APPENDIX B – DSF SUITABILITY ASSESSMENT & BIOLOGICAL RESOURCES ASSESSMENT AND JURISDICTIONAL WATERS DELINEATION

APPROXIMATELY 4.78-ACRE SITE
FONTANA SOUTHRIDGE

CITY OF FONTANA, SAN BERNARDINO COUNTY CALIFORNIA

Delhi Sands Flower-Loving Fly Habitat Suitability Assessment

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January 2021

APPROXIMATELY 4.78-ACRE SITE
FONTANA SOUTHRIDGE

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The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Guy P. Bruyea
Permit No. TE-837439-8
Bruyea Biological Consulting

Thomas J. McGill, Ph.D.
Managing Director
ELMT Consulting

January 2021

Executive Summary

This report contains the findings of a habitat suitability assessment for the Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*; DSF), a federally endangered species, for the approximately 4.78-acre Fontana Southridge Project located in the City of Fontana, San Bernardino County, California. The purpose of this assessment is to characterize existing site conditions at the project site and assess the quality of Delhi sand soils on the project to determine if they provide suitable habitat for DSF. The habitat suitability assessment was conducted by Guy P. Bruyea (Bruyea Biological, Permit No. TE-837439-8) and Thomas J. McGill, Ph.D. (ELMT Consulting) on January 15, 2021.

The entirety of the project site is an existing water detention basin with an access road on all four sides in south Fontana that has been in existence for over fifteen years. The 4-acre basin receives stormwater from the industrial, commercial, and residential developments along Sierra Avenue south of Interstate 15.

The project site has been mapped by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey as being composed of Delhi sand soils. Due to excavation of the site during the construction of the basin, Delhi sand soils were removed down to approximately 20 feet deep and imported clay soils were used to fortify and strengthen the sloped walls for the basin. The top of the basin is at ground level and borders Sierra Avenue to the east, residential housing on the south and vacant land to the west and north. Due to the development of the basin including a perimeter fence, as well as the buildout of Sierra Avenue in south Fontana, the project site is no longer subject to aeolian processes.

Soils observed on the basin floor, side and perimeter roads found on all fours sides of the basin were determined to not support clean, unconsolidated Delhi sands. Instead, the soils were composed of compacted clay soils brought in to create the basin. All the surface soils have a heavy clay composition, due to the construction of the basin, as well as the deposit of silts and fines associated with the storage of stormwaters in the basin over the years. Unconsolidated soils may be present at depth beneath the hardened surface but open, unconsolidated clean Delhi fine sands are absent. As previously noted, the buildout of surrounding areas has disrupted the aeolian process and no new Delhi sands soils are being deposited onsite.

Based on the above noted habitat characteristics, Guy Bruyea rated this site as being unsuitable for DSF with an overall habitat quality rating of 1. Two small areas were classified as very low-quality with a habitat rating of 2. The site is highly unlikely to support DSF. There are no known extant DSF populations in the general vicinity. It is improbable that a dispersing DSF individual would temporarily occupy the subject property.

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Exhibits

Appendix

Section 1 Introduction

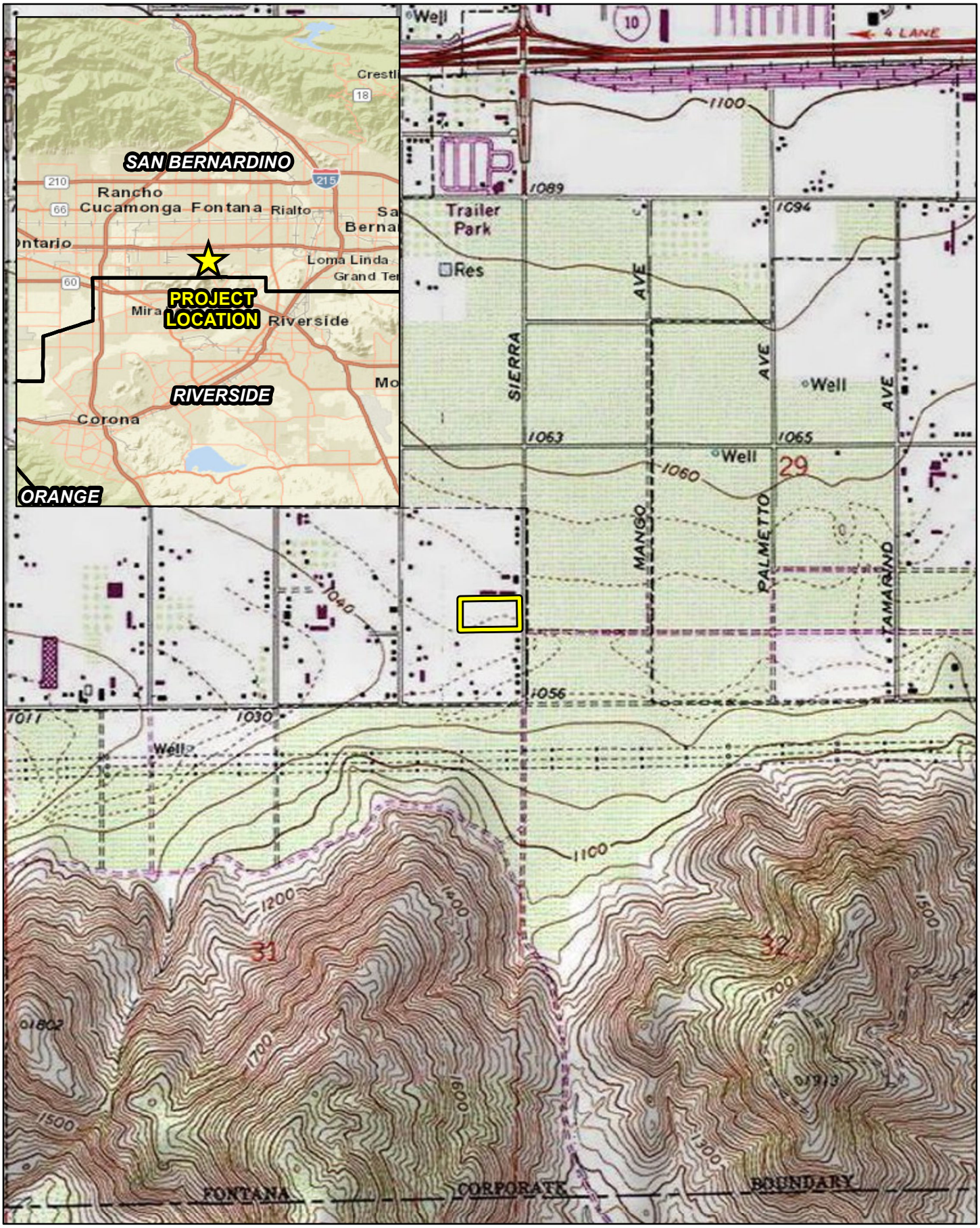
ELMT Consulting (ELMT) and Bruyea Biological Consulting prepared this Delhi Sands Flower-loving Fly (DSF) Habitat Suitability Assessment for the approximately 4.78-acre Fontana Southridge Project (project site or site) located in the City of Fontana, San Bernardino County, California. Guy Bruyea, United States Fish and Wildlife Service (USFWS) Permitted DSF Biologist (Permit Number TE-837439-8) and Thomas J. McGill, Ph.D., inventoried and evaluated the condition of the habitat on January 15, 2021. This assessment was conducted to determine if the soils on the project site support clean Delhi sand soils capable of providing suitable habitat for DSF.

1.1 PROJECT LOCATION

The project site is generally located south of Interstate 10, east of Interstate 15, north of State Route 60, and west of Sierra Avenue in the City of Fontana, San Bernardino County, California. The site is depicted on the Fontana quadrangle of the United States Geological Survey's (USGS) 7.5-minute map series within Section 30 of Township 1 South, Range 5 West (Exhibit 1, *Site Vicinity*). Specifically, the site is identified as Assessor Parcel Numbers (APNs) 0255-101-22 and -23 (Exhibit 2, *Project Site*).

1.2 PROJECT DESCRIPTION

The project proposes fill of the existing basin and construct a housing development.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

ELMT CONSULTING

0 0.25 0.5 1 Miles

Source: USA Topographic Map, San Bernardino County

Regional Vicinity

Exhibit 1

APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

Project Site

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, San Bernardino County

Exhibit 2

Section 2 Background

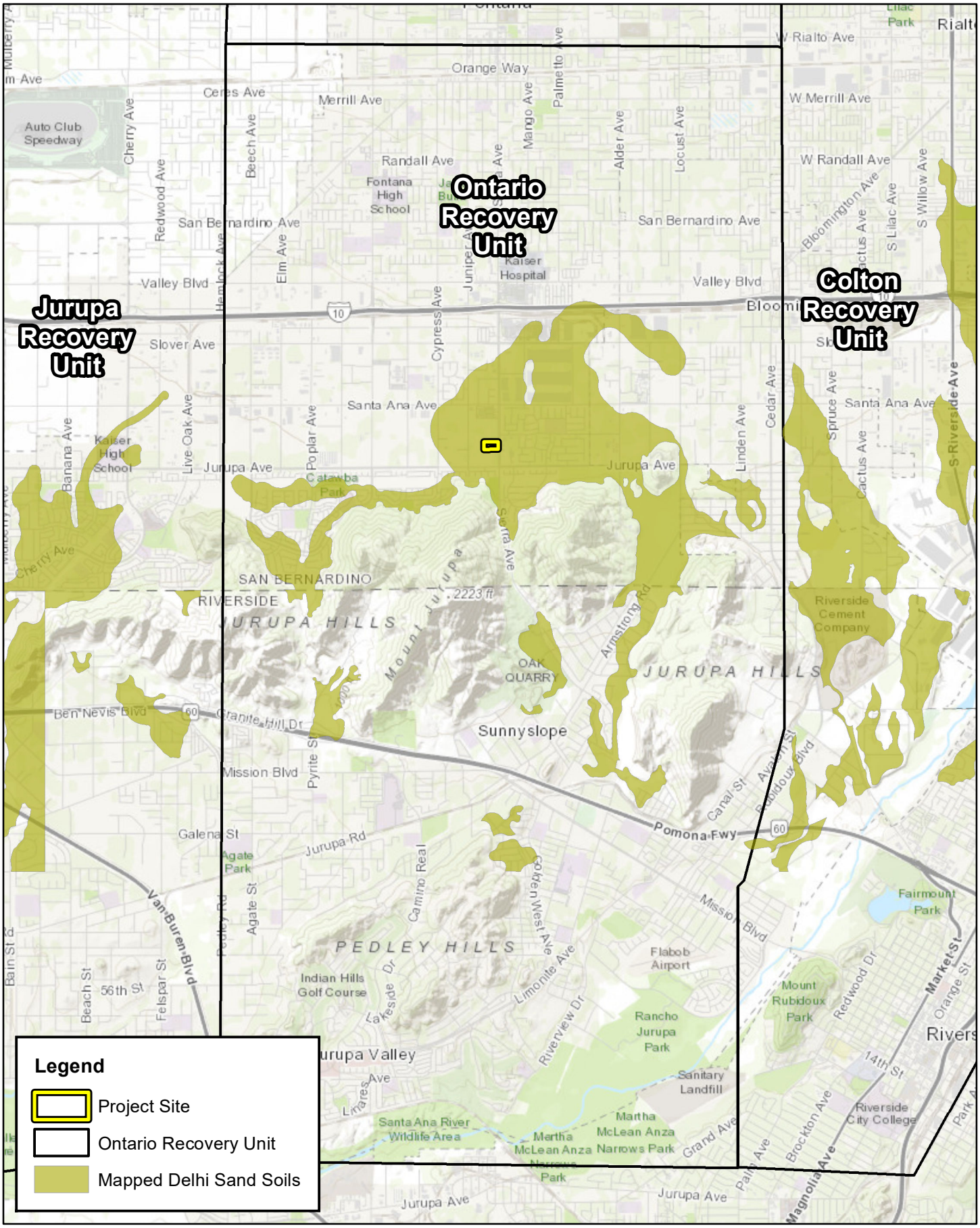
It has been generally acknowledged that DSF occur in Delhi sand soils, particularly clean dune formations composed of Aeolian sands. Conversely, soils and sands deposited by fluvial processes from the surrounding alluvial fans do not support DSF. These alluvial soils are composed of course sands, cobble and gravel (Tujunga soils) or coarse sands, silts and clays (Cieneba soils). In this part of San Bernardino County, the separation of soil types has been lost due to the mixing and cross contamination from years of agricultural activities, development, and other man-made disturbances.

Depending on the extent of mixing and contamination, some areas formally mapped as Delhi sand soils no longer have potential to support DSF populations. Conversely, some areas formally mapped as Cieneba soils may now supported wind deposited Delhi sand soils and have potential to support DSF. Six DSF experts (Ken Osborne, Greg Ballmer, Rudy Matoni, Karin Cleary-Rose, Alison Anderson and Tom McGill) used this criterion, the relative abundance of clean Delhi sand soils versus the amount of Cienba or other alluvial soils, to rate the suitability of the habitat to support DSF (Michael Brandman Associates, 2003). Soils high in gravel and alluvial materials, or high in fine materials such as silts and clays, were rated low, while soils that appear to be high in Aeolian deposited sands were rated high. This qualitative assessment of DSF habitat was further refined by considering the relative degree of soil compaction. Alluvial soils have a tendency to solidify to a hard surface pavement, while Aeolian soils are easier to penetrate and provide good substrate for DSF.

Although it has been common to attribute the presence of four common plant species California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), deer weed (*Acmispon glaber*), and telegraph weed (*Heterotheca grandiflora*) as indicators of habitat suitability, for the assessment, vegetation composition was not given much weight in making this habitat evaluation. These dominant plant species, and plant species composition of habitats, may not be directly relevant to larval development (due to likely predatory or parasitic habitat of DSF larvae) (Osborne, et al. 2003). The known immature life histories of the nine asiloid fly families, including that to which the DSF is classified, are primarily predatory and/or parasitic on other invertebrate species (mainly insects) and the presence or absence of plant species appears not to be relevant to the life history of these flies.

Land with suitable DSF habitat include only those areas with open, clean and unconsolidated Delhi Series soils that have not been permanently altered by residential, commercial, or industrial development, or other human actions. Areas known to contain Delhi sand soils and/or to be occupied by DSF have been divided by USFWS into three recovery units (Colton, Jurupa, and Ontario Recovery Units (USFWS, 1997)). These recovery units are defined as large geographic areas based on geographic proximity, similarity of habitat, and potential genetic exchange.

The project site is located within the Jurupa Recovery Unit (Exhibit 3, *DSF Recovery Units*). In the USFWS five-year review of the DSF Recovery Plan (USFWS, 2008), the USFWS acknowledged the habitat conditions have changed that preclude long-term conservation goals in most of the Recovery unit.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

DSF Recovery Units

ELMT CONSULTING

Source: World Topographic Map, San Bernardino County

Exhibit 3

Section 3 Methodology

The criteria discussed in detail below were used to rate the relative abundance of clean Delhi sand soils verses the amount of Cieneba, Tujunga, or other alluvial soils, to rate the suitability of the habitat to support DSF. Soils high in gravel and alluvial materials, or high in fine materials such as silts and clays, were rated low, while soils that appear to be high in Aeolian deposited sands were rated high. This qualitative assessment of DSF habitat was further refined by considering the relative degree of soil compaction. Alluvial soils have a tendency to solidify to a hard surface pavement, while Aeolian soils are loose sandy soils that are easier to penetrate and provide good substrate for DSF.

3.1 SOIL

Onsite and adjoining soils were researched prior to the field visit using the United States Department of Agricultural (USDA) Natural Resources Conservation Survey (NRCS) Soil Survey for San Bernardino County, California. In particular, the USDA NRCS was reviewed to determine the location of mapped Delhi sand soils on or within the immediate vicinity of the project site.

3.2 VEGETATION

Vegetative resources and surrounding land uses were also assessed as part of determining baseline conditions by walking meander transects and recording all species observed and adjacent land uses. Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less-familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

3.3 HABITAT SUITABILITY ASSESSMENT

The scope of the habitat suitability assessment was to determine the presence or absence of unconsolidated Delhi sand deposits and to determine its quality as it pertains to DSF. DSF permitted biologist, Guy Bruyea and ELMT biologist Tom McGill surveyed the project site on January 15, 2021. The habitat suitability assessment consisted of a visual and tactile inspection of all areas on the project site that contain Delhi sand soils. The majority of the surface soils within the project site are mapped as Delhi fine sands (Exhibit 4, *Soils*). The site was evaluated for the quality or purity of Delhi Sands and for its potential to support DSF. Areas were assigned one or more ratings ranging between 1 and 5, with 5 being the best quality and most suitable habitat:

1. Soils dominated by heavy deposits of alluvial material including coarse sands and gravels with little or no Delhi sand soils and evidence of soil compaction. Developed areas, non-Delhi sands soils with high clay, silt, and/or gravel content. Delhi sands extensively and deeply covered by dumping of exotic soils, rubble, trash or organic debris. *Unsuitable.*

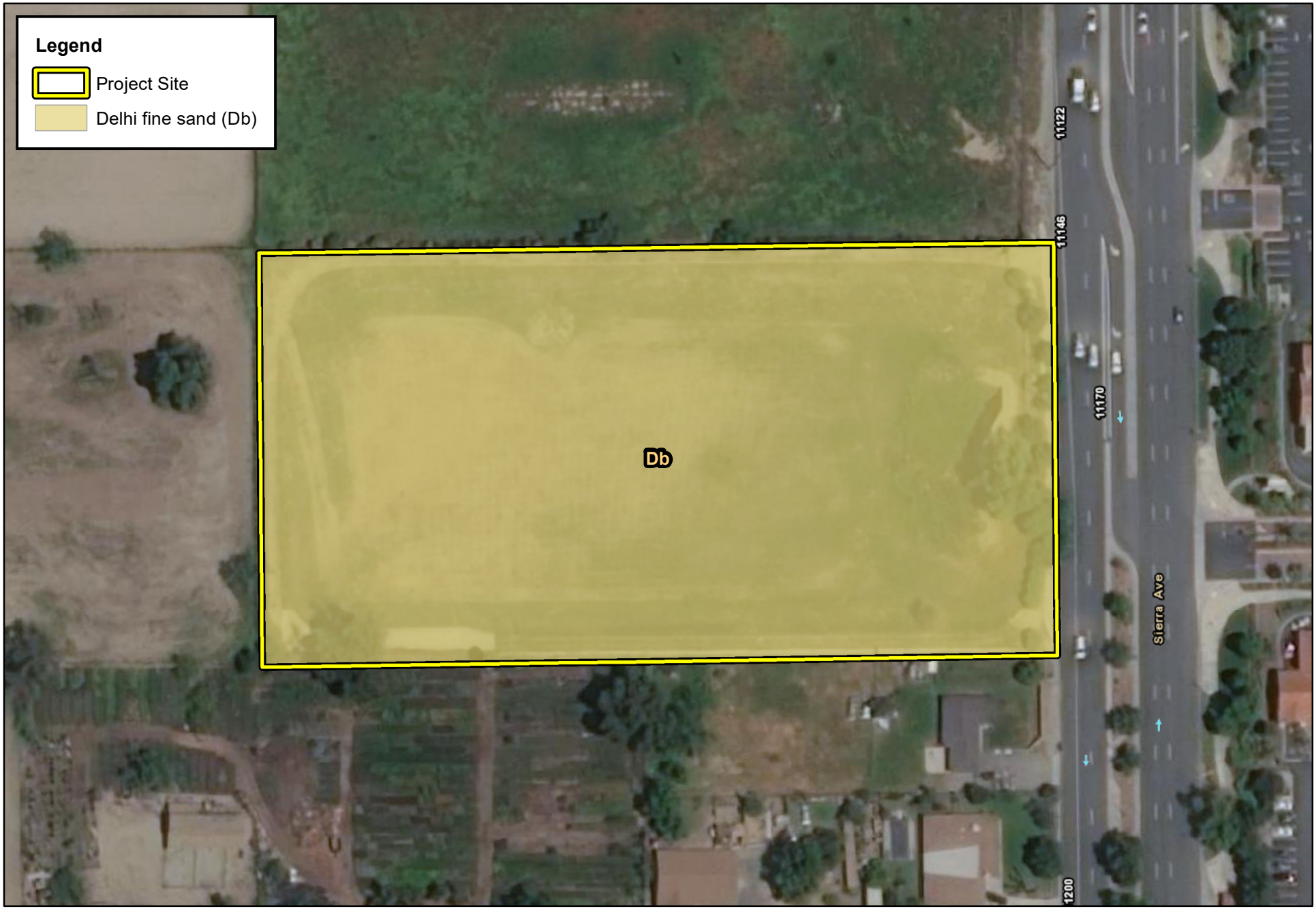
2. Delhi sand soils are present, but the soil characteristics include a predominance of alluvial materials (Tujunga Soils and Hilmar loamy sand), or predominance of other foreign contamination. Sever and frequent disturbance (such as maintenance yard or high use roadbed). *Very Low Quality*.

3. Although not clean, sufficient Delhi sand soils are present to prevent soil compaction. Moderately contaminated Delhi sands. Delhi sands with moderate to high disturbance (such as annual disking). Sufficient Delhi sands are present to prevent soil compaction (related to contamination by foreign soils). Some sandy soils exposed on the surface due to fossorial animal activity. *Low Quality*.

4. Abundant clean Delhi sand soils with little or no foreign soils (such as alluvial material, Tujunga soils or Hilmar loamy sand) present. Moderate abundance of exposed sands on the soil surface. Low vegetative cover. Evidence of moderate degree of fossorial animal activity by vertebrates and invertebrates. May represent high quality habitat with mild or superficial disturbance. *Moderate Quality*.

5. Sand dune habitat with clean Delhi sand soils. High abundance of exposed sands on the soil surface. Low vegetative cover. Evidence (soil surface often gives under foot) of high degree of fossorial animal activity by vertebrates and invertebrates. Sand associated plant and arthropod species may be abundant. *High Quality*.

It should be noted that habitat qualities often vary spatially within a site so that conditions on a site fall within a range of qualities. Further, overall habitat quality is affected by the overall habitat value of a site.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

Soils

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Soil Survey Geographic Database, San Bernardino County

Exhibit 4

Section 4 Results

4.1 EXISTING CONDITIONS

The approximately 4.78-acre site is bounded to the north and west by vacant fields, to the south by residential housing, and to the east by Sierra Avenue. The entirety of the project site is developed with an existing water detention basin with an access road on all four sides in south Fontana that has been in existence for over fifteen years. The basin receives stormwater from industrial, commercial, and residential developments along Sierra Avenue south of Interstate 10.

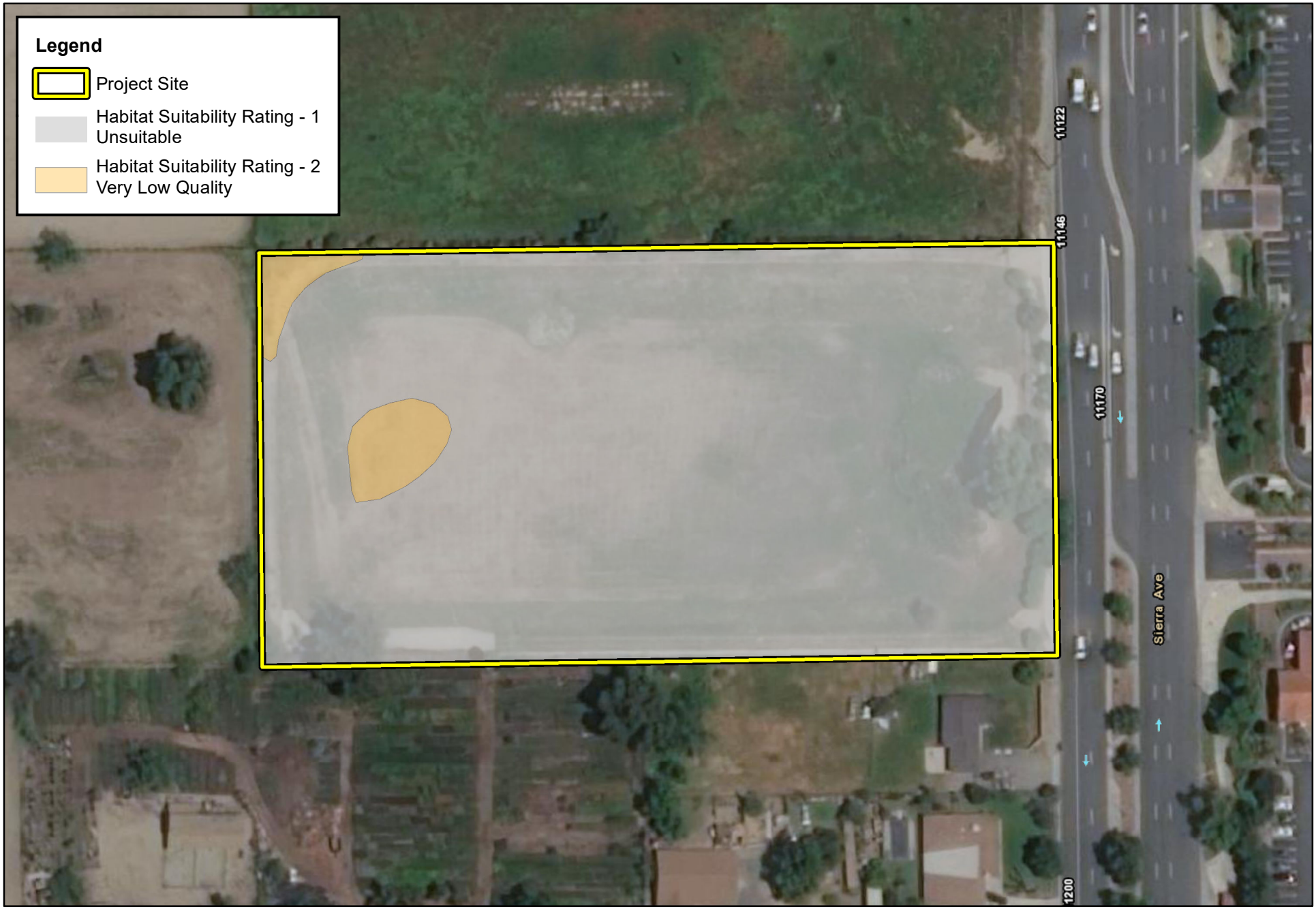
Vegetation on the basin floor and basin sloped sides have been routinely mowed, and primarily supported non-native/early successional plant species. At the east send of the basin, where stormwater is released, emergent aquatic species were observed. Plant species observed include Bermuda grass (*Cynodon dactylon*), rip gut (*Bromus diandrus*), curly dock (*Rumex crispus*), bull thistle *Ciricium vulgare*), cattail (*Typha* sp.), and sedge (*Cyprus sp*.). Native species associated with Delhi sands [Croton (*Croton californicus*), California buckwheat (*Eriogonum fasciculatum*) and telegraph weed (*Heterotheca grandiflora*)] were not observed on the project site.

4.2 HABITAT SUITABILITY ASSESSMENT

Based on the NRCS USDA Web Soil Survey, the project site and immediate adjacent areas are historically underlain by Delhi fine sand and Tujunga loamy sand (0 to 5 percent slopes). Refer to Exhibit 4, *Soils*. The entire project site is located within mapped Delhi fine sand soils.

Soils observed throughout the project site are compacted and did not give way underfoot during the survey. Open sandy dunes with sparse vegetative cover were not observed on the site. Unconsolidated soils are present in some areas beneath the hardened surface layer. Some areas contain loose soils at the surface in association with fossorial animal activity (mostly rodent burrows and ant mounds), but this was not commonly observed. Good quality Delhi fine sands are absent on the site due to prolonged anthropogenic disturbance, including the disruption of the aeolian process in association with surrounding development. In addition, the creation of the basin and imported soils have degraded soil quality, especially as it pertains to DSF.

Based on the above noted habitat characteristics, Guy Bruyea rated this site as being unsuitable for DSF with an overall habitat quality rating of 1 (Exhibit 5, *DSF Habitat Suitability*). Two small areas were classified as very low-quality with a habitat rating of 2. The site is highly unlikely to support DSF. Additionally, there are no known extant DSF populations in the immediate vicinity. It is improbable that a dispersing DSF individual would temporarily occupy the subject property.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

DSF Habitat Suitability

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Soil Survey Geographic Database, San Bernardino County

Exhibit 5

Section 5 Conclusion and Recommendations

A valid section 10(a)(1)(A) recovery permit issued under the Endangered Species Act of 1973, as amended, is currently held by Guy Bruyea (Permit Number TE-837439-8). Based on his twenty-five years of experience with DSF and occupied DSF ecosystems, the information provided in this report, and information based on the referenced DSF habitat suitability scale (Ballmer, Osborne, McGill), Guy Bruyea rated this site as being unsuitable and highly unlikely to support DSF. There are no known extant DSF populations in the vicinity. Focused surveys are not recommended.

Section 6 References

Osborne, K.H. 2002a. Focused surveys for the Delhi Sand giant flower-loving fly (*Rhaphiomidas terminatus abdominalis*) on a 125-acre portion of the Fontana Business Center site. Submitted to USFWS October 15, 2002.

Osborne, K.H. Greg Ballmer and Thomas McGill. 2003. Delhi Sands Flower-loving Fly Habitat Assessment for the Fontana Business Center.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2018. *Web Soil Survey.* Online at http://websoilsurvey.nrcs.usda.gov/app/.

U.S. Fish and Wildlife Services. 1996. Habitat Conservation Plan in support of the issuance of a Section 10(a) permit for incidental take of the endangered Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*) in connection with the completion of the Cantara residential project in the City of Colton, California.

U.S. Fish and Wildlife Services. 1997. Final Recovery Plan for Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*) U.S. Fish and Wildlife Services, Portland, Or. 51 pages.

U.S. Fish and Wildlife Service. 2019. Recovery Plan Amendment for Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*).

U.S. Fish and Wildlife Services. 2008. Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*) 5-Year Review: Summary and Evaluation. Carlsbad, California. March 2008.

Appendix A Site Photographs

Photograph 1: Looking west from southeast corner across the basin.

Photograph 2: Storm drain discharge pint and aquatic vegetation on the eastern boundary of the site.

Photograph 3: Looking east from southwest corner of the basin.

Photograph 4: Exposed clay contaminated soils with gravel on the southern slope of the basin.

Photograph 5: Looking east from western slope of the basin.

Photograph 6: Looking west at the clays soils in the bottom of the basin.

Photograph 7: Northern slope of the basin.

Photograph 8: Exposed clay contaminated soils with gravel on the northern slope of the basin.

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January 29, 2021

Kari Cano
Kimley-Horn
3880 Lemon Street, Suite 420
Riverside, CA 92501

RE: Biological Resources Assessment, Jurisdictional Waters Delineation
Fontana Southridge BRA-JD – Fontana, CA

Dear Ms. Cano:

Jericho Systems, Inc. (Jericho) is pleased to provide this letter report that details the results of a general Biological Resources Assessment (BRA) that includes habitat suitability assessments for nesting birds, Burrowing owl (*Athene cunicularia*) [BUOW], Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) [DSF], and a Jurisdictional Waters Delineation (JD) for the proposed Fontana Southridge Project (Project).

The purpose of the BRA was to address potential effects of the Project to designated critical habitats and/or any species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or species designated as sensitive by the California Department of Fish and Wildlife (CDFW) and/or the California Native Plant Society (CNPS).

The Project site was assessed for sensitive species known to occur locally. Attention was focused on those State- and/or federally-listed as threatened or endangered species and California species of special concern that have been documented in the Project vicinity and/or whose habitat requirements are present within the vicinity of the Project site. The results are intended to provide sufficient baseline information to the Project proponent and, if required, to federal and State regulatory agencies, including the U.S. Fish and Wildlife Service (USFWS) and CDFW, respectively, to determine if impacts will occur and to identify mitigation measures to offset those impacts.

In addition to the BRA, a Jurisdictional Delineation (JD) was conducted of the Project site to determine the extent of State and federal jurisdictional waters within the Project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and CDFW under Section 1602 of the California Fish and Game Code (FGC), respectively.

PROJECT LOCATION

The approximately 4.78-acre Project site is located in the City of Fontana and is vacant. The Project site is along the west side of Sierra Avenue, north of Jurupa Avenue and south of Santa Ana Avenue, directly west of the Sierra Crossroads shopping center. The Project site is depicted on the border of the *Fontana* U.S. Geological Survey's (USGS) 7.5-minute topographic map in the northern portion of Section 30,

Township 1 South, Range 5 West (Figures 1, 2, and 3). It is identified as Assessor's Parcel Numbers (APN) 0255-101-22 and 0255-101-23 in the City of Fontana, San Bernardino County, California.

ENVIRONMENTAL SETTING

The City of Fontana is subject to both seasonal and annual variations in temperature and precipitation. The local climatic conditions in the project area are characterized by warm summers, mild winters, infrequent rainfall, and dry humidity. The average temperature range is between 44-95°F. The rainy season begins in November and continues through March, with the quantity and frequency of rain varying from year to year. The average annual rainfall is approximately 17.31 inches.

According to the U.S. Environmental Protection Agency (EPA) Regional map, the project site is located in the Inland Valleys Ecoregion. An Ecoregion is regional area that has similar ecosystems in terms of type, quality, and quantity of environmental resources. The Inland Valleys Ecoregion consists of alluvial fans and basin floors immediately south of the San Gabriel and San Bernardino Mountains of Southern California and includes the San Jacinto and Perris Valleys toward the south. This ecoregion includes some floodplains along the Santa Ana River. The soil moisture regime is xeric which is characterized by long periods of drought in the summer. Historically, vegetation in this Ecoregion included Riversidean coastal sage scrub, valley grasslands, and riparian woodlands. Currently, much of this Ecoregion, including the project site and surround vicinity is heavily urbanized.

Hydrologically, the Project site is located within the Middle Santa Ana River Hydrologic Sub-Area (HSA 801.21), which comprises a 190,515-acre drainage area within the larger Upper Santa Ana River Watershed (HUC 180702030804).

The Project site is entirely disturbed. Google Earth satellite images show that up to 2004, the site remained unexcavated and in similar conditions to adjacent parcels to the north and west while grading for residential and commercial developments was underway across Sierra Avenue to the east. A detention basin covering most of the Project site was excavated in 2005. The Project site currently functions as a drainage detention basin with an unlined (soil) bottom. The soils on site are mapped as Delhi fine sand soils (Figure 4).

METHODS

Prior to conducting the field study, species and habitat information was gathered from the reports related to the specific project and relevant databases for the *Fontana* USGS 7.5 minute series quadrangle to determine which species and/or habitats would be expected to occur on site. These sources include:

- U.S. Fish and Wildlife (USFWS) threatened and endangered species occurrence GIS overlay;
- USFWS Information for Planning and Consultation System (IPaC);
- California Natural Diversity Database (CNDDB) *Rarefind 5*);
- CNDDB Biogeographic Information and Observation System (BIOS);
- California Native Plant Society Electronic Inventory (CNPSEI) database;
- Calflora Database;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey;
- USFWS National Wetland Inventory;
- Environmental Protection Agency (EPA) Water Program "My Waters" data layers
- USFWS Designated Critical Habitat Maps

On October 10, 2020, Jericho Biologist Shay Lawrey systematically assessed the entire Project site by walking the entire site in a manner which provided 100 percent visual coverage of the ground surface. Ms. Lawrey has an advanced degree in Biology and extensive experience in conducting biological surveys throughout Riverside and San Bernardino Counties. She conducted comprehensive surveys with complete coverage of the entire site and adjacent areas (when appropriate and feasible).

Wildlife species were detected during field surveys by sight, calls, tracks, scat, or other sign. In addition to species observed, expected wildlife usage of the site was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area.

The site was also assessed for habitat type and structure and, for jurisdictional drainage features potentially subject to Sections 404 and 401 of the Clean Water Act (CWA) and /or Section 1600 of the California Fish and Game Code (FGC). Regarding jurisdictional waters, Ms. Lawrey looked for indicators of active surface flow and corresponding physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris. Suspected jurisdictional areas were checked for the presence of definable channels, soils, and hydrology. Evaluation of potential federal jurisdiction followed the regulations set forth in 33CFR part 328 and the USACE guidance documents and evaluation of potential State jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (CDFW, 2010).

On January 15, 2021, Guy P. Bruyea (Bruyea Biological, Permit No. TE-837439-8) and Thomas J. McGill, Ph.D. (ELMT Consulting) conducted a habitat assessment for the federally endangered Delhi Sands Flower-loving Fly. Mr. Bruyea holds a USFWS 10(a) permitting to survey for the DSF has over 25 years of general entomological experience. The Delhi Sands Flower-loving Fly Habitat Suitability report is provided in Attachment A.

RESULTS

Critical Habitat

According to the database review, the Project site is not located within any federally designated Critical Habitat.

General Habitat

The floor of the detention basin contains aquatic to mesic ecological conditions created by collection of street and urban runoff. Plants on the floor of eastern portions of the detention basin include cattail (*Typha*), sedge (*Cyprus*), Bermuda grass (*Cynodon dactylon*), marsh evening primrose (*Oenothera elata*), curly dock (*Rumex crispus*), bull thistle (Ciricium vulgare) and sunflower (*Helianthus annua*). Several small western sycamore (*Platanus racemosa*) grow out of the sides of the basin near the water. A graveled and/or heavily compacted driveway circles the perimeter of the site. The slopes above the detention basin are composed of Delhi sands and support native sand associated plant species, including *Heterotheca grandiflora* and *Ambrosia acanthicarpa*. Delhi sands along with the associated *Heterotheca* and *Ambrosia* extend a little way onto the western floor of the detention basin in an area that is not perpetually wet like the eastern end of the basin.

Wildlife Species

Wildlife Species observed or otherwise detected on site during the surveys included: mourning dove (*Zenaida macroura*), house finch (*Haemorhous mexicanus*), common raven (*Corvus corax)*, red-tailed hawk (*Buteo jamaicensis),* and house sparrow (*Passer domesticus*).

Sensitive Species

The database searches identified 31 sensitive species and 1 sensitive habitat within the *Fontana* USGS 7.5-minute series quadrangle. Table 1, located at the end of the document, represents a compiled list of results from the IPaC, CNDDB and CNPSEI databases of species which have been documented within one mile of the Project site and/or have the potential to occur based potentially suitable habitat adjacent to, or within, the Project site. Table 1 also provides a potential to occur assessment based on the field investigation and surveyor's knowledge of the species and local ecology and considers the habitat requirements for each species and the potential for their occurrence on the site, based on required habitat elements relative to the current site conditions and species' range.

This list of sensitive species includes any State- and/or federally listed threatened or endangered species, CDFW designated Species of Special Concern (SSC), and otherwise Special Animals. "Special Animals" is a general term that refers to all the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species." The CDFW considers the taxa on this list to be those of greatest conservation need.

No State- and/or federally listed threatened or endangered species, or other sensitive species were observed on site during the field survey. However, there is potentially suitable habitat on site for DSF. See the DSF habitat assessment prepared under separate cover.

Burrowing owl (BUOW)

The western BUOW is one of 18 New World Burrowing Owl subspecies, and one of only two in North America. The western BUOW ranges from Texas to California and north to southern Canada. Individuals of resident populations in southern California, northern Mexico, and Florida breed and overwinter in an area without a significant migration (Haug et al. 1993). BUOW are found across American open landscapes, showing activity chiefly in the daytime. In California, preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils. In addition, BUOW may occur in some agricultural areas, ruderal grassy fields, vacant lots and pastures, and flood control facilities if the surrounding vegetation structure is suitable and there are useable burrows and foraging habitat in proximity.

Unique among North American raptors, the BUOW requires underground burrows or other cavities for nesting during the breeding season and for roosting and cover, year-round. Burrows used by the owls are usually dug by other species termed host burrowers. In California, California ground squirrel (*Spermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) burrows are frequently used by BUOW but they may use dens or holes dug by other fossorial species and/or human made structures such as cement culverts and pipes. They are active during the day and night and are generally observed in the early morning hours or at twilight.

BUOW have a high fidelity to their birth territory and they often prefer nesting in areas of high burrow densities. Breeding pairs are easily located within the surrounding of their nests (usually 90 feet) due to

their territorial behavior. BUOW breeding season begins February 1 and extends to August 31. Pair formation can begin in February. Peak of the BUOW breeding season, commonly accepted in California, occurs between April 15 and July 15. April to mid-May is when most burrowing owls are in the egg laying and incubation stages. BUOW egg incubation period is about 27-28 days Chick rearing typically occurs between May 15 and July 1. July 15 is typically considered the late nestling period when most owls are spending time above ground. The non-breeding season (September 1 to January 31). BUOW are semi-colonial and will sometimes share a burrow for incubation and chick rearing.

The BUOW is not listed under the State or federal ESA but is considered both a State and federal SSC. The BUOW is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5).

BUOW are documented within a half- mile northeast of the Project site. The result of this survey was that no evidence of BUOW was found in the onsite. No BUOW individuals or sign including pellets, feathers, prey remains, whitewash, burrows or potential surrogate burrows were observed. Per the definition provided in the *2012 CDFG Staff Report on Burrowing Owl Mitigation*, "Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey." The habitat within the Project site is currently densely vegetated and has no surrogate burrows. Therefore, the site is currently unsuitable for BUOW. BUOW are thereby absent from the Project site.

Delhi Sands Flower-loving Fly

DSF belongs to a genus of flies (Rhaphiomidas) commonly known as flower-loving flies (Cazier 1985). There are more than 30 species of these flies, distributed across the southwestern United States and northern Mexico. These flies are huge by the standards set by most flies, with size among the species ranging from approximately 1.5 centimeters up to 3 and even 4 centimeters, and are usually gray, tan, rust, or yellow in color. All species of *Rhaphiomidas* are associated with rather arid, sandy habitats, with most species living on dune systems of inland desert valleys, rivers, deltas, and beach strands.
The DSF is only known to occur in association with Delhi sand deposits and presumably occupied the once extensive dune system of the upper Santa Ana River Valley, including portions of what is now the City of Colton, west through portions of the City of Mira Loma, and south to the Santa Ana River. Today, DSF exists on only a few disjunct sites (USFWS 1997) within a radius of about 8 miles in southwestern San Bernardino and northwestern Riverside Counties (Colton, Rialto, Fontana, and Mira Loma).

The adult DSF flight period is typically August and September, when individual adults emerge, reproduce, and die. The adult life span of an individual DSF lasts for a few days and adults do not live beyond the flight period.

Soils observed on the basin floor, side and perimeter roads found on all fours sides of the basin were determined to not support clean, unconsolidated Delhi sands. Instead, the soils were composed of compacted clay soils brought in to create the basin. All the surface soils have a heavy clay composition, due to the construction of the basin, as well as the deposit of silts and fines associated with the storage of stormwaters in the basin over the years. Unconsolidated soils may be present at depth beneath the hardened surface but open, unconsolidated clean Delhi fine sands are absent. As previously noted, the buildout of surrounding areas has disrupted the aeolian process and no new Delhi sands soils are being deposited onsite.

Based on the above noted habitat characteristics, Guy Bruyea rated this site as being unsuitable for DSF with an overall habitat quality rating of 1. Two small areas were classified as very low-quality with a habitat rating of 2. The site is highly unlikely to support DSF. There are no known extant DSF populations in the general vicinity. It is improbable that a dispersing DSF individual would temporarily occupy the subject property.

City of Fontana General Plan

The Open Space and Conservation Element (Section 9) of the City of Fontana General Plan identifies the Project Area as being Potential Habitat DSF. See DSF Habitat Assessment prepared under separate cover.
Heritage Trees

According to the City of Fontana's Municipal Code (Chapter 28, Section 63), a Heritage Tree:

> *(1) Is of historical value because of its association with a place, building, natural feature or event of local, regional or national historical significance as identified by city council resolution; or*
>
> *(2) Is representative of a significant period of the city's growth or development (windrow tree, European Olive tree); or*
>
> *(3) Is a protected or endangered species as specified by federal or state statute; or*
>
> *(4) Is deemed historically or culturally significant by the city manager or his or her designee because of size, condition, location or aesthetic qualities.*

There are no trees on site that meet this definition. No further investigation is warranted..

Nesting Birds

Habitat for nesting birds occurs throughout the Project site specifically within the basin floor.

Nesting birds are protected under the MBTA which provides protection for nesting birds that are both residents and migrants whether they are considered sensitive by resource agencies. The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. The USFWS, in coordination with the CDFW administers the MBTA. CDFW's authoritative nexus to MBTA is provided in FGC Sections 3503.5 which protects all birds of prey and their nests and FGC Section 3800 which protects all non-game birds that occur naturally in the State.

No nesting birds, nor nests, were found on Project site during the survey.

Jurisdiction Waters

No aspect of the site presents any evidence of jurisdictional waters. The Project site functions as a drainage detention basin and receives runoff flows from the streets and surrounding development. No jurisdictional waters occur on site. The riparian vegetation at the east end is a man-made feature that is not regulated as it would disappear if the runoff was cutoff or diverted away from the site.

CONCLUSIONS AND RECOMMENDATIONS

The site is a detention basin that receives local runoff but lacks wetlands or jurisdictional waters.

Delhi Sands Flower-loving Fly

The Project is located within mapped Delhi fine sand soils that are known to have the potential to support a federally listed species. Based on the above noted habitat characteristics, and information based on the referenced DSF habitat suitability scale (Ballmer, Osborne, McGill) provided in Attachment A, Guy Bruyea rated this site as being unsuitable and highly unlikely to support DSF. There are no known extant DSF populations in the vicinity. Focused surveys are not recommended.

Burrowing Owl

No BUOW individuals or sign were observed onsite during the survey, no ground squirrel burrows are found onsite and the vegetation was very dense at the time of survey. The site is currently not suitable for BUOW occupation. However, in an abundance of caution, the following recommendation is made to reduce potential impacts to BUOW:

- A Pre-construction Burrowing Owl Survey shall be conducted by a qualified biologist at least 14 days prior to any Project activities, at any time of year. Surveys shall be completed following the recommendations and guidelines provided within the *Staff Report on Burrowing Owl Mitigation* (CDFG, March 2012) or most recent version by a qualified biologist. If an active burrowing owl burrow is detected within any Project disturbance area, or within a 500-foot buffer of the disturbance area, a 300- foot radius buffer zone surrounding the burrow shall be flagged, and no impacts to soils or vegetation or noise levels above 65 dBA shall be permitted while the burrow remains active or occupied. Disturbance-free buffers may be modified based on site-specific conditions in consultation with CDFW. The qualified biologist shall monitor active burrows daily and will increase buffer sizes as needed if owls show signs of disturbance. If active burrowing owl burrows are located within any work area and impact cannot be avoided, a qualified biologist shall submit a burrowing owl exclusion plan to CDFW for review and approval. The burrowing owl exclusion plan shall include permanent compensatory mitigation consistent with the recommendations in the *Staff Report on Burrowing Owl Mitigation* such that the habitat acreage, number of burrows and burrowing owls impacted are replaced. Passive relocation shall take place outside the nesting season (1 February to 31 August).

There is habitat for nesting birds on site. Therefore, to reduce potential impacts to nesting birds, the following recommendation is made:

- Bird nesting season generally extends from February 1 through September 15 in southern California and specifically, April 15 through August 31 for migratory passerine birds. To avoid impacts to nesting birds (common and special status) during the nesting season, a qualified Avian Biologist will conduct pre-construction Nesting Bird Surveys (NBS) prior to project-related disturbance to nestable vegetation to identify any active nests. If no active nests are found, no further action will be required. If an active nest is found, the biologist will set appropriate no-work buffers around the nest which will be based upon the nesting species, its sensitivity to disturbance, nesting stage and expected types, intensity and duration of

disturbance. The nests and buffer zones shall be field checked weekly by a qualified biological monitor. The approved no-work buffer zone shall be clearly marked in the field, within which no disturbance activity shall commence until the qualified biologist has determined the young birds have successfully fledged and the nest is inactive.

Please do not hesitate to contact me at 909-915-5900 should you have any questions or require further information.

Sincerely,

Shay Lawrey, President
Ecologist/Regulatory Specialist

Attachments:

DSF Habitat Suitability Assessment
Table 1 - Database Queries Species Occurrence Results
Figures
Site Photos

APPROXIMATELY 4.78-ACRE SITE
FONTANA SOUTHRIDGE

CITY OF FONTANA, SAN BERNARDINO COUNTY CALIFORNIA

Delhi Sands Flower-Loving Fly Habitat Suitability Assessment

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January 2021

APPROXIMATELY 4.78-ACRE SITE
FONTANA SOUTHRIDGE

CITY OF FONTANA, SAN BERNARDINO COUNTY CALIFORNIA

Delhi Sands Flower-Loving Fly Habitat Suitability Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Guy P. Bruyea
Permit No. TE-837439-8
Bruyea Biological Consulting

Thomas J. McGill, Ph.D.
Managing Director
ELMT Consulting

January 2021

Executive Summary

This report contains the findings of a habitat suitability assessment for the Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*; DSF), a federally endangered species, for the approximately 4.78-acre Fontana Southridge Project located in the City of Fontana, San Bernardino County, California. The purpose of this assessment is to characterize existing site conditions at the project site and assess the quality of Delhi sand soils on the project to determine if they provide suitable habitat for DSF. The habitat suitability assessment was conducted by Guy P. Bruyea (Bruyea Biological, Permit No. TE-837439-8) and Thomas J. McGill, Ph.D. (ELMT Consulting) on January 15, 2021.

The entirety of the project site is an existing water detention basin with an access road on all four sides in south Fontana that has been in existence for over fifteen years. The 4-acre basin receives stormwater from the industrial, commercial, and residential developments along Sierra Avenue south of Interstate 15.

The project site has been mapped by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey as being composed of Delhi sand soils. Due to excavation of the site during the construction of the basin, Delhi sand soils were removed down to approximately 20 feet deep and imported clay soils were used to fortify and strengthen the sloped walls for the basin. The top of the basin is at ground level and borders Sierra Avenue to the east, residential housing on the south and vacant land to the west and north. Due to the development of the basin including a perimeter fence, as well as the buildout of Sierra Avenue in south Fontana, the project site is no longer subject to aeolian processes.

Soils observed on the basin floor, side and perimeter roads found on all fours sides of the basin were determined to not support clean, unconsolidated Delhi sands. Instead, the soils were composed of compacted clay soils brought in to create the basin. All the surface soils have a heavy clay composition, due to the construction of the basin, as well as the deposit of silts and fines associated with the storage of stormwaters in the basin over the years. Unconsolidated soils may be present at depth beneath the hardened surface but open, unconsolidated clean Delhi fine sands are absent. As previously noted, the buildout of surrounding areas has disrupted the aeolian process and no new Delhi sands soils are being deposited onsite.

Based on the above noted habitat characteristics, Guy Bruyea rated this site as being unsuitable for DSF with an overall habitat quality rating of 1. Two small areas were classified as very low-quality with a habitat rating of 2. The site is highly unlikely to support DSF. There are no known extant DSF populations in the general vicinity. It is improbable that a dispersing DSF individual would temporarily occupy the subject property.

Table of Contents

Exhibits

Appendix

Section 1 Introduction

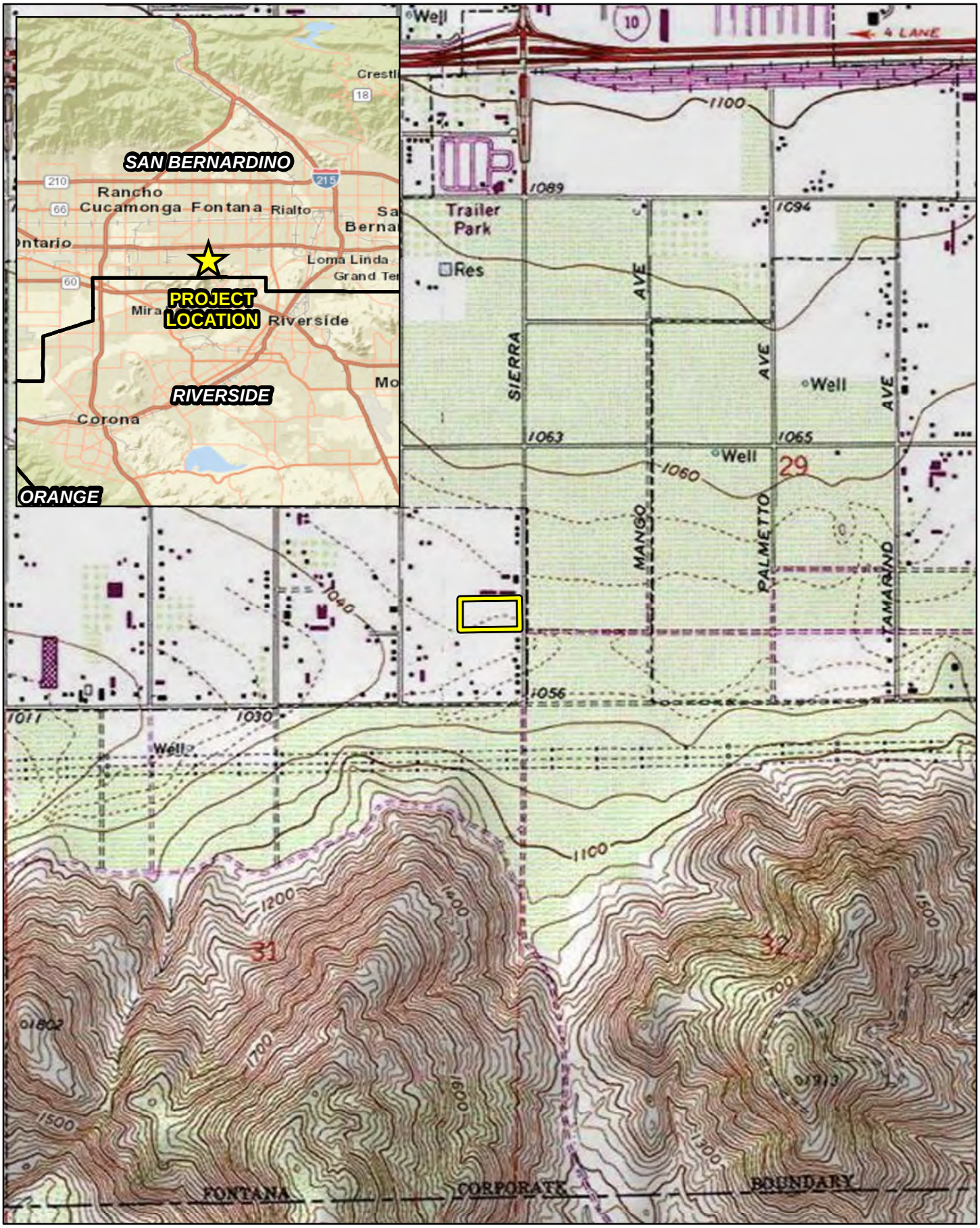
ELMT Consulting (ELMT) and Bruyea Biological Consulting prepared this Delhi Sands Flower-loving Fly (DSF) Habitat Suitability Assessment for the approximately 4.78-acre Fontana Southridge Project (project site or site) located in the City of Fontana, San Bernardino County, California. Guy Bruyea, United States Fish and Wildlife Service (USFWS) Permitted DSF Biologist (Permit Number TE-837439-8) and Thomas J. McGill, Ph.D., inventoried and evaluated the condition of the habitat on January 15, 2021. This assessment was conducted to determine if the soils on the project site support clean Delhi sand soils capable of providing suitable habitat for DSF.

1.1 PROJECT LOCATION

The project site is generally located south of Interstate 10, east of Interstate 15, north of State Route 60, and west of Sierra Avenue in the City of Fontana, San Bernardino County, California. The site is depicted on the Fontana quadrangle of the United States Geological Survey's (USGS) 7.5-minute map series within Section 30 of Township 1 South, Range 5 West (Exhibit 1, *Site Vicinity*). Specifically, the site is identified as Assessor Parcel Numbers (APNs) 0255-101-22 and -23 (Exhibit 2, *Project Site*).

1.2 PROJECT DESCRIPTION

The project proposes fill of the existing basin and construct a housing development.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

ELMT CONSULTING

0 0.25 0.5 1 Miles

Source: USA Topographic Map, San Bernardino County

Regional Vicinity

Exhibit 1

APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

Project Site

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, San Bernardino County

Exhibit 2

Section 2 Background

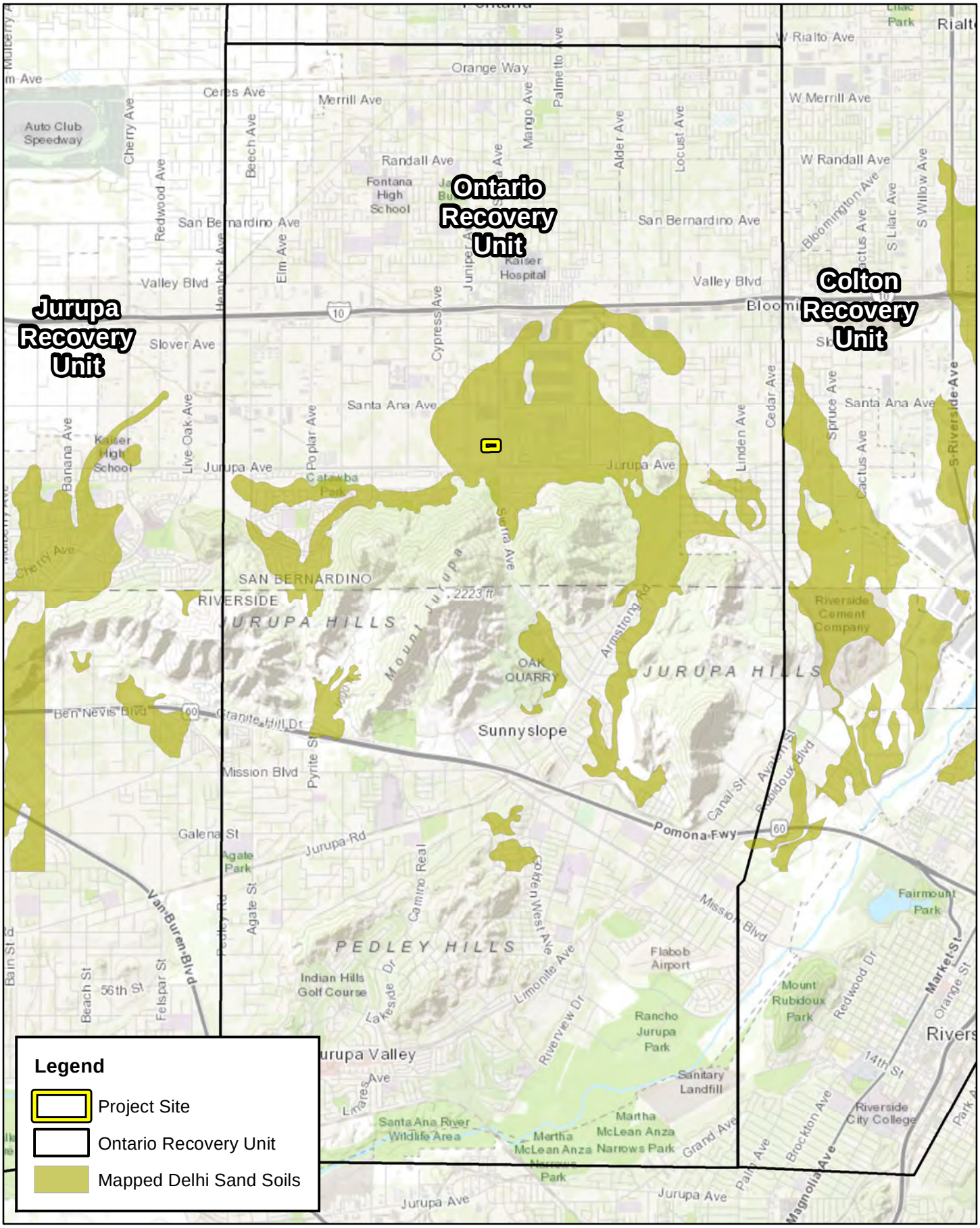
It has been generally acknowledged that DSF occur in Delhi sand soils, particularly clean dune formations composed of Aeolian sands. Conversely, soils and sands deposited by fluvial processes from the surrounding alluvial fans do not support DSF. These alluvial soils are composed of course sands, cobble and gravel (Tujunga soils) or coarse sands, silts and clays (Cieneba soils). In this part of San Bernardino County, the separation of soil types has been lost due to the mixing and cross contamination from years of agricultural activities, development, and other man-made disturbances.

Depending on the extent of mixing and contamination, some areas formally mapped as Delhi sand soils no longer have potential to support DSF populations. Conversely, some areas formally mapped as Cieneba soils may now supported wind deposited Delhi sand soils and have potential to support DSF. Six DSF experts (Ken Osborne, Greg Ballmer, Rudy Matoni, Karin Cleary-Rose, Alison Anderson and Tom McGill) used this criterion, the relative abundance of clean Delhi sand soils versus the amount of Cienba or other alluvial soils, to rate the suitability of the habitat to support DSF (Michael Brandman Associates, 2003). Soils high in gravel and alluvial materials, or high in fine materials such as silts and clays, were rated low, while soils that appear to be high in Aeolian deposited sands were rated high. This qualitative assessment of DSF habitat was further refined by considering the relative degree of soil compaction. Alluvial soils have a tendency to solidify to a hard surface pavement, while Aeolian soils are easier to penetrate and provide good substrate for DSF.

Although it has been common to attribute the presence of four common plant species California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), deer weed (*Acmispon glaber*), and telegraph weed (*Heterotheca grandiflora*) as indicators of habitat suitability, for the assessment, vegetation composition was not given much weight in making this habitat evaluation. These dominant plant species, and plant species composition of habitats, may not be directly relevant to larval development (due to likely predatory or parasitic habitat of DSF larvae) (Osborne, et al. 2003). The known immature life histories of the nine asiloid fly families, including that to which the DSF is classified, are primarily predatory and/or parasitic on other invertebrate species (mainly insects) and the presence or absence of plant species appears not to be relevant to the life history of these flies.

Land with suitable DSF habitat include only those areas with open, clean and unconsolidated Delhi Series soils that have not been permanently altered by residential, commercial, or industrial development, or other human actions. Areas known to contain Delhi sand soils and/or to be occupied by DSF have been divided by USFWS into three recovery units (Colton, Jurupa, and Ontario Recovery Units (USFWS, 1997)). These recovery units are defined as large geographic areas based on geographic proximity, similarity of habitat, and potential genetic exchange.

The project site is located within the Jurupa Recovery Unit (Exhibit 3, *DSF Recovery Units*). In the USFWS five-year review of the DSF Recovery Plan (USFWS, 2008), the USFWS acknowledged the habitat conditions have changed that preclude long-term conservation goals in most of the Recovery unit.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

DSF Recovery Units

Source: World Topographic Map, San Bernardino County

Exhibit 3

Section 3 Methodology

The criteria discussed in detail below were used to rate the relative abundance of clean Delhi sand soils verses the amount of Cieneba, Tujunga, or other alluvial soils, to rate the suitability of the habitat to support DSF. Soils high in gravel and alluvial materials, or high in fine materials such as silts and clays, were rated low, while soils that appear to be high in Aeolian deposited sands were rated high. This qualitative assessment of DSF habitat was further refined by considering the relative degree of soil compaction. Alluvial soils have a tendency to solidify to a hard surface pavement, while Aeolian soils are loose sandy soils that are easier to penetrate and provide good substrate for DSF.

3.1 SOIL

Onsite and adjoining soils were researched prior to the field visit using the United States Department of Agricultural (USDA) Natural Resources Conservation Survey (NRCS) Soil Survey for San Bernardino County, California. In particular, the USDA NRCS was reviewed to determine the location of mapped Delhi sand soils on or within the immediate vicinity of the project site.

3.2 VEGETATION

Vegetative resources and surrounding land uses were also assessed as part of determining baseline conditions by walking meander transects and recording all species observed and adjacent land uses. Common plant species observed during the field investigation were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less-familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

3.3 HABITAT SUITABILITY ASSESSMENT

The scope of the habitat suitability assessment was to determine the presence or absence of unconsolidated Delhi sand deposits and to determine its quality as it pertains to DSF. DSF permitted biologist, Guy Bruyea and ELMT biologist Tom McGill surveyed the project site on January 15, 2021. The habitat suitability assessment consisted of a visual and tactile inspection of all areas on the project site that contain Delhi sand soils. The majority of the surface soils within the project site are mapped as Delhi fine sands (Exhibit 4, *Soils*). The site was evaluated for the quality or purity of Delhi Sands and for its potential to support DSF. Areas were assigned one or more ratings ranging between 1 and 5, with 5 being the best quality and most suitable habitat:

1. Soils dominated by heavy deposits of alluvial material including coarse sands and gravels with little or no Delhi sand soils and evidence of soil compaction. Developed areas, non-Delhi sands soils with high clay, silt, and/or gravel content. Delhi sands extensively and deeply covered by dumping of exotic soils, rubble, trash or organic debris. *Unsuitable.*

2. Delhi sand soils are present, but the soil characteristics include a predominance of alluvial materials (Tujunga Soils and Hilmar loamy sand), or predominance of other foreign contamination. Sever and frequent disturbance (such as maintenance yard or high use roadbed). *Very Low Quality*.

3. Although not clean, sufficient Delhi sand soils are present to prevent soil compaction. Moderately contaminated Delhi sands. Delhi sands with moderate to high disturbance (such as annual disking). Sufficient Delhi sands are present to prevent soil compaction (related to contamination by foreign soils). Some sandy soils exposed on the surface due to fossorial animal activity. *Low Quality*.

4. Abundant clean Delhi sand soils with little or no foreign soils (such as alluvial material, Tujunga soils or Hilmar loamy sand) present. Moderate abundance of exposed sands on the soil surface. Low vegetative cover. Evidence of moderate degree of fossorial animal activity by vertebrates and invertebrates. May represent high quality habitat with mild or superficial disturbance. *Moderate Quality*.

5. Sand dune habitat with clean Delhi sand soils. High abundance of exposed sands on the soil surface. Low vegetative cover. Evidence (soil surface often gives under foot) of high degree of fossorial animal activity by vertebrates and invertebrates. Sand associated plant and arthropod species may be abundant. *High Quality*.

It should be noted that habitat qualities often vary spatially within a site so that conditions on a site fall within a range of qualities. Further, overall habitat quality is affected by the overall habitat value of a site.

APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

Soils

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Soil Survey Geographic Database, San Bernardino County

Exhibit 4

Section 4 Results

4.1 EXISTING CONDITIONS

The approximately 4.78-acre site is bounded to the north and west by vacant fields, to the south by residential housing, and to the east by Sierra Avenue. The entirety of the project site is developed with an existing water detention basin with an access road on all four sides in south Fontana that has been in existence for over fifteen years. The basin receives stormwater from industrial, commercial, and residential developments along Sierra Avenue south of Interstate 10.

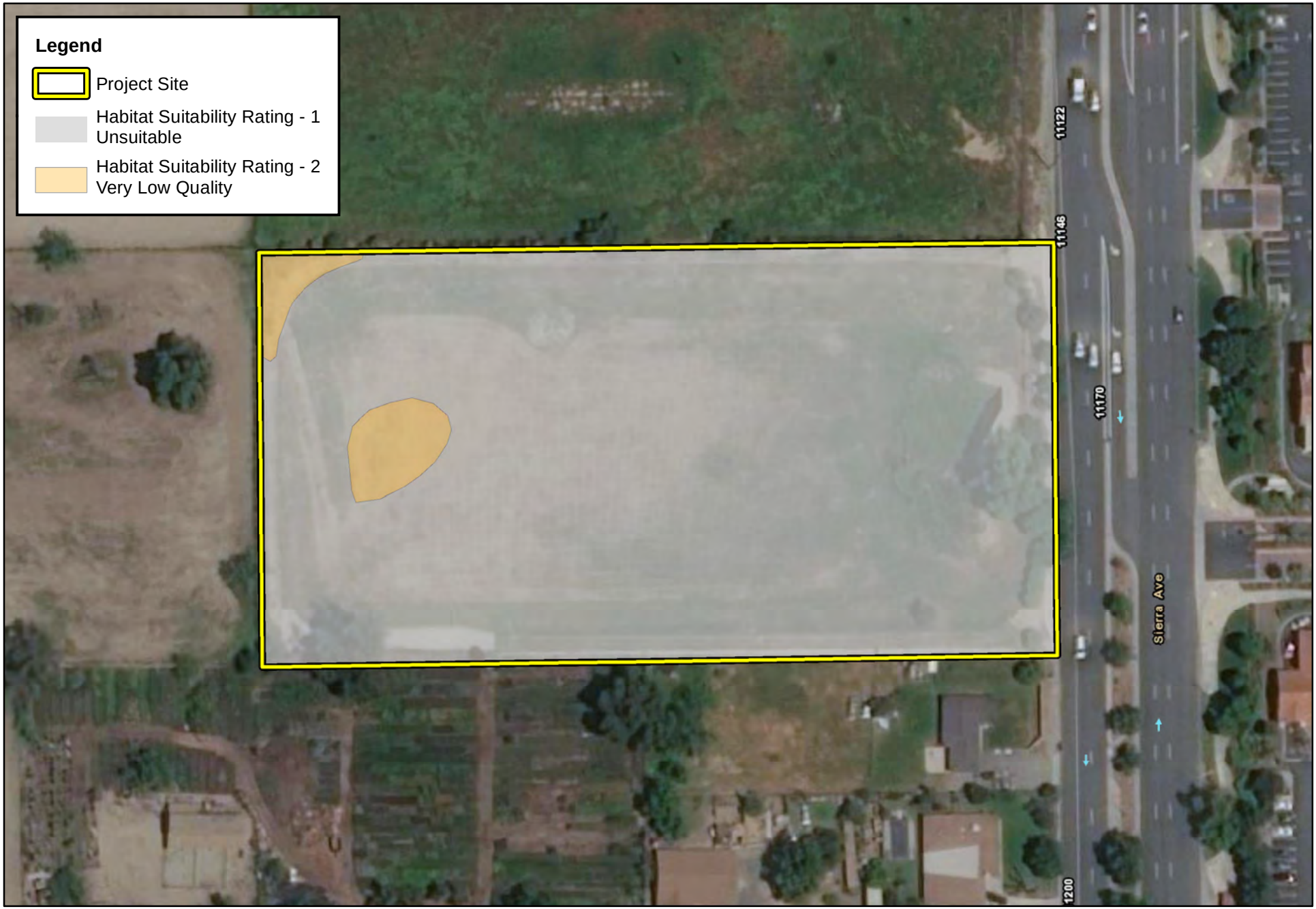
Vegetation on the basin floor and basin sloped sides have been routinely mowed, and primarily supported non-native/early successional plant species. At the east send of the basin, where stormwater is released, emergent aquatic species were observed. Plant species observed include Bermuda grass (*Cynodon dactylon*), rip gut (*Bromus diandrus*), curly dock (*Rumex crispus*), bull thistle *Ciricium vulgare*), cattail (*Typha* sp.), and sedge (*Cyprus sp*.). Native species associated with Delhi sands [Croton (*Croton californicus*), California buckwheat (*Eriogonum fasciculatum*) and telegraph weed (*Heterotheca grandiflora*)] were not observed on the project site.

4.2 HABITAT SUITABILITY ASSESSMENT

Based on the NRCS USDA Web Soil Survey, the project site and immediate adjacent areas are historically underlain by Delhi fine sand and Tujunga loamy sand (0 to 5 percent slopes). Refer to Exhibit 4, *Soils*. The entire project site is located within mapped Delhi fine sand soils.

Soils observed throughout the project site are compacted and did not give way underfoot during the survey. Open sandy dunes with sparse vegetative cover were not observed on the site. Unconsolidated soils are present in some areas beneath the hardened surface layer. Some areas contain loose soils at the surface in association with fossorial animal activity (mostly rodent burrows and ant mounds), but this was not commonly observed. Good quality Delhi fine sands are absent on the site due to prolonged anthropogenic disturbance, including the disruption of the aeolian process in association with surrounding development. In addition, the creation of the basin and imported soils have degraded soil quality, especially as it pertains to DSF.

Based on the above noted habitat characteristics, Guy Bruyea rated this site as being unsuitable for DSF with an overall habitat quality rating of 1 (Exhibit 5, *DSF Habitat Suitability*). Two small areas were classified as very low-quality with a habitat rating of 2. The site is highly unlikely to support DSF. Additionally, there are no known extant DSF populations in the immediate vicinity. It is improbable that a dispersing DSF individual would temporarily occupy the subject property.



APPROXIMATELY 4.78-ACRE - FONTANA SOUTHRIDGE PROEJCT
DELHI SANDS FLOWER-LOVING FLY SUITABILITY ASSESSMENT

DSF Habitat Suitability

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Soil Survey Geographic Database, San Bernardino County

Exhibit 5

Section 5 Conclusion and Recommendations

A valid section 10(a)(1)(A) recovery permit issued under the Endangered Species Act of 1973, as amended, is currently held by Guy Bruyea (Permit Number TE-837439-8). Based on his twenty-five years of experience with DSF and occupied DSF ecosystems, the information provided in this report, and information based on the referenced DSF habitat suitability scale (Ballmer, Osborne, McGill), Guy Bruyea rated this site as being unsuitable and highly unlikely to support DSF. There are no known extant DSF populations in the vicinity. Focused surveys are not recommended.

Section 6 References

Osborne, K.H. 2002a. Focused surveys for the Delhi Sand giant flower-loving fly (*Rhaphiomidas terminatus abdominalis*) on a 125-acre portion of the Fontana Business Center site. Submitted to USFWS October 15, 2002.

Osborne, K.H. Greg Ballmer and Thomas McGill. 2003. Delhi Sands Flower-loving Fly Habitat Assessment for the Fontana Business Center.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2018. *Web Soil Survey.* Online at http://websoilsurvey.nrcs.usda.gov/app/.

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U.S. Fish and Wildlife Services. 1997. Final Recovery Plan for Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*) U.S. Fish and Wildlife Services, Portland, Or. 51 pages.

U.S. Fish and Wildlife Service. 2019. Recovery Plan Amendment for Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*).

U.S. Fish and Wildlife Services. 2008. Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*) 5-Year Review: Summary and Evaluation. Carlsbad, California. March 2008.

Appendix A Site Photographs

Photograph 1: Looking west from southeast corner across the basin.

Photograph 2: Storm drain discharge pint and aquatic vegetation on the eastern boundary of the site.

Photograph 3: Looking east from southwest corner of the basin.

Photograph 4: Exposed clay contaminated soils with gravel on the southern slope of the basin.

Photograph 5: Looking east from western slope of the basin.

Photograph 6: Looking west at the clays soils in the bottom of the basin.

Photograph 7: Northern slope of the basin.

Photograph 8: Exposed clay contaminated soils with gravel on the northern slope of the basin.

Kari Cano
BRA/JD – Fontana Southridge
October, 14, 2020

Table 1.
Database Queries Species Occurrence Results

Scientific Name	Common Name	Federal/State Listing	Other Rankings	Habitat	Potential to Occur
Agelaius tricolor	tricolored blackbird	None/ Candidate Endangered	G2G3, S1S2, SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Anniella stebbinsi	southern California legless lizard	None/None	G3, S3, SSC	Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Arenaria paludicola	marsh sandwort	Endangered/ Endangered	G1, S1, CNPS 1B.1	Marshes and swamps. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Arizona elegans occidentalis	California glossy snake	None/None	G5T2, S2, SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Athene cunicularia	burrowing owl	None/None	G4, S3, SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Bombus crotchii	Crotch bumble bee	None/None	G3G4, S1S2,	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Calochortus plummerae	Plummer's mariposa-lily	None/None	G4, S4, CNPS 4.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 60-2500 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Catostomus santaanae	Santa Ana sucker	Threatened/ None	G1, S1,	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/None	G5T3T4, S3S4, SSC	Coastal scrub, chaparral, grasslands, sagebrush, etc. in western San Diego County. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Endangered/ Endangered	G4?T1, S1,	Marshes and swamps, coastal dunes. Limited to the higher zones of salt marsh habitat. 0-10 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.

			CNPS 1B.2		
Chorizanthe parryi var. parryi	Parry's spineflower	None/None	G3T2, S2, CNPS 1B.1	Coastal scrub, chaparral, cismontane woodland, valley and foothill grassland. Dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland. Dry, sandy soils. 90-1220 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Cicindela tranquebarica viridissima	greenest tiger beetle	None/None	G5T1, S1,	Inhabits the woodlands adjacent to the Santa Ana River basin. Usually found in open spots between trees.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Dipodomys merriami parvus	San Bernardino kangaroo rat	Endangered/ None	G5T1, S1, SSC	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains. Needs early to intermediate seral stages.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Endangered/ Endangered	G4T1, S1, CNPS 1B.1	Coastal scrub, chaparral. In sandy soils on river floodplains or terraced fluvial deposits. 180-705 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Gila orcuttii	arroyo chub	None/None	G2, S2, SSC	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave & San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Horkelia cuneata var. puberula	mesa horkelia	None/None	G4T1, S1, CNPS 1B.1	Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. 15-1645 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Lasiurus xanthinus	western yellow bat	None/None	G5, S3, SSC	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	None/None	G5T3, S3, CNPS 4.3	Chaparral, coastal scrub. Dry soils, shrubland. 4-1435 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/None	G5T3T4, S3S4, SSC	Intermediate canopy stages of shrub habitats & open shrub / herbaceous & tree / herbaceous edges. Coastal sage scrub habitats in Southern California.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Lycium parishii	Parish's desert-thorn	None/None	G3?, S1, CNPS 2B.3	Coastal scrub, Sonoran desert scrub. 135-1000 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Malacothamnus parishii	Parish's bush-mallow	None/None	GXQ, SX, CNPS 1A	Chaparral, coastal sage scrub. In a wash. 305-455 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.

Monardella pringlei	Pringle's monardella	None/None	GX, SX, CNPS	Coastal scrub. Sandy hills. 300-400 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/None	G4, S3, SSC	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Oncorhynchus mykiss irideus pop. 10	steelhead - southern California DPS	Endangered/ None	G5T1Q, S1,	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Phrynosoma blainvillii	coast horned lizard	None/None	G3G4, S3S4, SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Polioptila californica californica	coastal California gnatcatcher	Threatened/ None	G4G5T 2Q, S2, SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	Endangered/ None	G1T1, S1,	Found only in areas of the Delhi Sands formation in southwestern San Bernardino & northwestern Riverside counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes & sparse vegetation. Oviposition req. shade.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	None/None	G1, S1.1,	Coastal and inland scrub.	Habitat type does not occur onsite.
Senecio aphanactis	chaparral ragwort	None/None	G3, S2, CNPS 2B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Sphenopholis obtusata	prairie wedge grass	None/None	G5, S2, CNPS 2B.2	Cismontane woodland, meadows and seeps. Open moist sites, along rivers and springs, alkaline desert seeps. 15-2625 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Symphyotrichum defoliatum	San Bernardino aster	None/None	G2, S2, CNPS 1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 3-2045 m.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.
Vireo bellii pusillus	least Bell's vireo	Endangered/ Endangered	G5T2, S2,	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	Habitat to support this species does not occur onsite. Potential for this species to occur is **low**.

Kari Cano
BRA/JD – Fontana Southridge
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Coding and Terms

E = Endangered T = Threatened SSC = Species of Special Concern
R = Rare C = Candidate FP = Fully Protected

Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range. In fact, some species are limited to the San Bernardino Mountains area, however, they are locally common.

State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats. Raptor and owls are protected under section 3502.5 of the California Fish and Game code: "It is unlawful to take, possess or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess or destroy the nest or eggs of any such bird."

State Fully Protected: The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles. Please note that most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

State Plant Rankings:

S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres
S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 2,000 and 10,000 acres
S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 10,000 and 50,000 acres
S4 - No Threat Rank
S5 - No Threat Rank
SH - all sites in California are historical
.1 - very threatened
.2 - threatened
.3 - no current threats known

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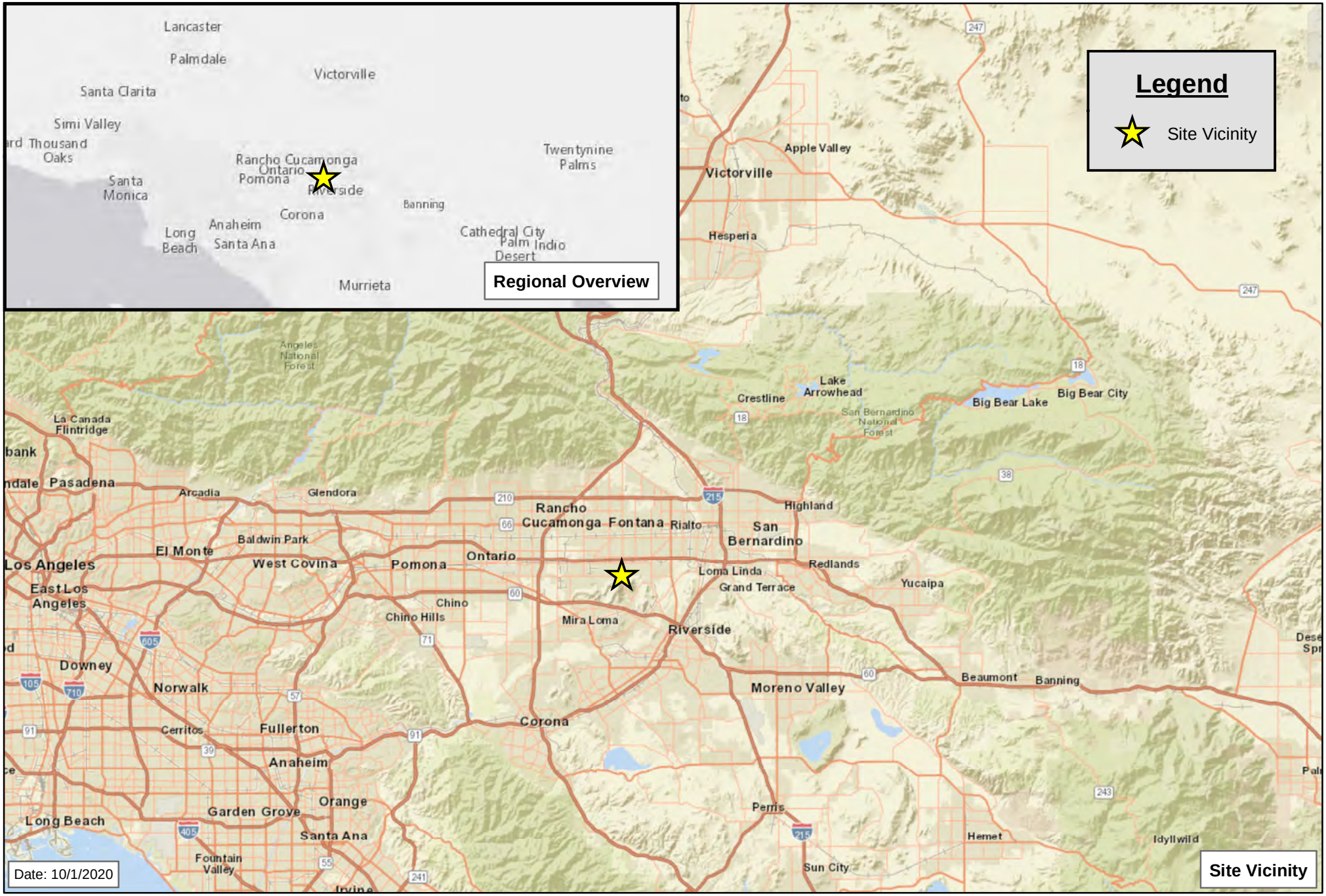
FIGURES



Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 1 - Regional Overview
Site Vicinity

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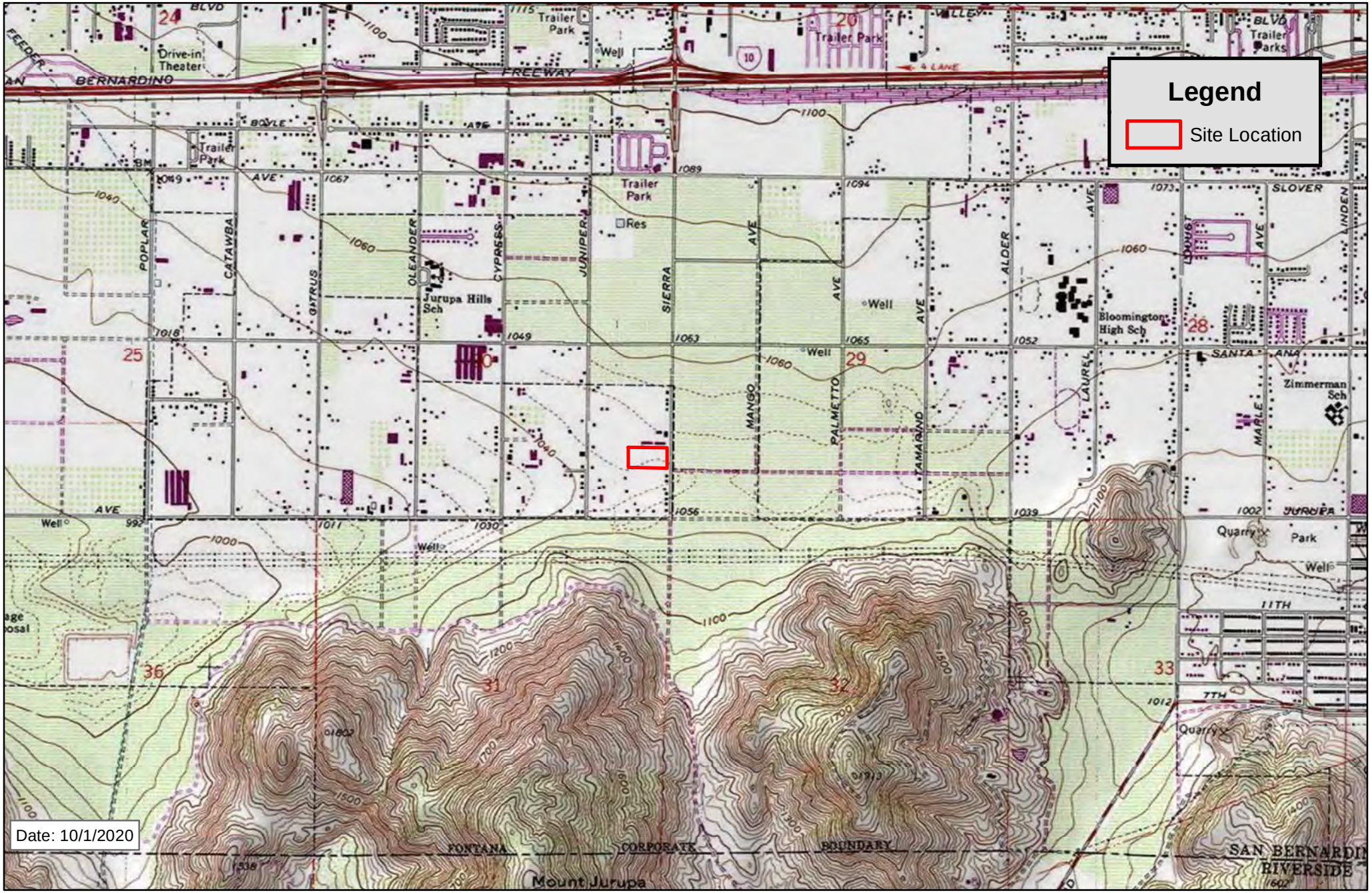

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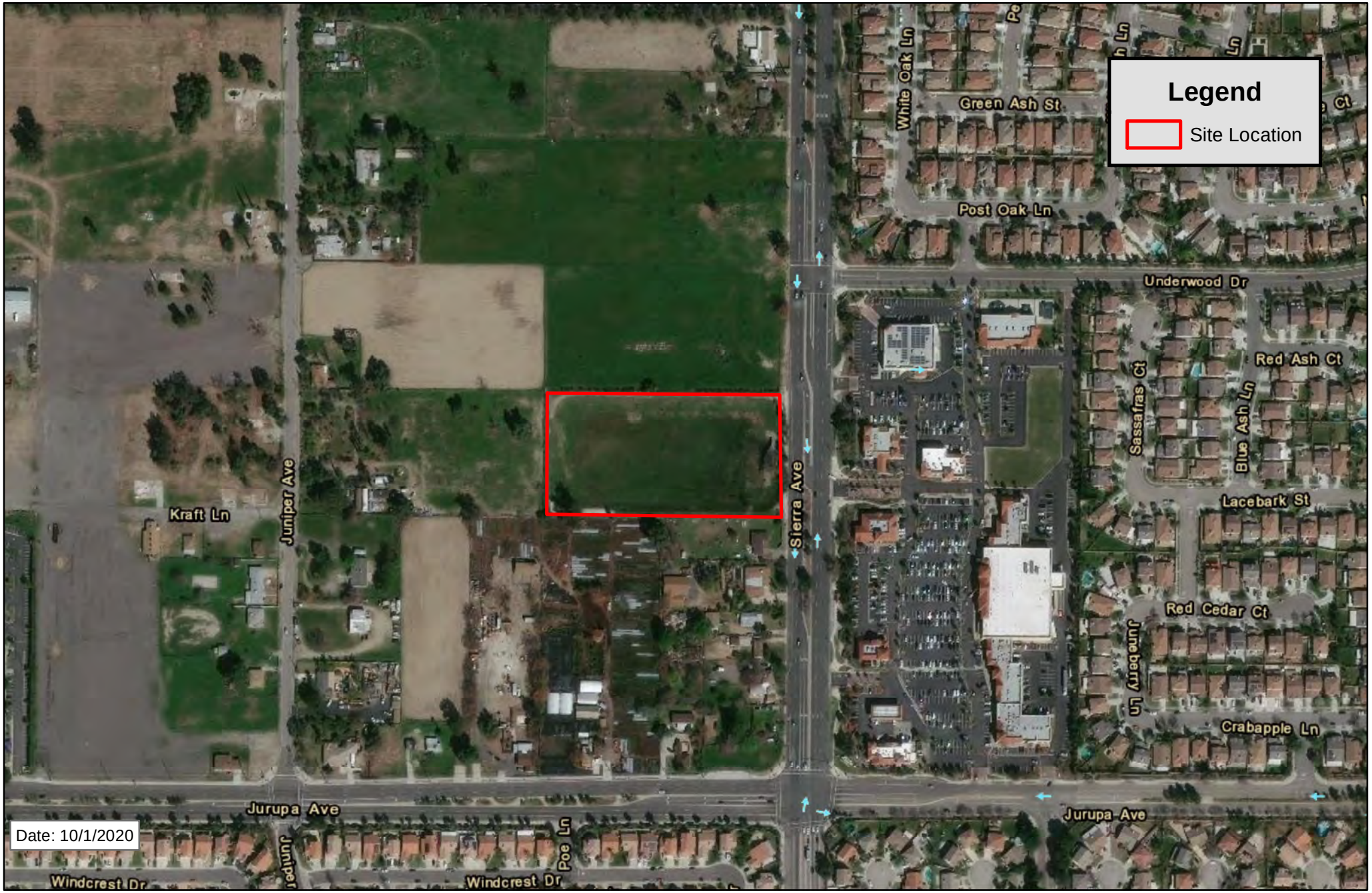
Figure 2
Site Location

Southridge - Fontana
Kimley-Horn



0 0.025 0.05 0.1 0.15 0.2 Miles

1 inch = 333 feet

Imagery Date: 2/19/2019

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Figure 3
Site Location

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0 0.00750.015 0.03 0.045 0.06 Miles

1 inch = 109 feet

Imagery Date: 2/19/2019

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
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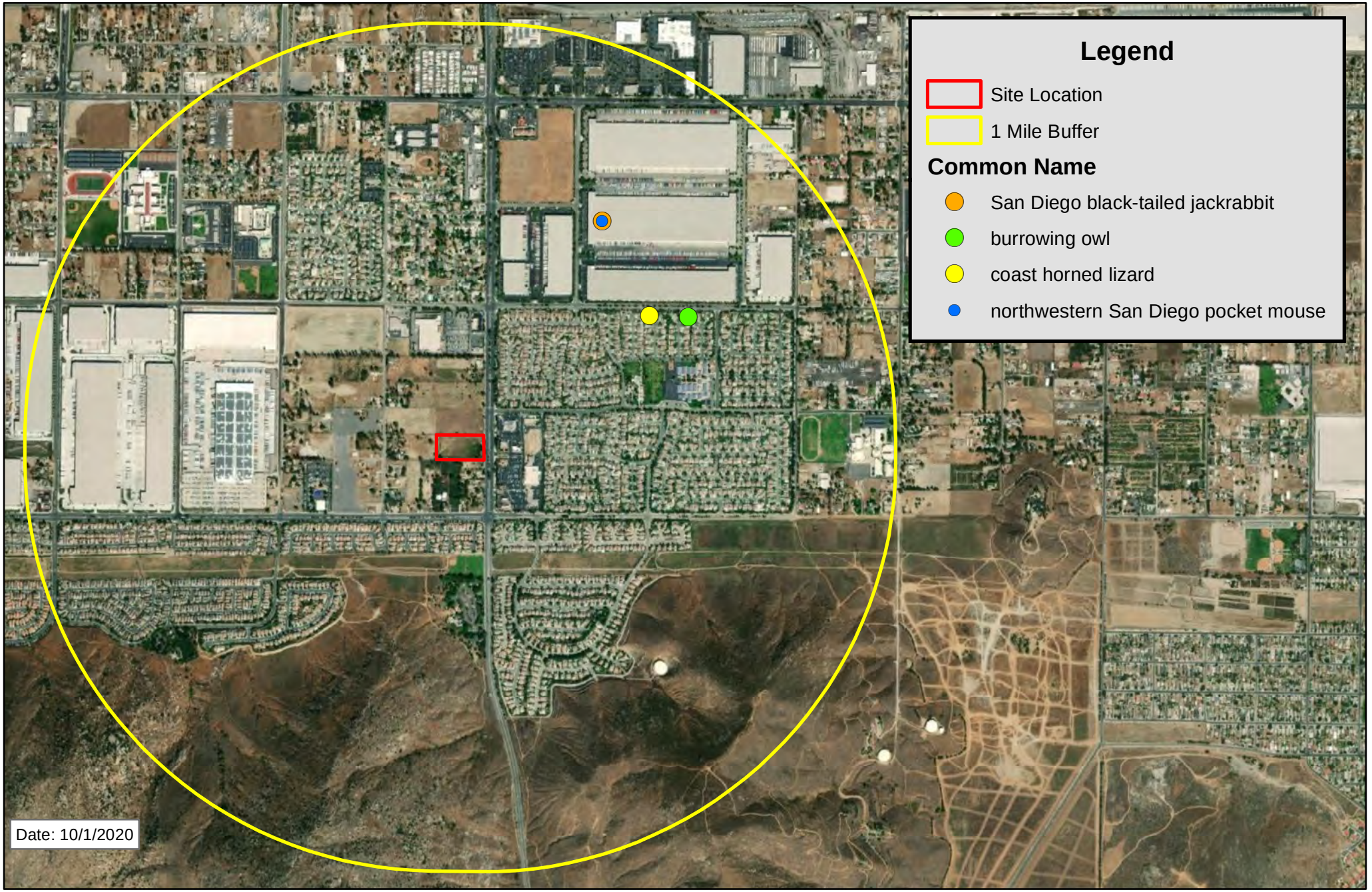
Figure 4 Soils	Southridge - Fontana Kimley-Horn



1 inch = 1,639 feet

Imagery Date: 2/19/2019

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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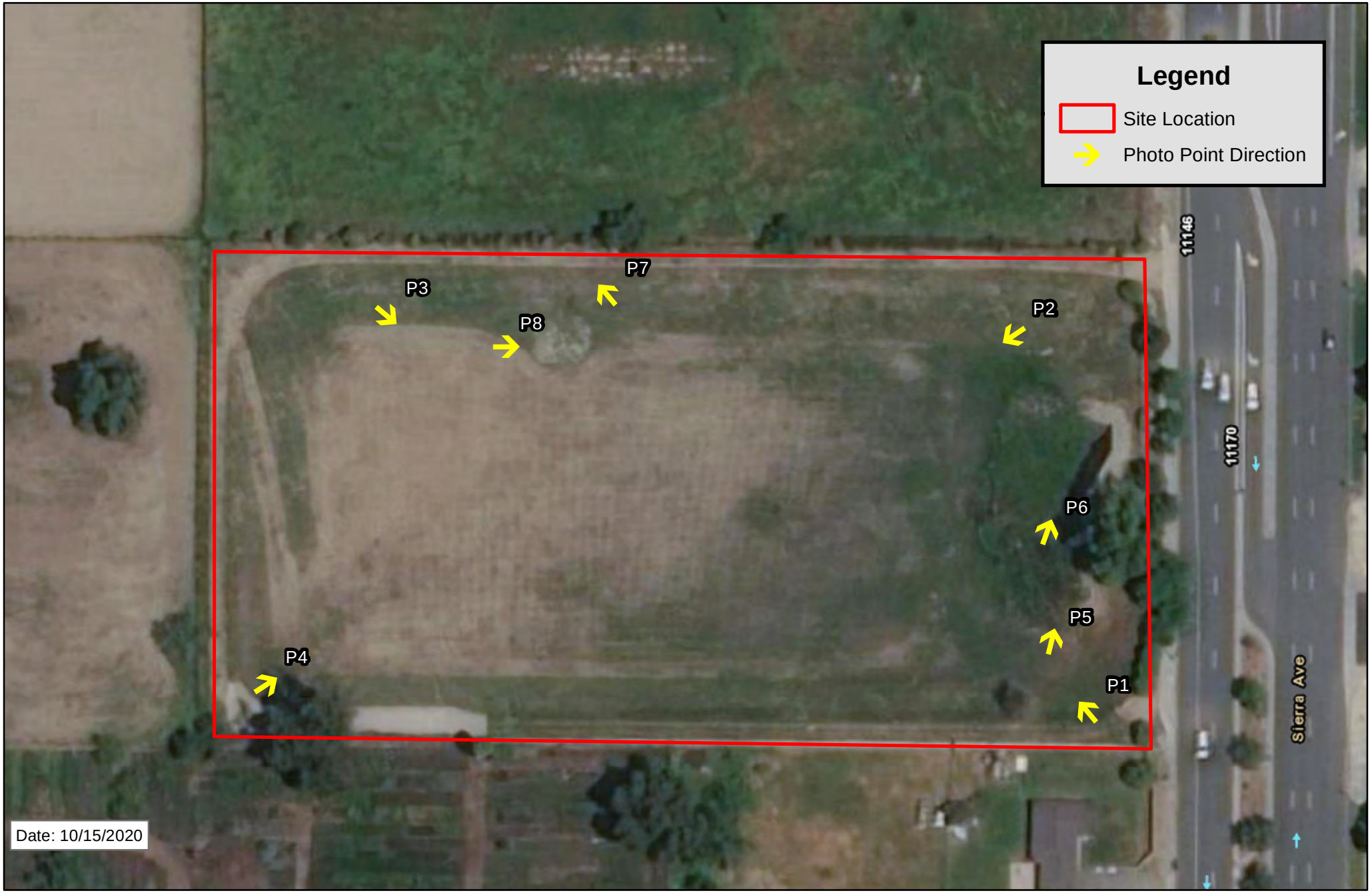
Figure 5 CNDDB	Southridge - Fontana Kimley-Horn



0 0.005 0.01 0.02 0.03 0.04 Miles

1 inch = 83 feet

Imagery Date: 2/19/2019

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
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Figure 6
Photo Map

Southridge - Fontana
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October, 14, 2020

SITE PHOTOS

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BRA/JD – Fontana Southridge
October, 14, 2020

	Photo 1. SE corner
	Photo 2. NE corner

	Photo 3. NW corner
	Photo 4. SW corner

	Photo 5. Small inlet grate east
	Photo 6. Large inlet grate east

Photo 7. Small inlet drain north

Photo 8. Small inlet drain north