

**Appendix D**  
**Focused Biological Survey**  
**and Jurisdictional Delineation for Offsite**  
**Improvements**

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**FOCUSED BIOLOGICAL SURVEY AND  
GENERAL BIOLOGICAL RESOURCES ASSESSMENT  
FOR OFFSITE IMPROVEMENTS ASSOCIATED WITH THE  
HACIENDA AT FAIRVIEW VALLEY PROJECT**

TOWN OF APPLE VALLEY SPHERE OF INFLUENCE  
USGS – FAIRVIEW VALLEY QUADRANGLE, 7.5-MINUTE SERIES  
TOWNSHIP 5 NORTH, RANGE 2 WEST, SECTIONS 9, 14, 15, AND 23  
AND TOWNSHIP 6 NORTH, RANGE 2 WEST, SECTION 32  
SAN BERNARDINO COUNTY, CALIFORNIA

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Prepared for:

**Strata Equity Group, Inc.**  
4370 La Jolla Village Drive, Suite 960  
San Diego, California 92122  
(858) 546-0900

Prepared by:

**Tom Dodson & Associates**  
2150 North Arrowhead Avenue  
San Bernardino, California 92405  
(909) 882-3612

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**Surveys Conducted October 2008**

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## **I. CERTIFICATION**

CERTIFICATION: *"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Fieldwork conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project."*



DATE: February 24, 2009

SIGNED: \_\_\_\_\_  
Shay Lawrey (Report Author)

## **II. EXECUTIVE SUMMARY**

Tom Dodson and Associates (TDA) was contracted by Strata Equity Group, Inc. (Strata) to assess the biological resources and potential impacts relative to the proposed conceptual offsite improvements associated with a residential development called the Hacienda at Fairview Valley. The potential offsite infrastructure locations assessed are conceptual at this time and are included as part of the specific plan application. Exact locations will be finalized during the tentative tract map application process with San Bernardino County. Biological surveys are expected to be performed by biologists approved by the County of San Bernardino. TDA is on the approved County of San Bernardino list of biologists.

The potential offsite improvements consist of seven (7) detention basins, two (2) water reservoir areas with access roads, and storm drain installation in conjunction with road improvements along Cahuilla Road and Chicago Road. The offsite improvements bordering the development are generally located northeast of the Town of Apple Valley in Fairview Valley, in a bajada nestled between Fairview Mountain, Sidewinder Mountain, and the Granite Mountains (see Figures 1 through 4).

A California Natural Diversity Data Base (CNDDDB) search was completed for the U.S. Geological Survey (USGS) – Fairview Valley Quadrangle, 7.5 Minute Series (topographic), as well as the surrounding quads: Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North. According to the CNDDDB, 23 sensitive species have been documented within these nine USGS quadrangles.

For the proposed road improvements and offsite facilities, two types of biological assessments (focused survey and constraints analysis) were performed. Focused surveys were not appropriate for the detention basin and reservoir site locations because they are preliminary and not finalized at this time. Instead, a general biological constraints analysis was conducted for the detention basin and reservoir site locations. Focused surveys for burrowing owl and desert tortoise were however, conducted for the road improvements along Cahuilla Road and Chicago Road because the action area is specified.

TDA biologist, Shay Lawrey, conducted the initial site assessment and constraints analysis of the detention basin and reservoir site locations on September 20, 2008.

S. Lawrey and Craig Lawrey completed the focused surveys along Cahuilla Road and Chicago Road on October 3, 4, 5 and 12, 2008. The purpose of the focused surveys was to determine the presence or absence of burrowing owl, desert tortoise, or any other sensitive species within or adjacent to the proposed road improvements.

They conducted the focused burrowing owl surveys in accordance with the “Burrowing Owl Survey Protocol and Mitigation Guidelines” prepared by the California Burrowing Owl Consortium on April 1993 and the October 17, 1995 California Department of Fish and Game (CDFG) staff report on Burrowing Owl Mitigation. The protocol survey identifies a four phased process with Phase IV being the report. The first phase is a Habitat Assessment. This phase calls for the identification of burrowing owl habitat onsite. If it is determined that burrowing owl habitat is observed, then Phase II is conducted. Phase II is a 100% coverage survey of the site plus a transect on adjacent

properties when possible. If burrows are present then Phase III is conducted which include owl surveys, census and mapping. If no owls are found then a winter survey is required.

Evidence of burrowing owl was found east of Chicago Road. Two burrows were found in the southeastern quarter of the proposed road improvements that had white wash, castings, and feathers near the burrow entrances. One burrowing owl individual was seen near one of the burrows during the surveys.

The project site is located within the range of the state and federally listed threatened desert tortoise, and patches of well suited desert tortoise habitat occur in area. S. Lawrey and C. Lawrey conducted the focused desert tortoise surveys along Cahuilla Road and Chicago Road on October 3, 4, 5 and 12, 2008. It is noted that the surveys were conducted outside of the spring time when tortoise activity is apparent. However, desert tortoise can be active in the fall and desert tortoise sign, such as scat, tracks, scuts, remains, and burrows, would persist beyond the active season. Additionally, TDA biologists conducted 100 % coverage desert tortoise surveys in 2005 and 2007 for the development project associated with these road improvements along Cahuilla Road and Chicago Road. The 2005 and 2007 desert tortoise surveys were conducted in the Spring season and the conditions during the 2005 survey of were ideal with abundant rain the previous year. The surveyors did not detect any desert tortoise or their sign (i.e., burrows, scat, scutes or tracks) during the course of the 2005 and 2007 surveys. Any such sign would indicate presence of desert tortoise.

Although the land surrounding the road improvements along Cahuilla Road and Chicago Road contains suitable habitat for desert tortoise, no evidence of desert tortoise or desert tortoise sign was found. There are also no current published data showing that desert tortoise occupy land in the area of the road improvements. Therefore, the location of the road improvements is not considered to be occupied by desert tortoise at this time.

The general biological survey and constraints analysis of the detention basin and reservoir sites identified a few potential biological issues that will require further investigation once the actual site locations have been identified and surveyed in. Of particular note, a number of native springs are mapped in the local area and the southerly offsite facility locations are proposed near one of these springs. At the time of survey, wetland habitat was not apparent, but the surveys were conducted during the dry season and the timing is not considered appropriate to identify wetland habitat boundaries. In order to properly and clearly define the boundaries of the spring wetland habitat, delineation surveys would need to be conducted in the early spring.

The spring habitat is considered sensitive and poses a constraint to development of the detention basins and reservoir sites. Additionally, jurisdictional waters were identified as a potential issue that will require further investigation. With the exception of Reservoir No. 1 and Detention Basin Nos. 2 and 3, the proposed offsite facility locations occur near jurisdictional, blue-line streams. Depending on the potential area of impact relative to jurisdictional limits, these water courses may pose another constraint. If there are impacts to the spring habitat or stream courses associated with the construction, maintenance, and operation of the offsite facilities, then regulatory approvals would be required. In order to identify potential impacts to jurisdictional waters or wetlands, a delineation should be conducted during the appropriate season.

Finally, the overall project area provides habitat for a variety of birds, some of which are appropriate prey species of prairie falcon (*Falco mexicanus*). One prairie falcon was observed flying over the site during the surveys. There is a high potential for this species to utilize the habitat in the project vicinity for foraging. The surrounding rugged topography indicates that prairie falcon may reside in the area, using the rocky surroundings for roosting or nesting. The rocky terrain provides appropriate habitat capable of supporting prairie falcon nesting. Although there was no evidence of prairie falcon territories near any of the offsite facility locations, focused surveys may be warranted if impacts to the rocky habitat are proposed in the future as part of the installation of the reservoirs.

### **III. PROJECT AND PROPERTY DESCRIPTION**

The proposed offsite improvements are associated with a residential development called the Hacienda at Fairview Valley. The potential offsite improvements consist of seven (7) detention basins, two (2) water reservoir areas with access roads, and storm drain installation and road improvements along Cahuilla Road and Chicago Road. Detention Basins Nos. 1 and 2 and Reservoir No. 1 are proposed to be located in Township 6 North, Range 2 West, Section 32; Detention Basin No. 4 is proposed to be located in Township 5 North, Range 2 West, Section 9; and Detention Basin Nos. 5-7, Reservoir No. 2 and access roads are proposed to be located in Township 5 North, Range 2 West, Sections 15, 14, 23. The storm drain and road improvements along Cahuilla Road and Chicago Road are specifically located in Township 5 North, Range 2 West on the line of Sections 10 and 11, San Bernardino County, California. Refer to site photos within this report for images of characteristic biological resources.

The potential offsite infrastructure locations assessed are conceptual at this time and are included as part of the specific plan application. Exact locations will be finalized during the tentative tract map application process with San Bernardino County. Biological surveys are expected to be performed by biologists approved by the County of San Bernardino.

All conceptual offsite infrastructure locations are managed by the Bureau of Land Management (BLM), except for DB-2. Water reservoirs (R-1 and R-2) need to be located at a higher elevation than the homes they serve. These offsite locations are selected to minimize visual impacts to existing and future residents and to achieve the required elevation. The stormwater and water quality basins (DB) are the most technically feasible and cost effective. Debris/Detention basins of this type belong in natural constrictions or lowpoints in the topography. The offsite roadway improvements are required to connect Villages C and D of the community. These roadways will be designed within existing road easements for Cahuilla Road and Chicago Road.

The project site can be found on 2007 Thomas Guide page 4298, Section G2. The proposed offsite improvements bordering the Hacienda at Fairview Valley development are generally located northeast of the Town of Apple Valley in Fairview Valley, in a bajada nestled between Fairview Mountain, Sidewinder Mountain, and the Granite Mountains (see Figures 1 through 4). The total area of disturbance proposed by the detention basins and reservoirs is 34.5 acres and the total area of disturbance proposed for the road improvements is 12.4 acres.

The topography within the study area ranges between 3,080 to 4,000 feet above mean sea level. The soils in the project area primarily consist of Cajon sand, Cajon-Wasco cool complex, and Helendale sand. The local climatic conditions in the project area are characterized by hot summers, mild winters, infrequent rainfall, and dry humidity. The average annual temperature is 62°F, ranging between 9-112°F. The rainy season begins in November and continues through March, with the quantity and frequency of rain varying from year to year. The average annual rainfall is approximately 4.5 inches with a range of 1.1 to 11.2 inches.

The primary vegetation community along Cahuilla Road and Chicago Road is Mojave creosote bush scrub, dominated by creosote bush (*Larrea tridentata*) Joshua tree (*Yucca brevifolia*), burrobrush (*Hymenoclea salsola*), and California buckwheat (*Eriogonum fasciculatum*). Mojave creosote bush scrub accounts for over 90% of the vegetative cover. Along the road edges, interspersed within the Mojave creosote bush scrub are patches of bare ground, disturbed ground

near the houses, and sparse habitat patches dominated by non-native species. There are high levels of on going disturbance ongoing along Cahuilla Road and Chicago Road. There are residential structures and old trash dumps as well as off-road-vehicle (ORV) use, feral dogs, and recent dumping. The land uses in the vicinity of project are rural residential.

There is very little evidence of disturbance in the vicinity of the detention basin and reservoir sites. These sites are dominated by native shrubs, primarily *Larrea tridentata* (creosote bush) Joshua tree, *Hymenoclea salsola* (burrobrush), and *Eriogonum fasciculatum* (California buckwheat). There are jurisdictional stream courses and natural springs located near some of the proposed offsite facilities.

#### **IV. FOCUSED STUDY / SPECIES OF CONCERN**

Background information was gathered prior to visiting this site in order to determine what species would be expected in this area. This background check included a search of the California Natural Diversity Data Base (CNDDDB), and a review of previously conducted biological surveys. The CNDDDB search was completed for the USGS – Fairview Valley Quadrangle, 7.5 Minute Series (topographic), as well as the surrounding quads: Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North. According to the CNDDDB, 23 sensitive species have been documented within these nine USGS Quadrangles. Please refer to Table 1 for a complete list of the species occurrence potential on the property. The table includes the habitat requirements of each species and the potential of their occurrence on the site. The occurrence potential is based on site conditions and species range.

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to the continued existence and existing knowledge of population levels. The U.S. Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act (ESA) of 1973. The ESA provides a legal mechanism for listing species as either threatened or endangered, and a process of protection for those species listed. Section 9 of the ESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in such conduct. "Take" can include adverse modification of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act. Take authorization can be obtained under Section 7 or Section 10 of the act.

**Migratory Bird Treaty Act:** The Migratory Bird Treaty Act protects all native breeding birds, whether or not they are considered sensitive by resource agencies.

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

Species of Special Concern is an informal designation used by CDFG for some declining wildlife species that are not proposed for listing as threatened or endangered, such as the burrowing owl. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFG.

Other applicable regulations include the County of San Bernardino native plant protection ordinance. The protected native plant species (e.g., Joshua trees) are identified in Section 89.0420 of the San Bernardino County Government Code. If the project proposes to remove any of these

native plant species, the project proponent shall comply with Section 89.0420 of the San Bernardino County Code regarding the harvesting of desert native plants.

## **Flora**

The eleven plant species identified to have a potential to occur within the vicinity of the project area include Shockley's rock cress (*Arabis shockleyi*), Cushenbury milk-vetch (*Astragalus albens*), Alkali mariposa lily (*Calochortus striatus*), Booth's evening-primrose (*Camissonia boothii* ssp. *boothii*), Desert springparsley (*Cymopterus deserticola*), Barstow woolly sunflower (*Eriophyllum mohavense*), Parish's phacelia (*Phacelia Parishii*), Parish's popcorn-flower (*Plagiobothrys parishii*), Parish's alkali grass (*Puccinellia parishii*), Latimer's woodland-gilia (*Saltugilia latimeri*), Salt Spring checkerbloom (*Sidalcea neomexicana*).

**Shockley's rock cress** (*A. shockleyi*) is an herbaceous perennial in the Brassicaceae plant family. It occurs in southeastern California, southern Nevada, and western Utah. It occurs in the 875-2205m elevational range in Pinyon and juniper woodland on ridges, rocky outcrops and openings on limestone or quartzite. *A. Shockleyi* does not have federal or state status but is ranked 2.2 by CNPS. As a list 2 species it meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing. As for all botanical species listed in this section, it is mandatory that sensitive species be fully considered during preparation of environmental documents relating to CEQA.

**Cushenbury milk-vetch** (*A. albens*) is an herbaceous perennial in the Fabaceae plant family. It is a California endemic that occurs in the 1095-2000m range. *A. albens* a limestone endemic which occurs on sandy or stony flats, rocky hillsides, canyon, washes, or fans on granite or mixed granitic-calcareous debris associated with Joshua tree woodland, mojavean desert scrub or pinyon and juniper woodland. *A. albens* is federally listed as endangered, has no state listing and is ranked 1.B by CNPS. As 1.B species it meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing.

**Alkali mariposa lily** (*C. striatus*) is an herbaceous perennial in the Liliaceae plant family. It occurs in southern California and southern Nevada in the 90-1595m elevation range. It is associated with chaparral, chenopod scrub, mojavean desert scrub, alkaline meadows and ephemeral wash communities, but it is primarily an alkaline meadow species. *C. striatus* does not have federal or state status but is ranked 1.B2 by CNPS. As a list 1.B species it meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Booth's evening-primrose** (*C. boothii* ssp. *boothii*) is an annual species in the Onagraceae plant family that occurs throughout the western United States and into Mexico. In California it occurs 900-2400m elevation on sandy flats and steep, loose slopes associated with Joshua tree woodland or pinyon-juniper woodland. *C. boothii* ssp. *boothii* does not have federal or state status but is ranked 2.3 by CNPS. As a list 2 species it meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Desert springparsley** (*C. deserticola*) is an herbaceous perennial in the Apiaceae plant family. It is a western Mojave desert endemic occurring between 625-910m elevation. It is associated with fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand in Joshua tree woodland and Mojavean desert scrub. *C. deserticola* does not have federal or state status but is ranked 1.B2 by CNPS. As a list 1.B species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Barstow woolly sunflower** (*E. mohavense*) is an annual in the Asteraceae plant family. It is a central Mojave desert endemic occurring between 500-900m elevation. It is associated with open, silty or sandy areas or margins of playas in desert chenopod scrub and Mojavean desert scrub. *E. mohavense* does not have federal or state status but is ranked 1.B2 by CNPS. As a list 1.B species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Parish's phacelia** (*P. parishii*) is an annual in the Hydrophyllaceae plant family. It occurs in San Bernardino county, California, southern Nevada, and western Arizona at elevations of 535-1200m. It is associated with alkaline flats and slopes, clay soils and playas in Mojavean desert scrub. *P. parishii* does not have federal or state status but is ranked 1.B2 by CNPS. As a list 1.B species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Parish's popcorn-flower** (*P. parishii*) is an annual in the Hydrophyllaceae (formerly Boraginaceae) plant family. It is a Mojave desert endemic that occurs at 750-1400m elevation. It is associated with alkaline soils and mesic sites in Great basin scrub and Joshua tree woodlands. *P. parishii* does not have federal or state status but is ranked 1.B1 by CNPS. As a list 1.B species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Parish's alkali grass** (*P. parishii*) is an annual species in the Poaceae plant family. It occurs in California, Arizona and New Mexico at 695-1000m elevations within desert meadows and seeps. *P. parishii* is associated with alkali springs and seeps in Joshua tree woodland. *P. parishii* does not have federal or state status but is ranked 1.B1 by CNPS. As a list 1.B species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

**Latimer's woodland-gilia** (*S. latimeri*) is an annual in the Polemoniaceae plant family. It occurs only in California at the elevation 400-1900m. It is associated with sandy or rocky substrates in chaparral and Mojavean desert scrub. *S. latimeri* does not have federal or state status but is ranked 1.B2 by CNPS. As a list 1.B species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing. The genus *Saltugilia* was recently segregated from the genus *Gilia* and *S. latimeri* was even more recently isolated from *S. australis*. The site was within the elevational range described for the species. The key

characteristic separating out the genus *Saltugilia* is a glabrous corolla with yellow spots in the tube while distinguishing characteristic that distinguishes *S. latimeri* from *S. australis* is a higher density of glands on the calyx as well as persistent pink or lavender in the corolla color.

**Salt Spring checkerbloom** (*S. neomexicana*) is an herbaceous perennial in the Malvaceae plant family that occurs throughout western North America at 0-1500m elevation. It is associated with alkali playas and brackish marshes in chaparral, coastal scrub, lower montane coniferous forest and Mojavean desert scrub. *S. neomexicana* does not have federal or state status but is ranked 2.2 by CNPS. As a list 2 species it meets the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and is eligible for state listing.

## **Fauna**

The nine species of special status animal species identified to have a potential to occur within the vicinity of the project area include pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), Mohave ground squirrel (*Spermophilus mohavensis*), desert tortoise (*G. agassizii*), burrowing owl (*A. cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), and Le Conte's thrasher (*Toxostoma lecontei*).

**Burrowing owl** (*A. cunicularia*) is a state Species of Special Concern. This owl is a mottled brownish and sand colored, dove sized raptor, with large yellow eyes, a rounded head lacking ear tufts, white eyebrows, and long legs compared to other owl species. It is a ground dwelling owl typically found in arid prairies, fields, and open areas where vegetation is sparse and low to the ground. The burrowing owl is heavily dependent upon the presence of mammal burrows, commonly ground squirrel, in its habitat to provide shelter from predators, inclement weather, and to provide a nesting place (Coulombe 1971). They are also known to make use of human-created structures such as cement culverts and pipes for burrows.

Burrowing owls spend a great deal of time standing on dirt mounds at the entrance to a burrow, or perched on a fence post or other low to the ground perch from which they hunt for prey. Burrowing owls frequently hunt by hovering in place above the ground and dropping on their prey from above. Burrowing owls feed primarily on insects, such as grasshoppers, June beetles and moths, but will also take small rodents, birds and reptiles. They are active during the day and night, but are considered a crepuscular owl; generally observed in the early morning hours or at twilight. The breeding season for the burrowing owl is February 1 through August 31. Up to 11, but typically 7 to 9 eggs are laid in a burrow, abandoned pipe, or other subterranean hollow where incubation is complete in 28-30 days. Young burrowing owls fledge in 44 days. The burrowing owl is considered a migratory species in portions of its range, which includes western North America from Canada to Mexico, and east to Texas and Louisiana. Burrowing owl populations in California are considered to be sedentary or locally migratory.

Throughout its range it is vulnerable to habitat loss, predation, vehicular collisions, destruction of burrow sites and poisoning of ground squirrels (Grinnell and Miller 1944, Zarn 1974, Remsen 1978). Burrowing owls have disappeared from significant portions of their range in the last 15 years and overall nearly 60% of the breeding groups of owls known to have existed in California during the 1980s had disappeared by the early 1990s (Burrowing Owl Consortium 1993). The burrowing owl

is not listed under the state or federal Endangered Species Act. The burrowing owl is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5).

**Desert tortoise** (*G. agassizii*) is listed under both state and federal law as a threatened species. Throughout its range it is threatened by habitat loss, domestic grazing, predation, collections, and increased mortality rates (Feldmeth et al. 1990). Critical habitat for the desert tortoise was designated on February 8, 1994 (FR 59 5820 5866). The project site is not located within designated critical habitat.

The desert tortoise is typically found in creosote bush scrub. They are most often found on level ground where the substrate is firm but not too rocky. Tortoise burrows are typically found at the base of shrubs, in the sides of washes and in hillsides. Recent activity at tortoise burrows may be indicated by footprints, fresh dirt on the apron of the burrow, fresh scat, crushed vegetation or recently exposed roots in the burrow wall. Tortoise scat is very distinctive and may remain on the desert floor for many years. General estimates of the age of tortoise scat can be made based upon sun bleaching and moisture levels. Home ranges for desert tortoise vary, depending upon the size and sex of a tortoise as well as the availability of food and shelter. According to the CDFG, information on the western Mojave population of desert tortoise, home range typically varies from 5 to 38 acres. Neonatal tortoises can travel up to 3-5 km after hatching (Becky Jones, CDFG personal communications). Because a single tortoise may have many burrows distributed throughout its home range, it is not possible to predict exact numbers of individuals on a site based upon burrow numbers.

In 1992 the U.S. Bureau of Land Management issued the California Statewide Desert Tortoise Management Policy which included categorizing habitat into three levels of classification. The management goal for Category I areas is to maintain stable, viable populations and to increase the population where possible. The management goal for Category II areas is to maintain stable, viable populations. The management goal for Category III areas is to limit population declines to the extent feasible. The entire project occurs in desert tortoise habitat designated as Class II.

**Prairie falcon** (*F. mexicanus*) is a medium to large bird with wingspans approaching 3.5 feet (106.7 cm). The female tends to be considerably larger than the male, in some cases a full one-third bigger. Adult prairie falcons are a pale brown to sandy brown across the top of their wings and back. The head is streaked with light areas around the face. A faint dark mustache appears on either side of the bill. Underneath the birds are creamy white with brown spotting or streaking on the breast and belly. Falcons all have slender bodies, long tails and characteristic long, pointed wings. Prairie falcons can be abundant when suitable habitats for nesting and foraging are present. They do migrate in the spring and fall, but some birds may reside in the area the entire year. Prairie falcons prefer rough broken terrain, which is where they establish nesting territories. Nesting occurs in mid-April through July. Their nests are often found in rock crevices and sometimes in vacated stick nests left by other birds.

The prairie falcon is a locally common bird. These falcons prey chiefly on small birds and mammals, and on a variety of reptiles and insects. Prairie falcons hunt using low, rapid, searching flight, usually capturing prey on or near the ground. The prairie falcon, as do other species of falcons, swoops down upon its prey from behind. A similar species, the peregrine falcon, has been clocked at speeds of over 90 mph in their descents upon prey. Prairie falcons nest primarily on cliff

ledges, but may also nest on low ridges. All birds of prey are protected by law. It is illegal to harm them or to disturb their nests. It is also against the law to have in your possession any artifacts from birds of prey, such as feathers, talons or preserved specimens. Injured hawks and owls should be reported to the Department of Game, Fish and Game or the U.S. Fish and Wildlife Service. Officials will arrange for birds that can be saved to be cared for at rehabilitation centers.

**Mohave ground squirrel** (*S. mohavensis*) (MGS) is endemic to 2 million hectares in the western Mojave Desert. It typically inhabits sandy soils of alkali sink and creosote bush scrub habitat. MGS are listed as threatened by CDFG due to habitat loss, fragmentation, and deterioration (Brooks and Matchett 2002). CDFG does not designate critical habitat.

MGS measure about 9 inches from nose to tip of tail, forage on leaves and seeds, and aestivate/hibernate for long periods of the year. Aestivation (reduction of body temperature, heart rate, and metabolism) begins usually in the early summer when vegetation begins to dry up. MGS reanimate after winter rains have produced new vegetative growth, generally in February. Males may travel up to a mile per day in search of mates after they have emerged from aestivation in the spring. Litters of 6-9 young are born by the end of March; young are weaned by early May and disperse within a few weeks. Young often establish home ranges adjacent to the maternal home range; however some young will disperse up to 4 miles. When winter rains fail, MGS do not reproduce and can enter dormancy as early as April. As a result, MGS numbers decline after a low rainfall year, and two successive years of drought can lead to the extinction of local populations. Young can recolonize suitable habitat rapidly after good reproductive seasons (Leitner 1999).

In the Coso Grazing Enclosure Monitoring Study (CEGMS, Leitner and Leitner 1998) several individuals survived until 5 years of age, the maximum lifespan recorded for this species. In general, the majority of juveniles do not survive to reach one year of age. Evidence from radiotelemetry and weight gain patterns suggest that juvenile survivorship is low because of predation and the frequent failure of juveniles to accumulate sufficient fat reserves for their first season of dormancy. However, once individual ground squirrels successfully reach yearling status and become established in a home range, survivorship tends to be high. (CEGMS, p.28)

Plants documented as forage for MGS include: fiddleneck (*Amsinckia tessellata*), wolfberry (*Lycium andersonii*), Joshua tree (*Yucca brevifolia*), winterfat (*Krascheninnikovia* (formerly *Eurotia*) *lanata*), spiny hopsage (*Grayia spinosa*), allscale (*Atriplex canescens* and *A. polycarpa*), desert holly (*Atriplex hymenelytra*), coreopsis (*Coreopsis* sp.), Russian thistle (*Salsola tragus*), and the seeds of Joshua tree (*Y. brevifolia*). It is suspected that MGS forage on the plant species with the highest water content available at the time.

**Pallid San Diego pocket mouse** (*Chaetodipus fallax pallidus*) (formerly known as northwestern San Diego pocket mouse) is considered a moderately sized pocket mouse, ranging in length from 170 to 200 mm and weighing from 17 to 22 grams. There is very little difference in size between males and females. Both are colored a dark brown on top and white underneath, with spines that are black on the rump and white on the hips. The tail length is shorter than the body by about 20 mm, it has a darkly colored dorsal crest and is light below. This appearance is very similar to *Chaetodipus californicus* that also occupy the same general habitat except that *C. fallax* has shorter ears, usually shorter than 9 mm. San Diego pocket mice are homeothermic endotherms with hypsodont and lophodont teeth. The northwestern San Diego pocket mouse inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities. It inhabits open, sandy areas

of both the Upper and Lower Sonoran life-zones of southwestern California and northern Baja California. The San Diego pocket mouse generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates (Bleich 1973; Price and Waser 1984), and to a lesser extent, shrubby areas (MWD and RCHCA 1995). In western Riverside County, the San Diego pocket mouse also commonly is found in disturbed grassland and open sage scrub vegetation with sandy-loam to loam soils.

Like other desert-adapted heteromyid rodents, the San Diego pocket mouse primarily is a granivore (seed eater). Arid grassland and desert environments support a surprising diversity of coexisting rodent granivores. The diversity and number of coexisting species vary depending on local conditions and the requirements of the constituent species. Pocket mice and other heteromyid rodents dig burrows, which moves the soils and provides habitat and refugia for other species, including other rodents, reptiles, amphibians, birds and invertebrates. The San Diego pocket mouse appears to be sensitive to habitat fragmentation and degradation. Bolger et al. (1997) studied rodent diversity and abundance in isolated habitat fragments of varying size and age in San Diego County. The San Diego pocket mouse tended to occur in habitat patches with 90-100 percent shrub cover, with only two of eight occupied patches having shrub cover of 50 percent and 75 percent. This species is still relatively common in sage scrub, chaparral, and grassland habitats.

**Western mastiff bat** (*E. perotis californicus*) is the biggest North American bat, with a body length of 5.5 to 7.5" and a wingspan of over 22". Fur is dark brown, kind of thin, hairs white at base. Has huge ears, joined at base and extending out over forehead like a bonnet. They occur in two populations. One population is from the southwestern United States to central Mexico and the second is located in the central and northern portions of South America (Harvey and other 1999). Western mastiff bat is found in desert scrub, chaparral, mixed conifer forest, giant sequoia forests, and montane meadows (Philpott 1997). In the southwestern United States, day roosts are generally found in areas with rugged, rocky canyons and cliffs (Best and others 1996). Crevices in granitic rocks and consolidated sandstone are a common roosting substrate (Best and others 1996). These bats will also roost in building crevices—as nearly as many day roosts are known in buildings as in natural crevices (Barbour and Davis 1969). Western mastiff bats are insectivorous and feed primarily on moths (Philpott 1997). They forage in broad open areas including dry desert washes, floodplains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas.

**Townsend's big-eared bat** (*C. townsendii*) sports prominent ears that look almost like wings. Townsend's big-eared bat largely preys on moths over open pasture and forest canopy. For females, foraging increases during pregnancy and lactation, from one or two foraging bouts per night to three, and the distance traveled also increases, from 1.0 km to more than 4.0 km per night. Females form maternity groups in the spring, in caves and shelters, where they give birth to a single pup. In addition to winter hibernation, these bats also experience daily periods of torpor during cooler weather, a sleep-like state of reduced motor and metabolic activity. Townsend's big-eared bat occurs in the western United States, northward to British Columbia, as far east as the Rocky Mountain States from Idaho to Texas, including Kansas and Oklahoma, and there are also populations in Arkansas, Missouri, Kentucky, Virginia, and West Virginia.

Townsend's big-eared bats are found throughout western North America, from British Columbia south to Oaxaca, Mexico, with two endangered subspecies in isolated areas in the Ozark and Central Appalachian regions of the United States. Their most typical habitat is arid western desert

scrub and pine forest regions. These agile fliers venture out to forage only after dark, using their keen echolocation to hunt moths and other insects. In the spring and summer, females form maternity colonies in mines, caves, or buildings, while males roost individually. In winter, these bats hibernate in caves and abandoned mines. They are extremely sensitive to disturbance at their roosting sites and have suffered severe population declines throughout much of the United States.

**Bendire's thrasher** (*T. bendirei*) is 23-28 cm (9 to 11 inches) in length, with a long tail and a short bill. It is colored grayish-brown on its upperparts and has paler underparts with faint dark streaks. The eyes are bright yellow, and the tips of the tail are tipped with white. Because of its similar coloration to the Curve-billed Thrasher, the two birds are very easy to mistake for one another. The Bendire's thrasher's shorter beak is a distinguishing feature when comparing mature birds, but it is still easy to misidentify an adult Bendire's thrasher as a young Curve-billed Thrasher as its beak has not grown to its mature length. The Bendire's thrasher lives in the brush-filled deserts and valleys and drylands of the south-western United States, mainly along the southern border that Arizona and New Mexico shares with Mexico (the Madrean sky islands, mountain range sky islands of the northern Mexican range: Sierra Madre Occidental).

The Bendire's thrasher constructs a cup-shaped nest from twigs, lining the interior with grass stems and rootlets. It is usually placed in a cactus or an otherwise thorny desert shrub or tree. The female lays three or four eggs, which are pale green to blue in color, and speckled with brown and purple. Bendire's thrasher, like the majority of thrashers, feed on small ground-dwelling insects.

**Le Conte's thrasher** (*T. lecontei*) is a permanent resident of the deserts of the southwestern U.S. and northwestern Mexico. An uncommon and hard-to-find bird, it characteristically exists only in low densities; in good habitat for the bird there may be only 10 adults per square kilometer. Its typical habitat is sparsely vegetated desert flats, dunes, or gently rolling topography with a high proportion of species of saltbush or shadscale and cholla cactus. Most of the shrubs are below 2.5 m in height. A requirement is that there be accumulated leaf litter under plants since the bird feeds almost entirely on arthropods taking shelter in this litter during the day. It also consumes plant seeds and opportunistically takes small snakes, lizards, and bird's eggs. All its basic water requirements are met through its diet, as it lives in an environment where surface water is only rarely available.

As a nest site, it prefers cholla cactus or thick, dense and thorny desert shrubs in deep shade from overhanging branches. Though the extent of its known range has not changed since the late 19<sup>th</sup> Century, much of its U.S. habitat within that range has been lost to development, resulting in great reductions locally in its numbers. One threat is degradation and destruction of habitat by ATV use; ATVs crush vegetation and destroy underlying litter and soil surface, making the area unsuitable for the thrasher.

## **FOCUSED STUDY**

Focused botanical surveys were not conducted for the offsite road improvements or facilities because botanical surveys need to be conducted in the spring time. None of the sensitive botanical elements listed above were found during the focused springtime botanical surveys conducted by C.J. Fotheringham in 2005 and 2007 for the Hacienda at Fairview Valley development project. As such, it is not likely that they occur in the vicinity of the offsite road improvements along Cahuilla Road and Chicago Road.

According to the West Mojave Plan Environmental Impact Report/Environmental Impact Statements, Map 3-15, and according to the Mohave ground squirrel (MGS) Partnership Workshop, the subject property is located outside, to the north, of the MGS range. Therefore, no protocol surveys were conducted and it is assumed that the site is not occupied by this species.

Focused surveys were conducted for the proposed road improvements along Cahuilla Road and Chicago Road for desert tortoise and burrowing owl.

## **V. METHODOLOGY**

For the proposed road improvements and offsite facilities, two types of biological assessments (focused survey and constraints analysis) were performed. Focused surveys were not appropriate for the detention basin and reservoir site locations because they are preliminary and not specific at this time. The potential offsite infrastructure locations assessed are conceptual at this time and are included as part of the specific plan application. Exact locations will be finalized during the tentative tract map application process with San Bernardino County. Biological surveys are expected to be performed by biologists approved by the County of San Bernardino. Instead, a general biological constraints analysis was conducted for the detention basin and reservoir site locations. Focused surveys for burrowing owl (*Athene cunicularia*) and desert tortoise (*Gopherus agassizii*) were however, conducted for the road improvements along Cahuilla Road and Chicago Road because the action area is specified.

TDA biologist, S. Lawrey, conducted the initial site assessment and constraints analysis of the detention basin and reservoir site locations on September 20, 2008. General habitat conditions and characteristics were noted for the constraints analysis aspect of the offsite detention basins, reservoirs and access roads.

### **Burrowing owl surveys**

S. Lawrey and C. Lawrey completed the focused burrowing owl surveys along Cahuilla Road and Chicago Road on October 3, 4, 5 and 12, 2008. The surveyors conducted the focused burrowing owl surveys in accordance with the "Burrowing Owl Survey Protocol and Mitigation Guidelines" prepared by the California Burrowing Owl Consortium on April 1993 and the October 17, 1995 CDFG staff report on Burrowing Owl Mitigation. The protocol consists of four phases, a habitat assessment, burrow survey, owl survey and census and report. If it is determined that there is burrowing owl habitat, then a 100% coverage survey. The site was surveyed at 30 meter (~100 foot) intervals. The bases of perennial shrubs were checked for burrows and signs. Natural and non-natural substrates were examined for potential burrow sites. All burrows encountered were examined for shape, scat, pellets, and tracks. Burrowing owl burrow locations were marked using a handheld Magellan Explorist 600 GPS unit (Global Position System). Habitat characteristics were photo documented and all species encountered were recorded. Date, time, and weather conditions were also logged.

### **Desert tortoise surveys**

The desert tortoise surveys consisted of 100-percent coverage with transects spaced 30-feet apart and zone of influence transects set at 100, 200, 400, 600, and 1200-foot intervals. Survey transects were conducted to 1,200 feet where possible. Transects did not go through occupied residential property. It is noted that the surveys were conducted outside of the spring time when tortoise activity is most apparent. However, desert tortoise can be active in the fall and desert tortoise sign, such as scat, tracks, scuts, remains, and burrows, would persist beyond the active season. Additionally, TDA biologists conducted 100% coverage desert tortoise surveys in 2005 and 2007 for the development project associated with these road improvements along Cahuilla Road and Chicago Road. The 2005 and 2007 desert tortoise surveys were conducted in the Spring season and the conditions during the 2005 survey of were ideal with abundant rain the previous year. Based on the assumption that sign would be evident at the time of survey, it was determined

appropriate to survey in the Fall. Further desert tortoise surveys will be required at future stages of this project, such as regulatory permitting. These additional surveys shall be conducted in accordance with the USFWS protocols prior to any ground disturbing activities associated with the project.

## **VI. GENERAL BIOLOGICAL SURVEY RESULTS**

According to the CNDDDB, 23 sensitive species have been documented within the USGS – Fairview Valley, Turtle Valley, Stoddard Wells, West Ord Mountain, White Horse Mountain, Lucerne Valley, Fifteenmile Valley, Apple Valley South, and Apple Valley North Quadrangles (refer to Table 1).

The eleven plant species identified to have a potential to occur within the vicinity of the project area include Shockley's rock cress (*Arabis shockleyi*), Cushenbury milk-vetch (*Astragalus albens*), alkali mariposa lily (*Calochortus striatus*), Booth's evening-primrose (*Camissonia boothii* ssp. *boothii*), desert springparsley (*Cymopterus deserticola*), Barstow woolly sunflower (*Eriophyllum mohavense*), Parish's phacelia (*Phacelia Parishii*), Parish's popcorn-flower (*Plagiobothrys Parishii*), Parish's alkali grass (*Puccinellia parishii*), Latimer's woodland-gilia (*Saltugilia latimeri*), Salt Spring checkerbloom (*Sidalcea neomexicana*).

The nine species of special status animal species identified to have a potential to occur within the vicinity of the project area include pallid San Diego pocket mouse (*Chaetodipus fallax apollidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), Mohave ground squirrel (*Spermophilus mohavensis*), desert tortoise (*G. agassizii*), burrowing owl (*A. cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), and Le Conte's thrasher (*Toxostoma lecontei*).

When the locations of the detention basins and reservoirs have been determined a spring time botanical survey and jurisdictional delineation shall be conducted. Furthermore, it would be appropriate to conduct focused avian surveys for burrowing owl, prairie falcon, Bendire's thrasher and Le Conte's thrasher.

The vicinity of the detention basin and reservoir sites primarily consists of rugged foothills, containing Mojave creosote bush scrub habitat, primarily consisting of creosote bush, rabbit brush, burrobrush, and a variety of cactus species. Other habitat features include rock outcrops, desert dry washes and dirt roads. The habitat quality within the survey area of the detention basin and reservoir sites is near pristine, with very little evidence of disturbance. Natural springs are mapped near the vicinity of the southerly detention basins and Reservoir No. 2. At the time of survey, wetland habitat was not apparent. Natural spring habitat, particularly in the Mojave Desert, is considered unique and sensitive and is capable of supporting a variety of locally rare flora and fauna. They provide water which is a limiting resource for many terrestrial animals and aquatic life forms. The water provided by the springs, draws a variety of unique insects, birds and mammals. They also provide refugia for neotropical migrant bird species, many of which are uncommon.

During the surveys, the general weather conditions were clear and breezy. Temperatures ranged between 69° and 83°F. Common wildlife observed during the survey include coyote (*Canis latrans*), California jack-rabbit (*Lepus californicus*), pocket gopher (*Thomomys bottae*), raven (*Corvus corax*), mourning dove (*Zenaida macroura*), and side-blotched lizard (*Uta stansburiana*). The overall project area provides habitat for a variety of birds, some of which are appropriate prey species of prairie falcon. One prairie falcon was observed flying over the site during the surveys. There is a high potential for this species to utilize the site for foraging. The surrounding rugged topography indicates that prairie falcon may reside in the area, using the rocky surroundings for roosting or nesting. The rocky terrain provides appropriate habitat capable of supporting prairie

falcon nesting. There was no evidence of a prairie falcon territory near any of the offsite facility locations.

## **VII. RARE, ENDANGERED, OR SENSITIVE SPECIES AND HABITAT RESULTS**

The primary vegetation community along Cahuilla Road and Chicago Road is Mojave creosote bush scrub, dominated by creosote bush (*Larrea tridentata*) Joshua tree (*Yucca brevifolia*), burrobrush (*Hymenoclea salsola*), and California buckwheat (*Eriogonum fasciculatum*). Mojave creosote bush scrub accounts for over 90% of the vegetative cover. Along the road edges, interspersed within the Mojave creosote bush scrub are patches of bare ground, disturbed ground near the houses, and sparse habitat patches dominated by non-native species. There are high levels of on going disturbance ongoing along Cahuilla Road and Chicago Road. There are residential structures and old trash dumps as well as off-road-vehicle (ORV) use, feral dogs, and recent dumping. The land uses in the vicinity of project are rural residential.

During the surveys, the general weather conditions were clear and breezy. Temperatures ranged between 69° and 83°F. This temperature range provides suitable conditions for burrowing owl and tortoise activity.

### **Burrowing Owl Surveys**

Evidence of burrowing owl was found east of Chicago Road. Two burrows were found in the southeastern quarter of the proposed road improvements that had white wash, castings, and feathers near the burrow entrances. One burrowing owl individual was seen near one of the burrows during the surveys.

### **Desert Tortoise Surveys**

Although the land surrounding the road improvements along Cahuilla Road and Chicago Road contains suitable habitat for desert tortoise, no evidence of desert tortoise or desert tortoise sign (i.e., burrows, scat, scutes or tracks) was found. Any such sign would indicate presence of desert tortoise.

## **VIII. IMPACTS AND RECOMMENDATIONS**

1. There are possible impacts to sensitive species or unique species either listed or proposed by a Federal or State agency. Habitat that supports a variety of cactus species and jurisdictional waters may be impacted. There is a potential for the loss of sensitive species habitats and foraging grounds. This project may disrupt the integrity or continuity of an important habitat or habitat/wildlife corridor relative to burrowing owl and other avian species. A total of two burrowing owl burrows and one burrowing owl individual was encountered during the surveys along the southeast quarter of Chicago Road. Burrowing owls nest and roost in modified, expanded burrows originally created by fossorial animals including ground squirrels. They are also known to make use of human-created structures such as cement culverts and pipes for burrows. It is recommended that the project proponent come to a collective agreement with the CDFG on the appropriate mitigation and avoidance measures. These measures may include phasing of project construction, passive relocation, and habitat conservation. Passive relocation would include constructing artificial burrows away from the action area and allowing the owl to relocate.
2. Following project approval, but prior to construction, 30 day pre-construction surveys should be conducted to ensure that burrowing owls have not established nesting territories within the project construction action and staging areas.
3. Following project approval, but prior to construction, 30 day pre-construction surveys should be conducted to ensure that a desert tortoise has not wandered into the area slated for construction.
4. Joshua trees and other cactus species occur within the study area. The County of San Bernardino has a native plant protection ordinance that identifies Joshua trees and other cactus species as sensitive species in Section 89.0420 of the San Bernardino County Government Code. The project proponent should make an effort to avoid or minimize the projects effect on sensitive plant species. If the project proposes to remove any of native plant species listed as sensitive in Section 89.0420 of the San Bernardino County Code, the project proponent shall comply with the regulations set forth in the Code regarding the harvesting of desert native plants.

All impacts to plants (including Joshua tree and cactus) protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) and/or by Section 89.0420 of the San Bernardino County Government Code must be addressed prior to the issuance of any development permit or land use application approval. The project proponent will have to follow the guidelines of the cities or County should removal of Joshua trees and other cacti be necessary.

5. There are a number of natural springs mapped outside of the Hacienda at Fairview Valley project area and the southerly potential offsite facility locations are proposed near two of these springs. Natural spring habitat is considered unique and sensitive and is capable of supporting a variety of locally rare flora and fauna. They provide water which is a limiting resource to many terrestrial animals and aquatic life forms. The water provided by the springs draws a variety of unique insects, birds and mammals. They also provide refugia for neotropical migrant bird species, many of which are uncommon.

In order to properly and clearly define the boundaries of the spring wetland habitat, delineation surveys would need to be conducted in the early spring prior to tentative tract map approval. The general biological surveys and constraints analysis conducted for the detention basin and reservoir sites noted springs mapped in the vicinity of the southerly sites, but could not identify them in the field. The surveys were conducted during the dry season and the timing is not considered appropriate to identify wetland habitat boundaries. Natural spring habitat is considered sensitive and poses a potential constraint. Furthermore, with the exception of Reservoir No. 1 and Detention Basin No. 2, the proposed offsite facility locations occur near jurisdictional, blue-line streams. Depending on the potential area of impact relative to jurisdictional limits, these water courses may pose another constraint. If there are impacts to the spring habitat or stream courses associated with the construction, maintenance and operation of the offsite facilities, then regulatory approvals will be required. In order to identify potential impacts to jurisdictional waters or wetlands, a delineation should be conducted during the appropriate season.

It is recommended that following selection of specific detention basin and reservoir sites, a delineation be conducted to identify potential impacts or to map and document that there will be no impacts. Once the delineation is complete the placement of the offsite facilities could confirm avoidance of any significant adverse impacts. A visible barrier should be placed around all sensitive areas such as natural spring habitat and jurisdictional waters prior to construction to prevent accidental intrusion. Further, construction near sensitive wetland/spring habitat should occur outside of the bird nesting season if the spring habitat areas cannot be avoided.

## **IX. PROPOSED MITIGATION MEASURES**

### **Botanical Resources**

Aside from various cactus species, no sensitive plant species were found during the surveys. However, in the event that one of the sensitive plant species identified in the CNDDDB is positively identified on site, during construction, the plant will be flagged and avoided until the CDFG is notified and takes their opportunity to salvage the plant.

As required by the San Bernardino County plant protection Ordinance and the CDFG, the project proponents should develop a cactus relocation plan to offset impacts to Joshua trees and other cactus species that may need to be removed as part of this project. This plan will identify the number and species of cactus to be protected in place or removed and relocated.

### **Desert Tortoise**

The desert tortoise occurs in several desert plant communities, including creosote scrub, saltbush scrub and Joshua tree woodland. This species is known to construct burrows with firm soil, usually (but not always) at the base of scrubs (e.g. creosote bush) or in the banks of washes. Although no desert tortoise were detected during survey, habitat on site is suitable for this species.

Within 30 days of the start of any land disturbance activities, a qualified and authorized biologist should survey the site to determine if desert tortoise are present. If a desert tortoise or sign of desert tortoise is encountered then project proponent will contact the USFWS and CDFG to obtain the required take authorization for the project. In this scenario, it is likely that protocol surveys would need to be done to identify any additional tortoise activity on site.

Following the pre-construction survey, a qualified biologist will make a determination: (1) if a biological monitor should be present at the site during all land disturbance activities; (2) if desert tortoise fencing needs to be installed around the perimeter of the construction work zone; or (3) if no further action is required.

If a desert tortoise is encountered during construction, no person including the biologist will touch the animal. Instead, the biologist will observe the area to see if the desert tortoise has an established burrow or if it is just wandering through the site. If it is clearly just moving through the site, all construction activity near the tortoise will cease until it is safely out of the area. The biologist will contact the USFWS and CDFG to coordinate with them for further instruction. At that time it may be appropriate to erect exclusionary fencing to prevent the re-entry of the desert tortoise back into the site. If the biologist finds that the desert tortoise is residing in a burrow on site, then all construction must cease until the USFWS and CDFG have issued take authority to relocate the tortoise out of the area. In this case, land disturbance activities shall not commence until the biologist has implemented the required measures according to the CDFG and USFWS to clear the site for construction.

The biologist/monitor should remain on-call during construction activities. If a desert tortoise is encountered during construction following the initial phases of ground disturbance, construction activities shall be halted in the vicinity of the find and the biologist/monitor called to the site. The contractor shall implement the recommendations of the biologist/monitor.

### **Burrowing Owl**

The burrowing owl is a state Species of Special Concern. The burrowing owl is typically found in grassland, scrubland and desert habitats with numerous small mammal burrows (Coulombe 1971). Burrowing owls nest and roost in modified, expanded burrows originally created by fossorial animals including ground squirrels, desert tortoise, and badgers. They are also known to make use of human-created structures such as cement culverts and pipes for burrows. A modest number of burrowing owl were encountered on site during the surveys.

Within 30 days of the start of any land disturbance activities, a qualified biologist should survey the site to determine if burrowing owls are present and nesting in the construction area. If burrowing owl are encountered and determined to be nesting, land disturbance activities shall not commence until the biologist has implemented the required measures according to the CDFG to clear the site for construction. One such measure may be to passively relocate the owls once the young have fledged the nest. This type of relocation requires the construction of artificial burrows in the near vicinity and collapsing of the old burrows once the owls have clearly flushed out of the site.

If burrowing owls are encountered during construction, construction activities shall be halted in the vicinity of the find and the biologist/monitor called to the site. The contractor shall implement the recommendations of the biologist/monitor.

### **Nesting Birds**

The State of California prohibits the take of active bird nests. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal will be conducted outside of the State identified nesting season (nesting season is February 15 through September 1). Alternatively, the site will be evaluated by a qualified biologist prior to initiation of ground disturbance to determine the presence or absence of nesting birds. If an active nest is located in the project construction area it will be flagged and a 300 foot buffer placed around it. No activity will occur within the 300 foot buffer until the young have fledged the nest.

### **Habitat**

All personnel associated with the construction on the site shall attend a worker education class. This class should include general information regarding all sensitive species and their habitat known to occur in the near vicinity of the project. Particular attention should be made to the various cactus species, habitat types on site, mohave ground squirrel, desert tortoise, and burrowing owl. The class should provide relevant information regarding the Federal and State laws and worker responsibilities when working in mohave desert habitat.

All project activities will be limited to a well-defined area. Prior to grading and construction activities the limits of disturbance will be clearly marked with flagging, stakes, or fencing. Impacts to any jurisdictional waters, will require permits from the regulatory agencies. For permanent impacts to jurisdictional waters the project proponent may purchase in lieu fee credits in a 1:1 ratio from a bank approved by the Army Corps of Engineers (ACOE), CDFG, and Regional Water Quality Control Board (RWQCB). Temporary impacts to jurisdictional waters will be mitigated in a 1:1 ratio through on site habitat restoration. The exact details of this restoration will be outlined in the Habitat

Mitigation and Monitoring Program document as required by the ACOE, RWQCB, and CDFG and will be negotiated at the time of permitting.

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California Fish and Game Code 3503 and 3503.5 state:

**3503:** *It is unlawful to take, possess or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation made pursuant thereto.*

**3503.5:** *It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

**TABLES**

Table 1: CNDDDB SEARCH

SCIENTIFIC NAME	COMMON NAME	STATUS Fed/State	CDFG STATUS	GENERAL HABITAT	MICROHABITAT
<i>Arabis shockleyi</i>	Shockley's rock cress	NONE/NONE		PINYON AND JUNIPER WOODLAND.	ON RIDGES, ROCKY OUTCROPS AND OPENINGS ON LIMESTONE OR QUARTZITE; USUALLY IN PINYON OR P-J SERIES. 875-2205M.
<i>Astragalus albens</i>	Cushenbury milk-vetch	ENDANGERED / NONE		JOSHUA TREE WOODLAND, MOJAVEAN DESERT SCRUB, PINYON AND JUNIPER WOODLAND.	SANDY OR STONY FLATS, ROCKY HILLSIDES, CYN WASHES, & FANS, ON GRANITE OR MIXED GRANITIC-CALCAREOUS DEBRIS. 1095-2000M.
<i>Athene cucicularia</i>	burrowing owl	NONE/NONE	SC	OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.	SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.
<i>Calochortus striatus</i>	alkali mariposa-lily	NONE/NONE		CHAPARRAL, CHENOPOD SCRUB, MOJAVEAN DESERT SCRUB, MEADOWS.	ALKALINE MEADOWS AND EPHEMERAL WASHES. 90-1595M.
<i>Camissonia boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose	NONE/NONE		JOSHUA TREE WOODLAND, PINYON-JUNIPER WOODLAND.	900-2400M.
<i>Canbya candida</i>	white pygmy-poppy	NONE/NONE		JOSHUA TREE WOODLAND, MOJAVEAN DESERT SCRUB.	SANDY PLACES. 725-1250M.
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	NONE/NONE	SC	DESERT BORDER AREAS IN EASTERN SAN DIEGO CO. IN DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, PINYON-JUNIPER, ETC.	SANDY HERBACEOUS AREAS, USUALLY IN ASSOCIATION WITH ROCKS OR COARSE GRAVEL.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	NONE/NONE	SC	THROUGHOUT CALIFORNIA IN A WIDE VARIETY OF HABITATS. MOST COMMON IN MESIC SITES.	ROOSTS IN THE OPEN, HANGING FROM WALLS & CEILINGS. ROOSTING SITES LIMITING. EXTREMELY SENSITIVE TO HUMAN DISTURBANCE.
<i>Cymopterus deserticola</i>	desert cymopterus	NONE/NONE		JOSHUA TREE WOODLAND, MOJAVEAN DESERT SCRUB. MOST OCCURRENCES LOCATED NEAR OR IN EDWARDS AFB.	ON FINE TO COARSE, LOOSE, SANDY SOIL OF FLATS IN OLD DUNE AREAS WITH WELL-DRAINED SAND. 625-910M.
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	NONE/NONE		DESERT CHENOPOD SCRUB, MOJAVEAN DESERT SCRUB, DESERT PLAYAS.	MOSTLY IN OPEN, SILTY OR SANDY AREAS W/SALTBUSH SCRUB, OR CREO. BUSH SCRUB. BARREN RIDGES OR MARGINS OF PLAYAS. 500-900M
<i>Eumops perotis californicus</i>	western mastiff bat	NONE/NONE	SC	MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL ETC	ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES & TUNNELS.
<i>Falco mexicanus</i>	prairie falcon	NONE/NONE		INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.	BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.

**Table 1: CNDDDB SEARCH**

SCIENTIFIC NAME	COMMON NAME	STATUS Fed/State	CDFG STATUS	GENERAL HABITAT	MICROHABITAT
<i>Gopherus agassizii</i>	desert tortoise	THREATENED/ THREATENED		MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.	REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LG ANNUAL WILDFLOWER BLOOMS PREFERRED.
<i>Lasionycteris noctivagans</i>	silver-haired bat	NONE/NONE		PRIMARILY A COASTAL & MONTANE FOREST DWELLER FEEDING OVER STREAMS, PONDS & OPEN BRUSHY AREAS.	ROOSTS IN HOLLOW TREES, BENEATH EXFOLIATING BARK, ABANDONED WOODPECKER HOLES & RARELY UNDER ROCKS. NEEDS DRINKING WATER.
<i>Phacelia parishii</i>	Parish's phacelia	NONE/NONE		MOJAVEAN DESERT SCRUB, PLAYAS.	ALKALINE FLATS AND SLOPES OR ON CLAY SOILS. 535-1200M.
<i>Phrynosoma coronatum</i> ( <i>blainvillii</i> population)	coast (San Diego) horned lizard	NONE/NONE	SC	INHABITS COASTAL SAGE SCRUB AND CHAPARRAL IN ARID AND SEMI-ARID CLIMATE CONDIT	PREFERS FRIABLE, ROCKY, OR SHALLOW SANDY SOILS.
<i>Plagiobothrys parishii</i>	Parish's popcorn-flower	NONE/NONE		GREAT BASIN SCRUB, JOSHUA TREE WOODLAND.	ALKALINE SOILS; MESIC SITES. 750-1400M.
<i>Puccinellia parishii</i>	Parish's alkali grass	NONE/NONE		MEADOWS AND SEEPS.	ALKALI SPRINGS AND SEEPS IN DESERTS. 695-1000M.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	NONE/NONE		CHAPARRAL, MOJAVEAN DESERT SCRUB.	ROCKY OR SANDY SUBSTRATE. 400-1900M.
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	NONE/NONE		ALKALI PLAYAS, BRACKISH MARSHES, CHAPARRAL, COASTAL SCRUB, LOWER MONTANE CONIFEROUS FOREST, MOJAVEAN DESERT SCRUB.	ALKALI SPRINGS AND MARSHES. 0-1500M.
<i>Spermophilus mohavensis</i>	Mohave ground squirrel	NONE/THREATENED		OPEN DESERT SCRUB, ALKALI SCRUB & JOSHUA TREE WOODLAND. ALSO FEEDS IN ANNUAL GRASSLANDS. RESTRICTED TO MOJAVE DESERT.	PREFERS SANDY TO GRAVELLY SOILS, AVOIDS ROCKY AREAS. USES BURROWS AT BASE OF SHRUBS FOR COVER. NESTS ARE IN BURROWS.
<i>Toxostoma bendirei</i>	Bendire's thrasher	NONE/NONE	SC	MIGRATORY; LOCAL SPRING/SUMMER RESIDENT IN FLAT AREAS OF DESERT SUCCULENT SHRUB/JOSHUA TREE HABITATS IN MOJAVE DESERT.	NESTS IN CHOLLA, YUCCA, PALOVERDE, THORNY SHRUB, OR SMALL TREE, USUALLY 0.5 TO 20 FEET ABOVE GROUND.
<i>Toxostoma lecontei</i>	Le Conte's thrasher	NONE/NONE	SC	DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.	COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

Yellow color	suitable habitat
Grey color	marginally suitable habitat
Green color	present onsite
SC	Special Concern

**Table 1: CNDDDB SEARCH**

<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>	<b>STATUS Fed/State</b>	<b>CDFG STATUS</b>	<b>GENERAL HABITAT</b>	<b>MICROHABITAT</b>
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**Coding and Terms**

E= Endangered      T= Threatened      SC= Species of Concern      N= None  
 R= Rare C= Candidate      PE= Proposed Endangered      N / A = Not Applicable

Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range.

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

**State Plant Rankings:**

S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres  
 S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 2,000 and 10,000 acres  
 S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 10,000 and 50,000 acres  
 S4 - No Threat Rank  
 S5 - No Threat Rank

.1 - very threatened      SH - all sites in California are historical  
 .2 - threatened  
 .3 - no current threats known

**CNPS Plant Rankings:**

1A- presumed extinct in California  
 1B - Rare, Threatened or Endangered in California and elsewhere  
 2 - Rare, Threatened or Endangered in California but more common elsewhere  
 3 - Plants for which more information is needed  
 4 - Plants with a limited distribution



**FIGURES**

FIGURE 1. OVERALL USGS QUADRANGLE LOCATION MAP

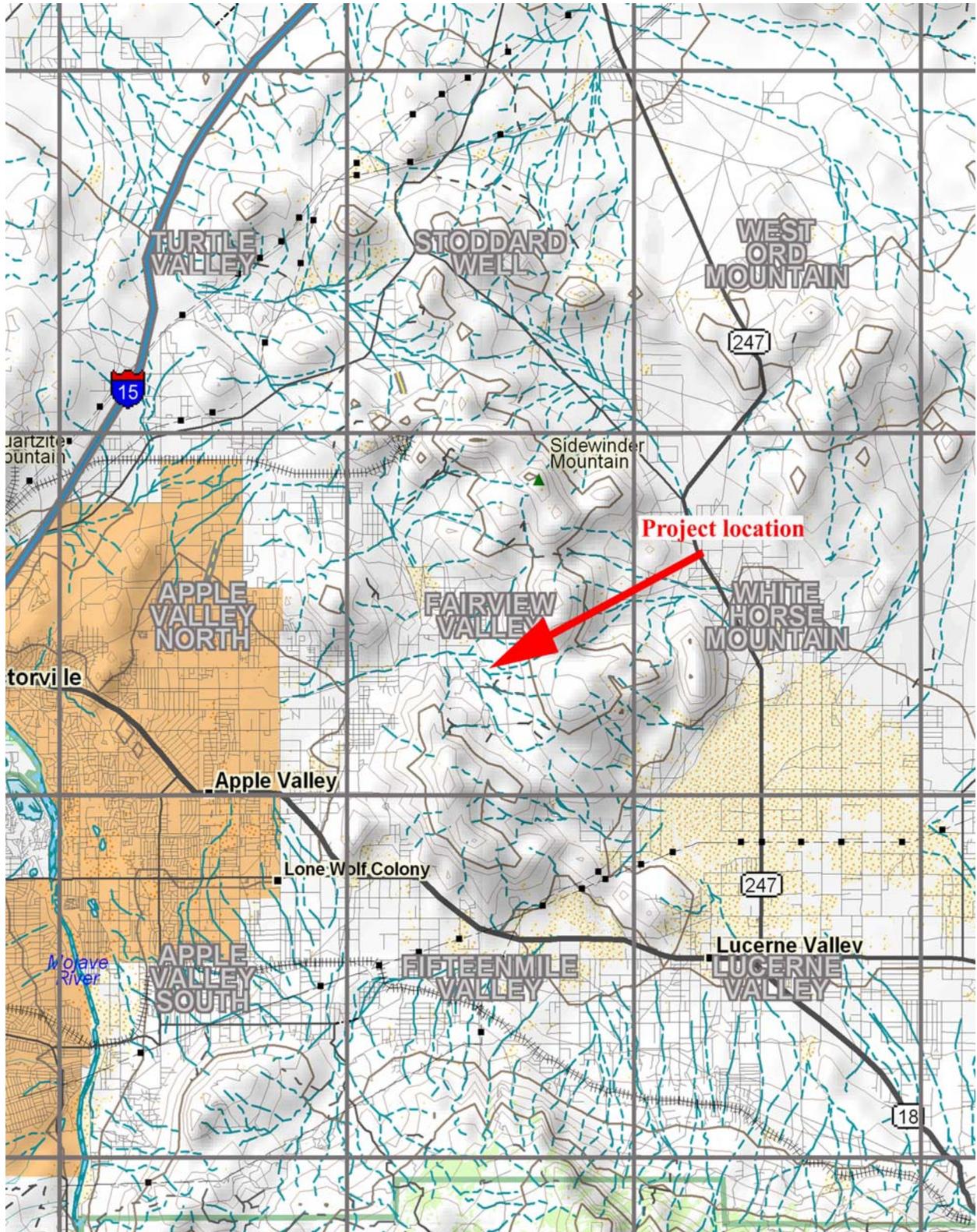


FIGURE 2. REGIONAL LOCATION

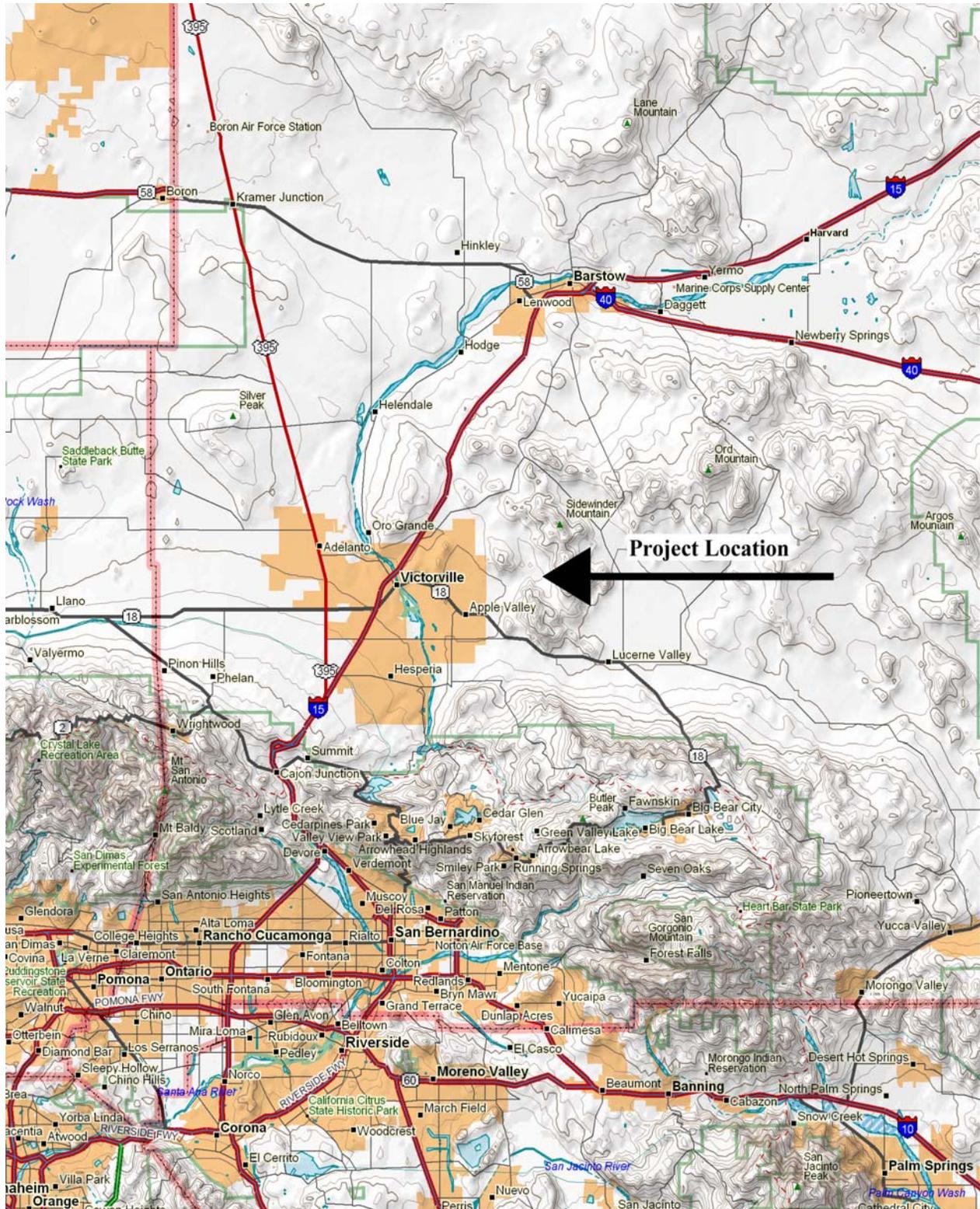


FIGURE 3. VICINITY MAP

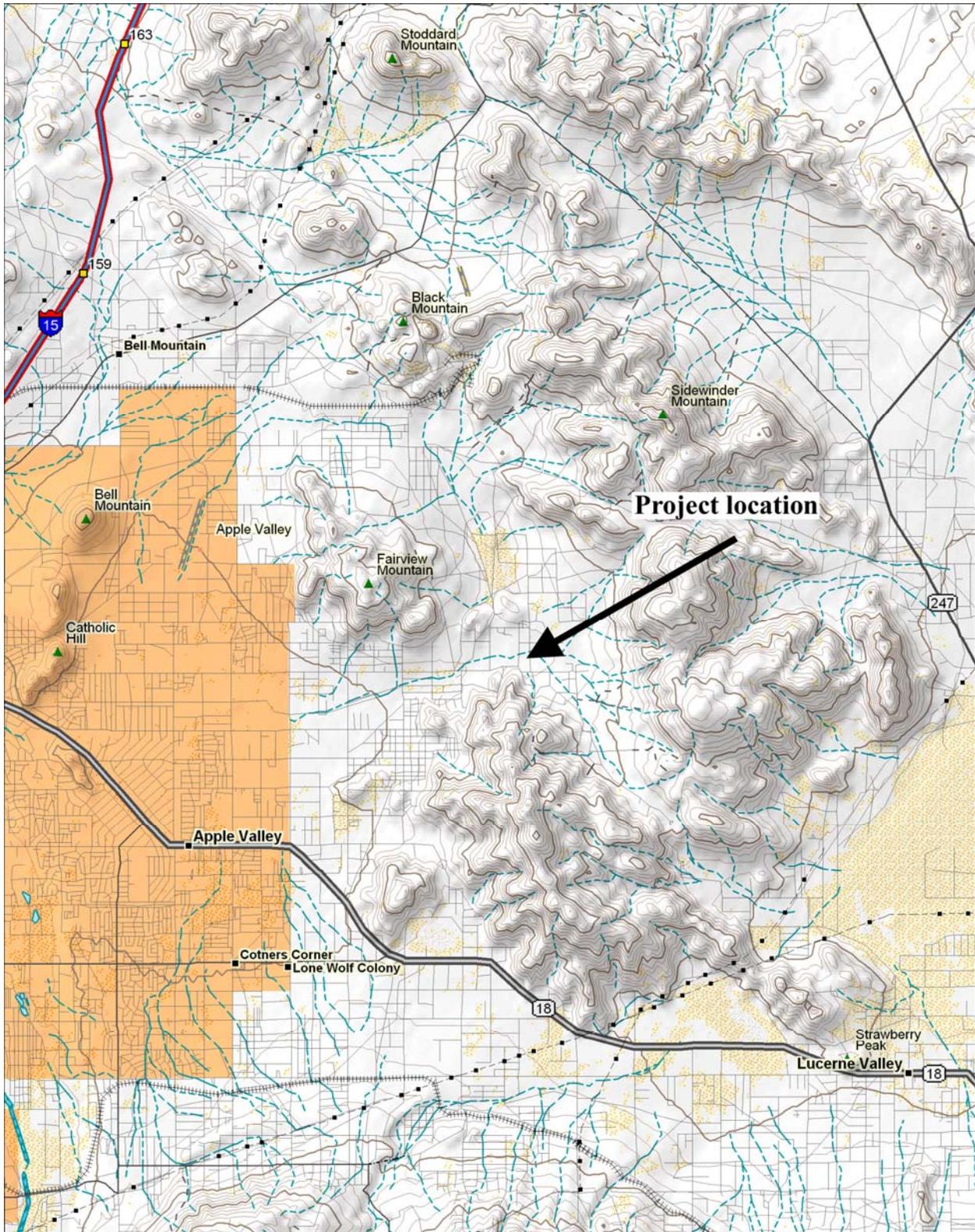


FIGURE 4. CONCEPTUAL OFFSITE IMPROVEMENTS LOCATIONS

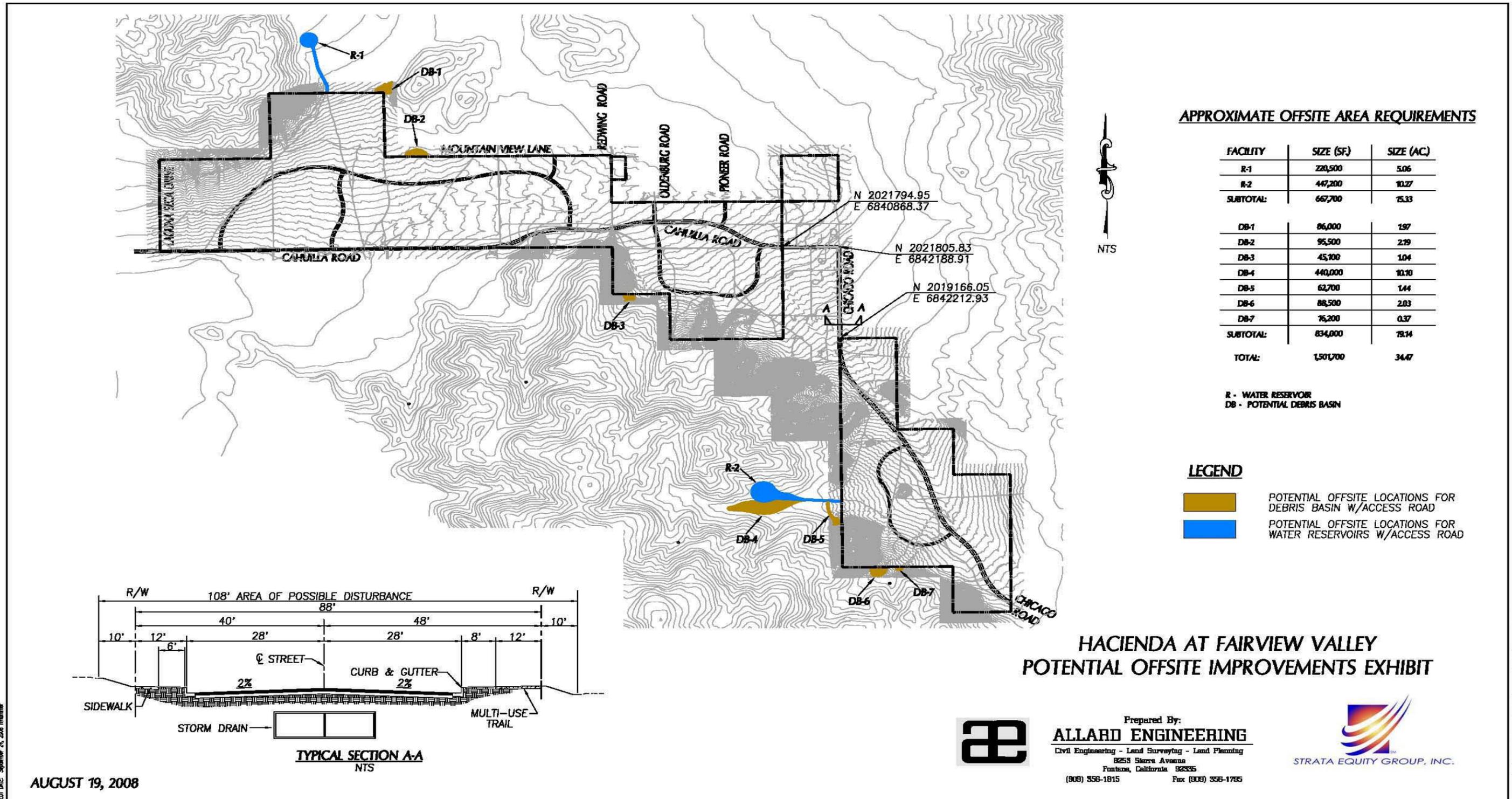


FIGURE 5. PROJECT SITE & STUDY LOCATIONS

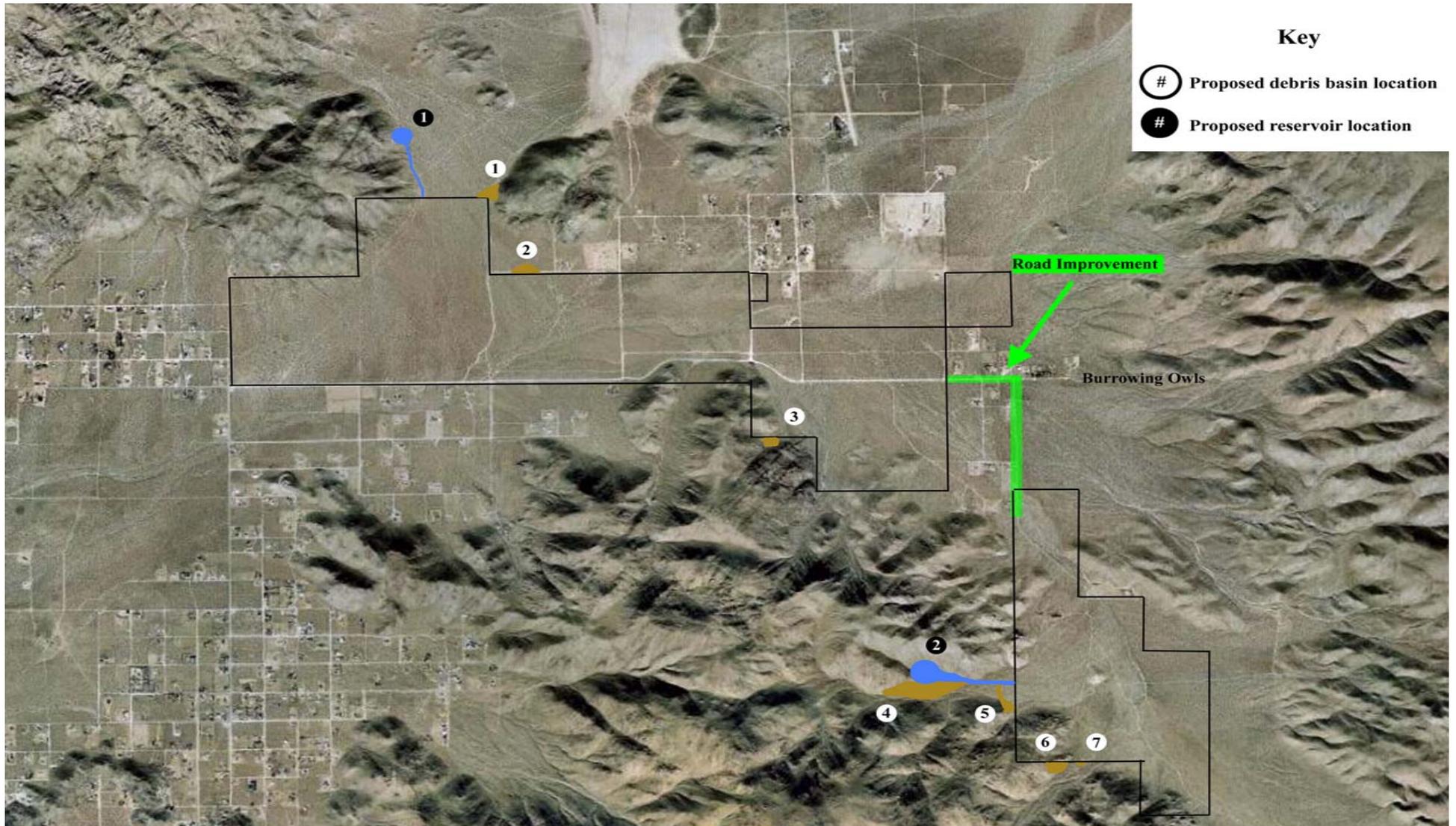
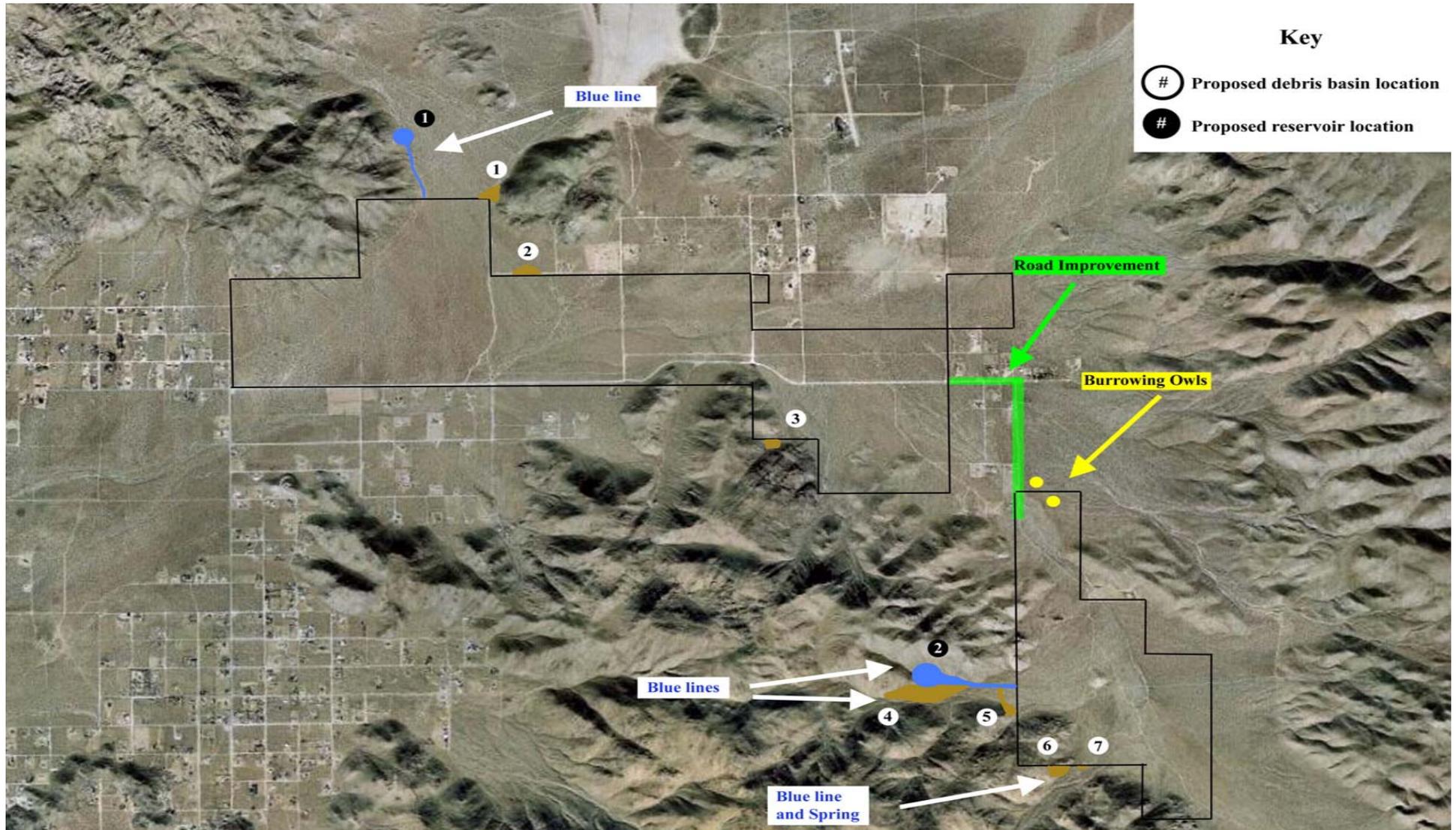
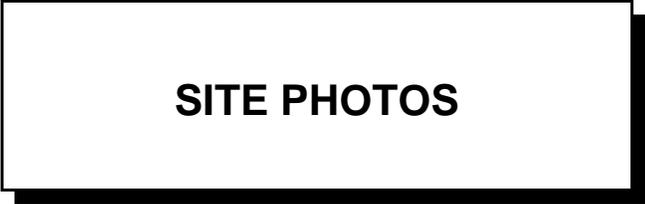


FIGURE 6. STUDY RESULTS





**SITE PHOTOS**



Photo 1. Showing overall environmental setting in a vicinity area view from Joshua Road, looking east, towards the project site.



Photo 2. Looking east along Cahuilla Road near intersection with Laguna Seca Road



Photo 3. Looking south from Cahuilla Road towards the general location for the proposed Detention Basin (DB) No. 3.



Photo 4. Looking west along Cahuilla Road near intersection with Chicago Road.



Photo 5. Looking northwest along Chicago Road south of Cahuilla Road.



Photo 6. Looking northeast along Chicago Road south of Cahuilla Road.



Photo 7. Looking southwest from Chicago Road towards the general locations for the proposed DB Nos. 4 and 5 and proposed Reservoir No. 2.



Photo 8. Looking north from south of Cahuilla Road towards the general location for the proposed DB No. 1 and proposed Reservoir No. 1.



Photo 9. Example of degraded habitat conditions found within portions of the survey area of Cahuilla Road and Chicago Road.



Photo 10. Example of high quality habitat conditions found within portions of the survey area of Cahuilla Road and Chicago Road.