MSHCP NARROW ENDEMIC PLANT SPECIES AND CRITERIA AREA SPECIES FOCUSED SURVEYS

DP-2021-2347

ASSESSOR'S PARCEL NUMBER 392-320-014

±17 ACRES OF 18.08-ACRE SITE SURVEYED

LOCATION:

Southeast corner of the intersection of Whitewood Road and Lee Lane in the City of Murrieta, Riverside County, California. Portion of Section 35, Township 6 South and Range 3 West S.B.M. of the USGS Topographic Map, 7.5 Minute Series, Murrieta, California Quadrangle

OWNER/APPLICANT:

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SURVEYS CONDUCTED BY PAUL A. PRINCIPE ON:

April 26, May 10, June 8, July 2, and August 4, 2021

REPORT DATE:

August 9, 2021

INFORMATION SUMMARY

REPORT DATE

August 9, 2021

REPORT TITLE

MSHCP Narrow Endemic and Criteria Area Plant Species Focused Surveys

CASE NUMBER

DP-2021-2347

ASSESSOR'S PARCEL NUMBER

392-320-014

SITE LOCATION

Southeast corner of the intersection of Whitewood Road and Lee Lane in the City of Murrieta, Riverside County, California **(Site Vicinity Map)**. It was mapped in a portion of Section 35, Township 6 South and Range 3 West S.B.M. of the USGS Topographic Map, 7.5 Minute Series, Murrieta, California Quadrangle **(USGS Location Map)**.

ACREAGE

18.08 acre-site
±17 acres surveyed

OWNER/APPLICANT

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Source of Aerial Photo: Google Earth 1-2020

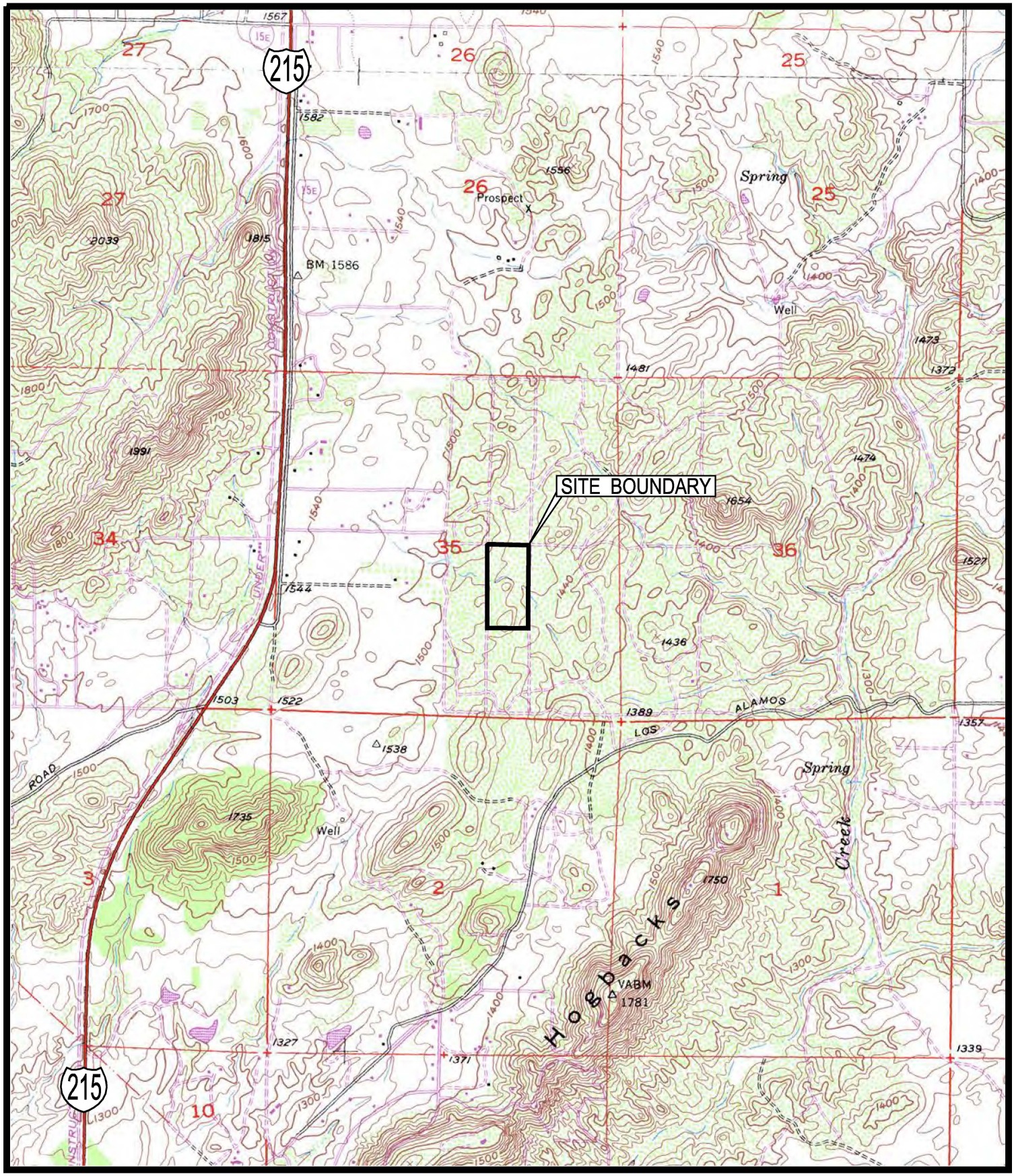
Scale: 1"= 1000'

0 1000 2000 Feet

SITE VICINITY MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES



Base Map Source: USGS 7.5 Min.
Murrieta, Calif. Quad.

Feet

0 2000 4000

USGS LOCATION MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES

PRINCIPAL INVESTIGATOR

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SURVEY SUMMARY

Based on the RCA MSHCP Information Map Conservation Description, the site is located in the Roughstep 6 (HMU – Menifee) Narrow Endemic Plant Survey Area and Criteria Area Species Survey Area. Due to the presence of suitable habitats, focused surveys were conducted for Munz's onion, San Diego ambrosia, many-stemmed dudleya, spreading navarretia, thread-leaved brodiaea, and round-leaved filaree.

Five focused surveys were conducted between April 26 and August 4, 2021. During the 2021 survey season, targeted Narrow Endemic Plant Species and Criteria Area Species were not identified at the site. As the surveys were conducted in accordance with the standardized guidelines issued by the regulatory agencies, results of the surveys provide reasonable evidence that the target species do not occur on the site.

One MSHCP plant species, long-spined spineflower, was identified. This is a California Native Plant Society List 1B.2 Species (RED Code 2-2-2). It has no State or Federal listing status. Long-spined spine flower is designated in the MSHCP as a Group 2 species because of its fairly wide distribution within specific soil restrictions, and the presence of two core locations.

The MSHCP assessment indicates that long-spined spineflower can be conserved at the landscape level. The MSHCP Conservation Area configuration provides for conservation of the majority of potential habitat for the species, and provides linkages of habitat conservation between Core Areas. Large blocks of habitat will protect this species from edge effects, provide the species the potential to expand into suitable habitat, and allow for pollination to occur, if pollinators are important in the reproductive cycle of this species.

Conservation for the long-spined spineflower will be achieved by inclusion of at least 389,510 acres of suitable Conserved Habitat and at least 57 known occurrences at 15 locations in the MSHCP Conservation Area. The small population identified at the site is not located within an area with a large block of conserved habitat, within one of the two core locations for this species at Lake Matthews and in the Agua Tibia Mountains, or within a linkage of habitat conservation between Core Areas

With completion of these surveys, the proposed project is consistent with Section 6.1.3 and Section 6.3.2 of the MSHCP, and the California Environmental Quality Act.

ABSTRACT

Due to the presence of suitable growing habitats, focused surveys for four Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Narrow Endemic Plant Species and two Criteria Area Plant Species were completed at the site during the appropriate growing and blooming seasons. Five focused surveys were conducted between April 26 and August 4, 2021 in accordance with the standardized guidelines issued by the regulatory agencies.

DESCRIPTION OF THE SITE, INCLUDING TOPOGRAPHY, HYDROGRAPHY, SOILS, VEGETATION ASSOCIATIONS AND SPECIES COMPOSITION, AND ANIMALS OBSERVED DURING VISIT(S)

Site

The site is presently vacant and undeveloped. Aerial photographs from 1996 and 2004 show that most of the upland scrublands present on the site were cleared and annual grassland was succeeding onto the site surface. The unnamed tributary of Warm Springs Creek that dissects the northern portion of the site was sparsely vegetated, and only a few clumps of large trees were visible. Meadowlark Lane crossed the tributary along the site's west property line.

The 2007 aerial photograph shows that some riparian vegetation had been established along the banks of the tributary, and an isolated ephemeral stream formed a confluence in the west central portion of the site. Riparian vegetation was starting to grow along this ephemeral stream. It appears that some shrub vegetation was resprouting in the annual grassland. Whitewood Road was being constructed to replace Meadowlark Lane along the site's west property line.

Between 2010 and 2012 the construction of Whitewood Road was completed at a few feet above the natural grade of the site. The tributary and ephemeral stream were placed in culverts beneath Whitewood Road and surface drains were constructed to drain water into the tributary. This probably resulted in an expansion of the riparian vegetation along the tributary and ephemeral stream. The resprouting shrub vegetation was becoming denser and more widespread. The site has remained vacant and undeveloped since that time. Recently, a homeless camp has been developed in the middle of the tributary and riparian vegetation.

Topography

Site topography is characterized by hill and valley contours. The southern portion of the site is nearly flat-lying with only a few natural irregularities, mainly rock and boulder outcrops, while the northern portion is a broad sloping hillside. One main natural watercourse trends in a west-to-east direction through the northern portion of the site.

Rolling hills are present in the northern half of the site that is located north of the natural watercourse. The hills slope gently downward in a general north→south direction to the channel of the natural watercourse. The change in elevation is 30 feet between the site's north property line and the channel (1500→1470 feet). Numerous hillocks are scattered through this portion of the site, which is strewn with boulders and rock outcrops. A manufactured slope is present along the westernmost portion of this area. During the construction of Whitewood Road, the roadway was raised 10-15 feet above the channel of an unnamed tributary of Warm Springs Creek.

A broad rather flat-lying hill is present in the southern half of the site that is located south of the natural watercourse. It occupies the entire center of this portion of the site, and gently slopes downward in a general southwest direction to the channel of the natural watercourse. The change in elevation is 20 feet between the top of this hill and the natural watercourse (1490→1470 feet). A few hillocks are present, and are elevated 7-14 feet above the rounded hilltop. Numerous boulder and rock outcrops are scattered throughout this portion of the site. A manufactured slope is also present along the westernmost portion of this area. During the construction of Whitewood Road, the roadway was raised 10-15 feet above the channel of a small ephemeral stream.

Hydrography and Drainage

The natural watercourse is an unnamed tributary of Warm Springs Creek. It is designated as an intermittent blueline stream on the USGS Topographic Map, Murrieta, California Quadrangle. An approximately 695-foot-long reach of this stream dissects the northern portion of the site, and has a northwest→southeast direction of flow. It enters and exits the site via culverts, and is not deeply incised into the ground. The origin of this tributary was mapped approximately 1,175 feet upstream of the site in a northwest direction. Downstream of the site, it was mapped for approximately 1,900 feet in a southeast direction before it could no longer be detected.

The tributary has a confluence with a small ephemeral stream near the west central portion of the site. This stream is not designated as an intermittent blueline stream, and likely was the result of a culvert placed beneath a newly constructed portion of Whitewood Road. It only trends for approximately 335 feet through the site before its confluence with the tributary

The majority of drainage on the site is by overland flow or downslope movement of storm water runoff (sheet flow) originating on higher elevated terrain located in the northern and southern portions of the site. The storm water runoff is characterized by low volume, infrequent and short duration flows that only occur during and after precipitation events. All of the onsite runoff drains directly into the unnamed tributary of Warm Springs Creek present on the site. Once the runoff drains into the tributary, the drainage regime becomes fluvial as it is carried off the site.

Soils

Review of the "Soil Survey of Western Riverside Area, California" revealed that the surficial soils mapped at the site are included in the Cajalco-Temescal-Las Posas Association (Soils of the Southern California Coastal Plain). Within this association, two soil types were mapped on the site **(Soils Map)**:

- Cac2 – Cieneba fine sandy loam, 2 to 8 percent slopes, eroded
- CbD2 – Cajalco rocky fine sandy loam, 5 to15 percent slopes, eroded

Vegetation Associations and Species Composition

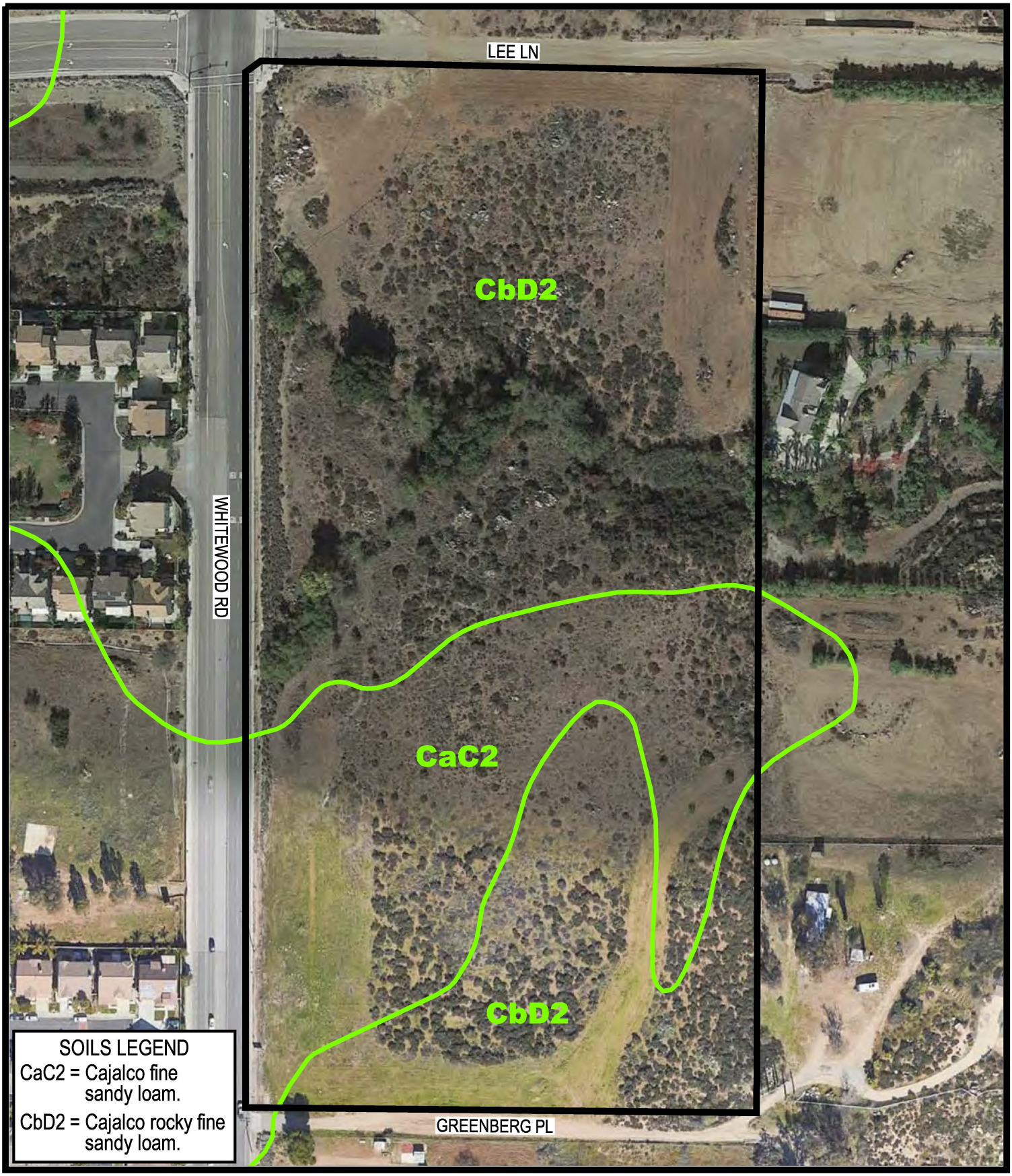
Based on the Habitat Accounts described in Volume 2 of the MSHCP, the Vegetation Subassociations occurring on the site are classified as Coastal Sage-Chaparral Scrub (1.07 acres), Non-Native Grasslands (15.77 acres) and Riparian Forest (1.19 acres), and Mulefat Scrub (0.05 acres) **(Biological Resources Map)**.

The **Coastal Sage Scrub Vegetation Association** is distributed throughout Western Riverside County, occupying approximately 159,000 acres (12 percent) of the MSHCP Plan Area. It is represented by three subassociations: Diegan coastal sage, Riversidean sage scrub and undifferentiated coastal scrub. Coastal Sage Scrub in Riverside County is contained in the Riversidean Sage Scrub Mapped Subassociation. Riversidean Sage Scrub is the dominant sage scrub Mapped Subassociation in the MSHCP Plan Area, occupying approximately 10.3 percent (136,278 acres) of the Plan Area.

The **MSHCP Habitat Accounts** for **the Coastal Sage Scrub Vegetation Association** includes additional classifications made by others. Based on previous vegetation removal activities occurring at the site, it appears that the Coastal Sage Scrub extant at the site is contained in the **Coastal Sage–Chaparral Scrub** classification made by Holland (1986). Based on its level of disturbance on the site, it is considered to be a remnant. Coastal Sage–Chaparral Scrub is typically a diverse mosaic of woody sclerophyllous (hard-leaved plants) chaparral species and drought-deciduous malacophyllous (fleshy-leaved plants) sage scrub species adapted to arid climates.

The 1.07 acres of Coastal Sage–Chaparral Scrub growing on the site is confined to boulder and rock outcrops and the manufactured slope below Whitewood Road. It is no longer continuously-growing on the site, and is now basically limited to a few shrubs growing in and around areas that were not cleared, individual sage and scrub plants resprouting from damaged central growing trunks or major branches scattered around the site, and individual sage and scrub plants that took root from seeds. Native sage scrub species are mixed with landscaping materials along the slopes below Whitewood Road and Lee Lane.

The Coastal Sage–Chaparral Scrub is dominated by interior California buckwheat *(Eriogonum fasciculatum* subsp. *foliolosum)*. Other abundant sage scrub species include coastal sagebrush *(Artemisia californica),* brittlebush *(Encelia farinosa),* thick-leaved lilac *(Ceanothus crassifolius* var*. crassifolius),* and chamise *(Adenostoma fasciculatum).*



Source of Aerial Photo: Google Earth 1-2020

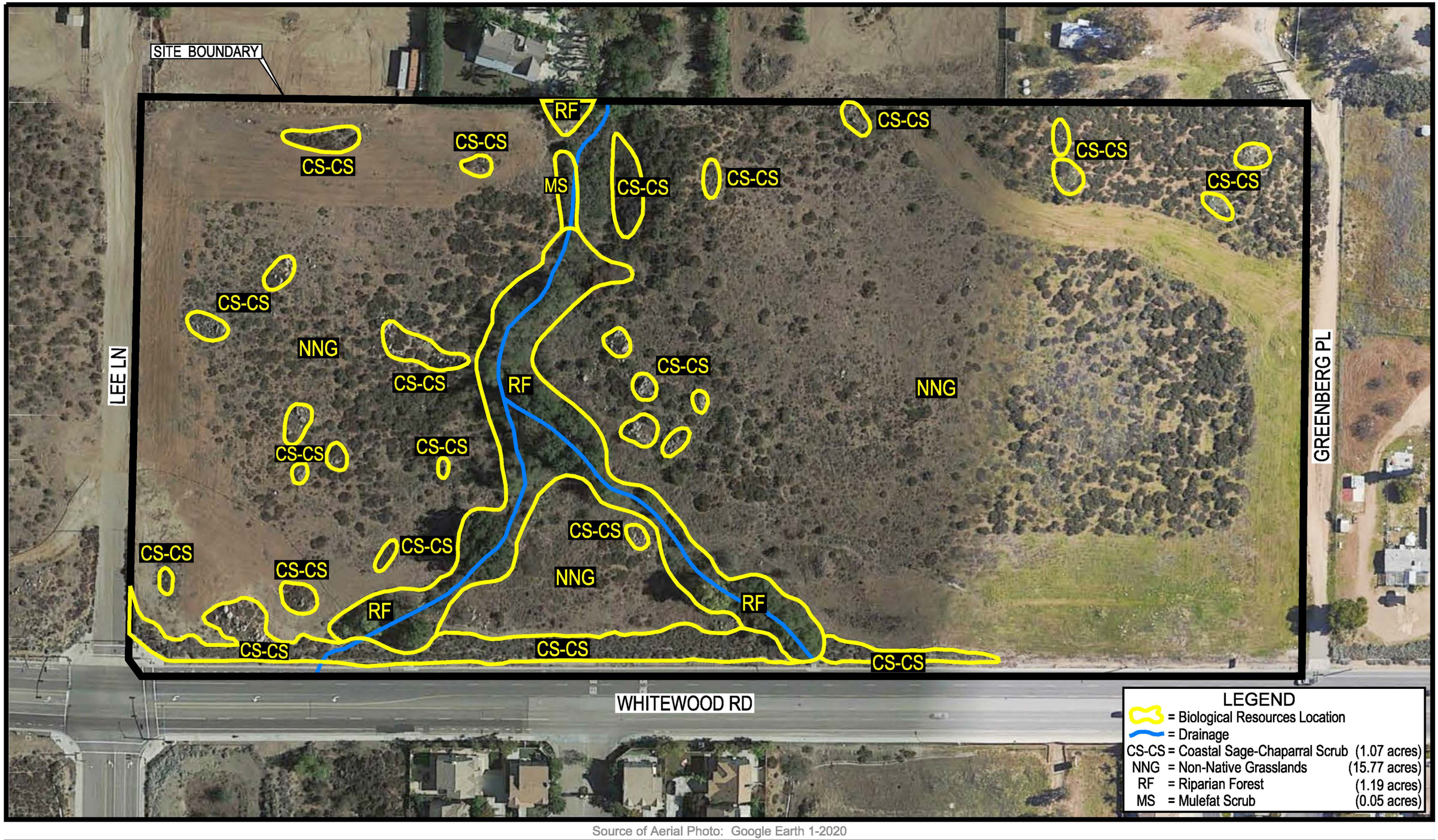
Scale: 1"= 160'

0 160 320 Feet

SOILS MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES



Source of Aerial Photo: Google Earth 1-2020

Scale: 1"= 100'

0 100 200 Feet

BIOLOGICAL RESOURCES MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES

See attached Checklist of Vascular Plant Species for a complete list of all the species identified at the site.

The **Grasslands Vegetation Association** occurs throughout most of Western Riverside County, and covers approximately 11.8% (154,421 acres) of the Plan Area. The **Grasslands Vegetation Subassociation** growing on the site is **Non-Native Grasslands**. Non-Native Grasslands occurs throughout the majority of the Plan Area (11.6%), usually within close proximity to urbanized or agricultural land uses.

15.77 acres of **Non-Native Grasslands** is growing on the site. It is dominated by invasive, non-native species, but also includes a suite of spring annuals and wildflowers that take root after the winter rains. Native resprouting Coastal Sage-Chaparral Scrub species scattered through the Non-Native Grasslands do not possess characteristics that would classify them in a recognized Vegetation Subassociation and are herein included as a component of Non-Native Grasslands. It is continuously-growing on both sides of the tributaries, forming a dense carpet in some areas.

The Non-Native Grasslands is dominated by *brome grasses (*Bromus diandrus, B. hordeaceus* and *B. madritensis* subsp. *rubens*). Other abundant ground-covering grasslands species include *Tocalote *(Centaurea melitensis),* paniculate tarplant *(Deinandra paniculata),* common fiddleneck *(Amsinckia menziesii* var. *intermedia),* *shortpod mustard *(Brassica geniculata),* and *annual bluegrass *(Poa annua).*

Of note was a relatively continuous patch of lastarriaea or leather spineflower *(Lastarriaea coriacea)* found growing in areas measuring over 5.2 acres on the site both north and south of the tributary. It is described as an uncommon and local annual herb, found mostly on open gravelly slopes in coastal sage scrub or chaparral and rarely encountered in sandy coastal patches.

Riparian Forest/Woodland/Scrub Vegetation Association subtypes are spatially distributed in drainages throughout much of Western Riverside County, and cover approximately 1.1 percent (14,545 acres) of the Plan Area. Southern Cottonwood/Willow Riparian Forest makes up the largest proportion of the riparian vegetation in the Plan Area comprising nearly one-half of the acreage (6,610 acres). Large complexes containing several of the riparian forest, woodland and scrub types are located in several portions in the Plan Area. The Temecula area supports a diversity of riparian vegetation types among urban and agricultural land uses along Temecula Creek, Sandia Canyon and portions of Wolf Valley.

Based on the description in the MSHCP, 1.19 acres of the **Riparian Forest Mapped Subassociation** is present at the site. Riparian Forest is now growing along both the unnamed tributary of Warm Springs Creek and the ephemeral stream. An aerial

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*****Denotes non-native species

Scientific nomenclature after Roberts, Jr., Fred M., Scott D. White, Andrew C. Sanders, David E. Bramlet, and Steve Boyd. 2004.

photograph from 1996 shows that only a few coast live oak *(Quercus agrifolia* var. *agrifolia)* were present on the site, and other riparian vegetation was minimal. The ephemeral stream was not yet present on the site. Currently, the Riparian Forest is mostly continuously-growing except where it is interrupted by the homeless camp. It is linear and narrow in nature, and only has a few clumps that are more than a few trees wide. The understory is a rather dense tangle of riparian and upland species. Although the habitat is not dense, it shows a moderate variability in patch size and bush height. It is now dominated by a mix of mature black willow *(Salix gooddingii),* red willow *(Salix laevigata),* western cottonwood *(Populus fremontii subsp. fremontii),* and coast live oak trees. One of the coast live oak trees has a diameter at breast height of ±65 inches.

Where the Riparian Forest opens and is no longer continuous in the eastern portion of the site, it is replaced by the ***Mulefat Scrub* Mapped Subassociation**. The 0.05 acres of Mulefat Scrub present on the site is dominated by mulefat *(Baccharis salicifolia)*. In fact, it is the sole riparian species except for one coast live oak tree. An opening in the Mulefat Scrub occurs near the site's east property line to allow access to the southern portion of the site. This open section of the Mulefat Scrub has been invaded by non-native grasses and weeds.

Wildlife Species Observed

Wildlife is relatively abundant and diverse at the site even at its location in a rapidly developing area. Most of the species observed are common and opportunistic species that inhabit and/or forage in developed areas. Species observed during all the plant and animal surveys conducted at the site between April 25 and August 4, 2021 include the western fence lizard *(Sceloporus occidentalis),* side-blotched lizard *(Uta stansburiana),* California quail *(Callipepla californica),* California red-tailed hawk *(Buteo jamaicensis),* killdeer (*Charadrius vociferus),* mourning dove *(Zenaida macroura),* greater roadrunner *(Geococcyx californianus),* Anna's hummingbird *(Calypte anna),* Nuttall's woodpecker *(Picoides nuttallii),* black phoebe *(Sayornis nigricans),* western kingbird *(Tyrannus verticalis),* common raven (*Corvus corax*), California scrub jay *(Aphelocoma californica),* wrentit *(Chamaea fasciata),* bushtit *(Psaltriparus minimus),* Bewick's wren *(Thryomanes bewickii),* northern mockingbird (*Mimus polyglottos*), California thrasher *(Toxostoma redivivum),* Wilson's warbler *(Wilsonia pusilla),* lark sparrow *(Chondestes grammacus),* California towhee *(Pipilo crissalis),* spotted towhee *(Pipilo maculatus),* song sparrow *(Melospiza melodia),* white-crowned sparrow *(Zonotrichia leucophrys),* house finch *(Carpodacus mexicanus)*, lesser goldfinch *(Carduelis psaltria),* ground squirrel *(Spermophilus beecheyi),* desert cottontail *(Sylvilagus audubonii),* and the coyote *(Canis latrans)*.

A few diagnostic animal signs were also discovered at the site. Dirt mounds indicated the presence of Botta's pocket gophers *(Thomomys bottae)*, small burrows with 2-3.25-inch openings indicated the presence of pocket mice *(Perognathus* sp.*)* and/or deer mice *(Peromyscus* sp.*)*, and nests indicated the presence of woodrats (*Neotoma* sp.).

MSHCP COMPLIANCE - NARROW ENDEMIC PLANT SPECIES AND CRITERIA AREA SPECIES SURVEYS

SURVEY METHODOLOGY

All surveys for target species were conducted in accordance with the standardized guidelines issued by the regulatory agencies (U.S. Fish and Wildlife Service 1996, California Department of Fish and Game 2000, and California Native Plant Society 2001). Botanical surveys were conducted in a manner that allowed the discovery of all target species present on the site as well as all species that have a probability of occurring in the area. Surveys were conducted at the proper times of year when the species are both evident and identifiable, and were conducted in the type(s) of habitats and habitat associations present on the site where they occur. The surveys included identifying all species observed in order to properly inventory and document the species present on the site.

Because some of the species are small and easily obscured by dense vegetation, intensive, systematic surveys were conducted to detect target species at the site. Survey transects were spaced 5 to 10 meters (16 to 33 feet) apart throughout the entire site, regardless of vegetation. Transects were stratified by topography or plant community for convenience. All areas surveyed were mapped and photographed, and the dates and times of the surveys were recorded. The observability and phenology of the target species were also recorded during the surveys.

A sufficient number of surveys were spaced throughout the known blooming periods of the species, and were floristic in nature. Thus, multiple visits to a site were deemed necessary to ensure that survey conditions have been appropriate for all potentially-occurring MSHCP listed plant species and not targeted for a single species. The surveys were conducted using systematic field techniques in all suitable growing habitats present on the site.

2021 FOCUSED SURVEYS

The 2021 focused plant surveys were conducted by Paul Principe. He has been conducting biological surveys in Riverside County since 1980. He has conducted surveys for MSHCP Narrow Endemic Plant Species in 6 of the 8 Survey Areas and in 6 of the 8 Criteria Area Species Survey Areas since 2003. The majority of the surveys have been conducted in the central and western portions of the MSHCP Plan Area.

Walk-over surveys were repeated once per month between April 26 and August 4, 2021 in an attempt to identify the targeted species at the site. Zachary Principe, a senior plant ecologist with The Nature Conservancy was consulted as needed to classify voucher specimens down to the species taxonomic level. Since 1994, he has been conducting biological surveys at the Santa Rosa Plateau and the Santa Margarita River Ecological Reserves, and and is now involved with these reserves at the management level. Both Paul and Zachary Principe have seen the target species growing in their natural habitats.

Following are the number and dates of surveys, start and stop times of surveys and the weather conditions at the beginning and end of each survey (shaded temperature in degrees Fahrenheit includes the wind chill factor, and wind speed in miles per hour is given as the range measured over a few moments with a Kestrel ® 2000):

1. April 26, 2021: Cloudy, 57°F, 1-2 mph winds (1000 hours)
Cloudy, 57°F, 2-3 mph winds (1130 hours)

2. May 10, 2021: Mostly cloudy, 64°F, 1-2 mph winds (1120 hours)
Mostly clear, 69°F, 2-3 mph winds (1300 hours)

3. June 8, 2021: Mostly cloudy, 62°F, 2-3 mph winds (0850 hours)
Partly cloudy, 64°F, 2-3 mph winds (1020 hours)

4. July 2, 2021: Mostly clear, 68°F, 0-1 mph winds (0730 hours)
Mostly clear, 78°F, 0-1 mph winds (0900 hours)

5. August 4, 2021: Clear, 72°F, 0-1 mph winds (0730 hours)
Clear, 80°F, 0-1 mph winds (0900 hours)

PRECIPITATION DATA:

The above surveys were conducted during the end of the rainy season beginning on July 1, 2020 and ending on June 30, 2021 and continued into the following rainy season beginning on July 1, 2021 and ending on June 30, 2022.

Between July 1, 2020 and April 25, 2021, the local monitoring station located closest to the site in Murrieta had recorded a total of 5.64 inches of precipitation. The plant surveys were then conducted between April 26 and August 4, 2021. A total of 0.44 inches of precipitation was recorded during this period of time. The total amount of precipitation that had an effect on the growth and development of the plant life at the site was 6.08 inches. To date, this was one of the driest rainy seasons since the 2017-2018 rainy season that recorded 4.9 inches of precipitation.

Based on the abundance and diversity of the wildflowers identified approximately 1,000 feet north of the site during the months of March and April, it appears that precipitation was adequate for germination and growth this year, as well as to confirm current phenology of the target species. Plants began germinating in March 2021. The growth and blooming season continued through July 2021. By August 4, 2021, the season was over.

FOCUSED SURVEYS

MSHCP NARROW ENDEMIC PLANT SPECIES

Based on the RCA MSHCP Information Map Conservation Description, the site is located in the Roughstep 6 (HMU – Menifee) Narrow Endemic Plant Survey Area. The six Narrow Endemic Plant Species listed for Roughstep 6 include Munz's onion *(Allium munzii),* San Diego ambrosia *(Ambrosia pumila),* many-stemmed dudleya *(Dudleya multicaulis),* spreading navarretia *(Navarretia fossalis),* California Orcutt grass *(Orcuttia californica),* and Wright's trichocoronis *(Trichocoronis wrightii var. wrightii).*

Focused surveys were conducted for the following four Narrow Endemic Plant Species:

Munz's Onion

Munz's onion has been designated in the MSHCP as a Group 3 species because of its limited geographic distribution in Riverside County and specialized habitat requirements.

Munz's onion is a Federal-listed Endangered Species, a State-listed Threatened Species and a CNPS List 1B Species. It is on the MSHCP Narrow Endemic Plant Species list (Section 6.1.3 of the MSHCP), and surveys for Munz's onion will be conducted as part of the project review process for public and private projects within the Narrow Endemic Plant Species Survey Area where suitable habitat is present. Munz's onion located as a result of survey efforts shall be conserved in accordance with procedures described within Section 6.1.3 of the MSHCP (Volume 1).

Munz's onion is a perennial geophyte; a plant originating from a bulb. It blooms from April through May, producing white or pinkish flowers. The capsules are 3-4 millimeters long, and the seeds are about 2 millimeters long. It is well adapted to summer drought and varied amounts of rainfall from year to year. Flowering appears to be correlated to early rains in the late fall and early winter. When rainfall is plentiful, most plants within a population bloom. When rainfall is light, many plants sprout leaves but few flower.

Munz's onion is found on mesic exposures or seasonally moist microsites in grassy openings in coastal sage scrub, chaparral, juniper woodland, and valley and foothill grasslands from 300 to 1,000 meters in elevation associated with clay and cobbly clay soils belonging to the following Soil Series: Altamont, Auld, Bosanko, Claypit, and Porterville. At least one population (Bachelor Mountain) is reported to be associated with pyroxenite outcrops instead of clay.

Munz's onion is endemic to southwestern Riverside County. This species is restricted to heavy clay soils which are scattered in a band several miles wide and extending some 40 miles southeast from Corona through Temescal Canyon and along the Elsinore Fault Zone to the southwestern foothills of the San Jacinto Mountains from 300 to 1,000 meters in elevation. The species has a scattered distribution (Estelle Mountain and the Gavilan Plateau at Harford Springs Park southeast through the hills north of Lake Elsinore, to the

Palomar Valley, Skunk Hollow, and Lake Skinner area). Munz's onion is known from 15 extant populations distributed primarily in the western and southern areas of the Plan Area. The critical populations for this species (in order of importance) include Elsinore Peak in the Santa Ana Mountains, Harford Springs in the Gavilan Hills, Bachelor Mountain, Temescal Terrace/Indian Truck Trail, North Peak, and the North Domenigoni Hills.

Findings:
Required growing habitats including mesic exposures or seasonally moist microsites in grassy openings in coastal sage scrub, chaparral, juniper woodland, and valley and foothill grasslands from 300 to 1,000 meters in elevation associated with clay and cobbly clay soils are not present on the site. Munz's onion was not identified in the clay soil present in the northern portion of the site during the 2021 focused surveys conducted there during the blooming period for this species (April and May).

San Diego Ambrosia

San Diego ambrosia has been designated In the MSHCP as a Group 3 species because of its limited geographic distribution, and specialized habitat and management requirements.

San Diego ambrosia is a Federal-listed Endangered Species, but has no State-listing status. Additionally, it is a CNPS List 1B Species. It is on the MSHCP Narrow Endemic Plant Species list (Section 6.1.3 of the MSHCP), and surveys for San Diego ambrosia will be conducted as part of the project review process for public and private projects within the Narrow Endemic Plant Species Survey Area where suitable habitat is present. San Diego ambrosia located as a result of survey efforts shall be conserved in accordance with procedures described within Section 6.1.3 of the MSHCP (Volume 1).

San Diego ambrosia is a clonal, perennial herb in the Sunflower Family *(Asteraceae).* It is an herbaceous species with finely dissected leaves and single-seeded fruit. Sexual reproduction and seed-set are not considered to be common in this taxon, suggesting that propagation and dispersal by seed is limited. Propagation is primarily through extensions of rhizomes (underground stems) indicating that each population could be a single plant and restricted to the immediate appropriate habitat. Flowers are generally present from June through September. Because San Diego ambrosia is one of the few members of the Ambrosia genus that do not have armed involucral bracts, it is less likely to disperse seeds by attaching to animals. Ambrosia species are probably primarily wind pollinated but other vectors (e.g. crawling insects) may play a role. Because pollen is contained in the downward facing male flower and is positioned above female flowers, San Diego ambrosia is probably to a large extent self-pollinating.

San Diego ambrosia occurs in open floodplain terraces or in the watershed margins of vernal pools. This species occurs in a variety of associations that are dominated by sparse non-native grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas. The extant Riverside County localities are found on Garretson gravelly fine sandy loams when in association with floodplains, and on Las Posas loam in close

proximity to silty, alkaline soils of the Willows Soils Series at Skunk Hollow. San Diego ambrosia generally occurs at low elevations, generally less than 500 meters, in the Riverside populations

Only three populations are known from Riverside County; all are located in the Riverside Lowlands Bioregion. The two largest populations occur in the vicinity of Alberhill. The first occurs both north and south of Nichols Road, west of Interstate 15 and Alberhill Creek; the second is located east of Lake Street, immediately south of Interstate 15. A third, and smaller, population is found at Skunk Hollow. All three are considered to be core locations. At the Alberhill and Nichols Road sites, San Diego ambrosia is found in ruderal habitat and open non-native grassland on Garretson gravelly fine sandy loam soil. Both populations are within floodplain areas associated with Alberhill Creek. At Skunk Hollow, however, San Diego ambrosia occurs in non-native grassland a short distance west of the Skunk Hollow vernal pool. There, the underlying soil is Las Posas loam.

Findings:
Required growing habitats including open floodplain terraces or watershed margins of vernal pools dominated by sparse non-native grasslands or ruderal habitat in association with river terraces, vernal pools, and alkali playas are not present on the site. San Diego ambrosia was not identified during the 2021 focused surveys conducted at the site during the blooming period for this species (June through August).

Many-Stemmed Dudleya

Many-stemmed dudleya has been designated in the MSHCP as a Group 3 species because of its limited geographic distribution in Riverside County, and its specialized habitat requirements. Populations in Riverside County are concentrated within the Santa Ana Mountains Bioregion and the western portion of the Riverside Lowlands Bioregion.

Many-stemmed dudleya has no Federal or State status, but is a CNPS List 1B Species and a Forest Service Sensitive Species. It is also on the Narrow Endemic Plant Species list (Section 6.1.3 of the MSHCP), and surveys will be conducted as part of the project review process for public and private projects within the Narrow Endemic Plant Species Survey Area where suitable habitat is present. Many-stemmed dudleya located as a result of survey efforts shall be conserved in accordance with procedures described within Section 6.1.3 of the MSHCP.

Many-stemmed dudleya is a small, vernal succulent perennial that originates from a subsurface corm. It generally produces yellow flowers in May and June after extended periods of rains, then dies back and uses the dead outer layers to form a protective coating that reduces water loss. Only the corm remains filled with water (and starch), thus allowing the plant to survive extended dry periods. By late August, there is nothing left to identify on the surface. It appears that this species only thrives in relatively sparse vegetated habitats.

Many-stemmed dudleya is often associated with clay soils in barrens, rocky places and ridgelines. The majorities of the populations are associated with coastal sage scrub or

sparsely vegetated openings in chaparral, coastal sage scrub and southern needlegrass grassland underlain by clay and cobbly clay soils belonging to the Altamont, Bosanko, Claypit, and/or Porterville Series. Core populations occur at Estelle Mountain, Alberhill, Temescal Canyon, Gavilan Hills, and the Santa Ana Mountains in western Riverside County.

Findings:
Required growing habitats including clay soils in barrens, rocky places and ridgelines associated with coastal sage scrub or sparsely vegetated openings in chaparral, coastal sage scrub and southern needlegrass grassland underlain by clay and cobbly clay soils are not present at the site. Many-stemmed dudleya was not identified in the clay soil present in the northern portion of the site during the 2012 focused surveys conducted there during the blooming period for this species (May and June).

Wright's trichocoronis

Wright's trichocoronis has been designated as a Group 3 species In the MSHCP because of its limited geographic distribution, specialized habitat requirements and management requirements for floodplain processes.

Wright's trichocoronis has no Federal or State listing status, but is a CNPS List 2 Species. It is also on the Narrow Endemic Plant Species list (Section 6.1.3 of the MSHCP), and surveys for Wright's trichocoronis will be conducted as part of the project review process for public and private projects within the Narrow Endemic Plant Species Survey Area where suitable habitat is present. Wright's trichocoronis located as a result of survey efforts shall be conserved in accordance with procedures described within Section 6.1.3 of the MSHCP (Volume 1).

Wright's trichocoronis is a low (<30 centimeters tall), slightly succulent subaquatic annual belonging to the Sunflower Family (*Asteraceae*). It is included in largely a tropical group of asters that are poorly represented in California. It is sometimes treated as an introduced species because it also occurs in western Texas and Chihuahua, Mexico. It blooms from May to September, and produces 75-125 flowers per flower head. Its small, dry and hard one-seeded fruit (achene) are one millimeter long.

Wright's trichocoronis is primarily restricted to the alkali floodplains of the San Jacinto River in association with soils belonging to the Traver-Domino-Willow Soils Association. It is found in alkali vernal plains, and is associated with alkali playa, alkali annual grassland and alkali vernal pool habitats. This species is known only from four locations along the middle segment of the San Jacinto River, the vicinity of the Ramona Expressway, the San Jacinto Wildlife Area, and along the northern shore of Mystic Lake.

The historic range of Wright's trichocoronis includes the Great Valley of central California, western Riverside County, and the Edwards Plateau of central Texas and adjacent Mexico. However, Wright's trichocoronis appears to be extirpated from central California and the California plants may represent a distinct species from the plants of Texas and north central Mexico. This species is known only from four locations along the San

Jacinto River from the vicinity of the Ramona Expressway and San Jacinto Wildlife Area and along the northern shore of Mystic Lake. Only two locations on either side of the Ramona Expressway have been seen in recent years. This species may have once occurred at Salt Creek and possibly in the alkali wetlands near Nichols Road in the vicinity of Lake Elsinore. Both of the known locations (middle segment of the San Jacinto River and the San Jacinto Wildlife Area) are core locations.

Findings:
Required growing habitats including the alkali floodplains of the San Jacinto River in association with soils belonging to the Traver-Domino-Willow Soils Association or alkali vernal plains associated with alkali playa, alkali annual grassland and alkali vernal pool habitats are not present at the site. Wright's trichocoronis was not identified during the 2021 focused surveys conducted at the site during the blooming period for this species (May through August).

CONCLUSION

During the 2021 survey season, targeted Narrow Endemic Plant Species were not identified. The potential for Narrow Endemic Plant Species to occur on the site has been reduced over the years due to vegetation removal by heavy equipment. Large areas of the site where the native sage-scrub vegetation was removed have been succeeded by invasive, non-native species. These species now form a relatively continuous and dense cover in those areas. Also, the clay soils present in the northern portion of the site have been disturbed by grading and road construction.

As the surveys were conducted in accordance with the standardized guidelines issued by the regulatory agencies, results of the surveys provide reasonable evidence that the target Narrow Endemic Plant Species do not occur on the site.

MSHCP CRITERIA AREA SPECIES

Based on the RCA MSHCP Information Map Conservation Description, the site is located in the Roughstep 6 (HMU – Menifee) Criteria Area Survey Area. The eight Criteria Area Species include Parish's brittlescale *(Atriplex parishii),* Davidson's saltscale *(Atriplex serenana* var. *davidsonii),* thread-leaved brodiaea *(Brodiaea filifolia),* round-leaved filaree *(Erodium macrophyllum),* smooth tarplant *(Centromadia pungens),* Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri),* little mousetail *(Myosurus minimus),* and mud nama *(Nama stenocarpum)*.

Focused surveys were conducted for the following two Criteria Area Species:

Thread-Leaved Brodiaea
Thread-leaved brodiaea has been designated as a Group 3 species In the MSHCP because of its limited geographic distribution and specialized habitat requirements and management requirements for floodplain processes.

Thread-leaved brodiaea is a State Endangered Species, a Federal Threatened Species and a CNPS List 1B Species. It is also on the Additional Survey Needs and Procedures list (Section 6.3.2 of the MSHCP), and surveys for thread-leaved brodiaea will be conducted as part of the project review process for public and private projects within the Criteria Area where suitable habitat is present. Thread-leaved brodiaea located as a result of survey efforts shall be conserved in accordance with procedures described within Section 6.3.2 of the MSHCP (Volume 1).

Thread-leaved brodiaea is a member of the Lily Family (*Liliaceae*). It blooms from March through June. The bell-shaped flowers are violet in color. Its growth cycle begins with the above-ground appearance of a few grass-like leaves from each corm. The corms function similarly to bulbs in storing water and nutrients during the dormant season. Individuals require several years to mature, and frequently only a fraction of the mature individuals flower in a given year.

Thread-leaved brodiaea typically occurs on gentle hillsides, valleys and floodplains in semi-alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native and non-native grassland, and alkali grassland plant communities in association with clay or alkaline silty clay soils. This species occurs from near sea level to 600 meters in elevation. Localities occupied by this species are frequently intermixed with or near vernal pool complexes, such as at the Santa Rosa Plateau and in the Upper Salt Creek drainage southwest of Hemet.

Thread-leaved brodiaea is endemic to southwestern cismontane California, ranging from the foothills of the San Gabriel Mountains at Glendora (Los Angeles County), east to Arrowhead Hot Springs in the western foothills of the San Bernardino Mountains (San Bernardino County), and south through eastern Orange and western Riverside Counties to Carlsbad and just south of Lake Hodges in northwestern San Diego County. 39 populations are still presumed extant. Nearly half of these remaining populations are clustered in the Cities of Vista, San Marcos and Carlsbad in San Diego County, and on the Santa Rosa Plateau in Riverside County. Twelve populations of thread-leaved brodiaea are known from western Riverside County along the San Jacinto River in Nuevo, Perris, and the San Jacinto Wildlife Area; along Salt Creek; on the Santa Rosa Plateau; and, west of the Santa Rosa Plateau (Squaw Mountain and Redondo Mesa). These populations are primarily clustered into two complexes: one along the San Jacinto River near Perris and Lakeview, and the other on the Santa Rosa Plateau. The core locations of thread-leaved brodiaea in the Plan Area are located on the Santa Rosa Plateau and along the San Jacinto River just southwest of Mystic Lake, between Perris and Canyon Lake.

Findings:
Required growing habitats including gentle hillsides, valleys and floodplains in semi-alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native and non-native grassland, and alkali grassland plant communities in association with clay or alkaline silty clay soils are not present at the site. Thread-leaved brodiaea was not

identified in the clay soil present in the northern portion of the site during the 2021 focused surveys conducted there during the blooming period for this species (March through June).

Round-Leaved Filaree

Round-leaved filaree has been designated in the MSHCP as a Group 3 species in the MSHCP because of its specialized habitat and soils requirements, and somewhat limited distribution (from the Gavilan Hills southeast to the foothills of the Agua Tibia Mountains) within the Plan Area.

Round-leaved filaree has no Federal or State status, but is a CNPS List 2 Species. It is also a species on the "Additional Survey Needs and Procedures list (Section 6.3.2 of the MSHCP), and surveys will be conducted as part of the project review process for public and private projects within the Criteria Area where suitable habitat is present. Round-leaved filaree located as a result of survey efforts shall be conserved in accordance with procedures described within Section 6.3.2 of the MSHCP.

Round-leaved filaree is one of the two native species in the genus *Erodium*, which belongs to the Geranium Family (*Geraniaceae*). It is an annual/biennial herb that is generally scapose, and has a stem typically less than 5 centimeters tall. It is puberulent to glandular-pubescent, and the peduncles are sub-basal and 10-30 centimeters long. It blooms from March through May. The white flowers are generally white-colored, tinged red or purple and 10-16 millimeters long. The body of the fruit is approximately 8-10 millimeters long with a truncated tip.

Round-leaved filaree is restricted to open cismontane woodland and valley and foothill grassland habitats on very friable clay soils between 15-2000 meters in elevation. Within the Plan Area, two of the mapped localities occur on Bosanko clay soils. Records indicate that this species tends to be associated with wild oats *(Avena fatua).*

Round-leaved filaree occurs in San Diego County, but also extends north to Santa Barbara County. It also occurs on Santa Cruz Island and in San Luis Obispo County. In Riverside County, this species extends to the south of Lake Mathews, as well as on the south flank of Alberhill Mountain. This species is primarily known from five records in the Gavilan Hills, one record at Lake Mathews, one at Diamond Valley Lake, one along Temescal Wash near Lee Lake, one in French Valley, and one in the foothills of the Agua Tibia Mountains.

Findings:

Required growing habitats including open cismontane woodland and valley and foothill grassland habitats on very friable clay soils are not present at the site. Round-leaved filaree was not identified in the clay soil present in the northern portion of the site during the 2021 focused surveys conducted there during the blooming period for this species (March through May).

CONCLUSION

During the 2021 survey season, targeted Criteria Area Species were not identified. The potential for Criteria Area Species to occur on the site has been reduced over the years due to vegetation removal by heavy equipment. Large areas of the site where the native sage-scrub vegetation was removed have been succeeded by invasive, non-native species. These species now form a relatively continuous and dense cover in those areas. Also, the clay soils present in the northern portion of the site have been disturbed by grading and road construction.

As the surveys were conducted in accordance with the standardized guidelines issued by the regulatory agencies, results of the surveys provide reasonable evidence that the target Criteria Area Species do not occur on the site.

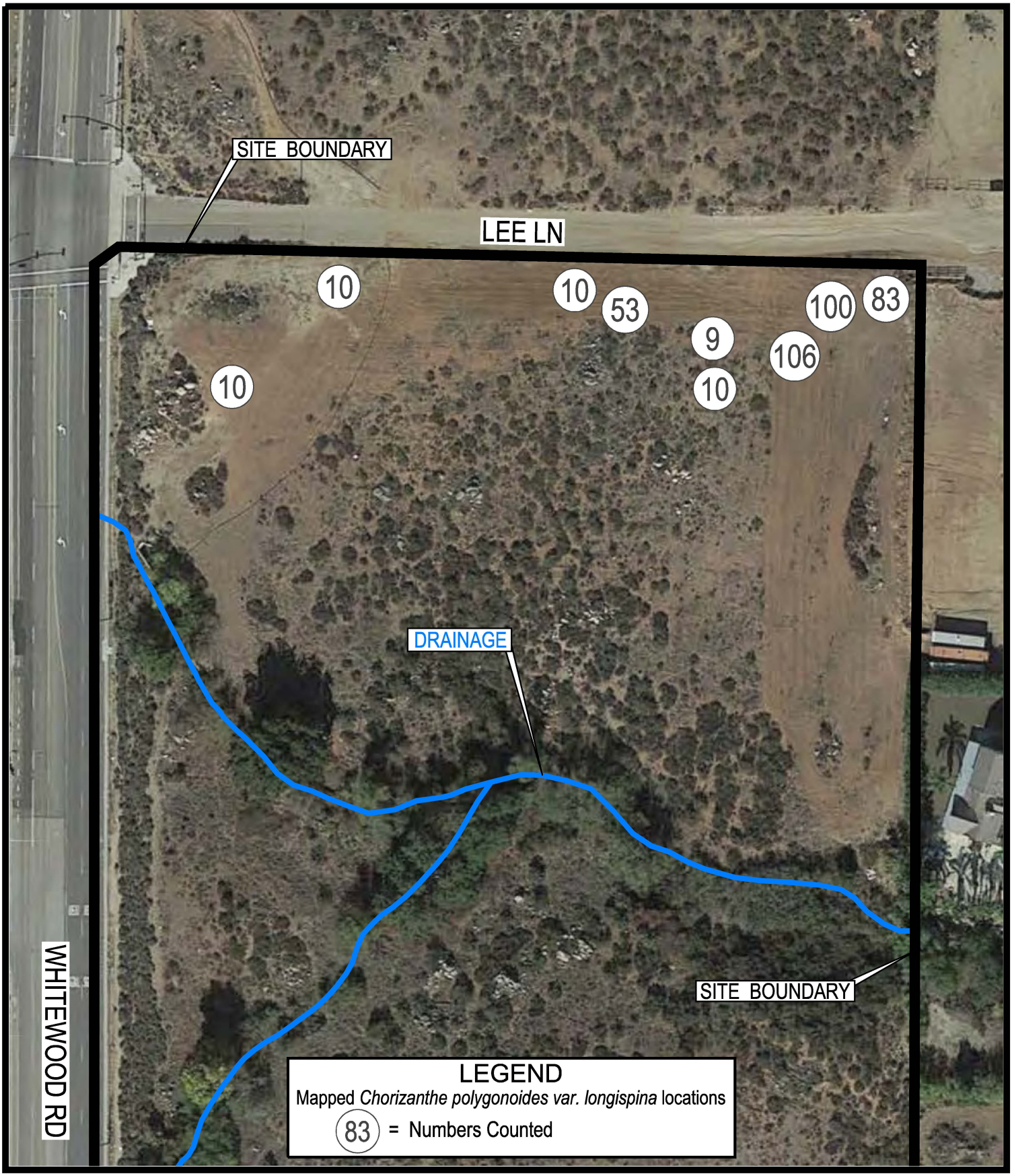
MSHCP COVERED PLANT SPECIES

One MSHCP Covered Plant Species, long-spined spineflower *(Chorizanthe polygonoides* var. *longispina)*, was identified at the site. This prostrate to decumbent annual herb is an annual species of small stature (1 to 5 cm high and 3 to 25 cm across). A small population of 391 individuals were counted and mapped at the site **(Long-Spined Spineflower Map)**.

Long-spined spineflower is a California Native Plant Society List 1B.2 Species (RED Code 2-2-2). It has no State or Federal listing status. It is designated in the MSHCP as a Group 2 species because of its fairly wide distribution within specific soil restrictions and the presence of two core locations. The MSHCP assessment indicates that long-spined spineflower can be conserved at the landscape level. Therefore, conserving large blocks of Public/Quasi-Public Lands which contain suitable habitat will probably capture occurrences in addition to the known conserved occurrences.

MSHCP Conservation Area configuration provides for conservation of the majority of potential habitat for the species and provides linkages of habitat conservation between Core Areas. The two core locations for this species are at Lake Matthews and in the Agua Tibia Mountains. The known and potential locations for this species are within areas with large blocks of conserved habitat (Lake Mathews, Vail Lake, Santa Rosa Plateau, Santa Ana Mountains, San Jacinto Mountains and Agua Tibia Mountains). Large blocks of habitat will protect this species from edge effects, provide the species the potential to expand into suitable habitat, and allow for pollination to occur, if pollinators are important in the reproductive cycle of this species.

Conservation for this species will be achieved by inclusion of at least 389,510 acres of suitable Conserved Habitat and at least 57 known occurrences at 15 locations (including the core localities at Lake Mathews and the Agua Tibia Mountains) within large blocks of habitat at Lake Mathews, Vail Lake, Santa Rosa Plateau, Santa Ana Mountains, San Jacinto Mountains and Agua Tibia Mountains in the MSHCP Conservation Area



Source of Aerial Photo: Google Earth 1-2020

Scale: 1"= 100'

0 100 200 Feet

LONG-SPINED SPINEFLOWER MAP

DP 2021-2347

PRINCIPE AND ASSOCIATES

MSHCP CONSIDERATIONS

Within identified Narrow Endemic Plant Species and Criteria Area Species survey areas, site-specific focused surveys for targeted species were completed for a private project where appropriate habitat is present. Therefore, focused surveys were necessary to ensure compliance with Section 6.1.3 and Section 6.3.2 of the MSHCP, and the California Environmental Quality Act (CEQA). With completion of these surveys, the proposed project is consistent with Sections 6.1.3 and 6.3.2 of the MSHCP and CEQA.

Conservation for the long-spined spineflower will be achieved by inclusion of at least 389,510 acres of suitable Conserved Habitat and at least 57 known occurrences at 15 locations in the MSHCP Conservation Area. The small population identified at the site is not located within an area with a large block of conserved habitat, within one of the two core locations for this species at Lake Matthews and in the Agua Tibia Mountains, or within a linkage of habitat conservation between Core Areas

CALIFORNIA NATURAL DIVERSITY DATABASE HISTORICAL INFORMATION REGARDING THE PRESENCE OF THE TARGETED PLANT SPECIES ON THE SITE

The California Natural Diversity Database (CNDDB) for the Bachelor Mountain, California Quadrangle includes six occurrence records of targeted species within 1-2 miles of the site. There is one occurrence record for Munz's onion. About 1,000 plants were seen in 1992 on rocky clay soil less than two miles northwest of the site. One Parry's spineflower record and four long-spined spineflower records were from less than 3,900 feet north and south of the site. One spreading navarretia occurrence record was from five miles away.

CERTIFICATION STATEMENT

Date: August 9, 2021

I hereby certify that the statements furnished herein and in the attached exhibits present the data and information required to complete this MSHCP Narrow Endemic and Criteria Area Plant Species Focused Surveys report to the best of my ability, and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Paul A. Principe

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PRINCIPE AND ASSOCIATES
Paul A. Principe
Principal

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CHECKLIST OF VASCULAR PLANT SPECIES

GROUP FAMILY	*Species*	COMMON NAME	HABITATS

ANGIOSPERMAE - DICOTS

ADOXACEAE – ELDERBERRY FAMILY

	Sambucus mexicana	MEXICAN ELDERBERRY NNG, RF

ANACARDIACEAE – SUMAC FAMILY

	Daucus pusillus	RATTLESNAKE WEED CS-CS, NNG
	Rhus trilobata	SKUNK BUSH CS-CS
	**Schinus molle*	PERUVIAN PEPPER TREE RF
	Toxicodendron diversilobum	POISON OAK CS-CS, RF

APIACEAE (UMBELLIFERAE) – CARROT FAMILY

	Apiastrum angustifolium	MOCK PARSLEY CS-CS

ASCLEPIADACEAE – MILKWEED FAMILY

	Funastrum cynanchoides	HARTWEG'S MILKVINE CS-CS

ASTERACEAE – SUNFLOWER FAMILY

	Acourtia microcephala	SACAPEPPOTE NNG
	Ambrosia psilostachya var. *californica*	WESTERN RAGWEED RF
	**Anthemis cortula*	DOG MAYWEED NNG
	Artemisia californica	COASTAL SAGEBRUSH CS-CS
	Baccharis pilularis subsp. consanguinea	COYOTE BRUSH RF
	Baccharis salicifolia	MULE FAT MS, RF
	**Carduus pycnocephalus*	ITALIAN THISTLE RF
	**Centaurea melitensis*	TOCALOTE NNG
	**Conyza canadensis*	COMMON HORSEWEED NNG
	Deinandra paniculata	PANICULATE TARPLANT NNG
	Erigeron foliosus var. foliosus	LEAFY DAISY CS-CS
	Encelia farinosa	BRITTLEBUSH CS-CS
	Eriophyllum confertiflorum var. *confertiflorum*	LONG-STEMMED GOLDEN YARROW CS-CS
	Eriophyllum multicaule	MANY-STEMMED WOOLLY DAISY CS-CS
	Filago californica	CALIFORNIA FILAGO NNG
	Gnaphalium californicum	CALIFORNIA EVERLANSTING CS-CS
	Gnaphalium luteo-album	WEEDY CUDWEED NNG
	Gnaphalium stramineum	COTTON-BATTING PLANT CS-CS
	Gutierrezia californica	CALIFORNIA MATCHWEED NNG
	Helianthus annuus	WESTERN SUNFLOWER RF
	Helianthus gracilentus	SLENDER SUNFLOWER NNG
	**Lactuca serriola*	PRICKLY LETTUCE NNG
	Microseris lindleyi	SILVER PUFFS NNG
	**Oncosiphon piluliferum*	STINK-NET NNG
	**Senecio vulgaris*	COMMON GROUNDSEL NNG

FAMILY *Species* COMMON NAME	HABITATS
**Sonchus asper* PRICKLY SOW-THISTLE	NNG
Stephanomeria virgata subsp. *virgata* VIRGATE WREATH-PLANT	CS-CS, NNG
BORAGINACEAE – BORAGE FAMILY	
Amsinckia menziesii var. *intermedia* COMMON FIDDLENECK	CS-CS, NNG
Cryptantha intermedia COMMON CRYPTANTHA	NNG
Cryptantha micromeres MINUTE-FLOWERED CRYPTANTHA	NNG
Heliotropium curassavicum ALKALI HELIOTROPE	NNG
Plagiobothrys canescens VALLEY POPCORN-FLOWER	NNG
BRASSICACEAE (CRUCIFERAE) – MUSTARD FAMILY	
**Brassica geniculata* SHORTPOD MUSTARD	CS-CS, NNG
CACTACEAE – CACTUS FAMILY	
*Cylindropuntia californi*a VALLEY CHOLLA	CS-CS
CHENOPODIACIAE – GOOSEFOOT FAMILY	
Atriplex canescens subsp. *canescens* FOURWING SALTBUSH	CS-CS
**Chenopodium album* LAMB'S QUARTERS	NNG
**Salsola tragus* RUSSIAN THISTLE	NNG
CONVOLVULACEAE – MORNING-GLORY FAMILY	
Calystegia macrostegia subsp. *tenuifolia* NARROW-LEAVED MORNING GLORY	NNG
CRASSULACEAE – STONECROP FAMILY	
Crassula connata SAND PIGMY-STONECROP	NNG
CUCURBITACEAE – GOURD FAMILY	
Marah macrocarpus var. macrocarpus WILD CUCUMBER	CS-CS, NNG
EUPHORBIACEAE – SPURGE FAMILY	
Croton setiger DOVEWEED	NNG
FABACEAE (LEGUMINOSAE) – PEA FAMILY	
Lotus hamatus GRAB LOTUS	NNG
**Lotus purshianus* SPANISH CLOVER	NNG
Lotus scoparius subsp. *scoparius* COASTAL DEERWEED	CS-CS, NNG
Lupinus bicolor subsp. *microphyllus* MINIATURE LUPINE	NNG
**Melilotus indicus* SOURCLOVER	MS, NNG, RF
FAGACEAE – OAK FAMILY	
Quercus agrifolia var. *agrifolia* COAST LIVE OAK	RF
Quercus berberidifolia CALIFORNIA SCRUB OAK	RF
GERANIACEAE – GERANIUM FAMILY	
**Erodium botrys* LONG-BEAK FILAREE	NNG
**Erodium cicutarium* RED-STEMMED FILAREE	NNG

FAMILY *Species* COMMON NAME	HABITATS
HYDROPHYLLACEAE – WATERLEAF FAMILY	
Emmenanthe penduliflora var. *penduliflora* WHISPERING BELLS	NNG
Phacelia cicutaria subsp. hispida CATERPILLAR PHACELIA	CS-CS
Phacelia minor WILD CANTERBURY-BELL	CS-CS
Phacelia ramosissima var. *latifolia* BRANCHING PHACELIA	CS-CS
LAMIACEAE – MINT FAMILY	
***Marrubium vulgar* COMMON HOREHOUND	NGG
Salvia columbariae CHIA	CS-CS, NNG
Salvia mellifera BLACK SAGE	CS-CS
MALVACEAE – MALLOW FAMILY	
**Malva parviflora* CHEESEWEED	NNG
ONAGRACEAE – EVENING PRIMROSE FAMILY	
Camissonia strigulosa STRIGULOSE EVENING PRIMROSE	NNG
POLEMONIACEAE – PHLOX FAMILY	
Gilia angelensis LOS ANGELES GILIA	NNG
Eriastrum sapphirinum SAPPHIRE WOLLY-STAR	NNG
Navarretia hamata subsp. *leptantha* SOUTHERN HOOKED SKUNKWEED	NNG
POLYGONACEAE – BUCKWHEAT FAMILY	
Chorizanthe polygonoides var. longispina LONG-SPINED SPINEFLOWER	NNG
Chorizanthe staticoides TURKISH RUGGING	NNG
Eriogonum fasciculatum subsp. *foliolosum* INTERIOR CALIFORNIA BUCKWHEAT	CS-CS, NNG
Eriogonum gracile var. *incultum* SMOOTH-STEMMED SLENDR BUCKWHEAT	NNG
Lastarriaea coriacea LASTARRIAEA	NNG
**Rumex crispus* CURLY DOCK	RF
PORTULACACEAE – PURSLANE FAMILY	
Claytonia perfoliata subsp. *perfoliata* COMMON MINER'S LETTUCE	RF
RHAMNACEAE – BUCKTHORN FAMILY	
Ceanothus crassifolius var. *crassifolius* THICK-LEAVED LILAC	CS-CS
ROSACEAE – ROSE FAMILY	
Adenostoma fasciculatum CHAMISE	CS-CS
Prunus ilicifolia HOLLY-LEAVED CHERRY	CS-CS
***RUBIACEAE – MADDER* FAMILY**	
Gallium angustifolium subsp. *angustifolium* NARROW-LEAVED BEDSTRAW	CS-CS
SALICACEAE – WILLOW FAMILY	
Populus fremontii subsp. *fremontii* WESTERN COTTONWOOD	RF
Salix exigua NARROW-LEAVED WILLOW	RF

FAMILY *Species* COMMON NAME	HABITATS
Salix gooddingii BLACK WILLOW	RF
Salix laevigata RED WILLOW	RF
Salix lasiolepis var. *lasiolepis* ARROYO WILLOW	RF
SCROPHULARIACEAE – FIGWORT FAMILY	
Mimulus guttatus SEEP MONKEY FLOWER	MS, RF
SOLANACEAE – NIGHTSHADE FAMILY	
Datura wrightii JIMSONWEED	CS-CS, NNG
**Nicotiana glauca* TREE TOBACCO	CS-CS, RF
Nicotiana quadrivalvis WALLACE'S TOBACCO	NNG
**Solanum elaeagnifolium* SILVERLEAF NIGHTSHADE	CS-CS, NNG
Solanum xanti CHAPARRAL NIGHTSHADE	CS-CS, NNG
TAMARICACEAE – TAMARISK FAMILY	
**Tamarix ramosissima* MEDITERRANEAN TAMARISK	RF
URTICLACEAE – NETTLE FAMILY	
Urtica dioica subsp. *holosericea* HOARY NETTLE	CS-CS, RF
**Urtica urens* DWARF NETTLE	CS-CS, RF

MONOCOTYLEDONES – MONOCOTS

LILIACEAE – LILY FAMILY	
Calochortus splendens SPLENDID MARIPOSA LILY	CS-CS, NNG
Calochortus weedii weedii WEED'S MARIPOSA LILY	CS-CS, NNG
POACEAE – GRASS FAMILY	
**Avena barbata* SLENDER WILD OAT	NNG
**Bromus diandrus* COMMON RIPGUT GRASS	NNG
**Bromus hordeaceus* SOFT CHESS	NNG
**Bromus madritensis* subsp. *rubens* RED BROME	NNG
**Cynodon dactylon* BERMUDA GRASS	NNG
Elymus condensatus GIANT WILDRYE	NNG
**Poa annua* ANNUAL BLUEGRASS	NNG
**Polypogon monspeliensis* ANNUAL BEARD GRASS	RF
**Schismus barbatus* MEDITERRANEAN SCHISMUS	NNG
Stipa cernua NODDING NEEDLEGRASS	CS-CS, NNG
**Vulpia myuros* var. *myuros* RATTAIL FESCUE	CS-CS, NNG
THEMIDACEAE – BRODIAEA FAMILY	
Dichelostemma pulchellum var. *pulchellum* BLUE-DICKS	CS-CS, NNG
TYPHACEAE – CAT-TAIL FAMILY	
Typha latifolia BROAD-LEAVED CAT-TAIL	MS, RF

HABITATS:

CS-CS = COASTAL SAGE-CHAPARRAL SCRUB

MS = MULEFAR SCRUB

NNG = NON-NATIVE GRASSLANDS

RS = RIPARIAN FOREST

*****Denotes non-native species throughout Checklist
Nomenclature after Roberts, Jr., Fred M., Scott D. White, Andrew C. Sanders, David E. Bramlet, and Steve Boyd. 2004.

View of the Cajalco rocky fine sandy loam mapped on the portion of the site located south of the unnamed tributary of Warm Springs Creek. This soil type provides growing habitat for a diverse group of common and widespread vascular plant species known from Western Riverside County, California.

SITE PHOTOGRAPH 1

DP-2021-2347

PRINCIPE AND ASSOCIATES

Lastarriaea or Leather spineflower is an uncommon species of spineflower found mostly on open gravely slopes in coastal sage scrub or chaparral. This May, Lastarriaea was found growing in abundance at the site. It is estimated to occur on over 10 acres of the site located both north and south of the tributary.

SITE PHOTOGRAPH 2

DP-2021-2347

PRINCIPE AND ASSOCIATES

Close-up view of the Cajalco rocky fine sandy loam. This photograph shows a patch of Lastarriaea growing at the site.

SITE PHOTOGRAPH 3

DP-2021-2347

PRINCIPE AND ASSOCIATES

View of the Cajalco fine sandy loam mapped on a portion of the site located south of the unnamed tributary of Warm Springs Creek. This soil type also provides growing habitat for a diverse group of common and widespread vascular plant species known from Western Riverside County, California.

SITE PHOTOGRAPH 4

DP-2021-2347

PRINCIPE AND ASSOCIATES

Close-up view of the Cajalco fine sandy loam. In addition to Lastarriaea, a number of annual grass and weed species were also found growing in abundance on this soil type.

SITE PHOTOGRAPH 5

DP-2021-2347

PRINCIPE AND ASSOCIATES

The Soil Survey of Western Riverside Area, California did not map clay soils at this site. Reddish brown clay loam was however found in the northern portion of the site. The cracked soils found in tire ruts in this area provided evidence of the presence of clay.

SITE PHOTOGRAPH 6

DP-2021-2347

PRINCIPE AND ASSOCIATES

The B Horizon of Cajalco Series soils is brown to reddish-brown or yellowish-brown fine sandy loam or loam to clay loam. It appears that the upper 18 inches of this soil has been removed in the past to expose the reddish-brown clay loam layer now visible on the surface.

SITE PHOTOGRAPH 7

DP-2021-2347

PRINCIPE AND ASSOCIATES

A population of long-spined spineflowers was found growing on the clay loam present at the site. This species is most often in found growing in association with clay soils. Approximately 400 individuals were counted at the site. It is a CNPS List 1B Species and is designated as a Group 2 species in the MSHCP.

SITE PHOTOGRAPH 8

DP-2021-2347

PRINCIPE AND ASSOCIATES

In June, a small population of Weed's mariposa lilies was found growing in the Cajalco rocky fine sandy loam on the hills located above the tributary. It was surprising that this plant was first observed this late in the blooming season, and indicated that precipitation was adequate for germination and growth this year.

SITE PHOTOGRAPH 9

DP-2021-2347

PRINCIPE AND ASSOCIATES