5TH & STERLING PROJECT

September 2023

General Biological Resources Assessment

Redlands United States Geological Survey
7.5-MinuteTopographic Quadrangle Map

Prepared By

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1.0 INTRODUCTION AND EXECUTIVE SUMMARY

NOREAS Inc. (NOREAS) is pleased to provide this General Biological Resources Assessment for the 5th & Sterling Project (hereafter referred to as the "Project"). The Project is located on the northeast corner of 5th Street and Sterling Avenue, in the City of San Bernardino, California (Figures 1). This document details the methods and results of baseline biological resources surveys and habitat assessments for the Project. For the purposes of this document, the "study area" includes the Project's proposed ground disturbance footprint (Project Site), and a buffer (Figure 2). The intended use of this document is to disclose and evaluate the Project Site's biological conditions and determine the potential for occurrence of common and special-status species[1], and their habitats.

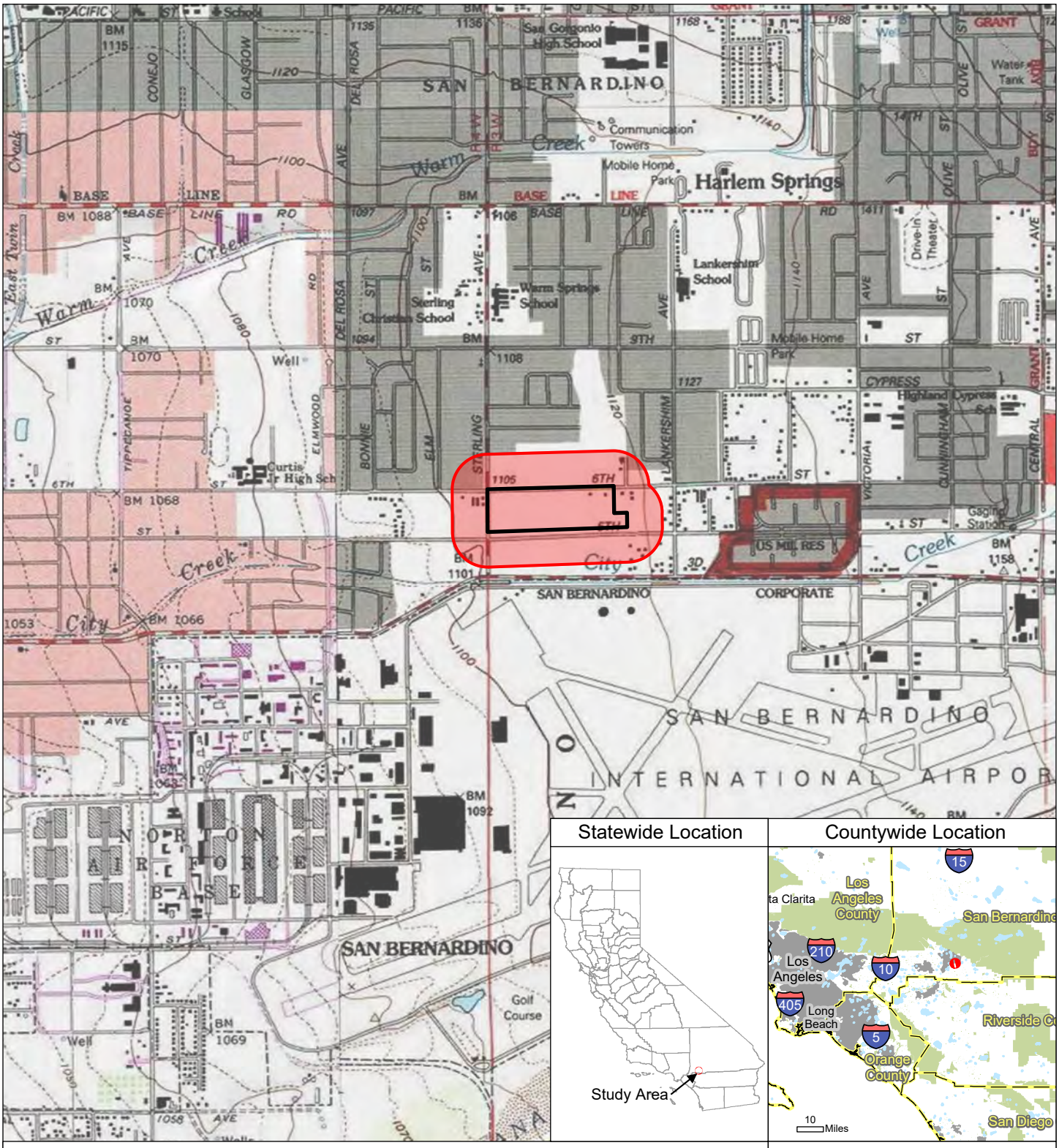
The data provided herein is conclusive, 99% of the Project Site consists of land that has been developed, disturbed, or overtaken by non-native plants and anthropogenic activities. To that end, the Project is not collocated with any United States Fish and Wildlife Service (USFWS) designated critical habitat, nor were any special status species detected during the 2023 field surveys. As such, no nesting birds, no special status plant species, no Burrowing Owl (*Athene cunicularia*), no suitable habitat for San Bernardino kangaroo rat (*Dipodomys merriami parvus* [SBKR]) or Los Angeles pocket mouse (*Perognathus longimembris brevinasus* [LAPM]), and no habitat suitable for Delhi Sands flowerloving fly (*Rhaphiomidas terminatus abdominalis* [DSF]) occupation were detected during surveys of the Project Site. The Project Site lacks the essential habitat attributes needed to support these species. Additionally, no remnant raptor nests, or bat guano were detected within the Project Site either.

Given the Project Site's current state, and surrounding urban infrastructure, it has low ecological value as a functional habitat for native flora and fauna. It also offers limited – if any, potential as a migration corridor for wildlife. In simple terms, the Project Site is severely movement constrained by the surrounding residential, industrial, and commercial developments, and public infrastructure.

[1] For the purposes of this analysis, "special-status species" refers to any species that has been afforded special protection by federal, state, or local resource agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW]) or resource conservation organizations (e.g., California Native Plant Society [CNPS], etc.). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, MBTA Section 10 protected species are afforded avoidance and minimization protections per state and federal requirements.

2.0 PROJECT AND PROPERTY DESCRIPTION

For the purposes of this document, the "study area" includes the Project's proposed ground disturbance footprint (Project Site) and a buffer (Figure 2). The Project Site can be found on the Redlands United States Geological Survey (USGS) 7.5-MinuteTopographic Quadrangle Map (USGS 1984).



The Study Area is located in San Bernardino County on the Redlands USGS 7.5-minute quadrangle map; San Bernardino Meridian, Township 1 South, Range 3 West, in Section 00 and Township 1 South, Range 4 West, in Section 00:
Center coordinate (WGS 1984): Latitude 33.824, Longitude -117.211

Figure 1. Regional Location

Project Site (25.69 ac)

Study Area (102.13 ac)

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/20/2022

Map Prepared: 8-30-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 2. Site Vicinity

3.0 FOCUSED STUDY/SPECIES OF CONCERN

Prior to beginning field surveys, resource specialists were consulted and available information from resource management plans, databases and relevant documents were reviewed to determine the locations and types of biological resources[2] that have the potential to exist within - and adjacent to, the study area. Biological resources were evaluated within several miles of the Project Site.

The materials reviewed included - but were not limited to, the following:

- ✓ USFWS Critical Habitat Mapper and File Data (USFWS 2023a);
- ✓ USFWS San Bernadino County Field Office Species List (USFWS 2023b);
- ✓ USFWS National Wetlands Inventory database (USFWS 2023c);
- ✓ Regional South Coast Missing Linkages Project Report (South Coast Wildlands 2008);
- ✓ California Natural Diversity Database maintained by the California Department of Fish and Wildlife (CDFW) (CDFW 2023);
- ✓ Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2023a);
- ✓ California Native Plant Society (CNPS) Electronic Inventory (CNPS 2023); and
- ✓ Aerial Photographs (Microsoft Corporation 2023).

[2] For the purposes of this analysis, "biological resources" refers to the plants, wildlife, and habitats that occur, or have the potential to occur, within the study area.

4.0 METHODS

To support the analysis detailed within Section 3.0 above, pedestrian-based field surveys were performed to assess land cover, general and dominant vegetation communities, habitat types, and species present within communities. Community descriptions were based on observed dominant vegetation composition, and derived from the criteria and definitions of widely accepted vegetation classification systems (Holland 1986 and Sawyer et al. 2009).

Plants were identified to the lowest taxonomic level sufficient to determine whether the species observed were non-native, native, or special-status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to The Jepson Manual (Baldwin et al. 2012). The presence of a wildlife species was based on direct observation and/or detection of wildlife sign (e.g., tracks, burrows, nests, scat, skeletal remains or vocalization). Field data compiled for wildlife species included scientific name, and common name. Wildlife of uncertain identity were documented and subsequently identified from specialized field guides and related literature (Burt and Grossenheider 1980; Halfpenny 2000; Sibley 2000; Elbroch 2003 and Stebbins 2003).

Additionally, the Project Site was assessed for its potential to support special-status species based on habitat[3] suitability comparisons with reported occupied habitats (Appendix A). The following potential for occurrence definitions were utilized within Appendix A:

- **Absent [A]** – Species distribution is restricted by substantive habitat requirements which do not occur – or are negligible within the Project Site, and no further survey or study is necessary to determine likely presence or absence of this species.
- **Habitat Present [HP]** – Species distribution is restricted by substantive habitat requirements which occur within the Project Site, and further study may be necessary to determine likely presence or absence of species.
- **Present [P]** – Species or species sign were observed within the Project Site, or historically has been documented within Project limits.
- **Critical Habitat [CH]** – The Project Site is located within a USFWS-designated critical habitat unit.

4.1 Focused Assessment

As a result of literature reviews and general biological surveys, additional targeted assessment activities were performed for Burrowing Owl, special status plants, SBKR, LAPM and DSF. Methods, results, and assumptions are presented within Appendices E, F, G and H. Summarized methods for each species are detailed below:

4.1.1 Special Status Plant Species

Plant survey methods were derived from the standardized guidelines issued by the USFWS (USFWS 2000), CDFW (CDFW 2009) and the CNPS (CNPS 2001). Field surveys were specifically conducted to determine the presence or absence of special status plant species, but the surveys were floristic[4] in nature. Surveys were conducted during the appropriate blooming period to maximize the potential for detection of special status plants. Survey methods, results, and assumptions are presented within Appendix E.

[3] A "habitat" is defined as the place - or type of locale, where a plant or animal, naturally or normally lives and grows.

[4] Focused on the distribution, number, types, and relationships of plant species in an area, or region.

4.1.2 Burrowing Owl

Survey methods for Burrowing Owl were derived from generally accepted professional standards, including – but not limited to, the 1993 California Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines (CBOC 1993), the 1995 and 2012 California Department of Fish and Game Staff Reports on Burrowing Owl Mitigation (CDFG 1995 and 2012). Detailed Burrowing Owl survey methods, results, and assumptions are presented within Appendix F. Please note that Burrowing Owl is of limited distribution - or occurs infrequently throughout California, and therefore their status is monitored by resource agencies[5]. The Burrowing Owl is not a Federal and/or State listed species.

4.1.3 San Bernardino Kangaroo Rat and Los Angeles Pocket Mouse

Field surveys and assessments for SBKR and LAPM were performed by Lincoln Hulse BS and Philippe Vergne MS in June and August of 2023. That said, Philippe Vergne was the primary investigator as he holds a USFWS permit to trap and handle Stephens's and San Bernardino Kangaroo rats, Pacific Pocket mouse, and to conduct field studies on sensitive small mammals in Southern California (TE-831207-4), a California Department of Fish and Game (CDFG) Memorandum of Understanding for above mentioned species and the Mohave Ground Squirrel, LAPM, Palms Springs pocket mouse, Palm Springs ground squirrel, white-eared pocket mouse, Jacumba pocket mouse, north-western San Diego pocket mouse, and Dulzura pocket mouse, and a CDFG collection permit. Detailed SBKR and LAPM assessment methods, results, and assumptions are presented within Appendix G.

4.1.4 Delhi Sand Flower Loving Fly

Field surveys and assessments for DSF were conducted by Lincoln Hulse BS and Dale Powell PhD in April and August of 2023. But more specifically, Dale Powell was the primary investigator as he holds a USFWS permit to conduct field studies of DSF (Recovery Permit # TE-006559-5). Detailed DSF assessment methods, results, and assumptions are presented within Appendix H.

4.2 Evaluation of Wetlands and Waterways

Based on the aforementioned review of commercially available literature and habitat assessments, the presence and/or absence of surface water conveyance features, riparian plant communities, riverine land cover types and wetlands - including vernal pools, was evaluated within the Project Site. Potential features were identified based on professional judgement, aerial photographic signatures, and the presence of a well-defined ordinary high-water mark, bed, bank, channel, and/or the limits of riparian habitat in the field; with deference to vegetation, soils, and observed hydrology.

[5] This species could be important locally with deference to preparation of environmental documents relating to the California Environmental Quality Act (CEQA) - based on CEQA Guidelines §15125 (c), and/or §15380.

5.0 GENERAL BIOLOGICAL SURVEY RESULTS

Weather conditions during the March, April, May, and August 2023 surveys included clear to cloudy skies, temperatures ranging from 55–98°F, with winds fluctuating from 0 to 15 miles per hour (mph). Representative photos of the study area are provided in Appendix B.

5.1 Vegetation Communities and Land Cover Types

Three vegetation community/land cover types were observed within the study area: Disturbed/Developed, Ruderal and Non-Native Grassland (Figure 3). These types are described below.

Developed/Disturbed

Disturbed/Developed lands within the study area include locales that have been developed, paved, cleared, graded, or otherwise altered by anthropogenic activities (i.e., industrial warehouses, access roads, concrete pads, ornamental landscaping, industrial facilities, storage yards, residential housing, commercial enterprises, etc.). Common non-native plants species detected within this type included ripgut brome (*Bromus diandrus*), Russian thistle (*Kali tragus Kali tragus*) and puncture vine (*Tribulus terrestris*).

Ruderal

The ruderal vegetation community includes locales that have been subject to recent grading, clearing, or other physical human modification of soils and/or vegetation. These lands also include areas with exposed soils with minimal vegetation, and moderate cover by various non-native annual grasses, and weeds (adapted for growth on substrates subject to disturbance). Common non-native plants species detected within this type included Maltese star-thistle (*Centaurea melitensis*), stinknet (*Oncosiphon piluliferum*), and cheeseweed (*Malva neglecta*). The native species - fiddleneck (*Amsinckia Intermedia*), is also represented -albeit infrequently, throughout this vegetation community.

Non-Native Grassland

The non-native grassland vegetation community is characterized by a dominance of nonnative grasses and forbs. Dominant plant species found in this community include ripgut brome (*Bromus diandrus*), black mustard (*Brassica nigra*), Russian thistle and other non-native forbs.

5.2 Wildlife

Wildlife species observed within the study area consisted of commonly-occurring species - including, but not limited to, house finch (*Haemorhous mexicanus*), western meadowlark (*Sturnella neglecta*) common raven (*Corvus corax*), and cottontail (*Sylvilagus audubonii*). Wildlife detected during the 2023 surveys are identified in Appendix D.

5.3 Special-Status Plants

No Federal or State listed plant species were observed within the study area during the 2023 field surveys. However, several have been documented within 10 miles of the Project (Figure 4). The study area includes no USFWS-designated critical habitat for plants (Figure 5). Based on the results of the targeted plant species surveys (Appendix F), there are no special status plants present within the Project Site. Special-status species known to occur within 10 miles of the Project, and their potential for occurrence, are detailed within Appendix A. Plant species observed during the field surveys are listed in Appendix C.

5.4 Special-Status Wildlife

No Federal or State listed wildlife species were observed within the study area during the 2023 field surveys. The study area includes no USFWS-designated critical habitat for wildlife (Figure 5). Special-status species known to occur within 10 miles of the Project and their potential for occurrence are detailed within Appendix A, and Figure 4. No nesting birds, Burrowing Owls (Appendix E), suitable habitat for SBKR and LAPM (Appendix G), nor habitat suitable for DSF (Appendix H) were detected during the surveys. As the Project Site lacks the essential habitat attributes needed to support these special status species. Neither remnant raptor nests, or bat guano were detected within the Project Site either. Wildlife species detected during the surveys are listed in Appendix D. Summarized results for the Burrowing Owl, SBKR, LAPM and DSF are included below:

Burrowing Owl

No Burrowing Owls were detected nesting, foraging, or dispersing within the study area during the 2023 surveys. Numerous – albeit low quality potential burrows, and burrow complexes were detected. But the burrows observed lacked evidence of owl sign (i.e., tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, and nest burrow decoration materials). With that said, the lack of Burrowing Owls within the study area is likely a result of the depauperate landscape, and the presence of owl predators. Although the Project has potential to impact lands that could be utilized by Burrowing Owls as habitat – under the appropriate suite of environmental conditions, surveys for the species are negative. Therefore, there is no presumption that the Project would result in the loss of individual Burrowing Owls, or that it would adversely affect local - or regional populations, of them (Appendix F).

San Bernardino Kangaroo Rat and Los Angeles Pocket Mouse

Neither SBKR nor LAPM were detected during the survey and assessment efforts in 2023. The Project Site lacks the essential habitat attributes needed to support these species. The current soil and vegetation composition renders the Project Site unsuitable for the habitation of SBKR and LAPM. Anthropogenic interference has significantly diminished the habitat quality of the Project Site, making it unfavorable for common and special status small mammals. In light of these findings, there is no presumption that Project implementation would either harm individual SBKR or LAPM, nor pose a threat to their local or regional populations (Appendix G).

Delhi Flowing Loving Fly

No areas within the Project Site were identified or mapped by the USDA NRCS Soil Survey as having Delhi Sand soils (Figure 6). Furthermore, it was determined that the Project Site's surface soils do not possess the unique Delhi Sand soil quality. While a few of the “indicator plants” commonly associated with the presence of DSF were detected within the Project Site, it is important to note that these were isolated occurrences. Also, the Project Site is also surrounded by existing developments, isolating, and detaching it from connectively to Delhi Sands soils, or areas impacted by wind-driven processes. In essence, the Project Site is devoid of DSF, and it lacks essential Delhi Sand soils within its boundaries. Without critical habitat components, the Project Site is inhospitable for DSF. Our findings suggest that the Project’s implementation will neither negatively impact individual DSF, nor endanger their broader populations, or impeded their recovery as defined by the 1997 USFWS DSF Recovery Plan (Appendix H).

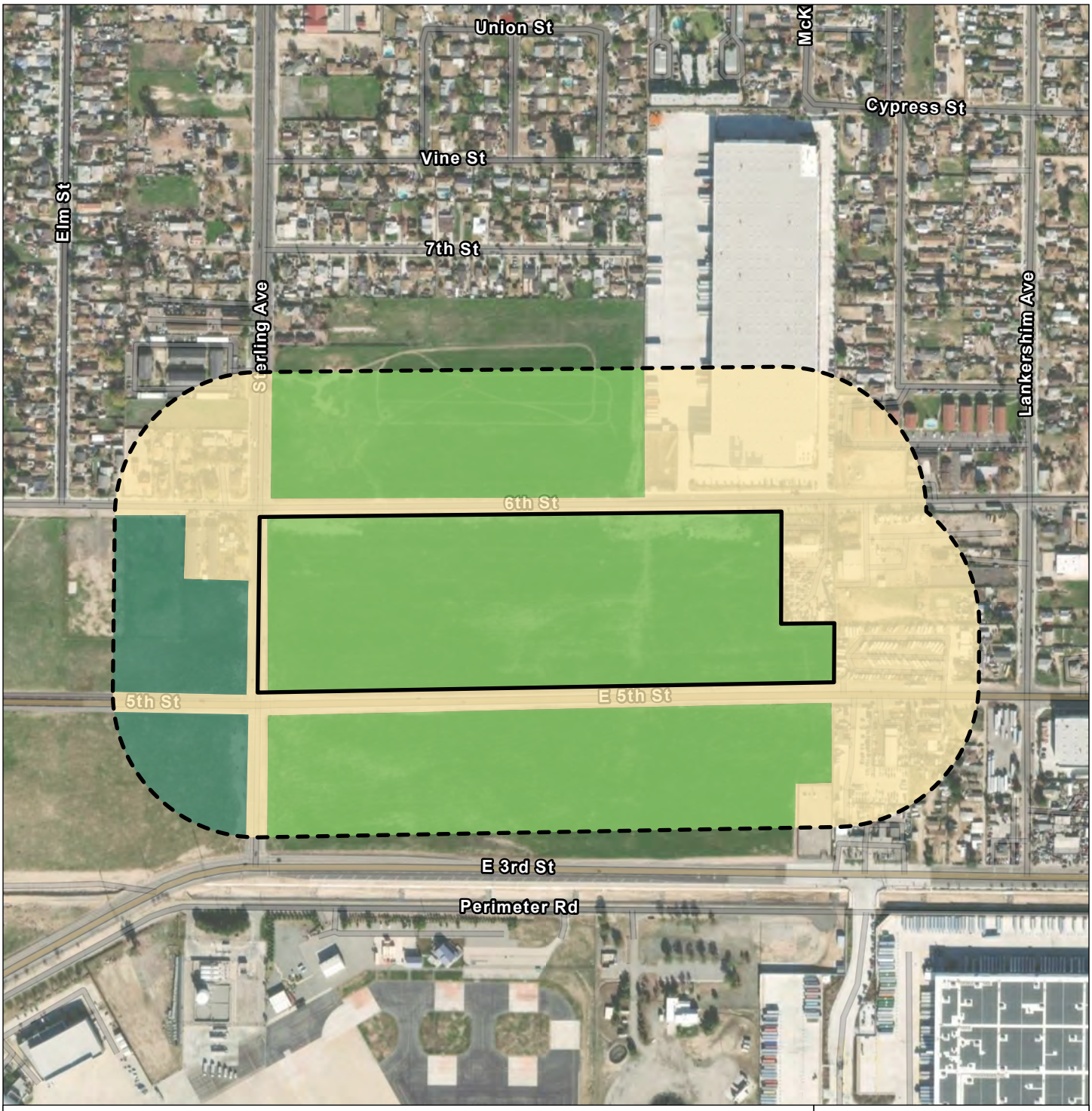
5.5 Wetlands and Waterways

The literature review and field survey data suggest that it is appropriate to characterize the Project Site as an upland, since no riparian or riverine habitats - or obvious indicators of well-defined water conveyance bed, bank or channel were detected. The topography suggests that the Project Site lacks

waters which are typically subject to the Clean Water Act, or Fish and Game Code Section 1600 jurisdiction. Furthermore, the National Wetland Inventory has no records of special aquatic resources within the Project Site (Figure 7).

Nonetheless, the Project Site does include a negligible number of signatures which meet the general definition and description for topographic lows, rills, gullies, swales, features excavated wholly in – and that drain only upland areas, and erosional signatures. The majority of these features are a result of road improvements, explicitly those related to drainage infrastructure, where roadside swales and culverts are created out of uplands, and are maintained to prevent street flooding; by merely conveying water away from the impermeable roads and other developed surfaces. These features are engineered and designed to collect precipitation and urban runoff along the roadway and other infrastructure.

But more importantly, these features lack connectivity - or the capacity to interact with the larger landscape, as they are not tributary to any larger drainage system. Nonetheless, they disperse water away from vital infrastructure after rainfall events, etc., resulting in notable erosion or sedimentation issues over time. Not surprisingly, this category of feature is routinely subject to anthropogenic disturbance in the form of repairs, clean-outs, enlargements, maintenance and other modifications. These are not natural streams, washes or rivers, etc. – to the contrary, they are artificial features without the attributes of natural waterways; nor do they connect downstream habitats with other aquatic resources.



Project Site (25.69 ac)

Study Area (102.13 ac)

Vegetation Communities

Developed/Disturbed (36.56 ac)

Non-native Grassland (8.74 ac)

Ruderal (56.83 ac)

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/22/2022

Map Prepared: 8-31-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 3. Vegetation Communities and Land Cover Types

Special-Status Species Occurrences

Map Code	Common Name *(Scientific Name)*	
	Plants	
P1	Alvin Meadow bedstraw	*Galium californicum ssp. primum*
P2	Bear Valley checkerbloom	*Sidalcea malviflora ssp. dolosa*
P3	bird-foot checkerbloom	*Sidalcea pedata*
P4	black bog-rush	*Schoenus nigricans*
P5	bristly sedge	*Carex comosa*
P6	California satintail	*Imperata brevifolia*
P7	chaparral ragwort	*Senecio aphanactis*
P8	Gambel's water cress	*Nasturtium gambelii*
P9	Hall's monardella	*Monardella macrantha ssp. hallii*
P10	Horn's milk-vetch	*Astragalus hornii var. hornii*
P11	hot springs fimbristylis	*Fimbristylis thermalis*
P12	Laguna Mountains jewelflower	*Streptanthus bernardinus*
P13	Los Angeles sunflower	*Helianthus nuttallii ssp. parishii*
P14	marsh sandwort	*Arenaria paludicola*
P15	mesa horkelia	*Horkelia cuneata var. puberula*
P16	Mt. Pinos onion	*Allium howellii var. clokeyi*
P17	Nevin's barberry	*Berberis nevinii*
P18	Palmer's mariposa-lily	*Calochortus palmeri var. palmeri*
P19	Parish's alumroot	*Heuchera parishii*
P20	Parish's bush-mallow	*Malacothamnus parishii*
P21	Parish's desert-thorn	*Lycium parishii*
P22	Parish's gooseberry	*Ribes divaricatum var. parishii*
P23	Parish's yampah	*Perideridia parishii ssp. parishii*
P24	Parry's spineflower	*Chorizanthe parryi var. parryi*
P25	Peruvian dodder	*Cuscuta obtusiflora var. glandulosa*
P26	Plummer's mariposa-lily	*Calochortus plummerae*
P27	prairie wedge grass	*Sphenopholis obtusata*
P28	Pringle's monardella	*Monardella pringlei*
P29	Riversidian Alluvial Fan Sage Scrub	*Riversidian Alluvial Fan Sage Scrub*
P30	Robinson's pepper-grass	*Lepidium virginicum var. robinsonii*
P31	salt marsh bird's-beak	*Chloropyron maritimum ssp. maritimum*
P32	salt spring checkerbloom	*Sidalcea neomexicana*
P33	San Bernardino aster	*Symphyotrichum defoliatum*
P34	San Bernardino Mountains owl's-clover	*Castilleja lasiorhyncha*
P35	Santa Ana River woollystar	*Eriastrum densifolium ssp. sanctorum*
P36	silver-haired ivesia	*Ivesia argyrocoma var. argyrocoma*
P37	singlewhorl burrobrush	*Ambrosia monogyra*
P38	slender-horned spineflower	*Dodecahema leptoceras*
P39	smooth tarplant	*Centromadia pungens ssp. laevis*
P40	Sonoran maiden fern	*Pelazoneuron puberulum var. sonorense*
P41	Southern Coast Live Oak Riparian Forest	*Southern Coast Live Oak Riparian Forest*
P42	Southern Cottonwood Willow Riparian Forest	*Southern Cottonwood Willow Riparian Forest*
P43	southern jewelflower	*Streptanthus campestris*
P44	Southern Mixed Riparian Forest	*Southern Mixed Riparian Forest*
P45	Southern Riparian Scrub	*Southern Riparian Scrub*
P46	Southern Sycamore Alder Riparian Woodland	*Southern Sycamore Alder Riparian Woodland*
P47	Southern Willow Scrub	*Southern Willow Scrub*
P48	thread-leaved brodiaea	*Brodiaea filifolia*
	Invertebrates	
I1	Andrew's marble butterfly	*Euchloe hyantis andrewsi*
I2	Busck's gallmoth	*Eugnosta busckana*
I3	Crotch bumble bee	*Bombus crotchii*
I4	Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*
I5	Morrison bumble bee	*Bombus morrisoni*
I6	quino checkerspot butterfly	*Euphydryas editha quino*
I7	white cuckoo bee	*Neolarra alba*
	Mammals	
M1	American badger	*Taxidea taxus*
M2	Los Angeles pocket mouse	*Perognathus longimembris brevinasus*
M3	northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*
M4	pallid bat	*Antrozous pallidus*
M5	pocketed free-tailed bat	*Nyctinomops femorosaccus*
M6	San Bernardino flying squirrel	*Glaucomys oregonensis californicus*
M7	San Bernardino kangaroo rat	*Dipodomys merriami parvus*
M8	San Diego black-tailed jackrabbit	*Lepus californicus bennettii*
M9	San Diego desert woodrat	*Neotoma lepida intermedia*
M10	southern grasshopper mouse	*Onychomys torridus ramona*
M11	Stephens' kangaroo rat	*Dipodomys stephensi*
M12	western mastiff bat	*Eumops perotis californicus*
M13	western yellow bat	*Lasiurus xanthinus*
M14	white-eared pocket mouse	*Perognathus alticola alticola*
	Birds	
B1	bald eagle	*Haliaeetus leucocephalus*
B2	Bell's sparrow	*Artemisiospiza belli belli*
B3	burrowing owl	*Athene cunicularia*
B4	California black rail	*Laterallus jamaicensis coturniculus*
B5	California horned lark	*Eremophila alpestris actia*
B6	coastal California gnatcatcher	*Polioptila californica californica*
B7	Cooper's hawk	*Accipiter cooperii*
B8	least Bell's vireo	*Vireo bellii pusillus*
B9	loggerhead shrike	*Lanius ludovicianus*
B10	merlin	*Falco columbarius*
B11	southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*
B12	southwestern willow flycatcher	*Empidonax traillii extimus*
B13	Swainson's hawk	*Buteo swainsoni*
B14	tricolored blackbird	*Agelaius tricolor*
B15	western yellow-billed cuckoo	*Coccyzus americanus occidentalis*
B16	yellow-breasted chat	*Icteria virens*
B17	yellow warbler	*Setophaga petechia*
	Reptiles	
R1	California glossy snake	*Arizona elegans occidentalis*
R2	coast horned lizard	*Phrynosoma blainvillii*
R3	coast patch-nosed snake	*Salvadora hexalepis virgultea*
R4	coastal whiptail	*Aspidoscelis tigris stejnegeri*
R5	orange-throated whiptail	*Aspidoscelis hyperythra*
R6	red-diamond rattlesnake	*Crotalus ruber*
R7	San Bernardino ringneck snake	*Diadophis punctatus modestus*
R8	San Diego banded gecko	*Coleonyx variegatus abbotti*
R9	Southern California legless lizard	*Anniella stebbinsi*
R10	southern rubber boa	*Charina umbratica*
R11	two-striped gartersnake	*Thamnophis hammondii*
	Amphibians	
A1	California red-legged frog	*Rana draytonii*
A2	San Gabriel slender salamander	*Batrachoseps gabrieli*
A3	southern mountain yellow-legged frog	*Rana muscosa*
A4	western spadefoot	*Spea hammondii*
	Fish	
F1	arroyo chub	*Gila orcuttii*
F2	Santa Ana speckled dace	*Rhinichthys osculus ssp. 8*
F3	Santa Ana sucker	*Catostomus santaanae*
F4	steelhead - southern California DPS	*Oncorhynchus mykiss irideus pop. 10*

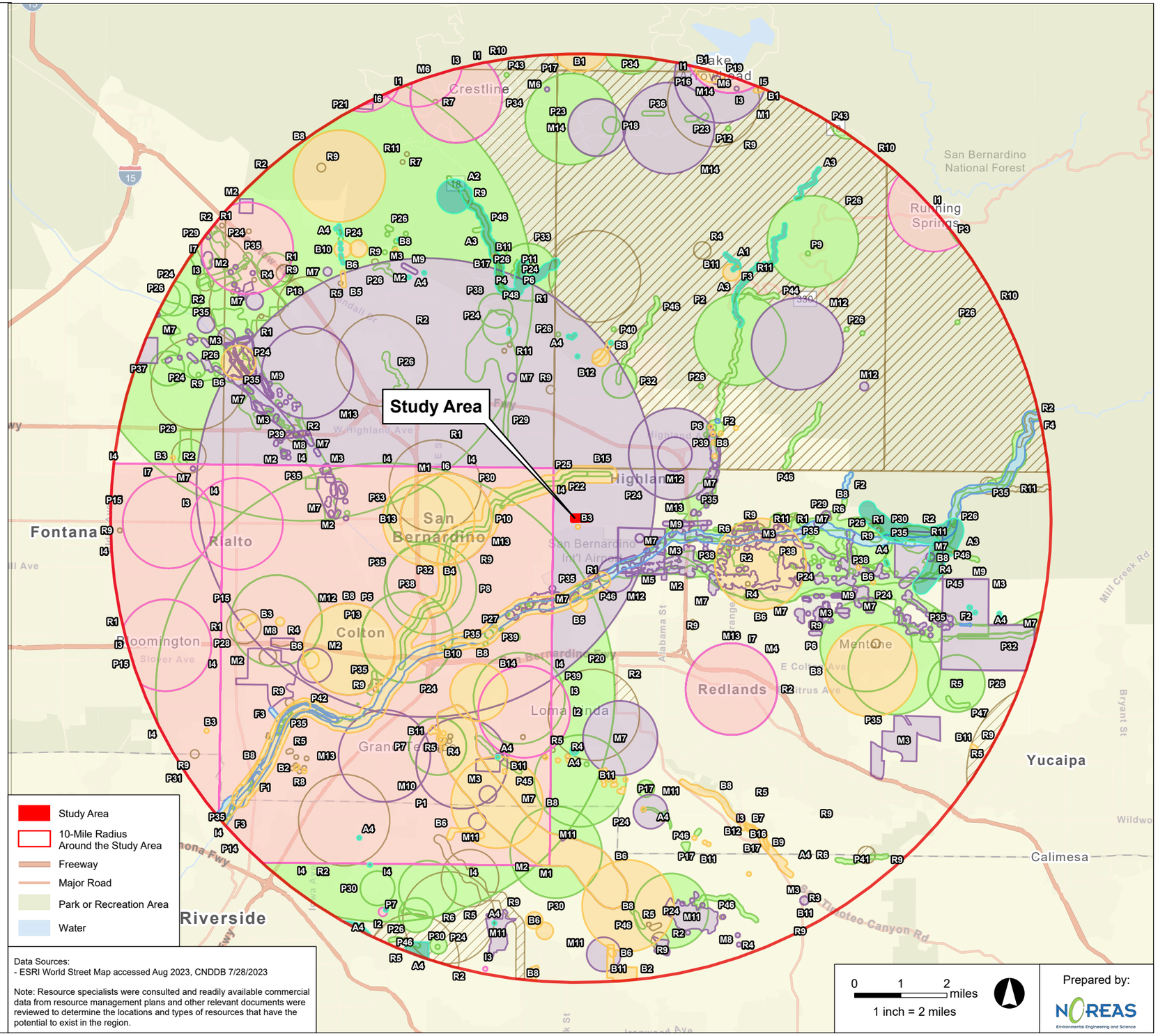
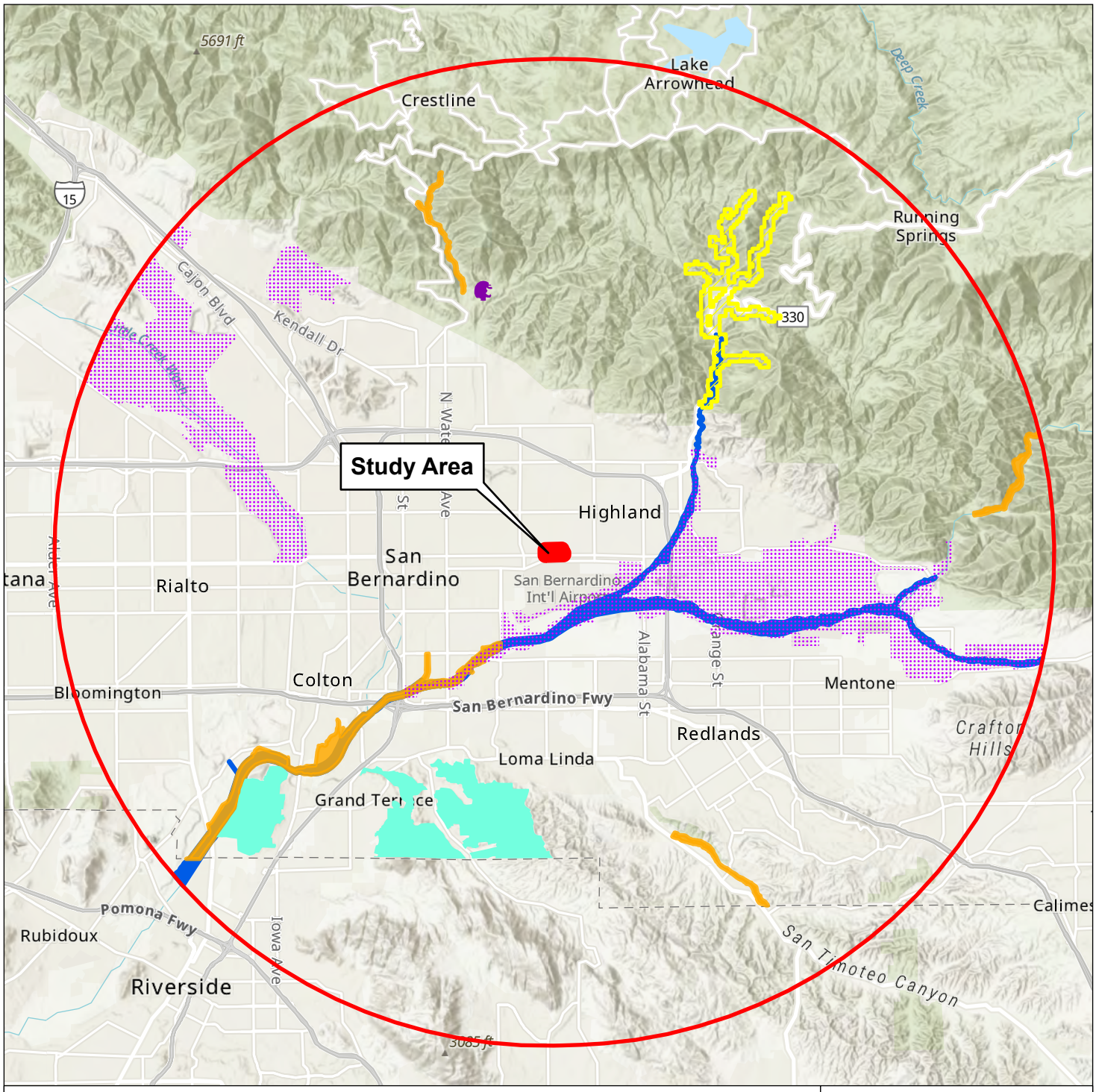


Figure 4. Literature Review



Study Area

10-Mile Radius Around the Study Area

Critical Habitat

- Coastal California gnatcatcher
- Mountain yellow-legged frog
- San Bernardino Merriam's kangaroo rat
- Santa Ana sucker
- Southwestern willow flycatcher
- Thread-leaved brodiaea

0 1.5 3 Miles

1 inch = 3 miles

Data Sources:
- ESRI World Topographic Map accessed Aug 2023
- US Fish and Wildlife Service Critical Habitat accessed Aug 2023

Map Prepared: 8-30-23

Prepared by:

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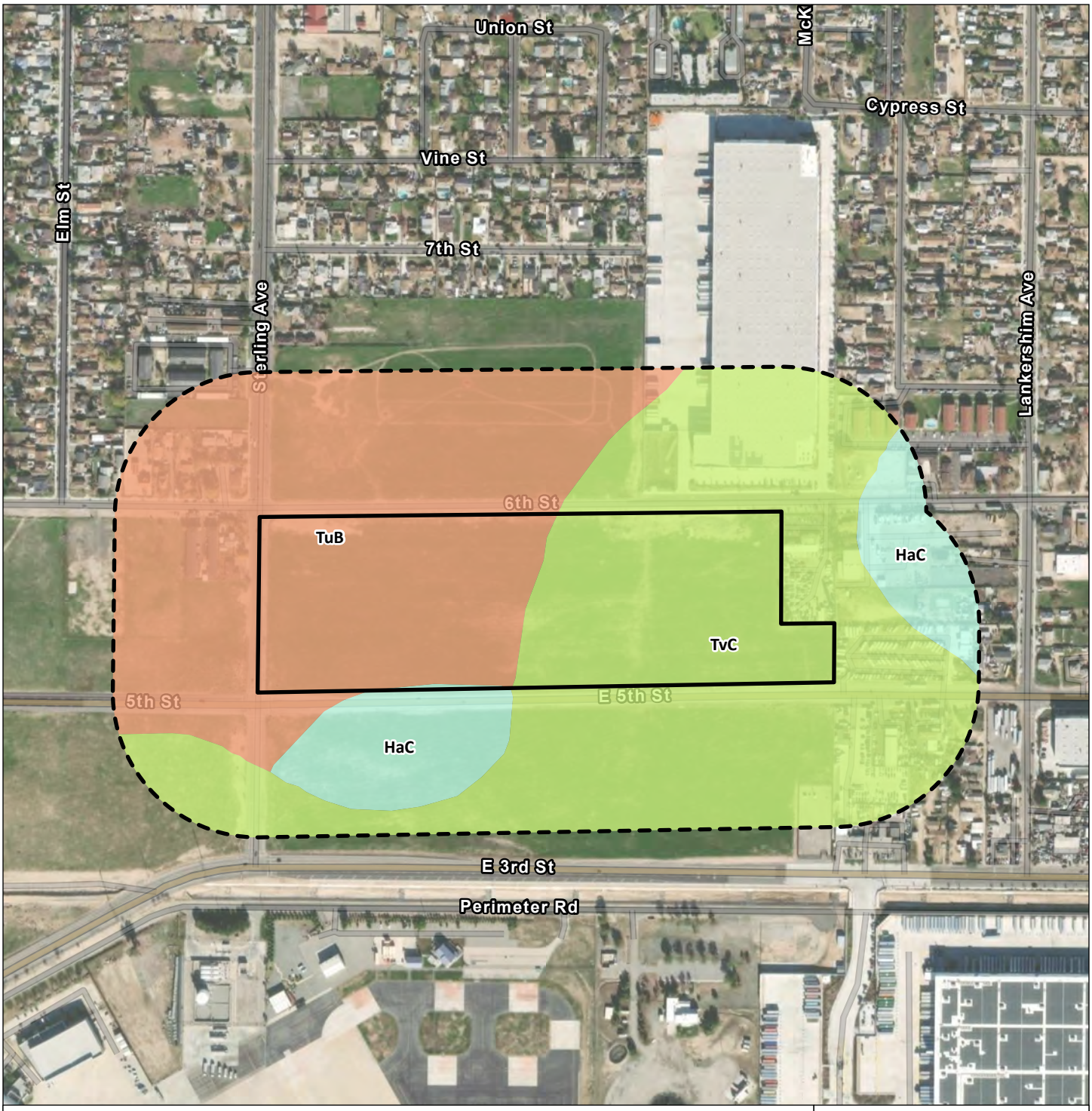
Figure 5. Critical Habitat



Project Site

Study Area

Soil Types

HaC - Hanford coarse sandy loam, 2 to 9 percent slopes

TuB - Tujunga loamy sand, 0 to 5 percent slopes

TvC - Tujunga gravelly loamy sand, 0 to 9 percent slopes

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/22/2022
- NRCS Web Soil Survey accessed Aug 2023

Map Prepared: 8-31-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 6. Soils Map

Project Site

Study Area

USA Wetlands

River

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/22/2022
- US Fish and Wildlife Service National Wetland Inventory accessed Aug 2023

Map Prepared: 8-31-23

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Figure 7. National Wetland Inventory

6.0 CONCLUSION AND RECOMMENDATIONS

The data provided herein implies that 99% of the Project Site consists of land that has been developed, disturbed, or overtaken by non-native plants and anthropogenic activities. As such, the Project is not collocated with any USFWS designated critical habitat, nor were any special status species detected during the 2023 field surveys. No nesting birds, no special status plant species, no Burrowing Owl, no suitable habitat for SBKR or LAPM, and no habitat suitable for DSF occupation were detected during surveys. To that end, the Project Site lacks the essential habitat attributes needed to support these species. Additionally, no remnant raptor nests, or bat guano were not detected within the Project Site either.

Given the Project Site's current state, and surrounding urban infrastructure, it has low ecological value as a functional habitat for native flora and fauna. It also offers limited – if any, potential as a migration corridor for wildlife. In simple terms, the Project Site is severely movement constrained by the surrounding residential, industrial and commercial developments, and public infrastructure. Even so, the following measures are recommended for implementation during the Project:

- No personnel working within Project limits will "take" or destroy plants, animals, or active nests (or eggs) of birds that are protected under the Federal or State Endangered Species Acts, California Fish and Game Code, and Migratory Bird Treaty Act (MBTA).

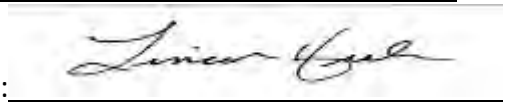
- In order to comply with Section 10 of the Migratory Bird Treaty Act and relevant sections of the California Fish and Game Code any necessary vegetation clearing should take place outside of the typical avian nesting season for protected species.
    - If work needs to take place during the nesting season for protected avian species, a pre-activity clearance survey for nesting birds should be completed prior to the onset of ground disturbance.
    - An activity exclusion buffer zone around occupied nests should be maintained during physical ground disturbing undertakings. Once nesting has ended, the buffer may be removed.

With the implementation of the measures recommended herein, there would be no presumption that the Project would result in the loss of individual species, nor that it would adversely affect local or regional populations of them.

7.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached figures present the data and information required for this resource assessment, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this investigation was performed by me and under my direct supervision. The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied and no warranty or guarantee is included or intended in this report.

DATE: September 22, 2023

SIGNED: 

Lincoln Hulse

The following NOREAS employees performed the field work and/or participated in preparation of this report: Lenny Malo MS, Lincoln Hulse BS, Vir McCoy BS, Jill Coumoutso BS, Coral Fenech BS, Philippe Vergne MS, Frank Wegscheider MS, and Dale Powell PhD.

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APPENDIX A
SPECIAL-STATUS SPECIES POTENTIAL FOR OCCURRENCE WITHIN THE PROJECT SITE

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 10 miles	Year(s) sighted
A	Parish's bush-mallow *(Malacothamnus parishii)*	None	None	1A	1	1895
A	Pocketed free-tailed bat *(Nyctinomops femorosaccus)*	None	None	-	1	1985
HP	Burrowing Owl *(Athene cunicularia)*	None	None	-	7	1983-2007
A	Delhi Sands flower-loving fly *(Rhaphiomidas terminatus abdominalis)*	Endangered	None	-	30	1990-2013
A	Marsh sandwort *(Arenaria paludicola)*	Endangered	Endangered	1B.1	1	1899
A	Salt marsh bird's-beak *(Chloropyron maritimum ssp. maritimum)*	Endangered	Endangered	1B.2	1	1888
A	Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)*	Threatened	Endangered	-	1	1930
A	Northwestern San Diego pocket mouse *(Chaetodipus fallax fallax)*	None	None	-	14	1993-2016
A	Los Angeles pocket mouse *(Perognathus longimembris brevinasus)*	None	None	-	10	1912-2017
A	Peruvian dodder *(Cuscuta obtusiflora var. glandulosa)*	None	None	2B.2	1	1890
A	Parish's gooseberry *(Ribes divaricatum var. parishii)*	None	None	1A	1	1917
A	Western mastiff bat *(Eumops perotis californicus)*	None	None	-	5	1933-1992
A	Southern rubber boa *(Charina umbratica)*	None	Threatened	-	23	1970-2020
A	San Bernardino kangaroo rat *(Dipodomys merriami parvus)*	Endangered	Candidate Endangered	-	29	1989-2017
A	Steelhead - southern California DPS *(Oncorhynchus mykiss irideus pop. 10)*	Endangered	Candidate Endangered	-	1	2013
A	Santa Ana River woollystar *(Eriastrum densifolium ssp. sanctorum)*	Endangered	Endangered	1B.1	25	1876-2021
A	California glossy snake *(Arizona elegans occidentalis)*	None	None	-	12	1939-2016
A	Parry's spineflower *(Chorizanthe parryi var. parryi)*	None	None	1B.1	23	1882-2018
A	Western yellow bat *(Lasiurus xanthinus)*	None	None	-	5	1984-1998
A	Riversidian Alluvial Fan Sage Scrub	None	None	-	4	1985-1986
A	Southern Sycamore Alder Riparian Woodland	None	None		11	1985

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 10 miles	Year(s) sighted
A	San Diego desert woodrat *(Neotoma lepida intermedia)*	None	None	-	5	1993-2007
A	California horned lark *(Eremophila alpestris actia)*	None	None	-	2	2001-2004
A	Horn's milk-vetch *(Astragalus hornii var. hornii)*	None	None	1B.1	1	1900-1900
A	Robinson's pepper-grass *(Lepidium virginicum var. robinsonii)*	None	None	4.3	5	1889-1989
A	Salt spring checkerbloom *(Sidalcea neomexicana)*	None	None	2B.2	3	1906-2011
A	Quino checkerspot butterfly *(Euphydryas editha quino)*	Endangered	None	-	2	1914-1958
A	Southern California legless lizard *(Anniella stebbinsi)*	None	None	-	32	1937-XXXX
A	Swainson's hawk *(Buteo swainsoni)*	None	Threatened	-	1	XXXX-XXXX
A	American badger *(Taxidea taxus)*	None	None	-	3	1908-XXXX
A	California black rail *(Laterallus jamaicensis coturniculus)*	None	Threatened	-	1	1919
A	Gambel's water cress *(Nasturtium gambelii)*	Endangered	Threatened	1B.1	1	1935
A	Parish's desert-thorn *(Lycium parishii)*	None	None	2B.3	1	1885
A	Smooth tarplant *(Centromadia pungens ssp. laevis)*	None	None	1B.1	6	1948-2016
A	San Bernardino aster *(Symphyotrichum defoliatum)*	None	None	1B.2	2	1917-1939
A	Prairie wedge grass *(Sphenopholis obtusata)*	None	None	2B.2	1	1917
A	Least Bell's vireo *(Vireo bellii pusillus)*	Endangered	Endangered	-	14	1900-2016
A	Coastal California gnatcatcher *(Polioptila californica californica)*	Threatened	None	-	11	1924-2013
HP	Slender-horned spineflower *(Dodecahema leptoceras)*	Endangered	Endangered	1B.1	8	1884-2021
A	Coastal whiptail *(Aspidoscelis tigris stejnegeri)*	None	None	-	12	1995-2016
A	California satintail *(Imperata brevifolia)*	None	None	2B.1	3	1891-2010
A	Red-diamond rattlesnake *(Crotalus ruber)*	None	None	-	5	1939-2017
A	Coast horned lizard *(Phrynosoma blainvillii)*	None	None	-	14	1926-2008
A	Southwestern willow flycatcher *(Empidonax traillii extimus)*	Endangered	Endangered	-	2	1999-2007
A	Busck's gallmoth *(Eugnosta busckana)*	None	None	-	2	19XX-2021

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 10 miles	Year(s) sighted
A	Crotch bumble bee *(Bombus crotchii)*	None	Candidate Endangered	-	9	1917-2020
A	Bristly sedge *(Carex comosa)*	None	None	2B.1	1	1884
A	Los Angeles sunflower *(Helianthus nuttallii ssp. parishii)*	None	None	1A	1	1937
A	Western spadefoot *(Spea hammondii)*	None	None	-	23	2001-2023
A	Santa Ana speckled dace *(Rhinichthys osculus)*	None	None	-	3	1995-2000
A	Southern Mixed Riparian Forest	None	None		1	1985
A	Tricolored blackbird *(Agelaius tricolor)*	None	Threatened	-	1	1950
A	Plummer's mariposa-lily *(Calochortus plummerae)*	None	None	4.2	16	1927-2011
A	White cuckoo bee *(Neolarra alba)*	None	None	-	3	1913-1946
A	Pallid bat *(Antrozous pallidus)*	None	None	-	1	1929-1929
A	Two-striped gartersnake *(Thamnophis hammondii)*	None	None	-	8	1997-2016
A	Merlin *(Falco columbarius)*	None	None	-	2	2013-2014
A	Sonoran maiden fern *(Pelazoneuron puberulum var. sonorense)*	None	None	2B.2	1	2009
A	Bear Valley checkerbloom *(Sidalcea malviflora ssp. dolosa)*	None	None	1B.2	1	1926
A	Orange-throated whiptail *(Aspidoscelis hyperythra)*	None	None	-	11	1955-2016
A	Alvin Meadow bedstraw *(Galium californicum ssp. primum)*	None	None	1B.2	1	1967-1967
A	Southern grasshopper mouse *(Onychomys torridus ramona)*	None	None	-	1	1923
A	Southern mountain yellow-legged frog *(Rana muscosa)*	Endangered	Endangered	-	4	1905-2011
A	Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens)*	None	None	-	13	2002-2016
A	Chaparral ragwort *(Senecio aphanactis)*	None	None	2B.2	2	2002
A	Southern Riparian Scrub	None	None	-	2	1985
A	Thread-leaved brodiaea *(Brodiaea filifolia)*	Threatened	Endangered	1B.1	2	2005
A	Nevin's barberry *(Berberis nevinii)*	Endangered	Endangered	1B.1	4	1987-2009

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 10 miles	Year(s) sighted
A	Black bog-rush *(Schoenus nigricans)*	None	None	2B.2	1	2005
A	Hot springs fimbristylis *(Fimbristylis thermalis)*	None	None	2B.2	1	2005
A	Mesa horkelia *(Horkelia cuneata var. puberula)*	None	None	1B.1	3	1885-1908
A	Pringle's monardella *(Monardella pringlei)*	None	None	1A	1	19XX-19XX
A	Yellow warbler *(Setophaga petechia)*	None	None	-	2	1999-2015
A	San Diego black-tailed jackrabbit *(Lepus californicus bennettii)*	None	None	-	8	1995-2007
A	Stephens' kangaroo rat *(Dipodomys stephensi)*	Threatened	Threatened	-	10	1988-1990
A	California red-legged frog *(Rana draytonii)*	Threatened	None	-	1	1982
A	Santa Ana sucker *(Catostomus santaanae)*	Threatened	None	-	3	1982-2005
A	Southern Cottonwood Willow Riparian Forest	None	None	-	1	1985
	Arroyo chub *(Gila orcuttii)*	None	None	-	2	1998-2000
A	San Gabriel slender salamander *(Batrachoseps gabrieli)*	None	None	-	1	1998
A	Hall's monardella *(Monardella macrantha ssp. hallii)*	None	None	1B.3	1	2005
A	Cooper's hawk *(Accipiter cooperii)*	None	None	-	1	1999
A	Loggerhead shrike *(Lanius ludovicianus)*	None	None	-	1	1999
A	Yellow-breasted chat *(Icteria virens)*	None	None	-	1	1999
A	White-eared pocket mouse *(Perognathus alticola alticola)*	None	None	-	3	1920-1981
A	Parish's yampah *(Perideridia parishii ssp. parishii)*	None	None	2B.2	2	1901-2005
A	Bell's sparrow *(Artemisiospiza belli belli)*	None	None	-	2	2002-2015
A	San Diego banded gecko *(Coleonyx variegatus abbotti)*	None	None	-	1	2015
A	Palmer's mariposa-lily *(Calochortus palmeri var. palmeri)*	None	None	1B.2	2	1962-2005
A	San Bernardino Mountains owl's-clover *(Castilleja lasiorhyncha)*	None	None	1B.2	2	1929-1937
A	Andrew's marble butterfly *(Euchloe hyantis andrewsi)*	None	None	-	4	1928-1949
A	San Bernardino flying squirrel *(Glaucomys oregonensis californicus)*	None	None	-	4	1935-2005
A	San Bernardino ringneck snake *(Diadophis*	None	None	-	2	2004-2006

Potential for occurrence	Common name (Scientific name)	Federal listing status	State listing status	CNPS list	Number of records within 10 miles	Year(s) sighted
	punctatus modestus)					
A	Southern Willow Scrub	None	None	-	1	1980
A	Silver-haired ivesia *(Ivesia argyrocoma var. argyrocoma)*	None	None	1B.2	1	2004
A	Laguna Mountains jewelflower *(Streptanthus bernardinus)*	None	None	4.3	1	1994
A	Singlewhorl burrobrush *(Ambrosia monogyra)*	None	None	2B.2	1	1961
A	Southern Coast Live Oak Riparian Forest	None	None	-	1	1980
A	Coast patch-nosed snake *(Salvadora hexalepis virgultea)*	None	None	-	1	2016
A	Southern jewelflower *(Streptanthus campestris)*	None	None	1B.3	2	2004-XXXX
A	Bald eagle *(Haliaeetus leucocephalus)*	None	Endangered	-	3	1980-2008
A	Mt. Pinos onion *(Allium howellii var. clokeyi)*	None	None	1B.3	1	1938-1938
A	Parish's alumroot *(Heuchera parishii)*	None	None	1B.3	1	1932
A	Morrison bumble bee *(Bombus morrisoni)*	None	None	-	1	1937
A	Bird-foot checkerbloom *(Sidalcea pedata)*	Endangered	Endangered	1B.1	1	1978

CNPS List Definitions
List 1A: Plants presumed extinct in California
List 1B.1: Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
List 1B.2: Plants rare, threatened, or endangered in California and elsewhere, fairly threatened in California
List 1B.3: Plants rare, threatened, or endangered in California and elsewhere, not very threatened in California
List 2.1: Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
List 2.2: Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

Potential for Occurrence Definitions
Absent [A] – Species distribution is restricted by substantive habitat requirements, which do not occur – or are negligible within the Project Site, and no further survey or study is obligatory to determine likely presence or absence of this species.
Habitat Present [HP] – Species distribution is restricted by substantive habitat requirements, which occur within the Project Site, and further survey or study may be necessary to determine likely presence or absence of species.
Present [P] – Species or species sign were observed within the Project Site, or historically has been documented within Project limits
Critical Habitat [CH] – The Project Site is located within a USFWS-designated critical habitat unit.

APPENDIX B
PHOTOGRAPH LOG

	**Photograph 1.** Facing West.
	**Photograph 2.** Facing South.

	**Photograph 3.** Facing East.
	**Photograph 4.** Facing North.

APPENDIX C
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

Scientific Name	Common Name
Asteraceae (Aster family)	
*Gnaphalium spp.**	Cudweed
*Lactuca serriola **	Prickly lettuce
*Matricaria discoidea**	Pineapple weed
*Oncosiphon piluliferum**	Stinknet
Heterotheca grandiflora	Telegraph weed
Helianthus annuus	Sunflower
***Anacardiaceae* (Cashew family)**	
*Schinus molle**	Peruvian pepper
Amaranthaceae (Amaranth family)	
Kali tragus	Russian thistle
Apocynaceae (Dogbane family)	
*Nerium oleander**	Oleander
Arecaceae (Palm family)	
*Washingtonia Robusta**	Mexican fan palm
Boraginaceae (Forget-me-not family)	
Amsinckia menziesii	Fiddleneck
Brassicaceae (Mustard family)	
*Brassica nigra**	Black mustard
*Brassica Tournefortii**	Sahara mustard
*Sisymbrium irio **	London rocket
Chenopodiaceae (Goosefoot family)	
*Chenopodium album**	White goosefoot
Euphorbiaceae (Spurge family)	
*Croton setigerus**	Dove weed
Geraniaceae (Geranium family)	
*Erodium cicutarium**	Redstem stork's bill
Malvaceae (Mallow family)	
*Malva parviflora**	Cheeseweed
Nyctaginaceae (Four o'clock family)	
*Bougainvillea sp.**	Bougainvillea
Pinaceae (Pine family)	
*Pinus sp.**	Pine
Poaceae (Grass family)	
*Avena fatua **	Wild oat
*Bromus diandrus **	Ripgut brome
*Bromus madritensis subsp. Rubens **	Red brome
*Festuca arundinacea **	Tall fescue

Scientific Name	*Common Name*
Hordeum murinum *	Wall barley
Simaroubaceae (Tropical tree family)	
Ailanthus altissima	Tree of heaven
Solanaceae (Nightshade family)	
Datura stramonium	Jimsonweed
Zygophyllaceae (zygon family)	
*Tribulus terrestris**	Puncture vine

Nomenclature follows the Jepson Manual, Second Edition (Baldwin et al 2011).

* = naturalized, non- native plant species.

APPENDIX D
WILDLIFE SPECIES OBSERVED WITHIN THE STUDY AREA

Scientific name	Common name
Birds	
Buteo jamaicensis	Red-Tailed hawk
Cathartes aura	Turkey vulture
Corvus corax	Common Raven
Corvus brachyrhynchos	American crow
Sturnus vulgaris	European Starling
Carpodacus mexicanus	House Finch
Charadrius vociferus	Killdeer
Hirundo rustica	Barn swallow
Passerculus sandwichensis	Savanna sparrow
Petrochelidon pyrrhonota	Cliff swallow
Columba livia	Rock Pigeon
Euphagus cyanocephalus	Brewer's Blackbird
Zonotrichia leucophrys	White-crowned sparrow
Falco sparverius	American kestrel
Mimus polyglottos	Northern mockingbird
Sayornis saya	Say's phoebe
Melospiza melodia	Song sparrow
Passer domesticus	House Sparrow
Sayornis nigricans	Black phoebe
Spinus psaltria	Lesser goldfinch
Sturnella neglecta	Western meadowlark
Tyrannus vociferans	Cassin's kingbird
Quiscalus quiscula	Common Grackle
Zenaida macroura	Mourning Dove
Mammals	
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Cottontail

APPENDIX E
BURROWING OWL SURVEY REPORT

5TH & STERLING PROJECT

September 2023

BURROWING OWL SURVEY REPORT

Redlands United States Geological Survey
7.5-MinuteTopographic Quadrangle Map

Prepared By

NOREAS
Environmental Engineering and Science

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(949) 467-9100

TABLE OF CONTENTS

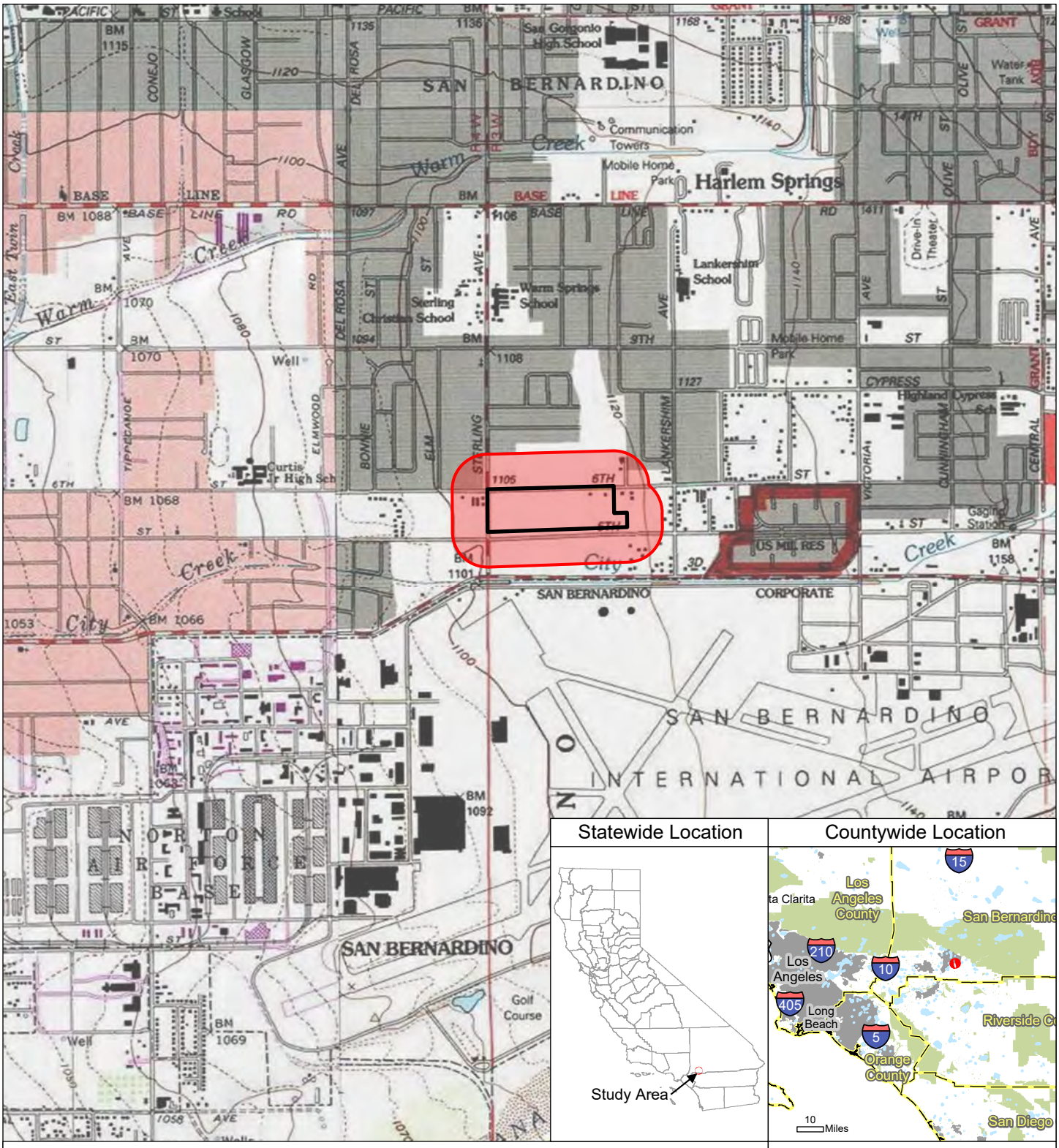
1.0 SUMMARY / INTRODUCTION

NOREAS Inc. (NOREAS) is pleased to provide this Burrowing Owl (*Athene cunicularia*) survey report for the 5th & Sterling Project (hereafter referred to as the "Project"). The Project Site is located on the northeast corner of 5th Street and Sterling Avenue, in the City of San Bernardino, California. (Figures 1 and 2). This report provides the methods, assumptions, and results of focused surveys for Burrowing Owl.

The Project Site can be found on the Redlands United States Geological Survey (USGS) 7.5-MinuteTopographic Quadrangle Map (USGS 1984). The Project occurs at an approximate elevation of 1,100 ft. above mean sea level (msl). Land use in the Project's surrounding environment mixes fallow lands with infrastructure, roads, and light industry. It is worth noting the Project Site undergoes regular disking for fire safety, and shows signs of illegal dumping and off-road vehicle tracks as well.

For the purposes of this report, the "study area" includes the Project's proposed ground disturbance footprint (Project Site), plus a 500-foot buffer where practical (Figures 2). No Burrowing Owls were detected nesting, foraging, or dispersing within the study area during the 2023 surveys. Numerous – albeit low quality potential burrows, and burrow complexes were detected (Figure 3). That said, the burrows observed lacked evidence of owl sign (i.e., tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, and nest burrow decoration materials). The lack of Burrowing Owls is likely a result of the depauperate landscape, and the presence of owl predators. Although the Project has potential to impact lands that could be utilized by Burrowing Owls as habitat – under the appropriate suite of environmental circumstances, surveys for the species are negative.

In light of these findings, there is no presumption that Project implementation would either harm individual Burrowing Owls, nor pose a threat to their local or regional populations.



The Study Area is located in San Bernardino County on the Redlands USGS 7.5-minute quadrangle map; San Bernardino Meridian, Township 1 South, Range 3 West, in Section 00 and Township 1 South, Range 4 West, in Section 00:
Center coordinate (WGS 1984): Latitude 33.824, Longitude -117.211

Figure 1. Regional Location

Project Site (25.69 ac)

Study Area (102.13 ac)

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/20/2022

Map Prepared: 8-30-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 2. Site Vicinity

2.0 BURROWING OWL BACKGROUND

The Burrowing Owl has been designated by the California Department of Fish and Wildlife (CDFW) as a species of special concern. "State Species of Special Concern" status applies to animals not listed for protection under the federal Endangered Species Act or the California Endangered Species Act. The designation denotes that a species is declining at a rate that could result in State listing or that a species has historically occurred in low numbers and known threats to their persistence currently exist. The designation is intended to result in "special consideration" for these animals during the environmental review and discretionary permitting processes. In addition, the designation is also intended to focus research and management attention on poorly-known, potentially at-risk species by stimulating the collection of additional information on their biology, distribution, and status.

Burrowing Owls prefer open, dry annual or perennial grasslands, agricultural and rangelands, deserts, and scrublands characterized by low-growing vegetation. Burrowing Owls also prefer areas inhabited by small mammals as they predominately depend on mammal burrows (particularly ground squirrels) for subterranean nesting. Owls can be found at elevations ranging from 200 ft. below sea level to 9,000 ft. above (CDFG 1995). Burrowing Owls commonly perch on fence posts or on mounds outside their burrows. Northern populations of Burrowing Owls are usually migratory, while more southern populations may move short distances or not at all (Haug et al. 1993, Botelho 1996). Little is known about the winter ranges of migratory populations, although migratory Burrowing Owls are believed to mix with resident populations in California during the winter months (Coulombe 1971, Haug et al. 1993).

Burrowing Owls tend to be resident where food sources are stable and available year-round (Rosenberg et al. 1998). Typically, they disperse or migrate south in areas when food becomes seasonally scarce. Burrowing Owls tend to be opportunistic feeders. Large arthropods, mainly beetles and grasshoppers, comprise a substantial portion of their diet (Rosenberg et al. 1998). Small mammals, especially mice, rats, gophers, and ground squirrels, are also important food items. Other prey animals include reptiles and amphibians, scorpions, young cottontail rabbits, bats, and birds such as sparrows and Horned Larks. Consumption of insects increases during the breeding season. Burrowing Owls hover while hunting; after catching their prey they return to perches on fence posts or the ground. Burrowing Owls are primarily active at dusk and dawn, but, if necessary, will hunt at any time of day (CBOC 1993, CDFG 1995; Rosenberg et al. 1998).

The breeding season for Burrowing Owls is March to late August; the season tends to last later in the northern part of the range (CBOC 1993, CDFG 1995, Klute et al. 2003). Clutch size (number of birds hatched at the same time) ranges from 1 to 12 and averages about 7 (Ehrlich 1988). The incubation period is 28–30 days (Ehrlich 1988). The female performs all the incubation and brooding (sitting on eggs to hatch them by the warmth of the body) and is believed to remain continually in the burrow while the male does all the hunting (Rosenberg et al. 1998). The young fledge (take their first flight out of the nest) at 44 days but remain near the burrow and join the adults in foraging flights at dusk (Ehrlich 1988). The maximum life span recorded for a banded bird in the wild is approximately 8.5 years (Rosenberg et al. 1998).

In resident populations, nest site fidelity is common, with many adults nesting each year in their previous year's burrow; young from the previous year often establish nest sites near (<900 ft) their natal sites (Trulio 1997,Rosenberg et al. 1998). Burrowing Owls in migratory populations also often nest in the same burrow, particularly if the previous year's breeding was successful (Belthoff and King 1997). Other birds in the same population may move to burrows near their previous year's burrow. The species is

threatened primarily by loss, degradation, and fragmentation of habitat, although they do readily inhabit anthropogenic landscapes such as agricultural fields, golf courses, and airport grasslands (Korfanta et al. 2005).

3.0 METHODS

Prior to beginning field surveys, resource specialists were consulted and available information (i.e., resource management plans and relevant documents) was reviewed to determine the locations and types of resources that have the potential to exist within - and adjacent to, the study area. Resources were evaluated within several miles of the Project.

The materials reviewed included, but were not limited to, the following:

- U.S. Fish and Wildlife Service (USFWS) Critical Habitat Mapper and File Data (USFWS 2023a);
- USFWS Species List for San Bernardino County (USFWS 2023b);
- California Natural Diversity Database maintained by the CDFW (CDFW 2023);
- 1993 California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol, and Mitigation Guidelines (CBOC 1993);
- 1995 and 2021 California Department of Fish and Game (CDFG) Staff Report on Burrowing Owl Mitigation (CDFG 1995 and 2012); and
- Aerial Photographs (Microsoft Corporation 2023).

Survey methods were derived from generally accepted professional standards including the 1993 California Burrowing Owl Consortium Survey Protocol and Mitigation Guidelines (CBOC 1993), the 1995 and 2012 California Department of Fish and Game Staff Reports on Burrowing Owl Mitigation (CDFG 1995 and 2012). Accordingly, a methodical pedestrian-survey for owl burrows and sign were conducted by walking through areas of suitable habitat within the study area (including evaluations of man-made structures, debris piles, etc.). Natural and non-natural substrates were examined for potential burrows and burrow complexes. Potential burrows encountered were examined for shape, size, molted feathers, whitewash, cast pellets and/or prey remains. Disturbance characteristics and other animal sign encountered within the study area were documented to the greatest extent practical.

Since suitable habitat was detected for Burrowing Owl within the study area, multiple additional survey events were performed (details are presented within *TABLE NO. 1 - SUMMARY OF SURVEY CONDITIONS*). A hand-held, global positioning system (GPS) with sub meter accuracy was used to survey predetermined transects that were prepared within a Geographic Information System (GIS) (Figure 3). Survey transects were spaced at appropriate intervals to allow for complete visual coverage of the study area. Where necessary, transect spacing was reduced or expanded in the field - to account for differences in terrain, vegetation density, visibility and access considerations (i.e., private property). Where access was limited, observations were made from the nearest appropriate vantage points by means of public rights-of-way with the use of binoculars, and spotting scopes. The presence of a species was based on direct observations of individual(s), sign, and/or vocalization. Avian scientific nomenclature and common names follows Sibley (2000).

Field surveys were conducted when weather conditions were conducive to observing birds. Surveys were not performed during rain, extreme temperatures, high winds (> 25 miles per hour), or dense fog. Targeted owl surveys were conducted on 03 March, 18 April, 21 May and 18 June 2023. Surveys were performed from approximately 1 hour before sunrise, to 2 hours after sunrise, when weather conditions were conducive to observing owls outside of burrows.

4.0 BURROWING OWL SURVEY RESULTS

The majority of the study area consists of heavily disturbed ruderal vegetation, with no substantial native stands of vegetation. There is also evidence of recent disking, off road vehicle tracks, and trash from illegal dumping throughout the Project Site.

No Burrowing Owls were observed nesting, foraging, or dispersing within the study area during the 2023 surveys. Nonetheless, potential burrows and burrow complexes – albeit low quality, were detected (Figure 3). The burrows observed lacked evidence of owl tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, or nest burrow decoration materials. The presence of several burrows and burrow complexes >11 centimeters (cm) in diameter (height and width), and >150 cm in depth warranted recording and reporting; even though the aforementioned burrows lacked owl sign, or owls. Survey conditions during the field events are presented in Table No. 1.

TABLE NO. 1 - SUMMARY OF SURVEY CONDITIONS

Survey Dates	Surveyors	Survey Type	Time[1] Start/End	Temperature °Fahrenheit Start/End	Wind Speed (MPH)	Start/End Cloud Cover (%)
3/28/22	Jill Coumoutso	Crepuscular BUOW	0530 - 1130	49/69	0-05	Clear/Clear
4/18/22	Jill Coumoutso	Crepuscular BUOW	0515- 1100	52/60	0-05	100/60
5/21/22	Jill Coumoutso	Crepuscular BUOW	0545- 1145	59/65	0-05	100/40
6/18/22	Jill Coumoutso	Crepuscular BUOW	0530- 1200	59/63	0-05	Clear/Clear
BUOW = Burrowing Owl MPH = Miles Per Hour						

The lack of Burrowing Owls within the Project Site is likely a result of the depauperate landscape, and the presence of owl predators (e.g., Red-Tailed Hawk [*Buteo jamaicensis*] and Cooper's hawk [*Accipiter cooperii*]). Although the Project Site has potential to impact lands that could be utilized by Burrowing Owls as habitat – under the appropriate suite of environmental circumstances, surveys for the species are negative. In light of these findings, there is no presumption that Project implementation would either harm individual Burrowing Owls, nor pose a threat to their local or regional populations. Representative photographs of the study area are provided below, and wildlife detected during the surveys are provided within Table No. 2.

[1] While targeted owl surveys were limited to approximately 1 hour before sunrise to 2 hours after sunrise, and 2 hours before sunset to 1 hour after sunset; the start and end times presented within this table details all time spent within the study area on any given day - which include setup, reporting and demobilization activities.

	**Photograph 1.** Facing Southeast.
	**Photograph 2.** Facing West.

	**Photograph 3.** Facing Southwest.
	**Photograph 4.** Facing East.

TABLE NO. 2 – WILDLIFE DETECTED DURING FIELD SURVEYS

Scientific name	Common name
Birds	
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	Red-Tailed hawk
Cathartes aura	Turkey vulture
Corvus corax	Common Raven
Corvus brachyrhynchos	American crow
Sturnus vulgaris	European Starling
Carpodacus mexicanus	House Finch
Charadrius vociferus	Killdeer
Hirundo rustica	Barn swallow
Passerculus sandwichensis	Savanna sparrow
Petrochelidon pyrrhonota	Cliff swallow
Columba livia	Rock Pigeon
Euphagus cyanocephalus	Brewer's Blackbird
Zonotrichia leucophrys	White-crowned sparrow
Falco sparverius	American kestrel
Mimus polyglottos	Northern mockingbird
Sayornis saya	Say's phoebe
Melospiza melodia	Song sparrow
Passer domesticus	House Sparrow
Sayornis nigricans	Black phoebe
Spinus psaltria	Lesser goldfinch
Sturnella neglecta	Western meadowlark
Tyrannus vociferans	Cassin's kingbird
Quiscalus quiscula	Common Grackle
Zenaida macroura	Mourning Dove
Mammals	
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Cottontail

Figure 3. Burrowing Owl Potential Burrows

5.0 RECOMMENDED MEASURES TO AVOID AND MINIMIZED IMPACTS TO NESTING BIRDS

The following measures are recommended as a means of avoiding, and minimizing adverse impacts to nesting birds that have the potential to occur within the Project Site, and on adjacent lands:

- In order to comply with Section 10 of the Migratory Bird Treaty Act and relevant sections of the California Fish and Game Code any necessary vegetation clearing should take place outside of the typical avian nesting season for protected species.
    - If work needs to take place during the nesting season for protected avian species, a pre-activity clearance survey for nesting birds should be completed prior to the onset of ground disturbance.
    - An activity exclusion buffer zone around occupied nests should be maintained during physical ground disturbing undertakings. Once nesting has ended, the buffer may be removed.

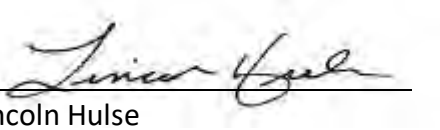
- Limits of grading and Project activities shall be clearly delineated with temporary construction staking, flagging, or similar materials.

- To avoid attracting predators and nuisance species, the Project Site shall be clear of debris, where possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the Project.

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied and no warranty or guarantee is included or intended in this report. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data and actual conditions may vary from those encountered at the times and locations where the data were obtained despite due professional care.

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: September 22, 2023

SIGNED: 

Lincoln Hulse

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APPENDIX F
SPECIAL STATUS PLANT SURVEY REPORT

5TH & STERLING PROJECT

September 2023

SPECIAL STATUS PLANT SURVEY REPORT

Prepared By

NOREAS
Environmental Engineering and Science

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(949) 467-9100

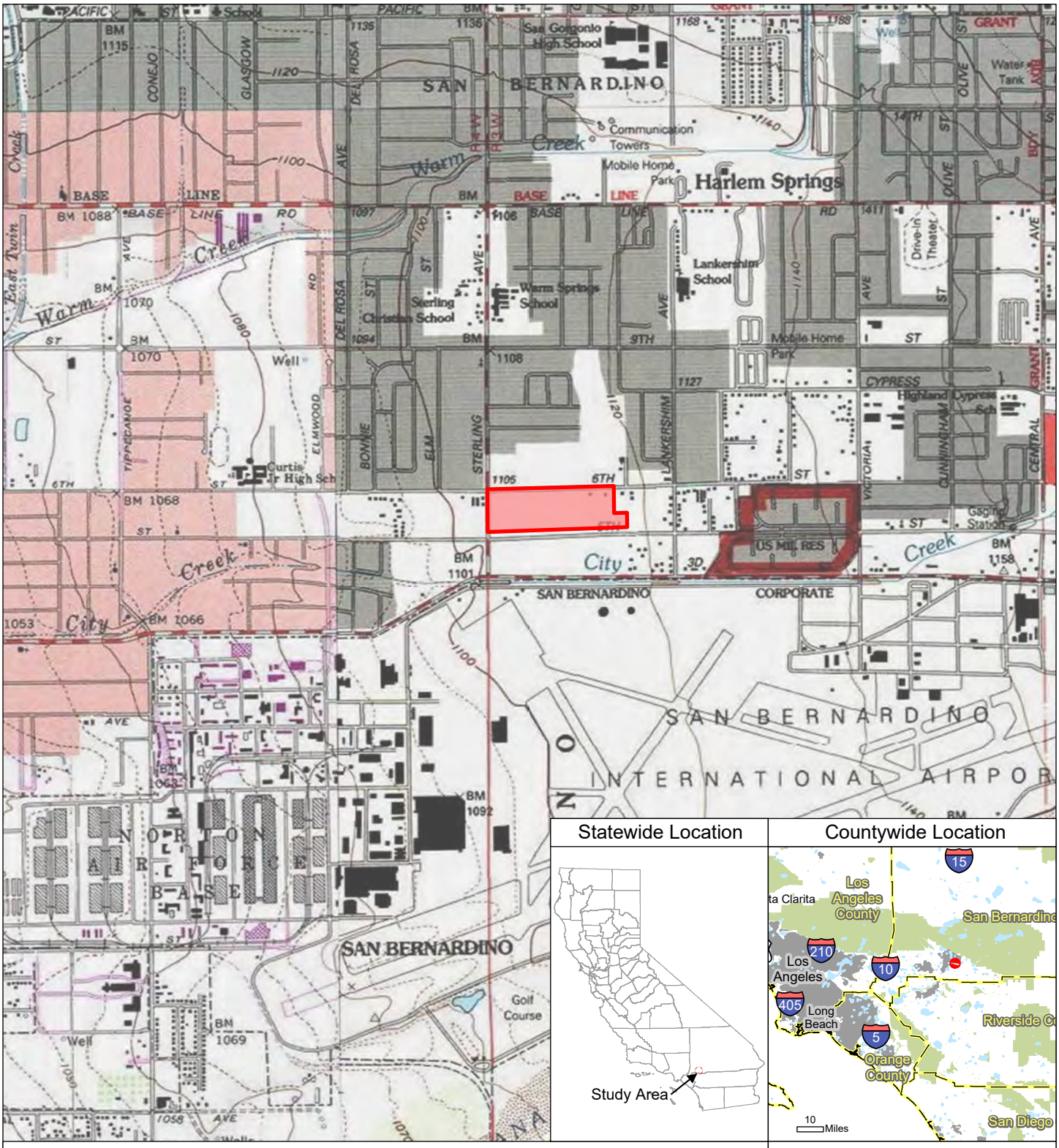
TABLE OF CONTENTS

1.0 INTRODUCTION / SUMMARY

NOREAS Inc. (NOREAS) is pleased to provide this special status plant[1] survey report for the 5th & Sterling Project (hereafter referred to as the "Project"). The Project is located on the northeast corner of 5th Street and Sterling Avenue, in the City of San Bernardino, California. (Figure 1). Based on the known distribution and range of special status plant species in the region, a focused survey was conducted. This report provides the methods, assumptions, and results of the 2023 targeted plant surveys. For the purposes of this report, the "Project Site" is a reference to the Project's proposed ground disturbance footprint (Project Site). The Project Site can be found on the Redlands United States Geological Survey (USGS) 7.5-MinuteTopographic Quadrangle Map (USGS 1984).

The Project Site is flat terrain and includes the Tujunga soil series. The surrounding environment mixes fallow lands with infrastructure, roads, and light industry. It is worth noting the Project Site undergoes regular disking for fire safety, and shows signs of illegal dumping and off-road vehicle tracks as well. In summary, the data presented herein are conclusive: no special status plants were detected during the surveys. The Project Site lacks the essential habitat attributes needed to support these species. The current soil and vegetation composition renders the Project Site unsuitable for the habitation of special status plants. The evident anthropogenic interference has significantly diminished the habitat quality of the Project Site for rare plants. In light of these findings, there is no presumption that Project implementation would either harm individual special status plants, nor pose a threat to their local or regional populations.

[1] For the purposes of this analysis, "special-status plant species" refers to any plant species that has been afforded special protection by federal, state, or local resource agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW]) or resource conservation organizations (e.g., California Native Plant Society [CNPS]], etc.).



The Study Area is located in San Bernardino County on the Redlands USGS 7.5-minute quadrangle map; San Bernardino Meridian, Township 1 South, Range 3 West, in Section 00 and Township 1 South, Range 4 West, in Section 00:
Center coordinate (WGS 1984): Latitude 33.824, Longitude -117.211

Figure 1. Regional Location

Project Site (25.69 ac)

0 250 500 Feet

1 inch = 500 feet

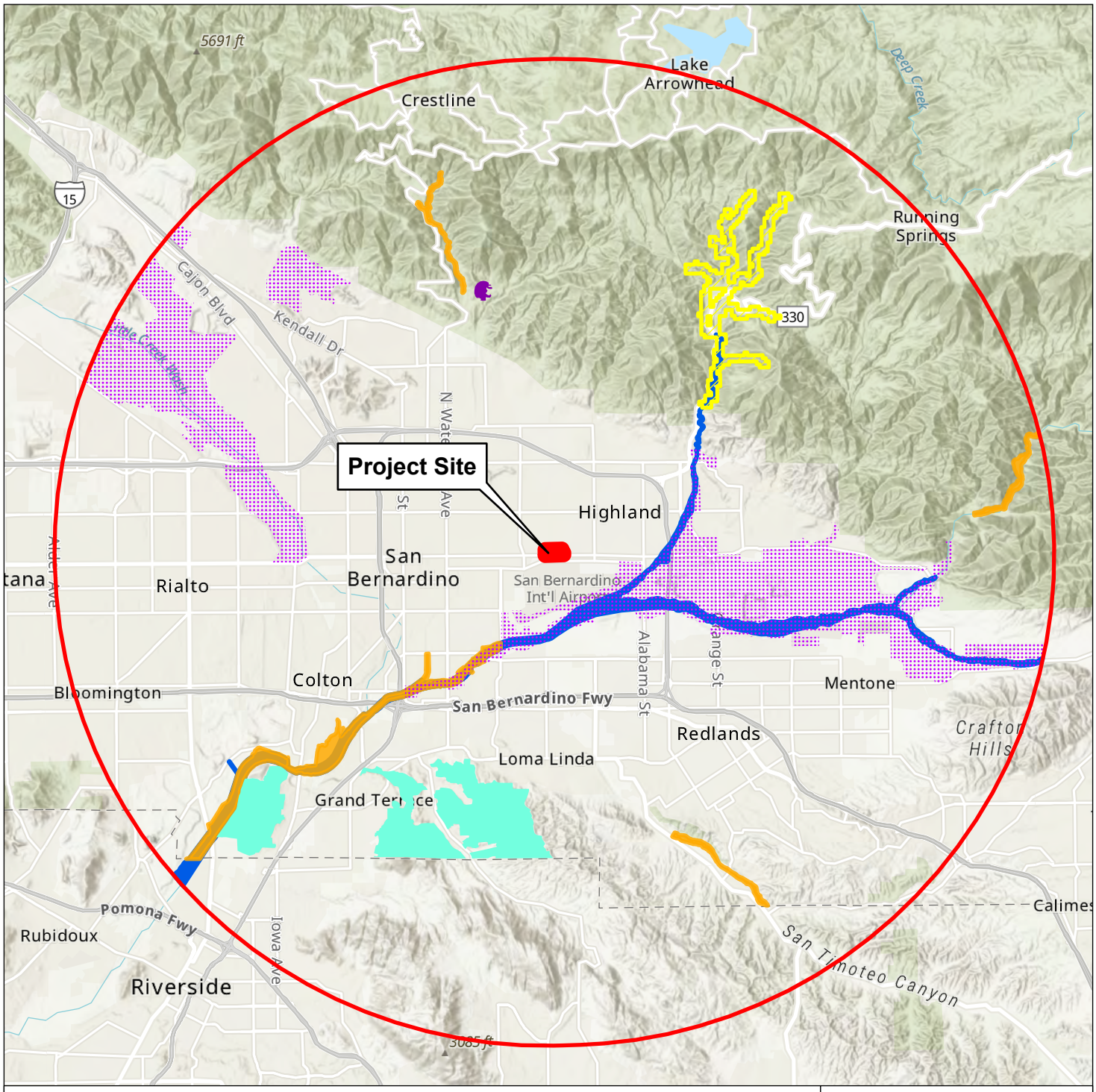
Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/20/2022

Map Prepared: 8-31-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 2. Site Vicinity



Project Site

10-Mile Radius Around the Project Site

Critical Habitat

- Coastal California gnatcatcher
- Mountain yellow-legged frog
- San Bernardino Merriam's kangaroo rat
- Santa Ana sucker
- Southwestern willow flycatcher
- Thread-leaved brodiaea

0 1.5 3 Miles

1 inch = 3 miles

Data Sources:
- ESRI World Topographic Map accessed Aug 2023
- US Fish and Wildlife Service Critical Habitat accessed Aug 2023

Map Prepared: 8-31-23

Prepared by:

NOREAS Environmental Engineering and Science

Figure 3. Critical Habitat

2.0 METHODS

Prior to beginning field surveys, resource specialists were consulted and available information from resource management plans and relevant documents were reviewed to determine the locations and types of resources that have the potential to exist within and adjacent to the Project. Resources were evaluated within several miles of the Project. The primary materials reviewed included, but were not limited to, the following:

- ✓ US Fish and Wildlife Service (USFWS) Critical Habitat Mapper and File Data (Figure 3) (USFWS 2023);
- ✓ USFWS Field Office San Bernadino County Species List (USFWS 2023b);
- ✓ USFWS National Wetlands Inventory database (USFWS 2023c);
- ✓ California Natural Diversity Database maintained by the California Department of Fish and Wildlife (CDFW) (CDFW 2023);
- ✓ Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2023a);
- ✓ California Native Plant Society (CNPS) Electronic Inventory (CNPS 2023); and
- ✓ Aerial Photographs (Microsoft Corporation 2023).

Plants were identified to the lowest taxonomic[2] level sufficient to determine whether the species detected were non-native, native, or special-status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to The Jepson Manual (Baldwin et al. 2012).

Focused botanical surveys were conducted on 14 April, 15 May, and 29 August 2023. Field survey methods were derived from the standardized guidelines issued by the U.S. Fish and Wildlife Service (USFWS 2000), California Department of Fish and Wildlife (CDFW 2009) and the California Native Plant Society (CNPS 2001). As previously stated, the field surveys were specifically conducted to determine the presence/absence of special status plants, but the surveys were floristic[3] in nature. Surveys were conducted during the appropriate blooming period to maximize the detection of special status plants in the region.

An evaluation of reference populations were performed prior to initiating surveys in April and May of 2023 to safeguard that survey timing was appropriate[4], and to assess local variations in plant phenology[5] of the target species. To that end, a targeted and methodical pedestrian-survey for special status plants was conducted by walking the Project Site. Survey transects[6] were spaced to allow for complete visual coverage of the Project Site. Transect spacing was reduced or expanded in the field to account for differences in terrain, vegetation density, visual field, health and safety considerations, access issues, and areas of potential habitat to provide adequate visibility.

[2] Botanical taxonomy is the practice and science of categorization or classification. A taxonomy (or taxonomical classification) is a scheme of classification, especially a hierarchical classification, in which plants are organized into groups or types.

[3] Focused on the distribution, number, types, and relationships of plant species in an area, or multiple areas.

[4] Prior to field surveys, a botanist visited a representative number of reference populations in 2023 to safeguard that survey timing was appropriate and to assess local variations in plant phenology.

[5] Phenology is the study of periodic events in biological life cycles and how these are influenced by seasonal and interannual variations in climate, as well as habitat factors.

[6] A transect is a path along which one counts and records occurrences of the objects of study.

3.0 BOTANICAL SURVEY RESULTS

Weather conditions during the April and May 2023 surveys included partly cloudy skies, temperatures ranging from 61–74 °F, and winds vacillating from 0 to 5 miles per hour. While the weather during the August 2023 survey included clear skies, temperatures ranging from 81–98 °F, and winds vacillating from 5 to 10 miles per hour.

The Project Site is flat terrain and includes the Tujunga soil series. The surrounding environment mixes fallow lands with infrastructure, roads, and light industry. Additionally, the Project Site undergoes regular disking for fire safety, and shows signs of illegal dumping and off-road vehicle tracks. The data presented herein are conclusive: no special status plants were detected during the 2023 surveys. The Project Site lacks the essential habitat attributes needed to support these species. The current soil and vegetation composition renders the Project Site unsuitable for the habitation of special status plants. The evident anthropogenic interference has significantly diminished the habitat quality of the Project Site. As a result of these findings, there is no presumption that Project implementation would either harm individual special status plants, nor pose a threat to their local or regional populations.

Representative photographs of the Project Site are provided in Appendix A. Plant species observed during the surveys are listed in Appendix B.

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied and no warranty or guarantee is included or intended in this report. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data despite due professional care.

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APPENDIX A

PHOTOGRAPH LOG

	**Photograph 1.** Facing West
	**Photograph 2.** Facing Southeast.

	**Photograph 3.** Facing East.
	**Photograph 4.** Facing North.

APPENDIX B

PLANT SPECIES OBSERVED

Scientific Name	*Common Name*
Asteraceae (Aster family)	
*Gnaphalium spp.**	Cudweed
*Lactuca serriola **	Prickly lettuce
*Matricaria discoidea**	Pineapple weed
*Oncosiphon piluliferum**	Stinknet
Heterotheca grandiflora	Telegraph weed
Helianthus annuus	Sunflower
***Anacardiaceae* (Cashew family)**	
*Schinus molle**	Peruvian pepper
Amaranthaceae (Amaranth family)	
Kali tragus	Russian thistle
Apocynaceae (Dogbane family)	
*Nerium oleander**	Oleander
Arecaceae (Palm family)	
*Washingtonia Robusta**	Mexican fan palm
Boraginaceae (Forget-me-not family)	
Amsinckia menziesii	Fiddleneck
Brassicaceae (Mustard family)	
*Brassica nigra**	Black mustard
*Brassica Tournefortii**	Sahara mustard
*Sisymbrium irio **	London rocket
Chenopodiaceae (Goosefoot family)	
*Chenopodium album**	White goosefoot
Euphorbiaceae (Spurge family)	
*Croton setigerus**	Dove weed
Geraniaceae (Geranium family)	
*Erodium cicutarium**	Redstem stork's bill
Malvaceae (Mallow family)	
*Malva parviflora**	Cheeseweed
Nyctaginaceae (Four o'clock family)	
*Bougainvillea sp.**	Bougainvillea
Pinaceae (Pine family)	
*Pinus sp.**	Pine
Poaceae (Grass family)	
*Avena fatua **	Wild oat

Scientific Name	Common Name
Bromus diandrus *	Ripgut brome
Bromus madritensis subsp. Rubens *	Red brome
Festuca arundinacea *	Tall fescue
Hordeum murinum *	Wall barley
Simaroubaceae (Tropical tree family)	
Ailanthus altissima	Tree of heaven
Solanaceae (Nightshade family)	
Datura stramonium	Jimsonweed
Zygophyllaceae (zygon family)	
*Tribulus terrestris**	Puncture vine

Nomenclature follows the Jepson Manual, Second Edition (Baldwin et al 2011).

* = naturalized, non- native plant species

APPENDIX G
SAN BERNARDINO KANGAROO RAT ASSESSMENT

5TH AND STERLING PROJECT

September 2023

SAN BERNARDINO KANGAROO RAT & LOS ANGELES POCKET MOUSE ASSESSMENT

Prepared By

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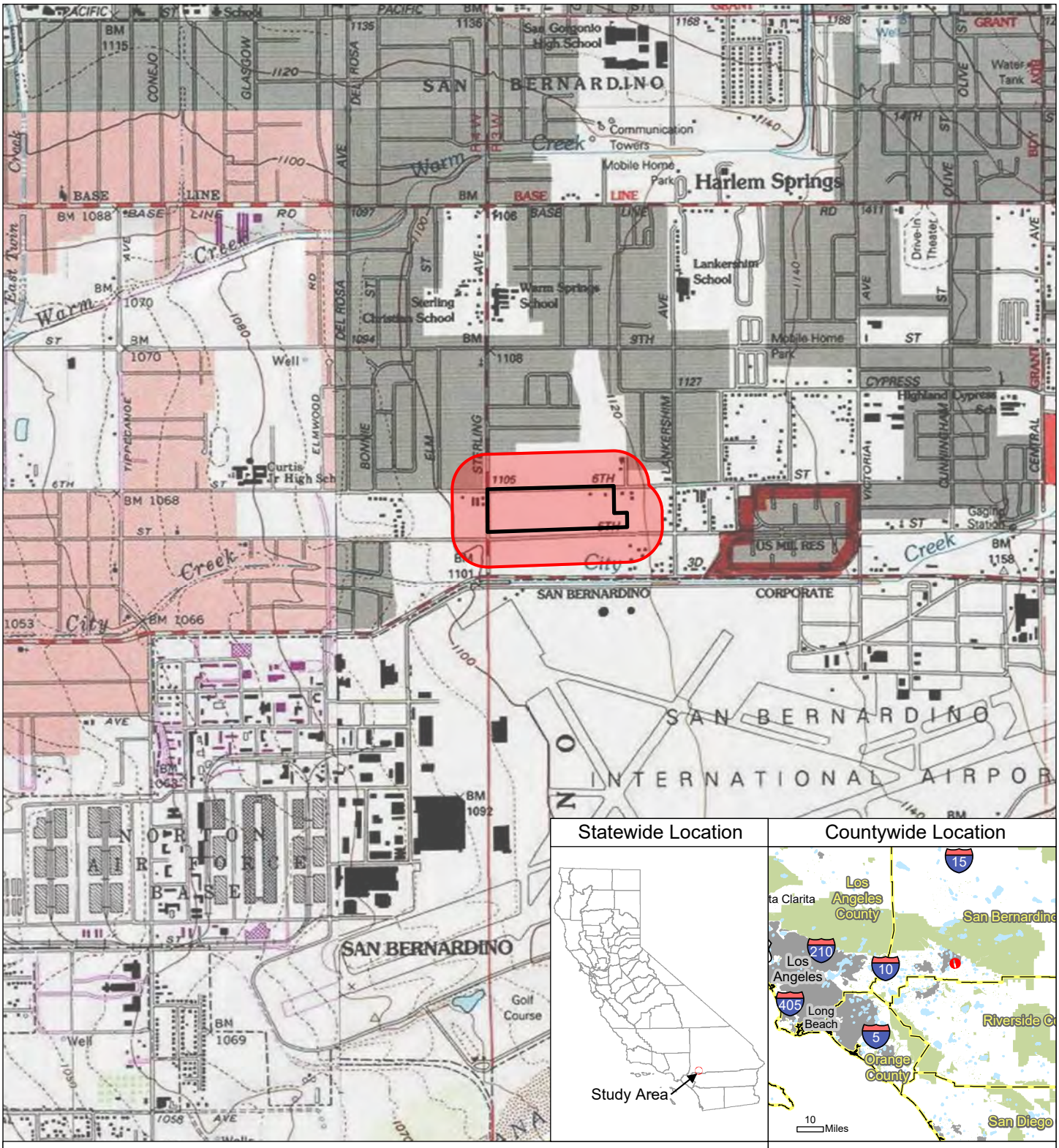
TABLE OF CONTENTS

1.0 INTRODUCTION / SUMMARY

To support the 5th and Sterling Project (hereafter referred to as the Project), NOREAS Inc. (NOREAS) conducted a San Bernardino kangaroo rat (*Dipodomys merriami parvus* [SBKR]) and Los Angeles pocket mouse (*Perognathus longimembris brevinasus* [LAPM]) assessment. The Project is located on the northeast corner of 5th Street and Sterling Avenue, in the City of San Bernardino, California (Figures 1 and 2). The Project can be found on the Redlands United States Geological Survey (USGS) 7.5-MinuteTopographic Quadrangle Map (USGS 1984). For the purposes of this report, the "Project Site" includes the Project's proposed ground disturbance footprint (Project Site). This report provides the methods, assumptions, and results of the 2023 SBKR and LAPM assessment within a roughly 25.69-acre Project Site.

The Project Site undergoes regular disking for fire safety, and shows signs of illegal dumping and off-road vehicle tracks as well. In summary, our findings are conclusive: neither SBKR nor LAPM were not detected during the 2023 field surveys. As the Project Site lacks the essential habitat attributes needed to support these species. The current soil and vegetation composition renders the Project Site unsuitable for the habitation of SBKR or LAPM. The evident anthropogenic interference has significantly diminished the habitat quality of the Project Site, making it unfavorable for common and special status small mammals. In light of these findings, there is no presumption that Project implementation would either harm individual SBKR or LAPM, nor pose a threat to their local or regional populations.



The Study Area is located in San Bernardino County on the Redlands USGS 7.5-minute quadrangle map; San Bernardino Meridian, Township 1 South, Range 3 West, in Section 00 and Township 1 South, Range 4 West, in Section 00:
Center coordinate (WGS 1984): Latitude 33.824, Longitude -117.211

Figure 1. Regional Location

Project Site (25.69 ac)

Study Area (102.13 ac)

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/20/2022

Map Prepared: 8-30-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 2. Site Vicinity

2.0 METHODS

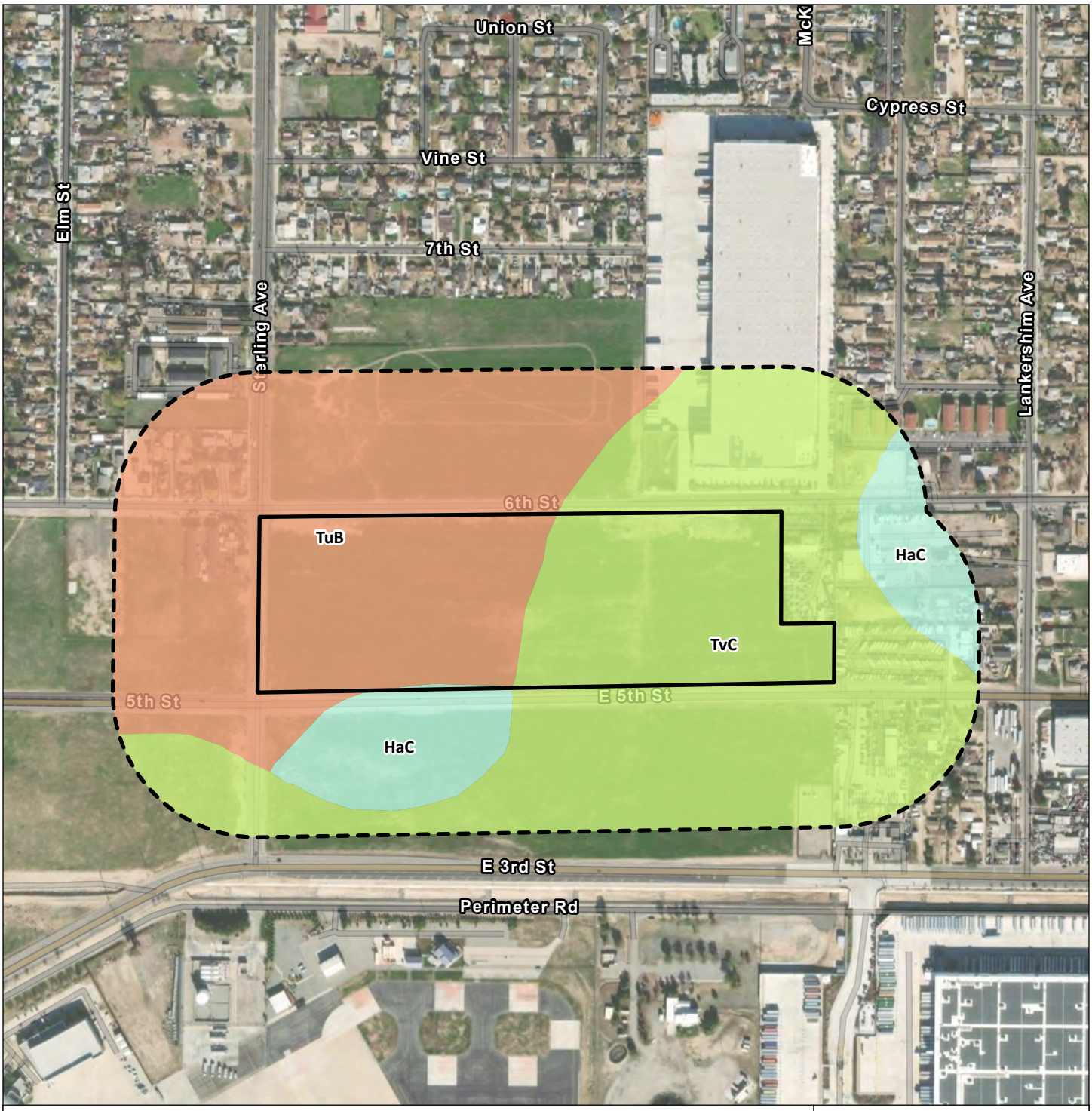
Prior to beginning field surveys, resource specialists were consulted and available information from resource management plans and relevant documents were reviewed to determine the locations and types of resources that have the potential to exist within and adjacent to the Project Site. Resources were evaluated within several miles of the Project. The primary materials reviewed included, but were not limited to, the following:

- ✓ US Fish and Wildlife Service (USFWS) Critical Habitat Mapper and File Data (USFWS 2023a);
- ✓ USFWS San Bernadino County Field Office Species List (USFWS 2023b);
- ✓ USFWS National Wetlands Inventory database (USFWS 2023c);
- ✓ California Natural Diversity Database maintained by the California Department of Fish and Wildlife (CDFW) (CDFW 2023);
- ✓ Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2023a);
- ✓ California Native Plant Society (CNPS) Electronic Inventory (CNPS 2023); and
- ✓ Aerial Photographs (Microsoft Corporation 2023).

Plants were identified to the lowest taxonomic[1] level sufficient to determine whether the species detected were non-native, native, or special-status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to The Jepson Manual (Baldwin et al. 2012). The presence of a wildlife species was based on direct observation and/or detection of wildlife sign (e.g., tracks, burrows, nests, scat, skeletal remains or vocalization). Field data compiled for wildlife species included scientific name, and common name. Wildlife of uncertain identity were documented and subsequently identified from specialized field guides and related literature (Burt and Grossenheider 1980; Halfpenny 2000; Sibley 2000; Elbroch 2003 and Stebbins 2003).

Field surveys and general biological assessments of the plant and wildlife species within the Project Site were performed by Lincoln Hulse and Philippe Vergne in June and August of 2023. Additionally, Project Site characteristics with deference to soils, topography, the condition of the plant communities, and evidence of anthropogenic disturbance were noted. That said, Philippe Vergne was the primary investigator as he holds a U.S. Fish and Wildlife Service (USFWS) permit to trap and handle Stephens's and San Bernardino Kangaroo rats, Pacific Pocket mouse, and to conduct field studies on sensitive small mammals in Southern California (TE-831207-4), a California Department of Fish and Game (CDFG) Memorandum of Understanding for above mentioned species and the Mohave Ground Squirrel, the Los Angeles pocket mouse, Palms Springs pocket mouse, Palm Springs ground squirrel, white-eared pocket mouse, Jacumba pocket mouse, north-western San Diego pocket mouse, and Dulzura pocket mouse, and a CDFG collection permit.

[1] Botanical taxonomy is the practice and science of categorization or classification. A taxonomy (or taxonomical classification) is a scheme of classification, especially a hierarchical classification, in which plants are organized into groups or types.



Project Site

Study Area

Soil Types

HaC - Hanford coarse sandy loam, 2 to 9 percent slopes

TuB - Tujunga loamy sand, 0 to 5 percent slopes

TvC - Tujunga gravelly loamy sand, 0 to 9 percent slopes

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/22/2022
- NRCS Web Soil Survey accessed Aug 2023

Map Prepared: 8-31-23

Prepared by:
NOREAS
Environmental Engineering and Science

Figure 3. Soils Map

3.0 RESULTS

Weather conditions during the June and August 2023 surveys included sunny skies, temperatures ranging from 70–85 °F, and winds vacillating from 0 to 05 miles per hour.

The SBKR stands out among several kangaroo rat species whose range overlaps with the Project Site. While the Pacific (*Dipodomys agilis*), Dulzura (*Dipodomys simulans*), and Stephens kangaroo (*Dipodomys stephensi*) rats share its environment, they enjoy a broader habitat, whereas the SBKR has a unique niche. It primarily thrives in areas with sandy soils shaped by water, not wind, often choosing loose soils near shrubs for burrowing.

The Merriam's kangaroo rat is a common sight from valleys to deserts, and the SBKR - a subspecies of the Merriam's kangaroo rat - is unique to scrubby regions alongside rivers and streams. Historical flood control efforts and increased human activities, like mining, housing, and off-road activities, have significantly reduced the quality and quantity of their habitats.

The LAPM is one of the two pocket mice found in this part of San Bernardino County. Both the LAPM and the San Diego pocket mouse have similar habitats. However, the latter's habitat stretches further into San Diego County. LAPM predominantly resides in grasslands and sage scrub habitats with sandy soils. Their range spans from Rancho Cucamonga to Morongo, extending south to San Diego County. Characteristically, they forage in open spaces and under shrubs, burrowing in sandy terrains.

The Project Site includes a flat terrain and boasts the Tujunga soil series. The surrounding environment mixes fallow lands with infrastructure, roads, and industry. It is worth noting the Project Site undergoes regular disking for fire safety, and shows signs of illegal dumping and off-road vehicle tracks as well. Appendix A includes representative photos of the Project Site and Appendix B includes a species lists. Notably, apart from a few Pocket Gopher burrows, the Project Site show no trace of kangaroo rats or other small mammals like the LAPM or deer mouse.

In summary, the data presented herein are conclusive: neither SBKR nor LAPM were detected during the surveys. The Project Site lacks the essential habitat attributes needed to support these species. The current soil and vegetation composition renders the Project Site unsuitable for the habitation of SBKR or LAPM. The evident anthropogenic interference has significantly diminished the habitat quality of the Project Site, making it unfavorable for common and special status small mammals. In light of these findings, there is no presumption that Project implementation would either harm individual SBKR or LAPM, nor pose a threat to their local or regional populations.

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied and no warranty or guarantee is included or intended in this report. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data despite due professional care.

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APPENDIX A
PHOTOGRAPH LOG

	**Photograph 1.** Facing East.
	**Photograph 2.** Facing Southeast.

APPENDIX B
PLANT & WILDLIFE SPECIES OBSERVED

PLANT SPECIES

Scientific Name	*Common Name*
Asteraceae (Aster family)	
*Gnaphalium spp.**	Cudweed
*Lactuca serriola **	Prickly lettuce
*Matricaria discoidea**	Pineapple weed
*Oncosiphon piluliferum**	Stinknet
Heterotheca grandiflora	Telegraph weed
Helianthus annuus	Sunflower
***Anacardiaceae* (Cashew family)**	
*Schinus molle**	Peruvian pepper
Amaranthaceae (Amaranth family)	
Kali tragus	Russian thistle
Apocynaceae (Dogbane family)	
*Nerium oleander**	Oleander
Arecaceae (Palm family)	
*Washingtonia Robusta**	Mexican fan palm
Boraginaceae (Forget-me-not family)	
Amsinckia menziesii	Fiddleneck
Brassicaceae (Mustard family)	
*Brassica nigra**	Black mustard
*Brassica Tournefortii**	Sahara mustard
*Sisymbrium irio **	London rocket
Chenopodiaceae (Goosefoot family)	
*Chenopodium album**	White goosefoot
Euphorbiaceae (Spurge family)	
*Croton setigerus**	Dove weed
Geraniaceae (Geranium family)	
*Erodium cicutarium**	Redstem stork's bill
Malvaceae (Mallow family)	
*Malva parviflora**	Cheeseweed
Nyctaginaceae (Four o'clock family)	
*Bougainvillea sp.**	Bougainvillea
Pinaceae (Pine family)	
*Pinus sp.**	Pine
Poaceae (Grass family)	
*Avena fatua **	Wild oat
*Bromus diandrus **	Ripgut brome
*Bromus madritensis subsp. Rubens **	Red brome
*Festuca arundinacea **	Tall fescue

Scientific Name	Common Name
Hordeum murinum *	Wall barley
Simaroubaceae (Tropical tree family)	
Ailanthus altissima	Tree of heaven
Solanaceae (Nightshade family)	
Datura stramonium	Jimsonweed
Zygophyllaceae (zygon family)	
*Tribulus terrestris**	Puncture vine

Nomenclature follows the Jepson Manual, Second Edition (Baldwin et al 2011).

* = naturalized, non- native plant species

WILDLIFE SPECIES

Scientific name	Common name
Birds	
Buteo jamaicensis	Red-Tailed hawk
Cathartes aura	Turkey vulture
Corvus corax	Common Raven
Corvus brachyrhynchos	American crow
Sturnus vulgaris	European Starling
Carpodacus mexicanus	House Finch
Charadrius vociferus	Killdeer
Hirundo rustica	Barn swallow
Passerculus sandwichensis	Savanna sparrow
Petrochelidon pyrrhonota	Cliff swallow
Columba livia	Rock Pigeon
Euphagus cyanocephalus	Brewer's Blackbird
Zonotrichia leucophrys	White-crowned sparrow
Falco sparverius	American kestrel
Mimus polyglottos	Northern mockingbird
Sayornis saya	Say's phoebe
Melospiza melodia	Song sparrow
Passer domesticus	House Sparrow
Sayornis nigricans	Black phoebe
Spinus psaltria	Lesser goldfinch
Sturnella neglecta	Western meadowlark
Tyrannus vociferans	Cassin's kingbird
Quiscalus quiscula	Common Grackle
Zenaida macroura	Mourning Dove
Mammals	
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Cottontail

APPENDIX H
DELHI SANDS FLOWER LOVING FLY ASSESSMENT

5TH AND STERLING PROJECT

September 2023

DELHI SANDS FLOWERLOVING FLY ASSESSMENT

Prepared By

NOREAS
Environmental Engineering and Science

16361 Scientific Way, Irvine, CA 92618
(949) 467-9100

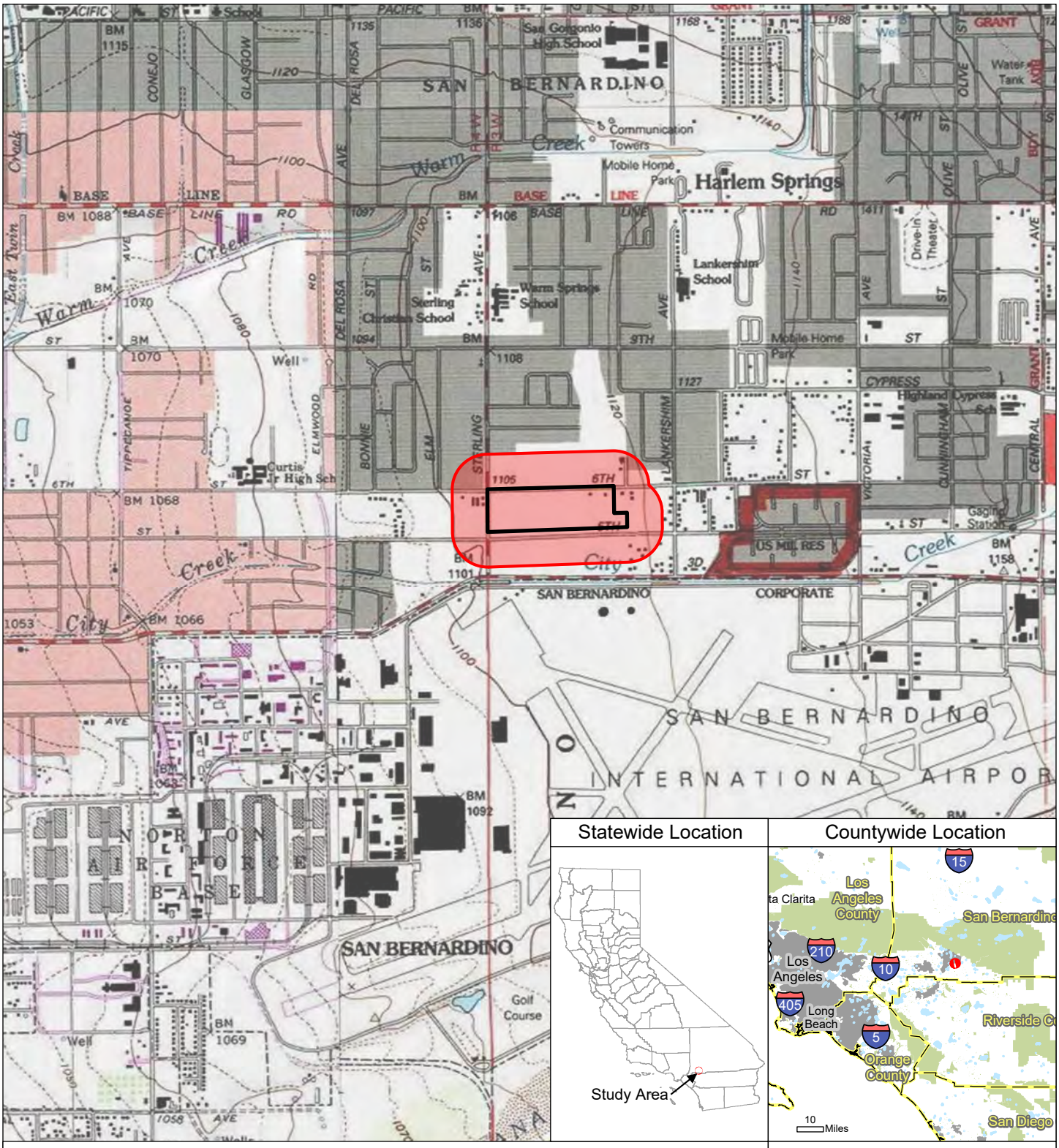
TABLE OF CONTENTS

1.0 INTRODUCTION / SUMMARY

To support the 5th and Sterling Project (hereafter referred to as the Project), NOREAS Inc. (NOREAS) conducted a Delhi Sands flowerloving fly (*Rhaphiomidas terminatus abdominalis* [DSF]) assessment. The Project is located on the northeast corner of 5th Street and Sterling Avenue, in the City of San Bernardino, California (Figures 1 and 2). The Project can be found on the Redlands United States Geological Survey (USGS) 7.5-MinuteTopographic Quadrangle Map (USGS 1984). For the purposes of this report, the "Project Site" includes the Project's proposed ground disturbance footprint (Project Site). This report provides the methods, assumptions, and results of the 2023 DSF assessment within a roughly 25.69-acre Project Site.

The purpose of this assessment is to characterize existing Project Site conditions and evaluate its potential as a habitat for DSF. The Project Site's soil, a decisive indicator, was our primary focus. None of the areas within the Project Site were identified or mapped by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey as having Delhi Sand soils, which are crucial for DSF habitation. It is important to understand that Delhi Sand soils, being wind-deposited, have boundaries that naturally evolve. After a comprehensive assessment, it was found that the Project Site's surface soils do not possess the unique Delhi Sand soil quality. Furthermore, while a few of the "indicator plants" commonly associated with the presence of DSF were detected within the Project Site, it is important to note that these were isolated occurrences. The sparse distribution of these indicator plants was not sufficient to constitute functional habitat for DSF. Moreover, a broader perspective reveals that the Project Site is also surrounded by existing developments, detaching it from connectively to Delhi Sands soils, or areas impacted by wind-driven processes.

In essence, our findings are conclusive: the Project Site is devoid of DSF, it lacks essential Delhi Sand soils, and a representative number of indicator plant species were not observed within its boundaries. Without these critical habitat components, the Project Site is inhospitable for DSF. Our findings suggest that the Project's implementation will neither negatively impact individual DSF, nor endanger their broader populations, or impeded their recovery as defined by the United States Fish and Wildlife Service (USFWS) DSF Recovery Plan (1997).



The Study Area is located in San Bernardino County on the Redlands USGS 7.5-minute quadrangle map; San Bernardino Meridian, Township 1 South, Range 3 West, in Section 00 and Township 1 South, Range 4 West, in Section 00:
Center coordinate (WGS 1984): Latitude 33.824, Longitude -117.211

Figure 1. Regional Location

Project Site (25.69 ac)

Study Area (102.13 ac)

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/20/2022

Map Prepared: 8-30-23

Prepared by:

NOREAS
Environmental Engineering and Science

Figure 2. Site Vicinity

2.0 METHODS

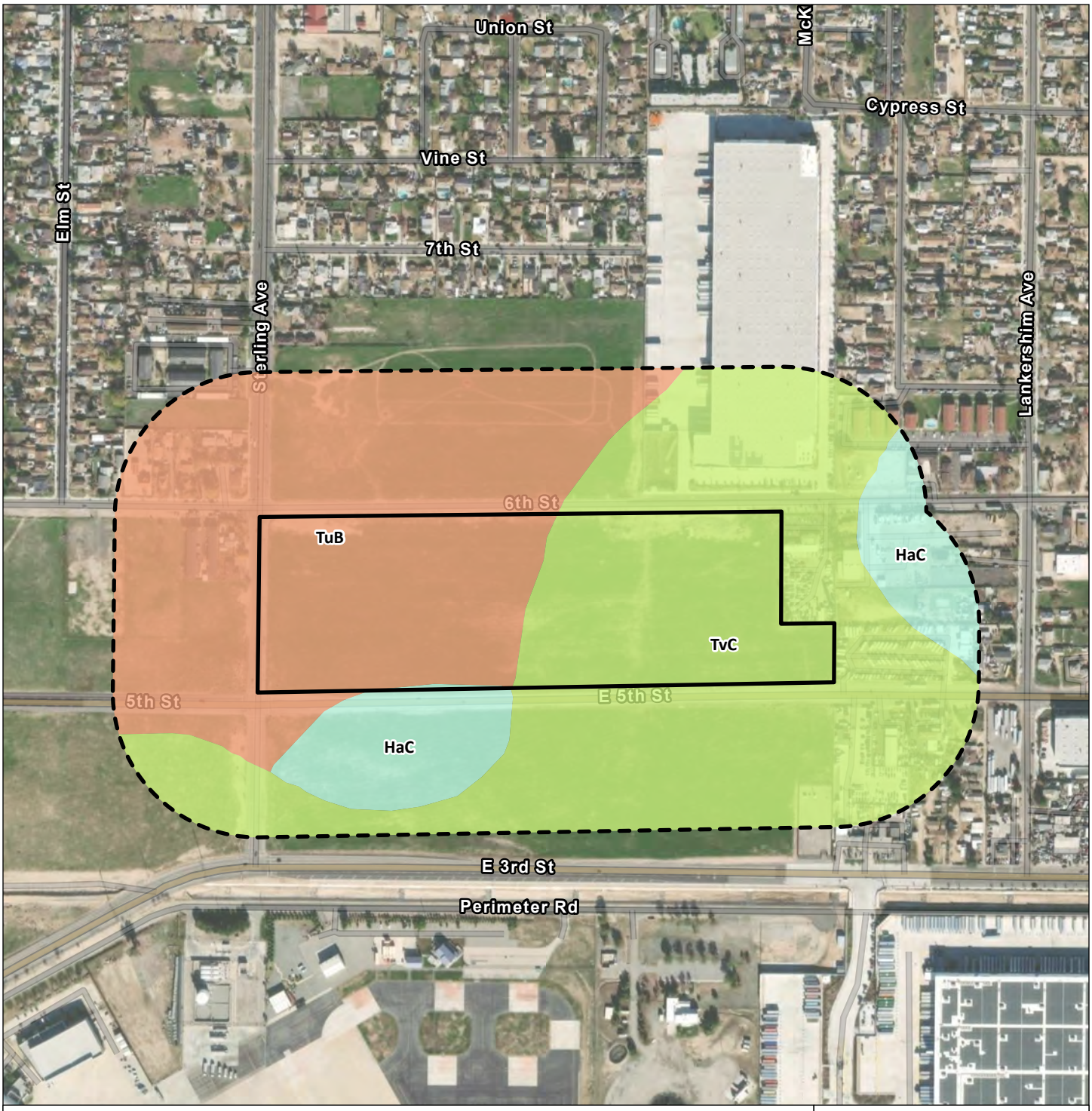
Prior to beginning field surveys, resource specialists were consulted and available information from resource management plans and relevant documents were reviewed to determine the locations and types of resources that have the potential to exist within and adjacent to the Project Site. Resources were evaluated within several miles of the Project. The primary materials reviewed included, but were not limited to, the following:

- ✓ US Fish and Wildlife Service (USFWS) Critical Habitat Mapper and File Data (USFWS 2023a);
- ✓ USFWS San Bernadino County Field Office Species List (USFWS 2023b);
- ✓ California Natural Diversity Database maintained by the California Department of Fish and Wildlife (CDFW) (CDFW 2023);
- ✓ Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2023a);
- ✓ California Native Plant Society (CNPS) Electronic Inventory (CNPS 2023); and
- ✓ Aerial Photographs (Microsoft Corporation 2023).

Plants were identified to the lowest taxonomic[1] level sufficient to determine whether the species detected were non-native, native, or special-status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to The Jepson Manual (Baldwin et al. 2012). The presence of a wildlife species was based on direct observation and/or detection of wildlife sign (e.g., tracks, burrows, nests, scat, skeletal remains or vocalization). Field data compiled for wildlife species included scientific name, and common name. Wildlife of uncertain identity were documented and subsequently identified from specialized field guides and related literature (Burt and Grossenheider 1980; Halfpenny 2000; Sibley 2000; Elbroch 2003 and Stebbins 2003).

Field surveys and general biological assessments of the plant and wildlife species within the Project Site were performed by Lincoln Hulse BS and Dale Powell PhD in April and August of 2023. Additionally, Project Site characteristics with deference to soils, topography, the condition of the plant communities, and evidence of anthropogenic disturbance were noted. That said, Dale Powell was the primary investigator as he holds a U.S. Fish and Wildlife Service (USFWS) permit to conduct field studies of DSF (Recovery Permit # TE-006559-5).

[1] Botanical taxonomy is the practice and science of categorization or classification. A taxonomy (or taxonomical classification) is a scheme of classification, especially a hierarchical classification, in which plants are organized into groups or types.



Project Site

Study Area

Soil Types

HaC - Hanford coarse sandy loam, 2 to 9 percent slopes

TuB - Tujunga loamy sand, 0 to 5 percent slopes

TvC - Tujunga gravelly loamy sand, 0 to 9 percent slopes

0 250 500 Feet

1 inch = 500 feet

Data Sources:
- ESRI World Imagery accessed Aug 2023, imagery date: 12/22/2022
- NRCS Web Soil Survey accessed Aug 2023

Map Prepared: 8-31-23

Prepared by:
NOREAS
Environmental Engineering and Science

Figure 3. Soils Map

3.0 RESULTS

Weather conditions during the April and August 2023 surveys included sunny skies, temperatures ranging from 68–87 °F, and winds vacillating from 0 to 15 miles per hour.

DSF (family *Mydidae*) was listed as an endangered species under the Endangered Species Act, as amended on September 23, 1993. The DSF is considered to be endangered primarily because of the loss of its habitat, mainly due to the habitat's conversion to agricultural, residential, and industrial uses. Its historic range has been reduced by over approximately 97% (USFWS, 1993). The DSF is known only to inhabit areas where Delhi series soils are located. These soils consist of fine, sandy soils, often forming wholly or partially consolidated dunes, located in an irregular 40 square mile area, in southwestern San Bernardino and northwestern Riverside Counties (Soil Conservation Service, 1980). Fine unconsolidated soils are required for oviposition.

The female fly inserts the end of her abdomen deep into the soil to lay her eggs (Rogers and Mattoni, 1993). The life history of the larval stages are unknown, however, it is presumed, that the larvae develop underground (Greg Ballmer, D. Hawks, pers. comm.). The DSF's adult flight period lasts approximately 11 weeks from early July through mid-September. The adult is approximately 1 inch long, tan to orange-brown in color, with dark brown bands and spots upon its abdomen. Its wings are hyaline. It has large green eyes and a long slender proboscis, which it has been seen to use to feed upon nectar from California buckwheat and telegraph weed. The adults frequent open areas, usually near unconsolidated soil. The adult males patrol open areas looking for females to mate with. The females are more sedentary and perch upon plants or sit upon the ground for long periods. Adults are most often observed from 9 or 10 AM until 3 or 4 PM.

The DSF is frequently associated with certain plants: California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), annual bursage (*Ambrosia acanthicarpa*) and telegraph weed (*Heterotheca grandiflora*), sometimes called "indicator plants". Other native plant species also occur in DSF habitat: California evening primrose (*Oenothera californica*), deerweed (*Lotus scoparius*), lessinga (*Lessingia glandulifera*), rancher's fiddleneck (*Amsinckia menziesii*), sapphire woolly-star (*Eriastrum sapphirinum*), and Thurber's buckwheat (*Eriogonum thurberi*).

No areas within the Project Site were identified or mapped by the USDA NRCS Soil Survey as having Delhi Sand soils. It is also important to reiterate that Delhi Sand soils, are wind-deposited, so there have boundaries naturally evolve over time. Nonetheless, it was determined that the Project Site's surface soils do not possess the unique Delhi Sand soil quality, nor the "indicator plants" commonly associated with the presence of DSF. While a few of the "indicator plants" commonly associated with the presence of DSF were detected within the Project Site, it is important to note that these were isolated occurrences. The sparse distribution of these indicator plants was not sufficient to constitute functional habitat for DSF. Furthermore, the Project Site is also surrounded by existing developments, isolating and detaching it from connectively to Delhi Sands soils, or areas impacted by wind-driven processes.

In essence, our findings are conclusive: the Project Site is devoid of DSF, it lacks essential Delhi Sand soils, and a representative number of indicator plant species were not observed within its boundaries. Without these critical habitat components, the Project Site is inhospitable for DSF. Our findings suggest that the Project's implementation will neither negatively impact individual DSF, nor endanger their broader populations, or impeded their recovery as defined by the United States Fish and Wildlife Service (USFWS) DSF Recovery Plan (1997).

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied and no warranty or guarantee is included or intended in this report. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data despite due professional care.

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APPENDIX A
PHOTOGRAPH LOG

	**Photograph 1.** Facing South.
	**Photograph 2.** Facing Southeast.

APPENDIX B
PLANT & WILDLIFE SPECIES OBSERVED

PLANT SPECIES

Scientific Name	*Common Name*
Asteraceae (Aster family)	
*Gnaphalium spp.**	Cudweed
*Lactuca serriola **	Prickly lettuce
*Matricaria discoidea**	Pineapple weed
*Oncosiphon piluliferum**	Stinknet
Heterotheca grandiflora	Telegraph weed
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*Schinus molle**	Peruvian pepper
Amaranthaceae (Amaranth family)	
Kali tragus	Russian thistle
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Arecaceae (Palm family)	
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Scientific Name	Common Name
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Datura stramonium	Jimsonweed
Zygophyllaceae (zygon family)	
*Tribulus terrestris**	Puncture vine

Nomenclature follows the Jepson Manual, Second Edition (Baldwin et al 2011).

* = naturalized, non- native plant species

WILDLIFE SPECIES

Scientific name	Common name
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Cathartes aura	Turkey vulture
Corvus corax	Common Raven
Corvus brachyrhynchos	American crow
Sturnus vulgaris	European Starling
Carpodacus mexicanus	House Finch
Charadrius vociferus	Killdeer
Hirundo rustica	Barn swallow
Passerculus sandwichensis	Savanna sparrow
Petrochelidon pyrrhonota	Cliff swallow
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Melospiza melodia	Song sparrow
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Spinus psaltria	Lesser goldfinch
Sturnella neglecta	Western meadowlark
Tyrannus vociferans	Cassin's kingbird
Quiscalus quiscula	Common Grackle
Zenaida macroura	Mourning Dove
Mammals	
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Sylvilagus audubonii	Cottontail