



INFORMATION SUMMARY

- A. Report Date: July 5th, 2017
- B. Report Title: MSHCP Sensitive Plant Surveys for the 245.07-Acre Rancho Diamante Project Site, City of Hemet, California
- C. Case #: TTM 36841
- D. APN#s: 465-100-016, 465-100-022, 465-110-020, 021, 022, 023, and 027. Offsite – Portions of 465-120-019, and 021, 465-130-016 and 017, 465-100-031, and 033 (including northern reach of Hemet Channel).
- E. Project Location: Located immediately west of Warren Road, south of the Hemet Channel and east of the San Diego Aqueduct - Portions of the east ½ of Section 24, Township 5 South, Range 2 West, San Bernardino Base and Meridian, in the County of Riverside, California.
- F. Applicant: Benchmark Pacific
550 Laguna Drive, Suite B, Carlsbad, CA 92008
Contact: Richard Robotta (760) 450-0444
- G. MOU Principal: Cadre Environmental
701 Palomar Airport Road, Suite 300
Carlsbad, CA. 92011
Contact: Ruben S. Ramirez, Jr. (949) 300-0212
USFWS permit #TE780566-13
- H. Date of Surveys: August 3rd, September 8th, 2015; February 19th, March 1st, April 17th, 21st, 26th, May 6th, 22nd, and June 15th, 2016; and March 7th, 16th, April 15th, 18th, and May 18th, 2017.
- I. Summary: The 245.07-acre project site is dominated by agricultural lands (field croplands), seasonal depressions, Eucalyptus woodland, disturbed/herbaceous wetland, and a man-made urban-agricultural drainage ditch created along the southern boundary which extends west to an existing infiltration basin. A 16.70-acre offsite assessment area is dominated by unvegetated streambed (Hemet Channel not included in survey area) and agricultural lands (field croplands) extending south from the southwest corner of the project site toward Simpson Road.

The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) San Jacinto Valley Area Plan, south of Proposed Noncontiguous Habitat Block 7 and Constrained Linkage B (Hemet Channel). A 62.75-acre portion of the project site is located within Criteria Cell 4007 and 20.23-acre portion is located within Criteria Cell 3892 (SU4 Hemet Vernal Pool Areas East).

The MSHCP has determined that all of the sensitive species potentially occurring onsite have been adequately covered (MSHCP Table 2-2 Species Considered for Conservation Under the MSHCP Since 1999, 2004). However, additional surveys may be required for narrow endemic plants, criteria area species, and specific wildlife species if suitable habitat is documented onsite and/or if the property is located within a predetermined "Survey Area" (MSHCP 2004).

The Project Site occurs within a predetermined "Survey Area" for fifteen (15) Criteria Area and Narrow Endemic plant species. Focused surveys were conducted by Rick Riefner from August 3rd, 2015, through May 18th, 2017, in order to determine presence/absence for the plant species designated for review by the MSHCP. The project surveys were coordinated with the blooming periods of several reference populations to confirm detection of sensitive species potentially occurring onsite during the 2015/2016/2017 survey period.

No state or federally listed threatened or endangered plant species were detected on the project site. However, a small population (191 plants) for one of the nine (9) MSHCP target Criteria Area species, the smooth tarplant (*Centromadia pungens* subsp. *laevis*; California Rare Plant Rank–CRPR 1B.1), was detected on the project site; i.e., the offsite project area located east of the San Diego Aqueduct and north of Simpson Road. None of the other Criteria Area species or any of the six (6) Narrow Endemic plants was observed on the Project Site.

SUBJECT

MSHCP Sensitive Plant Surveys for the 245.07-Acre Rancho Diamante Project Site, City of Hemet, California

245.07-acre project site “Project Site”, APN’s 465-100-016, 465-100-022, 465-110-020, 021, 022, 023, and 027. Offsite – Portions of 465-120-019, and 021, 465-130-016 and 017, 465-100-031, and 033 (including adjacent right-of-way centerline within Warren Road and northern reach of Hemet Channel).

The Project Site is located immediately west of Warren Road, south of the Hemet Channel and east of the San Diego Aqueduct in the City of Hemet, Riverside County, California as shown in Attachment A, *Biological Resources Map*. The Project Site is located on the U.S. Geological Survey (USGS) 7.5’ series Winchester Quadrangle, Township 5 South, Range 2 West, east ½ of Section 24.

The Project Site is located within the MSHCP San Jacinto Valley Area Plan. A 62.75-acre portion of the Project Site is located within Criteria Cell 4007 and 20.23-acre portion is located within Criteria Cell 3892 (SU4 Hemet Vernal Pool Areas East).

As excerpted from Riefner & Associates (2017) ¹:

The Rancho Diamante project lies within a predetermined Survey Area for fifteen (15) Criteria Area and Narrow Endemic plant species (RCIP, Conservation Report Summary Generator 2017), which includes:

Criteria Area Plant Species

- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) [Federal endangered, CRPR 1B.1];
- Davidson's saltscale (*Atriplex davidsonii*) [CRPR 1B.2];
- Parish's brittlescale (*Atriplex parishii*) [CRPR 1B.1];
- thread-leaved brodiaea (*Brodiaea filifolia*) [Federal threatened, State endangered, CRPR 1B.1];
- smooth tarplant (*Centromadia pungens* subsp. *laevis*) [CRPR 1B.1];
- round-leaved filaree (*Erodium macrophyllum*) [CRPR 1B.1];
- Coulter's goldfields (*Lasthenia glabrata* subsp. *coulteri*) [CRPR 1B.1];
- little mouseltail (*Myosurus minimus* subsp. *apus*) [CRPR 3.1]; and
- mud nama (*Nama stenocarpum*) [CRPR 2.2].

¹ Rick Riefner and Associates. 2017. Results of MSHCP Focused Criteria Area and Narrow Endemic Plant Surveys Conducted from 2015 through 2017 at the 249-Acre Rancho Diamante Project, City of Hemet, Western Riverside County, California.

Narrow Endemic Plant Species

- Munz's onion (*Allium munzii*) [Federal endangered, State threatened, CRPR 1B.1];
- San Diego ambrosia (*Ambrosia pumila*) [Federal endangered, CRPR 1B.1];
- many-stemmed dudleya (*Dudleya multicaulis*) [CRPR 1B.2];
- spreading navarretia (*Navarretia fossalis*) [Federal threatened, CRPR 1B.1];
- California Orcutt grass (*Orcuttia californica*) [Federal/State endangered, CRPR 1B.1]; and
- Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*) [CRPR 2.1].

Potential habitat is present on the property for several species in ruderal/agricultural field habitats, saline-alkali soils, seasonal depressions, and a constructed detention basin and channel with disturbed wetlands, unvegetated streambed, and riparian scrub. Saline-alkali soils mapped onsite include the Chino, Domino, Grangeville, Traver, and Willows series (Knecht 1971). According to the MSHCP guidelines, focused surveys are required during the appropriate flowering season to identify and document the presence/absence of these species if suitable habitat is present and if the property is located within a predetermined Survey Area (MSHCP 2003).

Therefore, focused surveys for Criteria Area and Narrow Endemic plants were conducted from the summer of 2015 through the spring of 2017. Dates of the field surveys include: August 3rd and September 8th, 2015; February 19th, March 1st, April 17th, 21st, 26th, May 6th, 22nd, and June 15th, 2016; and March 7th, 16th, April 15th, 18th, and May 18th, 2017. Each focused survey was conducted on-foot and covered all suitable habitats onsite according to MSHCP protocols and the U.S. Fish and Wildlife Service (USFWS), California Native Plant Society (CNPS), and California Department of Fish and Wildlife (CDFW) survey guidelines. The project surveys were also coordinated with the blooming periods of reference populations for many of the target MSHCP plant species.

References and literature cited in this report are attached as Appendix A (Literature Cited and Selected References), a floral compendium listing all native and non-native plants observed onsite is attached as Appendix B (Floral Compendium).

EXISTING CONDITIONS

The Project Site is generally flat and ranges in elevation from approximately 1,510 feet above mean sea level (AMSL) in the northeastern corner to approximately 1,490 feet AMSL at the constructed basin located in the southwest corner of the property (NOP 2016).

The Project Site is undeveloped and consists primarily of field croplands. Historically, the majority of the property has been used for growing crops, primarily dry farming, and has been regularly disced for the past twenty years (NOP 2016). Dryland grain crops,

interspersed with ruderal non-native species often associated with disturbed conditions, dominate the site. A non-native *Eucalyptus* woodland occurs along the central-eastern edge of the property along Warren Road.

In addition, a constructed drainage channel occurs along the southern border of the Project Site and a connecting detention basin is located in the southwestern portion of the property. The drainage channel and basin were constructed for water quality and detention purposes as part of the Page Ranch development project, which is located east of Warren Road (NOP 2016). These constructed features now support disturbed and herbaceous wetlands, unvegetated streambed, and riparian vegetation communities. Seasonal depressions, which have been mapped by Helix Environmental Inc. (2017), are found primarily in the eastern portions of the property. The two vernal pools identified by the NOP (2016), which are located offsite, are not part of the Rancho Diamante Project and were not included in the MSHCP plants focused survey program. The vegetation communities, seasonal pools, and agricultural lands mapped for the Project Site are shown in Attachment A, *Biological Resources Map*, and Attachments B-D, *Current Project Site Photographs*.

As excerpted from Cadre Environmental (2017) ²:

SOILS

Soils mapped by the Soil Conservation Service (SCS)³ for the property are depicted in Attachment E (Soil Associations Map), including:

- Ce – Chino silt loam, drained.
- Cf – Chino silt loam, drained, saline-alkali.
- Cg – Chino silt loam, drained, strongly saline-alkali.
- Ds2 – Domino fine sandy loam, eroded.
- Dt – Domino fine sandy loam, saline-alkali.
- **Dv – Domino silt loam, saline-alkali.**
- **Dw – Domino silt loam, strongly saline-alkali.**
- EnA – Exeter sandy loam, 0-2% slopes.
- EoB – Exeter sandy loam, slightly saline-alkali, 0-5% slopes.
- EpA – Exeter sandy loam, deep, 0-2% slopes.
- GoB – Grangeville loamy fine sand, drained, 0-4% slopes.
- GsB – Grangeville sandy loam, saline-alkali, 0-5% slopes.
- GyA – Greenfield sandy loam, 0-2% slopes.
- GyC2 – Greenfield sandy loam, 2-8% slopes, eroded.
- HcA – Hanford course sandy loam, 0-2% slopes.

² Cadre Environmental. 2017. General MSHCP Habitat Assessment, Regulatory Constraints, and MSHCP Consistency Approach for the 245.07-Acre Rancho Diamante Project Site, City of Hemet, California.

³ SCS is now known as the National Resource Conservation Service or NRCS.

- HcC – Hanford course sandy loam, 2-8% slopes.
- HgA – Hanford fine sandy loam, 0-2% slopes.
- PaA - Pachappa fine sandy loam, 0-2% slopes.
- PaC2 – Pachappa fine sandy loam, 2-8% slopes, eroded.
- **Tp2 – Traver loamy fine sand, eroded.**
- **Tr2 – Traver loamy fine sand, saline-alkali, eroded.**
- **Ts – Traver fine sandy loam, saline-alkali.**
- **Tt2 – Traver fine sandy loam, strongly saline-alkali, eroded.**
- **Wg – Willows silty clay, saline-alkali.**

As excerpted from Riefner & Associates (2017) ⁴:

Soils mapped within the eastern two-thirds of the Project Site consist primarily of the Exeter, Hanford, Grangeville, and Greenfield soils, and the western portion of the property by the saline-alkali Domino and Traver soils (Attachment E, Soil Associations Map).

The Domino series consist of moderately well drained to somewhat poorly drained saline-alkali soils that occur in basins and on alluvial fans. The Traver series are slightly to strongly saline soils, moderately well drained, and occur on valley plains and in basins (Knecht 1971). A small area of Willows soils are also mapped in the western portion of the property (Attachment E, Soil Associations Map). The Willows series consists of very deep, poorly to very poorly drained sodic soils that formed in alluvium from mixed rock sources. The Domino, Traver, and Willows soils are considered sensitive by the Riverside County MSHCP (Dudek 2003).

A brief description of the other soil series mapped for the property follows.

The Chino series are moderately alkaline, and may be slightly to strongly saline-alkali. They have calcareous silt loam A horizons and calcareous silty clay loam C horizons. The Chino soils occur in basins and flood plains at elevations of near sea level to 3,100 feet. They formed in alluvium derived from granitic rocks.

The Exeter series consists of moderately well drained soils that formed in alluvium mainly from granitic sources, which are moderately deep to a duripan. Exeter soils occur on alluvial fans and stream terraces and have a neutral pH.

The Grangeville series consists of very deep, somewhat poorly drained soils that formed in moderately coarse textured alluvium derived predominantly from granitic rock sources. Grangeville soils occur on alluvial fans and floodplains and have slightly to moderately alkaline soils; some are saline-alkali (i.e., the mapping unit GsB).

⁴ Rick Riefner and Associates. 2017. Results of MSHCP Focused Criteria Area and Narrow Endemic Plant Surveys Conducted from 2015 through 2017 at the 249-Acre Rancho Diamante Project, City of Hemet, Western Riverside County, California.

The Greenfield series consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. Greenfield soils occur on alluvial fans and terraces, and are slightly acid to neutral.

The Hanford series consists of very deep well drained soils that formed in moderately coarse textured alluvium derived predominantly from granite. Hanford soils are associated with stream bottoms, floodplains and alluvial fans, and are slightly acid to slightly alkaline.

The Pachappa series consists of well-drained soils developed from moderately coarse textured alluvium. They occur on gently sloping alluvial fans and flood plains with annual grass-herb vegetation. Characteristically, the Pachappa soils have slightly acid A1 horizons and neutral B2 horizons that overlie moderately alkaline, slightly calcareous B3 horizons and very slightly calcareous C horizons.

PLANT COMMUNITY/HABITAT CLASSIFICATION

As excerpted from Cadre Environmental (2017) ⁵:

The approximately 245-acre Project Site supports nine (9) agricultural land use and vegetation community types. The distribution of the agricultural and vegetation communities mapped for the property is shown in Attachment A, *Biological Resources Map*. Attachments B-D, *Current Project Site Photographs*, depict the major habitats and current land use practices. The acreage of each habitat is summarized in Table 1, and a brief description follows.

Table 1. Vegetation Communities Acreages

*Vegetation Type	Acreage (onsite)	Acres (offsite)	Acres (total)
Agriculture Land – Field Croplands	217.75	8.07	225.82
Seasonal Depressions	12.93	--	12.93
Unvegetated Streambed	6.57	6.34	12.91
Disturbed Wetland	3.42	--	3.42
Eucalyptus Woodland	2.94	--	2.94
Tamarisk Scrub	0.61	--	0.61
Mule Fat Scrub	0.48	--	0.48
Herbaceous Wetland	0.31	--	0.31
Southern Willow Scrub	0.06	--	0.06
Disturbed	0.00	2.29	2.29
TOTALS	245.07	16.70	261.77

**Source: Cadre Environmental 2015/Helix Environmental Planning Inc. 2017*

⁵ Cadre Environmental. 2017. General MSHCP Habitat Assessment, Regulatory Constraints, and MSHCP Consistency Approach for the 245.07-Acre Rancho Diamante Project Site, City of Hemet, California.

Agricultural Land – Field Croplands (FC):

Most of the property consists of active agricultural land – field croplands, which is routinely disked as part of dry-land farming practices. At the time of investigation, most of the property was nearly devoid of vegetation, consisting of sparse, scattered non-native plants such as field bindweed (*Convolvulus arvensis*), cheeseweed (*Malva parviflora*), Russian thistle (*Salsola australis*), heliotrope (*Heliotropium curassavicum*), and Bermuda grass (*Cynodon dactylon*). A few native and non-native forbs were seen along dirt roads that cross the site and along Warren Road, including bur clover (*Medicago polymorpha*), stink-net (*Oncosiphon piluliferum*), Russian thistle, telegraph weed (*Heterotheca grandiflora*), puncture vine (*Tribulus terrestris*), and serrate-leaved saltbush (*Atriplex suberecta*). A total of fourteen (14) **Seasonal Depressions (SD)** are scattered throughout the field croplands and are dominated by the same plant species as described above. One of the seasonal depressions is represented by an existing infiltration basin as described below.

Eucalyptus Woodland (EW):

A few *Eucalyptus* gum trees (*Eucalyptus* sp.) grow in the central-eastern portion of the Project Site along Warren Road, which supports a sparse to dense understory of mostly exotic forbs and grasses. Non-native grasses and forbs observed include red brome (*Bromus madritensis* subsp. *rubens*), Russian thistle, field bindweed, Bermuda grass, hare barley (*Hordeum murinum* subsp. *leporinum*), burclover (*Medicago polymorpha*), and ripgut grass (*Bromus diandrus*). Mexican fan palm (*Washingtonia robusta*) is also planted on site.

Constructed Urban-Agricultural Drainage Ditch:

In 2007, an artificial ditch was constructed along the southern boundary of the Project Site to collect agricultural and expanding urban development runoff from adjacent properties. This constructed ditch now supports **Disturbed Wetland (DW)**, **Herbaceous Wetland (HW)**, **Mule Fat Scrub (MFS)**, **Southern Willow Scrub (SWS)**, **Tamarisk Scrub (TS)** and **Unvegetated Streambed (US)** vegetation communities. The drainage ditch is dominated by facultative native and non-native species, including mule fat (*Baccharis salicifolia*), tamarisk (*Tamarix ramosissima*), and arroyo willow (*Salix lasiolepis*). Scattered Fremont cottonwood (*Populus fremontii*), Emory's baccharis (*Baccharis emoryi*), and black willow (*Salix gooddingii*) are also present. The understory vegetation is dominated by non-native forbs and grasses such as Spanish sunflower (*Pulicaria paludosa*), English plantain (*Plantago lanceolata*), tumbling pigweed (*Amaranthus albus*), curly dock (*Rumex crispus*), white sweet-clover (*Melilotus alba*), common purslane (*Portulaca oleracea*), rabbit-foot grass (*Polypogon monspeliensis*), and Bermuda grass. A few native forbs are also present within and along the outer edge of the ditch, including slender aster (*Aster subulatus* var. *ligulatus*), sand-bur (*Ambrosia acanthicarpa*), and western sunflower (*Helianthus annuus*).

Infiltration Basin:

An infiltration basin was also constructed in the southwestern portion of the Project Site to collect overflow runoff from the drainage ditch and adjacent farmlands. This shallow basin supports scattered clumps of tamarisk, and facultative weedy forb and grass species such as stink-net, heliotrope, Boccone's sand spurry (*Spergularia bocconeii*), common knotweed (*Polygonum arenastrum*), prickly lettuce (*Lactuca serriola*), Bermuda grass, Spanish sunflower, and English plantain. Vegetation communities documented within this infiltration basin include **Disturbed Wetland (DW)**, **Unvegetated Streambed (US)**, **Seasonal Depression (SD)**, and **Tamarisk Scrub (TS)**.

As excerpted from Riefner & Associates (2017) ⁶:

Rainfall Patterns and Potential Survey Limitations

Many annual, perennial, and geophyte (corm or bulb-forming) plant species may fail to germinate, grow, and/or bloom during sub-optimal rainfall years. Therefore, plant surveys conducted during adverse weather conditions may not accurately document the presence/absence of special-status species that potentially occur at a site. Accordingly, it is important to provide rainfall data for the time period when the focused surveys were conducted in order to show that the results of these surveys were not constrained by low precipitation for a region in any given year.

The rainfall totals for the City of Hemet recorded from 2013 through 2017 are shown in Table 2. The average rainfall total recorded for Hemet is 11.45 inches per season. Rainfall for the 2014-2015 season is 15.14 inches, the 2015-2016 season is 10.91 inches, and the 2016-2017 survey period is 18.24 inches; WeatherCurrents web site accessed on May 22, 2017.⁷ Accordingly, the project survey results were not constrained by low seasonal rainfall.

**Table 2 – Seasonal Rainfall Totals for Hemet
(Average rainfall per season is 11.45 inches)**

Rainfall Season (Measured July 1 – June 30)	Precipitation Total
2016 – 2017	18.24 inches*

⁶ Rick Riefner and Associates. 2017. Results of MSHCP Focused Criteria Area and Narrow Endemic Plant Surveys Conducted from 2015 through 2017 at the 249-Acre Rancho Diamante Project, City of Hemet, Western Riverside County, California.

⁷ WeatherCurrents: local weather history, Hemet, CA. Available:
<http://weathercurrents.com/hemet/ArchivePrecipitation.do>. Accessed May 22, 2017.

Rainfall Season (Measured July 1 – June 30)	Precipitation Total
2015 – 2016	10.91 inches
2014 – 2015	15.14 inches
2013 – 2014	5.22 inches

* total as of May 22, 2017

METHODOLOGY

A site-specific survey program was developed to achieve the following goals: (1) characterize the vegetation; (2) prepare a detailed floristic compendium; (3) conduct focused surveys to document the distribution and abundance, or absence, of MSHCP Criteria Area or Narrow Endemic plant species at the site; and 4) prepare botanical resource maps showing the distribution of vegetation communities and the location of the MSHCP target species observed onsite. The project surveys also proposed to document other CNPS sensitive plants or species of local concern onsite, if present.

The methodology and focus of the survey program is consistent with the MSHCP guidelines, but also conforms to scientific and technical standards listed by USFWS (1996), CNPS (2001), and CDFW (2009) for sensitive plant species surveys. Field surveys were coordinated with the blooming periods of several reference populations in order to determine whether the target species were identifiable at the time of the survey, and therefore would aid detection onsite, if present. The surveys were conducted on-foot throughout the Project Site, including the offsite project area located north of Simpson Road (see Attachment A, Biological Resources Map).

Literature Review

Existing biological resources within and adjacent to the Project Site were initially investigated through a review of pertinent literature and online data. The California Natural Diversity Database (CNDDB 2015/2016/2017), CNPS (2015/2016/2017), the Consortium of California Herbaria (2015/2016/2017), and consultant reports were reviewed for information regarding the known locations of sensitive species in the vicinity of the property. In addition, soil and geologic data, local floras, and consultation with local experts were utilized in the identification of species, soils, or habitats that could support the target MSHCP sensitive plants within or adjacent to the Project Site. These and other references are listed below and in Appendix A–Literature Cited and Selected References.

Prior to conducting fieldwork, a thorough archival review was conducted using the following baseline resources:

- California Native Plant Society 8th Inventory Online (2015/2016/2017);
- California Natural Diversity Data Base for the USGS 7.5' Winchester Quadrangle (CNDDB 2015/2016/2017);
- Consortium of California Herbaria (Consortium 2015/2016/2017);
- Soil Survey of Western Riverside Area (Knecht 1971; USDA-NRCS 2017);
- Vegetation Alliances of Western Riverside County, California (Klein and Evens 2005);
- Distribution of Vernal Pools in Southern California, the San Jacinto Valley and vernal alkali plains (Ferren et al. 1996a,b,c; RECON 1995; Bauder and McMilian 1998; Keeler-Wolf et al. 1998, and others);
- U.S. Fish and Wildlife Service proposed rules, reports, and comment letters (USFWS 1995, 1996, 1998, 2004, 2005, 2006, 2009, 2011, 2012, and others);
- Vascular Flora of Western Riverside County (Roberts et al. 2004);
- reports prepared by the Regional Conservation Authority, Western Riverside County (<http://wrc-rca.org/document-library/>);
- consultant reports, including previous studies conducted for the Project Site and the Hemet area (Bramlet 1993; Caltrans 2007; MBA 2007; CDFW 2016; NOP 2016; Helix 2006, 2017); and
- articles in botanical journals such as *Madroño*, *Aliso*, *Fremontia*, and *Crossosoma*.

Focused Survey Program Developed for MSHCP Target Plants

Floristic and focused plant surveys were conducted in order to identify all species observed on the Project Site. Additionally, program goals would also locate, census, and map the target MSHCP plants, and other CNPS or species of local concern, if present, occurring onsite. Aerial photographs were inspected to help identify habitats that could be easily overlooked in the field, such as vernal moist depressions and ephemeral pools. Other physical features such as clay soil inclusions, rock outcrops, and saline-alkali scalds, if present, were targeted in order to identify specific Criteria Area and Narrow Endemic rare plant habitats.

Field notes and site photographs were taken daily. These notes recorded the date, location, plant species observed, and general habitat characteristics of each area of the project and habitats examined that day. All plant species encountered during the field surveys were identified and recorded in the field notes, including any special-status plants occurring on the Project Site. Voucher specimens were collected to confirm identification of uncommon species. Surveys were performed in a manner consistent with the MSHCP and other applicable survey protocol requirements as outlined by USFWS (1996), CNPS (2001), and CDFW (2009).

Fieldwork was coordinated throughout the spring and summer blooming periods of local reference populations, site-specific habitat conditions, and vegetation-soil associations of the target species. Accordingly, 15 surveys were conducted onsite, including August 3rd and September 8th, 2015, and February 19th, March 1st, April 17th, 21st, 26th, and May 6th, 22nd, and June 15th, 2016, and March 7th, 16th, April 15th, 18th, and May 18th, 2017, which covered all suitable habitat areas within the project area (excluding the Hemet Channel streambed). Also, several reference populations were visited in order to establish whether the target species were identifiable at the time of the survey. The location of the reference population and date of visit are provided, where appropriate, in the species discussions below.

All portions of the Project Site were surveyed on-foot by walking slowly and methodically across each habitat type, including the agricultural fields. A complete list of the plants observed can be found in Appendix B—Floral Compendium. Scientific nomenclature and common names used in this report generally follow Roberts et al. (2004) and Baldwin et al. (2012), or Jepson Project eFlora (2017) for updated taxonomy.

Preparation of Vegetation and MSHCP Sensitive Plant Maps

Cadre Environmental conducted the vegetation mapping and prepared the GIS mapping of the MSHCP sensitive plants detected onsite (Attachment A, Biological Resources Map).

RESULTS

Focused surveys were conducted from August 3rd, 2015, through May 18th, 2017, to determine presence/absence for the plant species designated for review by the MSHCP.

One of the fifteen (15) Criteria Area and Narrow Endemic plant species, smooth tarplant (a small population consisting of 191 individual plants), was detected during the focused survey program. The other fourteen (14) target MSHCP species were not detected during the survey program and/or are not expected to grow onsite due to a lack of suitable habitat.

The following discussion is presented in three parts:

- I) MSHCP plants detected onsite;
- II) MSHCP species that can be excluded from the Project Site based on the negative results of the 2015/2016/2017 focused surveys, and/or lack of suitable habitat onsite; and
- III) additional special-status species found, if present, onsite.

I: Criteria Area or Narrow Endemic Plant Species Documented Onsite

Criteria Area Plants: One Criteria Area species, the smooth tarplant (*Centromadia pungens* subsp. *laevis*), was identified growing on the Project Site.

Smooth Tarplant (*Centromadia pungens* subsp. *laevis*) [CRPR 1B.1] – Smooth tarplant is an annual member of the sunflower family (Asteraceae) that occurs in vernal pools, alkali playas and scrub, alkali grasslands, riparian areas, and disturbed sites in alkaline soils. Smooth tarplant is tolerant of mild disturbance, and is often found in agricultural lands or other disturbed mesic habitats. It blooms April to September. This species is easily detected when present, even in small numbers.

Smooth tarplant occurs from southwestern San Bernardino County, through western Riverside County to San Diego County. The largest numbers of populations occur in western Riverside County where this plant is widely scattered throughout the Perris Basin (Roberts 2004; CNDDDB 2015/2016/2017). Within western Riverside County, substantial populations occur along the San Jacinto River floodplain, the Salt Creek watershed near Hemet, the Temecula-Murrieta area, and the Elsinore Valley. It is uncommon outside of western Riverside County.

Smooth tarplant reference populations were observed on August 3rd, 2015, along Devonshire Avenue at Warren Road in Hemet, and on April 17th, 2016, along Meyers Road, north of Devonshire Avenue in Hemet.

Smooth tarplant was recorded previously for the project area, north of Simpson Road, during the SR 79 project surveys (Caltrans 2007). At Rancho Diamante, smooth tarplant was documented on disturbed saline-alkali soils from the same general area; the southwestern (offsite) portion of the Project Site (north of Simpson Road along the San Diego Aqueduct). The population totals 191 plants and the locations mapped for the property are depicted on Attachment A (Biological Resources Map). The Domino and Traver soils are mapped for this habitat area (Attachment E, Soil Associations Map). Smooth tarplant habitat is depicted in Attachment D (Current Project Site Photographs).

Narrow Endemic Plants: No target MSHCP Narrow Endemic plants were found during the 2015/2016/2017 surveys and/or are not expected on the Project Site due to lack of suitable habitat.

II: Criteria Area and Narrow Endemic Plant Species Subject to Focused Surveys or Evaluated by Habitat Suitability Assessment and Not Found or Expected to Occur Onsite

Criteria Area Plants: The smooth tarplant (*Centromadia pungens* subsp. *laevis*), was identified at Rancho Diamante. None of the other Criteria Area species, however, were detected during the 2015/2016/2017 project surveys and/or are not expected due to lack of suitable habitat onsite. Brief discussions follow.

San Jacinto Valley Crownscale (*Atriplex coronata* var. *notatior*) [Federal endangered, CRPR 1B.1] – The San Jacinto Valley crownscale is a California endemic. It is

restricted to western Riverside County in the San Jacinto, Winchester, Perris, Menifee, and the Elsinore Valleys (Roberts et al. 2004; Consortium 2015/2016/2017).

The San Jacinto Valley crownscale grows primarily on floodplains that support alkali scrub, alkali playas, vernal pools, and occasionally alkali grasslands (Bramlet 1993). It grows in highly alkaline, silty-clay soils in association with the Traver-Domino-Willows soil associations, with the majority (approximately 80%) of the populations being associated with the Willows soil series (Bramlet 1993). Typically, in dry periods, these saline soils exhibit a white powdery surface (effloresce) of salts due to the evaporation of water (USFWS 2012). San Jacinto Valley crownscale occurs primarily in the San Jacinto River, Mystic Lake, and Salt Creek drainages.

Atriplex coronata var. *notatior* is declining throughout its range due to habitat destruction and fragmentation from urban and agricultural development, pipeline construction, alteration of hydrology and floodplain dynamics, channelization, off-road vehicle activity, trampling by cattle and sheep, weed abatement, fire suppression practices, including disking, and competition from non-native plants (Bramlet 1993; USFWS 1998, 2012).

The Domino-Traver-Willows soils are mapped for the property. A reference population was observed on April 16, 2016, in the Lovell Unit, San Jacinto Wildlife Area (Bramlet 2016) to establish whether or not the species germinated, bloomed, and/or was identifiable during the focused survey program.

The San Jacinto Valley crownscale was not observed at Rancho Diamante during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

Davidson's Saltbush (*Atriplex davidsonii*) [CRPR 1B.2] – Davidson's saltscale is a decumbent to ascending annual, sparsely scaly, which blooms April to October. Note: plants from Hemet may represent an undescribed taxon related to *A. coulteri*.⁸ Also, see the revised treatment for *A. serenana* var. *davidsonii*.⁹ In western Riverside County, Davidson's saltscale is found mostly along the San Jacinto River and west of Hemet in the Upper Salt Creek area in alkali grasslands, margins of alkali playas or alkali vernal pools, or alkali vernal plains (Consortium 2015/2016/2017).

Potential suitable saline-alkali soils and seasonal depressions are found onsite. A reference population was observed on April 16, 2016, in the Lovell Unit, San Jacinto Wildlife Area (Bramlet 2016) to establish whether or not the species was identifiable during the focused survey program.

⁸ Elizabeth H. Zacharias. 2017. *Atriplex coulteri*, Jepson Flora Project (eds.). *Jepson eFlora*, http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=15202, accessed on March 01, 2017.

⁹ Elizabeth H. Zacharias. 2017. *Atriplex serenana* var. *davidsonii*, Jepson Flora Project (eds.). *Jepson eFlora*, http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=55035, accessed on March 01, 2017.

Davidson's saltscale was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

Parish's Brittlescale (*Atriplex parishii*) [CRPR 1B] – Parish's brittlescale is a small prostrate to decumbent annual, white scaly, that is often less than eight inches in length. It blooms May to October. This species occurs on alkali or saline flats, alkali meadows, and in or along the margins of vernal pools or playa depressions. Historically, its distribution in southern California includes Ventura County (Channel Islands), Los Angeles County east to Cushenbury Springs at the north base of the San Bernardino Mountains, and south to Orange and Riverside counties, Ramona in San Diego County, and south into Baja California, Mexico (CNDDDB 2015/2016/2017; Consortium 2015/2016/2017). The majority of the historic locations for Parish's brittlescale are considered to be extirpated.

In western Riverside County, this species is found in alkali habitats on the Domino-Traver-Willows soils in the San Jacinto River floodplain and Upper Salt Creek near the cities of Hemet and Winchester. Parish's brittlescale was observed in 1993 in the Upper Salt Creek watershed near Hemet, a location that is now preserved in the MWD Upper Salt Creek Reserve (CNDDDB 2015/2016/2017). Two other occurrences have been discovered, 1996 near Winchester, and in 2001 near Ramona in San Diego County (Consortium 2015/2016/2017). The Winchester occurrence, which may no longer be extant, has not been observed in recent years.

Suitable alkali soils and habitat are present onsite for Parish's brittlescale. A reference population was detected in bloom in the Upper Salt Creek Reserve on April 11, 2015.¹⁰ Parish's brittlescale was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

Thread-Leaved Brodiaea (*Brodiaea filifolia*) [State endangered, Federal threatened, CRPR 1B.1] – Thread-leaved brodiaea is a geophyte, which produces leaves and flower stalks that sprout from corms (underground bulb-like storage stems). Thread-leaved brodiaea blooms March to June. The historic range of the brodiaea includes the foothills of the San Gabriel Mountains at Glendora and San Dimas in Los Angeles County, east to Arrowhead Hot Springs in the foothills of the San Bernardino Mountains, San Bernardino County, south through Orange County, western Riverside County, and San Onofre State Beach, Camp Pendleton, Carlsbad, San Marcos, and Rancho Bernardo in San Diego County.

In western Riverside County, populations of thread-leaved brodiaea have been documented from the San Jacinto River in Nuevo, Perris, and the San Jacinto Wildlife Area, Upper Salt Creek, southern Santa Ana Mountains, and the Santa Rosa Plateau. It typically grows on gentle hillsides, valleys, and floodplains in semi-alkaline flats of

¹⁰ E-mail communication from David Bramlet (Newport Beach, CA) on April 13, 2015.

riparian areas, vernal pools, mesic southern needlegrass grassland, mixed native-annual grassland, and alkali grassland plant communities in association with clay, clay loam, or alkaline silty-clay soils.

Marginal suitable habitat is present onsite along the edge of the San Diego Aqueduct and the Hemet Channel. Overall, however, long-term discing practices associated with dryland farming are not favorable for the persistence of corm and bulb species. A reference population was observed on April 16, 2016, in the Lovell Unit, San Jacinto Wildlife Area (Bramlet 2016) to confirm detection during the focused survey program.

Thread-leaved brodiaea was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection and marginal suitable habitat onsite.

Round-Leaved Filaree (*Erodium macrophyllum* [*California macrophylla*]) [CRPR 1B.1] – Round-leaved filaree is endemic to California but is widespread, occurring in over 20 California counties. It blooms March to May. Habitats include open areas in cismontane woodland and valley and foothill grasslands, which are often associated with heavy clay soils below 3,600 feet elevation. In western Riverside County, round-leaved filaree occurs in the Temescal Valley, near Lake Elsinore, the Temecula-Murrieta area, Menifee-Perris area, Lake Matthews, Lake Skinner, and Oak Mountain near Vail Lake.

Suitable habitat consisting of heavy non-saline clay soils is not present onsite. However, round-leaved filaree was carefully searched for during the project surveys. A reference population was visited in the Temescal Valley along DePalma Road on April 1, 2016, and March 27, 2017.

Round-leaved filaree was not observed during focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys for the project area (Caltrans 2007). It is not expected due to lack of detection and lack of suitable habitat.

Coulter's Goldfields (*Lasthenia glabrata* subsp. *coulteri*) [CRPR 1B.1] – Coulter's Goldfields is associated with low-lying alkali and saline habitats along the coast and inland valleys; numerous populations have been documented in coastal salt marsh habitats. In western Riverside County, Coulter's goldfields is often associated with highly alkaline clays of the Traver-Domino-Willows soils, and usually in the wetter areas of the alkali vernal plain community. Coulter's goldfields blooms February to June. The majority of the Riverside County populations are found in the vicinity of Mystic Lake, the San Jacinto Wildlife Area, near Gilman Springs Road, the Ramona Expressway just east of Warren Road, the Hemet-Ryan Airport, and a fairly substantial population also grows at the MWD Upper Salt Creek Reserve (RECON 1995; Consortium 2015/2016/2017).

Suitable saline-alkali habitat is present in the seasonally-wet ditch and disturbed wetlands found onsite. A reference population was observed on April 16, 2016, in the Lovell Unit, San Jacinto Wildlife Area (Bramlet 2016) to confirm detection during the focused survey program.

Coulter's goldfields was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

Little Mousetail (*Myosurus minimus* subsp. *apus*) [CRPR 3.1] – Little mousetail is widespread in California. It grows in alkaline vernal pools, and vernal alkali plains and grasslands, and blooms March to June. Little mousetail is known in western Riverside County from alkali vernal pools at Salt Creek west of Hemet, vernal pools on the Santa Rosa Plateau, and the Gavilan Plateau within Harford Springs County Park. It is also known from the vicinity of Lake Elsinore, Wildomar, and Menifee.

Suitable saline-alkali habitat is present in the wet ditch and disturbed wetlands, and the seasonal depressions found onsite. A reference population was visited on April 20, 2016, along Lakeshore Drive near Lake Park Street, Lake Elsinore, to confirm detection during the project surveys.

Little mousetail was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

Mud Nama (*Nama stenocarpum* [*Nama stenocarpa*]) [CRPR 2.2] – Mud nama has been placed in the Namaceae (*Nama stenocarpa*; CNPS.org 2017) or in the Boraginaceae by the Jepson eFlora (2017)¹¹. This hirsute annual is prostrate to ascending, freely branched, and is three to 18 inches tall.

Mud nama is known from Imperial, Kings, Orange, Riverside, and San Diego counties, San Clemente Island, California, Arizona, Baja California, Mexico, and elsewhere. It is thought to be extirpated from Imperial and Los Angeles counties (CNPS 2015/2016/2017). This species grows on muddy banks of rivers, marshes, and swamps, lake margins, meadow, playa, and vernal pools. In western Riverside County, it is known mostly from the north shore of Mystic Lake (Roberts et al. 2004), and historically elsewhere such as Perris (Consortium 2015/2016/2017).

Marginal suitable saline-alkali habitat is present in the wet ditch and disturbed wetlands found onsite. Mud nama was not observed during the focused surveys, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

¹¹ Sarah Taylor. 2017. *Nama*, Jepson Flora Project (eds.). Jepson eFlora, http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=34387, accessed on June 25, 2017.

Narrow Endemic Plants: None of the six (6) Narrow Endemic species were detected during the project surveys and/or are not be expected to occur due to lack of suitable habitat present onsite. A brief discussion follows.

Munz's Onion (*Allium munzii*) [Federal endangered, State threatened, CRPR 1B.1] – Munz's onion is an endemic species restricted to mesic clay soils in western Riverside County, California. It blooms from March to May. This species is found in southern needlegrass grassland, annual grassland, open coastal sage scrub, or occasionally in cismontane juniper woodlands. In western Riverside County, most populations occur in the Gavilan Hills, including Harford Springs County Park, the Temescal Valley, the Cleveland National Forest in the Santa Ana Mountains (Elsinore Peak), near Murrieta, Lake Skinner, and the Domenigoni Hills. Munz's onion prefers annual grasslands within open patches of wild oat grass (*Avena fatua*) and open Riversidean sage scrub developed on clayey soils.

Suitable heavy clay soils, annual grasslands or Riversidean sage scrub habitats are not present onsite. In addition, Munz's onion is not associated with saline-alkali soils. However, Munz's onion was carefully searched for during the project surveys. A reference population was visited in the Temescal Valley along DePalma Road on April 1, 2016, to establish detection.

Munz's onion was not observed during focused surveys conducted in 2015/2016/2017, and is not present due to lack of detection and lack of suitable habitat. Also, it was not recorded by the SR 79 surveys from the project area (Caltrans 2007).

San Diego Ambrosia (*Ambrosia pumila*) [Federal endangered, CRPR 1B.1] – San Diego ambrosia is known from Baja California, Mexico, and San Diego and Riverside counties in the United States. It blooms May to September. *Ambrosia pumila* occurs primarily on upper terraces of rivers and drainages, in open grasslands, openings in coastal sage scrub, and occasionally in areas adjacent to vernal pools. The species may also be found in disturbed sites such as fire fuel breaks and the edges of dirt roads. Populations in western Riverside County occur along Nichols Road (Warm Springs Valley), at Alberhill near Lake Elsinore, the Temecula-Murrieta region, Temescal Valley, at Skunk Hollow, and elsewhere. An historical occurrence in the Arlington area in the City of Riverside has also been reported. The soils are often gravelly fine sandy loam, loam, clay, or alkaline soils.

Suitable seasonal depression and ruderal saline-alkali soil habitats for the San Diego ambrosia are present onsite. A reference population growing on disturbed roadsides along Nichols Road west of Alberhill Creek, Lake Elsinore, was visited on June 27, 2016, and on May 17, 2017, to establish detection during the focused survey program.

San Diego Ambrosia was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). This species is not expected due to lack of detection.

Many-Stemmed Dudleya (*Dudleya multicaulis*) [CRPR 1B.2] – Many-stemmed dudleya is a succulent perennial in the stonecrop family (Crassulaceae). It blooms April to July. This species is known from several southern California counties; typically it grows in dry, stony places on heavy soils in scrub and grassland habitats below 2,000 feet elevation. It is also frequently found in thinly vegetated areas around rock outcrops.

In western Riverside County, most populations of many-stemmed dudleya occur within the Temescal Valley and Gavilan Hills, the vicinity of Santa Ana Canyon, Estelle Mountain, Lake Mathews, Alberhill near Lake Elsinore, and in the San Mateo Wilderness.

Suitable habitat for many-stemmed dudleya is not present onsite. It was not observed during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). This species is not expected due to lack of detection and lack of suitable habitat onsite.

Spreading Navarretia (*Navarretia fossalis*) [Federal threatened, CRPR 1B] – Spreading navarretia is a member of the phlox family, and is found in vernal pools, chenopod scrub, edge of marshes, and playas on saline-alkali soils. Occasionally it grows in ditches and depressions associated with degraded habitat or old stock ponds (Consortium 2015/2016/2017). Spreading navarretia blooms April to June.

In western Riverside County, spreading navarretia is found primarily within the seasonally flooded alkali vernal plains and vernal pools of the San Jacinto River and Upper Salt Creek drainage near Hemet. These populations are associated mostly with the Domino-Traver-Willows alkali soils (Dudek 2003; USFWS 2005, 2009). Other populations are reported from Murrieta, French Valley, the Meniffee Valley, and the Santa Rosa Plateau (Dudek 2003; USFWS 1998; CNDDB 2015/2016/2017; Consortium 2015/2016/2017).

Suitable saline-alkali habitat is present in the wet ditch in riparian scrub and herbaceous vegetation, disturbed wetlands, and seasonal depressions found onsite. A reference population was observed on April 16, 2016, at the Stowe Road vernal pool in Hemet (Bramlet 2016) to confirm detection during the focused survey program.

Spreading navarretia was not observed during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

California Orcutt Grass (*Orcuttia californica*) [Federal/State endangered, CRPR 1B.1] – This small, unique grass occurs primarily in vernal pool habitats. In southern California, it is known from Orange, Los Angeles, Riverside, Ventura, and San Diego Counties, and continues south into Baja California, Mexico. California Orcutt grass blooms April to August. In western Riverside County, this species is found in southern

basaltic claypan vernal pools on the Santa Rosa Plateau, and in alkaline vernal pools such as Skunk Hollow, at Upper Salt Creek near Hemet, Menifee Valley, and elsewhere.

Marginal suitable saline-alkali habitat is present onsite in the created wetland detention basin, which ponded during the survey period (Attachment B, Current Project Site Photographs).

California Orcutt grass was not observed onsite during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection and marginal habitat conditions found onsite.

Wright's Trichocoronis (*Trichocoronis wrightii* var. *wrightii*) [CRPR 2.1] – The historic known range of Wright's trichocoronis in California includes the Great Valley and western Riverside County; it is also known from south Texas and adjacent northeastern Mexico. This plant grows in meadows and seeps, marshes, riparian scrub, and vernal pools. Wright's Trichocoronis blooms May to September.

In southern California Wright's trichocoronis is known only from western Riverside County, where it grows along the San Jacinto River in the vicinity of the Ramona Expressway, the San Jacinto Wildlife Area, and the north-shore of Mystic Lake.

Marginal saline-alkali habitat includes the riparian scrub and herbaceous vegetation of the ditch and disturbed wetlands of the created detention basin. Wright's trichocoronis was not observed during the focused surveys conducted in 2015/2016/2017, nor was it recorded by the SR 79 surveys from the project area (Caltrans 2007). It is not expected due to lack of detection.

III. Additional Special-Status Plant Species Found Onsite

No other CNPS, special-status plants, or species of local concern were observed onsite.

CONCLUSION

No state or federally listed threatened or endangered plant species were detected onsite. One of the MSHCP target Criteria Area species, a small population (consisting of 191 plants) of the smooth tarplant (*Centromadia pungens* subsp. *laevis*) was found on the Project Site. None of the other Criteria Area species or any of the Narrow Endemic plants was observed onsite during the focused surveys conducted from the summer of 2015 through the spring of 2017.

ATTACHMENTS

Attachment A - Biological Resources Map

Attachment B - Current Project Site Photographs

Attachment C - Current Project Site Photographs

Attachment D - Current Project Site Photographs

Attachment E – Soil Associations Map

Author: _____

A handwritten signature in black ink, appearing to read "John L. Harris Jr.", written over a horizontal line.

Date: July 5th, 2017

APPENDIX A

LITERATURE CITED AND SELECTED REFERENCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, eds. 2012. *The Jepson manual: Vascular plants of California*, 2nd ed. University of California Press, Berkeley.
- Bauder, E.T. 2005. The effects of an unpredictable precipitation regime on vernal pool hydrology. *Freshwater Biology* 50:2129-2135.
- Bauder, E.T., D.A. Kreager, and S.C. McMillan. 1998. Vernal pools of Southern California: Recovery plan. Fish and Wildlife Service, Region 1, U.S. Department of the Interior, Portland, OR.
- Bauder, E.T., and S. McMillan. 1998. Current distribution and historical extent of vernal pools in southern California and northern Baja California, Mexico. Pages 56-70 *in* C. W. Witham, E.T. Bauder, D. Belk, and W.R. Ferren, Jr., eds. *Ecology, conservation, and management of vernal pool ecosystems*. California Native Plant Society, Sacramento, CA.
- Bauder, E.T., A.J. Bohonak, B. Hecht, M.A. Simovich, D. Shaw, D.G. Jenkins, and M. Rains. 2009. A Draft Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing wetland functions of vernal pool depressional wetlands in Southern California. San Diego State University, San Diego, CA.
- Bramlet, D. 1993. Plant species of special concern in the alkaline sinks of the San Jacinto River and Old Salt Creek Tributary area. Unpublished report, Santa Ana, CA.
- Bramlet, D. 1996. Survey of plant species of concern on the Lovell Unit, San Jacinto Wildlife Area. Unpublished report, Santa Ana, CA.
- Bramlet, D. 2016. Wildflower walk. April 16, 2016, San Jacinto Wildlife Area. Unpublished report, Newport Beach, CA.
- California Department of Fish and Wildlife (CDFW). 2009. Protocols for surveying and evaluating impacts to special status native plant populations and communities. Accessed 2015: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html.
- California Department of Fish and Wildlife (CDFW). 2016. Land management plan for the San Jacinto Wildlife Area. Administrative Draft: Prepared by Dudek, Encinitas, CA. Available <https://www.wildlife.ca.gov/Lands/Planning/San-Jacinto-Valley-WA>.

- California Natural Diversity Data Base (CNDDDB). 2015/2016/2017. Department of Fish and Game. Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities, USGS 7.5' Winchester Quadrangle.
- California Native Plant Society. 2001. Botanical survey guidelines of the California Native Plant Society. *Fremontia* 29:64-65.
- California Native Plant Society. 2015/2016/2017. Inventory of Rare and Endangered Plants in California, 8th Edition, Online WWW.CNPS.org.
- Caltrans. 2007. Final rare plant survey report. State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road. Realign State Route 79 between Domenigoni Parkway and Gilman Springs Road in the Cities of Hemet and San Jacinto and the County of Riverside, Riverside County, California. Riverside County Transportation Commission and CH2M HILL.
- Consortium of California Herbaria (Consortium). 2015/2016/2017. Smasch Accession Results <http://ucjeps.berkeley.edu/cgi-bin/get_chc.pl>. Accessed June through December 2016.
- Dudek & Associates, Inc. (Dudek). 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Vol. II –Section A, MSHCP Conservation Area Description. Prepared for County of Riverside Transportation Land management Agency. Approved June 17, 2003.
- Ferren, W.R., Jr., P.L. Fiedler, and R.A. Leidy. 1996. Wetlands of California. Part I. History of wetland habitat. *Madroño* 32:105-124.
- Ferren, W.R., Jr., P.L. Fiedler, R.A. Leidy, K. D. Lafferty, and L.A. K. Mertes. 1996a. Wetlands of California. Part II. Classification and description of wetlands of the central California and southern California coast and coastal watershed. *Madroño* 32:125-182.
- Ferren, W.R., Jr., P.L. Fiedler, R.A. Leidy, K. D. Lafferty, and L.A.K. Mertes. 1996b. Wetlands of California. Part III. Key to the catalogue of wetlands of the central California and southern California coast and coastal watershed. *Madroño* 32:183-223.
- Gillespie, I.G. 2001. Competition between *Erodium macrophyllum* (Geraniaceae) and exotic and native species in a southern California annual grassland. *Crossosoma* 27:24-27.
- Gillespie, I.G. and E.B. Allen. 2008. Restoring the rare forb *Erodium macrophyllum* to exotic grassland in southern California. *Endang. Species Res.* 5: 65-72.

- Glenn Lukos Associates (GLA). 2000. Biological assessment: San Jacinto River Project, Riverside County, California (Corps Permit No. 88-00083 RRS). Prepared for David P. Zappe, Riverside County Flood Control and Water District, Riverside CA.
- Helix Environmental Planning, Inc. (Helix). 2006. Biological resources report for the Western Hemet Planning/Sphere of Influence. Prepared for The Garrett Group, Temecula, CA.
- Helix Environmental Planning, Inc. (Helix). 20017. Rancho Diamante Jurisdictional Delineation Report. Prepared for Rancho Diamante Investments, Carlsbad, CA.
- Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California Resources Agency. Department of Fish and Game. Non-Game Heritage Program. Sacramento, CA.
- Jepson Flora Project. 2017. Jepson eFlora, <http://ucjeps.berkeley.edu/IJM.html> [accessed on March to June, 2017].
- Keeler-Wolf, T., D.R. Elam, and S.A. Flint. 1998. California vernal pool assessment, preliminary report: State of California, The Resource Agency, Department of Fish and Game, Sacramento, CA.
- Keeley, J.E., and P.H. Zedler. 1998. Characterization and global distribution of vernal pools, Pages 1-14 *in* Witham, C. W., Bauder, E. T., Belk, D., Ferren, W. R., Jr., and Ornduff, R. (eds.). Ecology, conservation and management of vernal pool ecosystems: Proceedings from a 1996 Conference, California Native Plant Society, Sacramento, CA.
- Klein, A., and J. Evens. 2005. Vegetation alliances of western Riverside County, California. Final draft report prepared for California Department of Fish and Game, Habitat Conservation Division, Contract Number P0185404, California Native Plant Society, Sacramento, CA.
- Knecht, A. 1971. Soil survey of western Riverside Area, California. United States Department of Agriculture, Soil Conservation Service, Washington, DC.
- Michael Brandman Associates (MBA). 2007. Habitat assessment (burrowing owl, criteria area species, and narrow endemic plant species), MSHCP consistency analysis and HANS review. Prepared for Pulte Homes/Del Webb, Corona, California. Prepared by Michael Brandman Associates, San Bernardino, CA.
- Nelson, J. 1984. Rare plant survey guidelines, *in* Inventory of rare and endangered vascular plants of California. J. Smith and R. York (eds.). Special Publication No. 1. California Native Plant Society, Sacramento, CA.

Notice of Preparation (NOP), City of Hemet. 2016. Rancho Diamante Phase II Specific Plan Amendment (SPA 15-001)–draft subsequent environmental impact report. Prepared by LSA Associates, Inc., Irvine, CA. Prepared for Rancho Diamante Investments, Carlsbad, CA.

Preston, R.E. 2010. Alkaline rain pools: Remnants of a vanishing community. *Fremontia* 37/38: 18–23.

Regional Conservation Authority, Western Riverside County. 2009. Vernal pool survey report 2008. MSHCP Biological Monitoring Program, Riverside County.

Regional Conservation Authority, Western Riverside County. 2010. Rare plant survey report 2009. MSHCP Biological Monitoring Program, Riverside County.

Regional Conservation Authority, Western Riverside County. 2010. Vegetation community survey report 2009. MSHCP Biological Monitoring Program, Riverside County.

Riverside County. 2003. Administrative Multiple Species Habitat Conservation Plan (MSHCP). June 17, 2003.

Riverside County Integrated Project (RCIP). 2015. Proposed Multiple Species Habitat Conservation Plan (MSCHP) – Online Custom Reporting.

RECON. 1994. The distribution, status, and conservation of vernal pool and alkali playa wetlands of the Upper Salt Creek drainage, Hemet, California. Unpublished Report prepared for the City of Hemet, California.

Riefner, R.E., Jr., S. Boyd, and R.J. Shlemon. 2002. *Eleocharis obtusa* var. *engelmannii* new to southern California. *Crossosoma* 27:52–54.

Riefner, R.E., Jr., and S. Boyd. 2005. Noteworthy collections from western Riverside County, California. *Crossosoma* 31:28–32.

Roberts, F. M., Jr., S. D. White, A. C. Sanders, D. E. Bramlet, and S. Boyd. 2004. The vascular plants of western Riverside County, California: An annotated checklist. F.M. Roberts Publications, San Luis Rey, CA.

Sawyer, J.O., T. Keeler-Wolf, and J. Evans. 2009. A Manual of California Vegetation, 2nd Edition. Sacramento: California Native Plant Society.

Tibor, D. [ed.]. 2001. California Native Plant Society. Inventory of Rare and Endangered Plants of California. California Native Plant Society, Special Publication Number 1, Sixth Edition.

- U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2017. Official soil series descriptions. Available: <https://soilseries.sc.egov.usda.gov/osdname.aspx>.
- U.S. Geological Survey (USGS). 1953, photorevised 1979. USGS 7.5' Quad: Winchester (79), Riverside County, CA. Available <http://www.efghmaps.com/RIVERSIDE/WINCHESTER.GIF>.
- U.S. Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Three Vernal Pool Plants and the Riverside Fairy Shrimp. Federal Register 59: 48153.
- U.S. Fish and Wildlife Service. 1994. Proposed rule to list four southwestern California plants as endangered or threatened. Federal Register 59(240): 64812–64823.
- U.S. Fish and Wildlife Service. 1995. Endangered and Threatened Wildlife and Plants; Proposed Endangered and Threatened Status for Four Chaparral Plants From Southwestern California and Northwestern Baja California, Mexico. Federal Register: Volume 60, Number 190 Page 51443-51452.
- U.S. Fish and Wildlife Service. 1996. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. Department of the Interior, U.S. Fish and Wildlife Service, Portland, OR.
- U.S. Fish and Wildlife Service. 1998. Determination of endangered or threatened status for four southwestern California plants from vernal wetlands and clay soils. Federal Register: Vol. 63 FR 54975.
- U.S. Fish and Wildlife Service. 1998. Vernal Pools of Southern California Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR.
- U.S. Fish and Wildlife Service. 2004. Endangered and Threatened Wildlife and Plants: Proposed Designation of Critical Habitat for *Navarretia fossalis* (spreading navarretia). Federal Register 69 (194): 60110-60134. 2004.
- U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for *Brodiaea filifolia* (thread-leaved brodiaea); Final Rule. Federal Register 70:73820-73863. December 13, 2005.
- U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for *Navarretia fossalis* (spreading navarretia); Final Rule. Federal Register 70:60658-60694. October 18, 2005.
- U.S. Fish and Wildlife Service. 2006. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Reviews of 56 Species in California and Nevada. Federal Register: Volume 71, Number 55: 14538-14542.

- U.S. Fish and Wildlife Service. 2009. 5-year review: summary and evaluation for *Brodiaea filifolia* (thread-leaved brodiaea). U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, Carlsbad, CA.
- U.S. Fish and Wildlife Service. 2009. 5-year review: summary and evaluation for *Navarretia fossalis* (spreading navarretia). U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, Carlsbad, CA.
- U.S. Fish and Wildlife Service. 2011. Final revised critical habitat for *Brodiaea filifolia* (thread-leaved brodiaea). U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, Carlsbad, CA. Federal Register 76 (26): 6848–6925.
- U.S. Fish and Wildlife Service. 2012. Designation of revised critical habitat for *Allium munzii* (Munz's onion) and *Atriplex coronata* var. *notatior* (San Jacinto Valley crownscale). U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, Carlsbad, CA. Federal Register 77 (74): 23008–23056.
- White, S.D. 1994. Vernal pools in the San Jacinto Valley. *Fremontia* 22:17–19.

APPENDIX B

RANCHO DIAMANTE PROJECT – FLORAL COMPENDIUM

(*) asterisk indicates a non-native species

PTERIDOPHYTES - FERNS AND ALLIES

MARSILEACEAE - MARSILEA FAMILY

Marsilea vestita Hook. & Grev. subsp. *vestita* HAIRY PEPPERWORT or CLOVER FERN.

ANGIOSPERMAE - FLOWERING PLANTS

DICOTYLEDONES - DICOTS

AIZOACEAE - FIG-MARIGOLD FAMILY

**Galenia pubescens* (Ecklon & Zeyher) Druve

AMARANTHACEAE - AMARANTH FAMILY

**Amaranthus albus* L. TUMBLING PIGWEED.

**Amaranthus cruentus* L. QUILETE.

Amaranthus palmeri S. Watson PALMER'S PIGWEED.

ANACARDIACEAE - SUMAC FAMILY

**Schinus molle* L. PERUVIAN PEPPER TREE.

APIACEAE (UMBELLIFERAE) - CARROT FAMILY

**Apium graveolens* L. COMMON CELERY.

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa Hook. SAND-BUR.

Ambrosia psilostachya DC. var. *californica* (Rydb.) Blake WESTERN RAGWEED.

**Anthemis cotula* L. DOG MAYWEED.

Aster subulatus Michx. var. *ligulatus* Shinners SLENDER ASTER.

Baccharis emoryi A. Gray EMORY'S BACCHARIS.

Baccharis salicifolia (Ruiz Lopez & Pavon) Pers. MULE FAT.

**Carthamus tinctorius* L. SAFFLOWER.

Centromadia pungens (Hook. & Arn.) E. Greene subsp. *laevis* Keck SMOOTH TARPLANT.

**Cirsium vulgare* (Savi) Ten. BULL THISTLE.

**Cnicus benedictus* L. BLESSED THISTLE.

Deinandra kelloggii E. Greene [*Hemizonia k. Greene*] KELLOGG'S TARPLANT.

Erigeron canadensis L. [*Conyza canadensis* (L.) Cronq.] COMMON HORSEWEED.

**Erigeron sumatrensis* Retz. [*Conyza floribunda* Kunth.] TROPICAL HORSEWEED.

Gnaphalium palustre Nutt. LOWLAND CUDWEED.

Helianthus annuus L. WESTERN SUNFLOWER.

Heterotheca grandiflora Nutt. TELEGRAPH WEED.

**Lactuca serriola* L. PRICKLY or WILD LETTUCE.

Lasthenia gracilis (DC.) E. Greene [*L. californica* DC. ex Lindley] COASTAL GOLDFIELDS.

**Matricaria discoidea* DC. [*Matricaria matricarioides* (Less.) Porter] COMMON PINEAPPLE WEED.

Matricaria occidentalis E. Greene. VALLEY PINEAPPLE WEED.

**Oncosiphon piluliferum* (L.f.) Kallersjo [*Matricaria globifera* (Thunb.) Fenzl] STINK-

NET.

Psilocarphus brevissimus Nutt. var. ***brevissimus*** WOOLLY MARBLES.

**Pulicaria paludosa* Link. SPANISH SUNFLOWER.

**Senecio vulgaris* L. COMMON GROUNDSEL.

Verbesina encelioides* (Cav.) A. Gray var. *exauriculata*** Rob. & Greenm. GOLDEN CROWN-BEARD.

BORAGINACEAE - BORAGE FAMILY

Amsinckia menziesii (Lehm.) Nelson & J.F. Macbr. var. ***intermedia*** (Fischer & C. Meyer) Ganders [*A. intermedia* Fischer & C. Meyer] COMMON FIDDLENECK.

Heliotropium curassavicum L. subsp. ***oculatum*** (Heller) Thorne SALT or ALKALI HELIOTROPE.

Plagiobothrys leptocladus (E. Greene) I.M. Johnston WIRE-STEMMED POPCORN FLOWER.

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

**Capsella bursa-pastoris* (L.) Medikus SHEPHERD'S PURSE.

**Coronopus didymus* (L.) Smith [*Lepidium d.* (L.) Smith] LESSER WORT-CRESS.

**Hirschfeldia incana* (L.) Lagr.-Fossat SHORTPOD or SUMMER MUSTARD.

**Lobularia maritima* (L.) Desv. SWEET ALYSSUM.

**Raphanus sativus* L. WILD RADISH.

**Sisymbrium irio* L. LONDON ROCKET.

CARYOPHYLLACEAE - PINK FAMILY

**Spergularia bocconeii* (Scheele) Merino BOCCONE'S SAND SPURRY.

CHENOPODIACEAE - GOOSEFOOT FAMILY

**Atriplex suberecta* I. Verd. SERRATE-LEAVED SALTBUSH.

**Bassia hyssopifolia* (Pallas) Kuntze FIVE-HOOK BASSIA.

**Chenopodium album* L. LAMB'S QUARTERS.

**Chenopodium murale* L. NETTLE-LEAVED GOOSEFOOT.

**Chenopodium strictum* Roth GOOSEFOOT.

**Cycloloma atriplicifolium* (Spreng.) J. Coulter WINGED PIGWEED.

**Kochia scoparia* (L.) Schrader SUMMER CYPRESS.

CONVOLVULACEAE - MORNING-GLORY FAMILY

**Convolvulus arvensis* L. FIELD BINDWEED.

Cressa truxillensis Kunth ALKALI WEED.

Cuscuta sp. DODDER.

FABACEAE (LEGUMINOSAE) - PEA FAMILY

**Medicago polymorpha* L. BUR-CLOVER.

**Melilotus alba* Medikus WHITE SWEET-CLOVER.

**Melilotus indica* (L.) All. SOURCLOVER.

GERANIACEAE - GERANIUM FAMILY

**Erodium cicutarium* (L.) L'Her. RED-STEMMED FILAREE.

LYTHRACEAE - LOOSESTRIFE FAMILY

**Lythrum hyssopifolium* L. GRASS POLY.

MALVACEAE - MALLOW FAMILY

**Malva parviflora* L. CHEESEWEED.

MELIACEAE - MAHOGONY FAMILY

**Melia azedarach* L. CHINA BERRY or PERSIAN LILAC.

MYRTACEAE - MYRTLE FAMILY

**Eucalyptus* sp. GUM.

ONAGRACEAE - EVENING PRIMROSE FAMILY

Epilobium brachycarpum C. Presl [*E. paniculatum* Torr. & A. Gray] SUMMER COTTON-WEED.

Epilobium ciliatum Raf. subsp. *ciliatum* GREEN WILLOW-HERB.

PLANTAGINACEAE - PLANTAIN FAMILY

(including parts of **SCROPHULARIACEAE - FIGWORT FAMILY**)

**Plantago lanceolata* L. ENGLISH PLANTAIN or RIB-GRASS.

Veronica peregrina L. subsp. *xalapensis* (Kunth) Pennell MEXICAN SPEEDWELL.

POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum Benth. subsp. *foliolosum* (Nutt.) Abrams INTERIOR CALIFORNIA BUCKWHEAT.

**Polygonum argyrocoleon* Kunze PERSIAN KNOTWEED.

**Polygonum aviculare* L. COMMON KNOTWEED.

**Rumex crispus* L. CURLY DOCK.

PORTULACACEAE - PURSLANE FAMILY

**Portulaca oleracea* L. COMMON PURSLANE.

SALICACEAE - WILLOW FAMILY

Populus fremontii S. Watson subsp. *fremontii* WESTERN COTTONWOOD.

Salix exigua Nutt. NARROW-LEAVED WILLOW.

Salix gooddingii C. Ball GOODDING'S WILLOW or BLACK WILLOW.

Salix lasiolepis Benth. ARROYO WILLOW.

SIMAROUBACEAE - QUASSIA FAMILY

**Ailanthus altissima* (Miller) Swingle TREE OF HEAVEN.

SOLANACEAE - NIGHTSHADE FAMILY

Datura wrightii Regel [*D. meteloides* A. DC.] JIMSONWEED.

**Physalis philadelphica* Lam. [*P. ixocarpa* Hornem.] TOMATILLO.

TAMARICACEAE - TAMARISK FAMILY

**Tamarix ramosissima* Ledeb. MEDITERRANEAN TAMARISK.

ZYGOPHYLLACEAE - CALTROP FAMILY

**Tribulus terrestris* L. PUNCTURE VINE.

MONOCOTYLEDONES - MONOCOTS

ARECACEAE (PALMAE) - PALM FAMILY

**Washingtonia robusta* H.A. Wendl. MEXICAN FAN PALM.

CYPERACEAE - SEDGE FAMILY

Cyperus eragrostis Lam. TALL UMBRELLA-SEDGE.

Eleocharis parishii Britton PARISH SPIKERUSH.

JUNCACEAE - RUSH FAMILY

Juncus bufonius L. var. *bufonius* COMMON TOAD RUSH.

POACEAE - GRASS FAMILY

**Bromus diandrus* Roth COMMON RIPGUT GRASS.

**Bromus madritensis* subsp. *rubens* (L.) Husnot [*B. rubens* L.] FOXTAIL CHESS or RED BROME.

**Crypsis vaginiflora* (Forrsk.) Opiz PRICKLE GRASS.

**Cynodon dactylon* (L.) Pers. BERMUDA GRASS.

Deschampsia danthonoides (Trin.) Benth. ANNUAL HAIRGRASS.

****Festuca perennis*** Columbus & J.P. Sm. [*Lolium perenne* L., *L. multiflorum* Lam.]
PERENNIAL RYEGRASS.

****Hordeum marinum*** Hudson subsp. ***gussoneanum*** (Parl.) Thell. [*H. geniculatum* All.]
MEDITERRANEAN BARLEY.

****Hordeum murinum*** subsp. ***leporinum*** (Link) Arcangeli [*H. leporinum* Link] HARE
BARLEY or FOXTAIL BARLEY.

****Hordeum vulgare*** L. CULTIVATED BARLEY.

Leptochloa fusca L. (Kunth) subsp. ***uninervia*** (J.S. Presl) N. Snow MEXICAN
SPRANGLETOP.

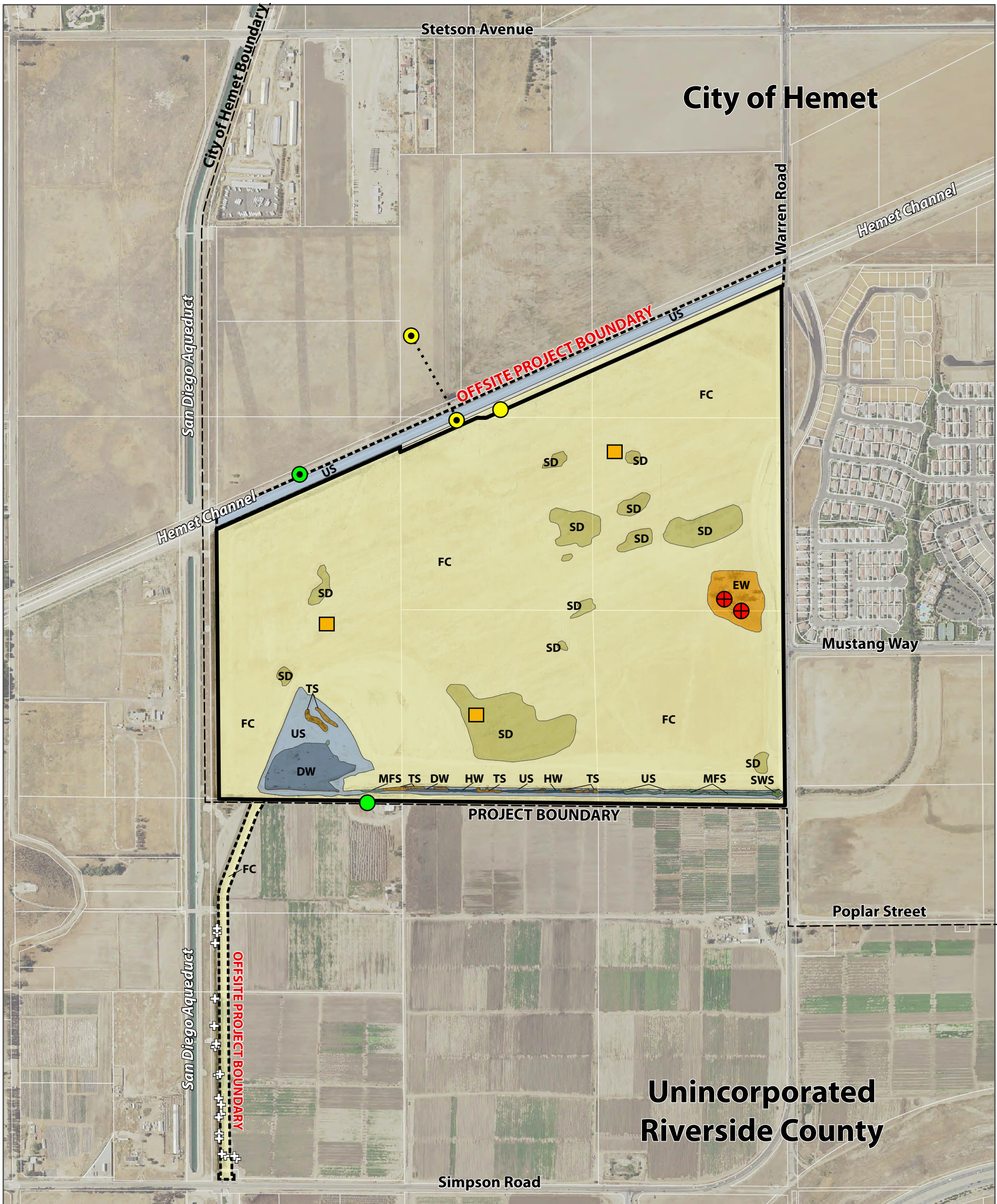
****Phalaris canariensis*** L. CANARY GRASS.

****Phalaris minor*** Retz. LITTLESEED CANARY GRASS.

****Polypogon monspeliensis*** (L.) Desf. ANNUAL BEARD GRASS or RABBIT-FOOT
GRASS.

****Schismus barbatus*** (L.) Thell. MEDITERRANEAN SCHISMUS.

****Setaria verticillata*** (L.) Beauv. BUR BRISTLEGRASS.



Burrowing Owl Observations

- Pair & Young, MBA 2005/2006, CH2M Hill (2005/2006)
- Adult Foraging, MBA 2006
- Pair CH2M Hill 2005
- Single Owl, CH2M Hill 2006

Raptor Nests

- ⊕ Cadre Environmental 2015

Sensitive Bird Species

- California Horned Lark - SSC (flock), Cadre 2015

Vegetation Communities

- | | | | |
|----|------------------------------------|-----|-----------------------|
| FC | Agriculture Land - Field Croplands | HW | Herbaceous Wetland |
| SD | Seasonal Depression | MFS | Mule Fat Scrub |
| EW | Eucalyptus Woodland | SWS | Southern Willow Scrub |
| TS | Tamarisk Scrub | US | Unvegetated Streambed |
| DW | Disturbed Wetland | | |

Sources: Cadre Environmental 2015/Helix Environmental Planning Inc. 2017

- ⊕ Smooth Tarplant (*Centromadia pungens ssp. laevis*), CRPR 1B.1
- Sources: Riefner and Associates 2017

APN 465-100-016, 465-100-022, 465-110-020, 021, 022, 023, and 027. Offsite 465-120-019, and 021, 465-130-016 and 017.

Aerial: NAIP 2014

Attachment A - Biological Resources Map

MSHCP Sensitive Plant Survey Report
Rancho Diamante





PHOTOGRAPH 1 - West view of infiltration basin from agriculture field croplands located in southwest region of Project Site.



PHOTOGRAPH 2 - Northward view of agriculture field croplands from south-central region of Project Site.



PHOTOGRAPH 2 - West view of Eucalyptus woodland located near eastern Project Site boundary.



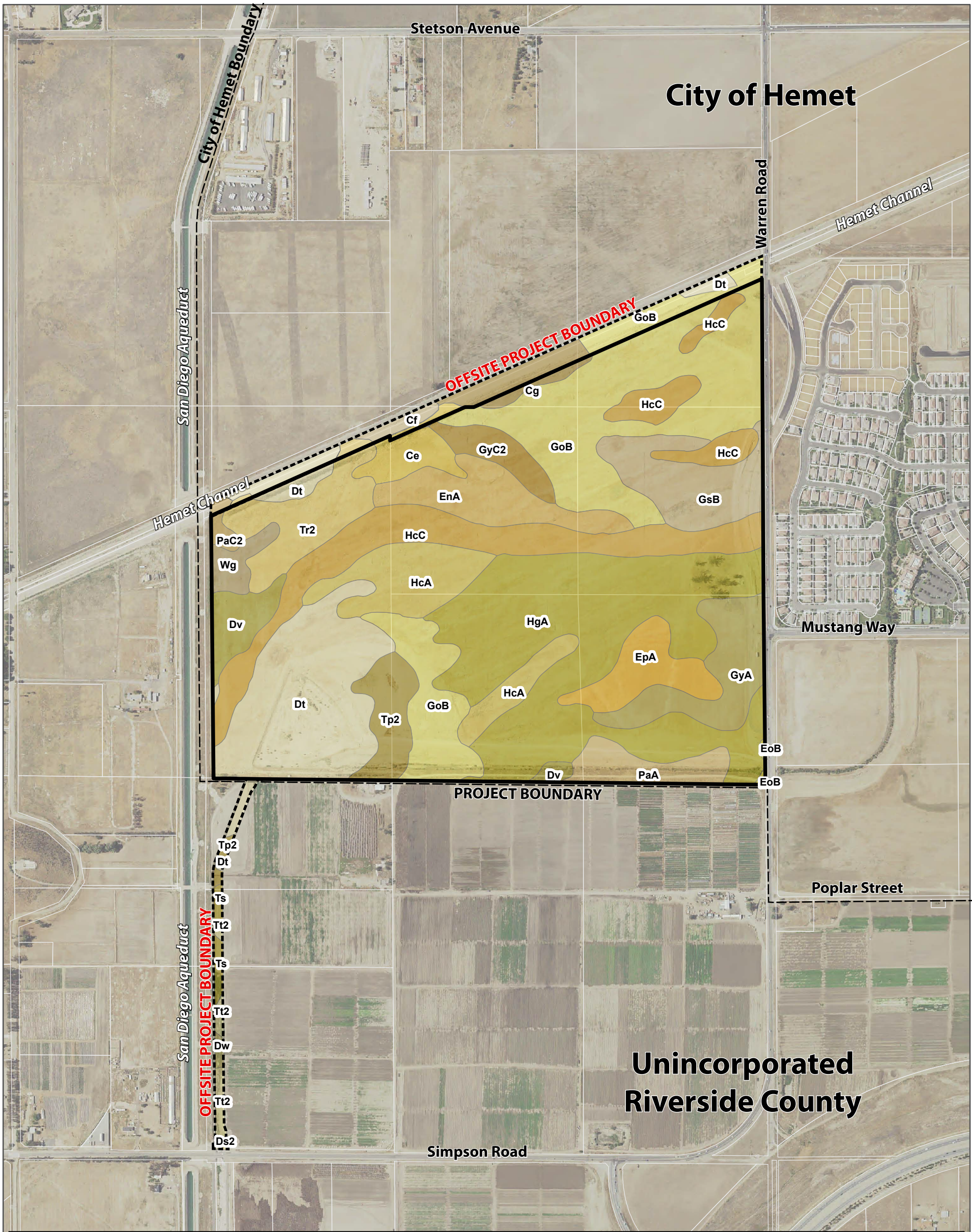
PHOTOGRAPH 3 - West view of man-made urban agricultural ditch located along southern Project Site boundary.



PHOTOGRAPH 2 - Seasonal depression within agricultural fields - Spring 2017.



PHOTOGRAPH 3 - Offsite assessment area - north of Simpson Road - smooth tarplant habitat.



Ce Chino silt loam, drainged	EoB Exeter sandy loam, slightly saline-alkali, 0-5% slopes	HgA Hanford fine sandy loam, 0-2% slopes
Cf Chino silt loam, drained, saline-alkali	EpA Exeter sandy loam, deep, 0-2% slopes	PaA Pachappa fine sandy loam, 0-2% slopes
Cg Chino silt loam, drained, strongly saline-alkali	GoB Grangeville loamy fine sand, drained, 0-5% slopes	PaC2 Pachappa fine sandy loam, 2-8% slopes, eroded
Ds2 Domino fine sandy loam, eroded	GsB Grangeville sandy loam, saline-alkali, 0-5% slopes	Tp2 Traver loamy fine sand, eroded
Dt Domino fine sandy loam, saline-alkali	GyA Greenfield sandy loam, 0-2% slopes	Tr2 Traver loamy fine sand, saline-alkali, eroded
Dv Domino silt loam, saline-alkali	GyC2 Greenfield sandy loam, 2-8% slopes, eroded	Ts Traver fine sandy loam, saline-alkali
Dw Domino silt loam, strongly saline-alkali	HcA Hanford course sandy loam, 0-2% slopes	Tt2 Traver fine sandy loam, strongly saline-alkali, eroded
EnA Exeter sandy loam, 0-2% slopes	HcC Hanford course sandy loam, 2-8% slopes	Wg Willows silty clay, saline-alkali

APN 465-100-016, 465-100-022, 465-110-020, 021, 022, 023, and 027. Offsite 465-120-019, and 021, 465-130-016 and 017.

Aerial: NAIP 2014, Soils NRCS 2014

Attachment E - Soil Associations Map

MSHCP Sensitive Plant Survey Report
Rancho Diamante

