The pond turtle is normally found in and along riparian areas, although gravid females have been reported up to a mile (1.6 km) away from water in search of appropriate nest sites. The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators such as raccoons (*Procyon lotor*), introduced fishes, and bullfrogs (*Rana catesbeiana*). Juvenile and adult turtles are commonly seen basking in the sun at appropriate sites; however, they are extremely wary animals and often dive into the water when disturbed.

The CNDDB (2005) lists two records for the southwestern pond turtle within the quadrangles surrounding the project site (1995 and 1999). To protect the population, the exact locations of the occurrences have been suppressed. The description in the CNDDB maintains pond turtles were observed in "Amargosa Creek, south of Ritter Ridge, west of Palmdale". This would place the occurrence approximately six to seven miles (9.7 to 11.3 km) from the project site. Although records exist for southwestern pond turtles within Amargosa Creek, the reach of the drainage within the project area lies outside the known range of the species, and pond turtles are not known from the Antelope Valley floor. Moreover, the habitat along the reach of Amargosa Creek within the project area is much more disturbed and much drier than the reach of the drainage from which the species has been recorded. Although the small pond located in a side

channel of Amargosa Creek near the south side of the project site could continuously retain water, no turtles were observed at the site during any biological survey or during the Mojave ground squirrel trapping that was conducted during the spring and summer of 2005. Southwestern pond turtles are absent from the project site.

Two-striped Garter Snake (*Thamnophis hammondii*). Federal Status: None; State Status: Species of Special Concern.

The two-striped garter snake (*Thamnophis hammondii*) is a slender-bodied snake that grows to approximately 3 ft (1 m) in length. This species is highly aquatic but may move considerable distances into upland habitats where permanent water is lacking. Two-striped garter snakes have been observed in riparian, freshwater marsh, coastal sage scrub, chaparral, oak woodland, and grassland habitats. The species is normally active from April to October and may become primarily nocturnal or crepuscular during the summer months. This species preys primarily on fish, fish eggs, and aquatic vertebrates. Populations may be threatened by the presence of numerous exotic species including bullfrogs and centrarchid fishes.

The CNDDB (2005) lists two records (1995 and 1999) for the two-striped garter snake within the nine-quadrangle area including and surrounding the project site. To protect the population, the exact locations of the occurrences have been suppressed. The description in the CNDDB of two-striped garter snakes being observed in "Amargosa Creek, south of Ritter Ridge, west of Palmdale" would place this occurrence approximately six to seven miles (9.7 to 11.3 km) from the project site. Although records exist for two-striped garter snakes within Amargosa Creek, the reach of the drainage within the project area lies outside the known range of the species. Moreover, the habitat along the reach of Amargosa Creek within the project area is much more disturbed and much drier than the reach of the drainage from which the species has been recorded. Although the small pond located in a side channel of Amargosa Creek near the south side of the project site could continuously retain sufficient water to support two-striped garter snakes, none were observed at the site during any biological survey or during the Mojave ground squirrel trapping that was conducted during the spring and summer of 2005. Two-striped garter snakes are absent from project site.

Western Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The Burrowing Owl (*Athene cunicularia*) is a small, terrestrial owl of open country. Burrowing Owls favor flat, open grassland or gentle slopes, and sparse shrubland ecosystems. These owls prefer annual and perennial grasslands, typically with sparse, or nonexistent, tree or shrub canopies. In California, Burrowing Owls are found in close association with California ground squirrels. Owls use ground squirrel burrows for shelter and nesting.

Approximately 60 California ground squirrel burrows were observed along the banks of Amargosa Creek on the project site. Ground squirrels were also observed along dirt roads throughout the site, and in areas adjacent to the dirt roads. Although no burrow within the project site showed any evidence of prior usage by Burrowing Owls (*e.g.*, pellets, whitewash), habitat characteristics on site are suitable for Burrowing Owls.

REGULATED HABITATS

UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTION

Regulatory Overview

Areas meeting the regulatory definition of "Waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U.S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

Survey Results

The portion of Amargosa Creek and its tributary drainage channel are well-defined channels, supporting ordinary flows to Rosamond Lake. However, because the Antelope Valley is an internally drained basin with no connection to navigable waters, the USACE has chosen to disclaim all drainages of this sort within the basin (Pers comm. A. Allen, USACE, Los Angeles District, March 26, 2003). Therefore, no habitats subject to the regulatory jurisdiction of the USACE occur on the project site.

CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION

Regulatory Overview

The CDFG potentially extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFG 1994). Such areas on the site were determined using methodology described in *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607* (CDFG 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream, or which substantially change its bed, channel or bank, or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFG.

Survey Results

Approximately 9.9 acres (4 ha) of desert wash habitat within the bed and banks of Amargosa Creek and its tributary drainage channel are subject to the regulatory jurisdiction of the CDFG under Section 1602 of the Fish and Game Code. Amargosa Creek carries regular flows during and immediately after rain events and is dry for much of the year. Due to heavy colonization of the tributary drainage channel by rabbitbrush and big sagebrush, this tributary drainage is assumed to be less active than Amargosa Creek but nevertheless carries ephemeral flows. No riparian vegetation is associated with either drainage.

If Amargosa Creek or its tributary drainage channel is impacted by project activities, a Streambed Alteration Agreement from CDFG will be required. CDFG will request adequate measures to offset impacts to desert wash resources. Early consultation with CDFG is recommended as project modification and/or mitigation measures may be necessary and will require the approval of CDFG (See Environmental Impacts section below).

LOCAL REGULATIONS AND PROGRAMS

LANCASTER GENERAL PLAN

The *City of Lancaster General Plan* (City of Lancaster 1997) includes a policy and specific measures to preserve significant desert wash areas and protect sensitive species that utilize this habitat. This policy is relevant to the dry riverbed / desert wash habitat on the project site. The relevant policy and specific actions included in the City of Lancaster General Plan are as follows:

Policy 3.4.3: Preserve significant desert wash areas to protect sensitive species that utilize these habitat areas.

Specific Actions:

3.4.3(b): As part of specific environmental review, evaluate natural desert wash habitats which could be impacted by development to determine their potential to support special status plant and wildlife species. Areas of desert wash habitat considered to be highly important for special status species, or that is occupied by these species, shall be protected.

General Plan Compliance

The purpose of this Biotic Study is to adequately evaluate development constraints on the project site posed by biological resources. As part of the overall environmental review, and in compliance with the General Plan, all biotic habitats on the project site were evaluated and assessed for their potential to support special-status species. As described in detail above, approximately 9.9 acres (4 ha) of desert wash habitat could be impacted by development. The desert wash habitat on the project site is not highly important for special-status species. Therefore, modification of this habitat on the project site would comply with General Plan policy 3.4.3 for the reasons detailed in the Special-Status Plant and Wildlife Species section of this report.

ENVIRONMENTAL IMPACTS

SIGNIFICANCE CRITERIA

The proposed project will have a number of effects on the biological resources of the project site. The California Environmental Quality Act (CEQA) defines "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in the environment." (Pub. Res. Code, §21068). Under CEQA Guidelines Section 15065, a project's effects on biotic resources are deemed significant where the project would:

- substantially reduce the habitat of a fish or wildlife species,
- cause a fish or wildlife population to drop below self-sustaining levels,
- threaten to eliminate a plant or animal community, and/or
- reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines lists other potential impacts to consider when analyzing the effects of a project. The following are applicable to the assessment of impacts stemming from the proposed project:

- Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?
- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS?
- Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preserve policy or ordinance?
- Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Federal and state laws regarding special-status species and Species of Concern establish a comprehensive regulatory scheme specifically designed to protect these wildlife and plant species from extinction. Compliance with these laws and regulations avoids the need to make the mandatory finding of significance described in Section 15065 of the State CEQA Guidelines.

IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

Loss of Non-native Herbaceous, Developed, Barren, and Disturbed Habitats

Permanent loss of approximately 96 acres (39 ha) of non-native herbaceous habitat, 28 acres (11 ha) of disturbed desert scrub, 28.5 (11.5 ha) acres of barren land, and 3.0 acres (1.2 ha) of paved areas will potentially occur as a result of the project. These habitats are locally and regionally common and provide, at best, marginal habitat for native plants and wildlife. Loss of these habitats will be less than significant and no mitigation is required (however, see impacts to Burrowing Owl below).

Construction Phase Disturbance to Silvery Legless Lizards

Silvery legless lizards, a California Species of Special Concern, could occur on the project site in low numbers. Potential habitat for this species is regionally abundant. Project implementation would not substantially reduce the habitat of this species, restrict their range, or cause regional populations to drop below a self-sustaining level. Impacts to silvery legless lizards will be less than significant and no individual mitigation measures are warranted.

Construction Phase Disturbance to Fish and Wildlife Species within Amargosa Creek and its Tributary Drainage Channel

Approximately 9.9 acres (4 ha) of seasonal aquatic habitat occurs within the bed and banks of Amargosa Creek and its tributary drainage channel. Flows within these drainages are highly ephemeral and neither support aquatic species nor provide a perennial water source for wildlife.

Areas of the project site surrounding the creek and its floodplain are highly degraded. Unlike the majority of undeveloped land north of the City, the project site does not currently support the braided wash or dune and pan microtopography associated with natural sheet flows to Rosamond Lake. Furthermore, the streambed immediately to the north (downstream) of the project site is constructed as an underground storm-drain box that is underneath a commercial shopping center, effectively limiting the use of the creek channel as a wildlife corridor. Therefore, the potential for the proposed activity to adversely affect fish and other stream-dependent wildlife resources is considered a less than significant impact under CEQA (however, see sections on Loss of Sensitive Desert Wash Resources, Cumulative Impacts, and Indirect Impacts below).

SIGNIFICANT IMPACTS THAT CAN BE MITIGATED TO A LESS-THAN-SIGNIFICANT LEVEL

Loss of Sensitive Desert Wash Resources within Amargosa Creek and its Tributary Drainage Channel

The proposed project may substantially alter Amargosa Creek and its tributary drainage within the project site, and may result in the direct loss of up to 9.9 acres (4 ha) of desert wash habitat. Desert wash habitat is a limited resource in the Lancaster area. If the project substantially degrades or removes desert wash habitat, the project will have significant direct and cumulative impacts to this resource. Implementation of following avoidance or mitigation measures will reduce impacts to desert wash resources to less-than-significant levels.

Mitigation 1. Avoidance. The proposed project should be designed to avoid Armagosa Creek and its tributary drainage channel to the extent feasible. In areas where the creek and drainage channel cannot be avoided, Mitigation 2 should be implemented.

Mitigation 2. Preservation of offsite desert wash habitat. Following final project design, the City in cooperation with CDFG should assess the area of impact to desert wash resources within the project site. To mitigate impacts to this area, offsite desert wash habitat should be preserved in perpetuity at a 2:1 mitigation ratio (two acres preserved for each acre impacted).

In the event of loss of desert wash habitat, the City of Lancaster should work with CDFG to identify appropriate mitigation lands and ensure their permanent protection through an appropriate CDFG-approved mechanism, such as a conservation easement or fee title purchase. A conservation easement could be held by CDFG or an approved land management entity and would be recorded within a time frame agreed upon by CDFG and the City of Lancaster.

Construction Phase Disturbance to Burrowing Owls

Burrowing Owls, though not observed during field surveys, could inhabit the project site and adjacent lands east of the site prior to construction. Declines in Burrowing Owl populations in southern California have been documented for several decades. Garrett and Dunn (1981) reported that Burrowing Owl numbers were greatly reduced and generally decreasing throughout southern California, except in the Imperial Valley and along the Colorado River. They are rarer today than in 1981 within San Diego, Orange, and Los Angeles Counties.

If Burrowing Owls are present on the site, or adjacent to the site at the time of construction, construction disturbance could destroy occupied burrows. Construction during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Reductions in the number of this rare species within Los Angeles County, directly or indirectly through nest abandonment or reproductive suppression, would constitute a significant impact. Furthermore, raptors, including owls and their nests, are protected under both federal and state laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code section 3503.5.

The measures outlined below will reduce potential project related impacts to Burrowing Owls to less-than-significant levels and avoid "take" of the species; thereby, conforming to federal and state regulations protecting raptors.

Mitigation 1. Pre-construction Survey. A pre-construction survey for Burrowing Owls conducted by a qualified ornithologist should occur prior to soil-altering activity or construction activities within the project area. The pre-construction surveys should be conducted per CDFG guidelines (currently no more than 30 days prior to the start of site grading); regardless of the time of year in which grading occurs (CDFG 1995). If no Burrowing Owls are found within the project site or within an additional 246-foot (75 m) radius (the radius that is recommended by CDFG to protect nests from new human disturbance), then no further action is warranted.

Timing of Survey: As mentioned above, the pre-construction survey shall be conducted no more than 30 days prior to the start of site grading, regardless of the time of year in which grading occurs. Therefore, if grading of the project site occurs in phases, all phases of ground disturbance activities must comply with CDFG guidelines.

Mitigation 2. Passive Relocation. If pre-construction surveys confirm occupation by Burrowing Owls, occupied burrows should not be disturbed during the nesting season (broadly defined as February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. When destruction of occupied burrows is unavoidable, passive relocation techniques (CDFG 1995) should be used to exclude owls from the project site.

CUMULATIVE IMPACTS

Amargosa Creek and its Tributary Drainage Channel

Periodic natural run-off from the Sierra Pelona Mountains has created various natural washes and channels in the Lancaster area. As these natural desert washes, including portions of Amargosa Creek, are developed, their natural absorption capabilities are reduced, floodwaters are redirected, and important desert wash resources may be impacted. Furthermore, future growth and development in Lancaster may accelerate these impacts. The Lancaster General Plan (1997) projected that population levels within the City limits will increase by 205 percent between 1990 and 2020. While recent estimates are more conservative, population levels and the number of households in Lancaster are expected to increase by 117.5 percent and 112.9 percent respectively between 2000 and 2030 (SCAG RTP 2004). Residential and non-residential development has been necessary to accommodate the increase in population. Many of these developments have occurred directly within, or adjacent to, Amargosa Creek and its tributaries thereby changing the natural hydrology of the creek. Planned improvements in the Amargosa Creek area associated with new development include the construction of a detention basin at the mouth of the creek, and the construction of 12.5 miles (20 km) of earthen channels, 1.5 miles (2.4 km) of concrete channels, and 10 miles (16.1 km) of storm drains (City of Lancaster 1997).

The loss of up to 9.9 acres (4 ha) of desert wash resources would result in cumulative impacts to Amargosa Creek and its tributary drainage channels. The mitigation measures described above (see Loss of Sensitive Desert Wash Resources) will reduce these cumulative impacts to less-than-significant levels.

INDIRECT IMPACTS

The proposed project has the potential to degrade water quality within Amargosa Creek as a result of pollution, sedimentation, and litter stemming from site construction and operation. These factors could result in significant indirect effects to downstream biological resources.

The project, however, must comply with state and federal water quality regulations, including California's General Construction Stormwater Permit, which requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). SWPPPs are designed to manage storm water quality degradation through best management practices during and after construction. These practices may include temporary drainage ditches, culverts, berms, and/or straw bales that confine storm water and prevent it from carrying sedimentation off of the project site.

If the project diverts or obstructs the natural flow of; or changes the bed, channel, or bank of; or uses material from Amargosa Creek; the project will require a Streambed Alteration Agreement from CDFG. CDFG Streambed Alteration Agreements contain avoidance and minimization measures addressing work areas and vegetation removal; fill and spoil; structures; clean up; pollution, sedimentation, and litter; restoration and mitigation; removing non-native vegetation; and protective measures for wildlife and aquatic species. Compliance with the SWPPP and CDFG Streambed Alteration Agreement will reduce the potential for indirect impacts to biological resources to less-than-significant levels.

UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

No unavoidable significant adverse impacts on biological resources would occur from implementing the proposed project.

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APPENDIX A.

PLANT SPECIES OBSERVED ON THE AMARGOSA CREEK PROJECT SITE

PLANT SPECIES IDENTIFIED ON THE AMARGOSA CREEK PROJECT SITE		
FAMILY NAME	**SCIENTIFIC NAME**	**COMMON NAME**
Asteraceae	**Artemisia tridentata**	Big sagebrush
	Chrysothamnus nauseosus	Rabbitbrush
	Gutierrezia microcephala	Sticky snakeweed
	Hemizonia pungens	Common spikeweed
	Lasthenia californica	California goldfields
Boraginaceae	*Amsinckia menziesii* var. *intermedia*	Common fiddleneck
Brassicaceae	*Descurainia pinnata* var. *glabra*	Tansy mustard
	Lepidium fremontii	Desert allysum
	Sisymbrium altissimum	Tall tumblemustard
Chenopodiaceae	*Atriplex canescens* var. *canescens*	Fourwing saltbush; Shadscale
Geraniaceae	*Erodium cicutarium*	Redstem filaree
Poaceae	*Bromus madritensis* var. *rubens*	Red brome
	Bromus tectorum	Cheatgrass
	Hordeum murinum var. *leporinum*	Mediterranean barley
	Schismus arabicus	Mediterranean grass
Polygonaceae	*Rumex hymenosepalus*	Canaigre dock

APPENDIX B.

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES CONSIDERED BUT REJECTED FOR OCCURRENCE AT THE PROJECT SITE

SPECIAL-STATUS PLANT SPECIES CONSIDERED BUT REJECTED FOR OCCURRENCE ON THE AMARGOSA CREEK PROJECT SITE

Scientific Name	Common Name	Lack of alkaline clay soils and mesic hydrology	Associated species absent from the project site	Other edaphic factors absent from project site	Project area outside elevation range of species
Astragalus preussii var. *laxiflorus*	Lancaster milk-vetch	X			
Calystegia peirsonii	Peirson's morning-glory		X		X
Canbya candida	pygmy poppy		X		
Castilleja plagiotoma	Mojave Indian paintbrush		X		
Chorizanthe spinosa	Mojave spineflower		X	X	
Chorizanthe xanti var. *leucotheca*	white-bracted spineflower		X		
Cryptantha clokeyi	Clokey's cryptantha		X	X	X
Cymopterus deserticola	desert cymopterus			X	
Goodmania luteola	golden goodmania	X			
Lupinus peirsonii	Peirson's lupine		X		X
Muilla coronata	crowned muilla			X	X
Navarretia fossalis	spreading navarretia		X	X	
Opuntia basilaris var. *brachyclada*	short-joint beavertail		X		
Syntrichopappus lemmonii	Lemmon's syntrichopappus			X	X

SPECIAL-STATUS WILDLIFE SPECIES CONSIDERED BUT REJECTED FOR OCCURRENCE ON THE AMARGOSA CREEK PROJECT SITE			
Scientific Name	**Common Name**	**Lack of suitable aquatic habitat**	**Lack of suitable terrestrial habitat or outside of range**
Rana aurora draytonii	California red-legged frog	X	X
Accipiter cooperii	Cooper's Hawk		X
Accipiter striatus	Sharp –shined Hawk		X
Aquila chrysaetos	Golden Eagle		X
Buteo cegalis	Ferruginous Hawk		X
Buteo swainsoni	Swainson's Hawk		X
Circus cyaneus	Northern Harrier		X
Falco columbarius	Merlin		X
Falco mexicanus	Prairie Falcon		X
Falco peregrinus anatum	American Peregrine Falcon		X
Charadrius alexandrinus nivosus	Western Snowy Plover		X
Charadrius montanus	Mountain Plover		X
Asio flammeus	Short-eared Owl		X
Asio flammeus	Short-eared Owl		X
Empidonax traillii	Willow Flycatcher		X
Lanius ludovicianus	Loggerhead Shrike		X
Vireo belli	Least Bell's Vireo		X
Eremophila alpestris actia	California Horned Lark		X
Toxostoma lecontei	Le Conte's Thrasher		X
Dendroica petechia brewsteri	California Yellow Warbler		X
Icteria virens	Yellow-breasted Chat		X
Amphispiza belli belli	Bell's Sage Sparrow		X
Agelaius tricolor	Tricolored Blackbird	X	X
Lepus californicus bennettii	San Diego black-tailed jackrabbit		X
Onychomys torridus ramona	Southern grasshopper mouse		X
Perognathus inornatus inornatus	San Joaquin pocket mouse		X
Taxidea taxus	North American badger		X