

Appendix F

MSHP Narrow Endemic Plant and Criteria Area Species Focused Surveys

MSHCP NARROW ENDEMIC PLANT AND CRITERIA AREA SPECIES FOCUSED SURVEYS

***DPR 22-00006, SPA 22-05047
TPM 22-05048***

**APNS 302-130-002, 302-130-008, 302-130-018, 302-130-021,
302-130-022, 302-130-023, 302-130-024, AND 302-130-027**

LOCATION:

Southeast corner of the intersection of North Perris Boulevard and Perry Street in the City of Perris, Riverside County, California. The site is mapped in a portion of Section 5, Township 4 South and Range 3 West of USGS Topographic Map, 7.5 Minute Series, Perris, California Quadrangle.

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**SURVEYS CONDUCTED BY PAUL A. PRINCIPE ON:
February 2, March 14, April 3, and May 6, 2022**

REPORT DATE:
May 10, 2022

1 INFORMATION SUMMARY

REPORT DATE

May 10, 2022

REPORT TITLE

MSHCP Narrow Endemic Plant and Criteria Area Species Focused Surveys

CASE NUMBERS

DPR 22-00006, TPM 22-05048 and SPA 22-05047

ASSESSOR'S PARCEL NUMBERS

302-130-002, 302-130-008, 302-130-018, 302-130-021, 302-130-022, 302-130-023, 302-130-024, and 302-130-027

SITE LOCATION

Southeast corner of the intersection of North Perris Boulevard and Perry Street in the City of Perris, Riverside County, California (**Site Vicinity Map**). The site is mapped in a portion of Section 5, Township 4 South and Range 3 West of USGS Topographic Map, 7.5 Minute Series, Perris, California Quadrangle (**USGS Location Map**).

ACREAGES

48.1-acre site
±35 acres surveyed

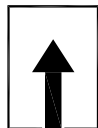
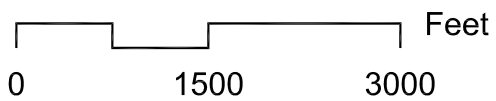
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Source of Aerial Photo: Google Earth 8/2021

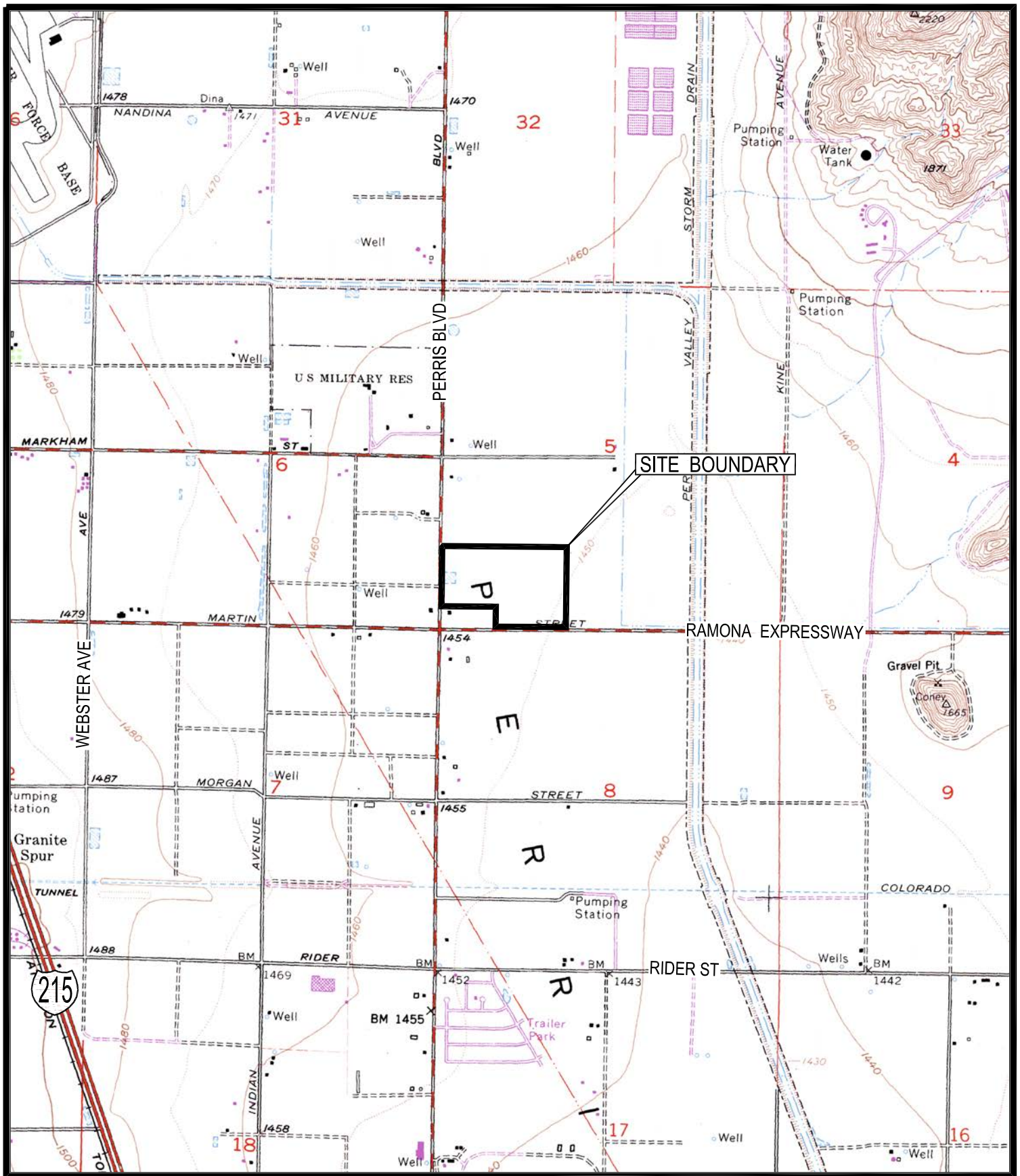
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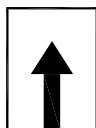
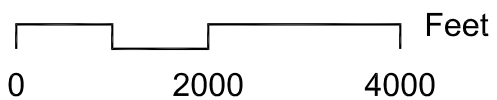
SITE VICINITY MAP

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES



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



USGS LOCATION MAP

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES

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SURVEY SUMMARY

Based on the RCA MSHCP Information Map Conservation Description, the site is located in the Roughstep 3 (HMU – San Jacinto) Narrow Endemic Plant and Criteria Area Species Survey Areas. Due to the presence of Domino silt loam (saline-alkaline) on approximately 35 acres of the site, a soil growing habitat similar to the required soil habitats described for the four Narrow Endemic Plant Species (San Diego ambrosia, spreading navarretia, California Orcutt grass, and Wright's trichocoronis) and the seven Criteria Area Species (San Jacinto Valley crownscale, Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea, smooth tarplant, Coulter's goldfields, and little mousetail) listed from Roughstep 3, focused surveys were completed at the site. Four focused surveys were conducted between February 2 and May 6, 2022.

During the 2022 survey season, none of the listed MSHCP Narrow Endemic Plant Species and Criteria Area Species were identified at the site. The potential for Narrow Endemic Plant Species and Criteria Area Species to occur on the site has been reduced over the years due to native vegetation and habitat removal by heavy equipment and subsequent annual weed abatement activities including discing, tilling and/or chain flail mowing/discing. These activities resulted in heavily disturbed and compacted soils with little available oxygen that no longer supports native plants or plant communities. Domino silt loam is only exposed on the surface in the northeast corner of the site on manufactured slopes and stockpiles as a result of the construction of Perry Street. Most of the site surface has been succeeded by invasive, non-native species. These low-growing grasses and weeds now form a continuous and dense cover on the surface of the site. There are now only a few openings where listed Narrow Endemic Plant Species could emerge and flourish. It appears that the non-native species have had such a competitive advantage over native species that they have prevented this disturbed area from providing growing habitats for any of them.

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.

Within identified Narrow Endemic Plant and Criteria Area Species Survey Areas, site-specific focused surveys for the listed MSHCP species were completed for a private project where appropriate habitat is present. Therefore, focused surveys were necessary to ensure compliance with Sections 6.1.3 and 6.3.2 of the MSHCP and CEQA.

ABSTRACT

Due to the presence of Domino silt loam (saline-alkaline), a soil growing habitat similar to the required soil habitats described for the Narrow Endemic Plant and Criteria Aera Species listed from Roughstep 3, focused surveys were completed at the site. Four focused surveys were conducted between February 2 and May 6, 2022. All surveys for listed MSHCP species were conducted 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 currently vacant and undeveloped with structures. The site is primarily comprised of disturbed vegetation and habitat that is dominated by a low carpet of non-native grass and weeds. Native vegetation and habitats within site boundaries have been eliminated due to long-term disturbances associated with agricultural and weed abatement activities (*i.e.*, chain-flail mowing, disking, tilling, etc.) that have resulted in heavily disturbed and compacted surface soils. One large detention basin is present in the western portion of the site where wind-blown trash accumulates. It is also used for illegal trash dumping. An abandoned water stack likely used for previous agricultural land uses is located towards the middle of the property.

Aerial photographs were reviewed to evaluate past land use patterns at the site and in the surrounding areas. The photos were taken in the following years: 1938, 1949, 1953, 1961, 1966, 1967, 1978, 1985, 1989, 1996, 1997, 2002, 2005, 2006, 2009, 2010, 2012, 2014, 2016, 2018, and 2020. The review revealed that the during the years between 1938 and 1985 the site was undeveloped, vacant and in a rural agricultural setting. The aerial photographs taken in 1949, 1953 and 1961 show agricultural land uses occurring on the majority of the site. The detention basin is first apparent on the 1966 aerial photograph, as well as the drainage ditch located along the north side of the Ramona Expressway.

From 1985 to the present, the site remained undeveloped and vacant as the surrounding area was experiencing residential, commercial and industrial development. The aerial photograph from 1997 shows that the southwest corner of the site had been cleared and was being used as a staging area for the commercial development occurring at the intersection of North Perris Boulevard and the Ramona Expressway. That cleared area has remained disturbed ever since the development was completed, and is being used for trailer truck parking on a daily basis.

Topography

Site topography is flat-lying and featureless. Natural topography has been completely altered in the past by long-term disturbances associated with agricultural and weed abatement activities (*i.e.*, chain-flail-mowing, disking, tilling, etc.). There are no boulder or rock outcrops on the site.

Elevation in the northern and western portions of the site is 1456 feet, while the elevation in the eastern and southern portions is 1452 feet. There is a slight change in elevation of four feet between across the site (1456→1452 feet). A manufactured slope is present along the north property line adjacent to Perry Street. The majority of the site is located 10-15 feet below the elevation of Perry Street.

Hydrography and Drainage

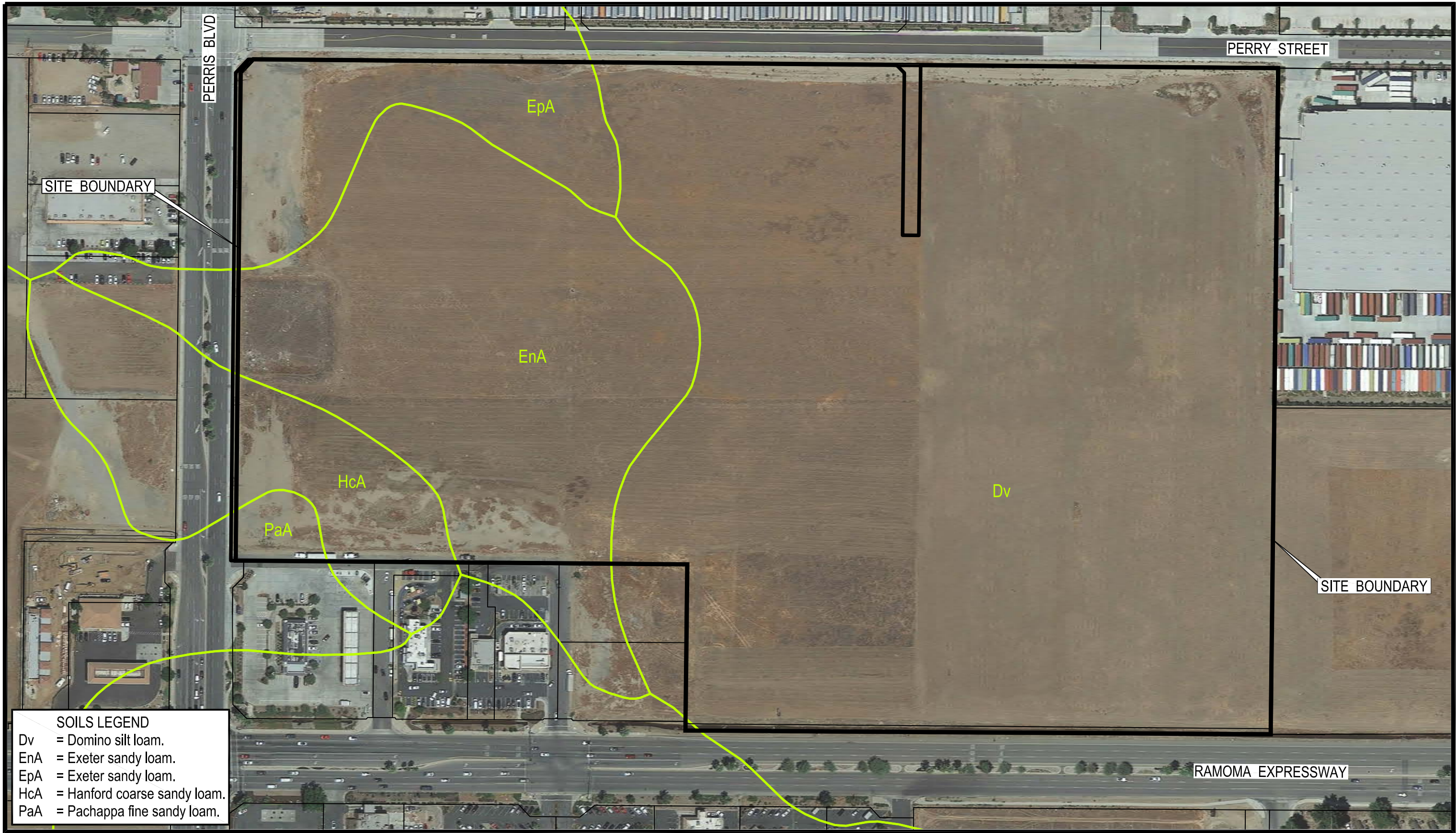
Natural watercourses of any kind are not present on the site (*i.e.*, perennial or intermittent blueline streams, ephemeral drainages, historical drainages, etc.). The San Jacinto River is located approximately 4.5 miles southeast of the site. Due to the low elevation at the site, most of it is located within the 100-year flood limit.

The site consists of vacant, undeveloped land that drains gradually northwest to southeast over varying terrain with a flow slope of 0.3 percent. It has been farmed and graded in the past, and shows evidence of continued disturbance and compaction. The runoff from the site is primarily overland flow or downslope movement of storm water runoff (sheet flow) originating on the slightly higher elevated terrain located in the northern and western 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. There are no flow paths through the site. The ultimate outfall is the southeast corner of the site into the existing drainage ditch constructed adjacent to the Ramona Expressway. Drainage in the westernmost portion of the site now drains into the new storm water and flood control conveyance systems constructed when North Perris Boulevard was improved (circa 2016). The site is within the Perris Valley Master Drainage Plan, with the proposed Line E regional storm drain traversing the southwest corner of the property.

Soils

Review of the “Soil Survey of Western Riverside Area, California” revealed that the surficial soils at the site are included in the Traver-Domino-Willows Association (Soils of the Southern California Coastal Plain). Within this association, five soil types have been mapped on the site (**Soils Map**):

- Dv – Domino silt loam, 0-2 percent slopes (saline-alkali)
- EnA – Exeter sandy loam, 0 to 2 percent slopes
- EpA - Exeter sandy loam, deep, 0 to 2 percent slopes
- HcA – Hanford coarse sandy loam, 0 to 2 percent slopes
- PaA - Pachappa fine sandy loam, 0 to 2 percent slopes



SITE BOUNDARY

PERRY STREET

PERRIS BLVD

EpA

EnA

HcA

PaA

Dv

SITE BOUNDARY

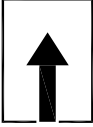
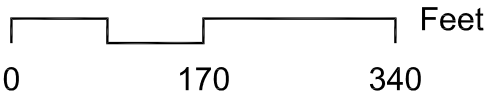
RAMOMA EXPRESSWAY

SOILS LEGEND

Dv	= Domino silt loam.
EnA	= Exeter sandy loam.
EpA	= Exeter sandy loam.
HcA	= Hanford coarse sandy loam.
PaA	= Pachappa fine sandy loam.

Source of Aerial Photo: Google Earth 8/2021

Scale: 1"= 170'



SOILS MAP

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES

Vegetation Associations and Species Composition

Based on the Habitat Accounts described in Volume 2 of the MSHCP, the Vegetation Association occurring on the site is classified as Grasslands (41.1 acres) (**Biological Resources Map**). Disturbed/Developed Lands account for the remaining surface area of the site (7.0 acres).

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

Non-native grasslands are primarily composed of annual grass species introduced from the Mediterranean basin and other Mediterranean-climate regions with variable presence of non-native and native herbaceous species. Species composition of Non-native grasslands may vary over time and place based on grazing or fire regimes, soil disturbance and annual precipitation patterns. Non-native grasslands typically produce deep layers of organic matter which is inversely related to the abundance of non-native and native species. Non-native grasslands also typically support an array of annual species from the Mediterranean-climate regions. Low abundances of native species are sometimes present within Non-native grasslands.

Non-native grasslands cover the majority of the site surface. It is growing on all previously disturbed areas that were historically disced for agricultural land uses and more recently for weed abatement to reduce fuel loads in areas where fire could threaten both human safety and property. Species composition is not diverse, but a few of the species are very abundant. The low-growing grasses and weeds form a continuous and dense cover on the surface of the site. Most of it is dominated by common and widespread non-native grass and weed species, but a few native annual species were also present. Dicot species include *dog mayweed (*Anthemis cortula*), *prickly lettuce (*Lactuca serriola*), *common groundsel (*Senecio vulgaris*), *stink-net (*Oncosiphon piluliferum*), *shortpod mustard (*Brassica geniculata*), *tumble mustard (*Sisymbrium altissimum*), *London rocket (*Sisymbrium irio*), *Russian-thistle (*Salsola tragus*), *field bindweed (*Convolvulus arvensis*), *long-beak filaree (*Erodium botrys*), and *cheeseweed (*Malva parviflora*).

Monocot species include *wild oat (*Avena sativa*), *common ripgut grass (*Bromus diandrus*), *red brome (*Bromus madritensis* subsp. *rubens*), *glaucous barley (*Hordeum murinum* subsp. *glaucum*), *hare barley (*Hordeum murinum* subsp. *leporinum*), *annual bluegrass (*Poa annua*), and *rattail fescue (*Vulpia myuros* var. *myuros*).

The only native species discovered in the Non-native grasslands was common fiddleneck (*Amsinckia menziesii* var. *intermedia*).

*Denotes non-native species throughout the text

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

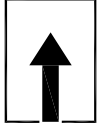
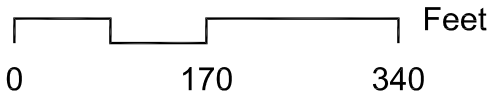


LEGEND

-  = Biological Resources Location
-  = Drainage Ditch
- D/D = Disturbed / Developed (7.0 acres)
- NNG = Non-Native Grasslands (41.4 acres)

Source of Aerial Photo: Google Earth 8/2021

Scale: 1"= 170'



BIOLOGICAL RESOURCES MAP

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES

Disturbed/Developed Land

Weed communities are common in urban areas, often occurring on roadsides and abandoned areas. In larger areas these weed populations may represent the early stages of natural succession. Some of these areas are known as ruderal communities. A ruderal community occupies waste areas, roadsides often on heavily compacted soils with little available oxygen.

Disturbed/Developed Lands are located around the perimeter of most of the site. This disturbed habitat supports non-native grasses and weeds growing on disturbed ground, manufactured slopes, stockpiles of excavated earthen materials, gravel, and soils compacted by trailer trucks and construction equipment.

Non-native species observed include *prostrate pigweed (*Amaranthus blitoides*), *prickly lettuce, *common groundsel, *stink-net, *shortpod mustard, *Australian saltbush (*Atriplex semibaccata*), *Russian-thistle, *long-beak filaree, *Bermuda grass (*Cynodon dactylon*), *hare barley, *Mediterranean schismus (*Schismus barbatus*), and *rattail fescue.

One native species, southern goldfields (*Lasthenia coronaria*) was found growing in the southwest corner of the site only during the February survey. This species was confined to a patch approximately one-tenth of an acre in size located in the disturbed area previously used as a staging area for the commercial development occurring at the intersection of North Perris Boulevard and the Ramona Expressway. It usually occurs in coarse sandy upland soils which are present in this portion of the site (**Site Photograph 1**).

Since the emergent non-native vegetation growing on the banks and in the channel of the ditch were manually removed and a herbicide was applied in March 2022, *alfalfa (*Medicago sativa*) and *English plantain (*Plantago lanceolata*) are the only two species growing in abundance along the channel and banks of the drainage ditch.

Wildlife Species Observed

A low abundance and diversity of wildlife was observed at the site likely due to the absence of native wildlife habitats present there. All wildlife species were observed in the Non-native grasslands. The species composition consists of common and opportunistic species that are adapted to exploit available habitats or resources in close proximity to man. Species observed include the western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), horned lark (*Eremophila alpestris*), northern rough-winged swallow (*Stelgidopteryx serripennis*), Savannah sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), western meadowlark (*Sturnella neglecta*), house sparrow (*Passer domesticus*), and California ground squirrel (*Spermophilus beecheyi*).

Diagnostic animal signs were limited to Botta's pocket gopher dirt mounds (*Thomomys bottae*), and a juvenile coyote carcass (*Canis latrans*).



During the March 14, 2022 survey, southern goldfields were found growing on the coarse sandy loams present on the Disturbed/ Developed Lands located in the southwest corner of the site. It then appears that precipitation was adequate for the germination and growth of vascular plants this year.

SITE PHOTOGRAPH 1

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES

MSHCP COMPLIANCE - NARROW ENDEMIC PLANT SPECIES SURVEYS

Based on the RCA MSHCP Information Map Conservation Description, the site is located within a Narrow Endemic Plant Species Survey Area for Rough Step 3. The four Narrow Endemic Plant Species listed for Rough Step 3 include San Diego ambrosia, spreading navarretia, California Orcutt grass, and Wright's trichocoronis. Due to the presence of Domino silt loam (saline-alkaline), a soil growing habitat similar to the required soil habitats described for Narrow Endemic Plant Species, focused surveys were completed at the site. Focused surveys were conducted during the blooming periods for most of the four Narrow Endemic Plant Species.

SURVEY METHODOLOGY

All surveys for listed MSHCP 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 area mapped with Domino silt loam on the site, regardless of vegetation. All areas surveyed were mapped and photographed, and the dates and times of the surveys were recorded.

A sufficient number of surveys were spaced throughout the known blooming periods of most 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 listed Narrow Endemic 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.

2022 FOCUSED SURVEYS

The 2022 focused plant surveys were conducted by Paul A. Principe. He has been conducting biological surveys in Riverside County since 1980. He has conducted surveys for listed Narrow Endemic Plant Species in 6 of the 8 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 February 2 and May 6, 2022 in an attempt to identify the targeted species at the site.

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. February 2, 2022: Clear, 55°F, 5-6 mph winds (1000 hours)
Clear, 57°F, 7-8 mph winds (1130 hours)
2. March 14, 2022: Mostly clear, 50°F, 0-1 mph winds (9000 hours)
Mostly clear, 64°F, 0-1 mph winds (1100 hours)
3. April 3, 2022: Cloudy, 58°F, 2-3 mph winds (0855 hours)
Cloudy, 59°F, 0-1 mph winds (1100 hours)
- 4, May 6, 2022: Mostly clear, 69°F, 0-1 mph winds (0830 hours)
Mostly clear, 79°F, 0-1 mph winds (1030 hours)

PRECIPITATION DATA

Average seasonal precipitation for Perris is given as 9.08 inches. The above surveys were conducted during the end of the rainy season which began on July 1, 2021 and will end on June 30, 2022.

Between July 1, 2021 and January 31, 2022, the local monitoring station located closest to the site in Perris had recorded a total of 3.89 inches of precipitation. The plant surveys were then conducted between February 2 and May 6, 2022. A total of 1.27 inches of precipitation was recorded during that 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 5.16 inches.

During the March 14, 2022 survey, southern goldfields was found growing on the coarse sandy loams present on the Disturbed/Developed Lands located in the southwest corner of the site. It then appears that precipitation was adequate for the germination and growth of vascular plants this year. Plants began germinating in February 2022 and the growth and blooming season continued through May 2022 (**Site Photograph 2**). Based on the abundance of dried skeletons of most of the grasses and weeds present on the site, it appeared that the season was over by May 6, 2022 (**Site Photograph 3**).

FOCUSED SURVEYS WERE CONDUCTED FOR THE FOLLOWING FOUR NARROW ENDEMIC PLANT SPECIES:

San Diego ambrosia

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



Domino silt loam was mapped on ± 35 acres of the site. This is a soil similar to the soil habitats described for the Narrow Endemic Plant Species and Criteria Aera Species listed from Roughstep 3. Four focused surveys were conducted between February 2, 2022 when the plants began germinating and continued through May 6, 2022. This photograph was taken on February 2.

SITE PHOTOGRAPH 2

DPR 22-00006, SPA 22-05047, TPM 05048

PRINCIPE AND ASSOCIATES



During the May 6, 2022 survey when this photograph was taken, the Non-native grasslands were dominated by the dried skeletons of most of the grass and weed species previously growing on the site.

SITE PHOTOGRAPH 3

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES

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.

This species 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 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.

Findings: The site is located outside of the known range of this species, but a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and it sometimes occurs in association with the Willows Soils Series, focused surveys for this species were conducted at the site. During the 2022 survey season, San Diego ambrosia was not identified at the site.

Spreading navarretia

Spreading navarretia is a small (1-15 centimeters high and wide), herbaceous annual belonging to the Phlox Family (*Polemoniaceae*). The inflorescence consists of a compact, compound flower cluster (cyme) of 15 to 50 small (4.5-6.5 millimeters) white flowers. It blooms from May through June. Upon fruiting, this species fades rapidly, and can be difficult to detect late in the dry season or in dry years. The number of individuals at a given population site varies annually in response to the timing and amount of rainfall and temperature.

The primary growing habitats for this species are vernal pools and depressions, and ditches in areas that once supported vernal pools. In western Riverside County, this species has been found in relatively undisturbed and moderately disturbed vernal pools, and within larger vernal floodplains dominated by annual alkali grassland or alkali playa. The alkali vernal pool/playa habitat found in the Hemet area is based primarily on silty clay soils in the Traver and Willow Soils Series. These soils are usually saline-alkaline in nature, and reliably pond water for long durations. Three core locations include alkali habitats within the San Jacinto Wildlife Area, the floodplains of the San Jacinto River from Ramona Expressway south to Railroad Canyon and the upper Salt Creek drainage area west of Hemet.

Findings: The site is located outside of the known range of this species, but a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and it sometimes occurs in association with the Traver and Willows Soil Series, focused surveys for this species were conducted at the site. During the 2022 survey season, spreading navarretia was not identified at the site.

California Orcutt grass

California Orcutt grass is an annual grass that is one of eight species in the genus *Orcuttia*. It blooms from April through June, and appears strongly adapted to wind pollination. Upon senescence, it remains intact and upright. The first heavy rainstorms of the late fall or early winter cause the individual plants to fall apart, releasing the seeds formed the previous summer. This species is easily identified by the viscid secretion that appears on all aerial parts of the plants. The secretion is first glistening and watery, but as the plant matures, the secretion becomes thicker, denser and brownish.

In Riverside County, this species is primarily restricted to the southern basaltic claypan vernal pools at the Santa Rosa Plateau and the alkaline vernal pools at Skunk Hollow and Salt Creek west of Hemet with alkaline soils belonging to the Traver-Domino-Willows Soils Association. All known occurrences of California Orcutt grass are associated with vernal pools.

Findings: The site is located outside of the known range of this species, but a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, California Orcutt grass was not identified at the site.

Wright's trichocoronis

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.

This species 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.

Findings: The site is located within the known range of this species, but a soil growing habitat similar to the required soil habitats described above is present on

the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, Wright's trichocoronis was not identified at the site.

CONCLUSIONS

During the 2022 survey season, none of the listed MSHCP Narrow Endemic Plant Species were identified at the site. The potential for Narrow Endemic Plant Species to occur on the site has been reduced over the years due to native vegetation and habitat removal by heavy equipment and subsequent annual weed abatement activities including discing, tilling and/or chain flail mowing/discing. These activities resulted in heavily disturbed and compacted soils with little available oxygen that no longer supports native plants or plant communities (**Site Photograph 4**). Domino silt loam is only exposed on the surface in the northeast corner of the site on manufactured slopes and stockpiles as a result of the construction of Perry Street (**Site Photograph 5**). Most of the site surface has been succeeded by invasive, non-native species. These low-growing grasses and weeds now form a continuous and dense cover on the surface of the site (**Site Photograph 6**). There are now only a few openings where listed Narrow Endemic Plant Species could emerge and flourish. It appears that the non-native species have had such a competitive advantage over native species that they have prevented this disturbed area from providing growing habitats for any of them.

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 CONSIDERATIONS

Within identified Narrow Endemic Plant 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 of the MSHCP and the California Environmental Quality Act (CEQA). With completion of these surveys, the proposed project is consistent with Section 6.1.3 of the MSHCP and CEQA.

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

The California Natural Diversity Database (CNDDDB) for the Perris, California Quadrangle does not include occurrence records of Narrow Endemic Plant Species from the site. Also, Narrow Endemic Plant Species have not been recorded between 1 and 3 miles of the site.



Domino silt loam is now only exposed on the surface in the northeast corner of the site on manufactured slopes and stockpiles as a result of the construction of Perry Street.

SITE PHOTOGRAPH 4

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES



Most of the site surface has been succeeded by invasive, non-native species. These low-growing grasses and weeds now form a continuous and dense cover on the surface of the site. There are only a few openings where Narrow Endemic Plant Species and Criteria Aera Species could emerge and flourish.

SITE PHOTOGRAPH 5

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES



Due to long-term native vegetation removal and weed abatement activities, the heavily disturbed and compacted soils no longer support native plants or plant communities at this large site. Only one native species was found growing in the Non-native grasslands on April 3, 2022 - common fiddleneck.

SITE PHOTOGRAPH 6

DPR 22-00006, SPA 22-05047, TPM 22-05048

PRINCIPE AND ASSOCIATES

MSHCP COMPLIANCE - CRITERIA AREA SPECIES SURVEYS

Based on the RCA MSHCP Information Map Conservation Description, the site is located in the Roughstep 3 (HMU – San Jacinto) Criteria Area Survey Area. The nine Criteria Area Species include San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), 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*). Due to the presence of Domino silt loam (saline-alkaline), a soil growing habitat similar to the required soil habitats described for Criteria Area Species, focused surveys were completed at the site. Focused surveys were conducted during the blooming periods for most of the seven Criteria Area Species.

SURVEY METHODOLOGY

All surveys for listed MSHCP 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 listed MSHCP 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 area mapped with Domino silt loam on the site, regardless of vegetation. All areas surveyed were mapped and photographed, and the dates and times of the surveys were recorded.

A sufficient number of surveys were spaced throughout the known blooming periods of most 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 listed Criteria Area 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.

2022 FOCUSED SURVEYS

The 2022 focused plant surveys were conducted by Paul A. Principe. He has been conducting biological surveys in Riverside County since 1980. He has conducted surveys for MSHCP Criteria Area Species 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 February 2 and May 6, 2022 in an attempt to identify the listed MSHCP species at the site.

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. February 2, 2022: Partly cloudy, 55°F, 3-4 mph winds (1000 hours)
Partly cloudy, 57°F, 5-6 mph winds (1130 hours)
2. March 14, 2022: Mostly clear, 50°F, 1-2 mph winds (0900 hours)
Mostly clear, 63°F, 1-2 mph winds (1030 hours)
3. April 3, 2022: Cloudy, 59°F, 2-3 mph winds (0855 hours)
Cloudy, 62°F, 1-2 mph winds (1030 hours)
- 4, May 6, 2022: Mostly clear, 69°F, 0-1 mph winds (0830 hours)
Mostly clear, 79°F, 0-1 mph winds (1030 hours)

PRECIPITATION DATA

Average seasonal precipitation for Perris is given as 9.08 inches. The above surveys were conducted during the end of the rainy season which began on July 1, 2021 and will end on June 30, 2022.

Between July 1, 2021 and January 31, 2022, the local monitoring station located closest to the site in Perris had recorded a total of 3.89 inches of precipitation. The plant surveys were then conducted between February 2 and May 6, 2022. A total of 1.27 inches of precipitation was recorded during that 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 5.16 inches.

During the March 14, 2022 survey, southern goldfields were found growing on the coarse sandy loams present on the Disturbed/Developed Lands located in the southwest corner of the site. It then appears that precipitation was adequate for the germination and growth of vascular plants this year. Plants began germinating in February 2022 and the growth and blooming season continued through May 2022 (**see Site Photograph 2 on Page 14**). Based on the abundance of dried skeletons of most of the grasses and weeds present on the site, it appeared that the season was over by May 6, 2022 (**see Site Photograph 3 on Page 15**).

AS REQUIRED HABITATS FOR TWO CRITERIA AERA SPECIES ARE NOT PRESENT ON THE SITE, CONDUCTING FOCUSED SURVEYS IS NOT REQUIRED:

Round-leaved filaree

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: The site is located outside of the known range of this species, and the required habitats described above are not present on the site.

Mud nama

Mud nama is a member of the genus *Nama* in the family Hydrophyllaceae Family. The annual/perennial herb blooms from January to July. The funnel-shaped corolla is white to cream or pale violet and four to seven mm long.

This species is restricted to muddy embankments of marshes and swamps, and within lake margins and riverbanks. It is only known from along the San Jacinto River near Gilman Springs Road and from the USGS 7.5 minute El Casco quadrangle.

Findings: The site is located outside of the known range of this species, and the required habitats described above are not present on the site.

FOCUSED SURVEYS WERE CONDUCTED FOR THE FOLLOWING SEVEN CRITERIA AREA SPECIES:

San Jacinto Valley crownscale

San Jacinto Valley crownscale is one of two varieties of *Atriplex coronata* within the Saltbush Family (*Chenopodiaceae*). This low, bushy and grayish annual is monoecious: the staminate and pistillate flowers occur in mixed clusters. It usually flowers in April and May and sets fruit by May or June.

This species occurs primarily in floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and, to a lesser extent, alkali grasslands. It is restricted to highly alkaline, silty-clay soils in association with the Traver-Domino-Willows Soil Association; the majority (approximately 80 percent) of the populations being associated with the Willows Soil Series. There are three Core Areas for this species: at Mystic Lake, along the San Jacinto River from the vicinity of Mystic Lake southwest to the vicinity of Perris, and in the upper Salt Creek drainage west of Hemet (Hemet vernal pool area).

Findings: The site is located within the known range of this species, and a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, San Jacinto Valley crownscale was not identified at the site.

Parish's brittlescale

Parish's brittlescale is a member of the Saltbush Family (*Chenopodiaceae*). It is a low annual with stems generally less than two decimeters long that usually flowers from June to October. The flower is obscure and small, and the seeds are about 1.2 millimeters long.

This species is typically found growing in alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains. It occurs within the upper Salt Creek area west of Hemet on highly saline/alkaline silty clay soils belonging to the Traver-Domino-Willows Soil Association. Salt Creek west of Hemet and the Winchester Valley support the only recent known populations of this plant. The Salt Creek population is a core location.

Findings: The site is located outside of the known range of this species, but a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, Parish's brittlescale was not identified at the site.

Davidson's saltscale

Davidson's saltscale is a member of the Saltbush Family (*Chenopodiaceae*). It is a low annual with branches reaching one meter in length that blooms from May to October. The flower is obscure and small.

This species is restricted to alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains in association with the highly saline/alkaline silty clay soils belonging to the Traver-Domino-Willows Soil Association. Occurrences at Salt Creek west of Hemet, the middle segment of the San Jacinto River and the San Jacinto Wildlife Area are core locations.

Findings: The site is located within the known range of this species, and a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, Davidson's saltscale was not identified at the site.

Thread-leaved brodiaea

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.

This species 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 Murrieta stony clay loam on the Santa Rosa Plateau (and Squaw Mountain and Redondo Mesa). It also occurs in floodplains in semi-alkaline mudflats and alkali grassland associated with the Traver-Domino-Willows Soil Association along the San Jacinto River and Salt Creek.

This species is found 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.

Findings: The site is located within the known range of this species, and Non-native grasslands and a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, thread-leaved brodiaea was not identified at the site.

Smooth tarplant

Smooth tarplant is one of about 25 species of *Hemizonia* in the Sunflower Family (*Asteraceae*). It is an annual herb, generally less than one meter tall, which blooms from April to November. Smooth tarplant is one of several spiny tarplants that have been recognized as members of the subgenus *Centromadia*.

This species occurs in a variety of habitats including alkali scrub, alkali playas, riparian woodland, watercourses, and grasslands with alkaline affinities. The majority of the populations in western Riverside County are associated with alkali vernal plains. This species is primarily restricted to the alkali floodplains of the San Jacinto River, Mystic Lake and Salt Creek in association with the highly saline/alkaline silty clay soils of the Traver-Domino-Willows Soil Association. Core locations include the San Jacinto Wildlife Area, the middle segment of the San Jacinto River, Salt Creek, and areas north of the Tres Cerritos Hills.

Findings: The site is located within the known range of this species, and a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, smooth tarplant was not identified at the site.

Coulter's goldfields

Coulter's goldfields is one of 17 species within the genus *Lasthenia* in the Sunflower Family (*Asteraceae*). It is a low, often succulent, annual with yellow flowers that flowers from February through June. This species has united and persistent bracts, and well-developed perfect disk flowers and pistate ray flowers.

This species occurs primarily in highly alkaline, silty-clay soils in association with the Traver-Domino-Willows Soils Association. Most Riverside County populations are associated with the Willows Soil Series. Coulter's goldfields occur primarily in alkali vernal plains. These are floodplains dominated by alkali scrub, alkali playas, vernal pools, and alkali grasslands. These habitats form mosaics that are largely dependent on salinity and micro-elevational differences. It occurs in wetter areas. The three Core Areas within the Plan Area include the San Jacinto Wildlife Area and southern shores of Mystic Lake, the middle segment of the San Jacinto River and the alkali flats between Alberhill and Lake Elsinore.

Findings: The site is located within the known range of this species, and a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam was mapped throughout the western portion of the site, and is a component of the Traver-Domino-Willows Soil Association, focused surveys for this species were conducted at the site. During the 2022 survey season, Coulter's goldfields were not identified at the site. Note that southern

goldfields were found growing on the coarse sandy loams present on the Disturbed/Developed Lands located in the southwest corner of the site during the March 14, 2022 survey.

Little mousetail

Little mousetail is one of 10 to 15 species of the genus *Myosurus* in the Crowfoot Family (*Ranunculaceae*). It is a short annual 2-12 centimeters tall that develops small greenish flowers from April through May on the Santa Rosa Plateau. Within the Salt Creek drainage, little mousetail blooms earlier, coinciding with the rains and cooler temperatures, often in March and April.

This species occurs in vernal pools and alkali vernal pools with clay or alkali soils and within the alkali annual grassland components of alkali vernal plains on alkaline soils. It is found in areas that have semi-regular inundation. It is known from Salt Creek west of Hemet, on the Santa Rosa Plateau and also at Harford Springs County Park (core locations).

Findings: The site is located outside of the known range of this species, but a soil growing habitat similar to the required soil habitats described above is present on the site. As Domino silt loam (saline-alkali) was mapped throughout the western portion of the site, focused surveys for this species were conducted at the site. During the 2022 survey season, little mousetail was not identified at the site.

CONCLUSIONS

During the 2022 survey season, none of the listed Criteria Area Species were identified at the site. The potential for Criteria Area Species to occur on the site has been reduced over the years due to native vegetation and habitat removal by heavy equipment and subsequent annual weed abatement activities including discing, tilling and/or chain flail mowing/discing. These activities resulted in heavily disturbed and compacted soils with little available oxygen that no longer supports native plants or plant communities (**see Site Photograph 4 on Page 19**). Domino silt loam is only exposed on the surface in the northeast corner of the site on manufactured slopes and stockpiles as a result of the construction of Perry Street (**see Site Photograph 5 on Page 20**). Most of the site surface has been succeeded by invasive, non-native species. These low-growing grasses and weeds now form a continuous and dense cover on the surface of the site (**see Site Photograph 6 on Page 21**). There are now only a few openings where listed Criteria Area Species could emerge and flourish. It appears that the non-native species have had such a competitive advantage over native species that they have prevented this disturbed area from providing growing habitats for any of them.

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 listed Criteria Area Species do not occur on the site.

MSHCP CONSIDERATIONS

Within identified Criteria Area Species Survey Areas, site-specific focused surveys for listed MSHCP species were completed for a private project where appropriate habitat is present. Therefore, focused surveys were necessary to ensure compliance with Section 6.3.2 of the MSHCP, and CEQA. With completion of these surveys, the proposed project is consistent with Section 6.3.2 of the MSHCP and CEQA.

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

The California Natural Diversity Database for the Perris, California Quadrangle does not include occurrence records of Criteria Area Species from the site. It does include one occurrence record of a Criteria Area Species within 3 miles of the site. Smooth tarplant was recorded in Perris Valley; along East Sunset Road about 0.1 mile west of its junction with Evans Road, Northeast Perris.

CERTIFICATION STATEMENT

Date: May 10, 2022

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 Plant and Criteria Area 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

PRINCIPE AND ASSOCIATES
Paul A. Principe
Principal

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