Biological Technical Report and MSHCP Consistency Analysis for the Nichols Ranch Project

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September 2018

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ACRONYMS, ABBREVIATIONS, AND GLOSSARY OF TERMS

BLM	United States Bureau of Land Management
BMPs	Best Management Practices
BUOW	burrowing owl
CAGN	coastal California gnatcatcher
CBOC	California Burrowing Owl Consortium
CDFW	California Department of Fish and Wildlife
City	City of Lake Elsinore
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CRPR	California Rare Plant Rank
CWA	federal Clean Water Act
EIR	Environmental Impact Report
ESA	federal Endangered Species Act
FGC	Fish and Game Code
KBI	Kidd Biological, Inc.
MBTA	Migratory Bird Treaty Act
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
MSL	Mean Sea Level
NHD	National Hydrography Dataset
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
QCB	Quino checkerspot butterfly
RWQCB	Regional Water Quality Control Board
SKR HCP	Stephen's Kangaroo Rat Habitat Conservation Plan
U.S.	United States
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

USGS	United States Geological Survey
VCS	VCS Environmental
WDR	Water Discharge Requirement
WEAP	Worker Environmental Awareness Program
WQC	Section 401 Water Quality Certification

1.0 Introduction

On behalf of the Nichols Road Partners, LLC, VCS Environmental (VCS) prepared this Biological Technical Report, which incorporates the findings from field surveys conducted by VCS biologists, Kidd Biological, Inc. (KBI) biologists, and Kendall H. Osborne of Osborne Biological Consulting, from January 2017 through May 2018. VCS prepared this report for the 72.5-acre Nichols Ranch Project (Project) Site, which includes an approximately 34-acre area subject to active mining operations, and an approximately 38-acre undeveloped area. The area subject to mining operations, per approved City permits, is 45.5 acres, which is the area vested for mining activities and is excluded from and not subject to the requirements of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP); however, the remainder of the Project Site is within the MSHCP and subject to MSHCP requirements. Additionally, the Project will be required to build a portion of the MSHCP-Covered Nichols Road, located offsite and to the north of the Project Site.

1.1 Purpose and Approach

This report provides a summary of the conditions present during the 2017 and 2018 surveys, an assessment of the potential presence of sensitive biological resources, and an analysis of the potential impacts to those resources with implementation of the Project. The Project was designed to avoid Stovepipe Creek, a drainage that runs the length of the project. Only one bridge crossing will be constructed over the Creek. This crossing has been designed to completely avoid impacts to Waters of the U.S. and minimize impacts to Waters of the State. This report identifies the current biological resources present within the Project Site and Offsite Improvements area including habitat communities, jurisdictional waters, and the potential occurrence of listed and special status plant and wildlife species. The potential biological impacts in view of federal, state, and local laws and regulations are also identified in this report. While general biological resources are discussed, the focus of this assessment is on those resources considered to be sensitive. The report also recommends, as appropriate, Best Management Practices (BMPs), avoidance, minimization, and mitigation measures to reduce or avoid potential impacts. This report was prepared based upon results of a literature review and field surveys.

1.2 Terms

The following terms will be used throughout this document, are depicted on the attached Figure 1, and are defined as follows:

- Project Site: the 72.5-acre area associated with the property boundary.
- MSHCP Project Area: the approximately 27-acre area within the Project Site that is included in the MSHCP and subject to the requirements of the MSHCP (see Figure 1).

- MSHCP-Excluded Project Area: the approximately 45.5-acre area within the Project Site that is excluded from the MSHCP and not subject to the requirements of the MSHCP (see Figure 1).

- MSHCP-Excluded Survey Area: the approximately 11-acre area within the MSHCP-Excluded Project Area subjected to focused biological surveys of species covered under the MSHCP, primarily the undeveloped area outside of the active mining limits.

- Offsite Improvements/MSHCP-Covered Road Area: The 7.78-acre area north of the Project Site where the MSCHP-Covered Nichols Road and associated improvements will be built.

- Project Vicinity: intended to be a general term to describe the broader area surrounding the Survey Area (generally two miles).

1.3 Project Site Location

The Project Site is located along and mostly south of Nichols Road, east of and adjacent to Interstate 15, west of El Toro Road, and north of Temescal Canyon High School in the City of Lake Elsinore, Riverside County, California. The Project Site is regionally accessible from Interstate 15 at Nichols Road (Figure 2, Regional Location Map; Figure 3, Vicinity Map).

The Offsite Improvements are within, just north, and just south of the existing Nichols Road alignment (Figure 3).

2.0 Project Description

The Project consists of commercial, low-medium residential, circulation, recreational open space, open space, drainage basins, and floodway zones within the 72.5-acre Project Site (Figure 4, Conceptual Land Use Plan). The Project will include the realignment of Nichols Road of which existing segments of the road are outside the current right of way.

The Project will consist of the following primary components:

- Commercial
  - 14.5 acres
- Low-Medium Residential
  - 31.1 acres
- Extended El Toro Road, Modified Nichols Road Alignment, Internal Roads and Circulation
  - 5.3 acres
- Recreational Open Space
  - 8.3 acres
- Open Space
  - 1.3 acres
- Drainage Basins
  - 5.5 acres
- Floodway
  - 6.5 acres

2.1 Existing Conditions

The Project Site consists of approximately 34 acres currently undergoing active construction/grading operations, within the existing active mining facility, and the remaining approximately 38 acres of undeveloped land. Adjacent uses to the Project Site include the active Nichols Road mining facility and undeveloped land to the north; residential development to the east; Temescal Canyon High School to the south; and Interstate 15 to the west. The Project Site includes an earthen drainage feature that conveys storm water flows entering the Project Site by two corrugated metal culverts located at the eastern boundary. The Project Site supports nine vegetation communities/land cover types. These vegetation communities/land cover types include non-native grassland, Riversidean sage scrub (RSS), disturbed Riversidean sage scrub, disturbed Riversidean sage scrub – Encelia dominant, Riversidean alluvial fan sage scrub, ruderal, ornamental, open streambed, and disturbed/developed (see Figure 5). Site photographs are attached as Appendix A.

South of the existing Nichols Road, the Project Site consists of gently rolling topography bisected by a channel that flows generally from the northeastern corner of the Project Site to the southwestern corner of the Project Site. Elevation on the Project Site ranges from approximately 1290 feet mean sea level (MSL) to 1400 feet MSL. North of Nichols Road the topography rises up

into steep hillsides to the northeast. Along the western portion of the Project Site north of Nichols road, the topography is generally flat with small rolling hills and similar grade to the road.

One special status plant species, Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*) was observed within the MSHCP-Covered Road Area north of Nichols Road during the 2017 focused plant surveys (the survey was conducted only for the MSHCP-Excluded Project Area and this was an incidental observation outside of the MSHCP-Excluded Project Area). Two special status animal species, coastal whiptail *(Aspidoscelis tigris* ssp. *stejnegeri*) and coast horned lizard (*Phrynosoma blainvillii*), were observed within the MSHCP-Excluded Project Area during the June 1, 2017 survey and focused plant surveys, respectively. There are several additional animal species with at least moderate potential to occur within the Project Site and Offsite Improvements Area based on the presence of suitable habitat. Based on focused surveys in 2017, the MSHCP-Excluded Survey Area was not occupied by Quino checkerspot butterfly (*Euphydryas editha quino*) [QCB] or coastal California gnatcatcher (*Polioptila californica californica*) [CAGN]. During burrowing owl [BUOW] surveys in 2018, CAGN were incidentally observed. However, since the 2017 focused CAGN surveys determined the MSHCP-Excluded Survey Area to be unoccupied and the incidental observations in 2018 support the condition of CAGN potentially dispersing through the MSHCP-Excluded Project Area to the MSHCP Project Area, any effects to CAGN are considered covered with MSHCP compliance and therefore less than significant.

The Project Site is known to contain both Waters of the United States and Waters of the State, including Riversidean alluvial fan sage scrub habitat. However, based on the project design, no impacts to Waters of the U.S. will occur and minimal impacts will occur to Waters of the State for one road crossing.

3.0 Regulatory Context

The following is a list of the relevant federal and state laws and regulations that apply to protecting plant communities, plants, wildlife, and water quality from impacts within the Project.

Agency/Organization	Laws/Regulations	Notes
Federal	Clean Water Act Section 401	No dredge or fill activities within Waters of the United States are anticipated. Therefore, a Regional Water Quality Control Board (RWQCB) Water Quality Certification would not be required. If minor changes to design were to result in impacts to the Ordinary High Water Mark (OHWM) of Stovepipe Creek, then a Section 401 Certification would be required.
	Clean Water Act Section 404	No dredge or fill activities within Waters of the United States are anticipated. If minor changes to design were to result in impacts to the OHWM of Stovepipe Creek, then a Section 404 permit from the United States Army Corps of Engineers (Corps) would be required.
	Clean Water Act Section 408	No facilities subject to Section 408 occur within the Project Site.
	Migratory Bird Treaty Act (MBTA)	Compliance with pre-construction surveys for nesting birds within 3 days prior to initiation of work.
	Endangered Species Act (ESA)	Focused surveys for CAGN within the MSHCP-Excluded Survey Area in 2017 determined that the MSHCP-Excluded Project Site was unoccupied by CAGN. During BUOW surveys in 2018, CAGN were incidentally observed. However, since the 2017 focused surveys determined the MSHCP-Excluded Survey Area to be unoccupied and the incidental observations in 2018 support the condition of CAGN potentially dispersing through the MSHCP-Excluded Project Area to the MSHCP Project Area, any effects to CAGN are considered covered with MSHCP compliance and therefore less than significant. CAGN Critical Habitat is mapped over a portion of the Project Site, however, Critical Habitat only affects Federal agency actions or federally funded or permitted activities. The Project

		does not require Federal agency actions or federally funded or permitted activities, therefore, the Project is not subject to the Critical Habitat designation.
State	Section 1600 of the Fish and Game Code	Project activities within Waters of the State require a Streambed Alteration Agreement pursuant to California Department of Fish and Wildlife (CDFW) Section 1600.
	Section 3503, 3503.5, and 3513 of the Fish and Game Code	These FGC sections offer protection of nesting birds, birds-of-prey, and migratory birds. Compliance will be maintained with a pre-construction survey for nesting birds (including birds-of-prey and migratory birds) within 3 days prior to initiation of work.
	Section 4150 of the Fish and Game Code	Prohibits incidental or deliberate "take" of non-game mammals, including bats. Potential impacts to bats will be avoided with a pre-construction survey conducted prior to initiation of work.
	Porter-Cologne Water Quality Control Act and WDR	Project activities within Waters of the State are subject to RWQCB jurisdiction and would require a WDR.
Local Plans	MSHCP	A portion of the Project is within an area excluded from the MSHCP (MSHCP-Excluded Project Area) and therefore is not subject to its requirements. The remaining portion of the Project Site (MSHCP Project Area) is within the MSHCP and subject to its requirements. The MSHCP Project Area is within Criteria Cells and Criteria Cell Groups, and partially within the MSHCP Burrowing Owl Survey Area. The MSHCP Project Area is not located within any other species survey areas.
	Stephen's Kangaroo Rat Habitat Conservation Plan (SKR HCP)	The Project Site occurs within the SKR HCP; therefore, the Project will be required to comply with applicable provisions of the SKR HCP (which includes payment of a mitigation fee).
City of Lake Elsinore	CEQA	Compliance with mitigation measures recommended in Section 8.0 of this report as adopted or amended by the CEQA lead agency in the certified CEQA document will be required.

	Lake Elsinore Municipal Code – Title 19, Chapter 19.04 [Habitat Conservation]	Addresses the implementation of the SKR HCP requiring all applicants for development permits within the boundaries of the plan area to pay an impact and mitigation fee. No development permit for real property located within the boundaries of the plan area shall be issued or approved without payment of the impact and mitigation fee and the submission of the biological survey as required by the code.
	Lake Elsinore Municipal Code – Title 16, Chapter 16.85 [Local Development Mitigation Fee for Funding the Preservation of Nature Ecosystems]	Establishes a local development mitigation fee as part of the City's implementation of the MSHCP. Fees are collected for any development within the City.
	Lake Elsinore Municipal Code – Title 14, Chapter 14.08	Intent of this chapter is to protect and enhance the water quality of City watercourses, water bodies, groundwater, and wetlands in a manner pursuant to and consistent with the Federal Clean Water Act.
	Lake Elsinore Municipal Code – Title 5, Chapter 5.116 [Palm Tree Preservation Program]	Removal of palm trees which exceed 5 feet in height (measures from the ground at the base of the trunk to the base of the crown) must obtain a palm tree removal permit prior to removal of the tree.

4.0 Survey and Methods

Studies of the biological resources associated with the Project began with a review of relevant available literature, followed by the onsite field surveys. Field surveys specifically investigating the MSHCP-Excluded Project Area started in January 2017 and were completed in June 2017. These biological surveys were conducted within the MSHCP-Excluded Survey Area and did not focus on the area of active mine activities in the western portion of the MSHCP-Excluded Project Area. Additional biological field assessments were conducted in December 2017 and February 2018 to assess the MSHCP Project Area and MSHCP-Covered Road Area (Offsite Improvements). Burrowing owl focused surveys for the areas covered by the MSHCP (i.e. the MSHCP Project Area and Offsite Improvements) were initiated in May 2018 and completed in July 2018. The purpose of all the surveys was to assess the existing habitat, assess onsite sensitive plant communities and jurisdictional waters, and to determine whether special status plant and wildlife species occur or could potentially occur within the Project Site and Offsite Improvements Area.

4.1 Literature Review

The study began with a review of relevant available literature on the biological resources within the Project Site and Offsite Improvements Area.

4.1.1 Sensitive Plant Communities

Sensitive plant communities (sensitive habitats) as defined below, are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. Sensitive habitats are often threatened with local extirpation and are therefore considered as valuable biological resources. Plant communities are considered "sensitive" by the California Native Plant Society (CNPS) and CDFW if they meet any of the following criteria listed below.

- The habitat is recognized and considered sensitive by CDFW, United States Fish and Wildlife Service (USFWS), and/or special interest groups such as CNPS.
- The habitat is under the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the CWA.
- The habitat is under the jurisdiction of the CDFW pursuant to Sections 1600 through 1612 of the California Fish and Game Code.
- The habitat is known or believed to be of high priority for inventory in the California Natural Diversity Database (CNDDB).
- The habitat is considered regionally rare.
- The habitat has undergone a large-scale reduction due to increased encroachment and development.
- The habitat supports special status plant and/or wildlife species (defined below).
- The habitat functions as an important corridor for wildlife movement.

Sensitive habitats are not afforded legal protection unless they support protected species, except for wetland habitats, which cannot be filled without authorization from the appropriate regulatory agencies. The most current version of CDFW's List of California Terrestrial Natural Communities indicates which natural communities are sensitive given the current state of the California classification (CDFW 2018a).

4.1.2 Critical Habitat

The USFWS's online service for information regarding Threatened and Endangered Species Final Critical Habitat designation within California was reviewed to determine if the Project is within any species' designated Critical Habitat (USFWS 2017a).

4.1.3 Special Status Plants and Wildlife

Species of plants and wildlife species are afforded "special status" by federal agencies, state agencies, and/or non-governmental organizations (e.g., USFWS, CDFW, and United States Forest Service[USFS]) because of their recognized rarity, potential vulnerability to extinction, and local importance. These species typically have a limited geographic range and/or limited habitat and are referred to collectively as "special status" species. Plant and wildlife species were considered "special status" species if they meet any of the following criteria.

- Taxa with official status under ESA, CESA, and/or the NPPA.
- Taxa proposed for listing under ESA and/or CESA.
- Taxa designated a species of special concern by CDFW.
- Taxa designated a state fully protected species by CDFW.
- Taxa identified as sensitive, unique or rare, by the USFWS, CDFW, USFS, and/or the United States Bureau of Land Management (BLM).
- Plants that meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
    - Species considered by CNPS and CDFW to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1A, 1B and 2) (CNPS 2018). A majority of the CRPR 3 and CRPR 4 plant species generally do not qualify for protection under CESA and NPPA.
    - Species that may warrant consideration on the basis of local significance or recent biological information.
    - Some species included on the CNDDB Special Plants, Bryophytes, and Lichens List (CDFW 2018h).
- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Available literature and databases were reviewed regarding sensitive habitats and special status plant and wildlife species. Special status plant and wildlife species that have the potential to occur within the immediate region of the Project were identified. Several agencies, including the USFWS, CDFW, and CNPS publish lists of particular taxa (species and subspecies) and the associated level of protection or concern associated with each. Reviewed and consulted literature and databases focused on the Project, and included the following sources listed below:

- The CNDDB, a CDFW species account database that inventories status and locations of rare plants and wildlife in California, was used to identify any sensitive plant communities and special status plants and wildlife that may exist within a two-mile radius of the Project. A CNDDB search was performed assessing a two-mile radius around the Project (CDFW 2018g). CNDDB records are generally used as a starting point when determining what special status species, if any, may occur in a particular area. However, these records may be old, lack data not yet entered, and do not represent all the special status species that could be in that particular area.
- A map of USFWS critical habitat to determine species with critical habitat mapped in the general vicinity of the Project (USFWS 2018).
- Online CNPS Inventory of Rare and Endangered Plants of California (CNPS 2018). A search for the USGS 7.5-Minute Topographic Map Lake Elsinore Quadrangle within a range of 1,200 feet to 1,500 feet elevation provided information regarding the distribution and habitats of special status vascular plants in the vicinity of the Project.
- Pertinent maps, scientific literature, websites, and regional flora and fauna field guides.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the Project Site and Offsite Improvements Area, as well as the surrounding area (please refer to Figures 6 and 7). Although the inventory list of special status plant and wildlife species was not exhaustive of all species that might be of concern for the Project, it provided a wide range of species that are representative of the wildland habitats in the area. Species occurrence and distribution information is often based on documented occurrences where opportunistic surveys have taken place; therefore, a lack of records does not necessarily indicate that a given species is absent from the Project Site and Offsite Improvements area.

4.2 Biological Surveys

4.2.1 General Field Survey

Field surveys were performed on June 1, 2017, December 8, 2017, and February 1, 2018 by VCS biologists Erin Hayes and Carla Marriner to assess and map vegetation communities and conduct a general plant and wildlife survey. The purpose of the field surveys was to ascertain general site conditions and identify habitat areas that could be suitable for special status species.

During the field surveys, the biologists assessed the existing habitat within the Project Site including the MSHCP-Excluded Survey Area and the MSHCP Project Area, and the Offsite

Improvements area. The biologists paid special attention to those habitat areas that had the potential to provide suitable habitat for special status plant and wildlife species. Aerial photographs and maps were used to assist in the delineation of plant community boundaries. Following field surveys, the plant communities were digitized and a vegetation map was prepared.

Plant species were identified using plant field and taxonomical guides, such as The Jepson Manual: Vascular Plants of California, second edition (Baldwin et al. 2012). All plant species encountered during the field survey were identified and recorded in field notes (except for some ornamental plant species). An effort was made to determine presence or absence of potentially suitable habitat for those plants that could not be identified at that time.

General wildlife surveys were conducted on foot and with binoculars within the MSHCP-Excluded Survey Area, the MSHCP Project Area, and the Offsite Improvements area. The location of the Project Site is within the general distributional range of several special status vertebrate species and a few invertebrate species. The purpose of the general survey was to note those species observed, ascertain general site conditions, and identify habitat areas that could be suitable for special status wildlife species.

All wildlife species encountered visually or audibly during the field survey were identified and recorded in field notes. Biologists also recorded signs of wildlife species including wildlife tracks, burrows, nests, scat and remains. Binoculars were used to aid in the identification of observed wildlife. Wildlife field guides and photographs were used to assist with identification of wildlife species during the field survey, as necessary. A general survey cannot be used to conclusively determine presence or absence of a species; therefore, assessments of presence/absence and potential for occurrence were made based on presence of suitable habitat to support the species, diagnostic signs (burrows, scat, tracks, vocalizations, and nests), known records or occurrence within the area, known distribution and elevation range, and habitat utilization from the relevant literature.

4.2.2 Burrowing Owl Habitat Assessment and Focused Surveys

A burrowing owl (*Athene cunicularia*) [BUOW] habitat assessment was performed during the general biological surveys on June 1, 2017 and December 8, 2017 by VCS biologists Erin Hayes and Carla Marriner to assess whether potentially suitable habitat for BUOW was present within the MSHCP-Excluded Survey Area, the MSHCP Project Area, and the Offsite Improvements area, and a 500-foot buffer surrounding those areas. Follow up focused burrowing owl surveys were performed May through July 2018. The habitat assessment and focused surveys were conducted pursuant to the MSHCP Burrowing Owl Survey Instructions (County of Riverside EPD, 2006). During the surveys, the biologists paid special attention to those habitat areas that appeared to provide suitable habitat for BUOW. Soil conditions, topography, vegetative communities, wildlife, and habitat quality were documented.

All encountered burrows or structure entrances were checked for the presence of BUOW, molted feathers, cast pellets, prey remains, eggshell fragments, tracks, or excrement at or near a burrow entrance. Natural or man-made structures and debris piles that could support BUOWs were also surveyed.

The methods used to detect and identify BUOW included observation of key signs identified by the California Burrowing Owl Consortium (CBOC) such as sight, scat, tracks, burrows, nests, and calls. All wildlife species encountered visually or audibly during the field surveys were identified and recorded in field notes. Binoculars were used to aid in the identification of observed wildlife. Photographs were taken to document existing conditions within the Infrastructure Improvement Area and the surrounding vicinity.

Prior to the field surveys, available literature and databases were reviewed regarding sensitive habitats and wildlife species. VCS reviewed and consulted literature and databases focused on Riverside County, California, including the CNDDB and USFWS Critical Habitat. The focused survey methodology is documented in more detail in the focused burrowing owl survey report (Appendix B).

4.2.3 Quino Checkerspot Butterfly Survey

A habitat assessment and focused field surveys for federally endangered QCB were conducted by Ken H. Osborne of Osborne Biological Consulting within the MSHCP-Excluded Survey Area. The QCB survey methodology is detailed in the QCB survey report (Appendix C). The QCB habitat assessment was conducted on January 24, 2017 to identify and characterize potential QCB habitat using definitions prescribed by USFWS (2014) guidelines. The focused field surveys were conducted on fourteen dates from February 15 to May 10, 2017 following USFWS (2014) guidelines.

4.2.4 Coastal California Gnatcatcher Survey

Breeding season protocol surveys for the federally threatened CAGN were conducted by KBI within the MSHCP-Excluded Survey Area. The CAGN survey methodology is detailed in the CAGN survey report (Appendix D). Surveys were conducted in accordance with guidance from USFWS CAGN survey protocol to cover breeding periods (USFWS 2013). A total of six breeding season protocol surveys for the CAGN were conducted by USFWS permitted biologists, Nina Jimerson-Kidd (Federal Permit #TE-036550-4) and Kelly Rios (Federal Permit #TE-018909-5), between March 16 and April 21, 2017.

4.2.5 Rare Plant Survey

Focused rare and sensitive plant surveys were conducted in spring 2017 by KBI within the MSHCP-Excluded Survey Area. The rare plant survey methodology is detailed in the special status plant

species survey report (Appendix E). A total of two surveys occurred on March 23, 2017 and May 4, 2017 and were conducted by David Bramlet.

4.3 Jurisdictional Waters

The following sources were reviewed to determine the potential presence or absence of jurisdictional streams/drainages, wetlands, and their location within the watersheds associated with the Survey Area, and other features that might contribute to federal or state jurisdictional authority located within watersheds associated with the Project:

- National Wetlands Inventory (NWI) maps (USFWS 2017c). The NWI database indicates potential wetland areas based on changes in vegetation patterns as observed from satellite imagery. This database is used as a preliminary indicator of wetland habitats because the satellite data are not precise;
- USGS National Hydrography Dataset (NHD). Provides the locations of "blue-line" streams as mapped on 7.5-Minute Topographic Map coverage;
- Aerial Imagery (Google Earth©) (Google 2017;
- USGS 7.5-Minute Topographic Maps; and
- Natural Resource Conservation Service (NRCS) Soil Survey.

4.4 Wetland Delineation

A wetland delineation within the MSHCP-Excluded Survey Area, MSHCP Project Area, and Offsite Improvements area was conducted by VCS biologists Wade Caffrey and Carla Marriner on August 11, 2016. The results of the delineation were confirmed in the field by Erin Hayes and Carla Marriner on June 1 and December 8, 2017, to determine the current conditions. Sensitive areas were delineated using a handheld Global Positioning System device (ESRI Arc Collector App connected to a Bad Elf GNSS Surveyor receiver). All areas with depressions or drainages were evaluated for the presence of Waters of the United States (U.S.), including jurisdictional wetlands. Each area was inspected according to the Corps delineation guidelines, and streambeds/wetland boundaries of CDFW and RWQCB. Furthermore, prior to the site visit, the delineators reviewed the Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants report (Brady and Vyverberg 2013). All drainages encountered were also examined for connectivity or lack of connectivity to other hydrologic features. Dominant vegetation within the drainages or adjacent to the drainages were identified and recorded. Other references used to determine jurisdictional areas included vegetation and topographic maps of the Survey Area and a recent aerial photograph.

5.0 Results

5.1 Vegetation Communities

5.1.1 Vegetation Communities

The vegetation communities and habitat conditions were inspected to confirm presence and habitat quality of the vegetation found within the Project Site and Offsite Improvements area. Where appropriate, descriptions of vegetation communities from the Manual of California Vegetation (Sawyer 2008) were utilized. Any deviations from standard vegetation classifications were made on best professional judgment when areas did not fit into a specific habitat description provided by the Manual.

Plant communities were mapped using field observations and utilizing aerial imagery in Google Earth. Vegetation mapping and acreages for each vegetation community/land cover type on-site are listed below in Table 1. Please refer to Figure 5 to view the vegetation on-site. Representative photographs of the Project Site and Offsite Improvements area are included as Appendix A.

Table 1
Vegetation Communities/Land Cover

Vegetation Communities	Project Site Acreage			Offsite Improvements Acreage	Total (Onsite + Offsite)
	MSHCP Project Area	MSHCP-Excluded Project Area	Total Project Site		
Non-native grassland	5.21	6.58	**11.79**	0.32	**12.11**
Ruderal	18.72	0.14	**18.86**	2.25	**21.11**
Riversidean Sage Scrub	0.63	1.02	**1.65**	0	**1.65**
Disturbed Riversidean Sage Scrub	0.31	0.99	**1.30**	0.18	**1.48**
Riversidean Alluvial Fan Sage Scrub	1.07	0.61	**1.68**	0	**1.68**
Disturbed Riversidean Sage Scrub – Encelia dominant	0	0.14	**0.14**	1.59	**1.73**
Open Streambed	0.14	0	**0.14**	0	**0.14**
Disturbed/Developed	0.54	35.93	**36.47**	3.44	**39.91**
Ornamental	0.38	0.09	**0.47**	0	**0.47**
TOTAL	**27.00**	**45.50**	**72.50**	**7.78**	**80.28**

5.1.1.1 Non-native grassland

A total of 11.79 acres of non-native grassland habitat was mapped within the Project Site and 0.32 acre within the Offsite Improvements. The non-native grassland habitat is characterized by weedy non-native annual herbaceous species with a low density of weedy native species intermixed. Much of the non-native grassland habitat appears to be subject to annual disking. Non-native species within the habitat include red-stem filaree (*Erodium cicutarium*), cheeseweed (*Malva parviflora*), Russian thistle (*Salsola tragus*), London rocket (*Sisymbrium irio*), shortpod mustard (*Hirschfeldia incana*), tumble pigweed (*Amaranthus albus*), oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis*), cheatgrass (*Bromus tectorum*), and false barley (*Hordeum murinum*). Native species within the habitat include doveweed (*Croton setigerus*), common fiddleneck (*Amsinckia intermedia*), and vinegar weed (*Trichostema lanceolatum*). Occasional small California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), and California buckwheat (*Eriogonum fasciculatum*) were observed within the habitat.

5.1.1.2 Ruderal

A total of 18.86 acres of ruderal land and associated plant species was observed within the Project Site and 2.25 acres within the Offsite Improvements area. The ruderal land type was identified within the southwestern portion of the Site as well as north of and adjacent to the current Nichols Road. The area includes primarily weedy, non-native species such as Russian thistle and mustard, and appears to be regularly disturbed by mowing, disking, or other vegetation maintenance activities. Occasional native species within the land type included small scattered grassland pinebush, vinegar weed, and doveweed. This area mostly lacks non-native grasses, which is one main distinguishing factor from the non-native grassland.

5.1.1.3 Riversidean Sage Scrub

A total of 1.65 acres of Riversidean sage scrub was identified within the Project Site. The Riversidean sage scrub is found primarily on the gently sloping and steep banks adjacent to the drainage channel as well as in a small area south of the drainage feature. Species observed within this habitat on-site include California sagebrush, California buckwheat, brittlebush, deerweed (*Acmispon glaber*), white sage (*Salvia apiana*), jimson weed (*Datura wrightii*), and grassland pinebush (*Ericameria palmeri* var. *pachylepis*). The understory was comprised of mostly herbaceous species including native dove weed as well as weedy, non-native red-stem filaree, shortpod mustard, and brome grasses.

5.1.1.4 Disturbed Riversidean Sage Scrub

A total of 1.30 acre of disturbed Riversidean sage scrub was identified within the Project Site and 0.18 acre within the Offsite Improvements area. The disturbed Riversidean sage scrub is found in areas adjacent to the drainage channel on the gently sloping banks as well as slopes somewhat removed from the drainage channel. Vegetation observed within this habitat is predominantly a high density of weedy native and non-native annual herbaceous species such as doveweed, red-stem filaree, shortpod mustard, and brome grasses with sparse and small Riversidean sage scrub shrubs throughout including California sagebrush, California buckwheat, brittlebush, grassland

pinebush, and deerweed. It appears the areas of disturbed Riversidean sage scrub may experience regular disturbance, such as annual disking explaining why the shrubs are small and sparse.

5.1.1.5 Disturbed Riversidean Sage Scrub – Encelia dominated

A total of 0.14 acre of disturbed Riversidean sage scrub – Encelia dominated was mapped within the Project Site and 1.59 acres within the Offsite Improvements area. This habitat is located on the slopes found along the northern edge of the Offsite Improvement area within the future road right-of-way. Vegetation observed within the habitat consists of high density weedy, non-native mustard, as well as a low to moderate density of scattered native brittlebush. Additional native species in this habitat include valley cholla (*Cylindropuntia californica* var. *parkeri*), doveweed, and California buckwheat.

5.1.1.6 Riversidean Alluvial Fan Sage Scrub

A total of 1.68 acre of Riversidean alluvial fan sage scrub was mapped within the Project Site. This habitat is associated with the sandy/gravely bottomed ephemeral wash within the channel that bisects the Project Site. Dominant species in this habitat include scalebroom (*Lepidospartum squamatum*) and California buckwheat. Additional species observed within the habitat include brittlebush, California sagebrush, deerweed, and white sage. The understory was comprised of mostly weedy non-native herbaceous species such as red-stem filaree, shortpod mustard, and brome grasses.

5.1.1.7 Open Streambed

A total of 0.14 acre of open streambed are located within the downstream portion of the on-site drainage channel. The open streambed is comprised of sandy wash substrate and is essentially void of vegetation. This area is wider than other section of open sandy wash; there are narrow sections of open sandy wash that are included in the Riversidean alluvial fan sage scrub habitat since the width is small and is considered part of that habitat type.

5.1.1.8 Disturbed/Developed

A total of 36.47 acres of the land within the Project Site and 3.44 acres within the Offsite Improvements area is considered disturbed/developed. Disturbed/developed habitat includes areas of bare ground (e.g. dirt roads), paved roads, active mine activities (construction/grading), and other built facilities.

5.1.1.9 Ornamental

A total of 0.47 acre of ornamental vegetation was identified within the Project Site. The ornamental vegetation includes a few trees along the eastern boundary including regrowth of Peruvian peppertrees (*Schinus molle*) near Nichols Road and the northeastern corner of the Site, the canopy of adjacent landscaping trees including eucalyptus (*Eucalyptus* sp.), pine (*Pinus* sp.), palo verde (*Parkinsonia* sp.), and Mexican fan palm (*Washingtonia robusta*), as well as in the

southeastern portion of the site including Peruvian peppertrees, eucalyptus, olive (*Olea europaea*), tamarisk (*Tamarix aphylla*), jacaranda (*Jacaranda* sp.), and African sumac (*Rhus lancea*).

5.1.2 Critical Habitat

Under the ESA, the federal government is required to designate "critical habitat" for any species it lists under the ESA. Federal agencies are prohibited from authorizing, funding, or carrying out actions that "destroy or adversely modify" critical habitats. As stated by USFWS, “Critical habitat designations affect only Federal agency actions or federally funded or permitted activities. Critical habitat designations do not affect activities by private landowners if there is no Federal “nexus”—that is, no Federal funding or authorization.”

The USFWS’s online service for information regarding Threatened and Endangered Species Final Critical Habitat designation within California (USFWS 2018) was reviewed to determine if the Project occurs within any species’ designated Critical Habitat. Portions of the Project Site (particularly the MSHCP-Excluded Project Area) and the Offsite Improvements Area occur within designated Coastal California Gnatcatcher Critical Habitat (Figure 6). However, there is no federal nexus onsite due to the lack of federal permits or funding, therefore the project is not required to address Critical Habitat.

5.1.3 Special Status Vegetation Communities

No special-status vegetation communities designated by CDFW were reported in the CNDDB within 2 miles of the Survey Area. The Special Status Plant Species Survey report notes three special status plant communities onsite including Riversidean sage scrub, Riversidean alluvial fan sage scrub, and ephemeral wash. The areas of exposed sandy ephemeral wash are included within the habitat designation of Riversidean alluvial fan sage scrub, and open streambed in this report.

5.2 Plants

5.2.1 Plant Species Observed

The plant species observed within the Project Site and Offsite Improvements area during the June 1, 2017, December 8, 2017, and February 1, 2018 surveys totaled 51 species and are listed in Appendix F of this report.

5.2.2 Sensitive Plant Species Observed

Focused surveys for special status plant species were conducted in spring 2017 within the MSHCP-Excluded Survey Area only. No sensitive plant species were observed within the MSHCP-Excluded Survey Area. One sensitive plant species, Robinson’s peppergrass (CRPR ranking 4.3),

was observed just north of the Project Site, within the Offsite Improvements area, during the focused surveys.

5.2.3 Sensitive Plant Species with Potential to Occur

Sensitive plant species include federally or state listed threatened or endangered species, those species listed on the California Native Plant Society's rare, endangered plant inventory. Species with the potential to occur onsite were analyzed based on distribution, habitat requirements, and existing site conditions, and are listed in Appendix H. No sensitive plant species were observed within the MSHCP-Excluded Survey Area during the focused plant surveys in 2017. One sensitive plant species, Robinson's peppergrass, was observed just north of the Project Site (north of Nichols Road) within the Offsite Improvements Area during the focused plant surveys. No additional sensitive plant species were observed within the MSHCP Project Area in the southern portion of the Project Site during the general survey of the area performed on December 8, 2017. While suitable habitat exists onsite for many of the plant species listed in Appendix H, there is relatively low potential for occurrence based on the lack of observation during the 2017 focused plant surveys (in the MSHCP-Excluded Survey Area) and disturbed nature within a majority of the site.

5.3 Wildlife

5.3.1 Wildlife Species Observed or Detected

The wildlife species or signs thereof observed within the Project Site and Offsite Improvements Area during the June 1, 2017, December 8, 2017, and February 1, 2018 surveys are listed in Appendix G of this report.

5.3.2 Sensitive Wildlife Species Observed

Two special status animal species, coastal whiptail and coast horned lizard, both California species of special concern, were observed during the June 1, 2017 survey and focused plant surveys, respectively, within the MSHCP-Excluded Survey Area. Based on focused surveys in 2017, the MSHCP-Excluded Survey Area was not occupied by QCB or CAGN. During burrowing owl surveys in 2018, CAGN were incidentally observed. However, since the 2017 focused surveys determined the MSHCP-Excluded Survey Area to be unoccupied and the incidental observations in 2018 support the condition of CAGN potentially dispersing through the MSHCP-Excluded Project Area to the MSHCP Project Area, any effects to CAGN are considered covered with MSHCP compliance.

The MSHCP Project Area and Offsite Improvements Area are not subject to QCB and CAGN focused surveys but are subject to BUOW focused surveys since the areas are included within the MSHCP and the only additional wildlife surveys required pursuant to the MSHCP are BUOW focused surveys. Focused BUOW surveys were initiated in May 2018 (based on the presence of

suitable habitat within the MSHCP Project Area and MSHCP-Covered Road Area) and completed in July 2018. No BUOW or their signs were observed during the focused BUOW surveys.

5.3.3 Sensitive Wildlife Species with Potential to Occur

Sensitive wildlife species include the following classifications: federally or state listed threatened or endangered species, California species of special concern, fully protected, and protected species (as designated by CDFW). Species with the potential to occur onsite were analyzed based on distribution, habitat requirements, and existing site conditions.

Two special status animal species, coastal whiptail and coast horned lizard both California species of special concern, were observed within the MSHCP-Excluded Survey Area during the June 1, 2017 survey and focused plant surveys, respectively. Based on the QCB focused surveys, the MSHCP-Excluded Survey Area is not considered to be occupied by QCB. As noted above, the 2017 CAGN focused surveys did not identify any CAGN within the MSHCP-Excluded Survey Area. Incidental sightings are noted above.

Several special status animal species have a moderate potential to occur within the Project Site and Offsite Improvements Area within their respective suitable habitats as listed in Appendix H. Most of these species are covered species under the MSHCP. Only two wildlife species with at least moderate potential to occur are not covered by the MSHCP: California glossy snake (*Arizona elegans occidentalis*) and coast patch-nosed snake (*Salvadora hexalepis virgultea*), both CDFW Species of Special Concern.

5.3.4 Burrowing Owl

Suitable BUOW habitat is present within the Project Site and Offsite Improvements Area and surrounding 500 feet. No BUOWs were observed within the Project Site or Offsite Improvements Area during the June 1, 2017, December 8, 2017, and February 1, 2018 surveys. A portion of the MSHCP Project Area is located within the MSHCP BUOW Survey Area. Since there is suitable habitat onsite, focused burrow and BUOW surveys were performed in 2018 within the portion of the site subject to MSHCP BUOW surveys. Focused BUOW survey were initiated in May 2018 and completed in July 2018. No BUOWs or signs thereof were observed during any of the surveys within the Project Site, Offsite Improvements Area and surrounding 500-foot survey buffer, and it was determined the areas were not occupied by BUOW. Additionally, since there is suitable habitat for BUOW onsite a pre-construction survey will be performed prior to construction within areas of suitable habitat.

5.4 Regional Connectivity/Wildlife Movement/Nesting/Maternity Roost

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated “islands” of wildlife habitat. Corridors effectively act as links

between different populations of a species. An increase in a population's genetic variability is generally associated with an increase in a population's health.

Corridors mitigate the effects of habitat fragmentation by:

- Allowing wildlife to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity;
- Providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and
- Serving as travel routes for individual wildlife species as they move within their home ranges in search of food, water, mates, and other needs (Fahrig and Merriam 1985, Simberloff and Cox 1987, Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories:

- Dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions);
- Seasonal migration; and
- Movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover).

5.4.1 Wildlife Movement within and near the Project Site

The Project Site and Offsite Improvements area are located near and on the edge of a large contiguous area of open space; the Project Site includes an incised drainage with native sage scrub habitat present. Therefore, there is the potential that the Project Site provides some value in very local wildlife movement, such as dispersal and foraging. However, the Project Site is also surrounded by residential and school development to the south and east, the I-15 freeway to the west, and intensive mining operations to the north. The Offsite Improvements Area is largely developed and located within and along a well-used paved road. These conditions decrease the likelihood for the Project Site and Offsite Improvements Area to function as a regional movement corridor or as a large-scale wildlife movement area.

5.4.2 Bird Nesting and Bat Maternity Roost Sites

The Project Site contains habitat including trees and shrubs that could support nesting birds and/or roosting bats, as common to any location containing such features. The Offsite Improvements Area contains habitat that could support nesting birds. While a focused survey for bird nesting and bat roosting was not conducted at the time of the general biological survey, no active bird nests or bat maternity roosts were incidentally observed during the general biological surveys.

5.5 Soils Mapping

The United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey lists 8 soil types (series) for the Project Site and Offsite Improvements Area (Figure 8). The soil types within the Project and Offsite Improvements Area are predominantly gravelly and rocky loam and are excerpted from the Web Soil Survey and described below. None of these soil types are considered MSHCP sensitive soils.

Arbuckle gravelly loam, 2 to 8 percent slopes
The Arbuckle series consists of very deep, well drained soils that formed in alluvial materials from mainly conglomerate and metasedimentary rocks. Arbuckle soils are on low terraces, and have slopes of 0 to 75 percent.

Arbuckle gravelly loam, 8 to 15 percent slopes
The Arbuckle series consists of very deep, well drained soils that formed in alluvial materials from mainly conglomerate and metasedimentary rocks. Arbuckle soils are on low terraces, and have slopes of 0 to 75 percent.

Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
The Cieneba series consists of very shallow and shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. Cieneba soils are on hills and mountains and have slopes of 9 to 85 percent.

Cortina gravelly loamy sand, 2 to 8 percent slopes
The Cortina series consists of very deep, somewhat excessively drained soils on alluvial fans and floodplains. These soils formed in gravelly alluvium from mixed rock sources. Slope ranges from 0 to 15 percent.

Escondido fine sandy loam, 8 to 15 percent slopes, eroded
Typically, Escondido soils have dark brown slightly acid very fine sandy loam A horizons and neutral very fine sandy loam B2 horizons over hard metamorphic bedrock at depths of about 29 inches.

Garretson gravelly very fine sandy loam, 2 to 8 percent slopes
The Garretson series is a member of the fine-loamy, mixed, nonacid, thermic family of Typic Xerorthents. Typically, Garretson soils have brown and yellowish brown, slightly acid, gravelly very fine sandy loam and gravelly loam A horizons and yellowish brown, brown and grayish brown, slightly acid and neutral, gravelly loam C horizons.

Hanford coarse sandy loam, 2 to 8% slopes:
The Hanford series consists of very deep, well drained soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains and alluvial fans and have slopes of 0 to 15 percent.

Lodo rocky loam, 25 to 50 percent slopes, eroded
The Lodo series consists of shallow, somewhat excessively drained soils that formed in material weathered from hard shale and fine-grained sandstone. Lodo soils are on uplands and have slopes of 5 to 75 percent.

5.6 Jurisdictional Areas

5.6.1 Waters of the United States

The Project Site and Offsite Improvements Area were assessed for jurisdictional wetland and non-wetland Waters of the United States. To determine the presence of a wetland, three indicators are required: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. The methodology published in the United States Army Corps of Engineers 1987 Wetland Delineation Manual and the Arid West Supplement sets the standards for meeting each of the three indicators, which normally require that 50 percent or more dominant plant species typical of a wetland, soils exhibiting characteristics of saturation, and hydrological indicators be present. Projects with impacts to Waters of the United States are regulated under Sections 401 and 404 of the Clean Water Act through the Corps and RWQCB.

Jurisdictional non-wetland Waters of the United States are typically determined through the observation of an Ordinary High Water Mark (OHWM), which is defined as the "line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Projects with impacts to Waters of the United States are regulated under Sections 401 and 404 of the Clean Water Act also by connectivity with adjacent watersheds.

Stovepipe Creek is an ephemeral drainage that bisects the northeastern portion of the Project Site and will be considered jurisdictional by the USACE and RWQCB, as identified in Figure 9. This drainage contains approximately 0.74 acre of Waters of the United States. No signs of wetlands were observed within Stovepipe Creek, therefore, the entire drainage is considered non-wetland Waters of the United States (U.S.). There are no Waters of the U.S. within the Offsite Improvements Area.

Table 2
Waters of the United States

Feature	Total Acreage
Non-wetland Waters of the US	0.74

5.6.2 Waters of the State

CDFW and RWQCB have jurisdiction over Waters of the State (California Fish and Game Code §§1600 et seq.; California Code of Regulations, Title 14, §720; Porter-Cologne Water Quality Control Act). Section 1602 of the California Fish and Game Code (FGC) applies to natural rivers, streams, and lakes:

> "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake"

CDFW defines a stream as "a body of water that flows perennially or episodically and that is defined by the area in which water currently flows, or has flowed, over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators" (Brady and Vyverberg 2013). CDFW regulates wetland areas only to the extent that those wetlands are part of a stream, river, or lake as defined by the CDFW. Based on the collective results of these investigations, areas that exhibited physical or biological indicators determined to be within the jurisdiction of CDFW were mapped.

To determine the areas where waters flow or have flowed and the width of its course, the delineators conducted a site visit to walk the entire site; reviewed previous biological, cultural, and construction reports on the site; and reviewed historical aerial imagery. Based on the collective results of these investigations, areas that exhibited physical or biological indicators determined to be within the jurisdiction were mapped. The VCS delineators concluded that the site does exhibit the characteristics of a stream, river, or lake, and therefore Waters of the State are present, which are shown on Figure 9.

Stovepipe Creek would be considered jurisdictional by CDFW. Additionally, RAFSS habitat was observed within Stovepipe Creek and along the adjacent banks, as shown in Figures 5 and 9. CDFW claims jurisdiction over RAFSS, therefore, this area has been included as Waters of the State. This drainage contains approximately 5.42 acres of Waters of the State, with the RAFSS habitat totaling 1.68 acres of that 5.42 acres. Acreages of Waters of the State are further detailed in Table 3 below, specifically identifying the vegetation communities present within Waters of the State. There are no Waters of the State within the Offsite Improvements Area.

Table 3
Waters of the State

Feature*	Total Acreage
Total Waters of the State	5.42
Riversidean Alluvial Fan Sage Scrub	1.68

5.6.3 Riparian/Riverine Areas and Vernal Pools

Section 6.1.2 of the MSHCP states that "riparian/riverine resources are lands which contain habitat dominated by trees, shrubs, persistent emergent [wetland plant species], or emergent mosses and lichens, which occur close to or which depend upon moisture from a nearby freshwater source; or areas with freshwater after flow during all or a portion of the year" and "Vernal pools are seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season." To determine the areas where "Riparian/Riverine Areas and Vernal Pools" are present, the delineators conducted a site visit to walk the entire site and reviewed historical aerial imagery. Based on the collective results of these investigations, areas that showed evidence of riparian/riverine resources were determined to be subject to the MSHCP and were mapped.

Riparian/Riverine Areas

Approximately 2.26 acres of riparian/riverine areas are located within the MSHCP Project Area as depicted on Figure 10. No riparian/riverine areas are located within the Offsite Improvements area.

Table 4
Riparian/Riverine within the Project Site

Feature	Total Acreage
Riverine	2.26
Riparian	0

Vernal Pools/Seasonal Depressions

No vernal pools or seasonal depressions were observed within the Project Site or Offsite Improvements area. Therefore, no additional impacts to the baseline condition would result from the Project.

6.0 Project Impacts

This section discusses potential impacts to biological resources that could result from implementation of the proposed Project. Implementation of the proposed Project has the potential to directly and/or indirectly impact sensitive plant species, sensitive animal species, and jurisdictional waters of the U.S. and State.

Biological resources may be either directly or indirectly impacted by a project. Direct and indirect impacts may be either permanent or temporary in nature. These impact categories are defined below.

- Direct impact: any loss, alteration, disturbance, or destruction of biological resources that would result from project-related activities is a direct impact. Examples include vegetation clearing, encroaching into wetlands, diverting natural surface water flows, and the loss of individual species and/or their habitats. Direct impacts are long term.

- Indirect impact: as a result of project-related activities, biological resources may also be affected in a manner that is not direct. Examples of indirect impacts include elevated noise, light, and dust levels, increased human activity, decreased water quality, erosion created by the removal of vegetation, and the introduction of invasive plants and unnatural predators (e.g. domestic cats and dogs). These indirect impacts may be both short term and long term in their extent.

- Permanent impacts: all impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.

- Temporary impacts: any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction, or removing vegetation and either allowing the natural vegetation to recolonize or actively revegetating the impact area.

The development footprint (including fuel modification zones) is considered the area of impact. The Recreation land use component includes the following categories, several of which will result in permanent impacts to habitat and are incorporated into the impact footprint shown on Figures 9 and 11:

- Open Space/Park - permanent impact
- Open Space with Fuel Modification - permanent impact
- Open Space - no impacts
- Bio-retention Basin - permanent impact

Under each section, potential impacts are discussed.

6.1 Potential Impacts to Vegetation Communities

Potential impacts to vegetation communities/land cover types due to implementation of the proposed Project includes the development footprint as shown in Figure 11, and as outlined below:

Table 5
Potential Impacts to Vegetation Communities

Vegetation Communities	Permanent Impacts				
	Project Site Impacts Acreage			Offsite Improvements Impacts Acreage	Total Impacts (Onsite + Offsite)
	MSHCP Project Area	MSHCP-Excluded Project Area	Total Project Site		
Non-native grassland	5.20	5.87	**11.07**	0.32	**11.39**
Ruderal	17.99	0.15	**18.14**	2.25	**20.39**
Riversidean Sage Scrub	0.15	0.23	**0.38**	0	**0.38**
Disturbed Riversidean Sage Scrub	0.08	0.14	**0.22**	0.18	**0.40**
Riversidean Alluvial Fan Sage Scrub	0	0.07	**0.07**	0	**0.07**
Disturbed Riversidean Sage Scrub – Encelia dominant	0	0.14	**0.14**	1.59	**1.73**
Open Streambed	0	0	**0**	0	**0**
Disturbed/Developed	0.53	35.77	**36.30**	3.44	**39.74**
Ornamental	0.38	0.09	**0.47**	0	**0.47**
TOTAL	24.33	42.46	**66.79**	7.78	**74.57**

Direct impacts to non-native grassland, ornamental, ruderal, and disturbed/developed vegetation/land cover types are considered less than significant because these habitats/land covers are common in the Project Site, Offsite Improvements Area, and/or surrounding vicinity and do not represent CNDDB or CDFW sensitive plant communities.

For direct impacts to Riversidean alluvial fan sage scrub it is expected that with the mitigation discussed in Section 8.1, the potential for significant direct impacts to this habitat will be reduced to below significance. For direct impacts to Riversidean sage scrub (including disturbed Riversidean sage scrub and disturbed Riversidean sage scrub – Encelia dominant), mitigation may be necessary as discussed in Section 8.1. In any case, impacts to this habitat is expected to be below significance.

Indirect impacts to plant communities result in secondary consequences. Development/excavation activities within the Project Site and Offsite Improvements Area could

result in indirect impacts to the vegetation communities surrounding the directly impacted areas. Examples of indirect temporary impacts to plant communities include the effects of fugitive dust created by construction activities and the spread of invasive species. With development, "edges" of vegetation communities may be exposed and more susceptible to invasion by invasive species (introduced by planted landscaping, seed dispersal from cars, people, and/or pets, and/or wind). Construction-related erosion, runoff, sedimentation, soil compaction, and alteration of drainage patterns that may affect plants by altering site conditions so that the location in which they are growing becomes unfavorable are prohibited by federal and state laws; compliance with the requirements under these state and federal laws will reduce the potential for significant indirect impacts to below significance.

Section 7.2 describes the avoidance measures to further reduce indirect impacts to the vegetation communities.

6.2 Potential Impacts to Special Status Plants

One species, Robinson's pepper-grass, was identified just north of the Project Site (north of Nichols Road) within the Offsite Improvements Area during the spring 2017 focused plant surveys. There were no other special status plant species identified within the MSHCP-Excluded Survey Area during the spring 2017 focused surveys. Robinson's pepper-grass has a CRPR ranking of 4.3, which means it is a watch list plant of limited distribution and "not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)". While Project implementation may impact this species, it is not considered significant based on the species' low CRPR ranking. There is low or very low potential for other special status plants to occur on the Project Site, therefore no significant direct and indirect impacts to special status plants are anticipated with Project implementation.

6.3 Potential Impacts to Critical Habitat

A portion of the Project Site and Offsite Improvements Area fall within CAGN Critical Habitat, however, the Project does not require Federal agency actions or federally funded or permitted activities, therefore, the Project is not subject to the Critical Habitat designation.

6.4 Potential Impacts to Special Status Wildlife

Two special status wildlife species, coastal whiptail and coast horned lizard both California species of special concern, were observed in the MSHCP-Excluded Survey Area. A majority of the habitat suitable for both species will be preserved onsite, therefore potential impacts to the species are limited. Please note that while this portion of the Project Site is not subject to the MSHCP, it does fall within the MSHCP boundaries. The coastal whiptail and coast horned lizard are both covered species under the MSHCP; therefore, conservation of this species will be addressed on a regional level around the Project Site and potential impacts due to Project implementation are not considered significant. Additionally, based on focused surveys, QCB does

not occupy the MSHCP-Excluded Project Area, therefore no impacts to this species are expected. As noted above, CAGN were not observed during 2017 focused surveys within the MSHCP-Excluded Project Area but have been incidentally observed within the Project Site during focused burrowing owl surveys in 2018. However, since the 2017 focused surveys determined the MSHCP-Excluded Survey Area to be unoccupied and the incidental observations in 2018 support the condition of CAGN potentially dispersing through the MSHCP-Excluded Project Area to the MSHCP Project Area, any effects to CAGN are considered covered with MSHCP compliance and therefore less than significant. If CAGN were to be found present during the pre-construction focused surveys, as described in Section 9.3, implementation of the mitigation measures identified in Sections 9.1 and 9.3 including the pre-construction focused surveys for CAGN, potential ESA permits, and CAGN suitable habitat-based mitigation, would reduce potential impacts to CAGN to below significance. Additionally, Project compliance with the MSHCP will address long-term conservation of the species on a regional scale.

Several special status animal species have a moderate potential to occur within the Project Site and Offsite Improvements Area within their respective suitable habitats as listed in Appendix H. Most of these species are covered species under the MSHCP. An MSHCP Covered Species is a species that is conserved by MSHCP implementation. There are 146 covered species in the MSHCP, of which 40 species are identified that may require additional surveys. Only two wildlife species with at least moderate potential to occur are not covered by the MSHCP: California glossy snake and coast patch-nosed snake, both CDFW Species of Special Concern. Both of these species were not observed onsite during field surveys. Any potential impacts to these species would be mitigated through habitat-based mitigation identified in Section 9.1 (scrub habitats).

BUOW is subject to additional MSHCP survey requirements if a project is located within the MSHCP Burrowing Owl Survey Area. Portions of the MSHCP Project Area and Offsite Improvements Area are located within the MSHCP Burrowing Owl Survey Area and as detailed in Section 5.3.4, the BUOW focused surveys were completed in 2018. Suitable habitat was identified within the MSHCP Project Area and within the Offsite Improvements area; however, no BUOW or their sign were observed within the MSHCP Project Area, the Offsite Improvements Area, or the surrounding 500-foot survey buffer surveyed during the focused survey efforts. In compliance with the MSHCP, a pre-construction presence/absence survey for burrowing owl shall be conducted by a qualified biologist within 30 days prior to the commencement of ground disturbing activities where suitable habitat is present (as outlined in Section 9.3).

If a project is in compliance with the MSHCP then the conservation goals of the covered species have been addressed by the Project's compliance (see Section 7.0, MSHCP Consistency Analysis). Therefore, any potential direct or indirect impacts to MSHCP covered species with at least moderate potential to occur are expected to be reduced to below significance with MSHCP compliance. Although the MSHCP-Excluded Project Area is not included in the MSHCP, the remainder of the Project Site will be required to be in compliance with the MSHCP and regional conservation related to covered species will be addressed.

Potential direct or indirect impacts to the California glossy snake and coast patch-nosed snake, species with moderate potential to occur but not covered by the MSHCP, are expected to be minimized through preservation of the majority of the suitable onsite habitat (i.e. Stovepipe Creek and associated habitat). Therefore, impacts to these two species are expected to be below significant.

6.5 Potential Impacts to Wildlife Movement, Bird Nesting, and Bat Maternity Roost Sites

As described earlier, the Project Site and Offsite Improvements Area occur within an area that may serve a function in local wildlife movement such as dispersal and foraging, however the surrounding infrastructure and development decreases the potential for wildlife movement. It is unlikely that the Project Site and Offsite Improvements Area function in regional wildlife movement or regional wildlife corridors. It is expected that local and regional wildlife movement will be maintained with the preservation and avoidance of the onsite channel and a majority of the sage scrub habitats; therefore, considering the relatively small size of area in which vegetation removal will occur and built nature of and surrounding the Project Site and Offsite Improvements Area, no long-term effects to wildlife movement are anticipated due to Project implementation. Additionally, considering the existing open space north of the Project Site, no significant effects to wildlife movement are anticipated due to Project implementation.

The Project Site contains disturbed/maintained soils and habitat including several trees and shrubs that could support nesting birds and/or roosting bats. Due to the potential for onsite bird nesting and/or bat roosting, Project construction could result in impacts to nesting birds that would be in violation of the MBTA and California FGC and/or result in impacts to protected bat maternity roosts if construction activities are to take place during nesting or maternity roosting season or if a preconstruction nesting bird and roosting bat survey is not performed to clear the Site prior to start of work. Therefore, recommended avoidance measures for preconstruction nesting bird and roosting bat surveys to avoid impacts are included in Section 9.3 of this report. These avoidance measures would ensure potential impacts are less than significant, and no additional mitigation is recommended.

6.6 Potential Impacts to Jurisdictional Waters

Waters of the U.S. under the jurisdiction of the Corps and RWQCB, Waters of the State under the jurisdiction of CDFW and RWQCB, and Riparian/Riverine/Vernal Pools under the jurisdiction of the MSHCP were found within the Project Site. Impacts are identified in the tables below. A majority of the onsite jurisdictional waters will be avoided, no dredge or fill will occur within Waters of the U.S. and impacts to jurisdictional areas are limited to Waters of the State within the central portion of the Project Site (Figure 9).

Impacts to Waters of the State within the Project Site include permanent impacts.

Table 6
Impacts to Waters of the U.S. within the Project Site

Feature	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Waters of the U.S	0.00	0.00	0.00

Table 7
Impacts to Waters of the State within the Project Site

Feature	Permanent Impacts (acres)	Shading Impacts (acres)	Total Impacts (acres)
Waters of the State	0.40	0.02	0.42
Riversidean alluvial fan sage scrub	0.07	0.00	0.07

Table 8
Impacts to Riparian/Riverine within the MSHCP Project Area

Feature	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Riparian/Riverine	0.00	0.00	0.00
Riversidean alluvial fan sage scrub	0.00	0.00	0.00

Note: only the MSHCP Project Area is included Table 8, since the MSHCP-Excluded Project Area is not subject to MSHCP requirements.

7.0 MSHCP Consistency Analysis

The Project Site and Offsite Improvements Area are located within the western Riverside County MSHCP boundary. A portion of the Project Site is excluded from the MSHCP (MSHCP Exclusion Project Area), while the remainder of the Project Site (MSHCP Project Area) is included within the MSHCP. The Offsite Improvements are for construction of an MSHCP-covered road, therefore are considered subject to the MSHCP. As a covered road, the Offsite Improvements are subject to the following:

- Section 6.1.2 Riparian/Riverine and Vernal Pool policies
- Section 6.1.3 and 6.3.2 – Species surveys in mapped survey areas if suitable habitat will be impacted
- Compliance with Section 7.5; siting, design, construction and wildlife movement guidelines if in a Criteria Cell or P/QP lands
- Urban/Wildlands Interface
- Joint Project Review for projects in Criteria Cells only

Table 9 below provides a summary of information related to Project consistency with the MSHCP, specifically regarding the MSHCP Project Area and Offsite Improvements Area. Figure 12 depicts the MSHCP Designations relative to the MSHCP Project Area and Offsite Improvements Area.

Table 9 MSHCP Consistency Analysis

MSHCP Element/Requirements	MSHCP Project Area Status	Offsite Improvements Status
Criteria Cell/Cell Group	The MSHCP Project Area is located mainly within Criteria Cell 4169 and a small portion of 4166. The MSHCP Project Area is not located within an MSHCP Criteria Cell Group. The MSHCP Project Area is not located within the areas targeted for conservation in Criteria Cells 4166 or 4169 (see details in Section 7.1 below).	The majority of the Offsite Improvement area is located within Criteria Cells 4070 and 4067 which are located within Cell Group W. However, the Offsite Improvements are for realignment of a covered road; therefore the Offsite Improvements are not subject to Reserve Assembly requirements.
Area Plan and Area Plan Subunit	The MSHCP Project Area is located within Subunit 3 – Elsinore of the Elsinore Area Plan.	The majority of the Offsite Improvements Area is located within Subunit 2 – Alberhill of the Elsinore Area Plan.

MSHCP Element/Requirements	**MSHCP Project Area Status**	**Offsite Improvements Status**
Habitat Management Unit	The MSHCP Project Area is located within the Santa Ana Mountains Habitat Management Unit.[1] The Project Site is not located within or adjacent to an MSHCP Conservation Area and there will be no Conservation Area formed on the Project Site. No requirements are imposed on the Project based on its presence in this habitat management unit.	The majority of the Offsite Improvements Area is located within the Gavilan Habitat Management Unit.[1] The Offsite Improvements Area is not located within or adjacent to an MSHCP Conservation Area and there will be no Conservation Area formed within the Offsite Improvements Area. No requirements are imposed on the Project based on its presence in this habitat management unit.
Public/Quasi Public Conservation Land	The MSHCP Project Area is not located within Public/Quasi Public Conservation Land.	The Offsite Improvements Area is not located within Public/Quasi Public Conservation Land.
MSHCP Conservation Areas	The MSHCP Project Area is not located within or adjacent to MSHCP Conservation Areas.	The Offsite Improvements Area is not located within or adjacent to MSHCP Conservation Areas.
Narrow Endemic Plants (*MSHCP Section 6.1.3*)	The MSHCP Project Area is not located within the Narrow Endemic Plant Survey Area; therefore, narrow endemic plant surveys are not required for this portion of the Project Site.	The Offsite Improvement Area is not located within the Narrow Endemic Plant Survey Area; therefore, narrow endemic plant surveys are not required for the Offsite Improvements.
Additional Species Surveys (including Burrowing Owl, Criteria Area Species, Amphibians,	A portion of the MSHCP Project Area is located within the Burrowing Owl Survey Area (Figure 12); therefore, a habitat assessment, focused burrow, and focused BUOW surveys are	A majority of the Offsite Improvements Area is located within the Burrowing Owl Survey Area (Figure 12); therefore, a habitat assessment, focused burrow, and focused

[1] The entire MSHCP area is broken down into habitat management units to effectively and efficiently manage the MSHCP Reserve lands (Conservation Areas) present.

MSHCP Element/Requirements	**MSHCP Project Area Status**	**Offsite Improvements Status**
and Mammals) [*MSHCP Section 6.3.2*]	required for the Project. The habitat assessment was completed during the general biological surveys on December 8, 2017, and February 1. The focused BUOW surveys were initiated in May 2018 and completed in July 2018. The MSHCP Project Area does have suitable habitat for BUOW; however, no BUOWs or sign of BUOWs were observed onsite during the four focused surveys. A 30-day pre-construction BUOW survey will be required prior to ground disturbing activities on the Project Site. No additional special surveys are required for the Project.	BUOW surveys are required for the Offsite Improvements Area. The habitat assessment was completed during the general biological surveys on December 8, 2017, and February 1. The focused BUOW surveys were initiated in May 2018 and completed in July 2018. The Offsite Improvements Area does have suitable habitat for BUOW; however, no BUOWs or sign of BUOWs were observed onsite during the four focused surveys. A 30-day pre-construction BUOW survey will be required prior to ground disturbing activities in the Offsite Improvements Area. No additional special surveys are required for the Project.
Riparian/Riverine Resources (*MSHCP Section 6.1.2*)	Riparian/riverine resources are present within the MSHCP Project Area; however vernal pools are not, as outlined in Section 5.6.3 of this report. Additionally, no impacts are proposed to riparian/riverine resources and none of the riparian/riverine species identified in Section 6.1.2 of the MSHCP were observed within the MSHCP Project Area. The project will avoid the riparian/riverine resources, therefore a Determination of Biological Equivalence or Superior Preservation (DBESP) will not be necessary.	The Offsite Improvements Area is not considered to have Riparian/Riverine areas, nor vernal pools, as outlined in Section 5.6.3 of this report. Additionally, none of the riparian/riverine species identified in Section 6.1.2 of the MSHCP were observed within the Offsite Improvements Area.

MSHCP Element/Requirements	**MSHCP Project Area Status**	**Offsite Improvements Status**
Guidelines Pertaining to Urban/ Wildlands Interface (*MSHCP Section 6.1.4*)	The MSHCP Project Area is not located adjacent to an MSHCP Conservation Area, therefore the guidelines pertaining to the Urban/Wildlands Interface are not applicable to the MSHCP Project Area.	The Offsite Improvements are not located adjacent to an MSHCP Conservation Area, therefore the guidelines pertaining to the Urban/Wildlands Interface are not applicable to the MSHCP Project Area.
Planned Roads within the Criteria Area (*MSHCP Section 7.3.5*)	N/A	The Offsite Improvements Area is included for the widening and realignment of Nichols Road. Nichols Road occurs within MSHCP Criteria Cells and is considered a covered road. Nichols Road is identified in the County and City General Plan as an Urban Arterial. Nichols Road is not identified in MSHCP Section 7.3.5 Table 7-4 as a road with special environmental issues due to the locations, which would otherwise require specific considerations for design and alignment. Further details are discussed below in Section 7.4.

7.1 MSHCP Project Area – Criteria Cells

The MSHCP Project Area is located within Criteria Cells 4166 and 4169, as depicted in Figure 12. Conservation goals within these cells are as follows:

> *4166: Conservation within this Cell will contribute to assembly of Proposed Linkage 2. Conservation within this Cell will focus on meadow, marsh, riparian scrub, woodland and forest habitat along Alberhill Creek and adjacent grassland habitat. Areas conserved within this Cell will be connected to riparian scrub, woodland, forest and grassland habitat proposed for conservation in Cell Group W to the north and to meadow, marsh and grassland habitat proposed for conservation in Cell #4169 to the east. Conservation within this Cell will range from15%-25% of the Cell focusing in the northeastern portion of the Cell.*

> *4169: Conservation within this Cell will contribute to assembly of Proposed Linkage 2. Conservation within this Cell will focus on meadow and marsh habitat along Alberhill Creek and adjacent grassland habitat. Areas conserved within this Cell will be connected to meadow and marsh habitat proposed for conservation in Cell #4166 to the west and to meadow, marsh and grassland habitat proposed for conservation in Cell #4266 to the south. Conservation within this Cell will range from10%-20% of the Cell focusing in the southwestern portion of the Cell.*

As detailed above, conservation within the cells is focused on Alberhill Creek and the adjacent habitats including 15-25% of the northeastern portion of Cell 4166 and 10-20% of the southwestern portion of Cell 4169. These areas of focus are located west of the I-15. The MSHCP Project Area is located on the east side of the I-15 and is not located within or near Alberhill Creek; therefore, the MSHCP Project Area will not contribute to the goals for these Criteria Cells.

7.2 Protection of Species Associated with Riparian/Riverine and Vernal Pool Resources

As detailed in Table 9, while Riparian/Riverine resources are present in the MSHCP Project Area, the Riparian/Riverine areas within the MSHCP Project Area will be avoided by Project development. The methods and results of the field survey are detailed in Sections 4.3, 4.4, and 5.6.3. Additionally, there is no suitable habitat present for the following species requiring focused surveys when suitable habitat is present:

- least Bell's vireo
- southwestern willow flycatcher
- western yellow-billed cuckoo
- Riverside fairy shrimp
- Santa Rosa Plateau fairy shrimp
- vernal pool fairy shrimp

Section 6.1.2 also lists plant and wildlife species whose conservation is tied to preservation of riparian/riverine and vernal pool resources. Of the species listed in Section 6.1.2 the following four species are also Elsinore Subunit Planning Species (the MSHCP Project Area is within this Area Plan subunit):

- least Bell's vireo
- southwestern willow flycatcher
- Riverside fairy shrimp
- smooth tarplant

As detailed in Appendix H, there is no suitable habitat (or low potential) for occurrence of these species within the Project Site including the MSHCP Project Area.

7.3 Guidelines Pertaining to Urban/ Wildlands Interface

The MSHCP recognizes that future development in proximity to existing or proposed MSHCP Conservation Areas might result in indirect edge effect conditions that will adversely affect biological resources within the MSHCP Conservation Area. The MSHCP provides guidelines to address the indirect effects of urban/wildlands interfaces, as outlined in Section 6.1.4, including conditions relating to drainage, toxics, lighting, noise, invasive plant species, barriers, and grading/land development. According to the Riverside County Environmental Programs Department (EPD) Development Review Team (DRT) Corrections Template, "If the proposed project is located in a Criteria Cell or within 1000 feet of a Criteria Cell, an Urban/Wildlife Interface Guideline analysis will need to be prepared."

As outlined in Section 6.1.4 of Volume I of the MSHCP and discussed above, edge effect conditions may apply to development in proximity to the MSHCP Conservation Area. The MSCHP Project Area and Offsite Improvements Area are located within Criteria Cells 4166, 4169, 4070 and 4067, in the vicinity of proposed Core 1 and Proposed Linkage 2 (Alberhill Creek).

The MSHCP Project Area is located approximately 1300 feet away from proposed Linkage 2 (Alberhill Creek), and the sites are separated by the I-15. Stovepipe Creek on the Project Site drains into Alberhill Creek (downstream), therefore there are potential indirect effects to areas targeted for conservation. The Project proposes to comply with the guidelines to minimize indirect impacts to Proposed Linkage 2 outlined below:

- Drainage: The Project proposes to comply with the standard best management practices (BMPs) outlined in Volume I, Appendix C of the MSHCP to address any potential effects.

- Toxics: No discharge of toxics during construction will occur onsite. Pre-construction BMPs listed in Appendix C of the MSHCP will be implemented, where appropriate. Further, a SWPPP will be prepared for the development in accordance with California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) which will provide for BMPs which will be implemented during the construction process. A Project Specific PWQMP has been prepared, in accordance with City of Lake Elsinore, Water Quality Ordinance (Municipal Code Section 14.08) to establish the post-construction BMPs that will be implemented with the development to mitigate impacts to post-construction runoff due to the development. The proposed BMPs include an extended detention basin, two sand filter basins and implementation of standard LID practices. A final WQMP will be prepared and approved prior to construction. Therefore, discharge of products that are potentially toxic to or might adversely affect wildlife species is not expected to occur.

- Lighting: The MSHCP Project Site and Offsite Improvements are will not be located adjacent to MSHCP Conservation Areas, therefore no lighting effects to Conservation Areas are expected. Additionally, lighting will be directed away from the preserved onsite drainage and associated habitat.

- Noise: The MSHCP Project Site and Offsite Improvements are will not be located adjacent to MSHCP Conservation Areas, therefore no indirect noise effects to Conservation Areas are expected. Additionally, noise generated from the planned residential uses located adjacent to the preserved onsite drainage are not expected to exceed the levels of the active mining or cause significant indirect impacts to wildlife within the preserved onsite drainage/habitat.

- Invasives: Landscaping within 100 feet of the onsite preserved drainage and associated habitat will avoid the use of species included within Table 6-2 of the MSHCP (Plants that Should be Avoided Adjacent to the MSHCP Conservation Area). While the Project Site is not adjacent to an MSHCP Conservation Area, the onsite drainage does drain downstream into Alberhill Creek where MSHCP conservation is targeted.

- Barriers: As noted above, the MSHCP Project Area and Offsite Improvement area are not located within 1000 feet of an MSHCP Conservation Area, therefore no particular barriers will need to be incorporated into the Project design.

- Grading: As noted above, the MSHCP Project Area and Offsite Improvement Area are not located within 1000 feet of an MSHCP Conservation Area, therefore graded/manufactured sloped associated with the developed will not extend into the MSHCP Conservation Area.

7.4 Planned Roads

As outlined above, the Offsite Improvements Area is comprised of the widening and realignment of Nichols Road. Nichols Road occurs within MSHCP Criteria Cells and is considered a covered (planned) road. Nichols Road is identified in the County and City General Plan as an Urban Arterial. Nichols Road is not identified in MSHCP Section 7.3.5 Table 7-4 as a road with special environmental issues due to the locations, which would otherwise require specific considerations for design and alignment.

Based on Section 7.5.1 which describes the Guidelines for the Siting and Design of Planned Roads within Criteria Areas, Nichols Road must:

- be located in the least environmentally sensitive location, if feasible
- avoid impacts to Covered Species and wetlands to the greatest extent feasible
- consider wildlife movement requirements
- avoid impacts to Narrow Endemic Plant Species, if feasible
- avoid clearing of natural vegetation during the active breeding season (March 1, through June 30)

The realignment and widening of Nichols Road will occur within the Nichols Road right-of-way and along the currently existing, paved Nichols Road, within predominantly developed and

disturbed habitats. While there is one sensitive plant species located within the Offsite Improvements Area (Robinson's peppergrass), impacts to this species is not considered significant due to the plant's CRPR Ranking. Additionally, there is generally low potential for any other special status wildlife and/or plants (including Covered species). The Offsite Improvements Area does not occur within the Narrow Endemic Plant Survey Area and there is low potential for those plant species to occur within the Offsite Improvements Area. Since there will not be conservation land located adjacent to the road and on both sides, wildlife movement is not expected to be impacted by the road realignment and widening. Vegetation clearing will be avoided as noted in the Mitigation Measures noted in Section 8.0 and if avoidance is not possible then preconstruction surveys for nesting birds and burrowing owls will be performed to ensure no impacts to those resources.

Construction of the road widening and alignment would follow the standard MSHCP BMPs described in Appendix C of the MSHCP (also attached to this report as Appendix I).

7.5 MSHCP Consistency Summary

Based on the consistency analysis provided above, the proposed Project activities within the areas covered by the MSHCP (MSHCP Project Area and Offsite Improvements Area) are considered consistent with the MSHCP.

8.0 BMPs, Avoidance, and Protection Measure Recommendations

The western Riverside MSHCP Volume 1, Appendix C (attached to this report as Appendix I) outlines standard BMPs which are intended in part to reduce impacts to plant communities, special status plant and wildlife species, and jurisdictional waters. Since the MSHCP Project Area and Offsite Improvements Area are subject to the MSHCP, the Project will be required to comply with applicable standard BMPs found in Appendix C of the MSHCP, which may include the following:

- Water pollution and erosion control plans shall be developed and implemented in accordance with RWQCB requirements.

- The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall be via preexisting access routes to the greatest extent possible.

- The Project should be designed to avoid the placement of equipment and personnel within stream channels or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.

- Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project related spills of hazardous materials shall be reported to appropriate entities including but not limited to applicable jurisdictional city, USFWS, and CDFW, RWQCB and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.

- Exotic species that prey upon or displace target species of concern should be permanently removed from the site to the extent feasible.

9.0 Mitigation Recommendations

9.1 Vegetation Communities

Mitigation for impacts to Riversidean alluvial fan sage scrub and Riversidean sage scrub is described in Table 10 below. A majority of the Riversidean alluvial fan sage scrub and Riversidean sage scrub habitats will be avoided throughout the Project Site. Mitigation is proposed to occur at a 2:1 ratio for impacts to Riversidean sage scrub and Riversidean alluvial fan sage scrub habitats within the MSHCP-Excluded Survey Area and at a 1:1 ratio for impacts to disturbed Riversidean sage scrub and disturbed Riversidean sage scrub – Encelia dominant within the MSHCP-Excluded Survey Area through either the purchase of habitat at a mitigation bank or the preservation of habitat onsite or offsite. Impacts to these habitats within the MSHCP Project Area and the Offsite Improvements Area is mitigated by compliance with the MSHCP requirements.

Table 10
Compensatory Mitigation for Habitat Impacts within the MSHCP-Excluded Project Area

Feature	Impacts (acres)	Ratio Multiplier	Mitigation (acres)
Riversidean Alluvial Fan Sage Scrub	0.07	2	0.14*
Riversidean Sage Scrub	0.23	2	0.46
Disturbed Riversidean Sage Scrub (including Disturbed Riversidean Sage Scrub – Encelia dominant)	0.28	1	0.28

*The 0.14 acre of Riversidean Alluvial Fan Sage Scrub mitigation is included within (not in addition to) the 0.88-acre of mitigation needed for impacts to waters of the State identified in Table 11, below.

9.2 Plant Species

The Robinson's peppergrass was observed within the Offsite Improvements Area only. Based on the plant's CRPR 4.3 status (watch list plant of limited distribution and "not very threatened in California [less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known]"), the impact is not considered significant; therefore, no mitigation is recommended for the species.

9.3 Wildlife Species

The following measures shall be performed prior to clearing and grubbing within the Project Site and Offsite Improvements Area to avoid impacts to nesting birds, including burrowing owl, and bats:

- The removal of potential nesting bird habitat will be conducted outside of the nesting season (February 1 to August 31) to the extent feasible. If grading or vegetation removal is to occur between February 1 and August 31, a nesting bird survey shall be conducted by a qualified biologist within no more than 72 hours of such scheduled disturbance, to determine the presence of nests or nesting birds. If active nests are identified, the biologist will establish appropriate buffers around the vegetation (typically 500 feet for raptors and sensitive species, 200 feet for non-raptors/non-sensitive species). All work within these buffers will be halted until the nesting effort is finished (i.e. the juveniles are surviving independent from the nest). The onsite biologist will review and verify compliance with these nesting boundaries and will verify the nesting effort has finished. Work can resume within the buffer area when no other active nests are found. Alternatively, a qualified biologist may determine that construction can be permitted within the buffer areas and would develop a monitoring plan to prevent any impacts while the nest continues to be active (eggs, chicks, etc.). Upon completion of the survey and any follow-up construction avoidance management, a report shall be prepared and submitted to the City for mitigation monitoring compliance record keeping. If vegetation removal is not completed within 72 hours of a negative survey during nesting season, the nesting survey must be repeated to confirm the absence of nesting birds. The CAGN is a Covered Species under the MSHCP, which requires focused surveys prior to nesting season if clearing of sensitive habitat is proposed between March 1 and August 15, and avoidance until August 15 of that year should the habitat be occupied. Project site pre-construction surveys pursuant to MSHCP requirements will be conducted.

- Pre-construction presence/absence surveys for burrowing owl within the survey area where suitable habitat is present shall be conducted by a qualified biologist within 30 days prior to the commencement of ground disturbing activities. If active burrowing owl burrows are detected during the breeding season, all work within an appropriate buffer (typically a minimum 300 feet) of any active burrow will be halted until that nesting effort is finished. The onsite biologist will review and verify compliance with these boundaries and will verify the nesting effort has finished. Work can resume in the buffer when no other active burrowing owl burrows nests are found within the buffer area.

  If active burrowing owl burrows are detected outside the breeding season or during the breeding season and its determined nesting activities have not begun, then passive and/or active relocation may be approved following consultation with CDFW. The installation of one-way doors may be installed as part of a passive relocation program. Burrowing owl burrows shall be excavated with hand tools by a qualified biologist when determined to be unoccupied, and back filled to ensure that animals do not re-enter the

holes/dens. Upon completion of the survey and any follow-up construction avoidance management, a report shall be prepared and submitted to CDFW.

- A qualified biologist shall conduct a preconstruction survey to determine if active bat roosts are present at the Site. The survey shall be conducted no earlier than 72 hours prior to commencement of vegetation removal that would occur during the breeding season of bat species potentially utilizing the Site (April 1 through August 31). If work begins outside of breeding season, no roosting bats are found, or if bats have not established an active maternity roost, no further mitigation is required. If an established maternity roost is found, either (A) postpone or halt construction within 200 feet of the roost until the roost is vacated and juveniles have fledged, or (B) require that a qualified biologist develop alternative measures, such as biological monitoring during active construction within the 200-foot buffer to ensure established maternity roosts are not impacted.

9.4 Jurisdictional Waters

A majority of the onsite jurisdictional waters will be avoided. Permanent impacts to non-wetland waters of the U.S. and streambed waters of the State are recommended to be compensated for at a minimum ratio of 2:1 at an agency-approved mitigation bank, with an in-lieu fee program, onsite, or at an offsite permittee sponsored location. The following table identifies the anticipated mitigation necessary for impacts to jurisdictional waters within the Project:

Table 11
Compensatory Mitigation for Waters Impacts

Feature	Impacts (acres)	Ratio Multiplier	Mitigation (acres)
Non-wetland WOUS	0	N/A	N/A
Streambed Waters of the State (including Riversidean alluvial fan sage scrub)	0.42	2	0.84

9.5 Agency Approvals

Prior to the issuance of a grading permit, the proposed project shall obtain the necessary authorizations from the regulatory agencies for proposed impacts to jurisdictional waters subject to Regional Water Quality Control Board and the California Department of Fish and Wildlife. Authorizations anticipated for this project include, but are not limited to, WDR and a Section 1600 Streambed Alteration Agreement. Additionally, the project is within criteria cells for the MSHCP, therefore, consistency through the Joint Project Review (JPR), also known as the Lake Elsinore Acquisition Process (LEAP), is anticipated.

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NICHOLS RANCH PROJECT

Figure 1.

Project Area Boundaries

Project Site (72.50 ac)
MSHCP-Excluded Project Area (45.50 ac)
MSHCP Project Area (27.00 ac)
Offsite Improvements/MSHCP-Covered Road Area (7.78 ac)
MSHCP-Excluded Survey Area (11.21 ac)

N
W E
S

0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS

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NICHOLS RANCH PROJECT

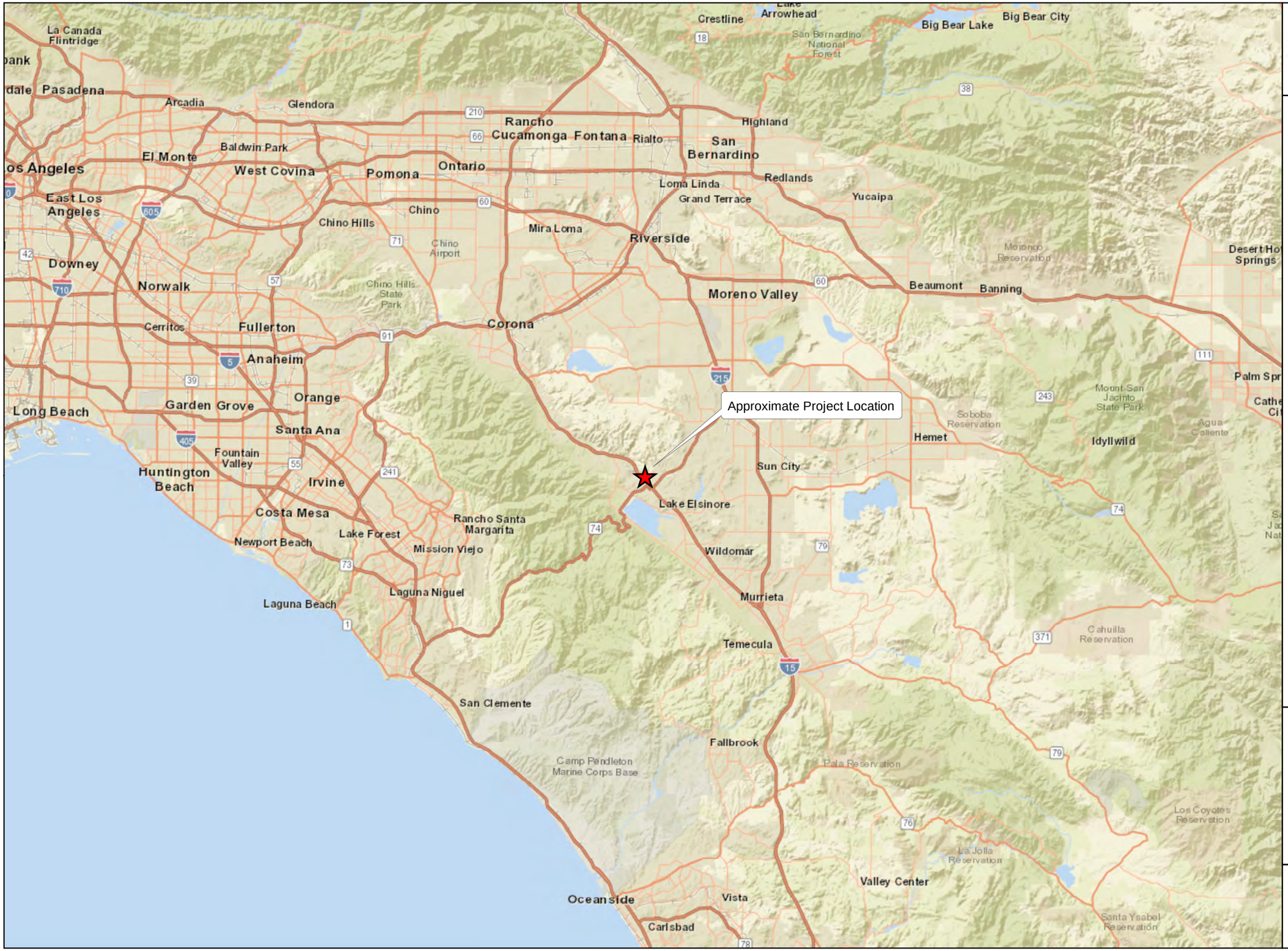

Figure 2.
Regional Location Map

N
W E
S

0 40,000 80,000
Feet

1 in = 40,000 ft

Map Date:
April 2018

Data Source:
ESRI

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NICHOLS RANCH PROJECT

Figure 3.

Vicinity Map

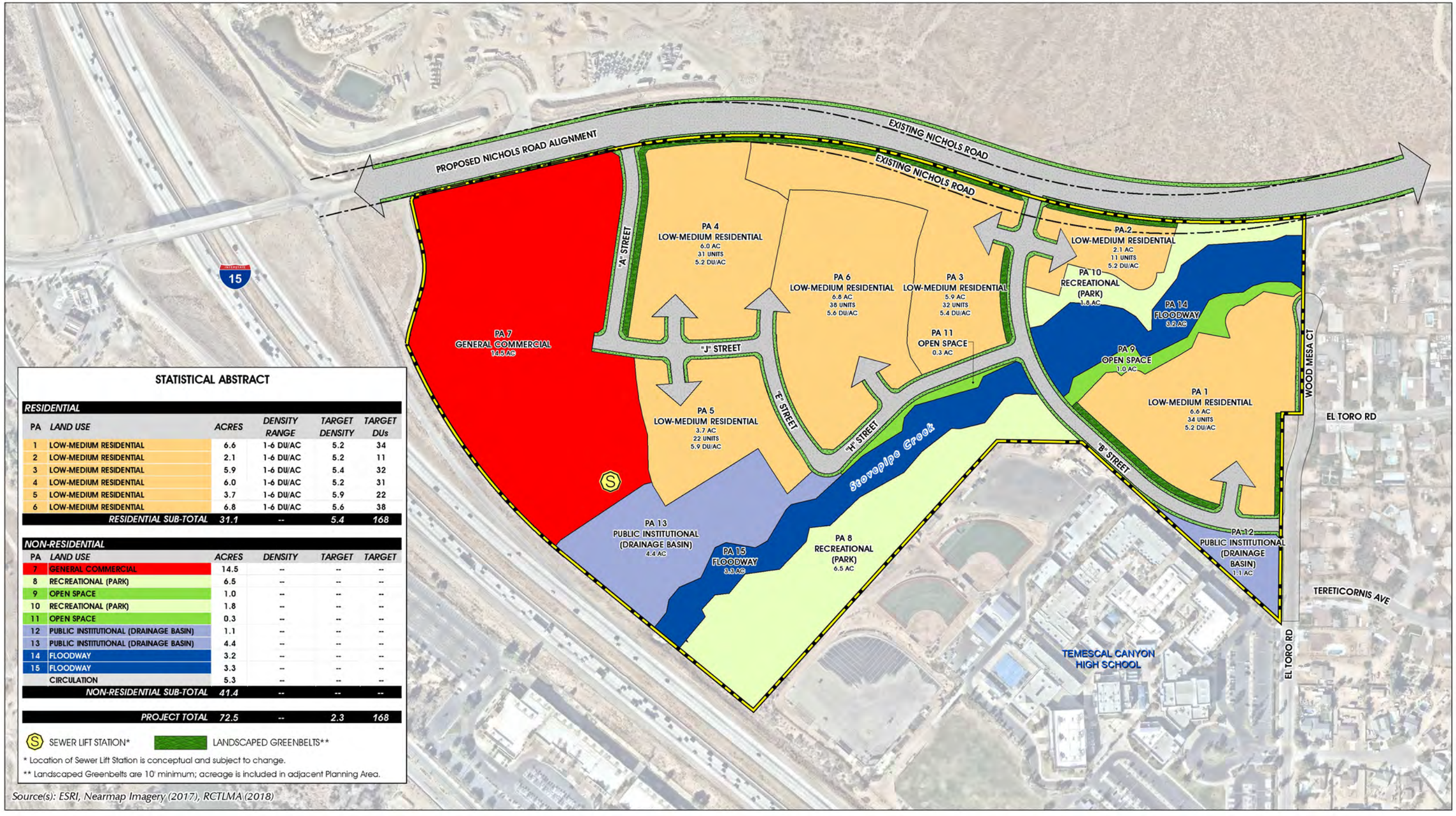
N
W E
S

0 300 600 900 1,200
Feet

1 in = 600 ft

Map Date:
June 2018

Imagery Source:
BING



STATISTICAL ABSTRACT

RESIDENTIAL

PA	LAND USE	ACRES	DENSITY RANGE	TARGET DENSITY	TARGET DUs
1	LOW-MEDIUM RESIDENTIAL	6.6	1-6 DU/AC	5.2	34
2	LOW-MEDIUM RESIDENTIAL	2.1	1-6 DU/AC	5.2	11
3	LOW-MEDIUM RESIDENTIAL	5.9	1-6 DU/AC	5.4	32
4	LOW-MEDIUM RESIDENTIAL	6.0	1-6 DU/AC	5.2	31
5	LOW-MEDIUM RESIDENTIAL	3.7	1-6 DU/AC	5.9	22
6	LOW-MEDIUM RESIDENTIAL	6.8	1-6 DU/AC	5.6	38
	RESIDENTIAL SUB-TOTAL	*31.1*	--	*5.4*	*168*

NON-RESIDENTIAL

PA	LAND USE	ACRES	DENSITY	TARGET	TARGET
7	GENERAL COMMERCIAL	14.5	--	--	--
8	RECREATIONAL (PARK)	6.5	--	--	--
9	OPEN SPACE	1.0	--	--	--
10	RECREATIONAL (PARK)	1.8	--	--	--
11	OPEN SPACE	0.3	--	--	--
12	PUBLIC INSTITUTIONAL (DRAINAGE BASIN)	1.1	--	--	--
13	PUBLIC INSTITUTIONAL (DRAINAGE BASIN)	4.4	--	--	--
14	FLOODWAY	3.2	--	--	--
15	FLOODWAY	3.3	--	--	--
	CIRCULATION	5.3	--	--	--
	NON-RESIDENTIAL SUB-TOTAL	*41.4*	--	--	--
	PROJECT TOTAL	*72.5*	--	*2.3*	*168*

(S) SEWER LIFT STATION* LANDSCAPED GREENBELTS**

* Location of Sewer Lift Station is conceptual and subject to change.

** Landscaped Greenbelts are 10' minimum; acreage is included in adjacent Planning Area.

Source(s): ESRI, Nearmap Imagery (2017), RCTLMA (2018)

0 75 150 300 Feet

SPECIFIC PLAN LAND USE PLAN

FIGURE 4

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NICHOLS RANCH PROJECT

Figure 5.

Vegetation

Project Site
Offsite Improvements/MSHCP-Covered Road Area
MSHCP Project Area

Vegetation / Land Cover Types

- Disturbed Riversidean Sage Scrub
- Disturbed Riversidean Sage Scrub_Enc
- Riversidean Sage Scrub
- Riversidean Alluvial Fan Sage Scrub
- Disturbed/Developed
- Non-Native Grassland
- Ornamental
- Ruderal
- Streambed

N
W E
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0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS

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NICHOLS RANCH PROJECT

Figure 6.

CNDDB OCCURRENCES & CRITICAL HABITAT-PLANT SPECIES

Project Site
Buffer (2 miles)

Critical Habitat
San Diego ambrosia

CNDDB Occurrences
Coulter's goldfields
Munz's onion
Palmer's grapplinghook
Parry's spineflower
San Diego ambrosia
San Jacinto Valley crownscale
Southern Coast Live Oak Riparian Forest
long-spined spineflower
many-stemmed dudleya
slender-horned spineflower
smooth tarplant

N
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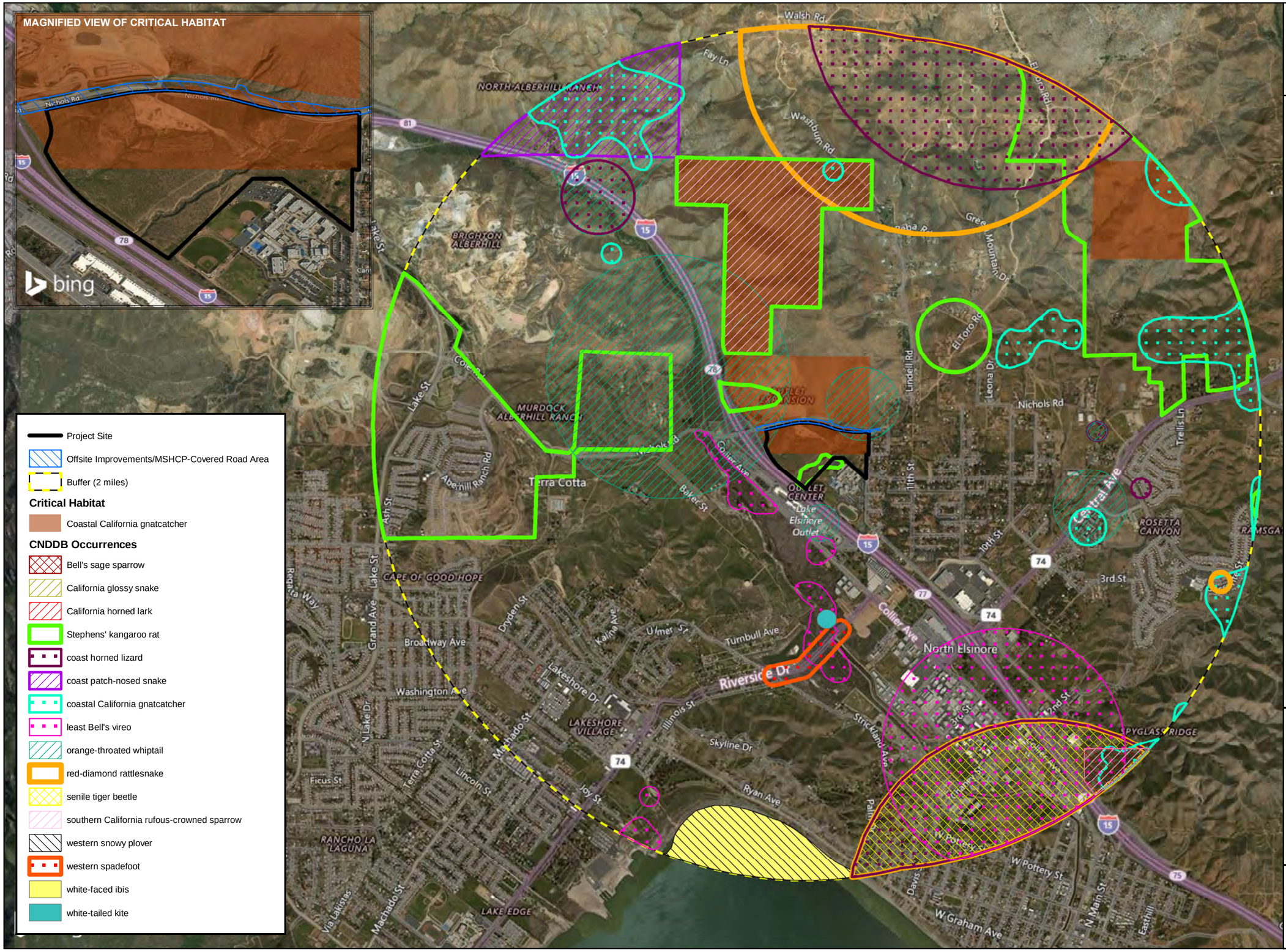
0 1,250 2,500 3,750 5,000
Feet

1 in = 2,500 ft

Map Date:
June 2018

Data Source:
BING, K&A, CNDDB



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NICHOLS RANCH PROJECT

Figure 7.

CNDDB OCCURRENCES & CRITICAL HABITAT-ANIMAL SPECIES

N
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0 1,250 2,500 3,750 5,000
Feet

1 in = 2,500 ft

Map Date:
June 2018

Data Source:
BING, K&A, CNDDB

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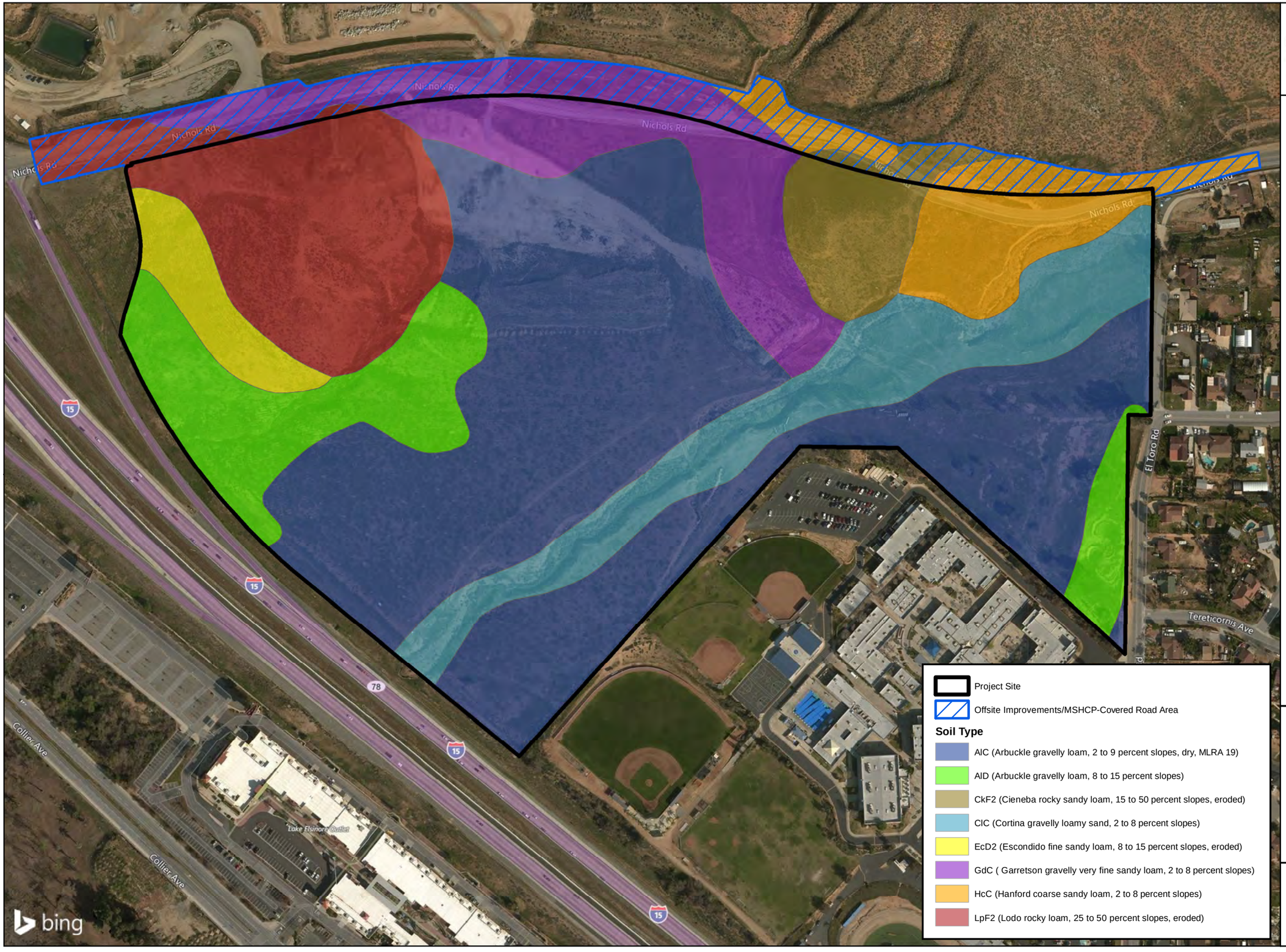
NICHOLS RANCH PROJECT

Figure 8.

Soils



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Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, NRCS

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NICHOLS RANCH PROJECT

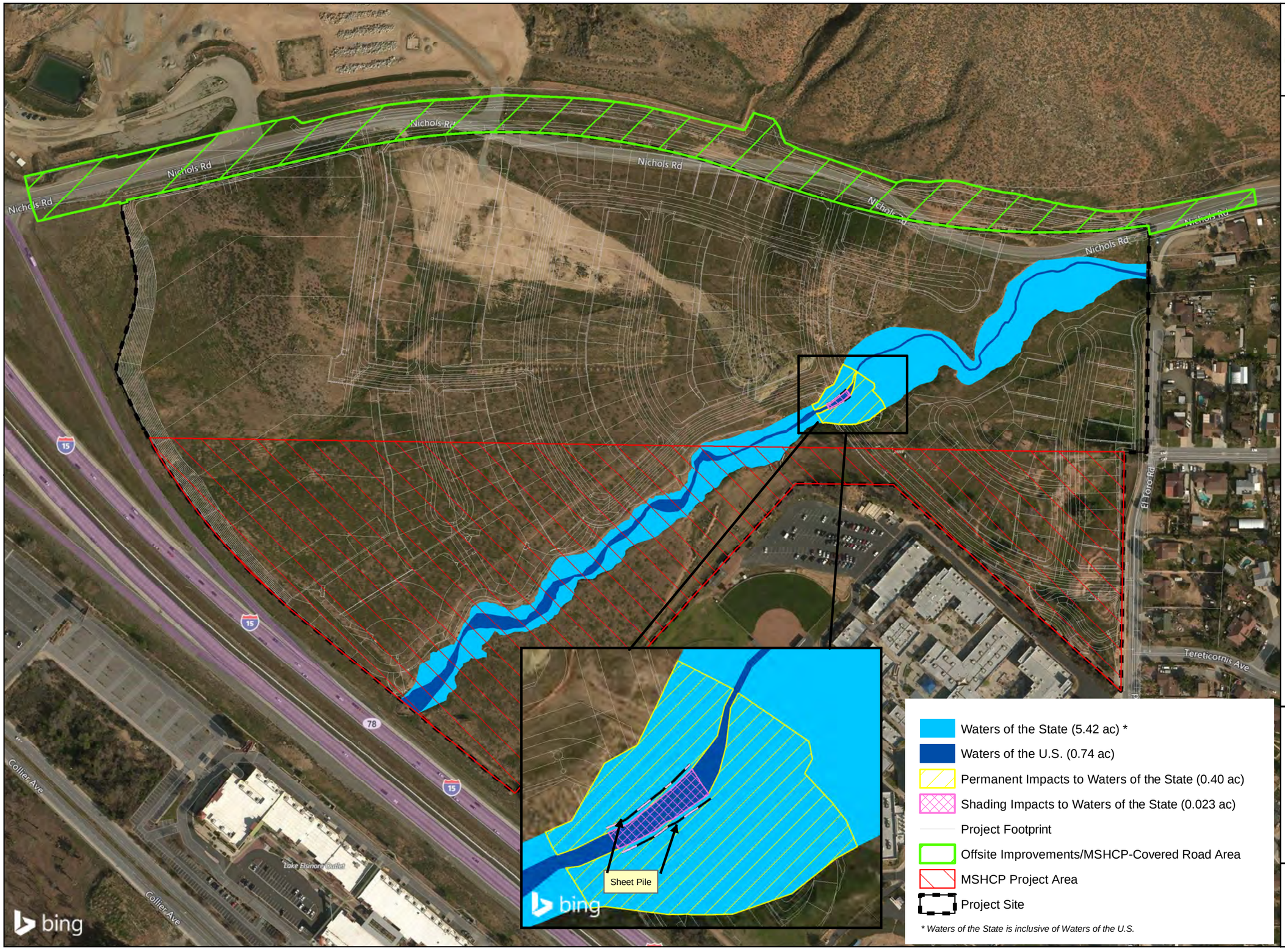

Figure 9.
Waters of the State & the United States

N
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0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
July 2018

Data Source:
BING, K&A, VCS

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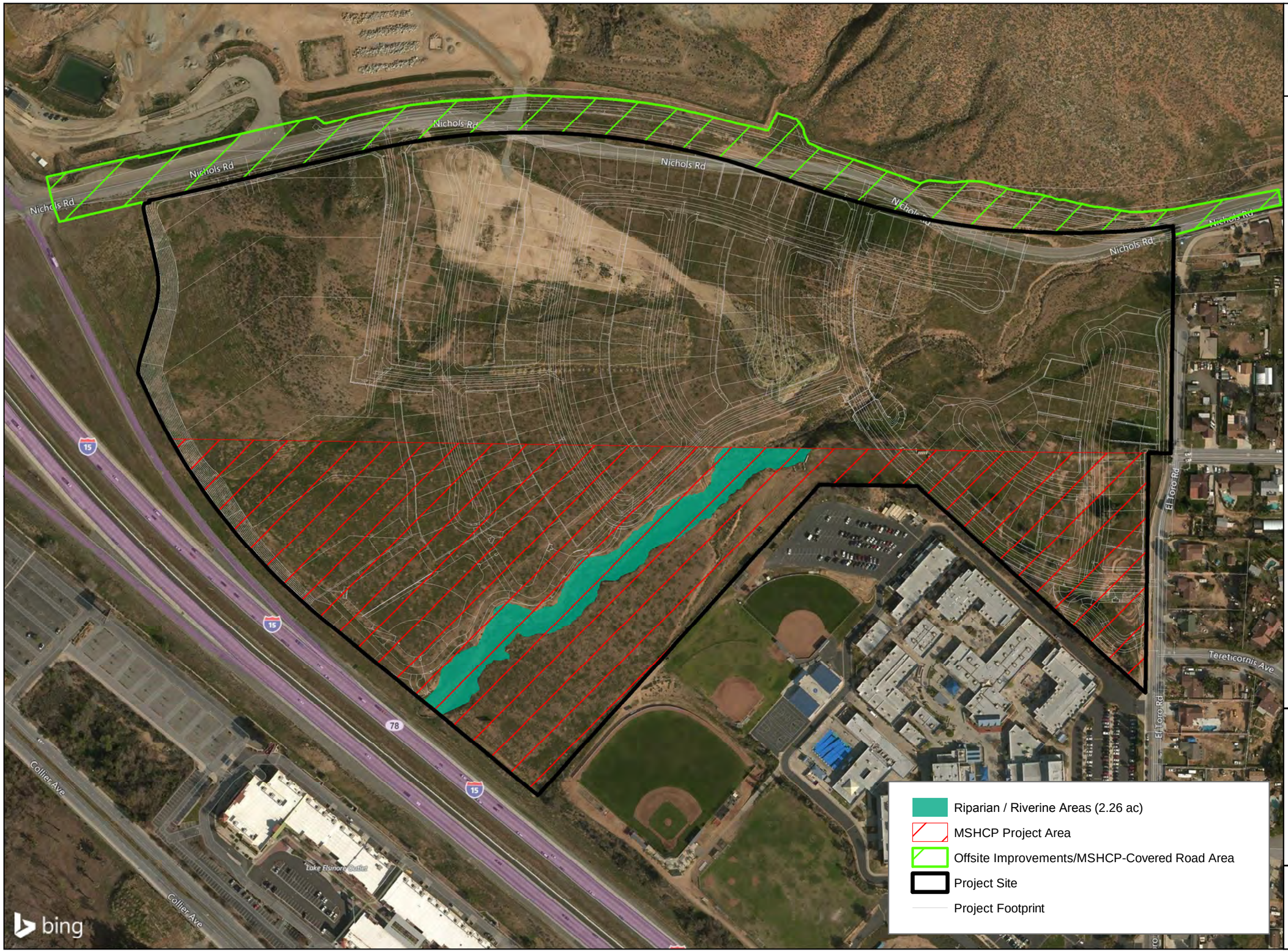
NICHOLS RANCH PROJECT

Figure 10.

Riparian / Riverine Areas



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0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS

VCS Environmental
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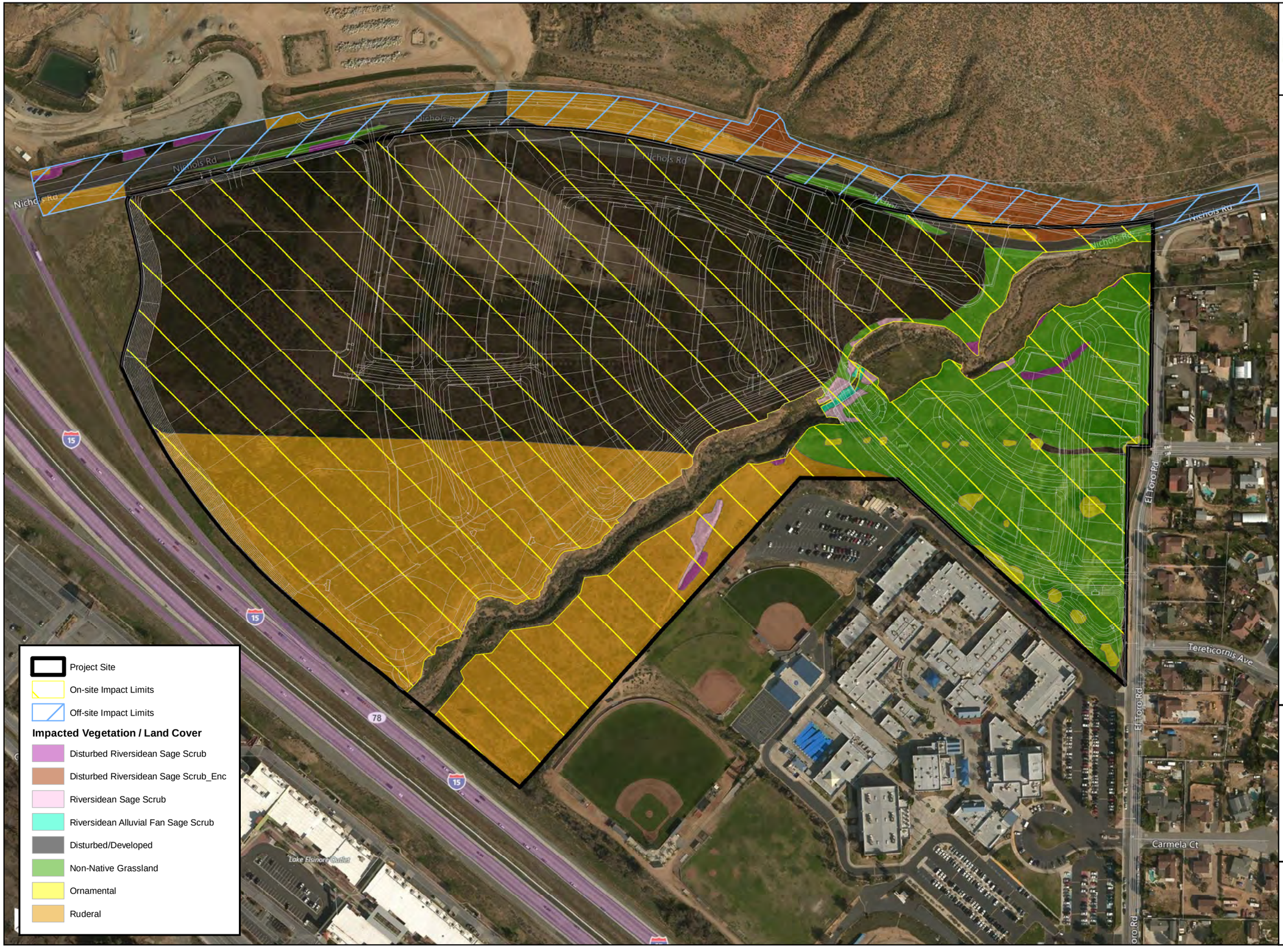
NICHOLS RANCH PROJECT

Figure 11.

Impacted Vegetation



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Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS

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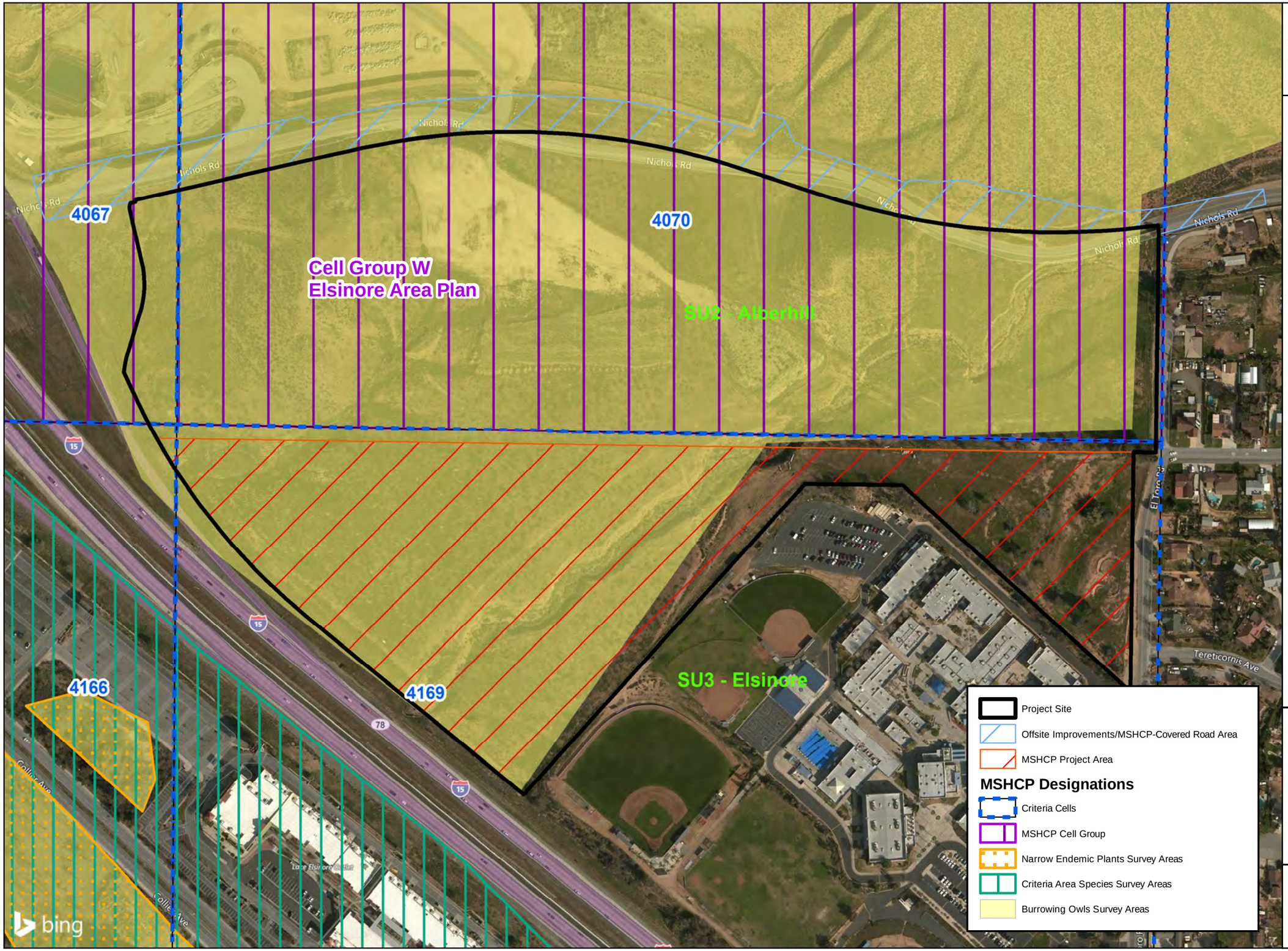
NICHOLS RANCH PROJECT

Figure 12.

MSHCP DESIGNATIONS



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0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS,
County of Riverside

APPENDIX A

Photopages

Photo 1. View of the Project site from the northeast corner.

Photo 2. Stovepipe Creek outlet into the Project Site.

Photo 3. Present view of Stovepipe Creek within the Project Site near Nichols Road.

Photo 4. Non-native grassland habitat within the Project Site, looking southeast.

Photo 5. Typical Riversidean alluvial fan sage scrub vegetation within Stovepipe Creek and Riversidean sage scrub adjacent to the channel; viewing downstream from the middle portion of the Project Site.

Photo 6. Boundary between the active mine and the undeveloped area within the Project Site.

Photo 7. View of Stovepipe Creek within the middle portion of the Project Site; viewing northeast.

Photo 8. Current view of Stovepipe creek outlet in the northeast corner of the Project Site.

Photo 9. Typical view of and vegetation within the northeast portion of the Project Site.

Photo 10. Present view of ruderal vegetation within the southern portion of the Project Site

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Photo 11. Present view of Stovepipe Creek within the Project Site near the western boundary of the Project Site and the I-15 freeway.

Photo 12. Present view of Stovepipe Creek within the central portion of the Project Site; viewing downstream.

Photo 13. Boundary between the on-going construction/developed area and the undeveloped area within the Project Site.

Photo 14. View of disturbed habitat within the Offsite Improvements area; viewing northeast. Nichols Road to the right.

Photo 15. Typical view to the Disturbed Riversidean Sage Scrub habitat within the east portion of the Offsite Improvements area.

APPENDIX B

Results of 2018 Focused Burrowing Owl Surveys [MSHCP Project Area and Offsite Improvements Area]

VCS Environmental
EXPERTS IN STRATEGIC SOLUTIONS

September 7, 2018

Todd Pendergrass
Nichols Road Partners, LLC
P.O. Box 77850
Corona, CA 92877

Subject: Results of the Western Riverside County MSHCP focused burrowing owl surveys [BUOW] conducted for the Nichols Ranch Project, Lake Elsinore, California.

Dear Todd:

This letter report provides a summary of existing conditions and provides the methods and results of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) focused burrowing owl (*Athene cunicularia*) [BUOW] surveys conducted for the Nichols Ranch Project in the City of Lake Elsinore, Riverside County (Figures 1 and 2). The Study Area includes the Project site (which includes the MSHCP Project Area and the MSHCP-Excluded Project Area), the Offsite Improvements Area, and a 500-foot surrounding buffer as depicted on Figures 3 and 4.

The BUOW surveys were conducted on May 22, June 26, July 12, and July 26, 2018 by Erin Hayes, Carla Marriner, Wade Caffrey, Darcy Hardwick, Molly Burdick-Whipp, and Sierra Coleman of VCS Environmental (VCS). No BUOW or signs thereof were observed within the Study Area during the surveys. Based on the lack of any direct or indirect evidence of BUOW presence, the survey results indicate that the Study Area was not occupied by BUOW at the time of the surveys.

Project Location and Existing Conditions

The Study Area encompasses approximately 195 acres. The Project Site is located along and mostly south of Nichols Road, east of and adjacent to Interstate 15, west of El Toro Road, and north of Temescal Canyon High School in the City of Lake Elsinore, Riverside County, California. The Project Site is regionally accessible from Interstate 15 at Nichols Road (Figure 1, Regional Location Map; Figure 2, Vicinity Map). The Offsite Improvements are within, just north, and just south of the existing Nichols Road alignment (Figures 2 and 3).

The Project Area is located within Subunit 3 (Elsinore) of the Elsinore Area Plan of the western Riverside County MSHCP. A portion of the Project is within an area excluded from the MSHCP (MSHCP-Excluded Project Area) and therefore is not subject to its requirements. The remaining portion of the Project Site (MSHCP Project Area) is within the MSHCP and subject to its requirements. The MSHCP Project Area is not located within an MSHCP Criteria Cell Group, but lies partially within the MSHCP Burrowing Owl Survey Area (Section 6.3.2). The MSHCP Project Area is not located within any other species survey areas.

The majority of the Offsite Improvements Area is located within Subunit 2 (Alberhill) of the Elsinore Area Plan and within Criteria Cell Group W. However, the Offsite Improvements are for realignment of a covered road; therefore the Offsite Improvements are not subject to Reserve Assembly requirements. A majority of the Offsite Improvements area is located within the MSHCP Burrowing Owl Survey Area. Figure 5 depicts the MSHCP Designations relative to the MSHCP Project Area and Offsite Improvements Area.

The Study Area is located within the United States Geological Survey (USGS) 7.5' series Lake Elsinore quadrangle, Township 6 North, Range 5 West, Section 25. Some of the Assessor Parcel Number's within the project areas (not including the 500-foot buffer) include[1]:

389-200-039 (MSHCP-excluded Project Area)
389-200-038 (MSHCP-excluded Project Area)
389-210-036 (MSHCP Project Area)
389-210-008 (MSHCP Project Area)
389-210-034 (MSHCP Project Area)
389-210-032 (MSHCP Project Area)

The Offsite Improvements Area is located within an existing right-of-way (ROW).

Existing Conditions

The Project Site consists of approximately 34 acres currently undergoing active construction/grading operations, within the existing active mining facility, and the remaining approximately 38 acres of undeveloped land. Adjacent uses to the Project Site include the active Nichols Road mining facility and undeveloped land to the north; residential development to the east; Temescal Canyon High School to the south; and Interstate 15 to the west. The Project Site includes an earthen drainage feature, Stovepipe Creek, that conveys storm water flows entering the Project Site by two corrugated metal culverts located at the eastern boundary.

[1] APNs were collected on July 30, 2018 from ArcGIS Riverside County Parcels.

South of the existing Nichols Road, the Project Site consists of gently rolling topography bisected by a channel that flows generally from the northeastern corner of the Project Site to the southwestern corner of the Project Site. Elevation on the Project Site ranges from approximately 1290 feet mean sea level (MSL) to 1400 feet MSL. North of Nichols Road the topography rises up into steep hillsides to the northeast. Along the western portion of the Project Site north of Nichols road, the topography is generally flat with small rolling hills and similar grade to the road.

Project Contact Information

Owner / Applicant

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San Juan Capistrano, CA 92675
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Burrowing Owl Field Survey Methods

The burrowing owl assessment followed the guidelines identified in *Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area* (County of Riverside 2006). The survey instructions note the following steps to the MSHCP burrowing owl assessment:

- Step 1: Habitat Assessment
- Step 2: Locating Burrows and Burrowing Owls
    - Part A: Focused Burrow Survey
    - Part B: Focused Burrowing Owl Surveys (4 separate surveys)

As noted in the Project biological technical report (VCS 2018), a burrowing owl habitat assessment (Step 1) was performed during the general biological survey on June 1 and December 8, 2017 by VCS biologists Erin Hayes and Carla Marriner. It was determined that the Project Site, Offsite Improvements Area and surrounding 500-foot buffer hosted suitable habitat for burrowing owls; therefore Step 2, Locating Burrows and Burrowing Owl was performed in 2018.

The focused burrow and focused burrowing owl surveys (Step 2, Parts A and B) involved walking through the Study Area depicted on Figure 4. The first survey included both the focused burrow survey and first of the focused burrowing owl surveys. The remaining three focused burrowing owl surveys were conducted in the areas where suitable habitat and burrows were identified during the first survey including the burrow locations plus within 500 feet of the burrows. The field methodology employed for the focused burrow and focused burrowing owl surveys were essentially the same. The pedestrian survey transects were spaced an appropriate distance apart to allow 100 percent visual coverage of the ground surface (approximately 10 to 15 meters [30 to 50 feet]; adjusted for specific field conditions including vegetation and topography); the biologists paid special attention to those habitat areas that appeared to provide suitable habitat for BUOW. Soil conditions, topography, vegetative communities, and habitat quality were documented. Any inaccessible areas (e.g. due to safety or not granted legal access), were surveyed with the use of binoculars.

All encountered burrows or structure entrances were checked for the presence of BUOWs, molted feathers, cast pellets, prey remains, eggshell fragments, tracks, or excrement at or near a burrow entrance. Natural or man-made structures and debris piles that could support BUOWs were also surveyed. All burrows were monitored at a short distance from the entrance, and at a location that would not interfere with owl behavior. All the burrows locations were recorded using GPS technology. The surveys were not conducted during rain, high winds (> 20 miles per hour), dense fog, or temperatures above 90 degree Fahrenheit (°F).

The methods used to detect and identify BUOW included observation of key signs identified by the California Burrowing Owl Consortium (CBOC) such as sight, scat, tracks, burrows, nests, and calls. All wildlife species encountered visually or audibly during the field survey were identified and recorded in field notes. Binoculars were used to aid in the identification of observed wildlife. Photographs were taken to document existing conditions within the Study Area.

Prior to the field surveys, available literature and databases including the California Natural Diversity Database (CNDDB) were reviewed, to identify sensitive habitats and special status wildlife species, specifically burrowing owl observations in the vicinity of the Study Area.

Results

The surveys were conducted over a series of four field visits by VCS biologists, as noted in Table 1 below. The survey on May 22 included both the focused burrow survey and the first of the four focused burrowing owl surveys.

Table 1. Survey Schedule, Weather Conditions, and Personnel

Survey Date	Time	Temperature High and Low (Fahrenheit)	Sky Conditions	Personnel
May 22, 2018	7:45 am – 12:15 pm	62, 56	Cool, overcast	EH, CM
June 26, 2018	7:00 am – 9:00 am	81, 76	Sunny, good visibility, minimal wind	WC, DH, MBW
July 12, 2018	7:00 am – 9:00 am	78, 69	Sunny, good visibility, minimal wind	WC, SC
July 26, 2018	7:00 am – 8:30 am	85, 71	Sunny, clear skies, 60% humidity, no wind	EH, CM, WC

EH = Erin Hayes, CM = Carla Marriner, WC = Wade Caffrey, DH = Darcy Hardwick,
MBW = Molly Burdick-Whipp, SC = Sierra Coleman

The results of the survey are detailed below.

Results – Habitat/Vegetation

The Study Area is characterized by non-native and native ruderal herbaceous species, non-native grassland, and native sage scrub communities with large areas of disturbed or developed land without vegertation, most notably within the MSHCP-excluded Project Area.

The MSHCP Project Area, MSHCP-excluded Project Area, and Offsite Improvements Area are mostly characterized by ruderal native and non-native herbaceous and grassland species that include ripgut brome (*Bromus diandrus),* London rocket (*Sisymbrium irio*), shortpod mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), red-stem filaree (*Erodium cicutarium*), Russian thistle (*Salsola tragus*), tumble pigweed (*Amaranthus albus*), oats (*Avena* sp.),

cheatgrass (*Bromus tectorum*), and false barley (*Hordeum murinum*). Native species within the habitat include doveweed (*Croton setigerus*), common fiddleneck (*Amsinckia intermedia*), and vinegar weed (*Trichostema lanceolatum*). Occasional small California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), and California buckwheat (*Eriogonum fasciculatum*) were observed within the habitat.

Disturbed Riversidean sage scrub occurred in the MSHCP Project Area, MSHCP-excluded Project Area, and Offsite Improvements Area. This community type was characterized by predominantly high density of weedy native and non-native annual herbaceous species such as doveweed, red-stem filaree, shortpod mustard, and brome grasses with sparse and small Riversidean sage scrub shrubs throughout including California sagebrush, California buckwheat, brittlebush, grassland pinebush, and deerweed. Valley cholla (*Cylindropuntia californica* var. *parkeri*) was also found in this habitat. It appears the areas of disturbed Riversidean sage scrub may experience regular disturbance, such as annual disking explaining why the shrubs are small and sparse.

Riversidean Sage Scrub and Riversidean Alluvial Fan Sage Scrub communities were found within the MSHCP Project Area and the MSHCP-excluded Project Area. Species observed within the Riversidean Sage Scrub habitat on-site include California sagebrush, California buckwheat, brittlebush, deerweed (*Acmispon glaber*), white sage (*Salvia apiana*), jimson weed (*Datura wrightii*), and grassland pinebush (*Ericameria palmeri* var. *pachylepis*). The Riversidean Alluvial Fan Sage Scrub habitat is associated with the sandy/gravely bottomed ephemeral wash within the channel that bisects the Project Site. Dominant species in this habitat include scalebroom (*Lepidospartum squamatum*) and California buckwheat. Additional species observed within the habitat include brittlebush, California sagebrush, deerweed, and white sage.

Open Streambed habitat was identified within the MSHCP Project Area, which is comprised of sandy wash substrate and is essentially void of vegetation.

Lastly, some ornamental vegetation was identified within the Project Area. Species include Peruvian peppertrees (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), pine (*Pinus* sp.), palo verde (*Parkinsonia* sp.), Mexican fan palm (*Washingtonia robusta*), olive (*Olea europaea*), tamarisk (*Tamarix aphylla*), jacaranda (*Jacaranda* sp.), and African sumac (*Rhus lancea*).

Site photographs are attached as Exhibit A.

Results – Wildlife

During the field survey, the following wildlife were observed/detected:

- American crow (*Corvus brachyrhynchos*)
- American kestrel (*Falco sparverius*)

- Anna's hummingbird (*Calypte anna*)
- bushtit (*Psaltriparus minimus*)
- California horned lark (*Eremophila alpestris*)
- California towhee (*Melozone crissalis*)
- coastal California gnatcatcher (*Polioptila californica californica*)
- common raven (*Corvus corax)*
- domestic rooster (*Gallus gallus domesticus*)
- Eurasian collared-dove (*Streptopelia decaocto*)
- European starling (*Sturnus vulgaris*)
- great egret (*Ardea alba*)
- house finch (*Haemorhous mexicanus)*
- killdeer (*Charadrius vociferous*)
- lark sparrow (*Chondestes grammacus*)
- lesser goldfinch (*Spinus psaltria*)
- mourning dove (*Zenaida macroura*)
- northern mockingbird (*Mimus polyglottos*)
- red-tailed hawk (*Buteo jamaicensis*)
- rock wren (*Salpinctes obsoletus*)
- song sparrow (*Melospiza melodia*)
- desert cottontails (*Sylvilagus audubonii*)
- coast horned lizard (*Phrynosoma coronatum*)

Results – BUOW

No BUOW or active signs thereof were observed during the four surveys within the Study Area. Suitable burrows were observed within the Study Area during the surveys. The burrows depicted on Figure 4, within the Study Area, are considered potentially suitable for burrowing owls. Parts of the MSHCP Project Area and MSHCP-excluded Project Area were either recently graded or disked and contained few suitable burrows as the soil was too friable. The section of the Study Area north of Nichols Road was generally steeply sloped and rocky where cavities were too small or were surrounded by vegetation creating an unsuitable environment for BUOW burrows. Most burrows potentially suitable for BUOW occurred along the drainage feature and along the western border of the MSHCP-excluded Project Area. Additionally, suitable foraging and nesting habitat was observed within the Study Area; however, no burrowing owls, or signs of burrowing owl were observed during the surveys.

Conclusion

Based on the lack of direct observation of BUOW or evidence of BUOW activity (e.g. active burrows, whitewash, pellets, etc.) during the surveys, the Study Area was not considered to be occupied by BUOW. However, the Study Area includes burrows suitable for burrowing owl and suitable burrowing owl foraging habitat; therefore, although burrowing owls were not found, a pre-construction survey will need to be conducted within 30 days prior to ground disturbance to avoid direct take of burrowing owls in compliance with the Burrowing Owl Survey Instructions for the MSHCP (County of Riverside 2006).

If you have any questions, please feel free to contact me at (949) 489-2700 ext. 215.

CERTIFICATION: *I hereby certify that the statements furnished above and in the attached exhibits present 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.*

Date: September 7, 2018
Signed:

Erin Hayes (Director, Biological Services)

Enclosures

Figure 1 – Regional Location
Figure 2 – Vicinity Map
Figure 3 – Project Area Boundaries
Figure 4 – BUOW Survey Area and Burrow Locations
Figure 5 – MSHCP Designations

Exhibit A - Site Photographs

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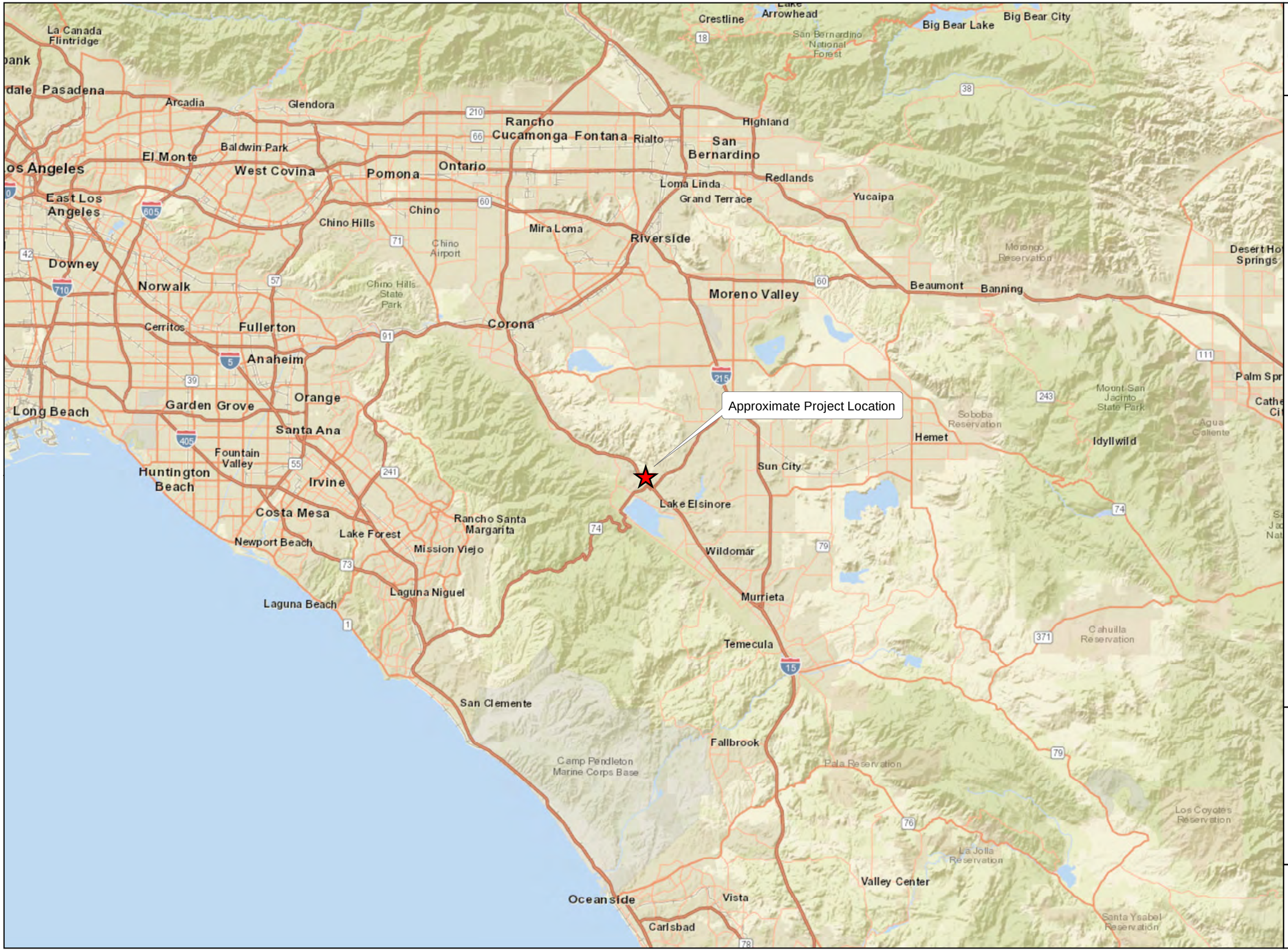

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NICHOLS RANCH PROJECT

Figure 1.
Regional Location Map

N
W E
S

0 40,000 80,000
Feet

1 in = 40,000 ft

Map Date:
April 2018

Data Source:
ESRI

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NICHOLS RANCH PROJECT

Figure 2.

Vicinity Map

N
W E
S

0 300 600 900 1,200
Feet

1 in = 600 ft

Map Date:
June 2018

Imagery Source:
BING

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NICHOLS RANCH PROJECT

Figure 3.

Project Area Boundaries

Project Site (72.50 ac)
MSHCP-Excluded Project Area (45.50 ac)
MSHCP Project Area (27.00 ac)
Offsite Improvements/MSHCP-Covered Road Area (7.78 ac)
MSHCP-Excluded Survey Area (11.21 ac)

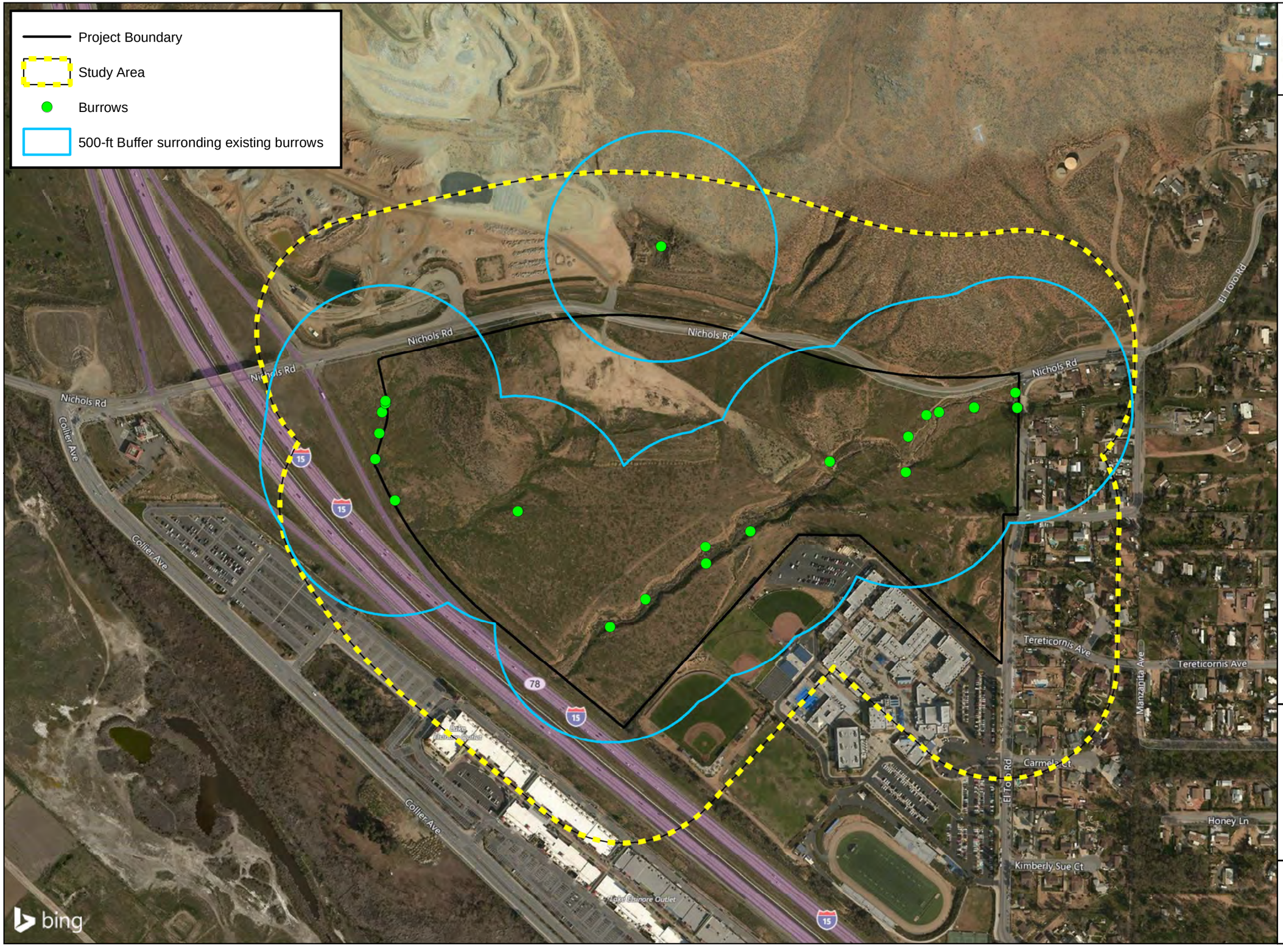
N
W E
S

0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS



VCS Environmental
EXPERT SOLUTIONS | CEQA-NEPA . Biology . Regulatory

NICHOLS RANCH PROJECT

Figure 4.

BUOW Study Area & Burrow Locations

N
W E
S

0 200 400
Feet

1 in = 400 ft

Map Date:
June 2018

Data Source:
BING,VCS

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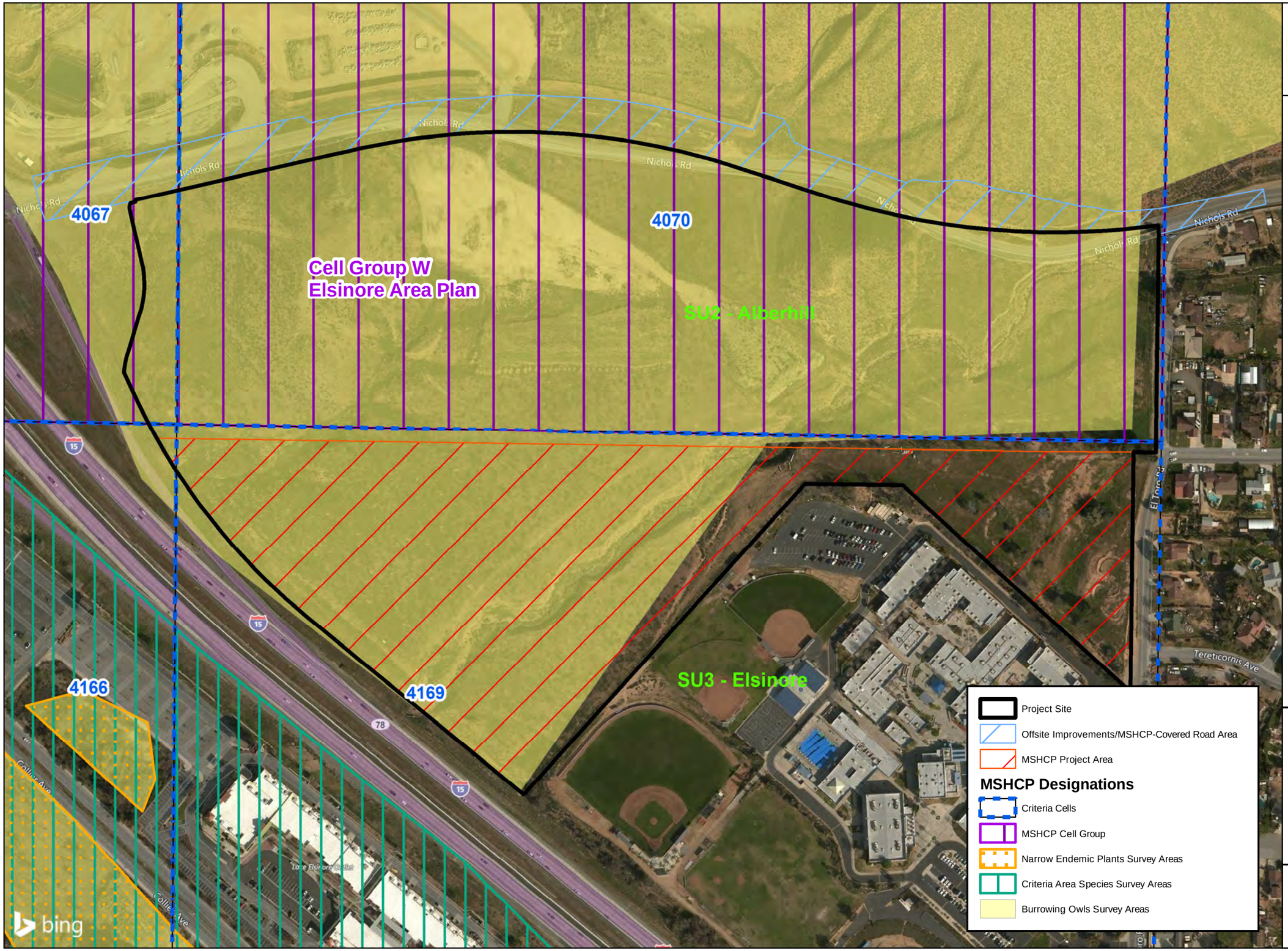
NICHOLS RANCH PROJECT

Figure 5.

MSHCP DESIGNATIONS



N
W E
S

0 125 250 375 500
Feet

1 in = 250 ft

Map Date:
June 2018

Data Source:
BING, K&A, VCS,
County of Riverside

EXHIBIT A

SITE PHOTOGRAPHS

Photo 1. MSHCP Project Area: viewing northeast within eastern area. View of Riversidean Sage Scrub habitat on the left and disked/disturbed area on the right. (Photo date: 5/22/2018)

Photo 2. MSHCP Project Area: viewing southwest within eastern area. Another view of Riversidean Sage Scrub habitat on the right and disked/disturbed area on the left. (Photo date: 6/26/2018)

Photo 3. MSHCP Project Area: viewing northwest along southern boundary. I-15 freeway in the background and disturbed/developed area in the foreground. (Photo date: 7/26/2018)

Photo 4. View of MSHCP-excluded Project Area (beyond orange fencing) taken from the northernmost portion of the MSHCP Project Area (northwesterly view). Ruderal vegetation (foreground) and disturbed/developed areas (background) within MSCHP-excluded Project Area are shown. (Photo date: 5/22/2018)

Photo 5. Easterly view of future Nichols Road alignment (middle), the MSHCP-excluded Project Area (far right), and the portion of the study area north of Nichols Road (left). (Photo date: 5/22/2018)

Photo 6. Typical view of the portion of the Study Area north of Nichols Road (northerly view) characterized by steeply sloped, rocky habitat. (Photo date: 7/12/2018)

Photo 7. Typical view of a natural burrow. (Photo date: 5/22/2018)

Photo 8. Concrete pipes within MSHCP Project Area. (Photo date: 7/26/2018)

APPENDIX C

Focused Adult Survey for Quino Checkerspot Butterfly [MSHCP-Excluded Survey Area]

FOCUSED ADULT SURVEY FOR QUINO CHECKERSPOT BUTTERFLY (*Euphydyras editha quino*) ON THE 10.6-ACRE NICHOLS SOUTH PROJECT SITE, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

VCS Environmental
30900 Rancho Viejo Road, Suite 100
San Juan Capistrano, CA 92675

The undersigned certify this report to be a complete and accurate account of the findings and conclusions of focused surveys for adult Quino Checkerspot Butterfly (*Euphydryas editha quino*) conducted during the spring of year 2017, on the 10.6-acre Nichols South project site, Riverside County, California.

Ken H. Osborne
6675 Avenue Juan Diaz
Riverside, CA 92509

June 15, 2017

FOCUSED ADULT SURVEY FOR QUINO CHECKERSPOT BUTTERFLY (*Euphydyras editha quino*) ON THE 10.6-ACRE NICHOLS SOUTH PROJECT SITE, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

VCS Environmental
30900 Rancho Viejo Road, Suite 100
San Juan Capistrano, CA 92675

Prepared by:

Kendall H. Osborne
Osborne Biological Consulting
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Riverside, CA 92509

June 15, 2017

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FOCUSED ADULT SURVEY FOR QUINO CHECKERSPOT BUTTERFLY (*Euphydyras editha quino*) ON THE 10.6-ACRE NICHOLS SOUTH PROJECT SITE, RIVERSIDE COUNTY, CALIFORNIA

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Ken H. Osborne
6675 Avenue Juan Diaz
Riverside, CA 92509

June 15, 2017

SUMMARY

VCS Environmental, has requested an adult survey for Quino Checkerspot Butterfly on the Nichols South project site, north of Lake Elsinore, Riverside County. The total acreage of the site is approximately 10.6 acres.

To assess the subject site for potential as habitat for the federally endangered Quino Checkerspot Butterfly (QCB, *Euphydryas editha quino*), and to determine presence or absence of QCB, the site was visited on January 24, 2017 in order to determine extent of habitat suitable for QCB. Subsequent field surveys were conducted from February 15 to May 10, 2017 in order to perform the focused survey for QCB.

The purpose of the field surveys was to locate and map the distribution of QCB habitat on the subject property, and during the course of the season, conduct focused surveys for adult QCB. Notes toward a general characterization of host plant localities, as well as the overall site for any conditions important to the biology and ecology of QCB were recorded. The subject site supports exotic annual grasslands, coastal sage scrub, and alluvial sage scrub. The entire site was included for survey constituting QCB habitat per survey guidelines (USFWS 2014).

No QCB were seen during the course of this survey. The spring 2017 season enjoyed substantial winter precipitation and a correspondingly good expression of annual plants and wildflowers on the site. Nectar resources suitable for use by QCB were distributed throughout the site. No QCB host plant species were observed on the site. It is my conclusion that the site does not support a population of QCB.

1.0 INTRODUCTION

This report presents the methods and results of a Quino Checkerspot Butterfly (QCB, *Euphydryas editha quino*) habitat assessment and focused adult QCB surveys for the 10.6-acre Nichols South project site, north of Lake Elsinore, Riverside County. The QCB was listed as a federally endangered species on January 16, 1997 (USFWS 1997).

Field surveys for QCB were conducted with focus on approximately 10.6 acres of suitable habitat on the site. Figure 1 shows the general vicinity of the survey site at 50% scale on the Lake Elsinore, 7.5' USGS quadrangle. Figure 2 shows the survey site at 100% scale on the Lake Elsinore, 7.5' USGS quadrangle. Lands similar to those on the survey site are found to the south and west of the site, with lands to the north and east developed.

Quino Checkerspot field surveys were divided into two separate tasks. Task One consisted of a general QCB Habitat Assessment. Task Two involved focused searches for adult QCB following USFWS (2014) guidelines. The purpose of Task One (QCB Habitat Assessment) field surveys was to identify and characterize potential QCB habitat using definitions prescribed by USFWS (2014) guidelines, as well as on the basis of more

specific habitat criteria determined by my own experience. This considered presence or absence developed areas and of areas with dense, closed canopy chaparral (too dense to constitute areas where QCB might likely be encountered), and areas lacking closed canopy chaparral (constituting QCB habitat as prescribed by USFWS protocol). Additional specific criteria involved presence, abundance and density of QCB hostplants as well overall plant community composition, soil surface conditions, and slope. Task Two (Focused QCB Adult Surveys) field surveys were conducted to determine the presence or absence of adult QCB within the subject property. In addition, while conducting surveys, further efforts were made to locate and identify QCB host plant species and any other essential biological resources (i.e. hilltopping sites, soil substrate suitable for support of QCB hostplants) required for habitation by QCB.

2.0 SITE DISPOSITION

The site is found on the Lake Elsinore, California, USGS 7.5 minute series quadrangle map in Township 5 S., Range 5 W. in section 25. In general, the site is located east of Hwy I-15 and south of Nichols Road.

3.0 SPECIES BACKGROUND

The Quino Checkerspot Butterfly (*Euphydryas editha*), also known as Edith's Checkerspot, is a small brush-footed butterfly (family Nymphalidae) that flies once a year. Like most *Euphydryas* sp., it has a small, approximately 2.5 to 4 cm wingspan and is checkered with black, red, and yellowish markings. This species is distributed in local colonies over much of western North America (Scott 1986, Parmesan 1996). Many subspecies have been described including 18 from California (Garth and Tilden 1986, Emmel et al. 1998).

QCB colonies are primarily associated with low elevation (sea level to 3,000 feet) open grasslands, vernal pools, and sunny openings within chaparral, coastal-sage scrub, and juniper woodlands. Colonies are found frequently near clay soils that possess cryptogamic crusts (crusts that are formed by the association of algae, mosses and fungi upon the surface of the soil). QCB distributions closely approximate the distributions of the primary larval host plant, *Plantago erecta* (dot-seed plantain, also known as dwarf plantain, family Plantaginaceae). Recently discovered, higher elevation (to 5000 feet) QCB populations have been found to use *Plantago patigonica* (Plantaginaceae); *Antirrhinum coulterianum*, and *Colinsia concolor* (Plantaginaceae); and *Cordylanthus rigidus* (Orobanchaceae). All of the QCB hosplant species are phylogenetically related generally (until recently many of the above listed plants have been classified as Scrophulariaceae), and their familial taxonomy has recently undergone flux resulting from DNA studies (Olmstead et al. 2001, see also Allen and Roberts 2013). Although *E. editha* are oligophagous (feed upon a limited range of plant species) and feed primarily upon plants contained within the Scrophulariaceae and Plantaginaceae, most local populations tend to be monophagous (feed on only one plant species) (White 1974, Scott 1986).

QCB mating activity occurs in or near the meadows, clearings, open areas on slopes and ridgelines inhabited by the host plants, where the larvae previously developed, and on open or sparsely

vegetated hilltops, ridgelines, and occasionally rocky hilltops (with or without the host plant being present nearby). Inordinately large numbers of adult males are found on hilltops (usually only one or two per hilltop), where they exhibit "territorial behavior" – flying sorties from various perches to chase other butterflies, including conspecifics. QCB males often chase each other high into the air, only to return to different parts of the hilltop. Hill-topping, where male butterflies await the arrival of unmated females in order to secure mates is common in many species of butterflies and the behavior in QCB is well known among experienced southern California lepidopterists and was well documented by Shields (1967) in a study of Dictionary Hill. When QCB adult densities are relatively low, mating success derived from facultative hilltoping behavior may be critical to long term population viability. Such hilltopping behavior is common to many species of butterflies (Shields 19670), moths and other insects.

Female QCB lay egg masses that contain approximately 20-75 eggs and may produce up to 1,200 eggs in several batches during their lifetime. The eggs hatch in about ten days under favorable conditions and the larvae immediately begin to feed. Early larval stages undergo an obligatory aestival diapause (dormant period from late spring through winter), which is broken after fall or winter rains of the following season (Murphy and White 1984, Osborne 1998). The larvae then quickly complete their development and emerge as adults during the same spring (Emmel and Emmel 1973, White 1974, Orsak 1977, Murphy and White 1984, Mattoni et al. 1997). Adult flight typically occurs between late January and mid-May, with peak activity generally in March and April. The flight period varies from year to year, depending upon the annual rainfall and other weather conditions. The timing and abundance of rainfall are important factors affecting the timing of host seed germination, growth, maturity and senescence of the host plant (especially for populations ecologically tied to *Plantago erecta*)(Murphy and White 1984, Dobkin et al. 1987), which in turn affects the survivorship of the larvae (Singer 1972, Ehrlich et al. 1980). Solar insolation on hillsides (determined in part by topography), where the larvae live, affects both the rate of host development and that of the larvae (White 1974, Weiss et al. 1988). In the race against host senescence (*Plantago erecta*), post-diapause larvae seek microclimates with high solar insolation in order to bask (Osborne 1998, Osborne and Redak 1999). This behavior increases their rate of development (Weiss et al. 1987). Soil conditions supporting the *P erecta* represent an additional complexity to QCB ecology. On gabbroic clay soils, the *P. erecta* takes on a prostrate, glabrous form with persists longer than the tall, hirsute form of *P. erecta* characteristic of more porous, silty soils. With respect to the low elevation QCB populations associated with *P .erecta* in western Riverside and San Diego Counties – nearly all of them are associated with gabroic or other volcanically derived clay soils; and QCB populations are conspicuously absent in areas with silty, schist-derived soils despite the presence of the *P. erecta*. It is likely that *P. erecta* on pourous soils is simply not sufficiently persistent to support QCB ecology. During periods of extended drought, the butterfly's populations decline and individual butterflies may become difficult to find. It is now known that extended periods of diapause over multiple years, can occur during drought (based on rearing observations by myself, Ballmer, Pratt and J. Emmel).

Metapopulation dynamics (Ehrlich et al. 1980, Dobkin et al. 1987) are an important element of QCB population ecology. Here, local colonies of the butterfly exist within complexes of habitat patches – with many habitat patches seeing temporary and often long-term absence of the butterfly. Populations undergo irregular boom and bust cycles. Particular, large, high quality habitat patches serve as population sources from which adults disperse to recolonize outlying habitat patches.

Habitat patches very with respect to hostplant species, size, microclimate, degree of isolation (increasing in modern times due to urban expansion), and relative proximity to other patches; so that population stability patch to patch, region to region is variable. These complex metapopulation dynamics have local function nested within larger patterns of function on ever increasing geographic scales.

Populations of *Euphydryas editha quino*, which were once distributed through much of lowland coastal southern California from northern Baja California, Mexico to Point Dume, Los Angeles County, have been declining since the late 1960's (Thorne 1970, Emmel and Emmel 1973, Orsak 1977, 1988). It has been hypothesized that this decline is primarily due to habitat loss by urban and agricultural expansion (Thorne 1970, Emmel and Emmel 1973, Orsak 1988). Here, large scale habitat loss simply disrupts matapopulation stability leading to the eventual collapse of the entire structure on a regional scale, as has likely happened in Orange County. Fire and overgrazing (Orsak 1977, but see Orsak 1988) may explain some decline. Increased exogenous inputs of Nitrogen promote competative exotic grasses (Weiss 1999) are known to eliminate habitat conditions suitable for Bay checerspot. With a more recent analysis, proximity to urban population centers and growth is strongly correlated with Quino extinction events (Preston, *et al* 2012). The decline of QCB may have started long before these modern observations after the early Spanish explorers and settlers introduced exotic grasses and forbs. These plants are highly competitive with the native QCB host plants (Proctor and Woodwell 1975).

Climate change has been argued as an agent of QCB decline. The Parmeasan study (1996) purporting to show range shift in *Euphydryas editha* due to climate change is invalid, as its statistical assumptions and conclusions break down after considerations including multiple year larval diapause, survey efforts required for valid negative findings, and the discovery of populations farther south in Mexico than previously considered. Populations are now known to exist only at a few sites, in small isolated colonies, in southwestern Riverside and southern San Diego Counties. Similarly, the recent suggestion that the newly discovered populations in the historically more remote, inaccessible, and under collected, higher elevation portions of southern California represent a recent climate-change-induced range shift for Quino (Parmesan *et al*. 2014), fail to fully appreciate the profound bias structured into the historic *specimen* versus present environmental compliance *survey data* collection imperatives. Since the late 1990's listing of Quino and the advent of extensive survey efforts on undeveloped lands, often in remote areas, many Quino population localities have been located in a broad region of higher elevations and farther east than historically known (for Quino) both in Riverside and San Diego Counties. These new (since Quino federal listing in 1997) distribution records, funded by the many and varied public and private project proponents, far exceed the efforts exerted historically, over many decades past, by butterfly collectors, who once drove fifteen minutes out of San Diego, Laguna Beach, Riverside, and Anaheim to collect specimens of Quino.

4.0 METHODS

4.1 Task One - QCB Habitat Assessment

On January 24, 2017, I visited the Nichols South project area. Using the map of the site as depicted on aerial image, I examined habitat conditions throughout the project area in

order to determine which portions of the study site warranted focused survey for QCB. Upon casual inspection, it became obvious that the entire site would constitute QCB habitat in accordance with USFWS protocol. Habitat evaluation continued to a lesser extent on subsequent survey dates, and included a careful assessment of any QCB hostplant occurrence. After substantial winter rains, annual growth suggested a good potential for spring butterfly activity.

4.2 Task Two - Focused Adult QCB Surveys

Focused adult surveys (searches) for QCB were conducted on fourteen dates from February 15 to May 10, 2017 by myself (Ken H. Osborne, USFWS Permit #TE837760-10). The field surveys followed USFWS survey protocol for focused adult QCB surveys developed by the U.S. Fish and Wildlife Service (USFWS 2014). These guidelines require that QCB surveys be conducted during a field season (third week of February to the second Saturday of May) and replace guidelines that relied on the basis of biologist's judgment as well as QCB activity at other reference colonies in southwestern Riverside County and San Diego County. Surveys must be conducted, if weather permits, at least once during each week, hopefully with suitable weather conditions prevailing (not overcast, or raining, minimal sustained winds < 15 mph, and temperatures > 65°F, or if overcast, temperatures > 70°F). In addition, per my own standards, surveys were generally conducted between the hours of 0900 and 1600. As a lepidopterist with > 50 years experience, I consider these temperature and time thresholds as useful guidelines (for inexperienced biologists), but note that I often find QCB under lesser conditions. Adult survey walked general transects across the slopes and flat areas in sage scrub and open grasslands, additionally visiting two hilltops (one created artificially by fill materials) on the western margin of the site (just off site, and graded out during the latter weeks of the survey). Survey examined any nectar sources, and open ground that might serve as flyways. In walking through the survey area, general field notes were collected, specifically on weather conditions, butterfly and moth species observed, potential nectar sources, general plant communities, their composition, and wildlife species observed during the survey.

The suitable survey area of 10.6 acres, given the prescribed survey rate of 5 to 10 acres per person-hour (USFWS 2014) called for a minimum of one hour and four minutes of survey effort per week. The survey season extended through fourteen weeks, (February 15 to May 10).

The survey area for this study underwent a series of reductions: The original notification to USFWS (February 8, 2017, correspondence in appendix) called for some 40 acres extending to Hwy 15 as a western boundary. My habitat evaluation of January 24 determined the entire area to constitute potential habitat for QCB according to USFWS protocol. I was subsequently advised that the area to be surveyed would be the 10.6 acre eastern portion of this area (as indicated in correspondence to USFWS dated February 8. Prior to initiation of focused surveys, I staked the western boundaries of the site using GPS coordinates (according to the February 8 notification). Survey efforts from February 15 to April 26, 2017 encompassed the entire area depicted on maps provided

with correspondence to USFWS dated February 8, and further included the hills just offsite to the west of the project area (representing hilltopping venues for butterflies). By mid April, an approved and permitted (I understand per communication with my client) grading project involved adjacent lands to the west of the survey area and also the hills I had been visiting through the season. When grading and brush clearing activities began to encroach into the survey area as I had understood it to that date, my client provided a refined map showing the boundaries of our survey area to be roughly corresponding to the northern edge of the channel which bisects the survey area, and so, for the remaining two site visits of May 3 and May 10, 2017, the survey was restricted within this refined survey area (Appendix). Maps presented in Figures 1, 2, 3, and 10 reflect this refined survey area.

Table 1 provides a schedule and site weather conditions for survey of the subject property and adjacent lands.

Table 1. QCB Adult Focused Survey Schedule and Site Weather Conditions.

Date	Biologists	Hours	Weather Conditions
15 February, 2017	K. H. Osborne	0925-1025 and 1538-1600	clear, 75° *F*, calm
23 February, 2017	K. H. Osborne	1058-1216	clear, 63-64° *F*, winds 0-2 mph
1 March 2017	K. H. Osborne	1102-1225	clear, 69° *F*, winds 0-4 mph
7 March 2017	K. H. Osborne	0948-1110	clear, 62-68° *F*, calm
9 March 2017	K. H. Osborne	1050-1210	clear, 84-86° *F*, winds 0-1 mph
15 March 2017	K. H. Osborne	1220-1342	0 to 25% patchy clouds, 84-90° *F*, winds 0-2 mph
23 March 2017	K. H. Osborne	1352-1410	50% patchy clouds, 64-67° *F*, winds 0-5 mph
30 March 2017	K. H. Osborne	1300-1415	clear, 79-80° *F*, winds 3-9 mph
5 April 2017	K. H. Osborne	1120-1235	clear, 83-88° *F*, winds 0-5 mph
12 April 2017	K. H. Osborne	1133-1300	25 – 50% patchy clouds, humid, 70° *F*, winds 2-6 mph
20 April 2017	K. H. Osborne	1200-1317	clear, 85-86° *F*, winds 0-6 mph
26 April, 2017	K. H. Osborne	0900-1015	0-20% thin overcast, 69-78° *F*, winds 0-2 mph
3 May, 2017	K. H. Osborne	1030-1145	clear, 84-87° *F*, winds 0-7 mph
10 May, 2017	K. H. Osborne	1300-1425	95-100% overcast, humid, 68-77° *F*, winds 0-2 mph

5.0 EXISTING ENVIRONMENT

5.1 Topography

The site has gently rolling topography and is transected by a channel tending from the northeastern corner of the site to the central portions of the site down to the southwestern edge of the site. A prominent hill, present along the northwestern edge of the site (just off of the site) was graded off during the course of the survey. Elevation on the subject site ranges from approximately 1373 to 1325 feet.

5.2 Soils

Gently rolling topography on the site is generally classed as Hanford course sandy loam, Arbuckle gravelly loam, and Cortina gravelly loamy sand (Knecht 1971). The channel transecting the site has alluvial fan and river wash deposits (Knecht 1971). The hillside on the adjacent western margin of the site was composed of Cieneba rocky sandy loam.

5.3 Plant Communities

The predominant plant communities occurring on the subject site are annual exotic grassland/forbland, alluvial sage scrub, and coastal sage scrub. The majority of the site is regularly disturbed by annual disking, and thus supports exotic annual grasslands with exotic forbs (especially *Bromus madritensis*, *Bromus diandrus*, *Schismus barbatus*, *Avena fatua*, *Erodium cicutarium*, *Malva parviflora*, *Amsinkia menziesii*, and *Hirschfeldia incana*. A channel transecting the site, with gravely, cobly sandy wash, supports alluvial sage scrub vegetation dominated by *Eriogonum fasciculatum* and *Lepidospartum squamatum*. Coastal sage scrub with *Eriogonum fasciculatum*, *Artemisia californica*, *Encelia farinosa*, *Acmespon scoparius*, *Mirabilis californica*, and *Salvia apiana* occur on a few limited slopes that appear too steep to allow the annual disking. A list of plant species found on the site is given in Table A2 (Appendix).

6.0 SURVEY RESULTS

6.1 Task One - QCB Habitat Assessment

The January 24 site visit determined the entire site to be undeveloped lands in annual grassland and sage scrub vegetation types, and thus entirely constituting suitable QCB habitat per USFWS protocol (USFWS 2014). Most of the site was being disked on the initial survey visit (an annual practice evident on examination of GoogleEarth images of the site).

Figures 4 – 9 are photographs of views representative of landscapes and habitats found on and around the subject site. Figure 10 provides a key as to where on the site these photographs were taken.

6.2 Task Two - Focused Adult QCB Surveys

QCB was not observed on the study site. The 2016-17 winter and early spring 2017 season had sufficient precipitation to elicit an ample growth of annual vegetation and associated wildflowers of potential use by QCB. The hilltop adjacent to the western boundary of the site (Figures 5 and 8), visited on a regular basis until it was graded, represented an excellent hill topping venue for butterflies. Twenty-three butterfly and four moth species were observed during survey efforts (Table A1). Numbers observed on different dates may be found in field data (Appendix B). Most common species of butterflies were typical of spring season in southern California, including American

painted lady, (*Vanessa cardui*), Sara orangetip (*Anthocharis sara*), Felder's orangetip (*Anthocharis cethura*), Brown elfin (*Incisalia augustinus*), Behr's metalmark (*Apodemia mormo*), and Funeral dusky-wing Skipper (*Erynnis funeralis*).

Hostplants suitable for QCB development were not observed on the site, nor observed on offsite areas immediately west of the survey area (these portions additionally surveyed during February to early April). Nectar resources suitable for use by QCB were distributed throughout the site, generally increasing thorough the season, with *Erodium, Amsinkia, Dichelostemma,* and *Cryptantha* prominent in the early portion of the season; *Salvia, Encelia, Hirschfeldia, Eriogonum, Acmispon, and Cuscuta* becoming most prominent in the latter half of the season. Nectar resources on the site are listed within Table A2.

7.0 CONCLUSIONS

It is my conclusion that the subject site does not support a population of QCB. The site represents poor QCB habitat owing to lack of hostplant resources, and the new development underway on the western adjacent lands, so that the site is largely surrounded (except to the north) by developed lands, further diminishes QCB potential on the site for the foreseeable future.

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9.0 FIGURES

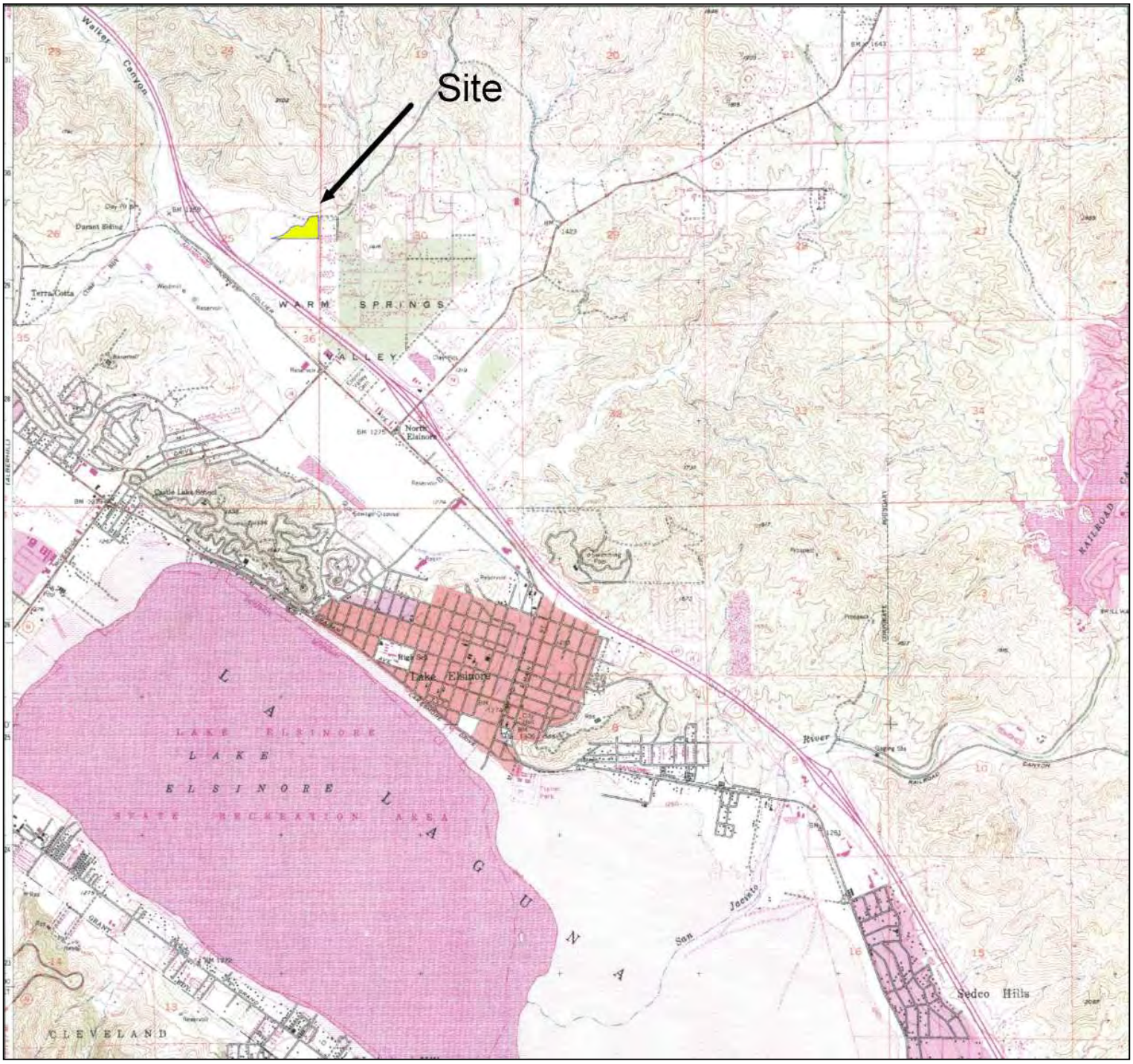


Figure 1. General vicinity of survey site, Lake Elsinore, California USGS 7.5" quadrangle at 50%. Subject site is outlined in blue and highlighted in yellow.

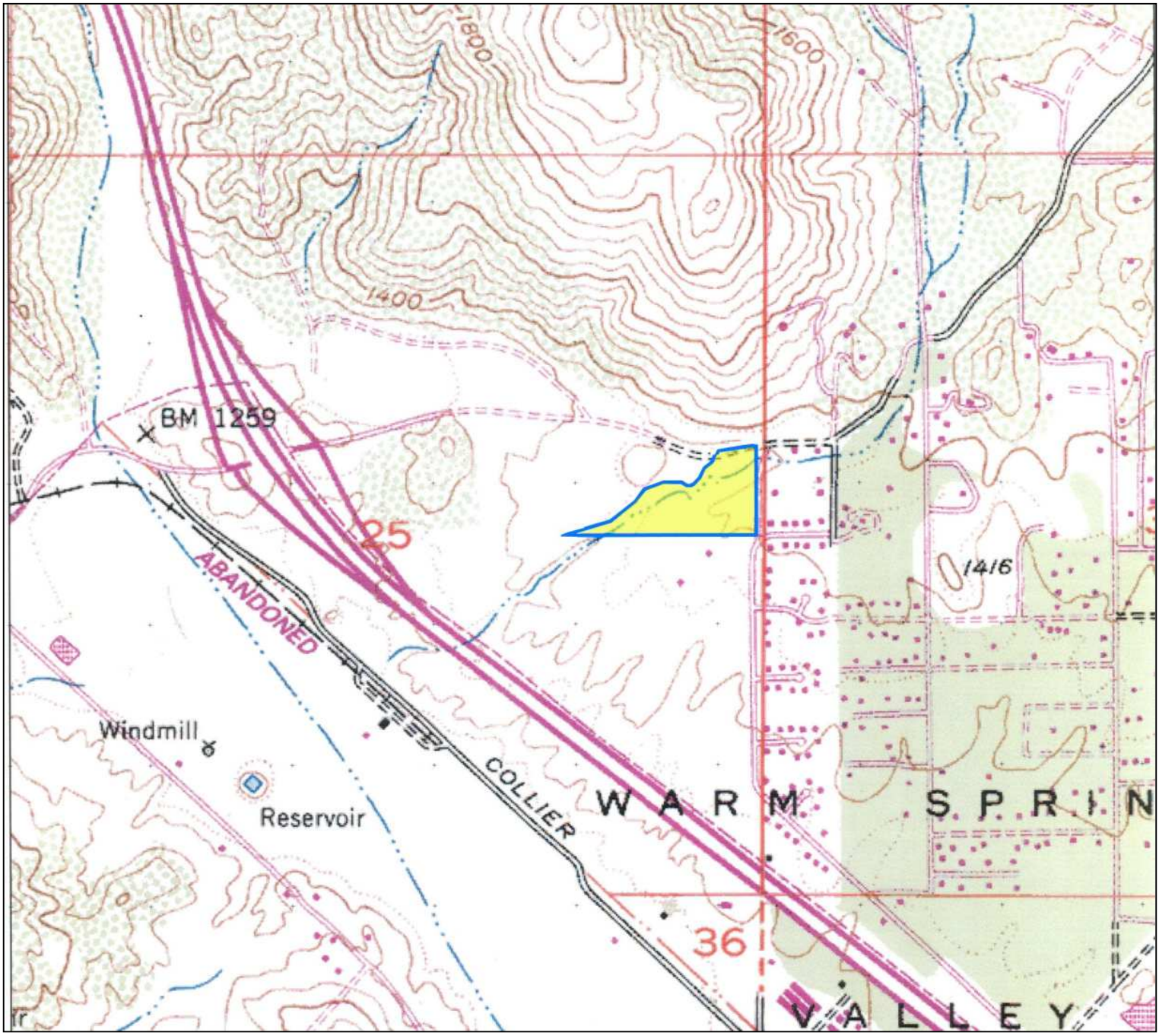


Figure 2. Survey site, Lake Elsinore, California USGS 7.5" quadrangle at 200%. Subject site is outlined in blue and highlighted in yellow.

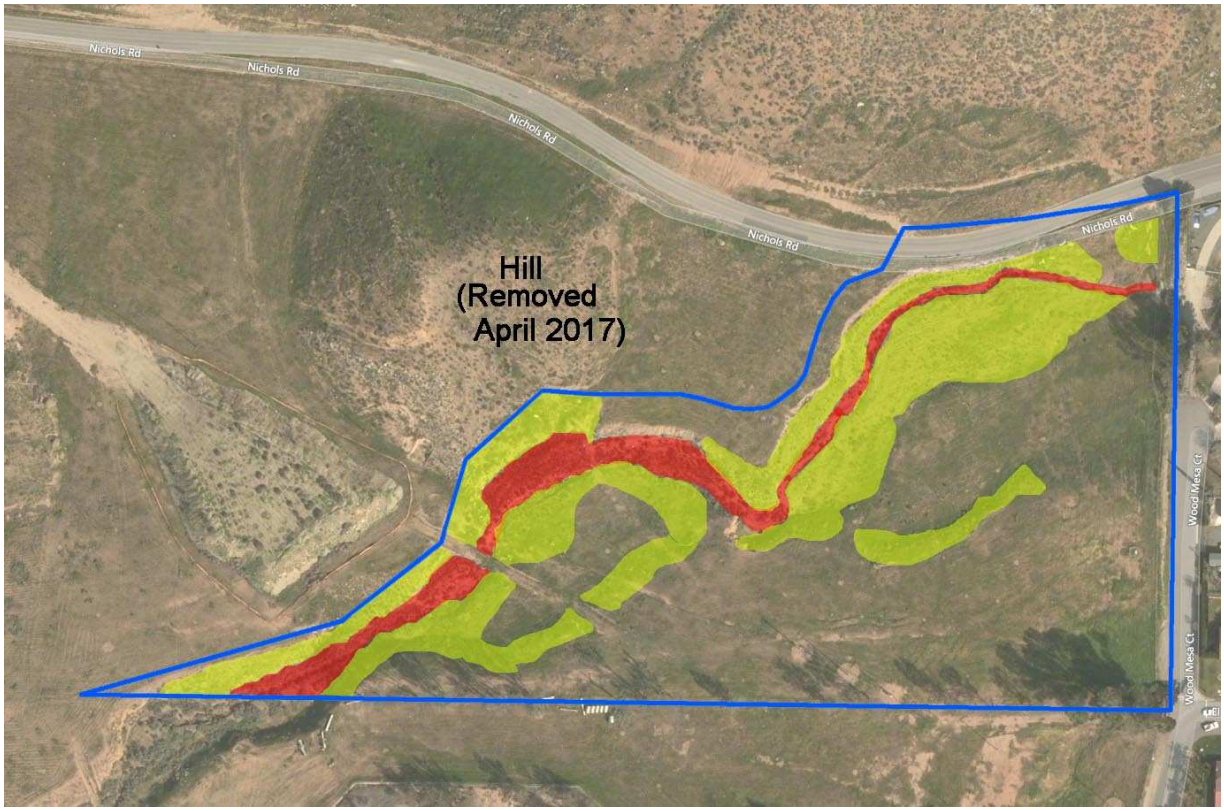


Figure 3. Distribution of vegetation types on the Nichols South project study site. General project area (blue boundary line); **Unshaded**: Exotic Annual Grassland/forbland. **Yellow**: Coastal Sage Scrub; **Red**: Alluvial Sage Scrub. The entire site is considered potential QCB habitat.

Figure 4. Photograph (March 1, 2017) of the southeastern portion of the study site with a view looking west from the southeastern corner of the site. Note the disked habitat on rolling topography.

Figure 5. Photograph (March 1, 2017) southeastern and central portions of the study site with a view looking west-northwest from the southeastern corner of the site. Note the disked habitat on rolling topography. Arrow (above right) indicates a hill just off site to the west.

Figure 6. Photograph (April 26, 2017) of the southwestern site with coastal sage scrub vegetation on a steep slope above a drainage channel. View looks east from near the southwestern edge of the site.

Figure 7. Photograph (May 10, 2017) of alluvial sage scrub habitat within the drainage channel on the central study site. View looks southwest from within the channel.

Figure 8. Photograph (March 15, 2017) of the prominent hillside and summit with coastal sage scrub vegetation located just off-site on the western edge of the site. A hilltopping venue for butterflies, this hill was graded off beginning in April. View looks west.

Figure 9. Photograph (May 10, 2017) of view along the western margin of the study site, a plastic fence installed to protect the drainage (right) from grading activities. View looks northeast from near the southwestern corner of the site.

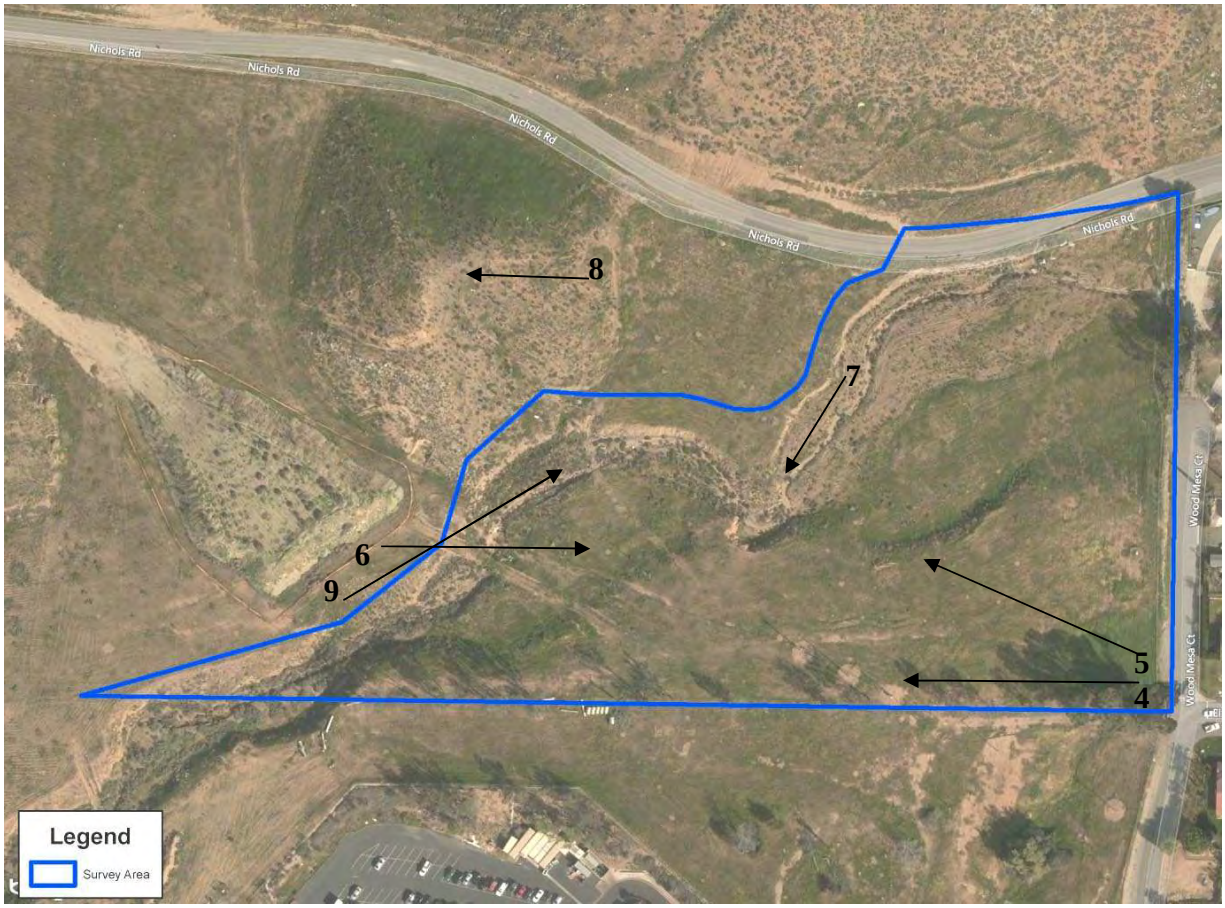


Figure 10. Approximate locations around survey site from which photographs were taken (base of arrows). Arrow indicates the direction a photograph was taken. Numbers next to the arrows indicate figure numbers (Figures 4-9). All portions of the site support nectar resources suitable for QCB. Nectar resources are distributed throughout the site (with exception of the paved surface of Nichols Rd.).

10 .0 APPENDIX

Appendix A

Table A1. Butterflies and moths encountered on the survey site.

Family	Species	Common name
Butterflies		
Nymphalidae	*Junonia coenia*	Buckeye
	Vanessa annabella	West coast painted lady
	Vanessa atalanta	Red admiral
	Vanessa cardui	American painted lady
	Adelpha bredowii	California sister
	Nymphalis antiopa	Mourning cloak
	Nymphalis californica	California tortoise shell
Pieridae	*Anthocharis cethura*	Felder's orangetip
	Anthocharis sara	Sara orangetip
	Colias eurytheme	Alfalfa sulfur
	Pieris rapae	Cabbage white
	Pontia beckerii	Becker's white
	Pontia protodice	Checkered white
Lycaenidae (Eumaeinae)	*Callophrys perplexa*	Perplexing hairstreak
	Incisalia augustinus	Brown elfin
	Strymon melinus	Gray Hairstreak
Lycaenidae (Polyommatinae)	*Brephidium exilis*	Pygmy blue
	Euphilotes bernardino	Bernardino blue
	Icarcia acmon	Acmon blue
Riodinidae	*Apodemia mormo*	Behr's metalmark
Hesperiidae	*Erynnis funeralis*	Funeral dusky-wing skipper
	Erynnis propertius	Propertius dusky-wing skipper
Moths		
Noctuidae	*Euclidia ardita*	
	Autographa californica	California looper
Saturniidae	*Hemiluca electra larvae*	Electra buckmoth
Sphingidae	*Hyles lineata*	White-lined sphinx moth

Table A2. Plant species encountered on the survey site (asterisk indicates suitable for QCB nectar use).

FAMILY	*Species*
ASTERACEAE	
California sage	*Artemisia californica*
Tocalote	*Centaurea melitensis*
fascicled tarplant	*Deinandra fasciculata*
brittlebush	**Encelia farinosa*
narrow-leaved filago	*Filago gallica*
sunflower	*Helianthus annua*
prickly lettuce	*Lactuca serriola*
southern goldfields	**Lasthenia coronaria*
Scalebroom	*Lepidospartum squamatum*
cudweed aster	*Lessingia filaginifolia*
chicoree	*Malacothrix saxatilis*
stink-net	*Oncosiphon piluliferum*
BORAGINACEAE	
ranchers fiddleneck	**Amsinkia menziesii*
cryptantha	**Cryptantha*
BRASSICACEAE	
shortpod mustard	**Hirschfeldia incana*
peppergrass	*Lepidium nitidum*
London rocket	**Sisymbrium irio*
wild radish	*Raphanus sativus*
CACTACEAE	
tuna cactus	*Opuntia ficus-indica*
valley cholla	*Opuntia parryi*
CHENOPODIACEAE	
Russian thistle	*Salsola tragus*
CONVOLVULACEAE	
bindweed	*Calystegia arvensis*
CRASSULACEAE	
sand pygme-stonecrop	*Crassula connata*
lance-leaved dudleya	*Dudleya lanceolata*
CUSCUTACEAE	
Dodder	**Cuscuta californica*
EUPHORBIACEAE	
dove weed	*Croton setigerus*
rattlesnake spurge	*Euphorbia albomarginata*
linear-leaved stillingia	*Stillingia linearifolia*

FABACEAE	
deer weed	**Acmispon scoparius*
strigose bird's-foot trefoil	**Lotus strigosus*
miniature lupine	*Lupinus bicolor*
GERANIACEAE	
red-stem filaree	**Erodium cicutarium*
HYDROPHYLLACEAE	
baby blue-eyes	*Nemophila menziesii*
LAMINACEAE	
Horehound	*Marubium vulgare*
vinegar weed	*Tricostema lanceolatum*
white sage	*Salvia apiana*
chia	**Salvia columbariae*
LILIACEAE	
Mariposa lily	*Calochortus splendens*
blue dicks	**Dichelostemma capitatum*
MYRTACEAE	
Eucalyptus	*Eucalyptus*
MALVACEAE	
cheeseweed	*Malva parviflora*
NYCTAGINACEAE	
California wishbone plant	*Mirabilis californica*
ONAGRACEAE	
California sun cup	**Camissonia bistorta*
miniature suncup	**Camissonia micrantha*
four-spot clarkia	*Clarkia purpurea*
PAPAVERACEAE	
California poppy	*Eschscholzia californica*
POLYGONACEAE	
Long-stemmed buckwheat	*Eriogonum elongatum*
Cal buckwheat	**Eriogonum fasciculatum*
SCROPHULARIACEAE	
smaller blue toadflax	*Linaria candadensis*
slope semaphore	*Mimulus brevipes*
SOLANACEAE	
Jimson weed	*Datura wrightii*
tree tobacco	*Nicotiana glauca*
URTICACEAE	
orchard nettle	*Urtica urens*
POACEAE	

wild oats	*Avena fatua*
brome	*Bromus hordiaceus*
foxtail chess/red brome	*Bromus madritensis*
Mediterranean barley	*Hordeum murinum*
Schismus	*Schismus barbatus*

Appendix B

Correspondence with USFWS
Maps provided by client
Field Notes

Ken H. Osborne (permit #TE837760-9)
6675 Avenue Juan Diaz,
Riverside, CA 92509
(951) 360-6461
Euproserpinus@msn.com

January 30, 2017

Attn: Ms. Stacey Love,
USFWS Carlsbad Field Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

RE: Quino Checkerspot Butterfly Protocol Adult Survey being undertaken for the Nichols Ranch site, Lake Elsinore, Riverside County.

Dear Ms. Love,

I write to notify you of my intent to conduct protocol adult surveys for Quino Checkerspot Butterfly (*Euphydryas editha quino*) on an approximately 40 acre site just north of Lake Elsinore, Riverside County. The site (not covered within the Western Riverside County MSHCP) is located at the southeastern intersection of Hwy 15 and Nichols Rd. as indicated with the map exhibits presented here.

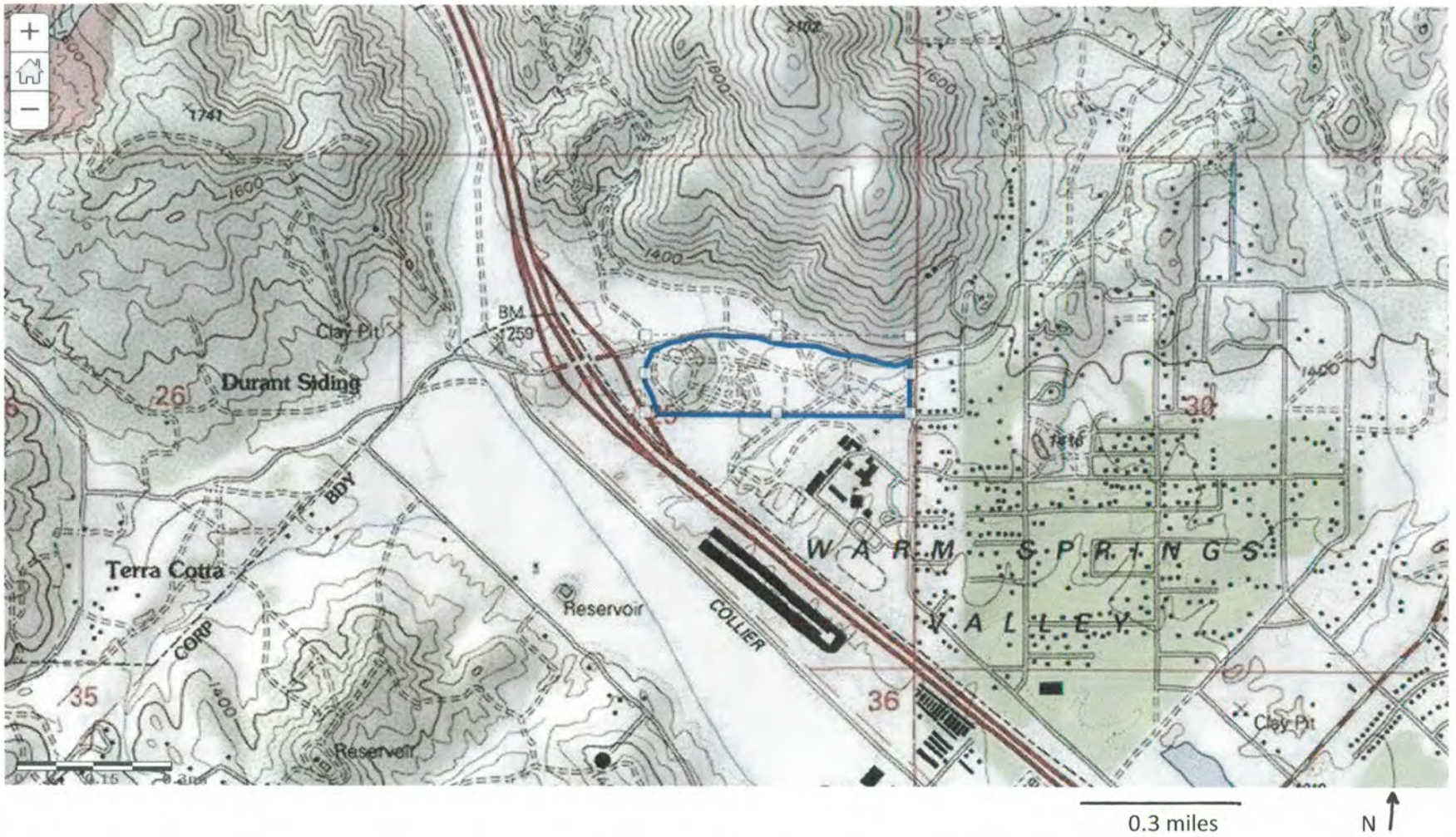
This survey is being undertaken through a subcontract agreement with VCS Environmental. Survey will commence on the third week of February (per protocol). I have already made a site visit and determined the site to consist entirely of suitable habitat for QCB (per USFWS protocol definitions). If you have any questions or comments regarding this survey, please feel free to contact me or Wade Caffrey of VCS Environmental.

Respectfully submitted,

Ken H. Osborne

cc: Wade Caffrey (VCS Environmental)

Vicinity of the surey area (blue outline) on the Lake Elsinore quadrangle, USGS Topographic map.



Location of the survey area (bue outline) on the Lake Elsinore quadrangle, USGS Topographic map.

Satelite image (Google Earth) of the survey site (outlined in green). Note that the northern boundary of the site does not conform to the alignment of Nichols Rd.

Ken H. Osborne (permit #TE837760-9)
6675 Avenue Juan Diaz,
Riverside, CA 92509
(951) 360-6461
Euproserpinus@msn.com

February 8, 2017

Attn: Ms. Stacey Love,
USFWS Carlsbad Field Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

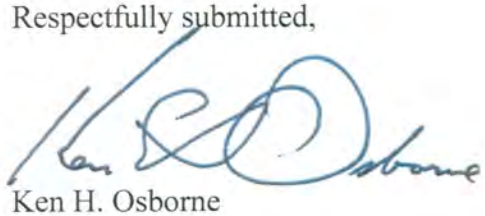
RE: Size Adjustment; Quino Checkerspot Butterfly Protocol Adult Survey being undertaken for the Nichols Ranch site, Lake Elsinore, Riverside County.

Dear Ms. Love,

On January 30, I provided notification for a Quino Checkerspot Butterfly Protocol Adult Survey on an approximately 40 acre site located at the southeastern intersection of Hwy 15 and Nichols Rd (north of Lake Elsinore, Riverside County). This morning, my client has advised me of a reduction in the size of the area to be surveyed in this case, down to 10.6 acres as indicated with the map exhibits presented here (and a small portion of this will be excluded as a paved portion of Nichols Rd.). Essentially, the reduced survey area corresponds to an eastern portion of the area previously contemplated. The survey area appears on the Lake Elsinore Quadrangle, 7.5 minute series topographic map in Range 5 W., Township 5 S., on the eastern portion of section 25 (presented here at 50% and 200% scale).

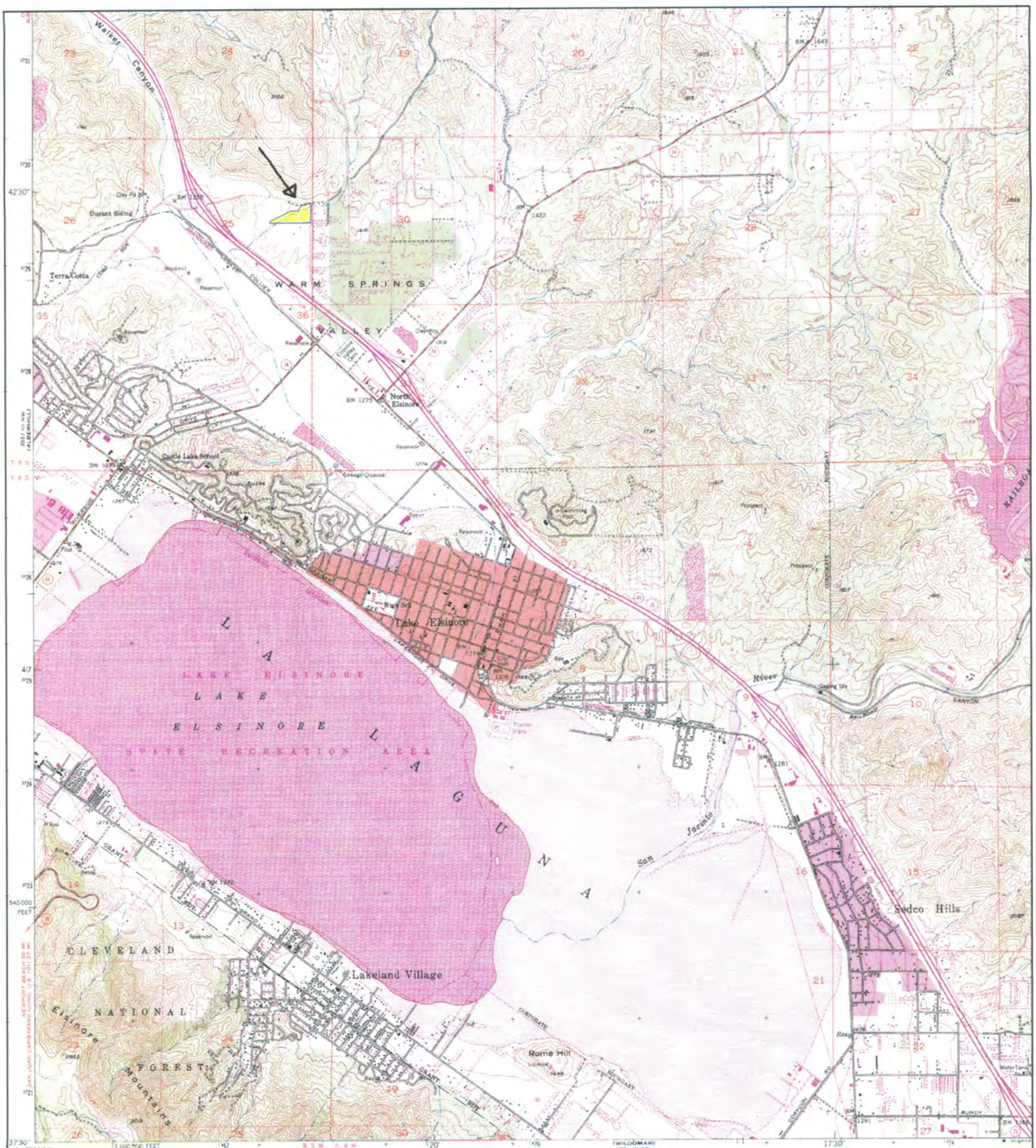
This survey is being undertaken through a subcontract agreement with VCS Environmental. Survey will commence on the third week of February (per protocol). I have already made a site visit and determined the site to consist entirely of suitable habitat for QCB (per USFWS protocol definitions). If you have any questions or comments regarding this survey, please feel free to contact me or Wade Caffrey of VCS Environmental.

Respectfully submitted,



Ken H. Osborne

cc: Wade Caffrey (VCS Environmental)



Mapped, edited, and published by the Geological Survey

Control by USGS, NOS/NOAA, and USCE

Topography from aerial photographs by multiplex methods and by plane-table surveys 1953. Aerial photographs taken 1951

Polyconic projection. 1927 North American datum
10,000-foot grid ticks based on California coordinate system, zone 6. 1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue
To place on the predicted North American Datum 1983, move the projection lines 82 meters east as shown by dashed corner ticks

Red tint indicates areas in which only landmark buildings are shown

Dashed land lines indicate approximate locations

There may be private inholdings within the boundaries of the National or State reservations shown on this map

UTM GRID AND 1988 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Purple tint indicates extension of urban areas

Revisions shown in purple and woodland compiled from aerial photographs taken 1985 and other source data. Partial check by U.S. Forest Service. Map edited 1988

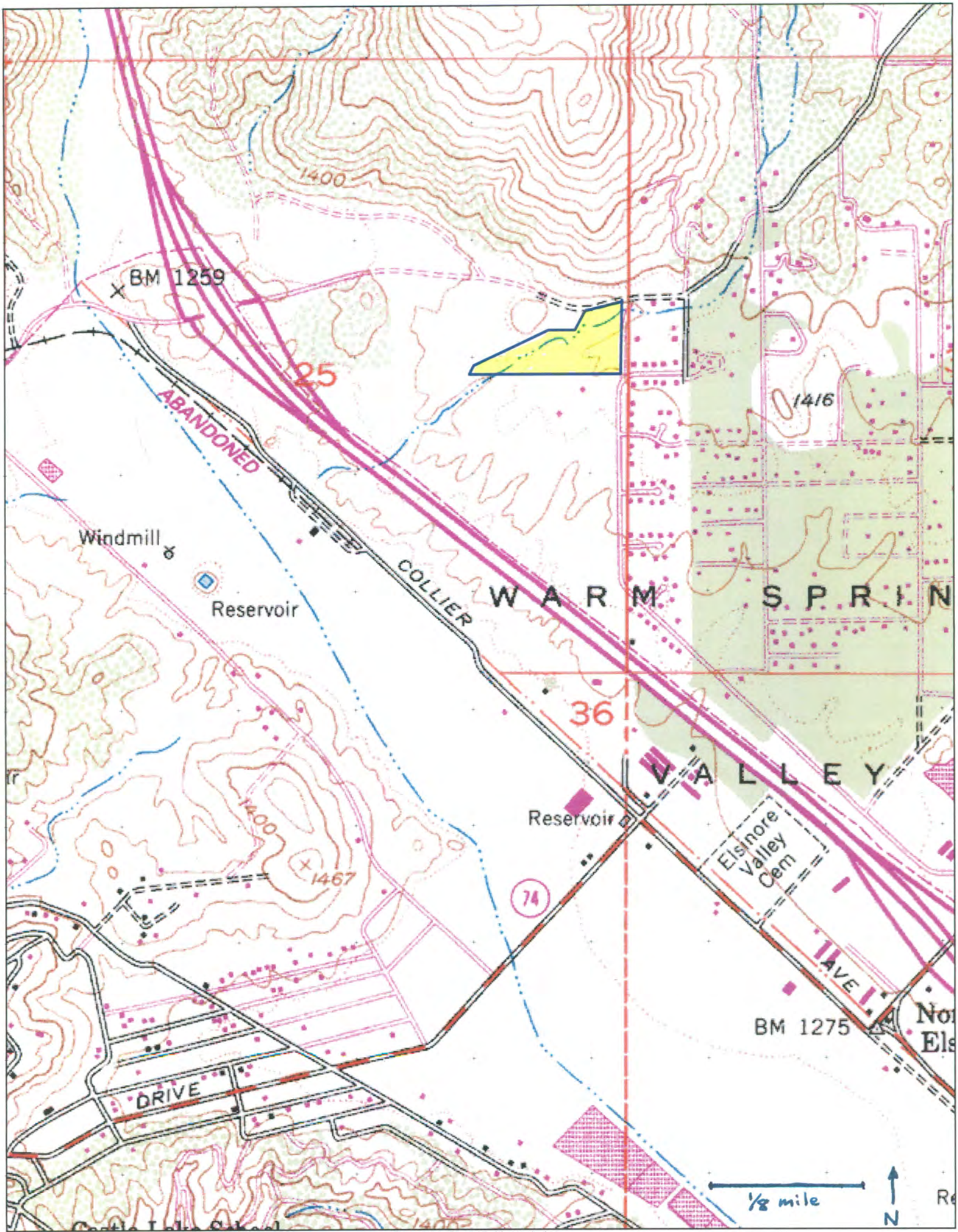
SCALE 1:24000

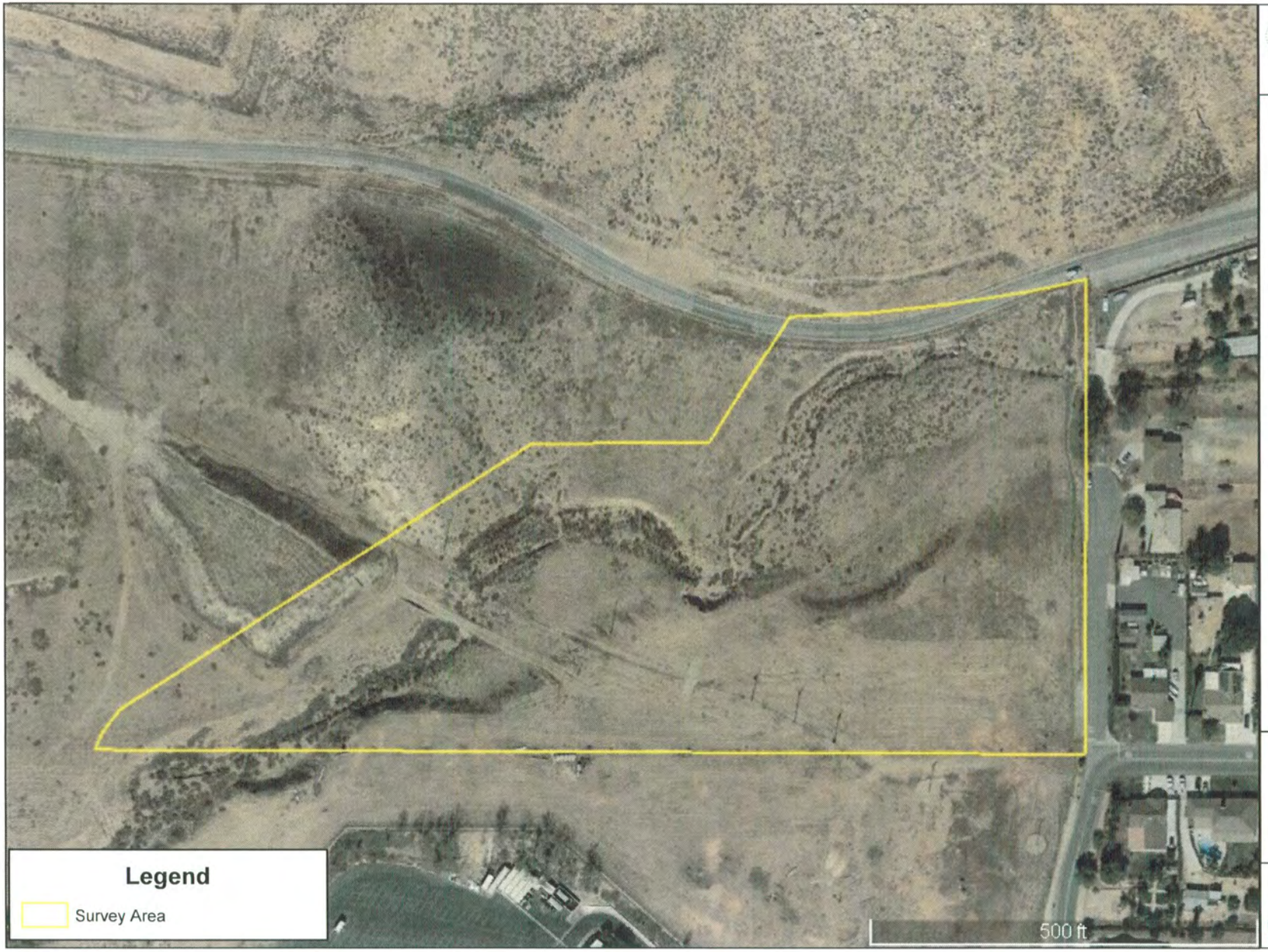
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT HALF-INTERVAL CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

Lake Elsinore





VCS Environmental

NICHOLS SOUTH

Survey Area

N
W E
S

Map Date: February 2017
Source: Google Earth

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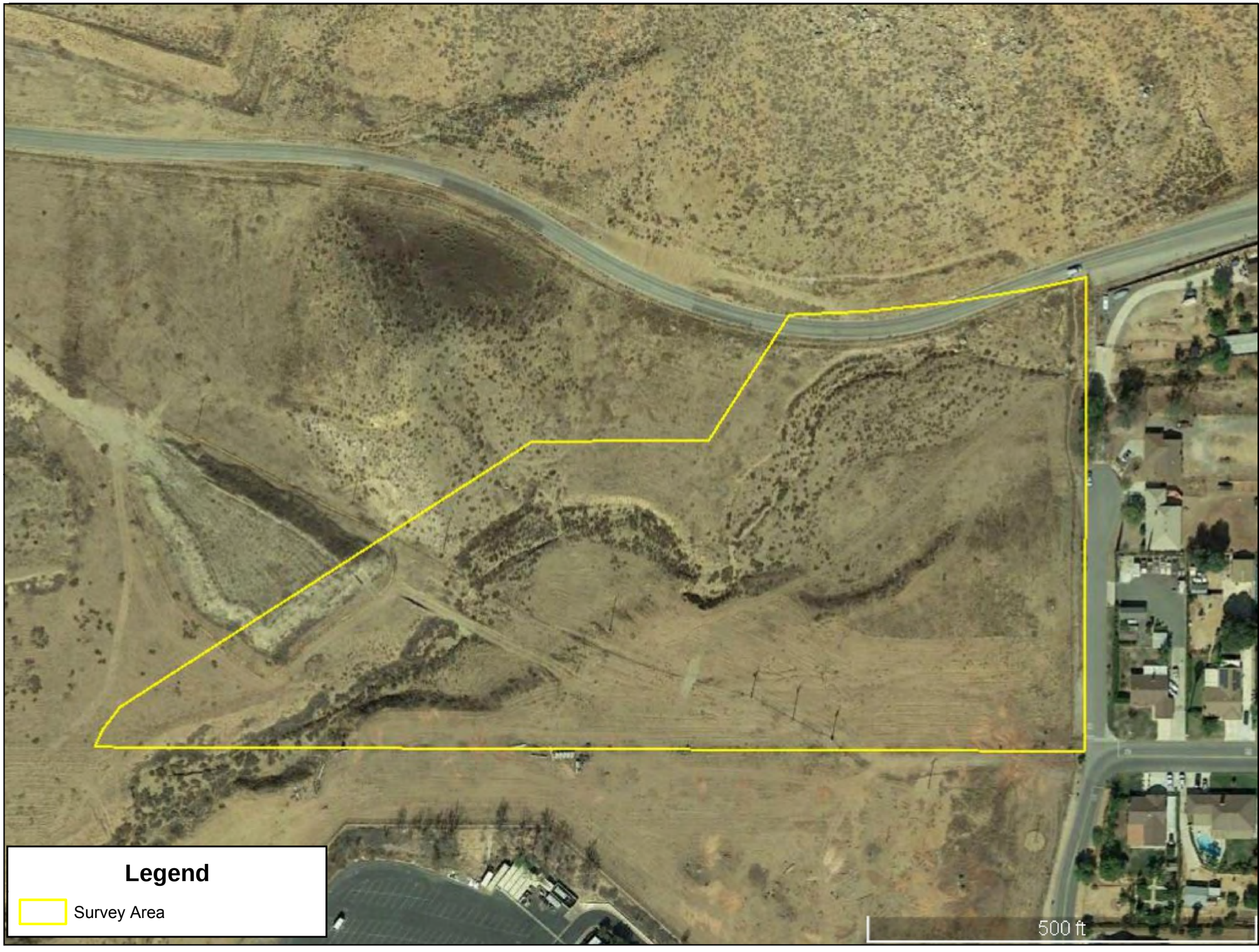
NICHOLS SOUTH

Survey Area



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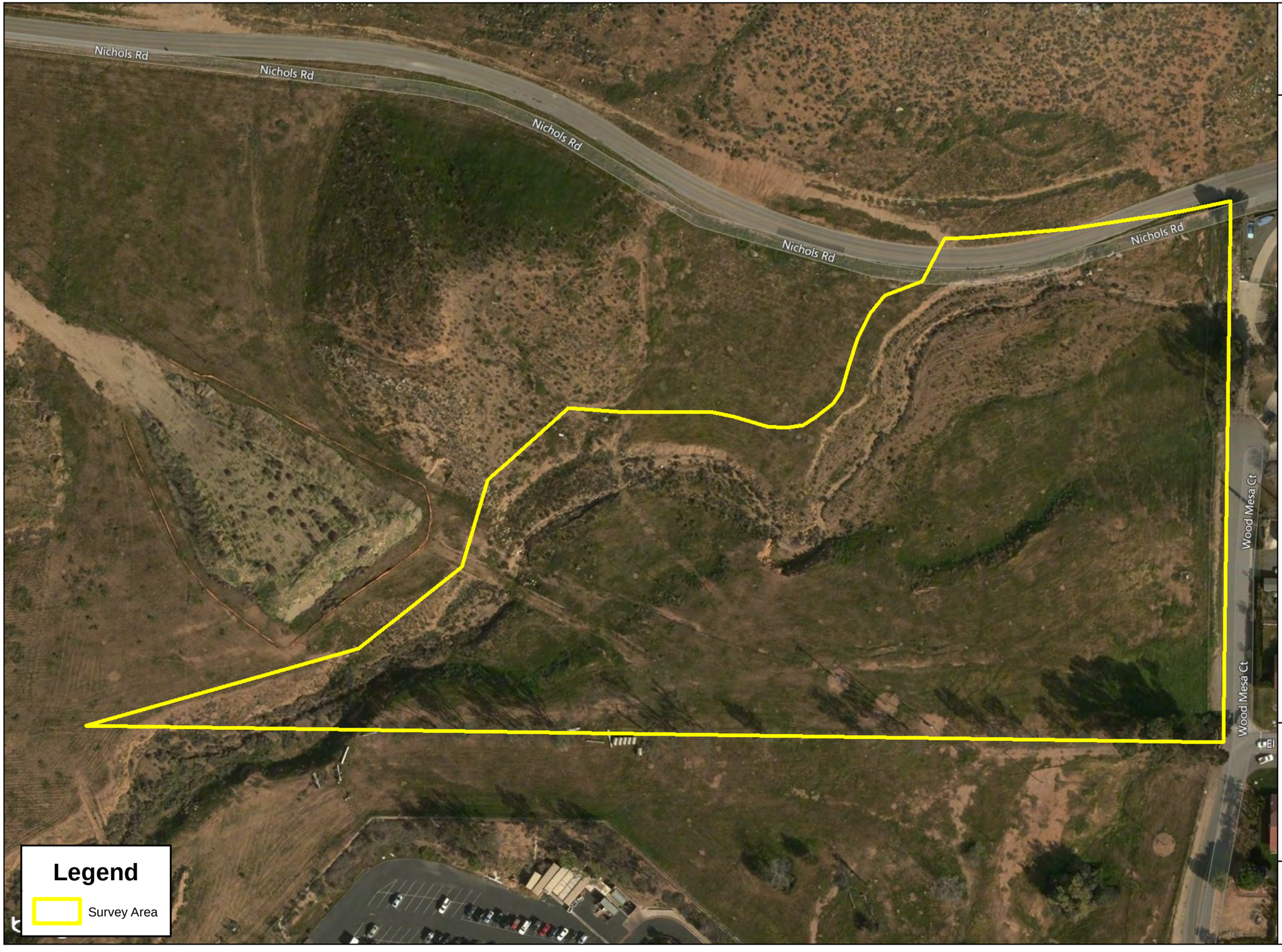

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NICHOLS SOUTH

Survey Area

N
W E
S

Map Date: May 2017
Source: BING

QCB Habitat Evaluation

Date 1/24/17 Time 1245 to 1W Job Nichols Ranch
Miles _____ Location E. side Nichols Rd, N. of Lake Elsinore
Biologists KMO
Survey for: N/A
Habitat Assessment for: QCB

Weather: Temp 54 Wind 0-5 Cloud cover 50% Rain Ø

Biological elements:

Vegetative communities:

most is annual exotic grassland.
hills on N. portion w/ I.F. CSS.

Soil type Cieneba rocky sandy loam (hill)
Calcareous clay soils / Channel - Alluvial Fan and Riverwash

Plant species: Hanford coarse sandy loam, Arbuckle gravelly loam,
Cortina gravelly loamy sand,

Vertebrates

Arthropods

Oak Woodlands Ø Riparian Veg Ø type _____
Vernal Pools Ø

Comments:

All QCB habitat, as CSS, and Grassland.
Prominent hill tops in central, western portions.
Work transects NE corner all the way SW to I-15.

Quino Checkerspot General Form **Adult Survey**

Location N. Lake Elsinore Site name / Nichols South
Surveyor K Osborne Date 3/15/17 Site Visit Number ____
Survey Partner(s) C
Total Acres: ____ Portion Surveyed: All Elevation: Max 9165 mi on site Min / 9245 mi on st

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 925	0	clear patchy overcast drizzle shower	0	
stop 1025	0	clear patchy overcast drizzle shower	0	
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
338		clear patchy overcast drizzle shower	0	
Stop 400		clear patchy overcast drizzle shower	0	

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis*		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo*		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara* /	1	
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola			*H. electra larva on E.f.*		
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor LHD Area # _____ Date: 2/15/17

Comments: Good annual plant expression

Plant Communities and Habitat Information: 1) Annual Grass/Forb. most of site
2) Alluvial Sage Scrub (w/ Lepidospartum) in wash
3) CSS PR, HC etc. on slopes near wash

Host Plants Present: No

Nectar Plants Present: Brodiaea, Cryptantha

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location L. Ricigone Site name Nichols South
Surveyor K. H. Osborne Date 2/23/17 Site Visit Number 2
Survey Partner(s) Ø
Total Acres: _____ Portion Surveyed: All 9621 m on SS Elevation: Max ____ Min ____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1058	0	(clear) patchy overcast drizzle shower	calm	63
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1216	0	(clear) patchy overcast drizzle shower	2	64

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis*		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo*		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui ✓	1		**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura* ✓	1	
Danaidae			*Anthocharis sara*		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus ✓	1				
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor KAO Area # _____ Date: 2/23/17

Comments: Most of site is freshly disked! only wash and steep slopes are free of disking.

Plant Communities and Habitat Information:

Host Plants Present: No

Nectar Plants Present: Perovskia, Caryopteris

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location N. L. Elsinore Site name Nichols S.
Surveyor KHO Date 3/1/17 Site Visit Number 3
Survey Partner(s) _____
Total Acres: _____ Portion Surveyed: All Elevation: Max _____ Min _____
9732 min on site

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1102	0	(clear) patchy overcast drizzle shower	3-4	69
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1225	0	(clear) patchy overcast drizzle shower	0	69

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* //	2	
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo*		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella /	/		*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui /	/		**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura* ///	3	
Danaidae			*Anthocharis sara* /	/	
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis /	/		*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola			Hutchinsonia X	10	
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor KAC Area # _____ Date: 3/1/2017

Comments:

Plant Communities and Habitat Information: 5% CSS
75% disced ruderal/annual veg
20% Lepidospartum/CSS channel

Host Plants Present: ∅

Nectar Plants Present: Cryptantha, Nemacastrum, Amsinckia, Eriodictyon c.

Photographs Taken: General

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location _____ Site name Nichols South
Surveyor K W Osborne Date 3/7/17 Site Visit Number 3
Survey Partner(s) 0
Total Acres: _____ Portion Surveyed: All Elevation: Max _____ Min _____
50139 mi on site

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 9:48	0	(clear) patchy overcast drizzle shower	0	62
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 11:10	0	(clear) patchy overcast drizzle shower	0	68

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* 11	2	
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo*		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta 1 area			*Papilio zelicaon*		
Vanessa cardui 111	3		**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara*		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor KAO Area # _____ Date: 3/7/17

Comments:

Plant Communities and Habitat Information:

Host Plants Present: Ø

Nectar Plants Present: Baccharis sarothroides, Cryptantha, Ambrosia, Eriodictyon

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location _____ Site name Nicholas S.
Surveyor KHOsborne Date 3/9/17 Site Visit Number 4
Survey Partner(s) _____
Total Acres: _____ Portion Surveyed: All Elevation: Max _____ Min _____
0295 on site

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1050	2	(clear) patchy overcast drizzle shower	0-1	84
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1215		(clear) patchy overcast drizzle shower	0	86

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* 1		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa c. 1			*Apodemia mormo*		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella 1			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui IIII			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura* 1		
Danaidae			*Anthocharis sara* 1		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme* 1		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus III					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor KKW Area # Nichols 8 Date: 3/9/17

Comments:

Plant Communities and Habitat Information:

Host Plants Present: None

Nectar Plants Present: Cryptantha, Bluedicks Amsonia, Cotes stenogyne S. irio, Chia, Hirschfeldia, Camissonia, Nemophila Erodium

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location N. Lake Elsinore Site name Nichols Ranch E.
Surveyor KWOsborne Date 3/15/17 Site Visit Number ____
Survey Partner(s) Ø
Total Acres: ____ Portion Surveyed: All Elevation: Max ____ Min ____
0376 on site

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1220	25	clear patchy overcast drizzle shower	calm	84
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 142pm	0	clear patchy overcast drizzle shower	calm 0-2	90

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* //	2	
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa /	/		*Apodemia mormo* //	2	
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta /	/		*Papilio zelicaon*		
Vanessa cardui /	/		**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura* // hilltop	2	✓
Danaidae			*Anthocharis sara*		
Danaus gilippus			*Pieris rapae* /	/	
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius	/				
Ochlodes agricola					
Lycaenidae (Hairstreaks)			Gecko!		
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor KAW Area # _____ Date: 3/15/17

Comments:

Plant Communities and Habitat Information:

Host Plants Present: None

Nectar Plants Present: Bluedicks, Lotus strigosus, Amsonia, Hirschfeldia, Salvia columbaria, S. iris, Ceanothus, Ecl. Cryptantha

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location L. Elsinore Site name Nichols S.
Surveyor K Osborne Date 3/23/17 Site Visit Number ____
Survey Partner(s) ____
Total Acres: ____ Portion Surveyed: 0296 mi on site. Elevation: Max ____ Min ____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1452	50	clear (patchy) overcast drizzle shower	2-5	64
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 2110	50	clear (patchy) overcast drizzle shower	4-5	67

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* 11		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo* 111		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella 1 and larvae			*Papilio rutulus*		
Vanessa atalanta 1 and larvae			*Papilio zelicaon*		
Vanessa cardui			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara*		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis 111			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus /					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor KAO Area # _____ Date: 3/27

Comments:

Plant Communities and Habitat Information:

Host Plants Present: No

Nectar Plants Present: Chic, R.f, Salvia columbaria, Cammisonia, S. ixia Brodiaea, Dichelostemma, Lotus,

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location N. Lake Elsinore Site name Nichols S.
Surveyor KH Osborne Date 3/30/17 Site Visit Number ____
Survey Partner(s) Ø
Total Acres: ____ Portion Surveyed: ACO Elevation: Max ____ Min ____
0.916 mi on site.

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1000	0	(clear) patchy overcast drizzle shower	4-8	80
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 215	0	(clear) patchy overcast drizzle shower	3-9	79

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* IV		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa Adolpha 1			*Apodemia mormo* HHH III		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui 1			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara*		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis III			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius			Euchloe sp.		
Ochlodes agricola			Anthocharis sp.		
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

N.HO.

3/30/17

No Hosts for QCB.

Abundant Nectar resources.

Quino Checkerspot General Form **Adult Survey**

Location Lake Elsinore Site name Nichols S.
Surveyor K A Osborne Date 4/5/17 Site Visit Number ____
Survey Partner(s) 0
Total Acres: ____ Portion Surveyed: All Elevation: Max ____ Min ____
1202 mi on site

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1120	0	(clear) patchy overcast drizzle shower	1-5	83
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1235	0	(clear) patchy overcast drizzle shower	calm	88

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* IIII		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo* VVV		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui V II			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara* VIII		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice* III		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis III			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Uta, Orange throated whiptail, Tcyer whiptail, KIDI WHSP
CAKI ANACR

Surveyor LVAO Area # _____ Date: 4/5/17

Comments:

Plant Communities and Habitat Information:

Host Plants Present: None

Nectar Plants Present:

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location L. Elsinore Site name Nichols E.
Surveyor KH Osborne Date 4/12/17 Site Visit Number ____
Survey Partner(s) ____
Total Acres: ____ Portion Surveyed: ____ Elevation: Max ____ Min ____
1801 main ste.

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1133	50	clear (patchy) overcast drizzle shower	2-5	70
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1:00 pm	25	clear (patchy) overcast drizzle shower	2-6	humid

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.
Grading underway adjacent W.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* III		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo* IIII IIII		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta 1 (K larvae)			*Papilio zelicaon*		
Vanessa cardui II			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara* III		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice*		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis 1			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus					
Glaucopsyche lygdamus					
Icarcia acmon 1					
Celastrina ladon					

Surveyor _____ Area #_____ Date: _____

Comments:

Plant Communities and Habitat Information:

Host Plants Present: None

Nectar Plants Present: Abundant.

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location L. Elsinore Site name Nichols S
Surveyor K W Osborne Date 4/20/17 Site Visit Number ____
Survey Partner(s) ____
Total Acres: ____ Portion Surveyed: ____ Elevation: Max ____ Min ____
2336 m on sto

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1200	0	(clear) patchy overcast drizzle shower	0-1	85
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1317	0	(clear) patchy overcast drizzle shower	2-6	86

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			~~*Philotes sonorensis*~~ *E bernardino*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* /		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa /			*Apodemia mormo* HH/III		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia /			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui HH/I			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara* HH II		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice* II/		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis III			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola			Hylas		
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus /					
Glaucopsyche lygdamus					
Icarcia acmon					
Celastrina ladon					

Surveyor _____ **Area #**_____ **Date:** _____

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Nectar Plants Present:

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location Lake Elsinore Site name Nichols S.
Surveyor KH Osborne Date 4/26/17 Site Visit Number
Survey Partner(s) JS
Total Acres: Portion Surveyed: All Elevation: Max Min
2756

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 900	0	(clear) patchy overcast drizzle shower	0-2	69
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1015	20	clear patchy (thin) overcast drizzle shower	0	78

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago, Castilleja, Cordylanthus, Antirrhinum*, nectar sources.
Grading operations continue to encroach on N & western portions.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* 1		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa 1			*Apodemia mormo* 11		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella 1			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui HHH 1			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara* 111		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice* HH 1		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa					
Strymon melinus 111					
Glaucopsyche lygdamus					
Icarcia acmon 1					
Celastrina ladon					

Quino Checkerspot General Form **Adult Survey**

Location Lake Elsinore Site name Nichols S.
Surveyor K H Osborne Date 5/3/2017 Site Visit Number ____
Survey Partner(s) ____
Total Acres: ____ Portion Surveyed: 3396 mi on site. Elevation: Max ____ Min ____

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (F)
Start 1030	0	(clear) patchy overcast drizzle shower	0-1	84
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 1145	C	(clear) patchy overcast drizzle shower	4-7	87

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* V		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo* HH I		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia I			*Papilio eurymedon*		
Vanessa annabella III			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui III			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara* I		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice* IIII		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii* I		
Hylephila phyleus			~~*Euremia nicippe*~~ P. behrii II		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis II			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola			Hylas II		
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus VI					
Callophyrs perplexa					
Strymon melinus I					
Glaucopsyche lygdamus					
Icarcia acmon I					
Celastrina ladon					
Euphilotes r					

Surveyor KHV Area # _____ Date: 5/3/17

Comments:

Plant Communities and Habitat Information:

Host Plants Present: No

Nectar Plants Present: Ef. Fuscelia, Lotus scoparius, Dodder

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Quino Checkerspot General Form **Adult Survey**

Location Lake Elsinore Site name / Nichols South
Surveyor K A Osborne Date 5/10/2017 Site Visit Number ____
Survey Partner(s) ____
Total Acres: ____ Portion Surveyed: ____ Elevation: Max ____ Min ____
3534 mi on s.t

Time (24 hr)	% Cloud	Sky	Wind (range)	Temp (*F*)
Start 1 10 pm	100	clear patchy (overcast) drizzle shower	2.0	68.5
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
		clear patchy overcast drizzle shower		
Stop 2 25	95	clear patchy (overcast) drizzle shower	0-2	76.9 Hot, humid

Habitat onsite (circle as applicable): hilltops, ridges, rock outcrops, open soils, soil crusts, clay soils, old roads, *Plantago*, *Castilleja*, *Cordylanthus*, *Antirrhinum*, nectar sources.

Butterfly Species	Count (Total)	Hill-topping	Butterfly Species	Count (Total)	Hill-topping
Nymphalidae (Brush Footed Butterflies)			*Leptotes marina*		
Euphydras editha quino (Quino Checkerspot)			*Philotes sonorensis*		
Euphydras chalcedona			*Plebejus melissa*		
Charidryas gabbii			*Everes amyntula*		
Phycoides mylitta			*Brephidium exilis* //		
Thessalia leanira			**Riodinidae (Metalmarks)**		
Nymphalis antiopa			*Apodemia mormo* 1		
Basilarchia lorquini			**Papilionidae (Swallowtails)**		
Junonia coenia			*Papilio eurymedon*		
Vanessa annabella			*Papilio rutulus*		
Vanessa atalanta			*Papilio zelicaon*		
Vanessa cardui			**Pieridae (Whites and Orangetips)**		
Vanessa virginiensis			*Anthocharis cethura*		
Danaidae			*Anthocharis sara*		
Danaus gilippus			*Pieris rapae*		
Danaus plexippus			*Pontia protodice* ///		
Hesperidae			*Colias eurytheme*		
Heliopetes ericetorum			*Colias harfordii*		
Hylephila phyleus			*Eurema nicippe*		
Pyrgus albescens			**Satyridae (Satyrids)**		
Erynnis funeralis /			*Coenonympha californica*		
Erynnis tristis			**OTHERS:**		
Erynnis propertius					
Ochlodes agricola					
Lycaenidae (Hairstreaks)					
Atlides halesus					
Incisalia augustinus					
Callophyrs perplexa ////					
Strymon melinus ///					
Glaucopsyche lygdamus					
Icarcia acmon					
~~*Celastrina ladon*~~ Euphilotes //					

Surveyor _____ Area #_____ Date: _____

Comments:

Plant Communities and Habitat Information:

Host Plants Present:

Nectar Plants Present:

Photographs Taken:

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

APPENDIX D

Results of 2017 Breeding Season California Gnatcatcher Surveys [MSHCP-Excluded Survey Area]

RESULTS OF 2017 BREEDING-SEASON CALIFORNIA GNATCATCHER SURVEYS

NICHOLS ROAD-SOUTH PROJECT

CITY OF LAKE ELSINORE
RIVERSIDE COUNTY, CALIFORNIA
PARCEL 389-200-038
LAKE ELSINORE, CALIFORNIA, USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE MAP
SECTION 25, TOWNSHIP 6 NORTH AND RANGE 5 WEST

PREPARED FOR:

U.S. FISH & WILDLIFE SERVICE
CARLSBAD FIELD OFFICE
2177 SALK AVENUE,
SUITE 250
CARLSBAD, CA 92008

CONTACT: STACEY LOVE

&

VCS ENVIRONMENTAL, INC.

30900 RANCHO VIEJO RD.
SUITE 100
SAN JUAN CAPISTRANO, CA 92675

CONTACT: WADE CAFFREY

PREPARED BY:

KIDD BIOLOGICAL, INC.
23046 AVE DE LA CARLOTA
SUITE 600, PMB 66
LAGUNA HILLS, CA 92653
CONTACT: KELLY RIOS

949.362.2756

May 8, 2017

INTRODUCTION

This report presents the results of the 2017 breeding season protocol surveys for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) ("CAGN") on the approximately 7 acres of suitable habitat within and adjacent to an 11-acre site in Lake Elsinore, California ("site", Appendix A, Figures 1-3). The surveys were conducted by Kidd Biological, Inc. (KBI) following a habitat assessment that was conducted by VCS Environmental, Inc. (hereafter "VCS"), where it was determined that the site supports potentially suitable CAGN habitat. Surveys were conducted in accordance with guidance from U.S. Fish and Wildlife Service (USFWS) CAGN survey protocol to cover breeding periods (USFWS 2003).

Breeding season protocol surveys for the CAGN were conducted by U.S. Fish and Wildlife Service (USFWS) permitted biologists, Nina Jimerson-Kidd (Federal Permit #TE-036550-4) and Kelly Rios (Federal Permit #TE-018909-5), between March 16 and April 21, 2017. The required 15-day notification to conduct focused surveys was submitted by email to the permit coordinator at the Carlsbad U.S. Fish and Wildlife Service (USFWS) Office dated February 19, 2017 (Appendix B).

SITE LOCATION

The Nichols Road-South project site is an approximately 11-acre parcel located in the City of Lake Elsinore, Riverside County, California. Specifically, the project site is located just east of Interstate 15, south of Nichols Road, east of El Toro Road and north of Highway 74 (Figure 1). The project site is located within the United States Geological Survey (USGS) 7.5' series Lake Elsinore quadrangle, Township 6 North, Range 5 West, Section 25. Elevations within the project site (Figure 2). Of the 11 acres within the parcel, approximately 5 acres contains some suitable habitat, which is primarily confined to the drainage feature. A knoll to the north of the project site also contains habitat and was therefore also surveyed as well as a buffer within the contiguous habitat in the drainage feature. Approximately 7 acres was surveyed for the presence of CAGN.

Land use adjacent to the project site consists of open space consisting of rolling hills to the north and south, active grading/mining to the west, and rural residential developments to the east.

NATURAL HISTORY OF THE COASTAL CALIFORNIA GNATCATCHER

The CAGN is a federally threatened species. It is most commonly found in the sage scrub communities of coastal southern California. According to J. Atwood and J. Bolsinger

(1992), 99% of all CAGN observations are in areas with elevations below 950 feet. There are reported occurrences of CAGN at 1,600 feet elevation (500 meters) (Davis and McKernan, 1998). Elevation of this site is approximately 1,630 - 1,680 feet above mean sea level (MSL). Although, just above the known elevational range of the CAGN, the site is higher in elevation than what is typically associated with the 99% of all CAGN observations. Nonetheless, with drought conditions in the region and effects of global warming there is a possibility that CAGN may transition to higher elevations where conditions are more suitable (Pounds et al 1999, Moritz et al 2008, Chen et al, 2011).

CAGN are ground and shrub-foraging insectivores. They feed on small insects and other arthropods. A CAGN's territory is highly variable in size and seems to be correlated with distance from the coast, ranging from less than 1 ha to over 9 ha (Mock, 2004). In a 1998 study, biologist Patrick Mock concluded that CAGN in the inland region require a larger territory than those on the coast in order to meet the nutritional requirements needed for survival and breeding.

The main threat to the CAGN is habitat loss, fragmentation, and degradation of habitat from invasive plant species and drought. Urban and agricultural development, livestock grazing, invasion of exotic grasses, off-road vehicles, pesticides, and military training activities all contribute to the destruction of CAGN habitat. Once locally common, CAGN have experienced widespread habitat loss and have lost most of their former range. By 1997, no more than 2,900 pairs remained in the United States. Only small patches of coastal sage scrub remain, and the majority is privately owned, making species recovery a difficult task.

The regional observations of CAGN are shown in Figure 3: *CNDDB Documented CAGN Locations*. These locations were obtained from the California Department of Wildlife's (CDFW) Natural Diversity Data Base (CNDDB) (2017). Based on the information, several CAGN have been documented to the east and south of the site.

PROJECT DESCRIPTION

The Nichols Road-South Project is currently in the design phase for a mixed-use development project.

TOPOGRAPHY

The CAGN survey area occurs on gentle rolling hills at approximately 1386 feet above mean sea level (AMSL). The survey area is located in Lake Elsinore, south of Lake Mathews and north of Lake Elsinore.

Vegetation Communities/Habitat Types

The approximately 7-acre survey area is located within disturbed coastal sage scrub, a native vegetation community, located in the northwestern portion of the project site. The southern and eastern portion of the project site was disturbed and contained ruderal vegetation as a result of regular plowing for weed abatement/fuel reduction (Figure 2).

A description of the vegetation community that defines the CAGN survey area is provided below. This includes a discussion of the vegetative constituents and overall structure of the habitats within the CAGN survey area, and a statement of the overall quality and general resource value of the habitat for the CAGN.

Sage Scrub (Coastal and Riversidean Alluvial Fan)

A total of approximately 4.5 acres of sage scrub habitat occurs within the project footprint; however, surrounding areas were also surveyed that included approximately 7 acres of suitable habitat. Dominant species within the CSS include California buckwheat (*Eriogonum fasciculatum*) and deer weed (*Acmispon glaber*). Additional species observed include California sagebrush (*Artemisia californica*), scalebroom (*Lepidospartum squamatum*), coyote brush (*Baccharis pilularis*), and brittlebush (*Enceila farinosa*).

Due to the regular plowing activities, the sage scrub was primarily located along the drainage that runs parallel to Nichols Road in the norther portion of the project site. The habitat was lacking high species diversity and density. The understory was dominated by ruderal species such as red-stemmed filaree (*Erodium cicutarium*), shortpod mustard (*Hirschfeldia incana*), and red brome (*Bromus rubens*).

Additional Fauna Species

Avian activity during the protocol surveys was moderate, with a wide range of bird species observed or otherwise detected throughout the course of the surveys. Common bird species observed or otherwise detected during surveys include species commonly found in sage scrub and urban habitats such as, but not limited to, house finch (*Haemorphous mexicanus*), lesser goldfinch (*Spinus psaltria*), bushtit (*Psaltriparus minimus*), wrentit (*Chamaea fasciata*), Anna's hummingbird (*Calypte anna*), and California towhee (*Melozone crissalis*). No brown-headed cowbirds (*Molothrus ater*), considered to be nest parasites for CAGNs, were observed or otherwise detected during the surveys.

One sensitive species was detected during the surveys: Coast horned lizard (*Phrynosoma coronatum*), a California species of concern. This species was detected on the top of the knoll to the north of the parcel, outside the parcel boundary.

A complete list of avian species observed during the protocol surveys is provided in Appendix A, Fauna Compendium.

METHODOLOGY

Prior to conducting protocol surveys, a literature review was conducted to obtain background information and resources pertinent to the survey effort. Data on previous observations of the target species that have been recorded in the vicinity of the project site were compiled from the CDFW California Natural Diversity Database (CNDDB), a sensitive species and plant community account database. The CNDDB Geographical Information Systems (GIS) database was also used to confirm and map the locations of CAGN recorded by the CNDDB in the area (Figure 3).

Protocol breeding season surveys for the coastal California gnatcatcher were conducted by Kelly Rios under USFWS Section 10(a)(1)(A) Permit Number TE-018909-5 and Nina Jimerson-Kidd under permit number TE-036550-4. Methods employed were in conformance with USFWS Coastal California Gnatcatcher Presence/Absence Survey Guidelines, issued July 28, 1997 (USFWS 1997). A total of six surveys were performed one week apart, between March 16 and April 21, 2017, generally between 0600 hours and 1200 hours. The surveys were conducted within all suitable habitat, as discussed in Section 5, Survey Area.

The biologist slowly traversed the biological survey area, stopping at approximately 100-foot intervals to listen for CAGN. If no CAGN were detected within 5-10 minutes, the biologist made pishing sounds, and played an audio recording of CAGN vocalizations. The recording was played for several seconds at each interval, followed by a brief pause to listen for a response. If any CAGN individuals were detected, additional observations including sex, age, breeding status, and behavioral characteristics were documented, consistent with protocol requirements.

RESULTS

Breeding season surveys were conducted by the USFWS permitted biologists noted above, in accordance with USFWS guidelines. Only areas considered suitable CAGN habitat were surveyed by KBI biologists during breeding season surveys. It should be noted; however, that not all lands supported 100% vegetative cover of suitable CAGN habitat. Table 2, below, summarizes the results of each survey.

No CAGN were detected during breeding season surveys conducted on the site. No brown-headed cowbirds (*Molothus ater*) were observed on the site during surveys. All

avian species detected during the surveys are listed in the *Avian Compendium* (Appendix B).

Table 2. Survey Data

Survey	Surveyor	Date	Time		Temp (°F)	Cloud Cover (%)	Wind Speed (mph)	CAGN Detected
			Begin	End				
1	N. Kidd	3/16/17	0800	1000	62	0	0-2	No
2	K. Rios	3/23/17	0845	1025	52	0	1-2	No
3	K. Rios	3/31/17	1100	1200	67	0	2-3	No
4	K. Rios	4/7/17	1030	1130	70	0	1-2	No
5	K. Rios	4/14/17	0945	1045	61	30	1-2	No
6	K. Rios	4/21/17	0800	0900	63	0	1-2	No

Additional Fauna Species

Avian activity during the protocol surveys was moderate, with a wide range of bird species observed or otherwise detected throughout the course of the surveys. Common bird species observed or otherwise detected during surveys include species commonly found in sage scrub and urban habitats such as, but not limited to, house finch (*Haemorphous mexicanus*), lesser goldfinch (*Spinus psaltria*), bushtit (*Psaltriparus minimus*), wrentit (*Chamaea fasciata*), Anna's hummingbird (*Calypte anna*), and California towhee (*Melozone crissalis*). No brown-headed cowbirds (*Molothrus ater*), considered to be nest parasites for CAGNs, were observed or otherwise detected during the surveys.

One sensitive species was detected during the surveys: Coast horned lizard (*Phrynosoma coronatum*), a California species of concern. This species was detected on the top of the knoll to the north of the parcel, outside the parcel boundary. A complete list of avian species observed during the protocol surveys is provided in Appendix A, Fauna Compendium.

CONCLUSION

Coastal California gnatcatcher breeding season protocol surveys have been completed for the Nichols Road-South Project in accordance with the USFWS presence/absence survey protocol and pursuant to the Federal ESA. No CAGN were observed during the protocol surveys and therefore CAGN are considered absent from the project site.

Additionally, no brown-headed cowbirds (*Molothrus ater*) were observed or otherwise detected during the surveys.

CERTIFICATION: We 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.

Date: May 3, 2017 Signed:

Kelly Rios TE-018909-5

Date May 3, 2017 Signed:

Nina J. Kidd TE-036550-4

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APPENDIX A- FIGURES

Figure 1. Survey Area for Nichols Road
Google earth 2016
Nichols Road 2017 Gnatcatcher Breeding Season Survey

Kidd BIOLOGICAL INC.

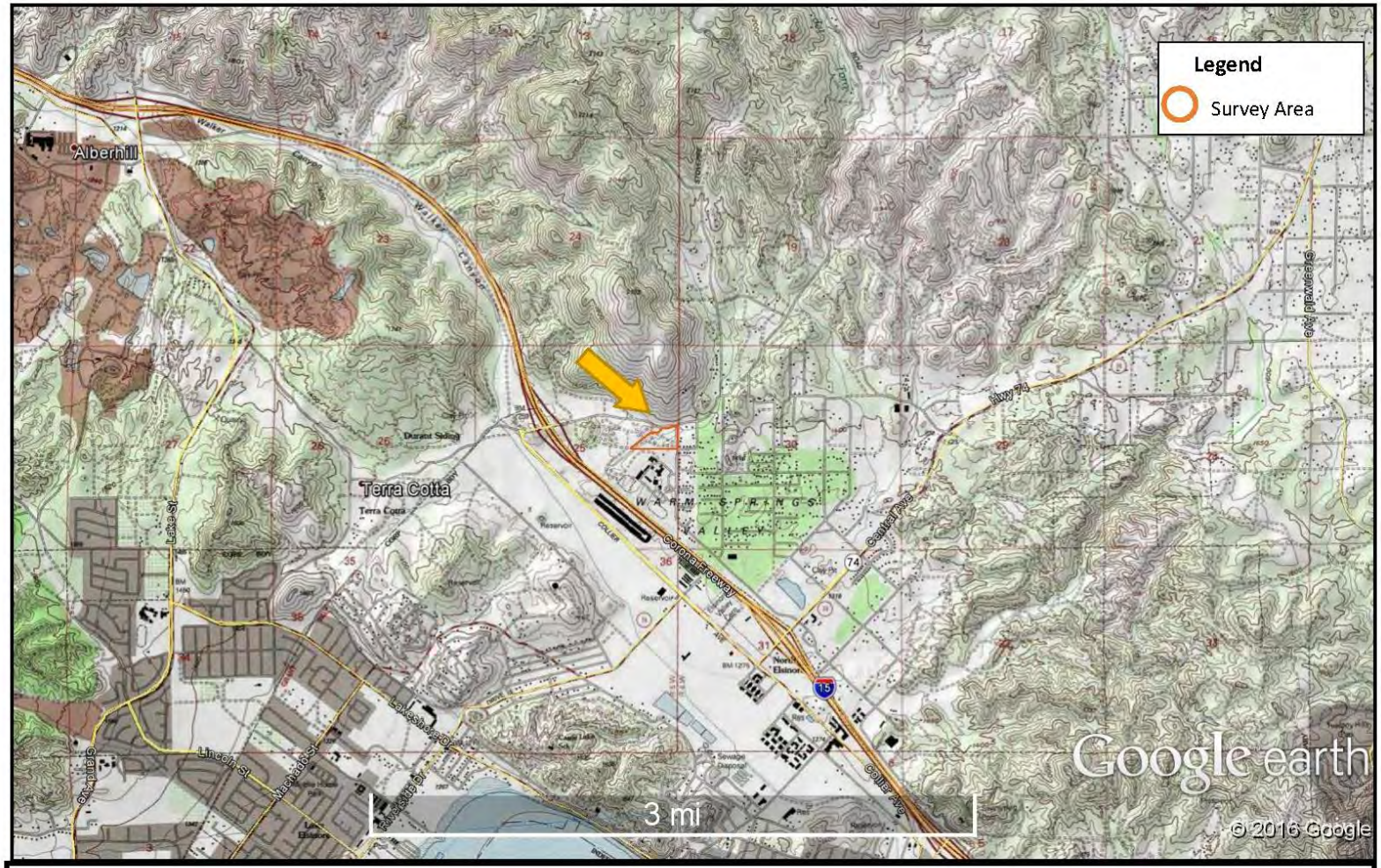


Figure 2. Survey Area on Lake Elsinore, CA USGS Topographic Map (EarthPoint 2017)
Nichols Road 2017 Gnatcatcher Breeding Season Survey

Kidd BIOLOGICAL INC.

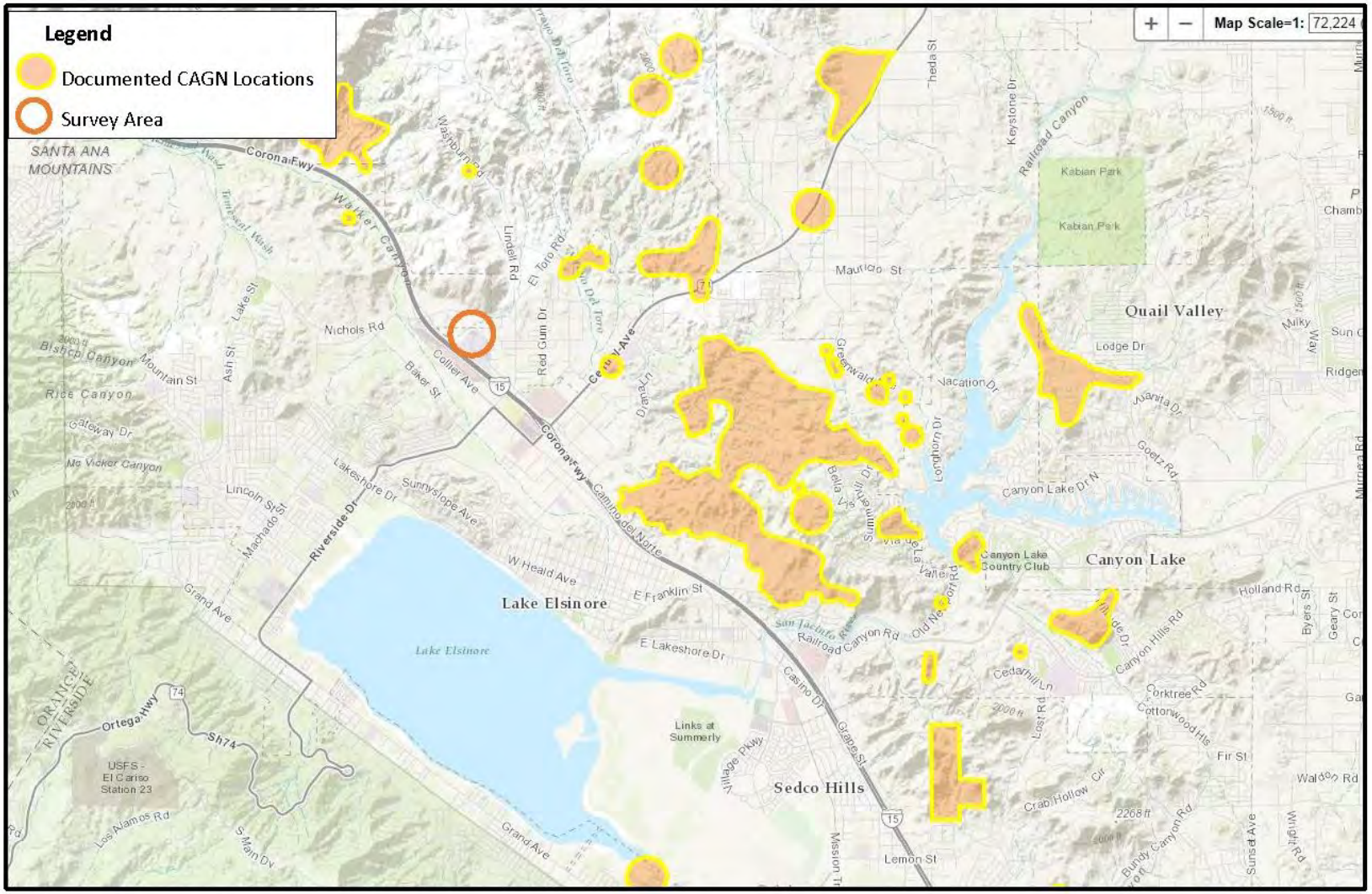


Figure 3. Reported CAGN Observations Relative to Survey Area
CNDDB RareFind5 2017 (ESRI)
Nichols Road 2017 Breeding Season Gnatcatcher Survey

Kidd BIOLOGICAL INC.

APPENDIX B: USFWS 15-DAY NOTICE

February 9, 2017

Ms. Stacey Love
U.S. Fish and Wildlife Service
Carlsbad Field Office
2177 Salk Ave #250
Carlsbad, California 93003

Subject: **15-Day Notice to perform California Gnatcatcher presence/absence surveys (breeding season) for the "Nichols Road-South" Project in the City of Lake Elsinore, California.**

Dear Stacey,

In order to determine if a proposed project in the City of Lake Elsinore will have an impact on the federally threatened California gnatcatcher (*Polioptila californica californica*) we are proposing to conduct focused presence/absence surveys within the **breeding season**. The proposed project site is located in the northern portion of Lake Elsinore in Riverside County, California. Although this area is under a MSHCP, this parcel elected to not partake in the plan and therefore focused surveys are required.
Specifically, the project site is located just east of Interstate 15, south of Nichols Road, east of El Toro Road and north of Highway 74 (Figure 1). The project site is located within the United States Geological Survey (USGS) 7.5' series Lake Elsinore quadrangle, Township 6 North, Range 5 West, Section 25. Elevations within the project site range between 200 and 400 feet (Figure 2). The survey area will comprise approximately 15 areas of suitable habitat.

Surveys will be conducted by myself, Scott Thomas (TE-036550-4), Jeff Kidd (TE-022230-3) Kelly Rios (TE 018909-5) and/or Karly Moore (TE02484A-1) of Kidd Biological, Inc. per U.S. Fish and Wildlife (USFWS) California gnatcatcher protocol guidelines. We expect to initiate the 6 surveys on March 15 and concluding surveys late April.

If you have any questions or comments regarding this letter, please contact me directly at (951) 600-0666. We will await your response to initiate surveys.

Sincerely,

Nina Jimerson-Kidd

APPENDIX C: AVIAN COMPENDIUM

Birds	
Accipitridae	**Hawks, Eagles, and Kites**
Buteo jamaicensis	red-tailed hawk
Charadriidea	**Plovers, Sandpipers and Allies**
Charadrius vociferus	Killdeer
Columbidae	**Pigeons and Doves**
* *Columba livia*	rock dove
Zenaida macroura	mourning dove
* *Streptopelia decaocto*	Eurasian collared dove
Hirundinidae	**Swallows**
Petrochelidon pyrrhonota	cliff swallow
Stelgidopteryx serripennis	Northern rough-wing swallow
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Corvidae	**Jays and Crows**
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Paridae	**Chickadees and Titmice**
Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Salpinctes obsoletus	rock wren

Sylviidae	**Sylviid Warblers**
Chamaea fasciata	wrentit
Mimidae	**Mockingbirds and Thrashers**
Mimus polyglottos	northern mockingbird
***** *Sternus vulgaris*	European starling
Bombycillidae	**Waxwings**
Bombycilla cedrorum	cedar waxwing
Emberizidae	**Sparrows**
Melozone crissalis	California towhee
Fringillidae	**Finches**
Haemorphous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	house sparrow

*Non-native species

§Sensitive Species

APPENDIX E

Special Status Plant Species Survey of the Nichols South Survey Area [MSHCP-Excluded Survey Area]

June 26, 2017

TO: Nina Kidd
Kidd Biological
23046 Ave de la Carlotta, Suite 600, PMB 66
Laguna Hills CA 92653

FROM: David Bramlet
D. Bramlet, Consulting Biologist
1691 Mesa Dr. No. P-4
Newport Beach CA 92660

SUBJECT: Special Status Plant Species Survey of the Nichols South Survey Area (APN 389-200-038).

Dear Ms. Kidd:

The following letter report presents the results of a special status plant survey on the Nichols South Survey Area, which is an 11.3 acre section of APN 389-200-038, which is located at the eastern end of this parcel. The survey area is located south of Nichols Road, and west of the I-15 freeway in the City of Lake Elsinore. Surveys were conducted in late March, and mid-May 2017 to determine the presence of any special status plant species on the project site. No special status plant species were located on the main parcel area, south of Nichols Road. However, the Robinson's pepper grass (*Lepdium virginicum* var. *robinsonii*) was noted in the area north of Nichols Road.

1.0 INTRODUCTION

Project Location. The project site is located on 11.3 acres of a 43.6 acre parcel, Assessor's Parcel Number (APN) 389-200-038, in the City of Lake Elsinore (County of Riverside 2017a). This section of the parcel is located 1,700 ft. west of the I-15, south of Nichols Road, west of Wood Mesa Court/El Toro Road, and 100 ft. north of Temescal Canyon High School. The study site is located at the eastern end of the property, in an area that has been designated as open space (T&B Planning 2016).

The parcel is located on the Lake Elsinore 7.5' USGS topographic map, at T5S R5W in Section 25 see Figure 1. The UTM coordinates for this property are 11S 04 67 725 mE X 37 29 637 mN and the elevation of the site varies from 1,329 ft. to 1,373 ft. above msl. Stovepipe Canyon creek is an ephemeral channel that flows southwest through the eastern end of the property and the creek is noted as a blue line stream on the USGS topographic map. An aerial photograph, noting the boundaries of the project site is found in Figure 2. Photos of the property are presented in Appendix A.

FIGURE 1
GENERAL LOCALITY OF THE PROJECT SITE

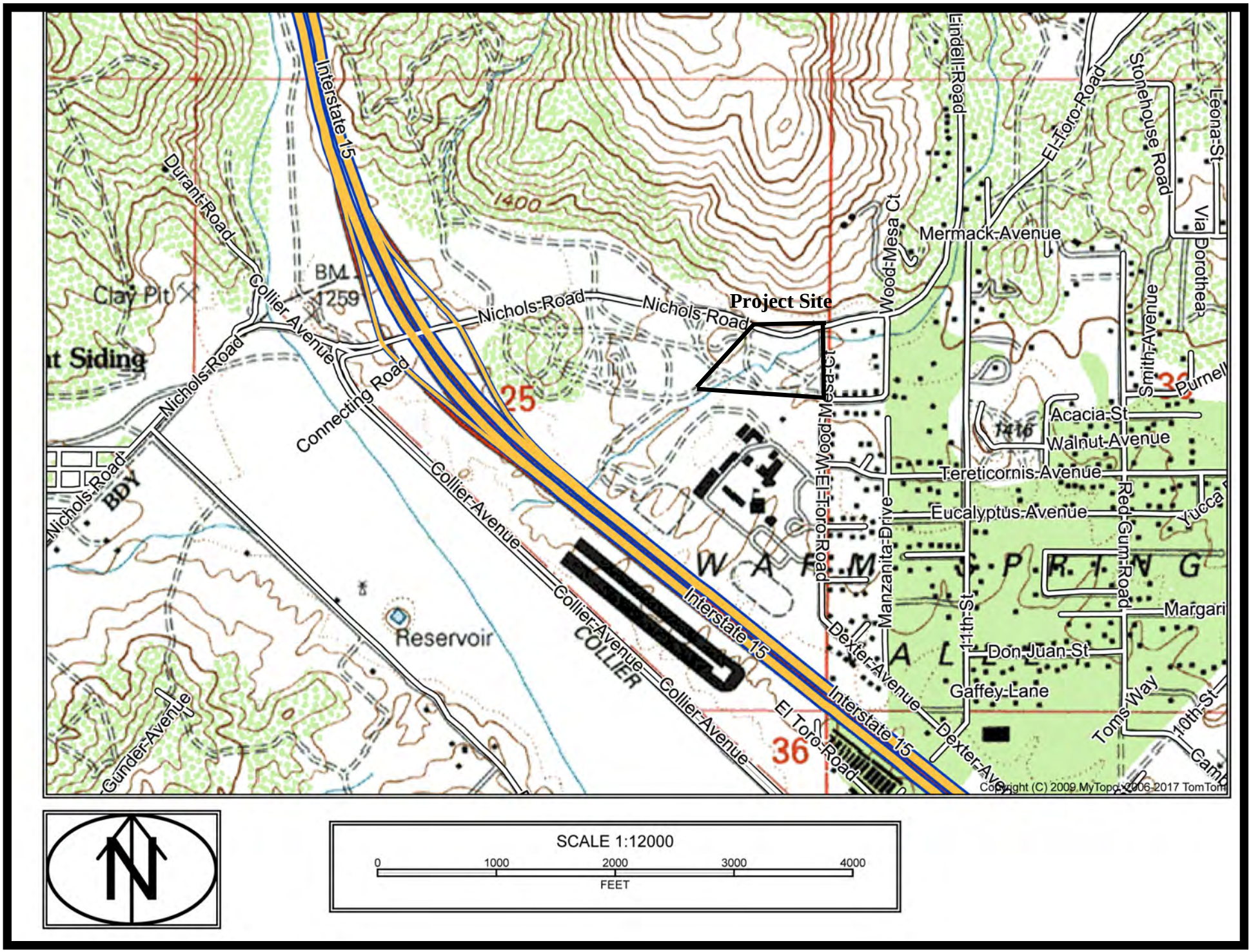
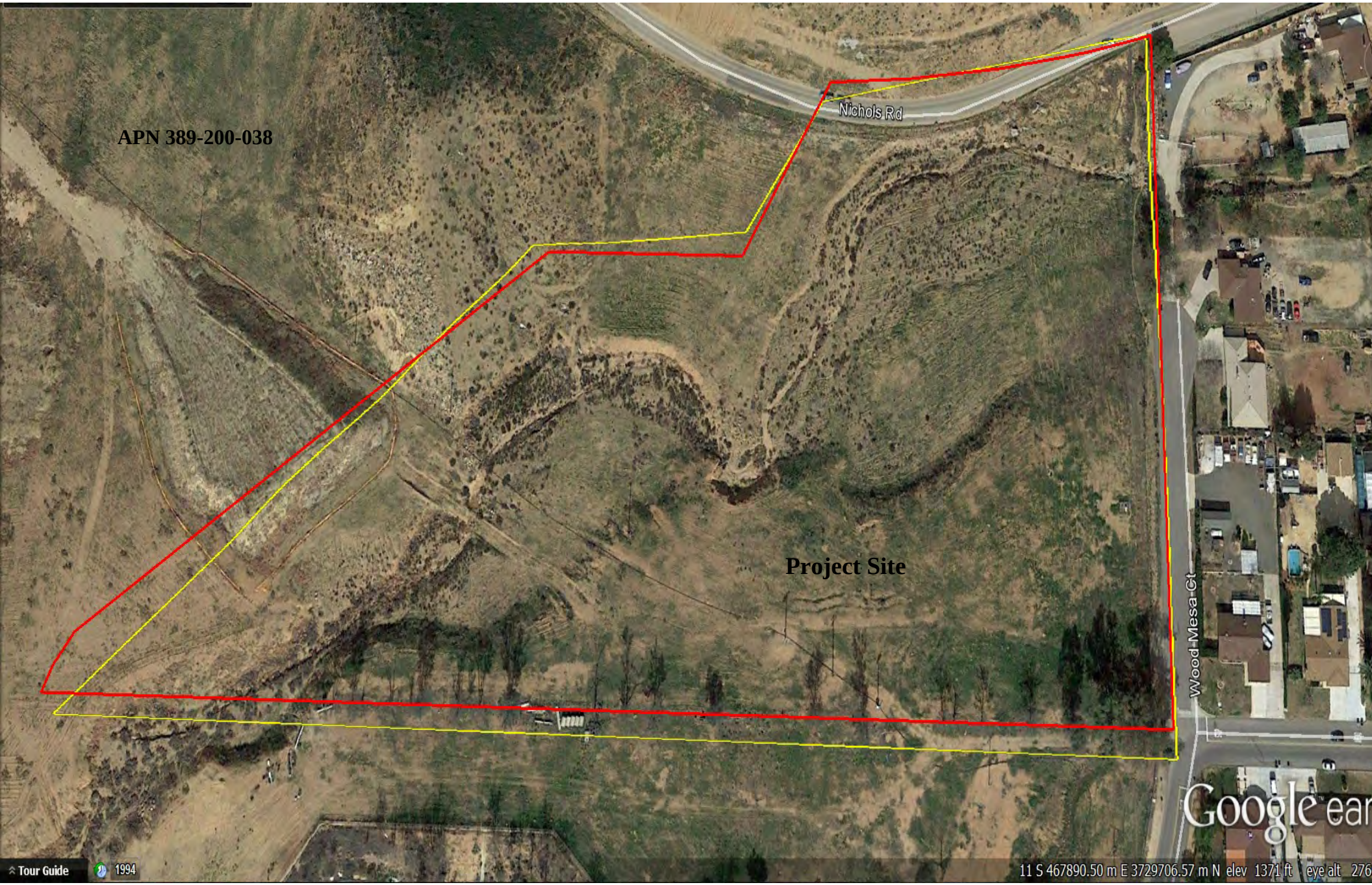


FIGURE 2

AERIAL PHOTO OF THE NICHOLS ROAD PROJECT SITE



WRMSHCP. The project site is found within the Elsinore Area Plan of the western Riverside MSHCP (County of Riverside 2003b). This parcel is located within Criteria Cell 4070, and is within a burrowing owl survey area (County of Riverside 2017b). However, the Nichols Canyon mine is not a participant in the MSHCP (T&B Planning 2016). Therefore, the project site is not subject to the procedures/informational requirements of the MSHCP process.

Project Description. The Nichols Canyon Mine property is comprised of a 199 acres located north and south of Nichols Road, and just east of the I-15 in the northeast area of the City of Lake Elsinore. A recent EIR (T&B Planning 2016) was prepared for the approval of a surface mine permit to allow the expansion of mining operations to in the northeast of the current mine, and to update the approved reclamation plan. The northeast and southeastern areas of the mine property are noted as open space in Figure 3-4 of the EIR. However, the biological studies for the EIR (Alden 2015) only covered the proposed expansion in a segment of the northeast area of the property.

A botanical study was requested for the open space area in the southeast part of the Nichols Canyon Mine property for the 2017 field season. This locality is characterized by a plateau area of annual grassland, and Stovepipe Canyon Creek, which runs through the center of the study area. This site also contains some steeper slopes that contain a Riversidian sage scrub community. The main objective of this study was to determine if any special status plant species were present on the southeastern open space area of this property.

2.0 METHODS

A review of the existing literature was conducted to determine any descriptions of existing habitats within the study and the potential presence of any special status plant and animal species or plant communities. The sources reviewed for this study included:

- CNDDB Rarefind database of special status species and habitats for the Lake Elsinore, Wildomar, Alberhill, and Romoland 7.5' quadrangles (CDFW 2017a);
- CNPS Rare Plant Inventory for the Lake Elsinore, Wildomar, Alberhill, and Romoland 7.5' quadrangles (CNPS 2017);
- Documented plant collections from the Consortium of California Herbaria for the Lake Elsinore area (Consortium 2017);
- MSHCP Conservation Summary Report (County of Riverside 2017b), RCA MSHCP Information Tool (RCA 2017) and Criteria Cell information (County of Riverside 2003b) for the project site and associated project areas;
- County of Riverside GIS information on the project parcel (County of Riverside 2017a);
- DEIR and Biological technical Report for the proposed expansion of the Nichols Canyon mine site (T&B Planning 2016, Alden Environmental 2015);
- City of Lake Elsinore General Plan (Altrum Group 2011, City of Lake Elsinore 2011, Jones and Stokes 2006);
- Biological Studies in the study area (AECOM 2014, AMEC 2006b, AMEC 2014, Ecology and Environment 2016, Planning Associates 2008, Planning Associates 2015); and
- NRCS (2017) soil map of the project site and associated project areas.

Field Surveys

Field surveys of the project site were performed by David Bramlet, botanist on 23 March 2017 for approximately eight hours, and on 4 May 2017 for 6.5 hours. The surveys examined the property by walking through the various habitats and noting all of the plant species observed during the site examination. Field notes were taken to record these observations, and photos were used to document the current conditions on the site at the time of the survey, see Appendix A. A GPS receiver was used to maintain a track log of the areas covered during the survey and waypoint any unique features found at these localities.

During the May survey it was noted that a portion of the initial survey area was being graded. Due to the heavy equipment working in this locality, the survey could not be conducted in this portion of the project site. Therefore, the late blooming survey could not be completed in this locality of the study site.

To determine the blooming status of the special status plant species, potentially occurring in the project site, several these several reference localities were examined before conducting these studies. Reference areas along Nichols Road (west of the I-15), and Baker Street were also

examined during this period, to determine the status of Riversidian sage scrub, clay soil, and alkali wetland plant species documented from this area. The San Diego ambrosia (*Ambroisa pumila*) locality along Nichols road, west of the I-15 was also examined during the review of the special status plant species. A locality of the Munz's onion (*Allium munzii*) in the Temescal Valley was examined due to determine blooming status of this species during the 2017 field season, along with of the clay restricted plant species found at this locality. Finally, a site in Wildomar was reviewed to determine the status of several species found on sandy soils, including the Parry's spineflower (*Chorizanthe parryi* var. *parryi*). These species would all have been observable during the field survey of the Nichols Road project site.

Scientific and common names generally follow the Vascular Plants of western Riverside County: An annotated checklist (Roberts et al. 2004, 2007), although some nomenclature from the Jepson Manual (Baldwin et al. 2012) and other botanical publications (Allen and Roberts 2013) is followed. The names for the special status plant species follow the CNPS online Rare Plant Inventory (CNPS 2017).

3.0 EXISTING CONDITIONS

3.1 Soils

The soils found on the project site include: Arbuckle gravelly loam, 2-8% slopes; Arbuckle gravelly loam, 8-15%; Cieneba rocky, sandy loam, 15-50% slopes; Cortina gravelly, loamy sand, 2-8% slopes; Garretson gravelly, loamy sand, 2-8% slopes; and Hanford coarse, sandy loam, 2-8T slopes.

3.2 Plant Communities

The following section describes the plant communities observed on the project site. The list of all of the plant species noted during the field surveys is found in Appendix B.

Annual grassland – A large portion of project is disked on an annual basis, keeping the area in herbaceous vegetation. The typical grasses found in this community consisted of: red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), slender wild oat (*Avena barbata*), foxtail barley (*Hordeum leporinum* ssp. *murinum*), wild oat (*Avena fatua*), schismus (*Schismus barbatus*), and rat-tail fescue (*Festuca myuros*). Characteristic forbs include: common fiddleneck (*Amsincka intermedia*), summer mustard (*Hirschfeldia incana*), red-stemmed filaree (*Erodium cicutarium*), bur clover (*Medicago polymorpha*), London rocket (*Sisymbrium irio*), white-stemmed filaree (*Erodium moschatum*), pygmy sand weed (*Crassula connata*), common sow thistle (*Sonchus oleraceus*), stinknet (*Oncosiphon piluliferum*), long-beaked filaree (*Erodium botrys*), red maids (*Calandrinia ciliata*), tumbling pigweed (*Amaranthus* albus), miniature lupine (*Lupinus bicolor*), prickly lettuce (*Lactuca serriola*), cheese weed (*Malva parvilfora*), dove weed (*Croton setiger*), rattlesnake weed (*Euphorbia albomarginata*), narrow-toothed combseed (*Pectocarya linearis*), annual sunflower (*Helianthus annuus*),valley popcorn flower (*Plagiobothrys canescens*), Russian thistle (*Salsoa tragus*), sand peppergrass (*Lepidium lasiocarpum*), nettle-leaved goosefoot (*Chenopodium murale*), vinegar weed (*Trichostema*

lanceolatum), horehound (*Marrubium vulgare*), jimson weed (*Datura wrightii*), and kellogg's tarplant (*Deinandra kelloggii*).

Scattered shrubs and subshrubs are found in this grassland and these are comprised of: interior California buckwheat (*Eriogonum fasciculatum* ssp. *foliolosum*), California sagebrush (*Artemisia californica*), cudweed aster (*Corethrogyne filaginifolia*), deerweed (*Acmispon glaber*), tree tobacco (*Nicotiana glauca*), brittlebush (*Encelia farinosa*), long-stemmed buckwheat (*Eriogonum elongatum*), grassland goldenbush (*Ericameria palmeri* ssp. *pachylepis*), and castor bean (*Ricinus communis*). Saplings of red river gum (*Eucalyptus camaldulensis*) were also found in this grassland habitat.

Riversidian sage scrub. The south facing slopes contained a Riversidian sage scrub that was characterized by brittlebush with interior California buckwheat, sweet bush (*Bebbia juncea*), linear-leaved stillingia (*Stillingia linearifolia*), deerweed, and valley cholla (*Cylindropuntia californica* var. *parkeri*). Grasses and forbs included: schismus, red brome, littleseed muhly (*Mulhenbergia microsperma*), foxtail barley, slender wild oat, red-stemmed filaree, summer mustard, kellogg's tarplant, common fiddleneck, rattlesnake weed, strigose lotus (*Acmispon strigosus*), chia (*Salvia columbariae*), red-stemmed filaree, common cryptantha, coyote melon (*Cucurbita palmata*), hare's ear cabbage (*Sisymbrium orientale*), grab lotus (*Acmispon micranthus*), miniature lupine, jimson weed, pygmy sand weed, and dove weed.

The north facing slopes had a more mesic scrub and associated shrub species. Typical species found on these slopes included: California sagebrush, interior California buckwheat, white sage (*Salvia apiana*), deerweed, California wishbone bush (*Mirabilis laevis* var. *crassifolia*), grassland goldenbush, and cudweed aster. This community is often very grassy, with the understory composed of: ripgut brome, red brome, little California melic (*Melica imperfecta*), rattail fescue (*Festuca myuros*), and one-sided bluegrass (*Poa secunda*). Forbs on these slopes included: common fiddleneck, coastal goldfields (*Lasthenia gracilis*), miniature lupine, dobie pod (*Tropidiocarpum gracile*), white-stemmed filaree, common cryptantha(*Cryptantha intermedia*), blue dicks (*Dichelostema pulchellum*), baby blue eyes (*Nemophilia menziesii*), California chicory (*Rafenesquia californica*), splendid mariposa lily (*Calochortus splendens*), silver puffs (*Microseris lindleyi*), Los Angeles gilia (*Gilia angelensis*), lance-leaved dudleya (*Dudleya lanceolata*), and Parry's larkspur (*Delphinium parryi*).

The east facing slopes had a slightly drier alliance of Riversidian sage scrub that was generally dominated by open stands of interior California buckwheat. Less common shrubs include California sagebrush, white sage, long-stemmed buckwheat, deerweed, California wishbone bush, and brittlebush.

Forbs and grasses in this alliance consist of: red brome, schismus, foxtail barely, and ripgut brome. Forbs on these slopes include: miniature lupine, chia red-semmed filaree, canterbury bells (*Phacelia minor*), summer mustard, sliver puffs, shiny peppergrass (*Lepidium nitidum*), kellogg's tarplant, dove weed, blue dicks, California popcorn flower, finger-leaved morning glory (*Calystegia macrostegia*), California plantain (*Plantago erecta*),strigose lotus (*Acmispon strigosus*), pygmy sand weed, common cryptanta, northern combseed (*Pectocarya penicillata*), and Russian thistle.

Riversidian alluvial fan sage scrub. The ephemeral wash that runs through the project is characterized by an alluvial fan sage scrub. The shrubs in this community include: scalebroom (*Lepidospartum squamatum*), along with stands of interior California buckwheat. Other shrubs in this community are comprised of: California sagebrush, deerweed, California wishbone bush, valley cholla, brittlebush, long-stemmed buckwheat, cudweed aster, and white sage.

The openings in the shrub contain an understory consisting of: red brome, schismus, sand bur (*Ambrosia acanthicapa*), pygmy sand weed, chia (*Salvia columbariae*), California fluff weed (*Logfia filaginoides*), common cryptantha, summer mustard, finger-leaved morning glory, field suncup (*Camissoniopsis hirtella*), red maids, tumbling pigweed, calabazilla (*Cucurbita foetidissima*), annual sunflower, California poppy (*Eschscholzia californica*), dwarf nettle (*Urtica urens*), slender buckwheat (*Eriogonum gracile*), and common cryptantha.

Ephemeral Wash. The open sandy channel that forms part of the Stovepipe Canyon Creek could be considered an ephemeral wash mapping unit. This sandy channel is generally unvegetated, although some scalebroom seedlings and other grasses and forbs are found in these fine sands. These include schismus, sand bur, pygmy sand weed, California fluff weed, annual sunflower, pitseed goosefoot (*Chenopodium berlandieri*), puncture vine (*Tribulus terrestris*), and slender buckwheat.

Disturbed. Disturbed site consisted of areas that have been disturbed by disking or on the margin of previous extraction sites. Typically, these habitats had a grass cover characterized by red brome, schismus, wild oat, foxtail barley, and ripgut brome. Common forbs in these area consisted of: summer mustard, bur clover, Russian thistle, common fiddleneck, red-stemmed filaree, cheeseweed, tocalote, common sow thistle, miniature lupine, red maids, nettle-leaved goosefoot, dwarf nettle, hare's ear cabbage, vinegar weed, horehound, stinknet, prickly lettuce (*Lactuca serriola*), and dove weed.

Graded. Dirt roads and previously mined area comprised a graded mapping unit. There was little if any vegetative cover in these graded areas. However, some of the past graded sites had an open vegetative cover. Common plant species in these sites consisted of: schimus, Russian thistle, London rocket, summer mustard, red-stemmed filaree, prickly lettuce, red brome, pygmy sand weed, stinknet, puncture vine, miniature lupine, tocalote, and tumbling pigweed.

3.3 Special Status Plant Species and Communities

The special status plant species in the study area comprise species found on clay soils/gabbro, alkali wetlands, wash areas, and open sandy soils. The following section will describe the special status plant species known from the study area.

Alkali wetlands – The Nichols Road wetlands found west of the I-15, contains an alkaline wetland area where a number of special status plant species are found. These include: San Jacinto Valley crownscale (*Atriplex cornonata* var. *notatior*) FE, CRPR 1B.1; Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) CRPR 1B.1; smooth tarplant (*Centromadia pungens* ssp. *laevis*) CRPR 1B.1; and vernal barley (*Hordeum intercendens*) CRPR 3.2. The moist grasslands beside these wetlands contain the San Diego ambrosia (*Ambrosia pumila*) FE, CRPR 1B.1 and smooth tarplant. Alkali wetlands are not found on the project site, and these species are all assumed to be absent from the property.

Clay Soils/Gabbro - Clay soils frequently occur in the general area are known to support: Munz's onion (*Allium munzii*) FT, SE, CRPR 1B.1; large-leaf filaree (*California macrophylla*) CRPR 1B.1; small-flowered morning glory (*Convolvulus simulans*) CRPR 4.2; small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) CRPR 4.2; long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*) CRPR 1B.2; Yucaipa onion (*Allium marvinii*) CRPR 1B.2; and Palmer's grappling hook (*Harpagonella palmeri*) CRPR 4.2. Rocky, clayey soils can also support the many-stemmed dudleya (*Dudleya multicaulis*) CRPR 1B.2. Deep clay soils are not found on the project site, and these species are all presumed absent from the property.

Wash Areas - Alluvial areas are unique environments, containing both fine sands and coarse, gravelly, rocky substrates. Special Status plant species occurring in these washes include: slender-horned spine flower (*Dodecahema leptoceras*) FE, SE, CRPR 1B.1; chaparral sand verbena (*Abronia villosa* var. *aurita*) CRPR 1B.1; alluvial wash everlasting (*Pseudognaphalium leucocephalum*) CRPR 4.2; the Peninsular spineflower (*Chorizanthe leptotheca*) CRPR 4.2 and Coulter's matilija poppy (*Romneya coulteri*) CRPR 4.2. The wash areas of Stovepipe canyon contain suitable habitat for the alluvial wash everlasting, chaparral sand verbena, and peninsular spineflower and these species would be considered to have moderate to low potential for occurring on the project site.

Sandy/Loamy Soils - Special Status Plants anticipated to occur on open sandy, rocky soils include: Parry's spineflower (*Chorizanthe parryi* var. *parryi*) CRPR 1B.1; Robinson's pepper grass (*Lepidium virginicum* var. *robinsonii*) CRPR 4.3; and intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) CRPP 1B.2. In loamier soils the paniculate tarplant (*Deinandra paniculata*) CRPR 4.2 frequently occurs in grasslands. Clayey substrates can be found in areas mapped with loamy soils, and these can form habitat for the long-spined spineflower and the Yucaipa onion. The project is comprised of sandy, loamy soils with some areas of clayey outcrops, and all of these species would be considered to have a moderate potential for occurring on the project site.

Special Status Communities – Special status communities on or near the project site include: Riversidian sage scrub; Riversidian alluvial fan sage scrub; and ephemeral wash (Jones and Stokes 2006, Alden 2015). The biological study on the Nichols mine site (Alden 2015), also considered annual grasslands as a special status community, presumably on the basis of the importance these communities represent as wildlife habitat in this region.

4.0 RESULTS

The field survey during late March and early May of 2017, did not locate any special status plant species on the project site. Fifteen Robinson's peppergrass plants were observed offsite, just north of Nichols Road at the following UTM coordinates 04 67 859mE X 37 29 763mN. These plants were located in openings of Riversidian sage scrub dominated by brittlebush, and was associated with the red-skinned onion (*Allium haematochiton*).

Generally, the only species that have potential for occurrence on the project site would include: the chaparral sand verbena, alluvial wash everlasting, Parry's spineflower, intermediate mariposa lily, and paniculate tarplant. There does appear to sufficient areas of fine sands to support the chaparral sand verbena or alluvial wash everlasting, these species were not located during the field surveys and are assumed to be absent from the project site.

The paniculate tarplant was assumed to be present, based on seedlings observed in the March 2017 survey. However, all of the flowering plants observed during May were the Kellogg's tarplant. There is still some potential for this species to occur on the property, since the paniculate tarplant has been documented from nearby localities.

There is little suitable habitat for the intermediate mariposa lily on the project site, and there are no records for this species in the Gavilan Hills area. This mariposa lily was not observed on the project site and is assumed to be absent from the property.

Clayey patches were not present in the gravelly to sandy loams on the project site, although a small area of Cieneba soils could provide habitat for this species, although suitable localities for this spineflower may be found north of the property. This species was not observed and assumed to be absent from the project site.

The sandy soils of the property do provide suitable habitat for the Parry's spineflower, although there are few documented localities for the Gavilan Hills or Lake Elsinore area. This species was not observed, but a there is still a low potential for this species to occur on the project site.

Several special status plant communities were observed on the project site. These include: Riversidian sage scrub; Riversidian alluvial fan sage scrub; and ephemeral wash (Jones and Stokes 2006, Alden 2015). The biological study on the Nichols mine site (Alden 2015), also considered annual grasslands as a special status community, presumably on the basis of the importance these communities represent as wildlife habitat in this region. The grasslands in the northeast area of the project site would readily develop into a Riversidian sage scrub, if disking was ceased in these localities.

5.0 REFERENCES

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APPENDIX A

PHOTOGRAPHS OF THE PROJECT SITE

Photo 1: Mideast area of the project site, looking northwest (Photo date 3/23/2017)

Photo 2: Mideast area of the project site, looking southwest

Photo 3: Stovepipe Canyon Creek, looking west (Alluvial fan sage scrub community)

Photo 4: Lower Stovepipe Canyon Creek, looking west

Photo 5: Mid-southern area of the project site looking northwest

Photo 6: Southeast corner of the project site, looking north

Figure 7: Northwest corner of the project site looking east

Photo 8: Riversidian sage scrub on the project site, looking west

Photo 9: Central area of the project site, looking north (Photo date 5/4/2017)

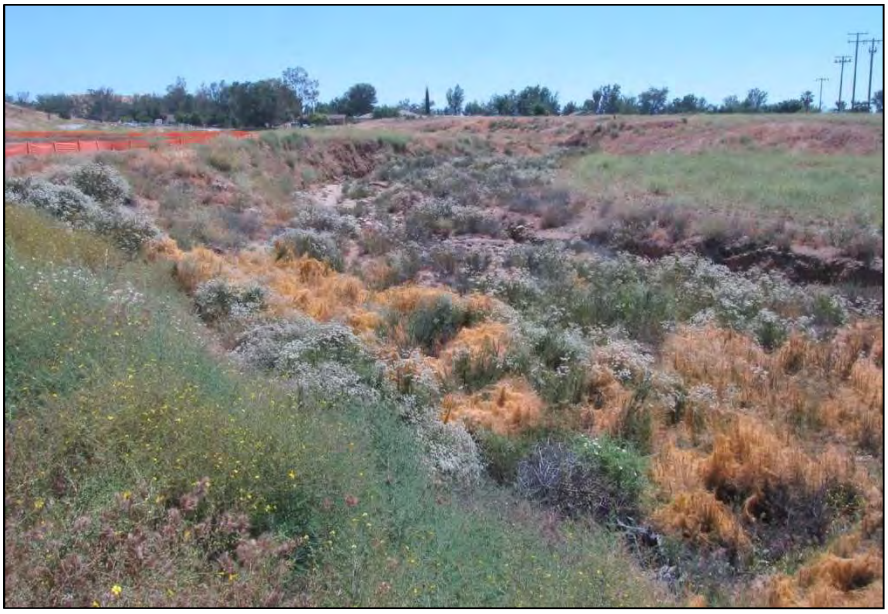

Photo 10: Stovepipe Canyon Creek, looking east

Photo 11: Northwest corner of the project site, looking northeast

Photo 12: Lower Stovepipe Canyon Creek, looking west

Photo 13: Stovepipe Canyon Creek, looking southwest

Photo 14: Southwest corner of the project site, Coast horned lizard

Photo 15: Robinson’s pepper grass (*Lepdium virginicum* var. *robinsonii*), north of Nichols Road

APPENDIX B

PLANT SPECIES OBSERVED
ON THE
NICHOLS ROAD PROJECT SITE

LEGEND

* Non-native species
† Special status plant species
[ ] Checklist of vascular plants of western Riverside County Equivalents

Note: Taxonomy of scientific and common names generally follows the Jepson manual (Baldwin et al. 2012), with some recent name changes following the checklist of vascular plants of western Riverside County (Roberts et al. 2004). Common names follow Roberts et al. 2004.

MAGNOLIOPHYTA - FLOWERING PLANTS

EUDICOTYLEDONES - EUDICOTS

AMARANTHACEAE
AMARANTH FAMILY

**Amaranthus albus*
Tumbling pigweed

APIACEAE
CARROT FAMILY

Daucus pusillus
Rattlesnake weed

ASTERACEAE
SUNFLOWER FAMILY

Ambrosia acanthicarpa
Annual bur weed

Artemisia californica
California sagebrush

Bebbia juncea
Scabrid sweetbush

**Centaurea melitensis*
Tocalote

Corethrogyne filaginifolia
Common sand aster

Deinandra kelloggii
Kellogg's tarplant

Encelia farinosa
Brittlebush

Ericameria palmeri var. *pachylepis*
Grassland goldenbush

Helianthus annuus
Annual sunflower

Helianthus gracilentus
Slender sunflower

**Hypochaeris glabra*
Smooth cat's ear

Lasthenia gracilis
Coastal goldfields

Lepidospartum squamatum
Scalebroom

Logfia filaginoides
[*Filago californica*]
California fluffweed

**Matricaria discoidea*
Common pineapple weed

Microseris lindleyi
Silver puffs

**Oncosiphon piluliferum*
Stinknet

Rafenesquia californica
California chicory

**Sonchus asper*
Prickly sow thistle

**Sonchus oleraceus*
Common sow thistle

Stylocline gnaphalioides
Everlasting nest straw

BORAGINACEAE
FORGET-ME-NOT FAMILY

Amsinckia intermedia
Common fiddleneck

Amsinckia reterosa
Gray fiddleneck

Cryptantha intermedia
Common cryptantha

Nemophila menziesii
Baby blue eyes

Pectocarya linearis
Slender pectocarya

Pectocarya penicillata
Northern combseed

Phacelia cicutaria
Caterpillar phacelia

Phacelia minor
Canterbury bells

Plagiobothrys collinus var. *californicus*
California popcorn flower

Plagiobothrys canescens
Valley popcorn flower

Plagiobothrys nothofulvus
Rusty popcorn flower

BRASSICACEAE
MUSTARD FAMILY

**Hirschfeldia incana*
Summer mustard

Lepidium lasiocarpum
Sand pepper grass

Lepidium nitidum
Shiny peppergrass

†*Lepidium virginicum* var. *robinsonii* (offsite)
Robinson's peppergrass

**Sisymbrium irio*
London rocket

**Sisymbrium orientale*
Hare's ear cabbage

Thysanocarpus laciniatus
Southern fringed-pod

Tropidocarpum gracile
Slender dobie pod

CACTACEAE
CACTUS FAMILY

Cylindropuntia californica var. *parkeri*
Valley cholla

CAMPANULACEAE
BELLFLOWER FAMILY

Nemacladus longiflorus
Long-flowered thread plant

CARYOPYLLACEAE
PINK FAMILY

Loefilingia squarrosa
Spreading pygmy leaf

CHENOPODIACEAE
GOOSEFOOT FAMILY

Chenopodium berlandieri
Pitseed goosefoot

**Chenopodium murale*
Nettle-leaved goosefoot

**Salsola tragus*
Russian thistle

CONVOLVULACEAE
MORNING GLORY FAMILY

Calystegia macrostegia
Finger-leaved morning glory

Cuscuta california
California dodder

CRASSULACEAE
STONECROP FAMILY

Crassula connata
Sand pigmy stonecrop

Dudleya lanceolata
Lance-leaved live-forever

CUCURBITACEAE
GOURD FAMILY

Cucurbita foetidissima
Calabazilla

Cucurbita palmata
Coyote melon

EUPHORBIACEAE
SPURGE FAMILY

Croton setiger
Dove weed

Euphorbia albomarginata

Rattlesnake weed

Euphorbia polycarpa
Golondrinia

Stillingia linearis
Linear-leaved stillingia

FABACEAE
PEA FAMILY

Acmispon glaber
[*Lotus scoparius*]
Deerweed

Acmispon brachycarpus
[*Lotus humistratus*]
Hill lotus

Acmispon strigosus
[*Lotus strigosus*]
Strigose lotus

Acmispon micranthus
[*Lotus hamatus*]
Grab lotus

Lupinus bicolor
Miniature lupine

**Medicago polymorpha*
Bur clover

GERANIACEAE
GERANIUM FAMILY

**Erodium botrys*.
Large-leaved filaree

**Erodium cicutarium*
Red-stemmed filaree

**Erodium moschatum*
White-stemmed filaree

LAMIACEAE
MINT FAMILY

**Marrubium vulgare*
Horehound

Salvia apiana
White sage

Salvia columbariae
Chia

Trichostema lancelolatum
Vinegar weed

MALVACEAE
MALLOW FAMILY

**Malva parviflora*
Cheeseweed

MONTIACEAE
MINER'S LETTUCE FAMILY

Calandrinia ciliata
Red maids

MYRTACEAE
MYRTLE FAMILY

**Eucalyptus camaldulensis*
Red river gum

NYCTAGINACEAE
FOUR O' CLOCK FAMILY

Mirabilis leavis var. *crassifolia*
[*M. californica*]
California wishbone bush

ONAGRACEAE
EVENING PRIMROSE FAMILY

Camissoniopsis hirtella
[*Camissonia hirtella*]
Field suncup

PAPAVERACEAE
POPPY FAMILY

Eschscholzia californica
California poppy

PLANTAGINACEAE
PLANTAIN FAMILY

Plantago erecta
California plantain

POLEMONIACEAE
PHLOX FAMILY

Gilia angelensis
Los Angeles gilia

POLYGONACEAE
BUCKWHEAT FAMILY

Eriogonum elongatum
Long-stemmed buckwheat

Eriogonum fasciculatum
ssp. *foliolosum*
Interior California buckwheat

Eriogonum gracile
Slender buckwheat

RANNUNCULACEAE
CROW FOOT FAMILY

Delphinium parryi
Parry's larkspur

SOLANACEAE
NIGHTSHADE FAMILY

Datura wrightii
Jimson weed

URTICACEAE
NETTLE FAMILY

**Urtica urens*
Dwarf nettle

ZYGOPHYLLACEAE
CALTROP FAMILY

**Tribulus terrestris*
Puncture vine

MONOCOTYLEDONES
MONOCOTS

ALLIACEAE
ONION FAMILY

Allium haematochiton (Offsite)
Red-skinned onion

LILIACEAE
LILLY FAMILY

Calochortus splendens
Splendid mariposa lily

POACEAE
GRASS FAMILY

**Avena barbata*
Slender wild oat

**Avena fatua*
Wild oat

**Bromus diandrus*
Ripgut brome

**Bromus madritensis ssp. rubens*
Red brome

**Festuca myuros*
Rat-tail fesuce

**Hordeum murinum* ssp. *leporinum*
Foxtail barley

Melica imperfecta
Little California melic

Mulhenbergia microsperma
Littleseed muhly

Poa secunda
One-sided bluegrass

**Schismus barbatus*
Mediterranean schismus

THEMIDACEAE
BRODIAEA FAMILY

Dichelostema pulchellum
[*D. capitatum*]
Blue dicks

APPENDIX F

Plant Species Observed within the Project Site and Offsite Improvements Area

Appendix F
Plant Species Observed within the Project Site and Offsite Improvements Area

Scientific Name	**Common Name**
Amaranthaceae	**Amaranth Family**
*Amaranthus albus**	tumble pigweed
Anacardiaceae	**Cashew Family**
*Rhus lancea**	African sumac
*Schinus molle**	Peruvian pepper tree
*Schinus terebinthifoliolius**	Brazilian peppertree
Asteraceae (Compositae)	**Sunflower Family**
Ambrosia acanthicarpa	annual bur weed
Artemisia californica	California sagebrush
Bebbia juncea	scabrid sweetbush
Centaurea sp.*	star thistle
Deinandra kellogii	Kellogg's tarplant
Encelia farinosa	brittlebush
Ericameria palmeri var. *pachylepis*	grassland pinebush
Euphorbia albomarginata	rattlesnake sandmat
Helianthus annuus	common sunflower
*Lactuca serriola**	prickly lettuce
Lepidospartum squamatum	scalebroom
*Sonchus oleraceus **	common sowthistle
Bignoniaceae	**Bignonia Family**
*Jacaranda mimosifolia**	jacaranda
Boraginaceae	**Borage Family**
Amsinckia intermedia	common fiddleneck
Brassicaceae (Cruciferae)	**Mustard Family**
*Brassica nigra**	black mustard
*Hirschfeldia incana**	shortpod mustard
*Sisymbrium irio**	London rocket
Cactaceae	**Cactus Family**
Cylindropuntia californica var. *parkeri*	valley cholla
Chenopodiaceae	**Goosefoot Family**
*Chenopodium album**	lambsquarters
*Salsola tragus**	Russian thistle (tumbleweed)
Convolvulaceae	**Morning Glory Family**

Scientific Name	**Common Name**
*Calystegia arvensis**	bindweed
Cucurbitaceae	**Gourd Family**
Cucurbata palmata	coyote gourd
Cuscutaceae	**Dodder Family**
Cuscuta californica	dodder
Euphorbiaceae	**Spurge Family**
Croton setigerus	dove weed
Fabacea	**Pea Family**
Acmispon glaber	deer weed
Frankeniaceae	**Frankenia Family**
Frankenia salina	alkali heath
Geraniaceae	**Geranium Family**
*Erodium cicutarium**	redstem filaree
Lamiaceae	**Mint Family**
*Marrubium vulgare**	horehound
Salvia apiana	white sage
Salvia columbariae	chia
Trichostema lanceolatum	vinegar weed
Malvaceae	**Mallow Family**
*Malva parviflora**	cheeseweed
Myrtaceae	**Myrtle Family**
*Eucalyptus sp.**	eucalyptus, gum tree
Oleaceae	**Olive Family**
*Olea europea**	olive
Papaveraceae	**Poppy Family**
Eschscholzia californica	California poppy
Poaceae (Gramineae)	**Grass Family**
*Avena sp.**	oat
*Bromus diandrus**	ripgut grass
Bromus madritensis ssp. *rubens**	red brome
*Bromus tectorum**	cheatgrass
*Hordeum murinum**	Mediterranean barley

Scientific Name	**Common Name**
*Schismus barbatus**	Mediterranean grass
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
Simaroubaceae	**Quassia Family**
*Ailanthus altissima**	tree of heaven
Solanaceae	**Nightshade Family**
Datura wrightii	jimsonweed
*Nicotiana glauca**	tree tobacco
Solanum xanti	purple nightshade
Tamaricaceae	**Tamarix Family**
*Tamarix aphylla**	Athel tamarisk

APPENDIX G

Wildlife Species Observed/Detected Within the Project Site and Offsite Improvements Area

Appendix G
Wildlife Species Observed/Detected within the Project Site and Offsite Improvements Area

Scientific Name	**Common Name**
Birds	
Calypte anna	Anna's hummingbird
Buteo jamaicensis	red-tailed hawk
Carpodacus mexicanus	house finch
Corvus brachyrhynchos	American crow
Polioptila californica californica	California gnatcatcher
Salpinctes obsoletum	rock wren
Sayornis nigricans	black phoebe
Zenaida macroura	mourning dove
Zonotrichia leucophrys	white-crowned sparrow
Insects	
Pieris rapae	cabbage white
Reptiles	
Aspidoscelis tigris spp. stejnegeri	coastal whiptail
Mammals	
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Audubon's cottontail

APPENDIX H

Special Status Species Potential Occurrence Determination

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APPENDIX H

Special Status Plant Species Potential Occurrence Determination

This table summarizes conclusions from analysis and field surveys regarding the potential occurrence of special status plant species within the Project Site and Offsite Improvements Area. During the field surveys, the potential for special status plant species to occur within the Project Site and Offsite Improvements Area was assessed based on the following criteria:

- Present: observed on the site during the field surveys, or recorded on-site by other qualified biologists.
- High potential to occur: observed in similar habitat in the region by a qualified biologist, or habitat on the site is a type often utilized by the species and the site is within the known distribution and elevation range of the species.
- Moderate potential to occur: reported sightings in surrounding region, or the site is within the known distribution and elevation range of the species and habitat on the site is a type occasionally used by the species.
- Low potential to occur: the site is within the known distribution and elevation range of the species but habitat on the site is rarely used by the species, or there are no known recorded occurrences of the species within or adjacent to the site.
- Absent: a focused study failed to detect the species or no suitable habitat is present.
- Unknown: the species' distributional/elevation range and habitat are poorly known.

Even with field surveys, biologists assess the *probability* of occurrence rather than make a definitive conclusion about species' presence or absence. Failure to detect the presence of the species is not definitive, and may be due to variable effects associated with fire, rainfall patterns, and/or season.

Special Status Plants: Potential to Occur within the Project Site and Offsite Improvements Area

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
PLANTS				
Abronia villosa var. aurita	Chaparral sand-verbena	CRPR: 1B.1	Exposed sites with sandy soils, especially washes and dunes, in chaparral, sage scrub, and alluvial scrub. Blooming period: January to September	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Allium munzii	Munz's onion	FE, ST, CRPR: 1B.1 MSHCP: Alberhill & Elsinore Subunit PS [Group 3]	It is endemic to western Riverside County where it grows in the coastal sage scrub, grassland or juniper woodland communities of the local hills and mountains. Elevation: 400 – 900 meters Blooming period: March to May	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Ambrosia pumila	San Diego ambrosia	FE, CRPR: 1B.1 MSHCP: Alberhill & Elsinore Subunit PS [Group 3]	Range extends from Riverside County through San Diego County into Baja California. Found along drainages and areas adjacent to riparian areas. Nearest location is San Luis Rey. Blooming period: June to September	*Project Site:* very low; site lacks suitable habitat and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; no suitable habitat present and not observed during focused spring survey within the MSHCP-Excluded Survey Area..

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Atriplex coronata var. notatior	San Jacinto Valley crownscale	FE, CRPR: 1B.1 MSCHP: [Group 3]	Suitable habitat for the San Jacinto Valley crownscale includes floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and alkali grasslands. It is endemic to western Riverside County and is restricted to the San Jacinto, Perris, Menifee and Elsinore Valleys. Elevation: 400 - 500 meters Blooming period: April to August	*Project Site:* very low; site lacks suitable habitat and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; no suitable habitat present and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
Atriplex serenana var. davidsonii	Davidson's saltscale	CRPR: 1B.2 MSHCP: [Group 3]	Annual herb native to California and Baja California. Habitat includes alkaline soils, coastal bluff scrub, and coastal scrub. Elevation: 10 - 200 meters Blooming Period: April to October	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Brodiaea filifolia	thread-leaved brodiaea	FT, SE, CRPR: 1B.1, MSCHP: [Group 3]	Found in chaparral (openings), cismontane woodland, and coastal scrub, playas, valley and foothill grassland, vernal pools. Requires very heavy clay soils. Blooming period: May to June	*Project Site:* very low; site lacks clay soils and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; site lacks clay soils and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
California macrophyla	round-leaved filaree	CRPR: 1B.2, BLMS, MSCHP: [Group 3]	This species is restricted to open cismontane woodland and valley and foothill grassland on clay soils. Elevation: 15 - 1200 meters Blooming period: March to May	*Project Site:* very low; site lacks clay soils and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; site lacks clay soils and not observed during focused spring survey within the MSHCP-Excluded Survey Area.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Caulanthus simulans	Payson's jewelflower	CPRP: 4.2 MSHCP: [Group 1]	Chaparral, Coastal scrub. Blooming period: March to May	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Calochortus weedii var. intermedius	Intermediate mariposa lily	CRPR: 1B MSHCP: [Group 2]	Rocky hill and valley landscapes with chaparral, sage scrub, or grasslands.	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Calochortus plummerae	Plummer's mariposa lily	CPRP: 4.2 MSHCP: [Group 2]	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Carex buxbaumii	Buxbaum's sedge	CPRP: 4.2	Perennial rhizomatous herb native to California and throughout U.S. Habitat includes bogs and fens, meadows and seeps (mesic), and marshes and swamps. Threatened by foot traffic. Elevation: 3 - 3300 meters Blooming Period: March to August	*Project Site:* very low; site lacks suitable habitat and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; no suitable habitat present and not observed during focused spring survey within the MSHCP-Excluded Survey Area.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Centromadia pungens ssp. laevis	smooth tarplant	CRPR: 1B.1 MSHCP: Elsinore Subunit PS [Group3]	Suitable habitat for the smooth tarplant includes alkali scrub, alkali playas, and grasslands with alkaline affinities. Blooming period: April to September	*Project Site:* very low; site lacks suitable habitat and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; no suitable habitat present and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
Chorizanthe parryi var. parryi	Parry's spineflower	CRPR: 1B.1, BLMS, FSS MSHCP: [Group 2]	Parry's spineflower occurs within the alluvial chaparral and scrub of the San Gabriel, San Bernardino and San Jacinto Mountains. Elevation: 100 - 1,300 meters Blooming period: April to June	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and there are few documented localities for the Lake Elsinore area. *Offsite Improvements Area:* very low; site lacks suitable habitat and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
Chorizanthe polygonoides var. longispina	long-spined spineflower	CRPR: 1B.2 MSHCP: [Group 2]	Long-spined spineflower is associated primarily with heavy, often rocky, clay soils in southern needlegrass grassland, and openings in coastal sage scrub, and chaparral. Blooming period: April to July	*Project Site:* very low; site lacks suitable habitat and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; no suitable habitat present and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
Convolvulus simulans	small-flowered morning-glory	CRPR: 4.2 MSHCP: [Group 2]	Annual herb native to California and Baja California. Habitat includes clay and serpentinite seeps, chaparral (openings), coastal scrub, and valley and foothill grassland. Rare in southern California. Threatened by development and vehicles. Elevation: 30 - 740 meters Blooming Period: March to July	*Project Site:* very low; site lacks suitable habitat and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; no suitable habitat present and not observed during focused spring survey within the MSHCP-Excluded Survey Area.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Deinandra paniculata	San Diego tarplant	CRPR: 4.2	Occurs as a dominant or co-dominant plant in the herbaceous layer of grasslands, forblands, openings of coastal sage scrub and oak woodland. Blooming period: April to November	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Dodecahema leptoceras	slender-horned spineflower	FE, SE, CRPR: 1B.1 MSHCP: [Group 3]	Slender-horned spineflower is endemic to southwestern cismontane California, ranging from central Los Angeles County east to San Bernardino County, and south to southwestern Riverside County in the foothills of the Transverse and Peninsular Ranges. Slender-horned spineflower is found in sandy soil in association with mature alluvial scrub. Elevation: 200 - 700 meters Blooming period: April to June	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; site lacks suitable habitat and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
Dudleya multicaulis	many-stemmed dudleya	CRPR: 1B.2, BLMS, FSS MSHCP: Alberhill Subunit PS [Group 3]	Many-stemmed dudleya is often associated with clay soils in barrens, rocky places, and ridgelines as well as thinly vegetated openings in chaparral, coastal sage scrub, and southern needlegrass grasslands on clay soils. Blooming period: April to July	*Project Site:* very low; site lacks clay soils and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; site lacks clay soils and not observed during focused spring survey within the MSHCP-Excluded Survey Area.
Harpagonella palmeri	Palmer's grapplinghook	CRPR: 4.2 MSHCP: [Group 2]	Palmer's grapplinghook is associated with clay and cobbly clay soils in chaparral, coastal sage scrub, valley and foothill grasslands, and scrub oak woodland. Elevation: Below 500 meters Blooming period: March to May	*Project Site:* very low; site lacks clay soils and it was not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; site lacks clay soils and not observed during focused spring survey within the MSHCP-Excluded Survey Area.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Hordeum intercedens	vernal barley	CRPR: 3.2 MSHCP: Alberhill Subunit PS [Group 2]	Annual herb native to California and Baja California. Habitat includes coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), and vernal pools. Threatened by development, habitat loss, road construction, and non-native plants. Elevation: 5 - 1000 meters Blooming Period: March to June	*Project Site:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* low; suitable habitat present but not observed during focused spring survey within the MSHCP-Excluded Survey Area and habitat is highly disturbed.
Juglans californica	southern California black walnut	CRPR: 4.2 MSHCP: [Group 2]	Perennial deciduous tree endemic to California. Habitat includes alluvial substrates, chaparral, cismontane woodland, coastal scrub, and riparian woodland. Threatened by urbanization, grazing, non-native plants, and possibly by lack of natural reproduction. Elevation: 50 - 900 meters Blooming Period: March to August	*Project Site and Off-site Improvements Area:* Absent; not identified onsite and if present it would have been identified.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	CRPR: 1B.1, BLMS MSHCP: Alberhill Subunit PS [Group 2]	Coulter's goldfields is associated with low-lying alkali habitats along the coast and in inland valleys. Most of the populations are associated with coastal salt marsh. In Riverside County, Coulter's goldfields occur primarily in highly alkaline, silty-clay soils in association with Traver, Domino and Willows soils. Most Riverside County populations are associated with the Willows soil series. Coulter's goldfields occur primarily in the alkali vernal plains community. Blooming period: February to June	*Project Site:* very low; suitable habitat is not present and not observed during focused spring survey within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* very low; site lacks suitable habitat and not observed during focused spring survey within the MSHCP-Excluded Survey.
Lepechinia cardiophylla	heart-leaved pitcher sage	CRPR: 1B.2 MSHCP: [Group 2]	Closed-cone coniferous forest, chaparral, cismontane woodland.	*Project Site and Off-site Improvements Area:* Very low potential to occur; no suitable habitat.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Lepidium virginicum var. robinsonii	Robinson's peppergrass	CRPR: 4.3	Chaparral, coastal scrub; dry soils, shrubland;1–945 meters in elevation. Blooming period: January to July.	*Project Site*: Moderate potential; observed within the Offsite Improvements area just north of the Project Site, north of Nichols Road during focused spring surveys, however was not observed within the MSHCP-Excluded Project Site during focused surveys. *Offsite Improvements Area:* Present; observed during focused spring surveys (2017).
Microseris douglasii var. platycarpha	small-flowered microseris	CRPR:4.2	Clay soils in association with native grasslands or vernal pools. Blooming period: March to May	*Project Site and Off-site Improvements Area:* Very low; suitable habitat is not present and species was not observed during focused spring survey in MSHCP-Excluded Survey Area.
Myosurus minimus ssp. apus	little mousetail	CRPR: 3.1 MSHCP: [Group 3]	Little mousetail occurs in association with vernal pools and within the alkali vernal pools and alkali annual grassland components of alkali vernal plains. Blooming period: April to May	*Project Site and Off-site Improvements Area:* Very low potential to occur due to lack of suitable habitat.
Orcuttia californica	California Orcutt grass	FE, SE, CRPR: 1B.1 MSHCP: [Group 3]	All known Californica orcutt grass localities are associated with vernal pools. Blooming period: April to August.	*Project Site and Off-site Improvements Area:* Very low potential to occur due to lack of suitable habitat.
Romneya coulteri	Coulter's matilija poppy	CRPR: 4.2 MSHCP: [Group 1]	This poppy is native to southern California and Baja California, where it grows in dry canyons in chaparral and coastal sage scrub plant communities, sometimes in areas recently burned. It is a popular ornamental plant, kept for its large, showy flowers. Blooming period: March to July	*Project Site and Off-site Improvements Area:* Low potential to occur; suitable habitat present, but not observed during focused spring surveys in MSHCP-Excluded Survey Area.
Sibaropsis hammittii	Hammitt's clay-cress	CRPR: 1B.2, FSS MSHCP: [Group 3]	Hammitt's clay-cress occurs in clay lenses within openings in chaparral and valley and foothill grassland habitats. Elevation: 700 to 1,100 meters Blooming period: March to April	*Project Site and Off-site Improvements Area:* Very low potential to occur due to absence of clay soils.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Tortula californica	California screw-moss	CRPR: 1B.2, BLMS	Moss endemic to California. Habitat includes sandy soils, chenopod scrub, and valley and foothill grassland. Elevation: 10 - 1460 meters	*Project Site:* Low potential to occur; suitable habitat present, but not observed during spring surveys in MSHCP-Excluded Survey Area. *Off-site Improvements Area:* Low potential to occur; suitable habitat present, but not observed during focused spring surveys in MSHCP-Excluded Survey Area.
ANIMALS				
Invertebrates / Crustaceans				
Branchinecta lynchi	vernal pool fairy shrimp	FT MSHCP: [Group 3]	This species is usually associated with vernal pools (79%) but can also be found in association with other ephemeral habitats including alkali pools, seasonal drainages, stock ponds, vernal swales and rock outcrops.	*Project Site and Offsite Improvements Area:* Very low potential to occur within the survey area due to lack of suitable habitat.
Streptocephalus woottoni	Riverside fairy shrimp	FE MSHCP: Alberhill & Elsinore Subunit PS [Group 3]	*S. wootoni* is restricted to deep (greater than 12" in depth) seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds and other human modified depressions.	*Project Site and Offsite Improvements Area:* Very low potential to occur within the survey area due to lack of suitable habitat.
Invertebrates / Insects				
Euphydryas editha quino	Quino checkerspot butterfly	FE MSHCP: Alberhill & Elsinore Subunit PS [Group 3]:	Open areas in grasslands, forb lands, coastal sage scrub, and chaparral, usually with low disturbance and a well developed biological soil crust. Primary larval host plant is Plantago erecta.	*Project Site and Offsite Improvements Area:* Very low; suitable habitat present but determined absent during focused surveys within MSHCP-Excluded Survey Area.
Amphibians				
Spea hammondii	western spadefoot	SSC, BLMS MSHCP: [Group 2]	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	*Project Site:* Moderate potential to occur; suitable habitat present within Project Site area. *Offsite Improvements Area:* Low potential to occur; lacks suitable habitat and highly disturbed.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Reptiles				
Arizona elegans occidentalis	California glossy snake	SSC	Inhabits arid scrub, rocky washes, grasslands, chaparral.	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low to moderate potential to occur; somewhat suitable habitat present, however highly disturbed area.
Aspidoscelis hyperythra	orangethroat whiptail	WL, FSS MSHCP: [Group 1]	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes & other sandy areas with patches of brush & rocks. Perennial plants necessary for its major food-termites.	*Project Site:* Moderate to high potential to occur; suitable habitat present. *Offsite Improvements Area:* Low potential to occur; lacks preferred habitat.
Aspidoscelis tigris stejnegeri	coastal whiptail	SSC MSHCP: [Group 1]	The coastal whiptail can be found in open, often rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations.	*Project Site:* Present; observed during general biological surveys. Suitable habitat present. Offsite Improvements Area: Moderate to high potential. Moderately suitable habitat present and species was observed on the Project Site, however area is highly disturbed.
Emys marmorata pallida)	western pond turtle	SSC, BLMS, FSS MSHCP: Elsinore Subunit PS [Group 3]	Ponds, small lakes, perennial pools in drainages, marshes, slow moving, sometimes brackish water.	*Project Site and Offsite Improvements Area:* Very low potential to occur; no suitable habitat present.
Crotalus ruber	red-diamond rattlesnake	FSS, SSC MSHCP: [Group 2]	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	*Project Site:* Moderate potential to occur; suitable habitat present but limited in Project Site. Offsite Improvements Area: Low to moderate potential to occur; somewhat suitable habitat, however highly disturbed.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Phrynosoma blainvillii	coast horned lizard	SSC, BLMS MSCHP: [Group 1]	The species can be found in various scrublands, grasslands, coniferous and broadleaf forests, and woodlands. It can range from the coast to elevations of 2,000 meters in the Southern California mountains. It is most common in mid-elevations of the coastal mountains and valleys within open habitat that offer good opportunities for sunning.	*Project Site:* Present; species observed during focused plant surveys within the MSHCP-Excluded Survey Area. *Offsite Improvements Area:* Moderate potential to occur; observed in the Project Site, however the Offsite Improvements Area is highly disturbed.
Salvadora hexalepis virgultea	coast patch-nosed snake	SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	*Project Site:* Moderate potential to occur; suitable habitat present within survey area. *Offsite Improvements Area:* Low potential to occur; somewhat suitable habitat present, however the Offsite Improvements Area is highly disturbed.
Birds				
Accipiter cooperii	Cooper's hawk	WL MSHCP: Alberhill & Elsinore Subunit PS [Group 2]	Forest and woodland birds. These lanky hawks are a regular sight in parks, quiet neighborhoods, over fields, at backyard feeders, and even along busy streets if there are trees around.	*Project Site and Offsite Improvements Area:* Low potential to occur; survey area generally lacks suitable habitat.
Agelaius tricolor	tricolored blackbird	SCE, SSC MSHCP: Alberhill Subunit PS [Group 2]	Freshwater marshes. Suitable breeding habitat includes cattails and bulrushes.	*Project Site and Offsite Improvements Area:* Very low potential to occur; no suitable habitat present.
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	WL MSHCP: [Group 2]	This species is found on moderate to steep, dry, grass-covered hillsides, coastal sage scrub, and chaparral and often occur near the edges of the denser scrub and chaparral associations. Preference is shown for tracts of California sagebrush.	*Project Site:* Moderate potential to occur; suitable habitat is present. *Offsite Improvements Area:* Low potential to occur; somewhat suitable habitat present, however the Offsite Improvements Area is highly disturbed.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Artemisiospiza belli belli	Bell's sage sparrow	WL, BCC MSHCP: Alberhill & Elsinore Subunit PS [Group 2]	The species prefers semi-open habitats with evenly spaced shrubs 1 to 2 meters high. Vertical structure, habitat patchiness, and vegetation density may be more important in habitat selection by the sage sparrow than the specific shrub species, but this sparrow is closely associated with sagebrush throughout most of its range.	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low potential to occur; somewhat suitable habitat present, however the Offsite Improvements Area is highly disturbed.
Athene cunicularia	burrowing owl	SSC, BCC, BLMS MSHCP: [Group 3]	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Project Site: Absent; suitable habitat present, however area determined unoccupied based on 2018 focused surveys. *Offsite Improvements Area:* Absent; somewhat suitable habitat present, however area determined unoccupied based on 2018 focused surveys.
Botaurus lentiginosus	American bittern	MSHCP: Elsinore Subunit PS [Group 2]	They are usually found in shallow freshwater marshes, typically toward the margins and among reeds and other vegetation; they are rarely out in the open.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to absence of suitable habitat.
Campylorhynchus Brunneicapillus	cactus wren	SSC MSHCP: [Group 3]	Coastal sage scrub with thickets, patches, or tracts of large branching cacti, thorny shrubs, and small trees.	*Project Site*: Low potential to occur; marginally suitable habitat present, but limited. *Offsite Improvements Area:* Very low potential to occur due to lack of suitable habitat.
Charadrius alexandrinus nivosus	western snowy plover	FT, SSC, BCC	Primarily on coastal beaches from southern Washington to southern Baja California, Mexico. The population breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Historic population observed in Lake Elsinore in 1970s.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to absence of suitable habitat.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Charadrius montanus	mountain plover	SSC, BLMS, BCC MSHCP: Elsinore Subunit PS [Group 3]	A native of the short-grass prairie, the mountain plover is a dull-colored shorebird of open, dry areas. Despite its name, it breeds in the high tablelands, not the mountains. Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed fields, and sandy deserts.	*Project Site:* Moderate potential to occur; suitable habitat present . *Offsite Improvements Area:* Low potential to occur; generally lacks suitable habitat.
Circus cyaneus	northern harrier	SCC MSHCP: Elsinore Subunit PS [Group 3]	Wide-open habitats ranging from Arctic tundra to prairie grasslands to fields and marshes. Their nests are concealed on the ground in grasses or wetland vegetation.	*Project Site:* Low potential for foraging; nesting unlikely. *Offsite Improvements Area:* Low potential for foraging or nesting due to highly disturbed/developed nature of area.
Elanus leucurus	white-tailed kite	FP, BLMS MSHCP: Alberhill & Elsinore Subunit PS [Group 2]	Commonly found in savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields. Generally avoids areas with extensive winter freezes, but rainfall and humidity vary greatly throughout this bird's range. White-tailed Kites hunt over lightly grazed or ungrazed fields where there may be larger prey populations than in more heavily grazed areas.	*Project Site:* Moderate potential for foraging; no suitable nesting habitat present. *Offsite Improvements Area:* Moderate potential for flyover (foraging habitat nearby but not within Offsite Improvements Area); no suitable nesting habitat.
Empidonax traillii extimus	southwestern willow flycatcher	FE, SE MSHCP: Alberhill & Elsinore Subunit PS [Group 3]	Riparian woodlands along rivers and streams, with mature dense stands of willows, cottonwoods, and sometimes alders. Requires some inundation or soil saturation in riparian areas at least through May.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to absence of suitable habitat.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Eremophila alpestris actia	California horned lark	WL MSHCP: [Group 2]	The California horned lark is a common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. In the Midwest, the species has been characterized as the most abundant species in row-crop fields. Range-wide, California horned larks breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low to moderate potential to occur; suitable habitat is present, however it is adjacent to a busy developed road.
Haliaeetus leucocephalus	bald eagle (nesting and wintering)	SE, FP, BLMS, BCC, FSS MSHCP: [Group 1]	Open areas, forest edges, and mountains near large lakes and rivers. Requires tall trees for nesting.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.
Icteria virens	yellow-breasted chat	SSC MSHCP: Alberhill Subunit PS [Group 2]	Nests and forages in dense, low riparian growth, including edges of woods, fencerows, dense thickets, and brambles in low, wet places near streams, pond edges, or swamps and in old overgrown clearings and fields.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.
Lanius ludovicianus	loggerhead shrike	SSC, BCC MSHCP: Elsinore Subunit PS [Group 2]	The species are known to forage over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low to moderate potential to occur; suitable habitat present, however it is limited and adjacent to a busy developed road.
Nycticorax nycticorax	black-crowned night heron	MSHCP: Elsinore Subunit PS [Group 2]	The black-crowned night heron is likely to use shallow bulrush (Scirpus spp.) or cattail (Typha spp.) marshes, most often within a grassland landscape. In addition, they will also nest in cottonwoods, willows, or other wetland vegetation.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Pandion haliaetus	osprey (nesting)	WL MSHCP: Elsinore Subunit PS [Group 3]	Open areas, mud flats with waterfowl, shorebirds. Not currently believed to breed in Riverside County.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.
Phalacrocorax auritus	double-crested cormorant (nesting colony)	WL MSHCP: Elsinore Subunit PS [Group 2]	Occupies diverse aquatic habitats in all seasons. Diet is primarily fishes. Tolerates only minimal disturbance at nesting colonies.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.
Picoides pubescens	downy woodpecker	MSHCP: Alberhill Subunit PS [Group 2]	Within southern California, the species generally nests in deciduous (often willow) woodlands, deciduous growth/oak woodlands, orchards, suburban plantings, and occasionally in conifers. This species is a year-long resident of riparian deciduous and associated hardwood and conifer habitats and orchards. It requires abundant snags, and tree/shrub, tree/herbaceous, and shrub/herbaceous ecotones.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.
Plegadis chihi	white-faced ibis	WL MSHCP: Elsinore Subunit PS [Group 2]	The species occurs in mainly shallow marshes with islands of emergent vegetation. They occasionally occur on spoil banks created by dredging. They occur locally in flooded shoals and mangrove swamps. In the coastal areas of the southern portion of the range, the white-faced ibis nests mostly in wetlands of outer coastal plains, freshwater marshes of common reed, bulltongue, saltmeadow cordgrass and torpedo panic grass.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Polioptila californica californica	coastal California gnatcatcher	FT, SSC MSHCP: Alberhill Subunit PS [Group 2]	Obligate, permanent resident of coastal sage scrub below 835 meters in Southern California. Low, coastal sage scrub in arid washes, on mesas & slopes. Not all areas classified as coastal sage scrub are occupied.	*Project Site*: Present; determined absent in the 2017 focused surveys within the MSHCP-Excluded Survey Area, however the species was incidentally observed during the 2018 burrowing owl focused surveys. The incidental 2018 observations support the condition of CAGN potentially dispersing through the MSHCP-Excluded Project Area to the MSHCP Project Area. Suitable habitat present. *Offsite Improvements Area*: Low to moderate potential to occur, nesting unlikely; marginally suitable habitat present, however it is next to a well-used paved road.
Setophaga petechia	yellow warbler	SCC, BCC MSHCP: Alberhill Subunit PS [Group 2]	Yellow warblers in southern California breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland. The yellow warbler is found at elevations from 100 meters to 2,700 meters within riparian habitat and at higher elevations along watercourses with riparian growth. It usually arrives in California in April, and generally has migrated out of the area by October.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Tachycineta bicolor	tree swallow	MSHCP: Alberhill Subunit PS [Group 2]	Tree swallows forage primarily over and around ponds, marshes, rivers, lakes, and estuaries. Tree swallows nest almost exclusively in cavity-containing trees or snags with cavities that are near, or preferably in, water. Suitable habitat includes riparian forest and woodland up through the lodgepole pine belt for breeding. In winter, it inhabits lowlands near estuaries, rivers, lakes, and emergent wetlands. In winter and migration, the species uses more open habitats, grasslands, meadows, brushlands, and is also found near water sources but is not restricted to habitat that contains cavities as is the case during the breeding season.	*Project Site and Offsite Improvements Area:* Very low potential to breed or nest due to a lack of suitable habitat; low to moderate potential to forage during winter or migration.
Vireo bellii pusillus	least Bell's vireo	FE, SE MSHCP: Alberhill & Elsinore Subunit PS [Group 2]	Summer resident of Southern California in low riparian, in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis or, mesquite.	*Project Site and Offsite Improvements Area:* Very low potential to occur due to a lack of suitable habitat.
Mammals				
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC MSHCP: [Group 1]	This species 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.	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low to moderate potential to occur; suitable habitat present however is limited and adjacent to a well-used road. The site is highly disturbed.

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Dipodomys stephensi	Stephens' kangaroo rat	FE, ST MSHCP: Alberhill Subunit PS [Group 2]	The species is found in open grassland habitats where the sparse vegetation is mainly composed of shrubs, sagebrush, grasses and forbs.	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low to moderate potential to occur; suitable habitat present however is limited and adjacent to a well-used road. The site is highly disturbed.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC MSHCP: [Group 1]	This species is found in western Riverside County in suitable grassland, sage scrub and chaparral (openings) habitat. It is also found in substantial numbers in agricultural and rural residential settings.	*Project Site:* Moderate potential to occur; suitable habitat present. *Offsite Improvements Area:* Low to moderate potential to occur; suitable habitat present however is limited and adjacent to a well-used road.
Lynx rufus	bobcat	MSHCP: Alberhill & Elsinore Subunit PS [Group 2]	Although widespread throughout Riverside County, the bobcat is most closely associated with rocky and brushy areas near springs or other perennial water sources, primarily in foothills comprised of chaparral habitats. Bobcats prefer areas with adequate cover in the form of rock cavities, snags, stumps and dense brush.	*Project Site:* Low to moderate potential to occur; some suitable habitat located within the drainage portion of the site. *Offsite Improvements Area:* Low potential to occur; area lacks adequate cover.
Puma concolor	mountain lion	MSHCP: Alberhill Subunit PS [Group 2]	Mountain lions use rocky areas, cliffs, and ledges that provide cover within open woodlands and chaparral, as well as riparian areas that provide protective habitat connections for movement between fragmented core habitat.	*Project Site:* Low potential to occur; somewhat suitable habitat for passage through the drainage onsite, however mountain lions are unlikely to cross the I-15 through the culvert at the downstream end, therefore the habitat is a dead end. *Offsite Improvements Area:* Low potential to occur; area lacks adequate cover.
Legend				
Federal Endangered Species Act (ESA) Listing Codes: federal listing is pursuant to the Federal Endangered Species Act of 1973, as amended (ESA). FE = federally listed as endangered: any species, subspecies, or variety of plant or animal that is in danger of extinction throughout all or a significant portion of their range.				

Scientific Name	*Common Name*	*Status*	*General Habitat Description*	*Potential for Occurrence within the Project Site and Offsite Improvements Area*

FT = federally listed as threatened: any species, subspecies, or variety of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.

California Endangered Species Act (CESA) Listing Codes: state listing is pursuant to § 1904 (Native Plant Protection Act of 1977) and §2074.2 and §2075.5 (California Endangered Species Act of 1984) of the Fish and Game Code, relating to listing of Endangered, Threatened and Rare species of plants and animals.
SE = state listed as endangered: any species, subspecies, or variety of plant or animal that are in serious danger of becoming extinct throughout all, or a significant portion, of their range.
SCE = state listed as candidate endangered: any species, subspecies, or variety of plant or animal whose status is under review to determine if they are in serious danger of becoming extinct throughout all, or a significant portion, of their range
ST = state listed as threatened: any species, subspecies, or variety of plant or animal that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future.

California Department of Fish and Wildlife (CDFW):
SSC = species of special concern: status applies to animals which 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist. The CDFW has designated certain vertebrate species as "species of special concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
FP = fully protected: animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.
WL = watch list: these birds have been designated as "Taxa to Watch" in the *California Bird Species of Special Concern report* (Shuford and Gardali 2008). The report defines "Taxa to Watch" as those that are not on the current special concern list that (1) formerly were on the 1978 (Remsen 1978) or 1992 (CDFG 1992) special concern lists and are not currently listed as state threatened and endangered; (2) have been removed (delisted) from either the state or federal threatened and endangered lists (and remain on neither), or (3) are currently designated as "fully protected" in California.

United States Fish and Wildlife Service (USFWS):
BCC = USFWS bird of conservation concern: listed in the USFWS'S 2008 *Birds of Conservation Concern* report. The report identifies species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report are priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

United States Forest Service (USFS):
FSS = Forest Service sensitive: those plant and animal species identified by a Regional Forester that are not listed or proposed for listing under the ESA and for which population viability is a concern, as evidenced by: (a) significant current or predicted downward trends in population numbers or density or (b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution."

United States Bureau of Land Management (BLM):
BLMS = BLM sensitive: those plant and animal species on BLM administered lands and that are (1) under status review by the USFWS/NMFS; or (2) whose numbers are

Scientific Name	*Common Name*	*Status*	*General Habitat Description*	*Potential for Occurrence within the Project Site and Offsite Improvements Area*

declining so rapidly that federal listing may become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats. BLM policy is to provide the same level of protection as USFWS candidate species.

California Rare Plant Ranks (Formerly known as CNPS Lists): the CNPS is a statewide, non-profit organization that maintains, with CDFG, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFG officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFG jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

CRPR: 1B - California Rare Plant Rank 1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere. All of the plants constituting California Rare Plant Rank 1B 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. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR: 2 - California Rare Plant Rank 2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere. All of the plants constituting California Rare Plant Rank 2 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. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR: 4 - California Rare Plant Rank 4 (formerly List 4): Plants of Limited Distribution - A Watch List. Very few of the plants constituting California Rare Plant Rank 4 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 few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and CNPS and CDFG strongly recommend that California Rare Plant Rank 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

California Native Plant Society (CNPS) Threat Ranks: The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) and designates the level of endangerment by a 1 to 3 ranking with 1 being the most endangered and 3 being the least endangered. A Threat Rank is present for all California Rare Plant Rank 1B's, 2's, 4's, and the majority of California Rare Plant Rank 3's. California Rare Plant Rank 4 plants are seldom assigned a Threat Rank of 0.1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a California Rare Plant Rank. In addition, all California Rare Plant Rank 1A (presumed extinct in California), and some California Rare Plant Rank 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

0.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = fairly endangered in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Scientific Name	***Common Name***	***Status***	***General Habitat Description***	***Potential for Occurrence within the Project Site and Offsite Improvements Area***
Western Riverside Multiple Species Habitat Conservation Plan (MSHCP): Planning species covered by the MSHCP. Additional surveys for Narrow Endemic Plant Species and Criteria Area Species to determine presence/absence may be required. PS = planning species Group 1 = Species that have wide distribution throughout the Plan Area within suitable habitat. Take coverage is warranted based upon regional or landscape level considerations, such as healthy population levels, widespread distribution throughout the MSHCP Plan Area, and life history characteristics that respond to habitat-scale conservation and management actions. Group 2 = Species that are relatively well-distributed throughout the MSCHP Plan Area. Take coverage is warranted based on regional or landscape level considerations with the addition of site-specific conservation and management requirements that are clearly identified in the MSHCP for species that are generally well-distributed, but that have Core Areas that require Conservation. Group 3 = Species that have narrow habitat requirements and limited distribution within the Plan Area. Take coverage is warranted based upon site specific considerations and the identification of specific conservation and management conditions for species within a narrowly defined Habitat or limited geographic area within the MSHCP Plan Area.				

Sources:

- Calflora website - search for plants (Calflora 2018).
- CNPS Inventory of Rare and Endangered Plants (CNPS 2018).
- The Jepson Manual: *Vascular Plants of California,* second edition (Baldwin *et al.* 2012).
- RareFind, CDFW, California Natural Diversity Database (CNDDB) (CDFW 2018).
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2018).
- Special Animals List (CDFW 2018)
- Western Riverside County Multiple Species Habitat Conservation Plan (County of Riverside 2003)

APPENDIX I

MSHCP (Appendix C) BMPs

APPENDIX C

STANDARD BEST MANAGEMENT PRACTICES

1. A condition shall be placed on grading permits requiring a qualified biologist to conduct a training session for project personnel prior to grading. The training shall include a description of the species of concern and its habitats, the general provisions of the Endangered Species Act (Act) and the MSHCP, the need to adhere to the provisions of the Act and the MSHCP, the penalties associated with violating the provisions of the Act, the general measures that are being implemented to conserve the species of concern as they relate to the project, and the access routes to and project site boundaries within which the project activities must be accomplished.
2. Water pollution and erosion control plans shall be developed and implemented in accordance with RWQCB requirements.
3. The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall be via pre-existing access routes to the greatest extent possible.
4. The upstream and downstream limits of projects disturbance plus lateral limits of disturbance on either side of the stream shall be clearly defined and marked in the field and reviewed by the biologist prior to initiation of work.
5. Projects should be designed to avoid the placement of equipment and personnel within the stream channel or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.
6. Projects that cannot be conducted without placing equipment or personnel in sensitive habitats should be timed to avoid the breeding season of riparian identified in MSHCP Global Species Objective No. 7.
7. When stream flows must be diverted, the diversions shall be conducted using sandbags or other methods requiring minimal instream impacts. Silt fencing of other sediment trapping materials shall be installed at the downstream end of construction activity to minimize the transport of sediments offsite. Settling ponds where sediment is collected shall be cleaned out in a manner that prevents the sediment from reentering the stream. Care shall be exercised when removing silt fences, as feasible, to prevent debris or sediment from returning to the stream.
8. Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project related spills of hazardous materials shall be reported to

appropriate entities including but not limited to applicable jurisdictional city, FWS, and CDFG, RWQCB and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.

9. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.
10. The qualified project biologist shall monitor construction activities for the duration of the project to ensure that practicable measures are being employed to avoid incidental disturbance of habitat and species of concern outside the project footprint.
11. The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.
12. Exotic species that prey upon or displace target species of concern should be permanently removed from the site to the extent feasible.
13. To avoid attracting predators of the species of concern, the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s).
14. Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the proposed project footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the project and shall be specified in the construction plans. Construction limits will be fenced with orange snow screen. Exclusion fencing should be maintained until the completion of all construction activities. Employees shall be instructed that their activities are restricted to the construction areas.
15. The Permittee shall have the right to access and inspect any sites of approved projects including any restoration/enhancement area for compliance with project approval conditions including these BMPs.