BIOLOGICAL SITE ASSESSMENT

The Commons at Quartz Hill
Lancaster, California

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1.0 INTRODUCTION

1.1 Project Site Location and General Description

The proposed project, commonly referred to as The Commons at Quartz Hill (proposed project), is located in the City of Lancaster (City), at the northwest corner of the intersection of 60th Street West and Avenue L (project site). The project site is bounded to the north by residential developments, to the south by Quartz Hill High School, to the east by residential development and to the west by a vacant parcel. The project site is located within the U.S. Geological Survey (USGS) Lancaster West Quadrangle 7.5 Minute Series Map in Sections 27 and 35, Township 7 North, Range 13 West. Access to the project site is via the Antelope Valley Freeway (State Route 14) exit to Avenue L (see Figure 1).

The project site is approximately 40 acres and is geographically located within the open flats of the Antelope Valley within the community of Quartz Hill in the City of Lancaster, southeast of the Antelope Valley Poppy Reserve, and southwest of the Prime Desert Woodland Preserve. The project site is predominantly vegetated with ruderal grassland plant species, with patches of rabbitbrush scrub in the eastern portion of the site and willows along the western boundary (see Figure 2). An active constructed drainage exists just west of the site along the western boundary which receives irrigation runoff from the high school. Another drainage channel was recently constructed within the southwestern portion of the site by the City, but has been since been modified and is inactive (does not support water flows). Topography of the project site is generally flat at an elevation of approximately 2,400 feet (720 meters) above mean sea level. The soil series identified per the US Department of Agriculture Soil Survey of the Antelope Valley Area are Hesperia fine sandy loam with 0 to 2 percent slopes and Greenfield sandy loam with 2 to 9 percent slopes (USDA 2007).

The proposed project consists of the development of an approximately 353,129 square foot commercial shopping center located on approximately 40 acres commonly known as The Commons at Quartz Hill (proposed project). The commercial development would include two anchors stores and up to ten smaller commercial buildings that would house a variety of food, merchandise and services. One proposed anchor store is a Wal-Mart Supercenter, approximately 240,000 square feet with an associated garden center. The second anchor store is anticipated to be approximately 90,000 square feet. A total of 1,837 parking spaces are anticipated to be provided and access to the project site would occur from 60th Street West and Avenue L.

1.2 Study Objectives

This biological study was requested by the City in order to help asses the potential impacts to the biological resources from construction and occupancy of the proposed project, in compliance with the requirements of the California Environmental Quality Act (CEQA). The purpose of this study is to identify sensitive biological resources that are present or have the potential to occur within the project site. This biological assessment includes discussions of the methods of study, the biological resources occurring within the project site and a discussion of special status plant and wildlife species which may have the potential to occur within the project site.

2.0 METHODS

The following discusses the various reviews and field studies that were conducted to accurately describe the biological resources within the project site boundaries. The technical report associated with the results of the focused surveys for burrowing owls can be found in Appendix D.

2.1 Data Compilation

Christopher Joseph and Associates (CAJA) compiled and reviewed pertinent information regarding the project site. Information that was reviewed included:

- City of Lancaster, Master Environmental Assessment (accessed online on http://www.lancaster2030.info/archive.asp#general, June 2007)
- California Department of Fish and Game's (CDFG) California Natural Diversity Data Base (CNDDB) record search of the Lancaster West 7.5 minute USGS quadrangle and surrounding quadrangles (Rosamond, Rosamond Lake, Lancaster East, Little Buttes, Del Sur, Sleepy Valley, Ritter Ridge and Palmdale) (CDFG, June 2007);
- California Native Plant Society's (CNPS) Electronic Inventory search for the Lancaster West 7.5 minute USGS quadrangle and surrounding quadrangles (accessed online on http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi, June 2007);
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Online Mapper (accessed online on http://www.fws.gov/nwi/, June 2007);
- US Department of Agriculture Natural Resources Conservation Service, Soil Survey Area: Antelope Valley Area, California (accessed online on http://websoilsurvey.nrcs.usda.gov/app/, June 2007)

A list of special status species and plant communities known from the region was compiled from reviewing the information above. A search was performed using the CNDDB and CNPS online species inventory of the project site and surrounding areas to determine if special-status species and/or natural communities have been documented within the vicinity of the project site.

2.2 Survey Dates and Survey Personnel

Surveys were conducted within and adjacent to the project site by CAJA Senior Biologist Shannon Lucas and Associate Biologist, Luz Torres on June 20, July 3, 5, 6 and 10, 2007.

2.3 Field Survey Methods

The field surveys included traversing the project site by foot, recording the species and habitats observed, and assessing the site for known or potentially sensitive biological resources. Focused surveys were also conducted for burrowing owls (see Section 2.6.1).

Plant and animal species observed during the survey were recorded and are presented in Appendix A. Site photographs taken during the July 3 and July 10, 2007 surveys are presented in Appendix B.

2.4 Habitat Assessment

The field surveys were conducted to assess the potential of the project site to support special status plant and wildlife species known from the region. The site assessment focused on determining the presence or absence of suitable habitat for special status species by comparing the project site conditions to the habitat conditions known to support such species. In addition, the project site was evaluated to determine whether it contained features that might be considered wetlands or waters subject to federal or state jurisdiction.

For the purposes of this analysis, special-status species include those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the US Fish and Wildlife Services (USFWS) or National Oceanic & Atmospheric Administration (NOAA) Fisheries under the Federal Endangered Species Act (FESA); those listed or proposed for listing as rare, threatened, or endangered by the CDFG under the California Endangered Species Act (CESA); plants occurring on List 1A, List 1B, and Lists 1, 2, 3 and 4 of the California Native Species Society (CNPS) Inventory; plants and animals designated as "species of special concern" or "fully protected" by the CDFG.

The potential occurrence of special-status species in the project site was evaluated by first developing a list of special-status plants and animals that are known to or have the potential to occur in the vicinity of the project site as described in Section 2.1 above. A complete list of the species recorded as occurring in the vicinity of the project site is presented in Appendix C. Each species was then evaluated for its potential to occur in the project site according to the following criteria:

(1) **Not Expected**. Species listed as having "no" potential to occur in the project site are those species for which:

- There is no suitable habitat present in the project site (i.e., habitats in the project site are unsuitable for the species requirements (e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime, etc.).
- The project site has been surveyed during the proper time of year with negative results for the species.

(2) **Low**. Species listed as having a "low" potential to occur in the project site are those species for which:

- There are no known records of occurrence in the vicinity of the project site/or
- There is marginal or very limited suitable habitat present in the project site;

(3) **Medium**. Species listed as having a "medium" potential to occur in the project site are those species for which:

- There are known records of occurrence in the vicinity of the project site; and/or
- There is marginal suitable habitat present in the project site.

(4) **High**. Species listed as having a "high" potential to occur in the project site are those species for which:

- There are known records of occurrence in the vicinity of the project site (there are many records and/or records in close proximity); and/or
- There is suitable habitat present in the project site.

(5) **Present**. Species listed as "present" in the project site are those species for which:

- The species was observed in the project site.

Appendix C presents the list of special-status plants and animals that are known to or have the potential to occur in the vicinity of the project site, their habitat requirements, and a rating of potential for occurrence in the project site.

2.5 Classification and Mapping of Plant Communities

Plant communities within each parcel were identified, characterized, and mapped (using GIS) in July of 2007. Vegetation nomenclature used to describe plant communities is primarily based on the *CDFG's List of California Terrestrial Natural Communities* (CDFG 2003) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995), where applicable. In addition, the *City of Lancaster General Plan, Master Environmental Assessment* (City of Lancaster 1997), Biological Resources section was consulted to help determine the existing natural plant communities within the project site. Common plant names are taken from *The Jepson Manual* (Hickman, ed. 1993) and *A Flora of Southern California* (Munz 1974). Plant communities mapped within the project site are illustrated in Figure 2.

2.6 Focused Surveys

Based on the initial habitat assessment it was determined the project site supports marginal nesting habitat for burrowing owls, as several suitably-sized burrows were observed on-site. Therefore it was determined that further study was needed to determine the presence or absence of burrowing owls within the project site. Also, due to the presence of two constructed drainage channels, one onsite and one offsite but adjacent to the site, a study was conducted to determine the extent of regulatory jurisdiction for these features. The methods for these studies are summarized below.

2.6.1 Burrowing Owl Focused Survey

The project site was assessed and evaluated for burrowing owl habitat based on the proximity of the project site to recorded occurrences, onsite vegetation and habitat characteristics, topography, elevation, soils, surrounding land uses, and the suitability of known habitat preferences and geographic ranges of the burrowing owl. Focused surveys were conducted according to the April 1993 *Burrowing Owl Survey Protocol and Mitigation Guidelines* (Burrowing Owl Consortium 1993), prepared by the California Burrowing Owl Consortium and adopted by the California Department of Fish and Game for assessing whether a particular site supports burrowing owls. Focused burrowing owl surveys were conducted during the breeding season (February 1 through August 31). Phase I and II surveys were conducted on

June 20, 2007 and Phase III surveys were conducted on July 3, 5, 6 and 10, 2007. A detailed discussion of the methods of the focused burrowing owl surveys is found in the Burrowing Owl Survey Report provided in Appendix D.

2.6.2 Jurisdictional Delineation Study

A survey of the project site and adjacent areas was conducted on July 10, 2007 to determine the presence and extent of wetland or water features potentially subject to regulation by 1) the U.S. Army Corps of Engineers (Corps) under the federal Clean Water Act (CWA), 2) CDFG under Section 1600 of the Fish and Game Code (Streambed Alteration Agreement Program), or 3) the Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and the state Porter-Cologne Act. Survey methods followed current Corps, CDFG and RWQCB regulations and guidance. A detailed discussion of the methods of the jurisdictional delineation study is found in the Jurisdictional Delineation Report provided in Appendix E.

3.0 RESULTS

The project site is a vacant parcel bordered by new residential developments to the east and north and a high school directly to the south. The project site contains patches of rubber rabbitbrush (*Chrysothamnus nauseosus*) scrub within the eastern portion, and ruderal vegetation along the southern and western portion (see Figure 2); the northern portion of the site supports little to no vegetation given the area has been recently burned and subsequently scraped. The project site is bordered to the west by an offsite active constructed drainage channel which receives irrigation runoff from the high school, and a vacant parcel beyond which also supports ruderal grassland vegetation.

Evidence of recent and extensive site disturbance includes several piles of debris remaining from the recent demolition of the structure along the southern boundary, numerous unpaved roads traversing the site, and miscellaneous household and industrial trash scattered throughout. The southeastern corner of the site also appears to have been recently graded or scraped, as evidenced by vehicle/equipment tracks and exposed bare soils. In addition, the City recently constructed a drainage channel within the southwestern portion of the site to accommodate some or all of the road and/or irrigation runoff; however, this drainage channel was subsequently blocked and no longer functions to transport water flows, as it was constructed without the land owner's permission.

3.1 Habitat Assessments

The project site was assessed for the potential to support sensitive plant communities and special status plant and wildlife species. This assessment was based on the literature review, CNPS and CNDDB databases, field visits and an evaluation of the quality of the onsite habitat.

3.1.1 Special Status Plants Species

Based on the initial database and background research, 1 special-status plant species were determined as potentially occurring on or within the vicinity of the project site. However, all of these 11 special status plant species are either not expected to occur within the project site or have a low potential to occur based on (1) a review of the onsite plant communities in relation to the special habitat requirements, (2) recorded regional occurrences according to the CNPS and CNDDB databases and (3) an assessment of the site conditions and disturbance, topography, elevation, soils and surrounding land uses. Certain special status plant species were not expected within the project site, such as those only occurring in specific habitats not present onsite (such as marshes, swamps, desert washes, ephemeral washes, riparian woodland and Joshua tree woodland), on specific soil types (such as alkaline soil, gravelly or sandy washes), or at elevations well above or below the site. One plant was considered to have a low potential to occur, white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), as minimal patches of marginally suitable habitat are present, but are heavily degraded and fragmented.

In general, the project site is highly unlikely to support sensitive plant species, given the site generally lacks suitable habitat and consists largely of heavily disturbed and/or ruderal vegetation. A detailed discussion of each species is presented in Appendix C.

3.1.2 Special Status Wildlife Species

Based on the initial database and background research, 21 special-status wildlife species were determined as potentially occurring on or within the vicinity of the project site. The special status wildlife species specific habitat requirements were compared to the existing project site conditions to determine if these special status wildlife species had the potential to occur within the project site. Based on the species specific habitat requirements, it was determined most of these species are “not expected” on the project site as it does not support suitable specific habitat for most of these species. This determination is based on (1) a review of the onsite plant communities in relation to the species habitat requirements, (2) recorded regional occurrences according to the CNDDB databases, (3) an assessment of the on-site conditions and disturbance, topography, elevation, soils and surrounding land uses. The habitat assessment and focused surveys completed within the project site determined the project site does not support suitable quality habitat for most of these sensitive wildlife species. Additionally the project site is highly disturbed, supports minimal vegetation and lacks the species specific habitat requirements for certain sensitive birds and other wildlife, such as riparian woodlands, Joshua tree woodland and gravelly or sandy washes. The results of the CNDDB database search and further analysis on specific special status wildlife species habitat requirements and their potential to occur within the project site is listed in Appendix C.

Several sensitive reptile species are considered to have a low potential to occur on-site: silvery legless lizard (*Anniella pulchra pulchra*), San Diego horned lizard (*Phrynosoma coronatum blainvillii*), and California horned lizard (*P. c. frontale*). Although the project site supports limited areas of marginally suitable habitat, the site has been heavily disturbed by onsite activities (structure demolition, vegetation

removal, vehicle/equipment use, drainage construction) and ongoing offsite activities (regular excavation of the offsite active constructed channel, suburban development). These sensitive reptile species are not known to occur in heavily disturbed or degraded areas (Jennings and Hayes 1994). In addition, the residential developments to the north and east of the site also increase the potential predation of any reptiles on-site by domestic cats, which are thought to be a major factor responsible for the decline of many sensitive reptile populations (Jennings and Hayes 1994). Therefore, these species are considered to have a low potential to occur on-site. The other sensitive reptiles reported from the region are not expected on-site due to a lack of suitable habitat, a lack of recent occurrences, and/or the site is outside of the known species range. See Appendix C for an additional discussion of these species.

Several sensitive bird species are considered to have a low potential to occur on-site, as they may forage within the heavily disturbed habitat on-site: Cooper's Hawk (*Accipiter cooperii*), short-eared owl (*Asio flammeus*), ferruginous hawk (*Buteo regalis*), mountain plover (*Charadrius montanus*), and merlin (*Falco columbarius*). However, none of these species are expected to nest on-site, either because the site lacks suitable nesting habitat (such as for Cooper's hawk and short-eared owl) or the species is not known to nest in California (such as for ferruginous hawk, mountain plover and merlin). The burrowing owl, although not observed on-site during focused surveys, still has a low potential to occur on-site; see discussion in Section 3.3.1 below. One additional sensitive bird species, Swainson's hawk, is considered to have a moderate potential to occur on-site, both for foraging and nesting. There are four recently recorded occurrences of Swainson's hawk nests in the region, and although the site does not support optimal nesting habitat for the species (large trees along riparian systems), it may nest in the utility poles on-site (CDFG 2005); one unoccupied stick nest was observed in a utility pole along the site's eastern boundary during the surveys. The remaining sensitive bird species reported from the region are not expected to forage or nest on-site either because suitable habitat is not present on or near the site and/or the species occurrence records and range information indicate that the species may no longer be present in the vicinity. None of these species were observed on-site during any of the site surveys; however, this does not necessarily preclude their presence. See Appendix C for an additional discussion of these species.

None of the sensitive mammal species reported from the region are expected to occur on-site, due to the fact that the site only supports minimal, fragmented, and heavily disturbed habitat. In addition, these species either have not been reported in the region for over 75 years, or the site is outside of the closest recorded occurrences or current known range. See Appendix C for an additional discussion of these species.

3.2 Natural Communities

Ruderal vegetation is dominant throughout the project site. The project site supports patches of rabbitbrush scrub along the eastern and northern portions with a few scattered Arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*) and red willow (*Salix laevigata*) along the western boundary of the site associated with the offsite active constructed drainage channel. These individual and small patches of willows, however, are not considered to be riparian plant communities as they do not exhibit

the appropriate density or characteristics to be classified as unique ecological plant communities. In addition, the site supports a patch of non-native trees along the western boundary, including black locust (*Robinia pseudoacacia*) and ash (*Fraxinus* sp.). But most of the project site is dominated with ruderal plants and non-native annual grasses, which are substantially disturbed by recent human activities. The City of Lancaster General Plan, Master Environmental Assessment indicated the project site is a "Developed Area" dominated with urban development and non-native plant and wildlife species. These plant communities are described in detail below. A detailed map depicting plant communities within the project site is provided in Figure 2.

3.2.1 Ruderal Non-native Grassland

Ruderal non-native grassland occurs throughout the project site and occupies most of the project site. Ruderal non-native grassland is characterized by the dominance of non-native annual grass species, which is generally due to regular disking, scraping or other disturbance activities. These areas support non-native plant species including cheat grass (*Bromus tectorum*), rattail fescue (*Vulpia myuros var.hirsuta*), Russian thistle (*Salsola tragus*), and short pod mustard (*Hirschfeldia incana*). Ruderal vegetation has also intermixed with the patches of rabbitbrush scrub, further degrading the composition and structure of these existing patches of the presumed former natural plant community. Non-native grassland is not considered a sensitive plant community by CDFG.

3.2.2 Rabbitbrush Scrub

Rabbitbrush scrub occurs as patches within the eastern and northern portions of the project site. Rabbitbrush scrub is a subset of desert scrub, and is characterized by an association of desert-adapted shrubs or plants in which a rabbitbrush (*Chrysothamnus* sp.) is a dominant species. In general, rabbitbrush scrub occurs on sandy or gravelly soils and consists of relatively widely-spaced shrubs and minimal herbaceous understory. The dominant rabbitbrush species within this plant community is rubber rabbitbrush (*Chrysothamnus nauseosus)*; however, other native desert shrubs within this plant community include four-wing saltbush (*Atriplex canescens*), horseweed (*Conyza canadensis*), jimsonweed (*Datura stramonium*), and ragweed (*Ambrosia sp.*). Due to the level of site disturbance, however, dominant herbaceous plants observed in the understory are mostly non-native species, including short pod mustard, tumble mustard (*Sisymbrium altissimum*), London rocket (*Sisymbrium irio*), rattail fescue, Russian thistle, and cheatgrass. Rabbitbrush scrub is not considered a sensitive plant community by CDFG.

3.3 Focused Surveys

The following presents the findings and determinations for burrowing owls and potentially jurisdictional drainages.

3.3.1 Burrowing Owl Focused Surveys

The results of the focused burrowing owl surveys were negative; therefore, no burrowing owls are expected to be present on-site. During the Phase I focused surveys, it was determined the project site

supports marginal suitable habitat. The Phase II survey observed potential burrows on-site. However, the Phase III surveys did not observe burrowing owls or owl signs, such as white-wash, molted feathers or owl pellets near or the within the vicinity of the burrows.

A detailed discussion of the results of the focused burrowing owl surveys is found in the Burrowing Owl Survey Report provided in Appendix D.

3.3.2 Jurisdictional Delineation Study

The on-site inactive constructed drainage was not considered in the jurisdictional study, given that it no longer functions to transport water flows, and efforts to remove the drainage have already been initiated by the City with regulatory agencies.

The offsite active constructed drainage was found to be potentially subject to regulation by CDFG and the RWQCB; however, it is likely to be considered "isolated" by the Corps, and therefore exempt from their regulation, as it does not flow into any navigable water or tributary and most other features in the Antelope Valley area have also been determined as "isolated" by the Corps (a formal determination from the Corps is pending).

Potential CDFG jurisdiction was determined to be approximately 0.47-acre, most of which occurs within the adjacent offsite active constructed drainage (only where it borders the project site); only 0.07-acre is present on-site, consisting of two small patches of arroyo and red willows, which may be considered riparian habitat associated with the adjacent offsite active constructed drainage. Approximately 0.12-acre is a patch of riparian habitat within the center portion of the drainage consisting of sandbar willow. The remaining 0.28-acre consists of the portion of the channel between the tops of the banks, which exist as slightly sloping earthen berms along the drainage.

Potential RWQCB jurisdiction is present within the active channel portion of the offsite active constructed drainage, consisting of approximately 0.09-acre (only where it borders the project site).

A detailed discussion of the results of the jurisdictional delineation study is found in the Jurisdictional Delineation Report provided in Appendix E.

4.0 DISCUSSION AND RECOMMENDATIONS

As previously described, the project site consists of approximately 40 acres, which supports marginal habitat for common native plant and wildlife species and lacks suitable habitat for sensitive plant and wildlife species. The project site does not support quality habitat to sustain sensitive plant and wildlife species given the project site is heavily disturbed, supports minimal native vegetation, and is somewhat fragmented from nearby natural areas to the north, east and south. Further, the area in the vicinity of the project site supports predominantly suburban developments, which tend to support mostly non-native species and common urban wildlife. These developments infringe and disconnect the project site from nearby natural environments such as the Prime Desert Woodland Preserve, two miles northeast of the

project site. In addition, this region is quickly being developed with single-family residential developments and commercial retail centers, further infringing and reducing the available open space and consequently degrading the existing low-quality habitat on-site for native wildlife and plant species.

Based on the above assessment and analysis, potential project impacts to existing and potential biological resources on the project site are discussed below, including any recommendations to minimize or avoid adverse impacts.

Special Status Plant Species and Sensitive Plant Communities

As discussed above, special status plant species are either not expected or are considered to have a low potential to be present on-site, due to the general disturbed and degraded conditions of the site and vegetation and/or the lack of specific habitat requirements for the special status plants known from the region. In addition, none of the plant communities on-site are considered to be sensitive. Although several willows are present on-site, they occur as isolated individuals or small patches which are disturbed and do not have the appropriate density or characteristics to be classified as true ecological plant communities. Therefore, the development of the project would not impact sensitive plants or communities.

Special Status Wildlife Species

As discussed above special status wildlife species are generally not expected to be present on-site, due to the general disturbed and degraded conditions of the site and vegetation. In addition, the project site lacks specific species habitat requirements, and is within close proximity to suburban development. It is not likely special status wildlife species would nest within the project site; however, a few special status birds may occasionally forage on-site. Therefore the development of the project site would not impact sensitive wildlife species. However, marginal habitat remains on-site for burrowing owls.

Focused surveys for burrowing owls were completed in June and July 2007 and determined the project site does support marginally suitable habitat for burrowing owls (see Burrowing Owl Survey Report Appendix D). While no burrowing owls were observed during the focused burrowing owls breeding season surveys conducted in 2007, owls could move onto the project site or adjacent areas and nest within the limited number of ground squirrel burrows or within any new burrows that could be constructed by ground squirrels following the 2007 surveys. In addition, burrowing owls could use on-site ground-squirrel or other similar sized burrows for shelter during the non-breeding season. Should breeding or non-breeding burrowing owls occur after the 2007 surveys, construction related activities could result in the loss of individual owls that may be residing within the on-site burrows.

Although marginal suitable habitat is present, burrowing owls were not identified during the focused surveys, however it is possible burrowing owls could colonize the site between the time of the July 2007 surveys and proposed site development. A Phase III pre-construction survey is recommended within 30 days prior to ground-disturbing activities (pursuant to CDFG protocols) to ensure that burrowing owls are not present within the construction areas.

Foraging Habitat and Nesting Birds

The plant communities within the project site provide foraging and breeding habitat for a number of small common mammals, reptiles, and invertebrates that, in turn, provide a source of prey for a variety of common birds, which may include both local and wintering raptors. In addition, as discussed previously, there is also a potential for several special-status bird species to forage on-site, including Cooper's hawk, short-eared owl, ferruginous hawk, Swainson's hawk, mountain plover and merlin. The development of the project site would remove approximately 40 acres of potential foraging habitat. However, given the mobility of these species, the relatively isolated nature of the project site, the marginal and heavily disturbed nature of the habitat present onsite, and the relative abundance of suitable foraging (including winter raptor foraging habitat) habitat in the region, the loss of the existing foraging habitat onsite would not be expected to have a substantial adverse effect on raptors or other sensitive bird species.

The isolated patches of willows and non-native trees on and adjacent to the site, and to a lesser extent the patches of rabbitbrush scrub on-site, represent potential nesting habitat for common bird species. In addition, the utility poles on-site support evidence of past nesting activities. Nesting birds and raptors are protected under the state Fish and Game code and/or the federal Migratory Bird Treaty Act. To avoid impacting nesting birds, a qualified wildlife biologist shall conduct a pre-construction nest survey no more than 5 days prior to initiation of grading to provide confirmation on presence or absence of active nests in the vicinity (at least 300 feet (90 meters) around the project site). If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the CDFG and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of the nest shall be deferred until the young birds have fledged. A minimum exclusion buffer of 100 feet (30 meters) shall be maintained during construction, depending on the species and location. The perimeter of the nest-setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot (6 meters) intervals, and construction personnel and activities restricted from the area. A survey report by the qualified biologist verifying that (1) no active nests are present, or (2) that the young have fledged, shall be submitted to the City prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests will occur.

Jurisdictional Features

An active constructed drainage is located off-site along the western boundary of the project site, which is considered to be potentially jurisdictional by CDFG and the RWQCB; as discussed above, it is unlikely that the Corps will assert jurisdiction over this feature[1]. Although this feature is not located on the proposed project site, grading activities associated with project development may impact this drainage as it is located in close proximity to the project site boundary (within 25 feet or closer in places). If development activities are anticipated to result in impacts to this drainage, it is recommended that the

[1] If the Corps does assert jurisdiction over the off-site active constructed drainage, a Section 404 Clean Water Act permit may be required from the Corps for impacts to this drainage.

applicant apply for and receive the following regulatory permits (or exemptions) prior to grading near the offsite active constructed drainage:

- A Streambed Alteration Agreement from CDFG (Section 1600 permit)
- A Notice of Intent to receive coverage under the Lahontan RWQCB's General Permit R6T-2003-0004 for minor streambed alteration projects where the Corps does not have jurisdiction[2].

As discussed previously, the removal of the on-site inactive constructed drainage is currently being addressed by the City in consultation with the relevant resource agencies. However, if this matter is not resolved, then the above recommendations would also apply to this on-site drainage feature.

[2] However, if the Corps asserts jurisdiction over the off-site active constructed drainage, then the applicant should an application to the RWQCB for Water Quality Certification under Section 401 of the Clean Water Act.

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Figures

Appendix A. Plant and Wildlife Species Observed

Common Name	Scientific Name
Wildlife	
Red-winged blackbird	*Agelaius phoeniceus*
Western scrub jay	*Aphelocoma californica*
Red-tailed hawk	*Buteo jamaicensis*
Killdeer	*Charadrius vociferus*
Turkey vulture	*Cathartes aura*
Anna's hummingbird	*Calypte anna*
House finch	*Carpodacus mexicanus*
Rock dove	*Columba livia*
Common raven	*Corvus corax*
Brewer's blackbird	*Euphagus cyanocephalus*
Northern mockingbird	*Mimus polyglottos*
Black phoebe	*Sayornis saya*
European starling	*Sturnus vulgaris*
Mourning dove	*Zenaida macroura*
White-crowned sparrow	*Zonotrichia leucophrys*
Field mouse	*Peromyscus sp.*
Audubon's cottontail	*Sylvilagus audubonii*
California harvester ant	*Pogonmyrmex californicus*
Western fence lizard	*Sceloporus occidentalis*
Plants	
Ragweed	*Ambrosia sp.*
Giant reed	*Arundo donax*
milkweed	*Asclepias sp.*
Four-wing saltbush	*Atriplex canescens*
Mulefat	*Baccharis salicifolia*
Black mustard	*Brassica nigra*
Red brome	*Bromus madritensis*
Cheatgrass	*Bromus tectorum*
Horseweed	*Conyza canadensis*
Rabbitbrush	*Chrysothamnus nauseosus*
Bermuda grass	*Cynodon dactylon*
Jimson weed	*Datura stramonium*
California buckwheat	*Eriogonum californicum*
cut leaved geranium	*Geranium dissectum*
Heliotrope	*Heliotropium sp.*
Wild lettuce	*Lactuca sp.*
Aster	*Lessingia sp*
Rye grass	*Lolium sp.*
Desert indianwheat	*Plantago ovata*
Knotweed	*Polygonum sp.*
Black locust	*Robinia pseudoacacia*
Curly leaved dock	*Rumex crispus*
Russian thistle	*Salsola tragus*
Sandbar willow	*Salix exigua*

Common Name	**Scientific Name**
Arroyo willow	*Salix lasiolepis*
Red willow	*Salix laevigata*
London rocket	*Sisymbrium irio*
Vinegar weed	*Trichostema lanceolatum*
Foxtail fescue	*Vulpia myuros*

Appendix B: Project Site Photos taken on July 3, 2007

View Northwest from southern portion of the project site

View Northeast from western portion of the project site

On-site Inactive Drainage, View South from southern portion of the project site

View West from eastern portion of the project site

Appendix B: Project Site Photos taken on July 10, 2007

Off-site Active Drainage West of the Project Site

View of the central portion of the off-site active constructed drainage, facing north

View of central portion of off-site active constructed drainage, facing south

View of off-site active constructed drainage before clearing and re-grading by the City of Lancaster

City of Lancaster clearing and re-grading off-site active constructed drainage on July 10, 2007

Appendix C
Special Status Plant and Wildlife Species Evaluated for Potential to Occur on the Project Site

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	**CESA**	**GLOBAL RANKING/ CNDDB**	**CNPS**	**CDFG/ STATE**		
PLANTS							
Astragalus preussii var. laxiflorus Lancaster milk-vetch	---	---	G4T2T3	1B.1	S1.1	General habitat consists of Chenopod scrub. Microhabitat is alkaline clay in flat, gravelly or sandy washes and along desert washes in gullied badlands. **Blooming Period:** March to May at elevations from 0 to 2,300 feet.	**Not expected**, this plant species is not expected to occur on-site since suitable habitat is not present within the project site or surrounding vicinity. Additionally, the only recorded occurrence of this species is from 1902, and is considered to be possibly extirpated.
Calochortus striatus Alkali mariposa lily	---	---	G2	1B.2	S2.2	General habitat consists of chaparral, Mojavean desert scrub Microhabitat is alkaline meadows and ephemeral washes. **Blooming Period:** April to June at an elevation range of 2,100-5,000 feet.	**Not expected,** the project site only supports very limited, fragmented, heavily degraded desert scrub habitat, and does not support alkaline soils or ephemeral washes. Two occurrences are located approximately 2 miles northeast of the site.
Carex vulpinoidea Fox sedge	---	---	G5	2.2	S2.2	General habitat consists of wet places. Microhabitat is marshes, swamps and riparian woodland or in wet places. **Blooming Period:** May to June at an elevation range of 100- 4,000 feet.	**Not expected**, this plant species was last recorded in 1902. Furthermore, there is no suitable habitat present on-site; the limited riparian habitat along the active channel is small, fragmented and heavily and frequently disturbed.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		
Chorizanthe parryi var. parryi Parry's spineflower	---	---	G2T2	3.2	S2.1	General habitat consists of coastal scrub, chaparral and sandy soils. Microhabitat consists of dry slopes and flats; sometimes at interfaces of the two vegetation types, such as chaparral and oak woodland, areas with dry, sandy soils. **Blooming Period:** April to June at elevations from 120 to 5,000 feet.	**Not expected**, this species is not expected on-site due to the absence of suitable habitat and the disturbed site conditions. In addition, the only recorded occurrence of this species in the CNDDB is from 1892 and may be extirpated in Los Angeles County (CNPS 2007).
Chorizanthe xanti var. leucotheca White-bracted spineflower	---	---	G4T3	1B.2	S1S2.2	Mojavean desert scrub, pinyon-juniper woodland. **Blooming Period:** April – June 1,500-3,600 feet	**Low potential**, the project site only supports very limited, fragmented, heavily degraded desert scrub habitat. The only recorded occurrence in the region for this species is from the Ritter Ranch area.
Cymopterus deserticola Desert cymopterus	---	---	G3	1B.2	S3.2	General habitat: Joshua tree woodland, Mojavean desert scrub, sandy soils. Microhabitat: on fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand. **Blooming Period:** March-May 1,800-4,500 feet	**Not expected,** the project site only supports very limited, fragmented, heavily degraded desert scrub habitat, and does not support loose sand or old dune areas. All reported occurrences of this species are from the Rosamond Lake and Edwards Air Force Base area and to the north and east (CNPS 2007). More than 90% of the known populations and individuals occur on Edwards Air Force Base (MacKay 2003).

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	**CESA**	**GLOBAL RANKING/ CNDDB**	**CNPS**	**CDFG/ STATE**		
Eriophyllum mohavense Barstow wolly sunflower	---	---	G2	1B.2	S2.2	General habitat: desert chenopod scrub, Mojavean desert scrub, desert playas. Microhabitat: mostly in open, silty or sandy areas with Saltbush Scrub, or Creosote bush scrub within barren ridges or margins of playas. **Blooming period:** April-May 1,500-3,000 feet	**Not expected,** the project site only supports very limited, fragmented, heavily degraded desert scrub habitat, and does not support open silty or sandy areas with saltbush scrub or creosote bush scrub, barren ridges or playas. The only recorded occurrence for this species is from Edwards Air Force Base (1995).
Eschscholzia minutiflora ssp. twisselmannii Red Rock poppy	---	---	G5T2	1B.2	S2.2	General habitat: Creosote Bush and Mojavean Desert Scrub areas. Microhabitat: Volcanic tuff with larrea, lycium, eriogonum, isomeris, hemizonia. **Blooming period:** March - May at elevations of 1,800-3,600 feet	**Not expected,** the project site only supports very limited, fragmented, heavily degraded desert scrub habitat, and does not support volcanic tuff or most of the associated plant species noted in the species' habitat description. The only recorded occurrence for this species is from 1977 at Edwards Air Force Base.
Layia heterotricha Pale-yellow layia	---	---	G2G3	1B.1	S2S3.1	General habitat consists of cismontane woodland, Pinyon-juniper woodland and Valley. Microhabitat is foothill grassland in alkaline or clay soils. **Blooming Period** March to June at an elevation range from 900 to 5,100 feet.	**Not expected,** the last natural community was recorded in 1892 and is the only occurrence recorded for this species, it is presumed extinct. In addition, this species is not expected due to the absence of alkaline or clay soil conditions and the high levels of disturbance on-site.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		
Loeflingia squarrosa var. artemisiarum Sagebrush loeflingia	---	---	G5T2T3	2.2	S2.2	General habitat consists of desert dunes. Microhabitat is Great Basin scrub and Sonoran desert scrub. **Blooming period** April to May at an elevation range of 2,100 to 4,800 feet.	**Not expected,** the project site does not support desert dunes, Great Basin scrub or Sonoran desert scrub and the sites are highly disturbed by human activities.
Opuntia basilaris var. brachyclada *Short-joint beavertail cactus*	---	---	G5T1	1B.2	S1.2	General habitat consists of Joshua tree woodland, Mojavean desert scrub, Pinyon-juniper woodland Microhabitat is riparian woodland in sandy soil or coarse granitic soils. Blooming Period April to June at elevations from 1,200 to 5,400 feet.	**Not expected,** the project site only supports very limited, fragmented, heavily degraded desert scrub and riparian habitat. This species was not observed on-site, and would have been observable at the time of the study, if present.
REPTILES AND AMPHIBIANS							
Anniella pulchra pulchra Silvery legless lizard	---	--	G3G4T3T4 Q	---	S3/CSC	Soil moisture is essential to this species and prefers soils with high moisture content and sandy or loose loamy soils under sparse vegetation. Microhabitat: prefer soils with a high moisture content.	**Low potential**, The species was detected in 2005 approximately two miles north of the project site at the intersection of Avenue K and 40th Street West. However, potentially suitable habitat is predominantly limited to areas near the adjacent off-site active drainage. In addition, the project site has been heavily disturbed - the off-site drainage is regularly excavated, and the site is adjacent to residential development, which has increased potential predation from domestic cats.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	**CESA**	**GLOBAL RANKING/ CNDDB**	**CNPS**	**CDFG/ STATE**		
Emys (=Clemmys) marmorata pallida Southwestern pond turtle	---	---	G3G4T2T3	---	S2/CSC	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6,000 feet in elevation. Requires basking sites such as partially submerged logs, vegetation mats or open mud banks.	**Not expected** to occur on-site; suitable habitat is not present.
Gopherus agassizii Desert tortoise	T	T	G4	---	S2	General habitat: most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Microhabitat: require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Not expected,** the project site supports very limited potential scrub habitat which is fragmented and heavily disturbed, and is now fenced. The project site is located approximately 9 miles southwest of the current boundary for the species, per the West Mojave Plan (BLM 2005). The site is approximately 20 miles west of the closest recorded occurrence reported in the CNDDB.
Phrynosoma coronatum (blainvillii population) Coast (San Diego) horned lizard	---	---	G4G5	---	S3S4/ CSC	General habitat consists of coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky or shallow sandy soils.	**Low potential**, Potentially suitable habitat on-site is limited and has been heavily disturbed, and the site is adjacent to residential development, which has increased potential predation from domestic cats.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		
Phrynosoma coronatum (frontale population) Coast (California) horned lizard	---	---	G4G5	---	S3S4/ CSC	Species frequents a wide variety of habitats but most commonly found in lowlands along sandy washes with scattered low bushes. Prefers open areas for sunning, bushes for cover, patches of loose soil for burial and an abundant supply of ants and other insects for foraging.	**Low potential**, The species was detected in 2005 approximately two miles north of the project site at the intersection of Avenue K and 40th Street West. However, potentially suitable habitat is predominantly limited to areas near the adjacent off-site active drainage. In addition, the project site has been heavily disturbed - the off-site drainage is regularly excavated, and the site is adjacent to residential development, which has increased potential predation from domestic cats.
Rana aurora draytonii California red-legged frog	T	---	G4T2T3	---	S2S3/ CSC	General habitat: lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Microhabitat: requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Not expected,** the project site does not support suitable deep water habitat with dense riparian or emergent vegetation. The only recorded occurrence for this species in the region is from the Ritter Ridge area, approximately 4 miles southwest of the site.
Thamnophis hammondii Two-striped garter snake	---	---	G3	---	S2/CSC	Species frequents coastal California from Salinas to northwest Baja California. Prefers elevation ranges from sea to about 7,000 and is highly aquatic and found in or near permanent fresh water, often along streams with rocky beds and riparian growth.	**Not expected,** the project site does not support suitable stream habitat with rocky beds or substantial riparian growth. Only two recorded occurrence for this species in the region, both from Amargosa Creek in the Ritter Ridge area, approximately 4 miles southwest of the site.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	**CESA**	**GLOBAL RANKING/ CNDDB**	**CNPS**	**CDFG/ STATE**		
BIRDS							
Accipiter cooperii Cooper's Hawk	----	----	G3	---	S3/CSC	General habitat: woodland, chiefly open, interrupted or marginal type. Microhabitat: nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	**Low Potential,** the project site supports limited suitable habitat for the species to forage. Nesting within the project site is not likely given the project site only supports small, fragmented patches of riparian habitat along the off-site created drainage and there are no suitably sized trees present (large deciduous trees). Only one occurrence of this species is recorded in the region from Palmdale in 1921.
Agelaius tricolor Tricolored blackbird	---	---	G2G3	---	S2/CSC	Nest colonies are highly colonial with most numerous in central valley & vicinity. Largely endemic to California. Microhabitat: requires open water, protected nesting substrate and foraging area with insect prey within a few miles of the colony.	**Not expected,** the project site does not support suitable nesting habitat, specifically open water (such as a pond) with protected nesting substrate. The species is not expected to forage on-site as no suitable areas of open water habitat were observed near the site.
Asio flammeus Short-eared owl	--	--	G5		S3/CSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grasses needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	**Low Potential,** the project site supports very limited, highly disturbed potential habitat. The only reported occurrence in the region is approximately 9 miles northeast of Lancaster and is from 1932.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		
Athene cunicularia Burrowing owl	---	---	G4	---	S2/CSC	General habitat is open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing cover. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Low Potential**, the focused surveys conducted as part of this proposed project did not identify burrowing owls or their sign (such as pellets or egg shell fragments). However, due to the presence of potential burrows the species may colonize the site in the future; pre-construction surveys are recommended. Please see Appendix D for the focused burrowing owl report.
Buteo regalis Ferruginous hawk	---	---	G4	---	S3S4/ CSC	General habitat consists of open grasslands, sagebrush flats, desert scrub, low foothills & fringes of Pinyon-juniper woodlands.	**Low Potential,** the project site contains suitable habitat for the species to forage; however, this species is not known to breed or nest in California (CDFG 2005) and, therefore, is unlikely to nest on-site.
Buteo swainsoni Swainson's hawk	---	T	G5	---	S2	Nesting and breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Moderate Potential,** the project site contains suitable, though heavily disturbed, habitat for the species to forage. In addition, although ideal nesting habitat is not present on-site (large trees near riparian areas), there are four reported nesting occurrences in the region and a large unoccupied nest was observed in a utility pole on-site, which may be used by the species (CDFG 2005).
Charadrius alexandrinus nivosus Western snowy plover	T	---	G4T3	---	S2	General habitat: sandy beaches, salt pond levees and shores of large alkali lakes. Microhabitat: needs sandy, gravelly or friable soils for nesting.	**Not expected** to nest or forage on-site; suitable habitat is not present.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		
Charadrius montanus Mountain plover	---	---	G2	---	S2/CSC	General habitat consists of short grasslands, freshly plowed fields, newly sprouting grain fields and sometimes sod farms with short vegetation and bare ground & flat topography. Prefers grazed areas and areas with burrowing rodents.	**Low Potential,** the project site contains limited suitable habitat for the species to forage. This species does not nest in California (CDFG 2005).
Falco columbarius Merlin	---	---	G5	---	S3/CSC	General habitat consists of tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts and in farms and ranches. Prefers clumps of trees or windbreaks are required for roosting in open country.	**Low Potential,** the project site contains limited suitable habitat for the species to forage. This species does not nest in California (CDFG 2005).
Plegadis chihi White-faced ibis	---	---	G5	---	S1/CSC	General habitat includes shallow fresh-water marsh and dense tule thickets for nesting; prefers areas interspersed with shallow water for foraging.	**Not expected,** since suitable habitat is not present within the project site or within the surrounding vicinity.
Toxostoma lecontei Le Conte's thrasher	---	---	G3	---	S3/CSC	Primarily a desert resident which lives in open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in dense, spiny shrub or densely branched cactus in desert wash habitat usually 2-8 feet above ground.	**Not expected,** The project site only supports very limited, fragmented, disturbed scrub habitat and does not support suitable nesting habitat. The only reported occurrences for the species in the region are from 1968 or earlier.

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	**CESA**	**GLOBAL RANKING/ CNDDB**	**CNPS**	**CDFG/ STATE**		
MAMMALS							
Onychomys torridus ramona Southern grasshopper mouse	---	---	G5T3	---	CSC	General habitat: desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Microhabitat: feeds almost exclusively on arthropods, especially scorpions & insects.	**Not expected,** The project site only supports very limited, fragmented, disturbed scrub habitat, and the only recorded occurrence for this species in the region is from 1930 in Mint Canyon, 12 miles southwest of the site (3 miles west of Agua Dulce).
Perognathus inornatus inornatus San Joaquin pocket mouse	--	---	G4T2T3	---	S2S3	Typically found in grasslands and blue oak savannas, associated with flat to steep terrain with friable soils as well as in areas of alluvial sand soils and wind drifted sands	**Not expected,** The project site only supports very limited, fragmented, disturbed grassland habitat, and the only recorded occurrence for this species in the region is from 1931.
Spermophilus mohavensis Mohave ground squirrel	---	T	G2G3	---	S2S3	General habitat consists of open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands and is restricted to the Mojave desert. Prefers sandy to gravelly soils, avoids rocky areas and uses burrows at base of shrubs for cover.	**Not expected**, no suitable habitat is present on the project site and it is heavily disturbed. Also, the nearest occurrence was last recorded 10 miles south of the project site in 1984 and has not been detected recently in the vicinity. In addition according to the Mohave ground squirrel survey protocol, areas which are five miles outside the known range do not require surveys to be completed; the project site is five miles west of the current CDFG and Mohave Ground Squirrel Working Group current range maps (the area of Lancaster west of Highway 14 is not within the current known range of the species) (MGSWG 2006).

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		
Taxidea taxus American badger	---	---	G5	---	S4/CSC	General habitat: most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Microhabitat: need sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents and digs burrow.	**Not Expected,** as the project site only supports heavily disturbed potential habitat nearly surrounded by development, and the only recorded occurrence of this species in the region is from Willow Springs, approximately 15 miles north of the site. No suitably sized potential burrows were observed on-site for the species.
PLANT COMMUNITIES							
Southern Coast Live Oak Riparian Forest			G4	---	S4		**Not Present.** No coast live oaks present on-site.
Southern Cottonwood Willow Riparian Forest			G3	---	S3.2		**Not Present.** No cottonwoods present on-site.
Southern Riparian Scrub			G3	---	S3.2		**Not Present.** Although several willows are present, they occur as isolated individuals or small patches which are disturbed and do not have the appropriate density to function as a true ecological community.
Southern Willow Scrub			G3	---	S2.1		**Not Present.** Although several willows are present, they occur as isolated individuals or small patches which are disturbed and do not have the appropriate density to function as a true ecological community.
Wildflower Field			G2	---	S2.2		**Not Present.** Site is heavily disturbed and dominated by non-native, ruderal grasses and herbaceous species.
Valley Needlegrass Grassland			G1	---	S2.2		**Not Present.** No needlegrass present on-site

Species	Status					Habitat/Blooming Period	Potential for Occurrence
	FESA	CESA	GLOBAL RANKING/ CNDDB	CNPS	CDFG/ STATE		

Status Codes:

Federal FESA: Endangered Species Act of 1972, as amended
E Federally listed as Endangered
T Federally listed as Threatened
PD Federally proposed for delisting
C Federal candidate species (former Category 1 candidates)
-- No designation.

State CESA: California Endangered Species Act
R State listed as Rare
E State listed as Endangered
T State listed as Threatened
-- No designation

Global Ranking/CNDDB: California Natural Diversity Database
Global Rank: The global rank is a reflection of the overall condition (rarity and endangerment) of an element throughout its range. Some global ranks for endemic species are assigned by the CNDDB biological staff following review of all available information. The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range, with G1 being the most rare and G5 the least rare. Subspecies receive a T-rank attached to the G-rank. The state rank (S-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached, with S1being the most rare and S5 the least rare.

California Native Plant Society
1B Plants listed as rare, threatened, or endangered in California and elsewhere
2 Plants rare, threatened, or endangered in California, but more common elsewhere
3 Plants about which more information is needed
-- No designation

Recently, CNPS added a decimal threat rank to the List rank to parallel that used by the CNDDB. This extension replaces the E (Endangerment) value from the R-E-D Code. CNPS ranks therefore read like this: 1B.1, 1B.2, etc.

State and CDFG
CSC Indicates whether the species is a Department of Fish and Game Species of Special Concern (terrestrial vertebrate animals only).
STATE RANKS: Statewide status of a full species or a subspecies: S1 to S5
Same general definitions as CNDDB rankings, but just for the range of the taxa within California. The *state rank* is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.
S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres
S1.1 = very threatened
S1.2 = threatened
S1.3 = no current threats known
S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
S2.1 = very threatened
S2.2 = threatened
S2.3 = no current threats known
S3 = 21-100 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres
S3.1 = very threatened
S3.2 = threatened
S3.3 = no current threats known
S4 - Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat. No threat rank.
S5 - Demonstrably secure to ineradicable in California. No threat rank.

Appendix D. Burrowing Owl Survey Report

BURROWING OWL SURVEY REPORT

The Commons at Quartz Hill
Lancaster, California

Prepared For:

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August 15, 2007

CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this study is to determine the suitability of the study area to support burrowing owls (*Athene cunicularia*) and to determine if any burrows on-site are occupied by burrowing owls. This report includes discussions of the study methods, the biological resources occurring within the study area, results of the habitat assessment and focused burrowing owl surveys and recommendations.

1.1 Study Area and Project Description

The proposed project site is located in the City of Lancaster (City) on the Lancaster West U.S. Geological Survey (USGS) 7.5-minute quadrangle map, Township 7 North, Range 13 West and Sections 27 and 35 at an elevation of approximately 2,400 feet in the County of Los Angeles. The project site is located at the northwest corner of 60th Street West and West Avenue L and bounded by vacant parcels to the north and west, to the south by a Quartz Hill High School and to the east by residential developments. Access to the project site is via the Antelope Valley Freeway (State Route 14) to Avenue L (see Figure 1). The study area encompasses the project site and the 500 feet buffer surrounding the project site (see Figure 2).

The project site is a vacant parcel surrounded by suburban development including new residential developments to the east and north and a high school directly south of the study area. The project site is dominated with rabbitbrush (*Chrysothamnus nauseosus*) scrub along the eastern portion, and ruderal vegetation along the southern portion and the northern portion supports little to no vegetation given the area has been recently burned. An active constructed drainage is present immediately west of the project site within the study area, and an inactive constructed drainage is located within the southwestern portion of the project site. Topography of the study area is generally flat. Evidence of local disturbance include several piles of construction debris, numerous unpaved roads traversing the site, and miscellaneous household and industrial trash scattered throughout the study area.

The proposed project consists of the development of an approximately 353,129 square foot commercial shopping center located on approximately 40 acres commonly known as The Commons at Quartz Hill (proposed project). The commercial development would include two anchors stores and up to ten smaller commercial buildings that would house a variety of food, merchandise and services. One proposed anchor store is a Wal-Mart Supercenter, approximately 240,000 square feet with an associated garden center. The second anchor store is anticipated to be approximately 90,000 square feet. A total of 1,837 parking spaces are anticipated to be provided and access to the project site would occur from 60th Street West and Avenue L.

1.2 Background

The burrowing owl is considered a California Species of Special Concern and a U.S. Fish and Wildlife Service Bird of Conservation Concern. In Southern California, burrowing owls typically inhabit annual and perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Suitable owl

habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface (Klute, et al 2003).

Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts, cement, asphalt, or wood debris piles, or openings beneath cement or asphalt pavement. Burrowing owls can forage up to 3,000 feet from the burrow, but generally stay within 2,000 feet. Evidence of owl use of a burrow includes sign such as molted feathers, cast pellets, prey remains, eggshell fragments or excrement at or near a burrow entrance (California Burrowing Owl Consortium 1993).

2.0 METHODS

The April 1993 *Burrowing Owl Survey Protocol and Mitigation Guidelines* (Burrowing Owl Consortium 1993), prepared by the California Burrowing Owl Consortium (CBOC) and adopted by the California Department of Fish and Game (CDFG), includes a three-phase methodology for assessing whether a particular site supports burrowing owl. Phase I involves an assessment of the site to determine whether burrowing owl habitat is present. If habitat is determined to be present on site, a Phase II burrow survey is conducted. The Phase II survey entails walking parallel transects at a maximum spacing of approximately 100 foot over the entire study area and recording any burrows suitable for owls. If the study area is determined during Phase II to contain burrows that could be used for owl nesting or shelter, a Phase III survey is conducted. Phase III requires that four separate site visits are conducted during the breeding season (February 1 through August 31) and non-breeding season (December 1 through January 31), at dusk or dawn, to determine whether burrows are actively in use as breeding, shelter, or over-wintering habitat. Phase III surveys requires that four separate site visits are conducted from two hours before sunset to one hour after or from one hour before to two hours after sunrise. Surveys for this project site were conducted in one hour per CBOC protocols time constraints given the project size and numbers of burrows initially identified were very limited. Surveys were conducted during weather that is conducive to observing burrowing owls outside their burrows and avoided surveys during heavy rain, high winds (> 20 mph), or dense fog. If no burrowing owls are observed using burrows during either the winter or breeding season surveys and suitable habitat occurs, a pre-construction survey should be conducted within 30 days of grading to confirm that no owls have moved onto the site since the previous surveys. Although, if burrows or burrowing owls are recorded on the site, a map should be prepared of the burrow concentration areas and a census of the burrowing owl population should be recorded. Pursuant to the *Burrowing Owl Survey Protocol and Mitigation Guidelines*, surveys for burrows and owls should be conducted by walking through suitable habitat over the entire study area and should also include areas within 500 foot of the project impact zone. This 500 foot buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area. The final step in completing the protocol burrowing owl surveys requires preparation of a report documenting the results and mitigation measures per CBOC guidelines.

Surveys were conducted pursuant to the CBOC survey protocols guidelines to determine if the potential for burrowing owls occurs within the study area. These guidelines are generally recognized by CDFG and biologists familiar with burrowing owls as acceptable for both detection and mitigation purposes.

2.1 Field Visits

Christopher Joseph & Associates (CAJA) Senior Biologist, Shannon Lucas and Associate Biologist, Luz Torres conducted the Phase I Habitat Assessment and Phase II Burrow Survey on June 20, 2007. Phase III Owl Surveys were conducted during the breeding season on July 3, 5, 6, and 10, 2007 (see Table 1). These surveys were conducted to assess the study area for burrowing owl habitat, to determine the number of individual burrowing owls utilizing the study area, and investigate all suitable burrows for burrowing owl signs. The study area was walked by foot and owl signs of burrowing owls, such as molted feathers, cast pellets, prey remains, eggshell fragments or excrement ("whitewash") at or near a burrow entrance were recorded if observed.

The study area for these burrowing owl surveys includes the proposed project site boundaries and the required additional survey areas within the 500-foot buffer of the project impact zone. The study area is surrounded by suburban development and bounded to the north and west by vacant parcels, to the east by a new housing development and to the south by Quartz Hill High School. The study area was accessed and evaluated for burrowing owl habitat based on the proximity of the study area to recorded occurrences, onsite vegetation and habitat characteristics, topography, elevation, soils, surrounding land uses, and the suitability of known habitat preferences and geographic ranges of the burrowing owl. Onsite vegetation was also characterized using the plant communities defined by the *CDFG's List of California Terrestrial Natural Communities* (2003) and the *A Manual of California Vegetation* (1995) where applicable. In addition, the *City of Lancaster General Plan, Master Environmental* Assessment (1997), Biological Resources section was consulted to help determine the existing natural plant communities within the study area and it identified the study area as ruderal vegetation and developed sites. Common plant names are taken from *The Jepson Manual* (1993) and *A Flora of Southern California* (1974).

Shannon Lucas, Senior Biologist and Associate Biologist, Luz Torres for CAJA conducted an initial Phase I habitat assessment on June 20, 2007. The habitat assessment focused on determining the presence or absence of suitable habitat for burrowing owls by comparing the study area conditions to the habitat conditions known to support such species. The Phase II survey was conducted by Shannon Lucas, Senior Biologist and Associate Biologist, Luz Torres for suitable owl burrows by walking the site in transects at spaced a maximum approximately 100 feet apart. In accordance with the CBOC Phase II burrow survey protocols, transects were walked across areas of suitable burrowing owl habitat, which included the entire study area. Areas within approximately 500 feet of the proposed project impact zone were also surveyed, since suitable burrowing owl habitat was present. Potential perching locations (i.e., mounds near ground squirrel burrows, trees, fences, debris piles, etc.) within the survey area were assessed for signs of burrowing owl (i.e., excrement, food remains, feathers, etc.). Phase III surveys were conducted during the breeding season to identify and quantify the number of owls potentially occurring on the site. Surveys for this project site were conducted per CBOC protocol time constraints (within one hour before or two hours

after sunrise or within two hours before and hour after sunset). Site conditions recorded during each survey are presented in Table 1. According to the protocol potential burrows were monitored from fixed points to allow sufficient direct visual time for each identified burrow and while minimizing potential disturbance to the burrowing animals. Any owl presence would subsequently be recorded along with accounts of its behavior. The habitat assessment focused on determining the presence or absence of suitable habitat for burrowing owls by comparing the study area conditions to the habitat conditions known to support such species. The habitat assessment included characterizing the vegetation, soils, topography, elevation, surrounding land uses, and the suitability of known habitat preferences and geographic ranges of the burrowing owl.

2.2 California Natural Diversity Database Query

The California Department of Fish and Game maintains the Natural Diversity Data Base (CNDDB), which is a computerized inventory of information on the reported locations of California's rare, threatened, endangered and otherwise sensitive plants, animals, and natural communities, this species database is updated monthly. Valuable information regarding the species occurrence, population numbers, observers, occurrence dates and potential threats to the plant or wildlife species are included for each occurrence record. A record search of the Lancaster West 7.5 minute USGS quadrangle and surrounding quadrangles (Rosamond, Lancaster East, Ritter Ridge and Palmdale) was conducted for burrowing owls to determine the occurrences recorded within the study area and surrounding vicinity.

2.3 Soil Analysis

Descriptions of the soils within the study area were researched to determine if the soils are compatible for burrowing owls. The United States Department of Agriculture Natural Resource Conservation Services has mapped two (2) soils within the study area. These soils were analyzed during the habitat assessment to determine if the appropriate soils for burrowing owls are present within the study area.

3.0 RESULTS

Surveys were conducted in accordance to CBOC guidelines and resulted in no observed burrowing owls or owl signs such as molted feathers, cast pellets, prey remains, eggshell fragments or excrement. The study area supports marginal habitat for burrowing owls; specifically burrows were observed along the eastern and western portions of the project site, although no burrowing owls or signs were recorded. Photographs were taken on July 3, 2007 of burrows and the current study area conditions, presented in Appendix A.

Onsite vegetation was characterized as defined by the *CDFG's List of California Terrestrial Natural Communities* (2003) or the *A Manual of California Vegetation* (1995) and represented in Figure 2. In addition, the *City of Lancaster General Plan, Master Environmental* Assessment (1997), Biological Resources section was consulted to help determine the existing natural plant communities within the

study area and it identified the project site as ruderal plant species and a developed site. Common plant names were taken from *The Jepson Manual* (1993) and *A Flora of Southern California* (1974).

3.1 Phase I Habitat Assessment

The study area supports marginally suitable habitat. The project site is currently undeveloped and supports minimal native vegetation including rabbitbrush scrub along the eastern portion with ruderal vegetation dominating the reminder of the project site (see Figure 2). A former structure within the southern portion of the project site was recently demolished, leaving behind disturbed soil and debris. The City Public Works Department recently constructed a drainage within the southwestern portion of the project site, further degrading the quality of the habitat and clearing native vegetation. The areas outside the project site within the 500-foot buffer support predominantly non-native grasses and ruderal vegetation. Evidence of a recent fire was observed within the northern portion of the study area (both on the project site and on the vacant parcel to the north); it appears that much of the burned vegetation was removed following the fire, as these areas were largely devoid of vegetation and exhibited recently disturbed, bare soils. Site photographs were taken on June 3, 2007 and are presented in Appendix A. Please note that the aerial utilized in the Figure 2 was taken in 2006 and significant changes in the landscape have occurred. Please view the site photos for the current site conditions. A complete list of plant and animal species observed during the site visits is provided at the end of this document in Appendix B.

Several potential burrows were identified within study area, most of which were located in the western portion of the study area (see Figure 2). The western portion of the study area supports an active constructed drainage with a perennial water source, which is fed by irrigation runoff from the adjacent high school. It has been documented by the CBOC that burrowing owls prefer areas within close proximity of irrigation ditches, detention basin, or areas which provide a perennial water source. Further, the northern and southern portions of the study area support minimal vegetation or bare soil and several abandoned pipes which may provide nesting areas for burrowing owls.

Soils within the study area were mapped by the United States Department of Agriculture, Natural Resource Conservation Services as Hesperia fine sandy loam with 0 to 2 percent slopes and Greenfield sandy loam with 2 to 9 percent slopes. These particular soil types are considered structurally suitable for burrowing owl occupation. In addition the CNDDB search of the Lancaster West USGS Quadrangle and surrounding quadrangles resulted in four (4) recorded sightings of burrowing owls within the vicinity of the study area. The most recent occurrence was recorded in January 2006 at the northwest corner of the intersection of 40th Street West and Avenue K. One nesting pair was recorded using pipes for nesting; this occurrence is approximately two miles north of the study area. Additional observations were recorded on May and July 2006 at the intersections of 40th Street West/Lancaster Boulevard and 80th Street West/Avenue I respectively; several breeding pairs and juveniles were observed on both sites. Figure 3 indicates the distances of each occurrence from the study area and occurrence year of the burrowing owl.

Based on the habitat assessment, it was concluded the habitat present within the study area is marginally suitable for burrowing owls, suitable soils are present and the topography and elevation is suitable for the burrowing owl. From these findings it was determined a Phase II burrow survey was necessary.

3.2 Phase II Burrow Surveys

During the Phase II survey, 14 potential burrowing owl burrows were observed measuring 6-8 inches in diameter. GPS points were taken at the potential owl burrows and the locations mapped on an aerial photo of the study area (see Figure 2). The burrows within the study area may not be currently used by burrowing animals since no signs or animal tracks were observed; in addition, cobwebs and debris were covering the entrance to many of the the burrows. Appendix A contains photos of the burrows observed within the study area.

3.3 Phase III Owl Surveys

During the Phase III surveys potential burrows were monitored from fixed points to allow sufficient direct visual time for each identified burrow, while minimizing potential disturbance to the burrowing animals. No burrowing owls or owl signs were observed during the four surveys. The surveys were conducted at the optimal breeding season for burrowing owls and during the surveys; no heavy rains or high winds were measured (see Table 1).

Table 1 – Field Survey Meteorological Data

Surveys	Date	Time of Survey	Sunrise and Sunset Times	Temperature Fahrenheit	Cloud Cover %	Wind Speed
Phase III Site Visit #1	7/3/07	7:05-7:40	Sunrise: 5:43 Sunset: 20:09	88-90	Clear with mild winds	5-10 mph
Phase III Site Visit #2	7/5/07	19:10-20:00	Sunrise: 5:44 Sunset: 20:09	98-110	Clear with mild winds	5-10 mph
Phase III Site Visit #3	7/6/07	6:45-7:40	Sunrise: 5:45 Sunset: 20:09	75-83	Clear with mild winds	5-10 mph
Phase III Site Visit #4	7/10/07	7:00-7:45	Sunrise: 5:47 Sunset: 20:08	75-83	Overcast with mild winds	5-10 mph

4.0 CONCLUSION AND RECOMMEDATIONS

The focused surveys for burrowing owls were conducted in accordance to CBOC guidelines and resulted in no observed burrowing owls or owl signs such as molted feathers, cast pellets, prey remains, eggshell fragments or excrement. The study area surveyed included the project site and the additional 500-foot (150 meter) buffer surrounding the project site.

The Phase I survey determined that the project site, and the northern and western portions of the study area (within the 500 foot (150 meter) buffer), support marginal habitat for burrowing owls. The eastern and southern portions of the study area do not support suitable habitat, as they are currently developed (with a residential development and a high school, respectively). The Phase II survey observed potential burrows within the study area, which measured 6-8 inches in diameter. The Phase III surveys did not observe burrowing owls or owl signs, such as white-wash, molted feathers or owl pellets near or within the vicinity of the burrows. Although burrowing owls were not present during the focused surveys, it is possible burrowing owls could colonize the site between the time of the July 2007 surveys and the proposed site development. A Phase III pre-construction survey is recommended within 30 days prior to ground-disturbing activities (pursuant to CDFG protocols) to ensure burrowing owls do not occur within construction areas.

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Appendix A: Burrowing Owls Photographs taken on July 3, 2007

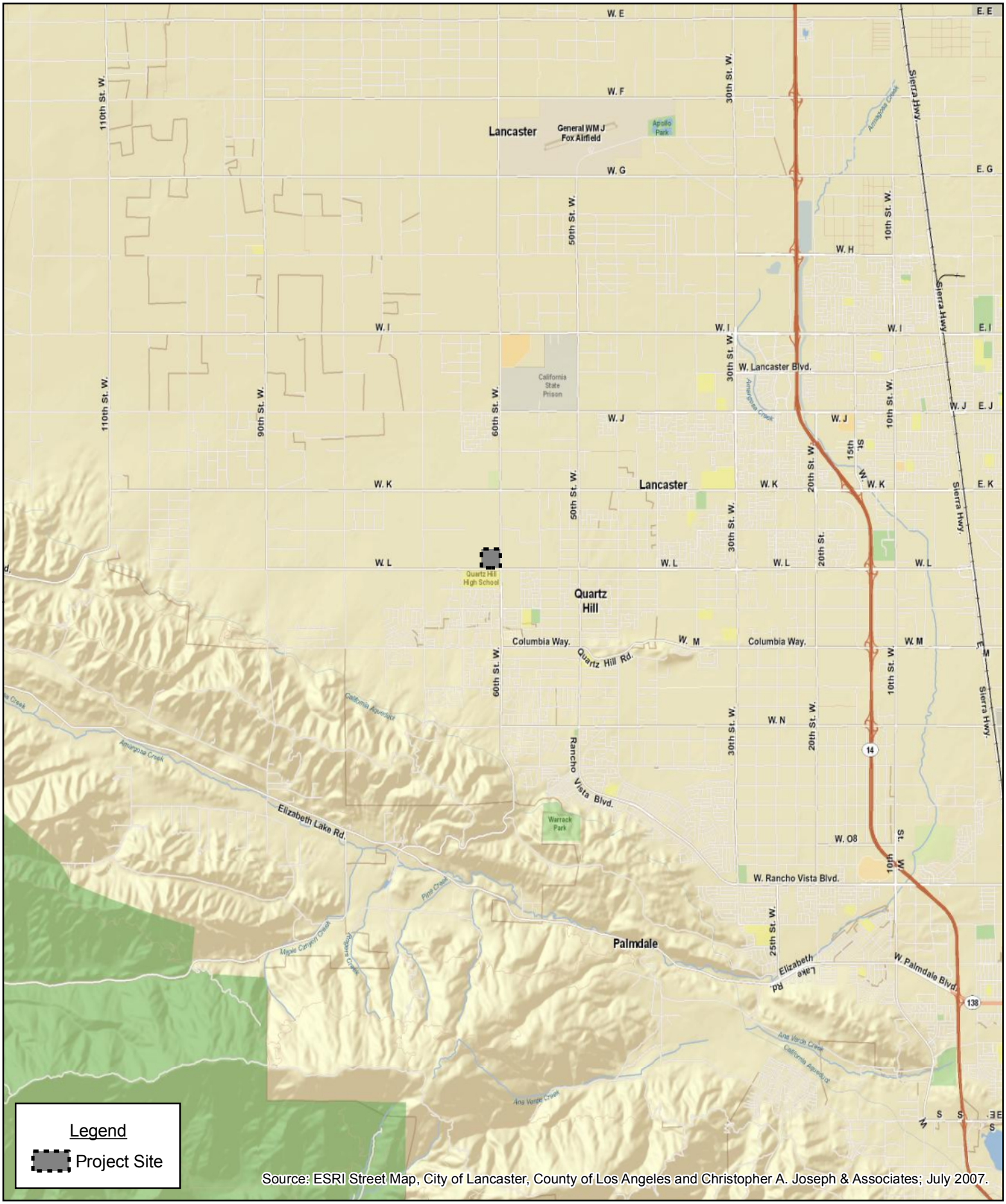
Burrows Located within the Project Site

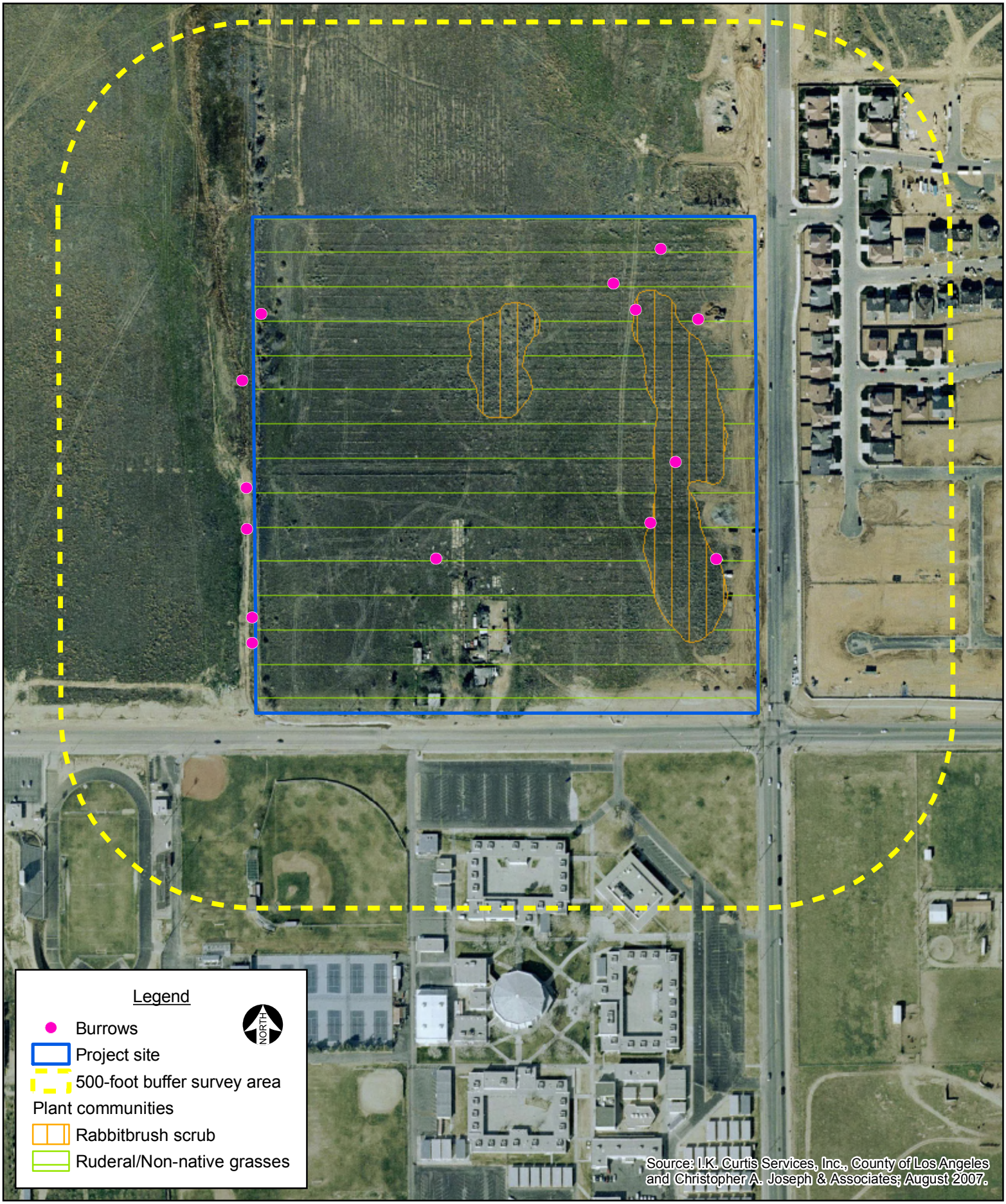
Appendix B: Flora and Fauna Compendium

Common Name	**Scientific Name**
Birds	
Red-winged blackbird	*Agelaius phoeniceus*
Western scrub jay	*Aphelocoma californica*
Red-tailed hawk	*Buteo jamaicensis*
Killdeer	*Charadrius vociferus*
Turkey vulture	*Cathartes aura*
Anna's hummingbird	*Calypte anna*
House finch	*Carpodacus mexicanus*
Rock dove	*Columba livia*
Common raven	*Corvus corax*
Brewer's blackbird	*Euphagus cyanocephalus*
Northern mockingbird	*Mimus polyglottos*
Black phoebe	*Sayornis saya*
European starling	*Sturnus vulgaris**
Mourning dove	*Zenaida macroura*
White-crowned sparrow	*Zonotrichia leucophrys*
Mammals	
Field mouse	*Peromyscus sp.*
Audubon's cottontail	*Sylvilagus audubonii*
Reptiles and Insects	
California harvester ant	*Pogonmyrmex californicus*
Western fence lizard	*Sceloporus occidentalis*
Plants	
Four-wing saltbush	*Atriplex canescens*
milkweed	*Asclepias*
Ragweed	*Ambrosia*
Giant reed	*Arundo donax*
Spanish brome	*Bromus madritensis*
Cheatgrass	*Bromus tectorum**
Mulefat	*Baccharis salicifolia*
Horseweed	*Conyza canadensis*
Rabbitbrush	*Crysothamnus nauseosus*
Bermuda grass	*Cynodon dactylon**
Jimson	*Datura stramonium**
California buckwheat	*Eriogonum californicum*
cut leaved geranium	*Geranium dissectum**
Heliotropium	*Heliotropium*
Wild lettuce	*Lactuca sp.*
Aster	*Lessingia sp*
Rye grass	*Lolium sp.**
Desert indianwheat	*Plantago ovata*
Knotweed	*Polygonum sp.*
Black locust	*Robinia pseudoacacia**

Common Name	**Scientific Name**
Curly leaved dock	*Rumex crispus*
Russianthistle	*Salsola tragus**
Arroyo willow	*Salix lasiolepis*
Red willow	*Salix laevigata*
Vinegar weed	*Trichostema lanceolatum*
Foxtail fescue	*Vulpia myuros*
Black mustard	*Brassica nigra*
London rocket	*Sisymbrium irio*
Sandbar willow	*Salix exigua*
*Non-native	

Figures


Lancaster
General WM J Fox Airfield
Apollo Park
Quartz Hill
Quartz Hill High School
California State Prison
Warrack Park
Palmdale
Elizabeth Lake Rd.
Columbia Way.
Quartz Hill Rd.
Rancho Vista Blvd.
W. Lancaster Blvd.
W. Rancho Vista Blvd.
W. Palmdale Blvd.
Sierra Hwy.
California Aqueduct
Amargosa Creek
Piute Creek
Mojave Canyon Creek
Portal Creek
Ana Verde Creek
W. E
W. F
W. G
W. H
W. I
W. J
W. K
W. L
W. M
W. N
W. O8
E. E
E. G
E. I
E. J
E. K
E. M
110th St. W.
90th St. W.
60th St. W.
50th St. W.
30th St. W.
25th St. W.
20th St. W.
15th St. W.
10th St. W.
20th St.
14
138
Legend
Project Site
Source: ESRI Street Map, City of Lancaster, County of Los Angeles and Christopher A. Joseph & Associates; July 2007.
CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research
NORTH
0 0.5 1 1.5 2
Miles
Figure 1: Project Vicinity



CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

0 150 300 450 600
Feet

Figure 2: Potentially Suitable Owl Burrow Locations

Appendix E. Jurisdictional Delineation Report

Jurisdictional Delineation Report

The Commons at Quartz Hill

Lancaster, California

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Abbreviations

CAJA	Christopher A. Joseph & Associates
CCR	California Code of Regulations
CEQA	California Environmental Protection Act
CDFG	California Department of Fish and Game
CFR	Code of Federal Regulations
City	City of Lancaster
Corps Manual	Field Guide for Wetland Delineation 1987 Corps of Engineers Manual and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
GPS	Trimble Geo-XT hand-held global positioning system
Lake and Streambed Alternation Program	Fish and Game Codes 1600-1616
NWI	US Fish and Wildlife National Wetlands Inventory
OHWM	Ordinary High Water Mark
Porter-Cologne Act	State Porter-Cologne Water Quality Control Act
Rapanos	U.S. Supreme Court decisions in Rapanos vs. U.S. and Carabel vs. U.S.
RWQCB	Regional Water Quality Control Board
SWANCC	U.S. Supreme Court decision in Solid Waste Agency of Northern Cook County vs. the U.S. Army Corps of Engineers
State Waters	Waters of the State
U.S.C.	United States Code
USGS	United States Geological Survey
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

This report presents the results of Christopher A. Joseph & Associates' (CAJA) potentially jurisdictional findings for the waters of the US and the State, including streambeds, completed for The Commons at Quartz Hill project (proposed project) located in the City of Lancaster (City), northeast corner of Los Angeles County in the Antelope Valley see Figure 1. The purpose of this analysis was to identify and delineate waters and wetlands ("jurisdictional features") within the proposed project that may be subject to the California Department of Fish and Game (CDFG) regulatory jurisdiction under Fish and Game Code Sections 1600-1616 (Lake and Streambed Alternation Program), U.S. Army Corps of Engineers (Corps) regulatory jurisdiction under Section 404 of the Clean Water Act (CWA) (as defined in the United States Code (U.S.C) 33 part 1344) and Regional Water Quality Control Board (RWQCB) regulatory jurisdiction under Section 401 of the CWA (33 U.S.C. 1341) and State Porter-Cologne Water Quality Control Act. This report provides regulatory context, methods, results and conclusions for delineation of potentially jurisdictional state and federal waters and wetlands.

The proposed project limits and boundaries were determined by outlining and using the Los Angeles County Parcel Maps (July 2007). The proposed project site is within parcels 3204008014, 3204008019, 3204008024 and 3204008032-3204008041 this area was assessed to determine jurisdictional features. Two hydrological features were observed during the survey 1) an offsite active constructed drainage located along the outside western edge of the proposed project site (hereafter referred as the offsite active constructed drainage) and 2) an onsite inactive constructed drainage which crosses through the southwestern portion of the proposed project site (hereafter referred to onsite inactive constructed drainage). The determinations of jurisdictional features in this report are considered preliminarily until verified by the respective regulatory agencies or until permits for activities within these features are issued or exempted by the agencies.

1.1 Regulatory Background

This section provides background regulatory information for a routine delineation of state and federal jurisdiction for waters and wetlands under the CWA and state jurisdiction under the Streambed Alteration Program, as well as the CWA and the Porter-Cologne Act.

Three primary regulatory agencies are responsible for regulating waters and wetlands: (1) the Corps regulates federal wetlands and waters under Section 404 of the CWA and requires a federal license or permit before dredged or fill material may be discharged into waters of the United States and/or federal wetlands; (2) CDFG regulates state streambeds and lakes under the Lake or Streambed Alteration Agreement and requires an agreement between the project proponent and CDFG before substantially diverting or obstructing the natural flow of, or substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake, depositing or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake; and (3) RWQCB regulates state and federal

water quality standards under the authority of Section 401 of the CWA and Porter-Cologne Act for projects that may result in a discharge into a water body, and requires that the applicant obtain state certification (or waiver of certification) that the proposed activity will not violate state and federal water quality standards.

1.1.1 Federal Waters and Wetlands

Waters of the United States

Section 404 of the of the CWA authorizes the Secretary of the Army, acting through the Corps, to issue permits for the discharge of dredged or fill material into the Waters of the United States. The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the Waters of the United States (33 CFR Part 328 Section 328.4). "Waters of the United States" is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Recently, the Corps revised the guidance for determinations for non-jurisdictional and jurisdictional waters of the United States, and a supplemental informal guidance was issued by the Corps and the U.S. Environmental Protection Agency (EPA), regarding jurisdiction following the US Supreme Court decision in Rapanos v. United States" (Corps/EPA 2007). Per this recent guidance, water bodies subject to Federal CWA jurisdiction are: traditional navigable waters; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent (i.e., tributaries that typically flow year-round or have continuous flow at least seasonally); and wetlands that directly abut such relatively permanent tributaries. Furthermore, federal CWA jurisdiction also covers the following classes of waters when a fact-specific analysis determines that those waters have a significant nexus with a traditional navigable water: non-navigable tributaries that do not typically flow year-round or have a continuous flow at least seasonally; wetlands adjacent to such tributaries; and wetlands adjacent but not directly abut a relatively permanent non-navigable tributary.

Wetlands

Wetlands are a subset of waters of the US which are defined in Corps regulations as one of several types of "special aquatic sites" under the Act and specifically are, "those areas that are inundated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. In keeping with this definition, the Corps evaluates wetlands by three criteria: hydrology, soils, and vegetation. Under the current federal delineation procedure a site must meet all three criteria to be classified as a wetland, with exceptions for atypical situations and problem areas.

Isolated and Non-jurisdictional Features

The Corps requires a federal license or permit before dredged or fill material may be discharged into waters and wetlands of the United States, unless it is determined that the wetland or water feature is non-jurisdictional.

The U.S. Supreme Court decision in Solid Waste Agency of Northern Cook County (SWANCC) vs. the U.S. Army Corps of Engineers determined that "isolated" waterways are non-navigable or intra-state waters which are not connected or tributary to navigable waters of the U.S. Isolated waters typically include vernal pools, seasonal swales, prairie potholes, playa lakes and sinks, desert washes and drainages not tributary to jurisdictional waters, and unconnected, constructed but abandoned features which collect water from surface runoff. Jurisdiction over waters of the United States under the CWA were further defined in recent U.S. Supreme Court Supreme decisions (Rapanos v. United States and Carabell v. United States, [Rapanos]), which determined the Corps will not assert jurisdiction over the following features: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow), ditches and roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. Wetlands and waters created by ongoing leakage, runoff, or abandonment of man-made features, as well as irrigation ditches and drainage ditches excavated in uplands are considered non-jurisdictional based on the SWANCC and the Rapanos decisions. Normally, temporary basins on construction sites, reflecting pools, wastewater systems, most active mining operation ponds, and certain other man-made functioning water bodies will be considered exempt.

1.1.2 State Waters

California Department of Fish and Game

Section 1600 of the State Fish and Game Code mandates that "it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." CDFG jurisdiction includes ephemeral, intermittent and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. Furthermore, CDFG jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function hydrologically as part of the riparian system. Historic court cases have further extended CDFG jurisdiction to include watercourses that seemingly disappear, but re-emerge elsewhere. CDFG-regulated activities require a "Lake or Streambed Alteration Agreement" and are applicable to all non-federal projects. A stream is defined in current CDFG regulations as, "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." The CDFG definition does not specify clear parameters with

regard to hydrology, soils, vegetation, or aquatic life. In practice, CDFG jurisdiction is usually asserted to the greater of: (1) the "top of the bank" (a potentially broader criterion than the federal OHWM), or (2) the outer boundary of any contiguous or closely adjacent (e.g., hydrologically connected) areas of riparian vegetation.

Regional Water Quality Control Board

The state of California administers requirements and permitting under Section 401 of the federal CWA through agreement with the federal EPA. This responsibility is performed under authority of the State Water Resources Control Board and is generally handled by the various RWQCBs. Each RWQCB regulates activities within state and federal waters under Section 401 of the federal CWA and the state Porter-Cologne Act. Section 401 of the CWA requires that "project proponents apply for a Federal permit for activities that involve a discharge to waters of the U.S. shall provide the Federal permitting agency a certification from the State in which the discharge proposed will comply with the applicable provisions under the Federal Clean Water Act". The RWQCB additionally regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (water code 13260(a)), pursuant to provisions of the Porter-Cologne Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (water code 13050 (e)). Under Section 401, every applicant for a federal permit or license for an activity that may result in a discharge into a water body must obtain state certification (or waiver of certification) that the proposed activity will not violate state and federal water quality standards. In addition to Section 401 requirements, most projects will be subject to compliance with Section 402 of the federal Clean Water Act in accordance with the NPDES.

1.2 Project Setting and Description

The proposed project site is approximately 40 acres and located in the City of Lancaster on the U.S. Geological Survey (USGS) Lancaster West Quadrangle 7.5 Minute Series Map in Sections 27 and 35, Township 7 North, Range 13 West, (see Figure 1). Access to the proposed project site is via the Antelope Valley Freeway (State Route 14) on the Avenue L exit. The project site is within the open flats of the Antelope Valley, surrounded by urban development, southeast of the Antelope Valley Poppy Reserve, and southwest of the Prime Desert Woodland Preserve. Topography of the project site is generally flat at an elevation of approximately 2,400 feet above mean sea level.

The project site is a vacant parcel bordered by new residential developments to the east and north and a high school directly to the south. The project site contains patches of rubber rabbitbrush (*Chrysothamnus nauseosus*) scrub within the eastern portion, and ruderal vegetation along the southern and western portion (see Figure 2); the northern portion of the site supports little to no vegetation given the area has been recently burned and subsequently scraped. The project site is bordered to the west by an off-site active drainage channel which receives irrigation runoff from the high school, and a vacant parcel beyond which also supports ruderal grassland vegetation.

Evidence of recent and extensive site disturbance includes several piles of debris remaining from the recent demolition of the structure along the southern boundary, numerous unpaved roads traversing the site, and miscellaneous household and industrial trash scattered throughout. The southeastern corner of the site also appears to have been recently graded or scraped, as evidenced by vehicle/equipment tracks and exposed bare soils. In addition, the City recently constructed a drainage channel within the southwestern portion of the site to accommodate some or all of the road and/or irrigation runoff; however, this drainage channel was subsequently blocked and no longer functions to transport water flows, as it was constructed without the land owner's permission.

The proposed Commons at Quartz Hill project consists of the development of approximately 353,129 square foot commercial shopping center located on approximately 40 acres on the northwest corner of 60th Street West and Avenue L. The commercial development would include two anchors stores and up to ten smaller commercial buildings that would house a variety of food, merchandise and services. One proposed anchor store is a Wal-Mart Supercenter, approximately 240,000 square feet with an associated garden center. The second anchor store is anticipated to be approximately 90,000 square feet. A total of 1,837 parking spaces are anticipated to be provided and access to the project site would occur from 60th Street West and Avenue L.

2.0 METHODOLOGY

2.1 Background Review

Prior to conducting a field survey, Christopher Joseph and Associates (CAJA) reviewed the following background information:

- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Online Mapper (USFWS 2007);
- US Department of Agriculture Natural Resources Conservation Service, Soil Survey Area: Antelope Valley Area, California (USDA NRCS 2007)

CAJA also contacted representatives from the Corps (Los Angeles District) to discuss preliminary jurisdictional findings of the offsite active constructed drainage along the western boundary outside of proposed project site.

2.2 Data Collection and Analysis

A field survey of the proposed project site was conducted on July 10, 2007 by CAJA Senior Biologist Shannon Lucas and Associate Biologist Luz Torres. The focus of the survey was to identify and delineate areas that potentially qualify as jurisdictional features on or adjacent to the site. The entire project site was examined field data was collected using a Trimble Geo-XT hand-held global positioning system (GPS) to determine the limits of the potentially jurisdictional

boundaries; this data was then used to calculate preliminary jurisdictional areas utilizing ArcView.

The boundaries of potential Corps and RWQCB jurisdiction were determined by mapping the extent of surface water and/or the observable Ordinary High Water Mark (OHWM), following established criteria (e.g., 33 CFR 328.3[e] and USACE 2005 and considering hydrological connectivity or isolation. In addition, observations were noted regarding the presence of any hydrophytic (wetland) plants or other site characteristics that might indicate the presence of a wetland, per the Corps Wetland Delineation Manual (Environmental Laboratory 1987; Corps 2006). Plant and animal species observed on-site are listed in Appendix B.

The boundaries of potential CDFG jurisdiction followed guidance in the state Fish and Game Code, related Fish and Game materials, and standard practices by Fish and Game personnel. Potential CDFG jurisdiction was delineated by measuring outer width boundaries of state jurisdiction (lakes or streambeds), consisting of the greater of either the "top of bank" measurement or the extent of associated riparian vegetation. Delineation of CDFG streambeds was based on indicators of an ephemeral, intermittent or perennial watercourse (including dry washes) characterized by the presence of (1) a definable bed and banks and/ot (2) existing fish or wildlife resources, including riparian habitat. CDFG streambeds include unvegetated waterways and other water bodies with a defined bed and bank, such as streams, lakes, drainages and rivers.

3.0 RESULTS

The following section presents the results from the field survey for jurisdictional features within or adjacent to the proposed project site. Two constructed drainages were noted during the delineation survey; 1) the offsite active constructed drainage and is located along the outside western boundary of the project site and 2) the onsite inactive constructed drainage is located within the southwestern corner of the project site. The extent and boundaries of the two constructed drainage features were calculated and are illustrated in Figure 3.

3.1 Preliminary Jurisdictional Results

As stated previously, two drainages were observed during the survey; one is an on-site inactive constructed channel, and the other is an off-site active constructed channel located adjacent to the western project site boundary.

The onsite inactive constructed drainage in the southwest corner of the project site was constructed within the last year or two by the City to accommodate some or all of the irrigation runoff from the adjacent high school; however, this drainage has recently become inoperative by blocking its inflow entrance along Avenue L, as the City inadvertently built this drainage without consent from the property owner. Therefore, runoff currently continues to flow into the offsite active constructed channel along the western site boundary. The onsite inactive constructed drainage currently does not transport flows and it is devoid of vegetation (please see photos in

Appendix A). Currently, the City is coordinating with the appropriate regulatory agencies to determine what type of regulatory permits and/or mitigation may be required in order to remove the drainage. Given that this drainage no longer functions to transport water flows, and efforts to remove the drainage have already been initiated with regulatory agencies, this drainage is not discussed further in this report.

The offsite active constructed drainage along the outside western boundary of the project site receives water as runoff from the irrigated high school fields to the south of project site. Excess water flows across Avenue L at its intersection with 60th Avenue West, which then flows westward along Avenue L along the southern project site boundary. Flows are then conveyed northward into the offsite active constructed drainage along the outside western boundary of the project site, where it eventually dissipates as overland flow just north of the project site onto a vacant parcel. The banks of this drainage are dominated with ruderal and non-native grasses, while scattered patches of patches of mulefat (*Baccharis salicifolia*), arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*) and red willow (*Salix laevigata*) occur along the eastern edges of the banks. This drainage is a constructed drainage and it is regularly maintained by the City. Such maintenance activities were observed during the July 10, 2007 survey, where City maintenance staff were observed excavating material from the drainage channel (see site photos in Appendix A). The City staff indicated that such activities are conducted once every few months, resulting in regular modifications to the flow pattern, vegetation, berms and depth of the drainage. Therefore, measurements and observations for this drainage are only valid as of the survey date (July 10, 2007).

The potentially jurisdictional status of the off-site drainage is discussed below with regard to Corps, CDFG and RWQCB regulatory guidance.

3.1.1 Corps Jurisdictional Wetlands and Waters

Delineation of Waters

The offsite inactive constructed drainage indicates an OHWM on the slightly raised earth berms/slopes, as illustrated in the site photos (see Appendix A). This drainage indicates characteristics of an OHWM, which include an incised streambed with a defined shelf, which measures approximately one to two feet wide for an approximate length of 1,486 feet (where it occurs adjacent to the project site boundary; the drainage continues further north of the project site before it dissipates as overland flow).

Although the offsite active constructed drainage has an identifiable and distinctive OHWM, this drainage is not a tributary to the waters of the US. The offsite active constructed drainage is an isolated drainage which collects runoff from the irrigated high school fields which eventually dissipates as overland flow just north of the project site into a vacant parcel; it does not connect to any navigable water or any tributary to navigable waters. Even if this drainage continued to flow further north and into a tributary of the Amargosa Creek (six miles north of the project site)

during high flow periods, the Corps has determined most drainages in the high desert, and specifically Amargosa Creek, are not subject to their regulation, as Amargosa Creek itself was determined to be an "isolated water" (per the Corps non-jurisdictional determination No. 2004-01295-AOA dated June 17, 2004 resulting from the SWANCC decision). Further, this drainage does not transport or is not susceptible to convey interstate or foreign commerce; therefore this drainage would likely be considered an isolated water feature not subject to regulation by the Corps. This Corps was contacted in order to determine the non-jurisdictional status of this drainage; this determination is currently pending.

Delineation of Wetlands

The drainage does support positive indicators of wetland hydrology, as it receives constant runoff from the irrigated high school fields and contained flowing water during the survey. In addition, wetland vegetation was also present within the drainage, dominated by rabbit's-foot grass and curly leaved dock (*Rumex crispus*),, and also containing patches of cattail (*Typha* sp.), mulefat and willow. The soil series identified per the US Department of Agriculture Soil Survey of the Antelope Valley Area are Hesperia fine sandy loam with 0 to 2 percent slopes and Greenfield sandy loam with 2 to 9 percent slopes; these are not considered hydric soils according to the California Hydric Soils List (USDA NRCS 2007). Observation of the soil confirmed the mapped soil type, as they were sandy in texture and light in chroma color, further indicating that hydric soils may not be present. Furthermore, no features were identified as wetlands or deepwater habitat on the USFWS National Wetland Inventory maps on the project site (USFWS 2007).

However, during the survey on July 10, 2007, the City Public Works Department was observed maintaining the drainage by excavating the vegetation and soil within the channel. Therefore, some or all of the observed wetland vegetation may have been cleared; please see photos in Appendix A. Based on discussions with the crew, these maintenance activities occur frequently, approximately once every few months. In addition, as described above, any potential wetlands within this drainage would likely be considered "isolated" by the Corps and, therefore, not subject to their regulation.

3.1.2 California Department of Fish and Game Jurisdictional Streambeds

The offsite active constructed drainage was judged to be a potentially jurisdictional CDFG streambed, since the slightly raised earth berms or slopes along the channel were identified as the "tops of banks" and the active flow/channel was identified as the "bed" of the streambed. At the time of the survey the drainage was observed to have a width of approximately six to eight feet between the "tops of banks" for a length of approximately 1,486 feet (where it occurs adjacent to the project site boundary; the drainage continues further north of the project site before it dissipates as overland flow). This channel contains areas of deposited gravelly material and, in places, exhibits slight scouring of the berms.

In addition, the southern and central portions the drainage support patches of riparian vegetation consisting of a few arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*) and red willow (*Salix laevigata*) (see Figure 3). Two of these patches of riparian vegetation, consisting of arroyo and red willow, are located within the southwestern edge of the proposed project site near the drainage and measure approximately 3,138 square feet (0.07 acre). One patch consisting of sandbar willow is located within the drainage outside and west of the proposed project limits and measures approximately 5,163 square feet (0.12 acre). However, during a site visit on July 10, 2007, the City Public Works Department was observed excavating the channel and, therefore, some or all of this off-site riparian patch may have been cleared.

3.1.3 Regional Water Quality Control Board Jurisdictional Waters of the State

The offsite active constructed drainage was evaluated for potential jurisdictional waters of the state by delineating the OHWM, following the Corps methods described in section 3.2.1 and it was determined this drainage contained potential jurisdictional waters of state. During the site visit, surface water was clearly observed flowing within the channel and the OHWM was measured at an approximate width of one to two feet for a length of 1,486 feet (where it occurs adjacent to the project site boundary; the drainage continues further north of the project site before it dissipates as overland flow). The drainage was clearly marked by a drainage pattern, scouring of the berms and erosional features including fluctuations in the depth of the water and width of the active channel.

Although the off-site drainage is considered to be "isolated", and therefore not subject to regulation by the Corps, it is still potentially subject to regulation by the RWQCB under the state Porter-Cologne Act.

4.0 FINDINGS AND CONCLUSIONS

A delineation of jurisdictional waters and wetlands was performed and results are illustrated in Figure 3. Totals for potential CDFG and state, by length, area, and type, are shown in Table 1.

The active constructed drainage was determined to be a potentially isolated feature and, therefore, not likely to be subject to regulation by the Corps under Section 404 of the Clean Water Act. However, this hydrological feature was determined to be potentially jurisdictional under CDFG's Streambed Alteration Program due to the presence of bed and banks and riparian vegetation. In addition, the active constructed drainage was determined to be potentially jurisdictional as "waters of the state" regulated by the RWQCB due to the presence of flowing surface water and an OHWM.

A Lake and Streambed Alteration Agreement will likely be required from CDFG and a permit may be required from the RWQCB (General Permit R6T-2003-0004 for minor streambed projects) if proposed project activities may impact the adjacent off-site active constructed drainage and/or associated riparian vegetation.

Table 1. Summary of Potentially Jurisdictional Features

STREAMBED REGULATED BY CDFG UNDER STREAMBED ALTERATION PROGRAM		
Measurements	**Offsite Active Constructed Drainage**	**Riparian Areas**
Average width (feet)	**6-8**	**---**
Linear feet	**1,486**	**---**
Area (square feet)	**12,151**	**Onsite 3,138** **Offsite 5,163**
TOTAL AREA 20,452 square feet (0.47 acre)		
WATERS OF THE STATE REGULATED BY RWQCB		
Measurements	**Offsite Active Constructed Drainage**	**Riparian Areas**
Average width (feet)	**1-2**	**0**
Linear feet	**1,486**	**0**
Area (square feet)	**3,850**	**0**
TOTAL AREAS 3,850 square feet (0.09 acre)		

5.0 REFERENCES

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U.S. Fish and Wildlife Service National Wetland Inventory Map for Lancaster South7.5 Minute USGS Quad, California. Accessed online April 15, 2007. http://wetlandsfws.er.usgs.gov/wtlnds/launch.html

Personal Communications

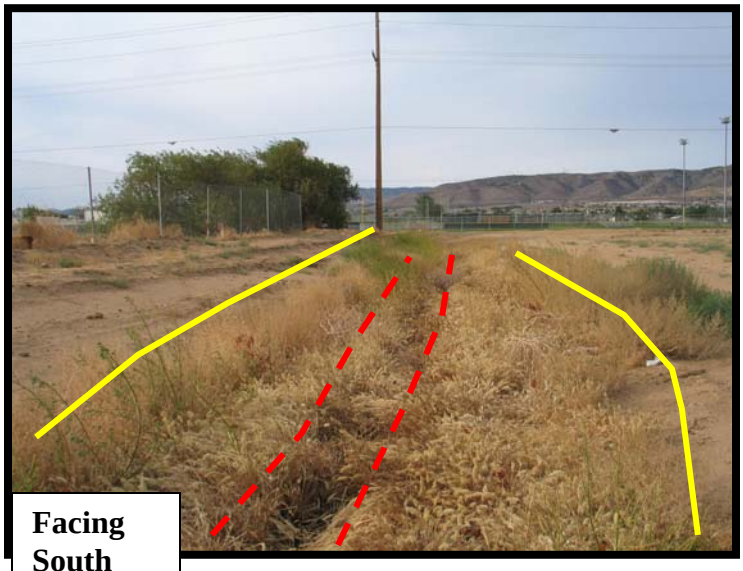
Trinh Phuong. U.S. Army Corps of Engineer, Los Angles District. Los Angeles, CA. July 19, 2007. Consultation and determination for non-jurisdictional determination.

FIGURES

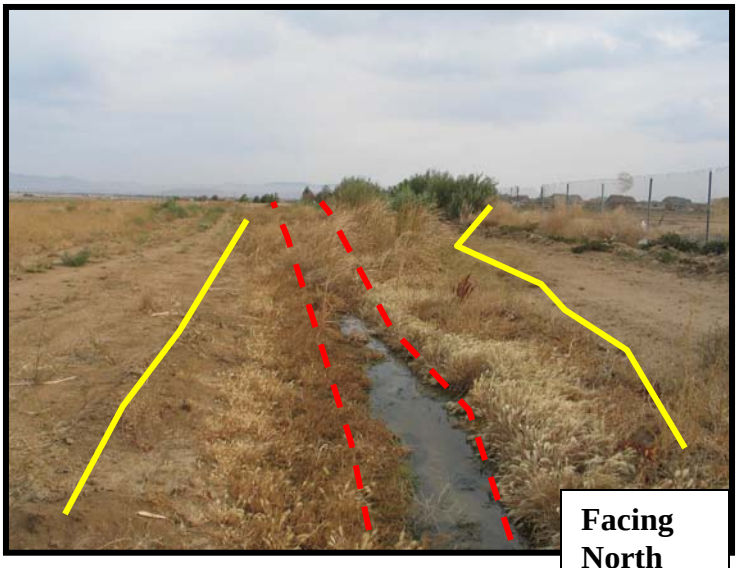
Appendix A.
Site Photographs taken on July 10, 2007
Offsite Active Constructed Drainage

Facing North: Central portion of drainage including the sparse Riparian Vegetation and the active channel.

City of Lancaster clearing and re-grading off-site active drainage on July 10, 2007



Facing South



Facing North

Offsite Active Constructed drainage, illustrating OHWM per Corps definition marked as the dashed lines and the top of banks per CDFG definition marked as a solid line includes the riparian vegetation.

Appendix B. Plant and Wildlife Species Observed

Common Name	Scientific Name
Wildlife	
Red-winged blackbird	*Agelaius phoeniceus*
Western scrub jay	*Aphelocoma californica*
Red-tailed hawk	*Buteo jamaicensis*
Anna's hummingbird	*Calypte anna*
House finch	*Carpodacus mexicanus*
Turkey vulture	*Cathartes aura*
Killdeer	*Charadrius vociferus*
Rock dove	*Columba livia*
Common raven	*Corvus corax*
Brewer's blackbird	*Euphagus cyanocephalus*
Northern mockingbird	*Mimus polyglottos*
Field mouse	*Peromyscus sp.*
California harvester ant	*Pogonmyrmex californicus*
Black phoebe	*Sayornis saya*
Western fence lizard	*Sceloporus occidentalis*
European starling	*Sturnus vulgaris*
Audubon's cottontail	*Sylvilagus audubonii*
Mourning dove	*Zenaida macroura*
White-crowned sparrow	*Zonotrichia leucophrys*
Plants	
Ragweed	*Ambrosia sp.*
Giant reed	*Arundo donax*
milkweed	*Asclepias sp.*
Four-wing saltbush	*Atriplex canescens*
Red brome	*Bromus madritensis*
Cheatgrass	*Bromus tectorum*
Mulefat	*Baccharis salicifolia*
Black mustard	*Brassica nigra*
Horseweed	*Conyza canadensis*
Rubber Rabbitbrush	*Crysothamnus nauseosus*
Bermuda grass	*Cynodon dactylon*
Jimson weed	*Datura stramonium*
California buckwheat	*Eriogonum californicum*
cut leaved geranium	*Geranium dissectum*
Heliotrope	*Heliotropium sp.*

Common Name	**Scientific Name**
Wild lettuce	*Lactuca sp.*
Aster	*Lessingia sp*
Rye grass	*Lolium sp.*
Desert indianwheat	*Plantago ovata*
Knotweed	*Polygonum sp.*
Rabbitfoot grass	*Polypogon monspeliensis*
Black locust	*Robinia pseudoacacia*
Curly leaved dock	*Rumex crispus*
Sandbar willow	*Salix exigua*
Arroyo willow	*Salix lasiolepis*
Red willow	*Salix laevigata*
Russian thistle	*Salsola tragus*
London rocket	*Sisymbrium irio*
Vinegar weed	*Trichostema lanceolatum*
Foxtail fescue	*Vulpia myuros*
Cattail	*Typha sp.*