Appendix D  Biological Studies
Appendices

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<table>
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<tr>
<th>Prepared For:</th>
</tr>
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<tbody>
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</tr>
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<table>
<thead>
<tr>
<th>Prepared By:</th>
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<tbody>
<tr>
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December 13, 2016
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1. Site photos.
2. List of plant species
1. INTRODUCTION

This report summarizes the results of a biological survey and MSHCP Consistency Analysis for the Menifee College project at 28237 La Piedra Road, Menifee, Riverside County. The project site consists of Assessor’s Parcel Numbers 364-070-031 and 364-070-032, which cover 50.28 acres and 30.44 acres, respectively. The campus is located in the Menifee Valley east of I-215 and south of Newport Road. The project site bordered by Antelope Road to the west, La Piedra Rd to the north, and Albion Road to the south. Figure 1, *Topographic Map* shows the site on the Romoland 7.5’ USGS topographic Quadrangle (T6S, R3W, Section 2). The approximate UTM coordinates of the center of the site are 11S 0484361mE X 3726142mN. Figure 2, *Aerial Photo*, shows the project site on an aerial photo. The elevation of the site ranges from 1,432 to 1,444 ft. above mean sea level (Msl). Site photos are found in Appendix 1.

Project Description

The Menifee Valley Campus Master Plan would develop the currently open areas on the campus. The open land to the south of the existing campus would be developed into a parking structure in the southwest corner of the property and an additional parking lot immediately south of the existing campus. The open land in the southeastern corner of the campus would become a new athletics core with the existing playing fields being moved to the east, along with the development of a new fitness center. The open field adjacent to current facilities in the northeast corner of the site would be developed into additional parking areas and a police facility. The plan would also demolish some existing buildings and plan for development of new core facilities and new buildings on the margin of the core campus. Overall, all of the existing open space on the campus, with the exception of the eastern flood control channel, would be fully developed and landscaped.

Western Riverside MSHCP

The Menifee Valley campus site is within the western Riverside County Multi-Species Habitat Conservation Plan Area (MSHCP), in the Sun City/Menifee Area Plan, which has two proposed cell groups and constrained linkages south of Scott Road (County of Riverside 2003, 2003a). The site is not located in a criteria cell, special linkage area, or additional survey area, with the exception of the burrowing owl.

The required studies for this project would include a habitat assessment for the burrowing owl (County of Riverside 2015b). A focused burrowing owl survey would also be needed if suitable habitat occurs on the project site. The MSHCP requires that the consistency analysis address the potential occurrence of riverine/riparian habitats, vernal pools and listed fairy shrimp habitat (RCA 2007a, 2007b).

2. METHODS

**Literature Review.** A search of the County of Riverside’s GIS website (County of Riverside 2016a), and the County’s MSHCP conservation generator website (County of Riverside 2016b) for APNs 364-070-031 and 364-070-032 was conducted to determine the status of the parcels under the MSHCP and if any specific surveys are required. The conservation summary report noted that the project site is located within the Sun City-Menifee Valley area plan, but are not located within a criteria cell. The proposed project would need to complete a habitat assessment, and carry out a habitat assessment for the burrowing owl. The habitat assessment would also need to address the presence of riparian/riverine habitat, including jurisdictional waters; vernal pools, or listed fairy shrimp.
Figure 1. Topographic map (project site in red)
Available databases and literature were consulted for documented localities of riparian, vernal pool or fairy shrimp localities in the project area. The sources included CNDDB RareFind records for the Romoland, Winchester, and Murrieta 7.5' Quadrangles (CDFW 2016a); a list of known vernal pools in western Riverside County (Brown 2003); and existing vegetation maps for western Riverside County (AIS 2015). Google Earth aerials were examined to determine any discernable ponding on the campus site.

The distribution and habitat preferences for special status species in the project area was obtained from the CNDDB (CDFW 2016a) and recent biological reports. These include the City of Menifee General Plan, and open space policies and conditions (City of Menifee 2013a, 2013b), the Interstate I-215 widening project (Caltrans 2010); habitat assessments for several projects in Menifee (Bramlet 2012, Ecological Sciences 2012, Ecological Sciences 2013, Webb 2015).

The distribution of special status plant species was obtained from collection records (Consortium 2015). Details on phenology and habitats preferences was derived from the MSHCP species accounts (Dudek 2003), published floras and checklists (Baldwin et al. 2012, Roberts et al. 2004, Roberts et al. 2007), RCA monitoring reports (RCA 2007 to 2011), and critical habitat designations (USFWS 2010a, 2010b, 2012).

Information on the burrowing owl was obtained from the CNDDB (CDFW 2016a), RCA monitoring reports (RCA 2008), a recent staff report from CDFG (2012), and other previous studies on this owl (Amec 2007, Bond 2010, Brylski 2012). The distribution of listed fairy shrimp was also obtained from the CNDDB data base (CDFW 2016a), MSHCP descriptions of these species (Dudek 2003), and recent fairy shrimp studies in the region (AMEC 2010, Caltrans 2007).

Field Surveys. The botanical survey and habitat assessment for vernal pools and riparian resources was carried out by David Bramlet on July 22, 2015. Although the entire campus site was visited, the survey focused on the undeveloped southern and northeastern areas of the campus, and the flood control channel on the eastern boundary of the property because these had the highest suitability for special status species. The developed portions of the campus contain are developed with ornamental vegetation, and therefore have very low suitability for target species and habitats. The undeveloped parts of the campus were examined on foot and the plant communities and other mapping units were noted on an aerial photograph, along with all plant species observed during the survey. A limitation of this survey was the poor condition of the annual plant species found on the project site. The majority of the annual grasses and forbs were dry and had to be identified from characters retained on the dried material.

The relatively low rainfall and unusual weather patterns were a factor in the determining the plant communities and species on the campus. Rainfall for the 2014-2015 was 6.55 inches, which is below the annual precipitation of 7.54" (Weather Currents 2015). In addition, portions of the winter months in 2015 were dry and hot, which limited the survival of the annual plants in the region. Furthermore, few ephemeral wetlands, especially vernal pools, were observable during 2015. The unusual weather patterns in 2015 included a late July storm, which resulted in a rainfall event of 1.04" in the Menifee area. The recent rainfall allowed for an examination of "road rut" pools or other ponding areas on the campus site. The survey noted currently ponded areas, which were documented with a Garmin GPS receiver and photographs, along with other localities that contained facultative or obligate wetland species (Lichvar et al. 2014).

The plant communities were mapped based on observations onsite using an aerial photograph from Google Earth. The nomenclature for plant communities generally follows Holland (Holland 1986) with the exception of annual grassland instead of “non-native grassland”, and the addition of the non-vegetative mapping units, e.g. developed. Scientific and common names presented in the text generally follow Roberts et al (2004); the Jepson Manual (Baldwin et al. 2012) is used to provide current names for species. The names for the special status plant species (narrow endemic and criteria area species) follow the CNPS Rare Plant Inventory (CNPS 2015).
The wildlife survey and habitat assessment for burrowing owls carried out by Phil Brylski, Ph.D. on January 18, 2016. The project site and surrounding area was surveyed for burrowing owls and their sign (burrows, pellets, feathers, scat, and litter) in accordance with the survey guidelines for the species (Burrowing Owl Consortium 1993; County of Riverside 2003). The site received 100% survey coverage by walking transects across the undeveloped parts of the site. A buffer area outside the eastern and southern site borders was surveyed using binoculars. The vacant lands across Albion Rd along the southern/southeastern part of the site were flooded at the time of the survey. Potential burrowing owl burrows were mapped using a GPS (Garmin, 60CSx; accuracy +/- 3 meters).

Figure 2. Aerial Photo (project site red/white line)

3. RESULTS

Site Description

The campus is located in a suburban part of Menifee bordered by I-215 to the west, high density residential development to the north and south, by vacant lands to the south, and Bell Mountain Middle School and the Wheatfield sports park to the east. The artificial lake of the Menifee Lakes Country Club is northeast of the project site.
The project site is flat with no topographic features except for a channel along the eastern boundary. In the southern areas it appears that overland flows drain north from the area of Albion Road towards the developed areas of the campus. Although the soils are generally loamy and sandy, induration of these soils has resulted in several ponded areas in the open fields on the south side of the campus. The flood control channel on the eastern border of campus receives surface flows from the campus and flows into the man-made lake at the Menifee Lakes Country Club. Water appears to occur in the channel year-round.

Eight soil series are found on the campus site, and their distribution on this property, as mapped by the NRCS (NRCS 2015, Kecht 1971) (Figure 3, Soils Map). The soils consist of Arbuckle loam (AkC), Escondido fine sandy loam (EcC2), Garreston very fine sandy loam (GaA), Garreston gravelly, very fine sandy loam (GdA, GdC), Honcot sandy loam (HnC), Wyman loam (WyC2), and Yokohl loam (YbC).

![Figure 3. Soils Map.](image)

**Plant Communities**

The plant communities and land use categories found on the parcel in include disturbed annual grassland, riparian plant communities, including riparian herb, riparian marsh and mulefat scrub; seasonal wetlands; graded; developed; and ornamental mapping units. The following section describes the mapping units; their distribution is shown in Figure 4, Plant Communities. Table 1 lists the areas of the plant communities. Appendix 2 lists the plant species observed on the project site.
**Disturbed Annual Grassland**

The dominant plant community of the undeveloped campus area is disturbed annual grassland. In the western part, the grassland is characterized by stands of foxtail barley (*Hordeum murinum* ssp. *leporinum*) with lesser amounts of red brome (*Bromus madritensis* ssp. *rubens*), and slender wild oat (*Avena barbata*). Forb species consist of: suberect saltbush (*Atriplex suberecta*), London rocket (*Sistymbrium irio*), Russian thistle (*Salsola tragus*), common fiddleneck (*Amsinckia intermedia*), summer mustard (*Hirschfeldia incana*), bur clover (*Medicago polymorpha*), tumbling pigweed (*Amaranthus albus*), and cheese weed (*Malva parviflora*).

The grasslands on the east side of the site are characterized by stands of red brome, ripgut brome (*Bromus diandrus*), foxtail barley, wild oat (*Avena fatua*), and slender wild oat. Common forbs are comprised of: summer mustard, common fiddleneck, tocalote (*Centaura melitensis*), bindweed (*Convolvulus arvensis*), dove weed (*Croton setiger*), common horseweed (*Erigeron canadensis*), vinegar weed (*Trichostema lanceolata*), London rocket, and tumbling pigweed.

**Riparian**

Three riparian plant communities occur in the earthen flood control channel on the east border of the campus. The channel was generally comprised of a riparian herb community with separate patches of riparian marsh and mulefat scrub at the southern end of the channel.

**Riparian Herb.** This community is comprised of herbaceous species such as tall umbrella sedge (*Cyperus eragrostis*), Spanish sunflower (*Pilucaria paludosa*), curly dock (*Rumex crispus*), marsh aster (*Symphyotrichum subulatum* var. *parviflorum*), cocklebur (*Xanthium sturmarium*), willow smartweed (*Polygonum lapathifolium*), prickly lettuce (*Lactuca serriola*), common sow thistle (*Sonchus oleraceus*), yellow sweet clover (*Melilotus indicus*), Persian knotweed (*Polygonum argeocoleon*), and bull thistle (*Cirsium vulgare*). The slopes of the channel were generally composed of annual grassland species including ripgut brome, Bermuda grass (*Cynodon dactylon*), summer mustard, slender wild oat, common horseweed, prickly lettuce, yellow sweet clover, alkali heliotrope (*Heliotropium curassavicum*), tocalote, bull thistle, red brome, and tumbling pigweed.

**Riparian Marsh.** The southern end of the drainage channel contained dense stands of broad-leaved cat-tail (*Typha latifolia*) and was mapped as a riparian marsh. Other species that occur in this community included Spanish sunflower, tall umbrella sedge, common horseweed, and bull thistle.

**Mulefat Scrub.** A small area of mulefat scrub was mapped along the channel, and was comprised of a few scattered stands of mulefat (*Baccharis salicifolia*). Other shrubs found at this locality consisted of Emory's baccharis (*Baccharis salacina*), and black willow (*Salix gooddingii*). In addition, a single Fremont cottonwood (*Populus fremontii*) was found on the upper bank of the channel. Besides the scattered shrubs, the channel was generally dominated by tall umbrella sedge and Spanish sunflower.

**Seasonal Wetlands**

Ten seasonal pools and one seasonal drainage (swale) were mapped on the project site (Figure 5, *Biological Features*). Most of these are very small "road rut" pools formed by ponding in shallow depressions formed by tire tracks and other disturbances along the dirt access road. The pools were observed following the rain on July 18 and 19, 2015 and other localities that were not ponded but had vegetative indicators of moist soils or previously ponding. The most important indicator plant species to identify these wetlands was the Valley pineapple weed (*Matricaria occidentalis*), which is considered a facultative wetland (FacW) species (Lichar et al. 2014). Another species, the wire-stemmed popcorn flower (*Plagiobothrys*...
leptocladus), which is listed as obligate (Obl) wetland species was located in a single pool on the campus. Figure 4, Plant Communities and Figure 5, Biological Features, show the distribution of these ephemeral wetlands on the project site.

The majority of the seasonal wetlands found on the campus site were located in the southwest portion of the campus, both east and west of the existing parking lot. One "road rut" pool was observed just south of the existing soccer field, and a moist soil area was noted in the northeast corner of the northern open space area on the campus. Approximately five "road rut" pools and a single seasonal drainage were located to the east of the southern parking lot and south of the existing campus buildings. These road rut pools were filled at the time of the survey, due to the recent rainfall. The pools consist of ponded or areas of moist soil and contained stands of dry valley pineapple weed (FacW), Persian knotweed (a Facultative wetland species, Fac), foxtail barley (a Facultative Upland species, FacUp), tumbling pigweed (FacUp), Russian thistle (FacUp), suberect saltbush (FacUp), and soft chess (Bromus hordeaceus) (FacUp). This area also included a seasonal drainage, which contained the species described above and extends from the margin of the southern parking to the edge of the existing baseball field.

A "road rut" pool was also found just south of the existing trailers and north of the parking lot. This area consisted of a shallowly ponded area with no vegetation. In contrast, a "road rut" pool found at the southeast edge of the parking lot was comprised of fairly dense stands of valley pineapple weed, foxtail barley, suberect saltbush, and Russian thistle.

Another seasonal wetland was located just south of the parking lot and centered between the east and west ends of this facility. The species found in this area suggests that the area could be a playa wetland or a vernal pool. The species found in this depression consisted of wirestem popcorn flower (Obl), suberect saltbush, Persian knotweed, and foxtail barley. This seasonal wetland was ponded on January 17, 2016 (approximately 50 feet in diameter with a depth of 6 inches).

In the east area of the campus, two ephemeral wetlands were observed. A single "road rut" pool was noted at the south end of the existing soccer field. This pool contained some scattered tumbling pigweed and Russian thistle, along with a single Mediterranean tamarisk.

A moist soil area was also located north of the existing storage yard in the south east area of the open field in the northeast portion of the campus. This area contained stands of suberect saltbush, and tumbling pigweed.

Graded

Portions of the campus that consisted of scraped, indurated areas were placed in a graded mapping unit. These areas often had a scattered vegetative cover of tumbling pigweed, suberect saltbush, red-stemmed filaree, puncture vine (Tribulus terrestris), Russian thistle, common knotweed (Polygonum arenastrum), and matted sandmat (Euphorbia serpens).

Developed

The existing campus areas were mapped as developed. Besides the buildings and hardscape found on the campus, this mapping unit also included some areas of ornamental vegetation, and small graded areas.

Ornamental

The existing landscaping and turf areas were mapped as ornamental vegetation.
Figure 4. Plant Communities
Figure 5. Biological Features (blue: channel and seasonal wetlands; red square: active burrowing owl burrow; red circles: potential burrows for burrowing owl but not in use; green circle: paniculate tarplant location).

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<th>Plant Community</th>
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<td>Riparian communities</td>
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<tr>
<td>Seasonal wetlands</td>
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<tr>
<td>Graded</td>
<td>1.98</td>
</tr>
<tr>
<td>Developed</td>
<td>31.72</td>
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<tr>
<td>Ornamental</td>
<td>14.38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80.72</strong></td>
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</table>

**Wildlife**

The existing campus contains buildings and other infrastructure with ornamental trees and shrubs and turf grass, which support typical urban wildlife. The disturbed grassland habitats south of the existing campus support native wildlife typical of agricultural use. The wildlife observed is typical of the suburban and agricultural nature of the area, and include great egret (*Ardea alba*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), burrowing owl (*Athene cunicularia*), Anna's hummingbird (*Calypte anna*), Say's phoebe (*Sayornis saya*),
western kingbird (*Tyrannus verticalis*), common raven (*Corvus corax*), yellow-rumped warbler (*Dendroica coronata*), lark sparrow (*Chondestes grammacus*), western meadowlark (*Sturnella neglecta*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Carduelis psaltria*). The location of the active burrowing owl burrow is shown in Figure 5, Biological Features.

**Special Status Plant Species and Communities**

Species of special interest include those plant or wildlife species listed by the state or federal governments as endangered, threatened or rare and species which are candidates for future listing. These include species noted on the CNDDDB special plants or animals lists (CDFW 2016b, 2016c), or plants on the CNPS Rare Plant Inventory (CNPS 2016). Special status plant communities are those habitats noted as of concern to the California Dept. of Fish and Wildlife (CDFW 2010), or may be regulated by other agencies, such as the U.S Army Corps of Engineers, CDFW, or the Regional Water Control Board.

**NAS, CAS, and Other special status plant species**

The campus is south of the MSHCP Narrow Endemic Survey Area No. 3. Species required to be addressed in this survey area include Munz’s onion (*Allium munzii*), many-stemmed dudleya (*Dudleya multicaulis*), San Diego ambrosia (*Ambrosia pumila*), spreading navarretia (*Navarretia fossalis*), California orcutt grass (*Orcuttia californica*), and Wright’s trichocoronis (*Trichocoronis wrightii*).

There are no MSHCP Criteria Area Species survey areas near the campus site, although Survey Area 4 is in the general area of the campus. Species required to be addressed in this CAS survey area include: thread-leaved brodiaea (*Brodiaea filifolia*), Parish’s brittle scale (*Atriplex parishii*), Davidson’s saltscale (*Atriplex davidsonii*), large-leaved filaree (*California macrophylla*), Coulter’s goldfields (*Lasthenia glabrata* ssp. *coulteri*), little mouse tail (*Myosurus minimus* var. *apus*), and smooth tarplant (*Centromadia pungens* ssp. *laevis*).

Other special status plant species known from the study area include chaparral sand-verbena (*Abronia villosa* ssp. *aurita*), intermediae marisposa lily (*Calochortus weedii* var. *intermedius*), Parry’s spineflower (*Chorizanthe parryi* var. *parryi*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), small-flowered morning glory (*Convolvulus simulans*); Palmer’s grappling hook (*Harpagonella palmeri*); vernal barley (*Hordeum intercedens*); and southern California black walnut (*Juglans californica*), and small-flowered microseris (*Microseris douglasii* ssp. *platycarpa*).

The Menifee Valley Campus lacks clay soils, alkali soils, or areas of open gravelly substrate or fine sands that would be required for most of the special status plant species listed above. Potentially occurring special status plants include spreading navarretia (vernal pools), vernal barley (generally not reported from the study area), and the smooth tarplant.

The paniculate tarplant (*Deinandra paniculata*) is an RPR 4.2 species and is not covered by the MSHCP. It is generally commonly found in the Perris Valley, but is located in areas that are rapidly being developed. A small locality of this tarplant was observed along the margin of the existing flood control channel. Approximately 200 plants in flower were observed at this locality (0484860mE X 3726033mN) in disturbed annual grassland. Their location on the project site is shown in Figure 5, Biological Features.

**Plant Species of Special Interest**

Table 2 lists the plant species of special concern known from the project region and assesses their potential to occur on the project site. Table 3 lists the plant species of special concern from the project region that are not expected to occur on the project site. No listed plant species were observed on the project site or have at least
moderate potential to occur there. Of the non-listed special interest plant species known from the project area, the smooth tarplant (Centromadia pungens ssp. laevis), a California Native Plant Society Rare Plant Rank (CRPR) 1B.1 species (plants considered rare, threatened or endangered in California and elsewhere) has at least moderate potential to occur on the project site. The paniculate tarplant (Deinandra paniculata), a CRPR 4.2 species (a watch list of plants of limited distribution list), was observed on the project site during the botanical survey.

<table>
<thead>
<tr>
<th>Species</th>
<th>Federal/State</th>
<th>CNPS/MSHCP Other</th>
<th>Known or Expected Localities</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>California macrophylla Large-leaf filaree</td>
<td>CRPR 1B.1, CS, ASNP, CAS</td>
<td></td>
<td>Menifee Valley, Murrieta, Lake Elsinore region, Temecula Valley, Bachelor Mtn., Gavilan Hills</td>
<td>Found in clay soil grasslands. Very low potential for occurrence on the project site.</td>
</tr>
<tr>
<td>Calochortus weedii var. Intermedius Intermediate mariposa lily</td>
<td>CRPR 1B.2, CCS</td>
<td></td>
<td>French Valley, Crown Valley, Murrieta, Vail Lake, Corona, Santa Ana Mtns</td>
<td>Found in coastal sage scrub or chaparral. Very low potential for occurrence on the project site.</td>
</tr>
<tr>
<td>Centromadia pungens ssp. laevis Smooth tarplant</td>
<td>CRPR 1B.1, CS, ASNP, CAPS, RR/VP</td>
<td></td>
<td>Menifee Valley, French-Paloma Valleys, SLake Elsinore region, San Jacinto River-Perris, Lakeview, SJWA, Upper Salt Creek, Diamond Valley, Murrieta Creek, Temecula Creek, Warm Springs Creek, Tucalota Creek, an Jacinto Valley</td>
<td>Found in alkali meadows or grasslands. Also found on the margin of riparian habitats in the region. Moderate potential for occurrence on the project site.</td>
</tr>
<tr>
<td>Chorizanthe polygonoides ssp. longispina Long-spined spineflower</td>
<td>CRPR 1B.2, CS</td>
<td></td>
<td>Menifee Valley, Bundy Cyn., Gavilan Hills,Temecula Cyn., Alberhill, Murrieta region, Temecula region, Lake Skinner, Skunk Hollow, Garner Valley, W. Hemet Area, Lake Skinner, Warm Springs Creek, Santa Rosa Plateau</td>
<td>Found on clay soils or eroded loams in annual grasslands. This species is found scattered on clayish substrates throughout the Perris Basin. Very low potential for occurrence on the project site.</td>
</tr>
<tr>
<td>Species Name</td>
<td>CRPR Code</td>
<td>Location Details</td>
<td>Potential for Occurrence</td>
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<td>------------------------------</td>
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<td>---------------------------------------------------------------------------------------------------------------------</td>
<td></td>
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<tr>
<td>Hordeum inercedens</td>
<td>CRPR 3.2, CS, RR/VP</td>
<td>French Valley, San Jacinto River, SJWA, Upper Salt Creek, Lake Elsinore (Warm Springs Valley)</td>
<td>Found in alkali wetlands, vernal pools, alkali grasslands. Low potential for occurrence on the project site.</td>
<td></td>
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<tr>
<td>Lasthenia glabrata ssp. coulteri</td>
<td>CRPR 1B.1, CS, ASNP, CAPS, RR/VP</td>
<td>Temecula, Upper Salt Creek, San Jacinto River, SJWA, San Jacinto, Nichols Road, Riverside, San Jacinto Mtns.</td>
<td>Found in alkali wetlands. Low potential for occurrence on the project site.</td>
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<tr>
<td>Lepidium virginicum var. robinsonii</td>
<td>CRPR 4.3, NCS</td>
<td>Murrieta-Menifee Valley, Gavilan Hills, Sedco Hills, French Valley, Lake Skinner-Crown Valley, Vail Lake, Perris Valley, Sedco Hills, Box Springs Mtns, N. Domenigoni Hills, W. Hemet Hills</td>
<td>Found uncommonly scattered throughout the Perris Basin, San Bernardino Basin. This peppergrass blooms from Jan. to March and can be difficult to identify after this period. Very low potential for occurrence on the project site.</td>
<td></td>
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<tr>
<td>Myosurus minimus ssp. apus</td>
<td>CRPR 3.1, CS, ASNP, CAPS, RR/VP</td>
<td>Murrieta Creek area, Elsinore, Menifee, Upper Salt Creek, Temescal Cyn., Santa Rosa Plateau</td>
<td>Found in vernal pools, ephemeral wetlands. Low potential for occurrence on the project site.</td>
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<td>Navarretia fossalis</td>
<td>CRPR 1B.1, CS, ASNP, NEPS, RR/VP</td>
<td>Menifee Valley, Paloma Valley, Murrieta, Wildomar Upper Salt Creek, San Jacinto River, SJWA</td>
<td>Found in vernal pools, ephemeral wetlands. Low potential for occurrence on the project site.</td>
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<td>Orcuttia californica</td>
<td>CRPR 1B.1, CS, NEPS, RR/VP</td>
<td>Menifee Valley, Wildomar, Skunk Hollow, Santa Rosa Plateau, Upper Salt Creek</td>
<td>Found in vernal pools. Very low potential for occurrence on the project site.</td>
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**Table 2 Special Status Plant Species Potentially Occurring on the Project Site**

<table>
<thead>
<tr>
<th>Species</th>
<th>Federal/State</th>
<th>CNPS/MSHCP/Other</th>
<th>Known or Expected Localities</th>
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<tbody>
<tr>
<td>Abronia villosa var. aurita Chaparral sand verbena</td>
<td>FT</td>
<td>CRPR 1B.1, NCS</td>
<td>Murrieta Creek, Gavilan Hills, Temescal Valley, Diamond Valley, San Jacinto River, South of Hemet, Vail Lake, Banning Bench, San Jacinto Mtns</td>
<td>Found in Open sandy washes, sandy openings in coastal sage scrub.</td>
</tr>
<tr>
<td>Allium munzii Munz’s onion</td>
<td>FT, SE</td>
<td>CRPR 1B.1, NEPS</td>
<td>Gavilan Hills, Temescal Valley, Skunk Hollow, Paloma Valley, Lake Skinner, N. Domenigoni Hills</td>
<td>Generally found in dense clay soils, but also on gabbronic substrates.</td>
</tr>
<tr>
<td>Ambrosia pumila San Diego ambrosia</td>
<td>FE</td>
<td>CRPR 1B.1, CS, NEPS</td>
<td>Nichols Road, Skunk Hollow and south of Skunk Hollow, Temecula Creek</td>
<td>Found in annual grasslands on floodplain terraces, often on the margin of ephemeral wetlands. Very low potential for occurrence</td>
</tr>
<tr>
<td>Atriplex serenana var. davidsonii (Atriplexculteri) Davidson's saltscale</td>
<td>CRPR 1B.2, CAS</td>
<td>West of Hemet, SJWA, San Jacinto River</td>
<td>Found in alkali grasslands and alkali playas.</td>
<td></td>
</tr>
<tr>
<td>Atriplex parishii Parish's brittlescale</td>
<td>CRPR 1B.1, CAS, ASNP</td>
<td>West of Hemet, Winchester, San Jacinto River</td>
<td>Found in alkali grasslands and alkali playas</td>
<td></td>
</tr>
<tr>
<td>Brodiaea filifolia Thread-leaved brodiaea</td>
<td>FT, CE</td>
<td>CRPR 1B.1, CS, ASNP, CAS, RR/VP</td>
<td>San Jacinto River, SJWA, Upper Salt Creek, Santa Rosa Plateau</td>
<td>Found in clay or silty clay soils in grassland habitats.</td>
</tr>
<tr>
<td>Calochortus plummerae Plummer’s mariposa lily</td>
<td>CRPR 1B.2, CCS</td>
<td>Lake Skinner, Jurupa Hills, Box Springs Mtns. W. Hemet Hills, Foothills of the San Jacinto Mtns.</td>
<td>Found in coastal sage scrub or chaparral, including alluvial fan areas.</td>
<td></td>
</tr>
</tbody>
</table>

**Federal Designations:**
- FE = Listed by the Federal government as endangered.
- FT = Listed by the Federal government as endangered
- BLM = A BLM sensitive plant species.

**State Designations:**
- SE = Listed as endangered by the State of California.
- ST = Listed by the State of California as threatened.
- SR = Listed by the State of California as rare

**Western Riverside MSHCP**
- CS = Plant species covered w/in the MSHCP
- CCS = Plant species conditionally covered w/in the MSHCP; coverage conditional on the plan meeting species specific objectives.
- NCS = Plant species not covered w/in the MSHCP
- NEPS = Plant species on the list of Narrow endemic plant species.
- ASNP = Plant species on the list of Additional Survey needs and procedures list.
- RR/VP = Plant species on the Riparian/Riverine & Vernal pool list.
- CAPS = Plant species included on the list of Criteria Area Species

**California Native Plant Society (CNPS), Rare Plant Rank (RPR):**
- RPR 1A = Plants presumed extinct in California.
- RPR 1B = Plants considered rare, threatened or endangered in California and elsewhere.
- RPR 2 = Plants rare, threatened or endangered in California but more common elsewhere.
- RPR 3 = Plants about which we need more information - A review list.
- RPR 4 = Plants of limited distribution - A watch list.

**CNPS Threat Code Extensions**
- .1 = Seriously endangered in California.
- .2 = Fairly endangered in California.
- .3 = Not very endangered in California.

**Other:**
- LC = Local Concern

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**Table 3 Plant Species of Special Interest Known to Occur in the Region, but not Anticipated in the Vicinity of the Project Site**

<table>
<thead>
<tr>
<th>Species</th>
<th>Federal/State</th>
<th>CNPS/MSHCP/Other</th>
<th>Known or Expected Localities</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abronia villosa var. aurita Chaparral sand verbena</td>
<td>FT</td>
<td>CRPR 1B.1, NCS</td>
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<td>Found in Open sandy washes, sandy openings in coastal sage scrub.</td>
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<td>FT, SE</td>
<td>CRPR 1B.1, NEPS</td>
<td>Gavilan Hills, Temescal Valley, Skunk Hollow, Paloma Valley, Lake Skinner, N. Domenigoni Hills</td>
<td>Generally found in dense clay soils, but also on gabbronic substrates.</td>
</tr>
<tr>
<td>Ambrosia pumila San Diego ambrosia</td>
<td>FE</td>
<td>CRPR 1B.1, CS, NEPS</td>
<td>Nichols Road, Skunk Hollow and south of Skunk Hollow, Temecula Creek</td>
<td>Found in annual grasslands on floodplain terraces, often on the margin of ephemeral wetlands. Very low potential for occurrence</td>
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<tr>
<td>Atriplex serenana var. davidsonii (Atriplexculteri) Davidson's saltscale</td>
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<td>FT, CE</td>
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<td>Found in clay or silty clay soils in grassland habitats.</td>
</tr>
<tr>
<td>Calochortus plummerae Plummer’s mariposa lily</td>
<td>CRPR 1B.2, CCS</td>
<td>Lake Skinner, Jurupa Hills, Box Springs Mtns. W. Hemet Hills, Foothills of the San Jacinto Mtns.</td>
<td>Found in coastal sage scrub or chaparral, including alluvial fan areas.</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Plant Species</th>
<th>CRPR</th>
<th>Location</th>
<th>Habitat Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorizanthe leptotheca</td>
<td>CRPR 4.2, CCS</td>
<td>San TimoteoCyn., Vail Lake area. San Jacinto Mtns, RecheCyn., Loma Linda, Bautista Cyn.</td>
<td>Found in sandy, gravelly habitats, often in openings of chaparral, or in alluvial fan sage scrub.</td>
</tr>
<tr>
<td>Cryptantha wigginisi</td>
<td>CRPR 1B.1, NCS</td>
<td>Temecula (Skunk Hollow), Carlsbad</td>
<td>Found on open gabbro soils on the margins of Riversidn sage scrub.</td>
</tr>
<tr>
<td>Dudleya multicaulis</td>
<td>CRPR 1B.2, CS, NEPS</td>
<td>Gavilan Hills, Alberhill, La Sierra Hills, Temescal Canyon</td>
<td>Found in clayey soils or sandstone outcrops in sage scrub or native grasslands.</td>
</tr>
<tr>
<td>Juglans californica</td>
<td>CRPR 4.2, CS, RR/VP</td>
<td>Murrieta Creek, French Valley, Paloma Valley, Lake Skinner region, Riverside, Santa Ana River, Moreno valley, Jurupa Hills</td>
<td>Found on margins of alluvial washes, margins of riparian woodland, oak woodland, &amp; coastal sage scrub-chaparral.</td>
</tr>
<tr>
<td>Mimulus diffusus</td>
<td>CRPR 4.2, CS</td>
<td>Lake Skinner, San Jacinto Mtns, Bautista Cyn.</td>
<td>Found in the understore or openings of Riversidn sage scrub or chaparral.</td>
</tr>
<tr>
<td>Pentachaeta aurea</td>
<td>CRPR 4.2, NCS</td>
<td>Temecula, San Jacinto Mtns.</td>
<td>Found in openings of coastal sage scrub or in annual or perennial grassland habitats. Poorly documented and anticipated to occur in grasslands and scrub habitats throughout the inland valley.</td>
</tr>
<tr>
<td>Pseudognaphalium leucocephalum</td>
<td>CRPR 4.2, NCS</td>
<td>Murrieta, San TimoteoCyn.</td>
<td>Found in sandy washes</td>
</tr>
<tr>
<td>Quercus engelmannii</td>
<td>CRPR 4.2, CS</td>
<td>Sedco Hills, Temecula, Santa Rosa Plateau, Gavilan Hills, Lake Skinner region, Murrieta region</td>
<td>Oak woodlands.</td>
</tr>
<tr>
<td>Trichocoronis wrightii var. wrightii</td>
<td>CRPR 2B.1, NEPS, RR/VP</td>
<td>San Jacinto River, SJWA</td>
<td>Found in alkali playas, and other alkali wetlands. Currently only known from the SJWA.</td>
</tr>
</tbody>
</table>

See Table 2 for description of abbreviations.
### Sensitive Animal Species

Table 4 lists the animal species of special interest known from the project region and assesses their potential to occur on the project site.

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Status*</th>
<th>Habitat Preference</th>
<th>Potential to Occur on Project Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invertebrates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vernal pool fairy shrimp <em>Branchinecta lynchi</em></td>
<td>FT</td>
<td>Occur in large, deep pools.</td>
<td>None due to absence of suitable habitat</td>
</tr>
<tr>
<td>Quino checkerspot butterfly <em>Euphydryas editha quino</em></td>
<td>FE</td>
<td>Occur in grassland and open areas within scrub and chaparral habitats.</td>
<td>Not expected to occur on-site. Its host plant species (<em>Plantago</em> sp, <em>Castilleja exserta, Antirrhinum coulterianum, Collinsia heterophylla, and Cordylanthus rigidus</em>) were not observed on the site. &amp;&amp;&amp;</td>
</tr>
<tr>
<td>Riverside fairy shrimp <em>Streptocephalus woottoni</em></td>
<td>FE</td>
<td>Restricted to a few vernal pools in southwestern Riverside, Orange, and San Diego counties.</td>
<td>Low potential, but need for protocol survey to be determined.</td>
</tr>
<tr>
<td>Vertebrates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphibians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western spadefoot <em>Spea hammondii</em></td>
<td>CSC</td>
<td>Open areas with sandy or gravelly soils, in a variety of habitats including grasslands, chaparral, and sandy washes. Shallow pools in these habitats are necessary for reproduction. Breeds in ponds, streams, and rain pools that do not contain bullfrogs and fish, which prey on tadpoles.</td>
<td>Low potential to occur in areas with seasonal standing water, such as channel along eastern border of site and ephemeral swale. No potential to occur elsewhere on project site.</td>
</tr>
<tr>
<td>Reptiles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange-throated whiptail <em>Aspidoscelis hypertyrus</em></td>
<td>WL</td>
<td>Prefers coastal sage scrub and woodland habitats with sandy openings.</td>
<td>None due to the absence of suitable habitat.</td>
</tr>
<tr>
<td>Coastal western whiptail <em>Aspidoscelis tigris stejnegeri</em></td>
<td>SA</td>
<td>Occurs in coastal sage scrub, chaparral and wash habitats.</td>
<td>None due to the absence of suitable habitat.</td>
</tr>
<tr>
<td>Northern red-diamond rattlesnake <em>Crotalus ruber ruber</em></td>
<td>CSC</td>
<td>Arid scrub (including coastal sage scrub), chaparral, woodlands, and cultivated areas, often with large rocks or boulders.</td>
<td>None due to the absence of suitable habitat.</td>
</tr>
<tr>
<td>San Diego horned lizard <em>Phrynosoma coronatum blainvillet</em></td>
<td>CSC</td>
<td>Occurs in variety of habitats including coastal sage, grassland, chaparral, oak woodland, and riparian woodland with loose sandy soils and abundant native ants or other insects.</td>
<td>None due to the absence of suitable habitat.</td>
</tr>
<tr>
<td>Birds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooper’s hawk <em>Accipiter cooperii</em></td>
<td>WL</td>
<td>Occurs in various woodland habitats, including riparian.</td>
<td>Low potential to nest in ornamental trees on existing campus, no potential in undeveloped parts of site.</td>
</tr>
</tbody>
</table>
### Table 4. Special Status Animal Species Known From Project Region

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Status*</th>
<th>Habitat Preference</th>
<th>Potential to Occur on Project Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern California rufous-crowned sparrow</td>
<td>WL</td>
<td>Occurs in sparsely vegetated scrubland on hillsides and canyons, preferring coastal sage scrub dominated by California sagebrush (<em>Artemisia californica</em>) and grassy successional growth.</td>
<td>Low potential due to absence of sage scrub habitats.</td>
</tr>
<tr>
<td><em>Aimophila ruficeps canescens</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bell’s sage sparrow</td>
<td>WL</td>
<td>Occurs in coastal sage scrub and chaparral, preferably semi-open with shrubs 1–2 m high.</td>
<td>None due to the absence of suitable habitat.</td>
</tr>
<tr>
<td><em>Artemisiospiza belli belli</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burrowing owl <em>Athene cunicularia</em></td>
<td>CSC</td>
<td>Open grassland, fallow fields, sparsely vegetated desert scrub, and edges of disturbed lands, where soil is friable for nesting burrows. Not observed during the biological survey.</td>
<td>Active burrow with two adults observed on project site.</td>
</tr>
<tr>
<td>Northern harrier (nesting) <em>Circus cyaneus</em></td>
<td>CSC</td>
<td>Occurs in a variety of habitats, including open wetlands, grasslands, wet pasture, old fields, dry uplands, and croplands.</td>
<td>Occasional foraging in grasslands expected but no potential for nesting onsite.</td>
</tr>
<tr>
<td>California horned lark <em>Eremophila alpestris actia</em></td>
<td>WL</td>
<td>Occurs in a variety of open habitats, and in southern California breeds mainly in open fields, grasslands, and rangelands.</td>
<td>Moderate potential to nest in grassland habitats on project site.</td>
</tr>
<tr>
<td>Loggerhead shrike <em>Lanius ludovicianus</em></td>
<td>CSC</td>
<td>Occurs in grassland, open sage scrub, chaparral, and desert scrub.</td>
<td>Low potential in developed and grassland habitats on project site.</td>
</tr>
<tr>
<td>Coastal California gnatcatcher <em>Poliotila californica californica</em></td>
<td>FT CSC</td>
<td>Occurs primarily in coastal sage scrub habitat, but also use chaparral, grassland, and riparian habitats where they occur in proximity to sage scrub.</td>
<td>None due to absence of suitable habitat.</td>
</tr>
<tr>
<td>Least Bell’s vireo <em>Vireo bellii pusillus</em></td>
<td>FE SE</td>
<td>Occurs in cottonwood-willow forest, but may also occur in oak woodland, shrubby thickets, and dry washes with willow thickets at the edges.</td>
<td>None due to absence of suitable habitat.</td>
</tr>
</tbody>
</table>

### Mammals

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Status*</th>
<th>Habitat Preference</th>
<th>Potential to Occur on Project Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego black-tailed jackrabbit <em>Lepus californicus bennetti</em></td>
<td>CSC</td>
<td>Occurs in a variety of habitats, including sage scrubs, chaparral, agricultural lands and other disturbed habitats, but prefers open grassland.</td>
<td>Low to moderate potential.</td>
</tr>
<tr>
<td>Western mastiff bat <em>Eumops perotis californicus</em></td>
<td>CSC</td>
<td>Variety of habitats, from desert scrub and chaparral to oak woodland and ponderosa pine, but only where there are significant rock features for roosting. Natural roosts are often found under large exfoliating slabs of granite, sandstone slabs, or in columnar basalt, on cliff faces, or in large boulders. Some roosts have been None due to the absence of suitable roosting habitat.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4. Special Status Animal Species Known From Project Region

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</thead>
<tbody>
<tr>
<td>Western yellow bat <em>Lasiurus xanthinus</em></td>
<td>CSC</td>
<td>Riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. They may be expanding their range with the increased usage of ornamental palms in landscaping.</td>
<td>Low potential.</td>
</tr>
<tr>
<td>Stephen’s kangaroo rat <em>Dipodomys stephensi</em></td>
<td>FE, ST</td>
<td>Occurs in open grassland and sparse coastal sage scrub habitats on friable well-drained soils.</td>
<td>Low to moderate potential in sparse grassland habitats in southeastern part of site.</td>
</tr>
<tr>
<td>Los Angeles pocket mouse <em>Perognathus longimembris brevinus</em></td>
<td>CSC</td>
<td>Inhabits coastal sage scrub and alluvial fan sage scrub habitats.</td>
<td>Low to moderate potential in sparse grassland habitats onsite.</td>
</tr>
<tr>
<td>Northwestern San Diego pocket mouse <em>Chaetodipus fallax fallax</em></td>
<td>CSC</td>
<td>Occurs mainly in sage scrub, chaparral, and grassland habitats.</td>
<td>Moderate to high potential in sparse grassland habitats onsite.</td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td>State</td>
<td></td>
</tr>
<tr>
<td>FE</td>
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<td>State Endangered</td>
<td></td>
</tr>
<tr>
<td>FT</td>
<td>Federally Threatened</td>
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<td></td>
</tr>
<tr>
<td>FPT</td>
<td>Federally Proposed Threatened</td>
<td>California Species of Concern</td>
<td></td>
</tr>
<tr>
<td>FSC</td>
<td>Federal Species of Concern</td>
<td>California Fully-Protected Species</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
<td>Special Animal</td>
<td></td>
</tr>
</tbody>
</table>

One listed species, Stephen’s kangaroo rat, and five California Species of Concern (CSC) have at least moderate potential to occur on the project site: the western spadefoot toad, California horned lark, Los Angeles pocket mouse, Dulzura pocket mouse, and San Diego black-tailed jackrabbit. The burrowing owl, a CSC species, was observed on the project site during the wildlife survey. The potential for occurrence for the remaining species is low to none due to the absence of suitable habitat.

**Riverside Fair shrimp.** The Riverside fairy shrimp, a federally threatened species, inhabits vernal pools and swales, and prefers deeper pools through the warm weather of late April and May. Ten seasonal wetlands and one seasonal channel were observed on the undeveloped portion of the campus. Seven of seasonal wetlands consist of “road rut” pools, wet soil areas, or a seasonal channel. Most of the seasonal wetlands that occur on the project site are shallow and drain relatively quickly due to the loam and sandy loam soils, which are unfavorable for Riverside fairy shrimp reproduction in average rainfall years. Despite the low potential for fairy shrimp occurrence on the project site, the CNDDB (CDFW 2016) contains several records from the project region in a range of habitat types, from typical vernal pools, seasonal pools, and stock ponds, to pools created by tire tracks (‘road ruts’). Prior to impacting the seasonal wetlands on the project site, a habitat assessment would need to be carried out that determines whether a presence/absence protocol survey is needed. The proposed college campus project is phased over many years, which allows undertaking the necessary surveys before any impacts are made.

**Quino Checkerspot Butterfly.** The Quino checkerspot butterfly occurs in chaparral, cismontane woodland, coastal scrub, and native and introduced grasslands. The butterfly’s primary host plant is dwarf plantain (*Plantago erecta*). Other host plants include owl’s clover (*Castilleja exserta*), white snap dragon (*Antirrhinum coulterianum*), Chinese houses (*Collinsia heterophylla*), and bird’s-beak (*Cordylanthus rigidus*). The Quino checkerspot butterfly is known from the project region, but the project site does not contain habitat for the species. The project site contains few of its general habitat characteristics and none of its host or nectar feeding plants were observed during the botanical survey.
**Western Burrowing Owl.** The western burrowing owl is a ground-nesting owl that inhabits grassland habitats in California, often in areas that have been disturbed as a result of agriculture and urban and suburban development. They frequently use burrows previously excavated by the California ground squirrel (*Otospermophilus beecheyi*). The burrowing owl often uses pipes and other natural and non-natural cavities at or below ground level. The entrances to burrows are often indicated by the presence of whitewash and other sign (scat, feathers, and litter). Burrowing owls also require open fields with adequate food supply for foraging habitat, low vegetative cover to allow owls to watch for predators, and adequate roosting sites. These owls can often be seen perched or standing by their burrow or hunting insects, rodents, amphibians, or small birds in open fields. Nesting season is from February through August, with most pairs usually fledging 4 or 5 young. After the nesting season, most owls in California remain throughout the winter as year-round residents and owls from other areas augment resident California populations. Burrowing owls are susceptible to predators that can access their nest chamber, such as foxes, coyotes, skunks, raccoons, and snakes, and are also preyed upon by various other raptor species, such as hawks, eagles, and other species of owls.

The CNDDB (CDFW 2016) contains a number of burrowing owl records for the project region. One adult burrowing owl was observed in a burrow on the project site on January 18, 2016. The location of the active burrowing owl burrow is shown in Figure 5, Biological Features. The disturbed annual grassland habitat that occurs in the undeveloped portion of the project site is suitable for burrowing owls.

**Stephens kangaroo rat.** Stephens kangaroo rat (SKR) prefer open grasslands with abundant bare ground and low to moderate grass density, on level to gently sloping terrain. Soils in habitats harboring SKR are typically loamy in nature, while soils dominated by clay or sand very rarely support this species (USFWS 1997). Most of the disturbed grassland that occurs on the project site is too dense for SKR, but there are areas of low grass cover and suitable soils. The potential for SKR in these sparse grassland areas is low to moderate.

**Nesting Birds**

The plant communities found on the project site provide nesting habitat for a number of bird species that occur there as residents or migrants. Nesting bird species are protected by California Fish and Game Code Sections 3503, 3503.5, and 3800, and by the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703–711), which regulate the take, possession, or destruction of nests or eggs of any migratory bird or bird of prey.

**Communities of Special Interest/Regulated Habitats**

**Riparian/Riverine Areas**

Riparian habitat occurs in the flood control channel on the eastern edge of the campus. The riparian plant communities generally consisted of perennial and annual wetland species, with some emergent vegetation found in the riparian marsh community, characterized by the broad-leaved cat-tail. A small area of mulefat scrub was also found within this flood control channel.

The riparian vegetation along the channel is not suitable for nesting by riparian bird species (least bell’s vireo, southwestern willow flycatcher, and yellow-billed cuckoo); surveys for these species would not be required.

**Vernal Pools, Listed Fairy Shrimp Habitat**

One of the seasonal wetlands observed on the campus has potential for being classified as a vernal pool due to the presence of the wire-stemmed popcorn flower, a facultative wetland plant species. Further studies on this potential vernal pool would also include an assessment of ‘road rut’ seasonal wetlands on the project site.
to determine whether any of these meet the definition of vernal pools. There is some potential for fairy shrimp occurrence on the project site, which is addressed in the previous paragraph on the Riverside fairy shrimp.

Jurisdictional Waters and Wetlands

The small seasonal wetlands shown in Figure 4, *Plant Communities* are temporary ponds created in areas disturbed by tire tracks and dips in the dirt access roads. These lack defined channels or banks and wetland vegetation, and the pools dry out quickly due to the permeable loam and sandy loam soils. These small seasonal wetlands are not wetlands or jurisdictional waters.

The larger seasonal wetland located south of the parking lot is a depression that has potential to be a vernal pool. If it is a vernal pool, it is not necessarily a jurisdictional water.

The channel along the eastern side of the site does not appear to a jurisdictional water because it was not created from a natural channel and flows into an artificial lake. However, the channel may be under the jurisdiction of the Regional Water Control Board, and the California Dept. of Fish and Wildlife due to its wildlife habitat value.

A jurisdictional delineation of the large seasonal wetland and the flood control channel would be needed to determine any permitting requirements for the proposed campus development if the proposed project would impact these.

Wildlife Movement Corridors

Wildlife corridors link areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Corridors are links between different populations of a species and mitigate the effects of habitat fragmentation by 1) allowing animals to move between remaining habitats (which allows replenishment of depleted populations and promotes genetic diversity); 2) providing escape routes from fire, predators, and human disturbances that put populations or local species at risk; and 3) serving as travel routes for individuals moving within their home ranges for food, water, mates, and shelter. Wildlife movement activities usually fall into one of three movement categories: dispersal, seasonal migration, or movements related to home range activities. Large open spaces will generally support a diverse wildlife community representing all types of movement. Wildlife movement may range from non-migratory movement of amphibians, reptiles, and some birds on a local level to the many-square-mile home ranges of large mammals moving at a regional level.

The project site is not part of an important wildlife movement corridor. The site is not identified as being in or near a Special Linkage by the MSHCP. The project site is located in a suburban area, bordered by high density residential land uses to the north and southwest, by I-215 to the west, and a middle school with sports fields to the west. The Salt Creek drainage channel is located approximately 1.2 miles north/northwest of the campus, intervened by high density residential land uses and several freeways. The drainage channel on the eastern border of the campus may be used by coyotes and skunks and other local wildlife in home range movement. The channel terminates in the artificial lake at the Menifee Lakes Country Club north of La Piedra Rd.

4. IMPACTS

The proposed project would renovate the existing campus facilities and create new classrooms, parking lots and roadways, administrative offices, and sports/recreation facilities in the undeveloped parts of the site south of the existing campus. At buildout, the proposed project would cover the majority of the site, and would
convert approximately 49 acres of disturbed annual grassland, ornamental, and seasonal wetland habitats to developed campus uses.

Implementation of the Menifee Valley Campus Master Plan would occur in two phases (Phases I and II), each with six stages (1-6). The Phase I Stage 1 and 2 activities are proposed to occur over the period 2017-2020, and include a parking lot in the northeastern part of the campus, a cluster of modular classrooms in the southeastern corner of the existing main campus, and a football field and sports complex in the east-central part of the site. The Phase I Stage 3 activities would occur over the period 2018-2022, and include construction of classroom, security, and parking facilities within the existing campus footprint. The remaining stages of Phase I would be implemented in the period 2019-2025. The Phase II elements of the Menifee Campus Master Plan would be implemented over the period 2026-2038.

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact with Mitigation Incorporated.

Plants. No plant species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Wildlife (CDFW) were observed on the project site or have the potential to occur there. The proposed project would not impact any listed plant species. Of the non-listed special interest plant species known from the project area, the smooth tarplant (*Centromadia pungens* ssp. *laevis*), a California Native Plant Society Rare Plant Rank (CRPR) 1B.1 species (plants considered rare, threatened or endangered in California and elsewhere) has moderate potential to occur on the project site. The smooth tarplant is a covered species under the MSHCP and impacts to this species are mitigated to a less than significant level through the conservation efforts carried out under the MSHCP.

The paniculate tarplant (*Deinandra paniculata*), a CRPR 4.2 species (a watch list of plants of limited distribution list), was observed in the disturbed annual grassland along the channel on the eastern side of the site. The proposed project would impact the paniculate tarplant on the site. The paniculate tarplant is a CNPS "watchlist" species that is common in western Riverside County. Therefore, potential impacts to this species are not considered significant and no mitigation is needed.

Animals

Burrowing Owl. Construction of the proposed parking structure in the northeastern part of the project site would impact the burrow and foraging habitat of one pair of adult burrowing owls observed. The parking structure is included in the Phase I Stage 1 plans, schedule for implementation in the 2017-2020 period. These impacts would be mitigated to a less than significant level with implementation of Mitigation Measures BIO-1 to BIO-3.

*Stephens kangaroo rat* (SKR). There is low to moderate potential for SKR occurrence in small areas of sparse grassland in the southern part of the project site. Potential impacts to SKR would be covered under the SKR Habitat Conservation Plan (SKR HCP). No further mitigation is needed.

*Riverside Fair shrimp*. The proposed project could impact all of the seasonal wetlands that have been mapped on the project site. The project will be phased over 20 years, which allows undertaking the necessary
surveys to mitigate potential impacts. With regard to the small seasonal wetlands and ‘road rut’ pools, three would be impacted by the Phase I, Stage 1 and Stage 2 activities in the period 2017-2020. The largest seasonal wetland south of the parking lot, which showed vegetative characteristics of vernal pools, would not be impacted until Phase I Stage 4, which would occur in the period 2019-2022. Other small seasonal wetlands would be impacted after 2019. The seasonal wetlands that occur on the project site may not support Riverside fairy shrimp, but a Riverside fairy shrimp expert will determine through a habitat assessment and, if warranted, a protocol survey, whether the proposed project would impact the species. This mitigation is included in BIO-4.

The western spadefoot toad, California horned lark, Los Angeles pocket mouse, Dulzura pocket mouse, and San Diego black-tailed jackrabbit have moderate potential to occur on the project site and could be impacted by the proposed project. In the cases of the California horned lark and San Diego black-tailed jackrabbit, any individuals that occur on the site would move offsite during site preparation. These species are all Covered species under the MSHCP, which would mitigate impacts to a less than significant level.

**Nesting Birds**

The proposed project could result in the removal of ornamental trees and shrubs in the existing campus area. If construction or site preparation activities would result in the removal of tree and shrub vegetation during the bird nesting season (January 15 to September 1), then the project could impact nesting birds. The Federal Migratory Bird Treaty Act prohibits direct impacts to nesting birds and their nests. Also, the California Fish and Game Code (Section 3503.5) prohibits activities that take, possess or destroy the active nest of any such bird. With adherence to the existing regulations, the potential impact on biological resources would be less than significant.

b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

**Less Than Significant Impact with Mitigation Incorporated.** The project site contains ten seasonal pools and one seasonal drainage in the vacant lands on the project site, largely in the southwestern part of the site. A larger swale mapped south of the parking lot (see Figure 4, *Plant Communities*) contains wire-stemmed popcorn flower (*Plagiobothrys leptocladus*), an obligate wetland species, which indicates that this swale could be a playa wetland or vernal pool. The potential vernal pool mapped south of the parking lot would not be impacted until Phase I Stage 4, which would occur in the period 2019-2022. Prior to any impact, a vernal pool and fairy shrimp habitat assessment would be carried out.

The proposed project is not expected to impact the channel and its riparian habitat along the eastern border of the site. The seasonal wetlands and swales located in the vacant lands south of the existing campus would be directly impacted by the proposed project. The phasing plan calls for development of the area south of the existing parking lot in Phase 1, Stage 4 (years 2019-22). These impacts to sensitive communities would be mitigated to a less than significant level by Mitigation Measure BIO-6.

c). **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**Less Than Significant Impact with Mitigation Incorporated.**
The small seasonal wetlands that occur on the project site lack defined channels or banks and wetland vegetation, and the pools dry out quickly due to the permeable loam and sandy loam soils. These small seasonal wetlands are not expected to be considered wetlands or jurisdictional waters by the Army Corps of Engineers, California Department of Fish and Wildlife, and the Regional Water Quality Control Board. The larger seasonal wetland located south of the parking lot may be a vernal pool, but not necessarily a jurisdictional water. The channel along the eastern side of the site is not expected to be jurisdictional water because it was not created from a natural channel and flows into an artificial lake. Potential impacts to the channel may be under the jurisdiction of the Regional Water Control Board, or to the California CDFW due to the channel’s wildlife habitat value.

The proposed project would install storm drain inlets in the existing channel on the eastern side of the site, which would involve construction activities in the channel. The proposed project would also impact the single potential vernal pool identified on the site. A jurisdictional delineation of the seasonal wetlands and the flood control channel would be needed to determine any permitting requirements because the proposed project would impact these. Potential impacts to jurisdictional waters would be mitigated to a less than significant level by Mitigation Measure BIO-6.

d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**No Impact.** The project site is located in a suburban area, bordered by high density residential land uses to the north and southwest, by I-215 to the west, and a middle school with sports fields to the west. The site is not identified as being in or near a Special Linkage by the MSHCP. The Salt Creek drainage channel is located approximately 1.2 miles north/northeast of the campus, from which it is separated by residential development. The drainage channel on the eastern border of the campus is probably used by coyotes and skunks and other local wildlife in home range movement. The channel terminates in the artificial lake at the Menifee Lakes Country Club north of La Piedra Ave. The project site is not part of an important wildlife movement corridor. The proposed project would not fragment habitat or impede wildlife movement. No mitigation measures are needed.

e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**No Impact.** The goal of the Menifee General Plan Open Space and Conservation Element is to protect biological resources, especially sensitive and special status wildlife species and their natural habitats. The General Plan relies strongly on implementation of the Western Riverside County MSHCP for achieving the biological conservation goal and policies. The proposed project is consistent with City biological conservation policies and is consistent with the MSHCP. No mitigation measures are needed.

f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**No Impact.** The project site is found within the Sun City/Menifee Valley Area Plan of the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The proposed project would not conflict with provisions of the MSHCP. The proposed project is not within or adjoining a Criteria Cell or Special Linkage Area, which are identified for conservation objectives under the MSHCP. The biological surveys required under the MSHCP included a habitat assessment of western burrowing owl and mapping of potential riparian/riverine habitat, jurisdictional waters; vernal pools, and listed fairy shrimp habitat on the project site. No mitigation measures are needed.
Mitigation Measures

BIO-1  A preconstruction clearance survey for burrowing owls will be performed within 30 days prior to ground disturbance in potentially suitable habitat within the site, pursuant to CDFG protocols. The preconstruction survey will include a 300-foot buffer if between February 1 and August 31 (nesting season) and a 100-foot buffer if outside of this period. If owls are found within the survey area during the nesting season, construction activities will not occur within 300 feet of the occupied burrows until nesting is completed. A qualified biologist must confirm that the nesting effort has been completed prior to the removal of the work buffer restriction. If owls are found within the disturbance footprint outside of the February 1 through August 31 period, passive relocation (e.g., use of one-way doors and collapse of burrows) will occur. These surveys and mitigation for burrowing owl are consistent with Section 6.3.2 of the MSHCP, Additional Survey Needs and Procedures.

BIO-2  To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of burrowing owl habitat per pair or unpaired birds shall be acquired and permanently protected within the MSHCP area.

BIO-3  Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the District verifies through noninvasive methods either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

BIO-4  A habitat assessment for the Riverside fairy shrimp (RFS) shall be carried out on the project site by a permitted biologist. If the habitat assessment concludes there is potential for RFS on the site, a presence/absence survey shall be carried in accordance with the Fish and Wildlife Service's protocol.

BIO-5  If a focused survey confirms the presence of the Riverside Fairy Shrimp the College District shall either petition the Riverside County Regional Conservation Authority to participate in the MSHCP to mitigate impacts to the species or obtain an individual permit from the U.S. Fish and Wildlife Service under Section 10(a) of the Endangered Species Act.

BIO-6  A jurisdictional waters delineation shall be carried out on seasonal wetlands and drainage channels on the project site. If the proposed project would impact waters found to be jurisdictional to the Army Corps of Engineers, Regional Water Quality Control Board, and/or California Department of Fish and Wildlife, permits shall be obtained for these impacts. The amount of mitigation required will be determined during the permitting process.

5. REFERENCES

AIS.2015. Western Riverside County, Vegetation Mapping Update. Prepared for the Western Riverside County Regional Conservation Authority


AMEC. 2010. Results of focused surveys for listed fairy shrimp species for the Valley-Ivy Glen transmission line project. Prepared for Southern California Edison.


Bond, J. 2010. Western Riverside MSHCP Burrowing Owl focused survey, Bundy Canyon Road Improvement Project. Prepared for the County of Riverside Transportation Department.

Bramlet, D.E. 2012. Habitat Assessment and Western Riverside MSHCP Consistency Analysis, Wireless Communications Facility, 29801 Scott Road, Menifee, Riverside County, California. Prepared for SiteMaster, Tulsa, Oklahoma.


California Department of Fish and Wildlife (CDFW), Natural Diversity Database. 2015a. California Natural Diversity (RareFind) Database Element report for the Romoland, Murrieta, and Winchester 7.5’ quadrangles. California Department of Fish and Game, Natural Heritage Division, Sacramento, California.

California Department of Fish and Wildlife (CDFW), Natural Diversity Database. 2015b. Special Vascular Plants, Bryophytes, and Lichens List.Wildlife and Habitat Data Analysis Branch, Sacramento, California (July).

California Department of Fish and Wildlife (CDFW), Natural Diversity Database. 2015c. Special Animals List.Wildlife and Habitat Data Analysis Branch, Sacramento, California (July).

California Department of Fish and Wildlife (CDFW). 2012c. Staff report on burrowing owl mitigation.


California Department of Transportation (Caltrans). 2010. Interstate 215 widening project from Scott Road to Nuevo Road: Initial Study (w/ proposed Mitigated Negative Declaration)/Environmental Assessment.


City of Menifee. 2013a. City of Menifee, General Plan, DEIR, Section 5.4 Biological Resources.


County of Riverside 2003a. Section 3.314 Sun City/Menifee Area Plan, plus the criteria for Cell 5066, In Section 3.0 Conservation Planning Process, Western Riverside MSHCP.


County of Riverside. 2005. Burrowing owl survey protocol. Environmental Planning Department, County of Riverside.

County of Riverside. 2006a. Burrowing owl survey instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area.

County of Riverside. 2009. Draft Biological policies and procedures. County of Riverside Planning Department.


Jones and Stokes. 2007. DBESP report for APNs 963-060-019, 963-060-020, 963-100-001, 963-100-007, 963-060-021 in French Valley. Prepared for French Valley Town Center, LLC., Brea, California.


RCA (Western Riverside County, Regional Conservation Authority). 2007b. MSHCP permittee implementation guidance manual, Appendix D Example, MSHCP Consistency assessment (Faux Willow Creek Project).


RCA. 2011. MSHCP Wildlife Corridors, Presentation to the RCA board.


Weather Currents. 2015. Menifee, California Precipitation Summary for 2015, and the past ten years, along with recent precipitation records. www.weathercurrents.com

Appendix 1. Site photographs

Photo 1. Grassland habitat south of existing campus (July picture), view looking north

Photo 2. Grassland habitat south of existing campus (July picture), view looking west
Photo 3. Swale located in grassland habitat south of campus (January 2016 photo), view looking northeast

Photo 4. Swale in low area of dirt access road (‘road rut’) south of campus (July 2015 photo), view looking east
Photo 5. Willow and cat-tail vegetation in channel along eastern border of site, view looking south

Photo 6. Adult burrowing owl near its burrow, view looking north
Appendix 2. List of Plant Species
* non-native species

Pteridophytes, Ferns and Their Allies
Pteridaceae, Lip-fern Family
Common horsetail (*Equisetum arvense*)

Cupressaceae, Cypress Family
Italian cypress (*Cupressus sempervirens*)*

Pinaceae, Pine Family
Italian stone pine (*Pinus pinea*)*

Magnoliophyta, Flowering plant
Eudicotyledons, Eudicots

Amaranthaceae, Amaranth Family
Tumbling pigweed (*Amaranthus albus*)*
Prostrate pigweed (*Amaranthus blitoides*)

Asteraceae, Sunflower Family
Weak-leaved burweed (*Ambrosia confertiflora*)
Mayweed (*Anthemis cotula*)*
Emory's baccharis (*Baccharis salicina*)
Mulefat (*Baccharis salicifolia*)
Tocalote (*Centaurea melitensis*)*
Bull thistle (*Cirsium vulgare*)*
Paniculate tarplant (*Deinandra paniculata*)
Flax-leaved horseweed (*Erigeron bonariensis*) *
Common horseweed (*Erigeron canadensis*)
Annual sunflower (*Helianthus annuus L.*)
Telegraph weed (*Heterotheca grandiflora*)
Prickly lettuce (*Lactuca serriola*)*
Valley pineapple weed (*Matricaria occidentalis*)
Stink net (*Oncosiphon piluliferum*)*
Spanish sunflower (*Pulicaria paludosum*)*
Prickly sow thistle (*Sonchus asper*)*
Common sow thistle (*Sonchus oleraceus*)*
Marsh aster (*Symphyotrichum subulatum var. parviflorum*)
Dandelion (*Taraxacum officinale*)*
Cocklebur (*Xanthium strumarium*)

Boraginaceae, Forget-Me-Not Family
Common fiddleneck (*Amsinckia menziesii*)
Alkali heliotrope (*Heliotropium curassavicum*)
Wire-stemmed popcorn flower (*Plagiobothrys leptocladus*)

Brassicaceae, Mustard Family
Summer mustard (*Hirschfeldia incana*)*
London rocket (*Sisymbrium irio L.*)*
Hare's ear cabbage (*Sisymbrium orientale*)*

Chenopodiaceae, Goosefoot Family
Suberect saltbush (*Atriplex suberecta*)*
Lamb's quarters (*Chenopodium album*)*
Nettle-leaved goosefoot (*Chenopodium murale*)
Russian thistle (*Salsola tragus*)

**Convolvulaceae, Morning Glory Family**
Field bindweed (*Convolvulus arvensis*)

**Euphorbiaceae, Spurge Family**
Rattlesnake spurge (*Chamaesyce albomarginata*)
Dove weed (*Croton setiger*)
Spotted spurge (*Euphorbia maculata*)
Prostrate spurge (*Euphorbia prostrata*)

**Fabaceae, Pea Family**
Black medick (*Medicago lupulina*)
Bur clover (*Medicago polymorpha*)
Yellow sweet clover (*Melilotus indica*)
Mexican palo verde (*Parkinsonia aculeata*)

**Geraniaceae, Geranium Family**
Red-stemmed filaree (*Erodium cicutarium*)
White-stemmed filaree (*Erodium moschatum*)

**Lamiaceae, Mint Family**
Vinegar weed (*Trichostema lanceolatum*)

**Malvaceae, Mallow Family**
Cheeseweed (*Malva parviflora*)
Alkali mallow (*Malvella leprosa*)

**Myrtaceae, Myrtle Family**
Eucalyptus (*Eucalyptus* sp)

**Oleaceae, Olive Family**
Shamel ash (*Fraxinus udehi*)

**Plantaginaceae, Plantain Family**
Common plantain (*Plantago major*)

**Platanaceae, Sycamore Family**
London plane tree (*Platanus acerifolia*)

**Polygonaceae, Buckwheat Family**
Persian knotweed (*Polygonum argeocoleon*)
Common knotweed (*Polygonum aviculare*)
Willow smartweed (*Polygonum lapathifolia*)
Curly dock (*Rumex crispus*)

**Portulaceae, Purslane Family**
Purslane (*Portulaca oleracea*)

**Primulaceae, Primrose Family**
Scarlet pimpernel (*Anagallis arvensis*)

**Rosaceae, Rose Family**
India hawthorn (*Rhaphiolepis indica*)
Cultivated rose (*Rosa chinensis*)
Salicaceae, Willow Family
Fremont cottonwood (*Populus fremontii*)
Black willow (*Salix gooddingii*)

Solanaceae, Nightshade Family
Tree tobacco (*Nicotiana glauca*)*

Tamaricaceae, Tamarisk Family
Salt cedar (*Tamarix ramosissima*)*

Zygophyllaceae, Caltrop Family
Puncture vine (*Tribulus terrestris*)*

Monocotyledones, Monocots

Arecaeeae, Palm Family
Mexican fan palm (*Washingtonia robusta*)*

Cyperaceae, Sedge Family
Tall umbrella sedge (*Cyperus eragrostis*)

Poaceae, Grass Family
Slender wild oat (*Avena barbata*)
Wild oat (*Avena fatua*)
Ripgut brome (*Bromus diandrus*)
Soft chess (*Bromus hordeaceus*)
Red brome (*Bromus madritensis ssp. rubens*)
Bermuda grass (*Cynodon dactylon*)*
Hairy crab grass (*Digitaria sanguinalis*)*
Barn yard grass (*Echinochloa crus-galli*)*
Foxtail barley (*Hordeum murinum ssp. leporinum*)*
Mexican sprangletop (*Leptochloa fusca ssp. uninervia*)
Deergrass (*Mulhenbergia rigens*) (Planted)
Mediterranean schismus (*Schismus barbatus*)*
Green bristle grass (*Setaria viridis*)*
Mexican feather grass (*Stipa tenuissima*)