

**General Biological Assessment
And MSHCP Consistency Analysis
For Tentative Tract No. 37731
A Subdivision of 35.8 (Gross) Acres (32.54 Net Acres) into 138
Single Family Residential Lots, 1 Park and Flood Detention Lots
Located in the City of Riverside, CA**

Assessor Parcel Numbers: 266-140-021, 266-140-022, 266-140-029,
266-140-030, 266-140-049, 266-140-050

Located within Section 29, Township 3 South
Range 4 West of the *Riverside and Steele Peak, CA Quadrangles*

Prepared for:

City of Riverside

and

Lurin Land, LLC
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List of Appended Exhibits

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| Exhibit 1 - Regional Location | attached in order |
| Exhibit 2 - USGS Topo | attached in order |
| Exhibit 3 - Soils | attached in order |
| Exhibit 4 - 2018 Aerial Photo | attached in order |
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| Exhibit 8 - RCA MSHCP Information Map – Public Quasi Public Conserved Areas Lands... | attached in order |
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| Exhibit 10 – Potential Section 6.1.2 Features 1-5A..... | attached in order |
| Tentative Tract Map No. 37731 | attached in order |

1.0 INTRODUCTION

PURPOSE

Lurin Land, LLC. is currently processing the following entitlements to facilitate the establishment of an 138-unit Planned Residential Development: 1) Tentative Tract Map (TM 37731) to subdivide 35.8 gross acres (32.54 net acres) into 138 single-family residential lots and lettered lots for private streets and common open space; 2) Planned Residential Development for the establishment of detached single-family dwellings, private streets and common open space; 3) Variance to allow a reduced perimeter setback; and 4) Design Review of project plans with the City of Riverside ("City"), CA. Gross acreage calculations include easement areas which extend into the collector streets surrounding the Project site.

TERACOR has prepared this assessment so that the City may understand the full range of biological resources present and potentially present on-site and the relationship of the biological resources to the proposed project. This analysis is based on biological field evaluations performed on-site, multiple focused surveys performed on the subject property, and our knowledge of cismontane southern California habitats and associated organisms, MSHCP requirements and parameters, and relevant scientific literature which describes and categorizes these resources.

In addition to this General Biological Assessment and MSHCP Consistency Analysis, TERACOR has prepared other related documentation which includes:

- *Preliminary Jurisdictional Delineation and Determination of California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the California Regional Water Quality Control Board – Santa Ana Region Jurisdiction for a 35.8 Gross Acre (32.54 Net Acre) Property Located south of Lurin Avenue and West of Barton Street, City of Riverside, CA – Tentative Tract No. 37731 dated 02 December 2019 (revised per City of Riverside comments 24 July 2020) (Revised per Wildlife Agency Comments 13 January 2021);*
- *Step I Habitat Assessment, Step II, Part A Focused Burrow Survey and Step II, Part B Focused Burrowing Owl Survey for Tentative Tract No. 37731 a 138 Lot Subdivision of 35.8 Gross Acres (32.54 Net Acres) in the City of Riverside, Riverside County, California dated 03 December 2019 (revised per City of Riverside comments 24 July 2020; and*
- *Determination of Biologically Equivalent or Superior Preservation (DBESP) For Tentative Tract No. 37731 in the City of Riverside, CA, dated 17 January 2020 (revised per City of Riverside comments 24 July 2020 (Revised per Wildlife Agency Comments 13 January 2021).*

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MSHCP-RELATED BACKGROUND

The subject property is located within the Western Riverside County Multiple Species Habitat Conservation Plan ("MSHCP" or "Plan") area. The following is quoted from Section 1.0 of the MSHCP:

"The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan ("HCP") focusing on Conservation of species and their associated Habitats in Western Riverside County. This Plan is one of several large, multi-jurisdictional habitat-planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region... The MSHCP will allow Riverside County ...and its Cities to better control local land-use decisions and maintain a strong economic climate in the region while addressing the requirements of the state and federal Endangered Species Acts."

There are 146 sensitive species which are covered under the MSHCP. These species are listed below in *Table 4 – MSHCP-Covered Species in Section 5.0 – Regulatory Status Species Analysis*. The MSHCP formation was a collaborative effort between the scientific community, governmental agencies, consultants and Permittees that determined which species were of particular concern in western Riverside County. This suite of sensitive organisms was approved by the **U.S. Fish and Wildlife Service** ("USFWS") and the **California Department of Fish and Wildlife** ("CDFW"). The MSHCP is the overriding document that provides the framework for where and when surveys are conducted and how conservation may occur in the Plan area.

SITE LOCATION AND PHYSIOGRAHY

The property is located within the **City of Riverside** ("City"), California, in the Orangecrest neighborhood of the City. The property is bounded by Lurin Avenue to the north and Mariposa Avenue to the south. Cole Avenue lies on the east side of the Project site. The property encircles existing large lot rural residential housing which is not part of the Project, which is the prevalent land use in the area. A relatively new single-family subdivision has been constructed across from the subject site on the north side of Lurin Avenue, near Cole Avenue. *Exhibit 1 – Regional Location*, attached, depicts the property's location relatively to local thoroughfares and regional freeways.

The subject site is comprised of six (6) parcels totaling 35.8 gross acres (32.54 net acres); Assessor Parcel No's. 266-140-021, 022, 029, 030, 049, and 050. The property is geographically located within Section 29 of Township 3 South, Range 4 West of the *Riverside East and Steele Peak, California 7.5 Minute Series U.S.G.S. Topographic Quadrangles*, as depicted in the attached *Exhibit 2 - USGS Topo*.

Elevations on-site range from approximately 1685 feet above mean sea level (msl) on the northernmost edge of the site along Lurin Avenue, to 1680 feet msl at the south edge of the property at Mariposa Avenue. There is vertical fall of approximately 5 feet across the site. The relief of the property is best characterized as generally level or gently rolling.

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The topography of the site generally slopes from north to south. The property is mainly comprised of an annual non-native grassland with common annual wildflowers prevalent during Spring and Summer months. A roadside ditch along Lurin Avenue appears to convey stormwater and urban nuisance runoff along the northeast corner of the property, where a disturbed and relatively open stand of mixed willow and mulefat scrub is present. Ornamental trees are present in several places on-site. Vegetation community alliances are discussed in Section 3.0 – Vegetation and Plant Communities.

The property is routinely disked and mowed for weed abatement and fire suppression purposes.

The property is located on the roof of uplifted, Mesozoic (approximately 600 to 65 million years BCE) granite (grMz). Soils on-site are derived from the underlying eroded granite. The property location is approximately located and shown in the center of *Exhibit 9 – Regional Geologic Map of California*. The complex and very active geology of California has given rise to its' diversity of landscapes.

PROJECT DESCRIPTION

Tentative Tract No. 37731 proposes the following entitlements to facilitate the establishment of an 138-unit Planned Residential Development: 1) Tentative Tract Map (TM 37731) to subdivide 35.8 gross acres (32.54 net acres) into 138 single-family residential lots and lettered lots for private streets and common open space; 2) Planned Residential Development for the establishment of detached single-family dwellings, private streets and common open space; 3) Variance to allow a reduced perimeter setback; and 4) Design Review of project plans. Water detention/treatment facilities would receive stormwater runoff from the residential lots and street system. Stormwater would be temporarily detained to allow for a reduction in peak stormflow runoff and treatment of low flow runoff from residential lots and streets.

SOILS

TERACOR reviewed published description of soils present on-site prepared by the USDA. Specifically, we reviewed the **Natural Resources Conservation Service** ("NRCS") Web Soil Survey of the Western Riverside Area, California mapped soils on the property, as shown in *Exhibit 3 – Soils*. The property is historically comprised of three (3) soil series, according to the NRCS *Web Soil Survey: Western Riverside Area, California*. The soils historically present on the property are as follows:

Table 1 - Soils

| CODE | SOIL TYPE | PROPERTY LOCATION |
|------|--|---|
| FbC2 | Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded | Southeast corner of property |
| FfC2 | Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded | Approx. west half of property and along Cole Ave. |
| MmB | Monserate sandy loam, 0 to 5% slopes, eroded | Approx. center of site |

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All of the soils on-site are loams; meaning they have the necessary components and characteristics to support a vigorous and diverse vegetative cover, and to also support subsurface burrows, tunnels or animal dens. These loam soils also drain well, so small mammal burrows are ubiquitously located across much of the property. These loam soils include sand (see Table 1), which generally increases porosity (i.e., percolation of water). Sand alone is highly porous as compared to clay, for example, as clay retards percolation and sometimes leads to surface ponding. The easterly and south-central areas of the property were utilized for an agricultural grove for 20 to 30 years, but trees were removed about 20 years ago.

These soil types have implications when considering whether the property is suitable for seasonal ponding, or for different types of plants and organisms to reside on it. We would consider these soils to be broadly associated with many Riverside County plants and animals, but not those organisms which prefer or even require clay or alkaline substrates. Clays consist of very fine particles, tightly packed together. Clay soils (which are absent on-site) can support organisms specifically adapted to poor drainage and poor aeration. These characteristics are important to help predict presence or absence of certain rare organisms, as discussed later in this report.

2.0 METHODS

An array of field (on-site) and research (off-site) methodologies were utilized to assess and evaluate the different types of biological resources present or potentially present on-site. These specific methodologies included:

- Literature Review for Vascular Vegetation and Vegetation Community Occurrences
- Published Government Geologic and Topographic Mapping
- Literature Review for Animal Occurrences
- State of California *Natural Diversity Data Base* ("CNDDDB") Query for Flora, Fauna and Plant Communities with Special Regulatory Designations
- MSHCP species accounts and compliance parameters
- California Native Plant Society publications
- Federal and State Protected Species (Endangered, Threatened, Candidate and Others) Lists
- General and Focused Field Investigations and Assessment
- Aerial Biogeographic Analysis (Potential Corridors, Movement Pathways, Habitat Linkages)

These assessment methodologies are described below in detail to provide background information about information sources and references, survey methods and protocols as applicable and overall approach in identifying resources and assessing impacts that could result to those resources with project implementation. The only established protocol utilized in our assessments was for burrowing owl as the MSCHP has established procedures both for a habitat assessment and for surveys if justified by the Habitat Assessment.

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LITERATURE REVIEW

Vascular Vegetation and Vegetation Community Occurrences

Literature reviewed from which plant names and identifications, vegetation communities and associations, and relevant descriptions were derived include: *The Jepson Manual, Vascular Plants of California - Second Edition* (Baldwin et. al. 2012), the CDFW's *California Natural Community List* (2018), *The Vascular Plants of Western Riverside County, California – An Annotated Checklist* (Boyd et al, 2004), and *A Manual of California Vegetation - Second Edition* (Sawyer, Keeler-Wolf and Evens 2009). A complete floral inventory of species observed on-site has been provided as *Appendix A – Floral Compendium*.

Animal Occurrences

The literature review included a query of the *CNDDDB*, which is a computerized inventory of information on the location of California's rare, threatened, endangered, and otherwise regulatory status¹ plants, animals, and natural communities, and the MSHCP. Subscriptions are required in order to access *CNDDDB* occurrences. Information regarding the species occurrence, population numbers, observers, occurrence dates and potential threats to the organism(s) are included for each occurrence record. TERACOR queried the *Riverside East and Steele Peak, California* Quadrangles in the *CNDDDB* and MSHCP for local records of MSHCP-covered and otherwise regulatory status organisms and habitats. *Exhibit 8 – CNDDDB Occurrences* displays nearby sensitive species detections.

The results of these queries are presented in Section 5.0 of this report. A list of the faunal species observed within several decades and/or western Riverside County MSHCP covered species which are known or expected to occur in habitats similar to those found on-site has been provided as *Appendix B – Faunal Compendium*.

California Native Plant Society

The **California Native Plant Society** ("CNPS") is a statewide, non-profit organization dedicated to the preservation of native flora. The *California Native Plant Society's Inventory of Rare and Endangered Plants of California* (2001) includes information regarding the distribution, ecology, rarity, and legal status of over 2,000 rare plants which occur in California. The inventory has been updated and is maintained on a regular basis on the *Inventory of Rare and Endangered Plants Online Database* (2018).

The CNPS regulatory status designation consists of two (2) parts. The first portion of the designation is the rarity code and the second is the threat code. For example, a plant designated as a *Rare Plant Rank 1B.1* is considered rare, threatened, or endangered in California and elsewhere, and is seriously endangered

¹ "Regulatory Status" refers to those species that appear on a federal or state list as defined by the California Environmental Quality Act ("CEQA").

in California (over 80% of occurrences threatened / high degree and immediacy of threat). A description of the rarity and threat code designations is presented below.

The CNPS codes presented for regulatory status flora below include the following:

| | |
|-----------------------------|--|
| Rare Plant Rank 1A: | Presumed Extirpated in California and Either Rare or Extinct elsewhere |
| Rare Plant Rank 1B: | Rare, Threatened, or Endangered in CA and elsewhere |
| Rare Plant Rank 2A: | Presumed Extirpated in CA, but common elsewhere |
| Rare Plant Rank 2B: | Rare, Threatened, or Endangered in CA but more common elsewhere |
| Rare Plant Rank 3: | Plants about which more information is needed - a review list |
| Rare Plant Rank 4: | Plants of Limited Distribution - a watch list |
| Rare Plant Rank CBR: | Considered But Rejected |

The **Threat Code** is as follows:

- .1 - Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat).
- .2 - Moderately threatened in California (20 - 80% of occurrences threatened/moderate degree and immediacy of threat).
- .3 - Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

MSHCP-covered regulatory status plant species descriptions have been provided in *Section 5.0 – Regulatory Status Species Analysis, Table 4 – MSHCP-Covered Species*. These species descriptions are based on plant information provided in the MSHCP, the *Jepson Manual*, as well as the *CNPS Online Inventory*. Species information from these sources, such as elevational ranges or blooming periods of regulatory status plant species, is not always consistent. Because the regulatory status plant species listed below in *Table 4* are CNPS-ranked, and the CNPS can provide broader descriptive information relative to distribution, the species information as summarized in the *CNPS Online Inventory* has generally been presented in this biological assessment.

U.S. Army Corps of Engineers Jurisdictional Analysis of "Waters of the United States"

The Corps regulates the discharge of dredged or fill material into jurisdictional "waters" through Section 404 of the Clean Water Act, as amended.

Effective 22 June 2020, the Corps recently adopted the new *Navigable Waters Protection Rule*. This new rule, formulated under the Trump national administration, establishes the scope of federal regulatory

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authority under the CWA. The Navigable Waters Protection Rule includes four categories of jurisdictional waters and provides specific exclusions for many water features that traditionally have not been regulated. The most far-reaching of its intended changes is to not regulate ephemeral streams. Because some uncertainty exists about the legal standing of this new Rule, it can be reasonably expected to be challenged in federal court or undergo revision. In the meantime, the Rule will be allowed to stand at this time. The Navigable Water Protection Rule eliminates some ephemeral “waters” from federal jurisdiction. This site would likely be considered non-jurisdictional by the Corps at this time.

TERACOR specifically utilizes the *Army Corps of Engineers Wetland Delineation Manual* (1987), as well as the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (“Regional Supplement”) (2008) to conduct delineations. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region, which consists of all or significant portions of eleven (11) states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming. The subject site is located within the Arid West Region.

The EPA and Corps adopted guidance and jurisdictional information on 02 December 2008 regarding the Rapanos decision in the *Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in Rapanos v. United States & Carabell v. United States*. Based on the Rapanos decision by the Supreme Court, the Corps may assert jurisdiction over waters that have a significant nexus or are associated with a traditional navigable water. The significant nexus will be determined by fact-specific analysis, which will assess flow characteristics, and functions of tributaries and adjacent wetlands to determine if they significantly affect the chemical, physical and biological processes of downstream traditional navigable waters, and also consider hydrological and ecological factors. The Corps will generally not assert jurisdiction over swales or erosional features with low, infrequent or short duration flows or ditches, including roadside ditches, with no relatively permanent flow of water.

A full list of scientific and background literature references has been provided as *Appendix C - References*.

FEDERAL AND STATE PROTECTED SPECIES

Protected regulatory status species are usually classified by both state and federal resource management agencies as threatened or endangered, under provisions of the State and federal Endangered Species Acts. Vulnerable or “at-risk” species which have been proposed or are being considered for listing as threatened or endangered or “species of special concern” are categorized administratively by the USFWS. The CDFW uses various terminology and classifications to describe regulatory status species. There are also other species classifications and categories used in this report; all are described below.

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For some species, the CNDDDB designates only specific life history phases or constructs, such as roosts, rookeries, or nest sites, and not the organism itself outside of that phase. Migratory birds are protected under provisions of the Migratory Bird Treaty Act, which prohibits killing any designated bird including disturbing or destroying an active nest of a bird listed under the Act. The list of bird species, in fact, does contain some common birds and birds now considered pests, such as brown-headed cowbird (*Molothrus ater*) and European starling (*Sturnus vulgaris*). Nesting birds are also protected under California Fish and Game Code Sections 3503, 3503.5, and 3512, which prohibit the take of active bird nests.

Federal Protection and Classifications

The federal Endangered Species Act of 1973 ("FESA") defines an endangered species as:

"any species which is in danger of extinction throughout all or a significant portion of its range..."

The FESA defines a threatened species as:

"any species which is likely to become an endangered species in the foreseeable future throughout all or significant portions of its range..."

Federal regulatory status species' listings are as follows:

| | |
|---|-------|
| Federally listed as Endangered | = FE |
| Federally listed as Threatened | = FT |
| Federally Proposed as Endangered | = FPE |
| Federally Proposed as Threatened | = FPT |
| Federal Candidate Species | = FC |
| Federally Proposed for Delisting | = FPD |
| Federally Delisted as Endangered or Threatened | = FDL |

State of California Protection and Classifications

California's Endangered Species Act ("CESA") defines an endangered species as:

"a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease."

CESA defines a threatened species as: *"a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management"*

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efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species."

California regulatory status species listings are as follows:

| | |
|--|-------|
| State listed as Endangered | = SE |
| State listed as Threatened | = ST |
| State Candidate for Endangered | = SCE |
| State Candidate for Threatened | = SCT |
| State listed as Rare (Plants only) | = SR |
| State Fully Protected | = SFP |
| State Species of Special Concern | = SSC |
| State Delisted as Endangered or Threatened | = SDL |

Other State classifications are:

| | |
|--------------------------|-------|
| State Special Animal | = SSA |
| State Watch List Species | = SWL |

State Candidate Species

Candidate species are defined as: *"a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list."*

Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species.

State Rare Species

Fish and Game Code §1901 defines a **rare** plant species as: *"...although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens."*

State Fully Protected Species

The state defines a **"Fully Protected"** species as: *"The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare*

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or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Please note that many Fully Protected species have also been listed as Threatened or Endangered species under the more recent endangered species laws and regulations."

The Fish and Game Code sections dealing with Fully Protected species state that these species *"...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species ..."*, although take may be authorized for necessary scientific research. This language arguably makes the "Fully Protected" designation the strongest and most restrictive regarding the "take" of these species.

State Species of Special Concern

A **Species of Special Concern** is defined as: *"a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:*

- a) is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;*
- b) is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;*
- c) is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;*
- d) has naturally small populations exhibiting high susceptibility to risk from any factor(s); that if realized, could lead to declines that would qualify it for State threatened or endangered status."*

The Species of Special Concern list is broken down into separate lists for Mammal and Bird species. The Reptile and Amphibian species list is combined as one (1).

Mammal Species: The Mammalian List of Species of Special Concern ("Mammal List") lists such species into three (3) separate categories: "Highest Priority," "Second Priority," and "Third Priority." According to the Mammal List:

"The definitions for these categories are based on the perceived proximity of threats or extinction. Species listed in the Highest Priority category appear to face a high probability of extinction or extirpation from their entire geographic range in California if current trends continue. Populations of species in the Second Priority category are definitely jeopardized

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and declining, but the threats of extinction or extirpation appear less imminent. Populations of species listed in the Third Priority category appear not to face extinction in the near future, but they are declining seriously or are otherwise highly vulnerable to extirpation because of human developments, and require special attention in land and resource management decisions. Some species listed in the Second and Third Priority categories are relatively rare and virtually no current data on their distributions and population status are available; when investigated in detail, some of these may be found to face greater or lesser threats."

Mammal Species of Special Concern which are not listed in the three (3) categories described above are listed in the "Additions to List" category.

Bird Species: The Bird Species of Special Concern List ("Bird List"), similar to the Mammal List described above, is comprised of three (3) priority categories (First Priority, Second Priority, and Third Priority) derived through a scoring and ranking process. In addition to the priority categories, bird species which meet the definition described above and are determined to be either 1) "*Taxa Extirpated from the State Totally or in Their Primary Seasonal or Breeding Role*", and/or 2) "*Taxa Listed as Federally, but Not State, Threatened or Endangered*" are included on the Bird List.

No formal discussion on the definitions of the First, Second, and Third Priority categories is given. TERACOR, therefore, has preliminarily assigned meanings to the three (3) categories. First Priority bird species are birds which are of highest concern. Second Priority birds are of moderate concern. Third Priority birds are of lowest concern.

Reptile and Amphibian Species: The Reptile and Amphibian List of Species of Special Concern ("Herp List") is relatively simpler than the Mammal or Bird Lists in that it lists regulatory status herp species into five (5) groups: Turtles, Lizards, Snakes, Salamanders, and Frogs. No further categories comprise the Reptile and Amphibian List.

State "Special Animal"

The state defines a "**Special Animal**" as: "*Special Animals*" is a general term that refers to all of the taxa the CNDDb is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species". The Department of Fish and Game considers the taxa on this list to be those of greatest conservation need." Any species included in the CNDDb is considered a Special Animal, and in addition to SSC, the CNDDb Special Animals List includes species that lack state or federal status, but have been listed by various other state or federal agencies or by various conservation organizations.

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State “Watch List” Bird Species

The CDFW has recently created a new designation for species; a “watch list” species. A “**watch list**” species is defined by CDFW as: *“a new category of “Taxa to Watch” [that] was created in the new California Bird Species of Special Concern report. The birds on this watch list are 1) not on the current Special Concern list but were on previous lists and they have not been state listed under CESA; 2) were previously state or federally listed and now are on neither list; or 3) are on the list of ‘fully protected’ species.”*

Other types of species besides bird species are also listed on CDFW's watch list.

GENERAL FIELD INVESTIGATIONS

Biological Investigations: TERACOR initially evaluated this property on 17 June 2016. We resumed the investigation again on 31 October 2017, 25, 29, and 30 January 2018, and 30 May and 30 July 2019 to assess the regulatory status of drainages and other resources that could be present on the site. S. Reed and J. Reed conducted all 2016/2017/2018 fieldwork and preliminary evaluations. In 2019, there was a burrowing owl habitat assessment and focused burrowing owl surveys conducted on 22 and 31 July, 07, 14, and 22 August 2019. Final vegetation mapping was performed in the field 08 December 2019.

The most recent fieldwork (both general habitat-based assessment and focused surveys for burrowing owl) was most recently conducted on foot by TERACOR Principal Biologist S. Reed on 22 July, 31 July, 07 August, 14 August, 22 August and, and 08 December 2019. Plants identified in *Appendix A* were identified by S. Reed and J. Reed in the field and questionable identifications was identified by Michael C. Long. Reptile species in *Appendix B* were surveyed by turning debris, and scanning sunning and foraging areas. Particular attention was given to a small single rock outcrop in the northwest portion of the site and other open areas for reptiles during mid-morning hours of the day considered most conducive to detection. Amphibians were not observed on the property but common amphibian species such as western toad and garden salamander could be expected on-site. Nomenclature follows Stebbins (2003), and was updated in accordance with *The Center for North American Herpetology* website. Bird species in *Appendix B* were identified by field personnel both aurally and visually, with nomenclature following Dunn (1999), Sibley (2003), and updated utilizing the American Ornithological Society's most recent checklist. Mammals were identified initially by sight or sign.

With regard to determining the presence of some organisms, this assessment is both habitat-based and predictive, based on historic records of distribution and habitat suitability. The evaluation for presence for regulatory status organisms (for example, considered rare or given regulatory status by the USFWS, CDFW, CNPS, or the CNDDDB) included such variables as availability of support resources (such as rock outcrops, surface water, specific host plants, nesting sites, etc.), the location and size of the subject property, and the history of disturbance. The likelihood of potential occurrences is further predicated on the known distributions of species, area habitat fragmentation, and species' overall habitat requirements and preferences.

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Delineations and Jurisdictional Fieldwork: We utilized digital mapping methods by staking boundaries of riparian vegetation in the field, and then mapping those staked areas with GPS data collection/survey equipment. We included bed and bank and high-water mark indicators in the staked zone to establish the full extent of jurisdictional and/or Riparian/Riverine resources present on-site.

Each potential Riparian/Riverine or agency-jurisdictional surface water feature was staked and mapped. Our first general reconnaissance was on 31 October 2017, then on 25, 29 and 30 January 2018 we delineated features on the property. The field survey was conducted by TERACOR Principal Biologist, S. Reed, and Senior Biologist J. Reed. TERACOR field personnel traversed the entire site for field evidence of potentially jurisdictional drainages. A follow up field inspection was conducted by S. Reed on 30 May 2019 to assess the general status of the site following Spring rains and to determine if conditions had changed on the site. Feature 1 showed the greatest extent of diminishment due to drought and human action to protect utility lines, but the mapped area of the feature remained the same.

Field personnel staked the jurisdictional boundaries of five (5) on-site features in order to record and calculate the geographic extent of CDFW jurisdiction. The survey firm **Dennis Janda, Inc.** ("DJI") then recorded GPS coordinates of the 128 stakes on 13 November 2017 and 04 February 2018. DJI then mapped the GPS coordinates and drew polygons or lines based on each stake location. The CDFW jurisdictional area for each drainage segment was then calculated from each drainage polygon or linear feature.

Transect widths and ecological and hydrological conditions of potential Riparian/Riverine, and Army Corps "waters" and areas considered potentially CDFW-jurisdictional as well were recorded on TERACOR field data worksheets. Transects were established every 100 feet. TERACOR and DJI then calculated the jurisdictional area of each linear feature from these measurements.

In late 2020, a Determination of Biological Equivalency or Superior Preservation (DBESP) was transmitted to the Wildlife Agencies (CDFW and USFWS) by the City of Riverside. Comments were received on 07 December 2020. Subsequently, a meeting was held with the Project Applicant, the City of Riverside, the Wildlife Agencies, and TERACOR on 13 January 2021. Section 6.0 of this document has been revised to reflect the consensus of opinion reached at the 13 January 2021 meeting.

3.0 VEGETATION AND PLANT COMMUNITIES

Classification of plant communities on-site generally follows CDFW's *California Natural Community List* (2018) and *A Manual of California Vegetation - Second Edition* (Sawyer, Keeler-Wolf and Evens, 2009). References herein reflect the previously mentioned published materials described in *Section 2.0 – Methods*.

Geographically, the subject property is located within the California Floristic Province Southwestern California region. Specifically, the subject property is within the South Coast subregion. The South Coast

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subregion extends along the Pacific Coast from Point Conception to Mexico. According to the *Jepson Manual*, coastal sage scrub and chaparral communities that support numerous endemic species were common to the area, but most of the subregion from Santa Barbara to the Mexican border has been urbanized, with substantial loss of natural habitat (Baldwin et al, 2012). Many open areas, such as the Project site, were probably once comprised of sage scrub that has been eliminated by human activities.

The south-central and easterly portions of the property, formerly under irrigated agricultural production, have transitioned to an annual grassland comprised mostly of non-native brome species after the grove was removed approximately 20 years ago. There are a number of non-native trees that have also become established on the site, primarily California pepper (*Schinus mole*), *Palo Verde* and *Tamarix* trees.

Current overall conditions on the subject property are depicted in the attached *Exhibit 4 – 2018 Aerial Photo*. This photograph assists in understanding the extent of habitat fragmentation and development in the area. These types of human modifications in the landscape decrease most animal populations, reduce plant and animal diversity, and result generally in degraded ecological conditions which permanently impair the biological productivity in various ways.

Two distinct natural plant communities/landscape types are recognized and considered dominant on-site; a mixed willow scrub alliance and annual grassland/mixed herb alliance. The grassland, which is primarily non-native in composition, exists probably because native plant communities have been removed through agricultural operations and weed abatement for fire suppression. We also identified scattered California pepper, Olive, *Tamarix*, *Eucalyptus* trees and mapped these occurrences accordingly as Ornamental.

Two of the five drainage features on the property qualified as Riparian/Riverine under provisions of MSHCP Section 6.1.2. Both areas exhibited a preponderance of riverine characteristics (i.e., “functions and values”) contained in Section 6.1.2 of the MSHCP. These features are described in considerable detail in the sections that follow in this report: 4.0 MSHCP Consistency Analysis and 7.0 MSHCP Project Impacts and Recommended Mitigation Measures.

We noted the presence of one species in grassland areas, which was the non-native invasive plant known as stinknet (*Oncosiphon piluliferum*) in certain areas on-site. This annual is a relatively new arrival to western Riverside County, but it is overtaking native and semi-natural habitat areas quickly, especially former agricultural fields. Passage for small mammals and reptiles becomes difficult through dense stands of this and other herbaceous weeds and non-native grassland. Because of this and other non-native annual grasses and weeds, population sizes of small mammals and reptiles often experience declines due to mobility issues and ensuing disruptions in predator-prey relationships.

There are no natural “woodland” plant communities on the subject site. The mixed willow cells, comprised of red willow, arroyo willow and Gooding’s black willow are too small and underdeveloped to be

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considered woodlands. These cells would be considered to be riparian scrub, or willow thicket, but we identified mostly individual small trees in linear formations, not dense riparian thickets as the assigned name "willow thicket" seems to imply. This open riparian scrub structure and its small size precludes the presence of sensitive and protected organisms, particularly passerine bird species associated with riparian areas.

Vegetation assemblages present on-site are shown in the attached *Exhibit 5 - Vegetation Map – 2018 Aerial Photo*.

Individual vegetation communities and landscape types present on the subject property, as well as their respective California Natural Community Codes ("CaCodes") or CNDDDB codes, are described and quantified below.

Red Brome (*Bromus rubens*) Grasslands and Mixed Herbs Semi-Natural Alliance (CaCode 42.024.02)

Non-native grassland (CNDDDB Code CTT42200CA), or alternatively the red brome grasslands naturalized alliance on the subject property could be considered synonymous with other non-native naturalized grassland communities such as **Ripgut Grass alliance (*B. diandrus*) (CaCode 42.026.21)**, or **Cheatgrass grassland (42.020.00)**, or- **Wild oat (*Avena* spp.) (CaCode 42.026.22)** which is also present on-site. The precise classification has little ecological consequence in the context of this report insofar as which of many variations cover former agricultural fields and disturbed portions of the site; all are ecological impediments to wildlife utilization compared to a native plant community.

Non-native grasslands, comprised of any of the invasive bromes and native and non-native herbs, function at a diminished level of productivity or functionality compared to native grassland. Brome grasslands negatively affect open substrates surrounding shrubs by crowding in between shrubs and eliminating open areas for small animals to move and forage for food, as well as taxing soil moisture which would otherwise be available to native herbs and shrubs. Annual non-native grassland has several negative characteristics including: 1) it maintains an excessive demand for near-surface soil moisture thereby out-competing native annual plant species; 2) it inhibits passage and access to the soil surface for most smaller ground-dwelling invertebrates, reptiles and small mammals; and 3) over time it forms an impenetrable layer over the soil precluding re-establishment of annual plants and wildflowers and shrubs. Non-native grassland can, however, have some positive attributes if managed properly. It can support similar assemblages of plant and animal species as native grasslands, albeit at lower densities for undetermined lengths of time, particularly if it is grazed or burned periodically. Layers of unburned thatch are particularly deleterious to small mammal and reptile presence.

These non-native annual grasslands comprise **33.05 acres** of the site.

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California pepper tree (*Schinus molle*) (CaCode 79.200.02) and other non-native emergent trees like olive and salt-cedar (*Tamarix* sp.) dot the landscape in the southern portion of the site, and were mapped as **Ornamental** landscape. The Ornamental cells totaled **0.37 acre** in extent.

In addition to these invasive and nuisance trees, there are numerous non-native species also present across much of the Project site, such as star thistle (*Centaurea melitensis*), tumbling pigweed (*Amaranthus albus*), bur clover (*Medicago polymorpha*), common knotweed (*Polygonum arenastrum*) and horehound (*Marrubium vulgare*). These nuisance species are somewhat controlled via disking on an annual basis for fire suppression and weed abatement purposes.

Mixed Red Willow (*Salix laevigata*)/Arroyo Willow (*S. lasiolepis*) (CaCode 61.205.02)/Black willow thickets (*S. gooddingii*) (CaCode 61.211.05)

TERACOR mapped several small pockets or cells of a mixed willow thicket which are scattered around the property within the different drainage features we identified. Each drainage feature is described in detail below. Willow cells have been illustrated on *Exhibit 5 – Vegetation Communities – 2018 Aerial*. The cells are all contained within four of the five (5) features we analyzed to assess Riparian/Riverine characteristics and state and federal jurisdictional status. *Exhibit 10 – Potential Section 6.1.2 Features 1 – 5A* has been attached to illustrate the locations of these features. A close comparison of *Exhibit 5* and *Exhibit 10* helps to understand the relationship between stormwater drainage and urban nuisance water to the presence of Mixed red willow/arroyo willow/black willow thickets on the proposed Project site.

Mixed willow thicket comprises a total of **0.20 acre** on-site.

Willow thicket and Drainage Analysis on the Property: Scrub willows correlate strongly with the presence of focused runoff on the Project site. Much of this focused runoff is the result of human actions as described immediately below.

Feature 1: The largest of the willow thicket cells on-site is along Lurin Avenue. It receives urban runoff from the single-family residential area on the north side of Lurin Avenue and from a stormdrain located across Cole Avenue on the south side of Lurin Avenue. Based on review of historic aerials from 1962 to present, all the riparian scrub cells on-site are of recent origin. Feature 1 has been affected by human actions at several stages of its' development. In 1962 it appears not to be present, having not yet developed because the property does not have a sufficient water which could support naturally-occurring riparian vegetation. By the 1970's and 1980's there were tree groves on-site along Lurin, Cole and Mariposa Avenues, and we concluded, therefore, that there were no natural streams or riparian vegetation during that period, based on aerial photographic evidence.

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Once the grove was removed, and single-family residential tract development occurred on the north side of Lurin Avenue, nuisance flows were directed into the property from the east in an uncontrolled fashion. In 2017 we noted that there was no discernable roadside ditch along Lurin Avenue. A roadside ditch, however, was trenched immediately adjacent to the asphalt roadway some time after our initial evaluations along Lurin Avenue. The diversion of runoff into the new ditch diverted nuisance water formerly available to the willows and most of the willows died or were in decline by 2019. Other willows closer to the new ditch were trimmed back by the utility purveyor to avoid interference with a utility line. Some willows re-sprouted but the cell remains shrubby, patchy and underdeveloped. The willow cell has become substantially diminished in extent since 2017. The area now consists of **0.03 acre**.

Feature 2: Feature 2 is located along the westerly property line of the larger southern parcel on-site. See *Exhibit 10 – Potential Section 6.1.2 Features 1 – 5A* to understand the location of the feature. Feature 2 is actually a continuation of Feature 1, however Feature 1 discharges flow into and through an adjoining rural residential property before re-entering the Project site. This feature then disappears at the westerly property line as it apparently transitions to sheet flow at the property line.

Feature 2 displays no actual bed and bank, but there is a broad, winding swale through this portion of the site. The upstream portion of Feature 2 is comprised only of grassy and herbaceous vegetation. We recorded brome, tumbleweed, bindweed (*Convolvulus arvensis*), common sunflower (*Helianthus annuus*) and common plantain (*Plantago major*) in this upstream portion. The feature transitions to a small cell of several individual arroyo trees spaced apart from one another just before it transitions into sheetflow off-site. Feature 2 totals **0.10 acre** including the willow canopy.

Feature 3: Feature 3 is a grassy swale. There is no developed riparian vegetation in it (one small senescent willow and tamarisk), and it is very narrow. It originates on the property and runs only a short distance on the property. It is not connected to other drainage features on the property.

Feature 4: Feature 4 is a human-created roadside ditch with no riparian vegetation. It contains mostly weedy, water-tolerant species such as curly dock (*Rumex crispis*), common sunflower, knotweed (*Polygonum arifolium*) and dandelion (*Sonchus* sp.). Native species are sparse and consist of weedy annuals. This feature conveys urban runoff from roadways and residential properties.

Feature 5: The westerly-most willow cell is comprised of five (5) small willow trees, a single ash tree (*Fraxinus* sp.), and several non-native trees, including Mexican fan palm, Palo Verde, and mulberry. It receives stormwater and nuisance water discharges from a 12 inch corrugated metal pipe (cmp) type drain under Lurin Avenue. The drain has sustained damage at both its intake and outflow. Other non-native trees have emerged recently near this small Lurin Avenue drain pipe as well, including non-native Palo Verde trees and a single palm tree. These ornamental, non-native trees are not native to the area and have little biological value. The single willow, palm tree and other ornamental trees developed when other nearby properties across Lurin Avenue focused runoff toward it in the 1980's and 1990's. The willow cell at this location is

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approximately **0.03 acre** in extent.

Feature 5A: input received from the Wildlife Agencies during DBESP review suggested there should be a hydrological connection extending south to Feature 5 for a distance of 608 feet to the south property line. We assigned the designation "5A" to this connection. We estimated a three (3) foot width for this connection. The Wildlife Agency-recommended extension comprises a total of **0.04 acre**.

SUMMARY

Representative photographs depicting current conditions of the subject property are depicted in *Exhibit 6 - Site Photos*, attached.

The vegetation communities, their landscape distinctions, and their respective acreages on-site are listed below in *Table 2 – Vegetation Communities, Landscape Distinctions, and Respective Areas*.

Table 2 – Vegetation Communities, Landscape Distinctions, and Respective Areas

| | |
|---|-------------------------|
| Annual Grassland/Wildflower Field | 33.05 acres |
| Mixed Red Willow/Arroyo Willow/Black Willow | 0.2 acre |
| Ornamental Alliance | 0.37 acre |
| Asphalt Roadway (Not Mapped/Not Habitat) | 2.18 acres |
| Total | 35.8 gross acres |

4.0 MSHCP CONSISTENCY ANALYSES

Background: The project site is located within the boundaries of the MSHCP area. All projects within the MSHCP area are required to analyze their consistency with the MSHCP, including conducting analyses of species organisms on designated parcels across the Plan Area, such as criteria area/narrow endemic plant species, or animals like burrowing owl. These analyses usually include preparation of species-specific habitat assessments for target organisms. If a given property is found to be suitable for specified species to occur, then focused surveys are often required for the organism(s) in question.

The Riverside County Regional Conservation Authority (RCA) MSHCP Information Map outlines, on a parcel by parcel basis, those properties which require habitat assessments and focused surveys. The only organism requiring specific analysis for this property was burrowing owl. Riparian areas were too open, sparse, and underdeveloped to support of any of the riparian-dwelling species like yellow-billed cuckoo, willow flycatcher, or least Bell's vireo, and surveys were not warranted for these species.

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Burrowing Owl

TERACOR conducted both a habitat assessment and focused burrowing owl (*Athene cunicularia*) ("BUOW") surveys on the subject property during the 2019 season. A report entitled "*Step I Habitat Assessment, Step II. Part B Focused Burrowing Owl Survey for Tentative Tract No 37731 a 35.8 Gross Acre (32.54 Net Acre) Property Located in the City of Riverside, Riverside County, California*", dated 05 December 2019 (Revised 24 July 2020) has been prepared. No BUOW were detected during the 2019 survey season.

Conservation – MSHCP Reserve Assembly

When development of property is proposed, the Permittee (in this case the City of Riverside) is also required to consult the RCA's MSHCP Information Map (either directly, or via a qualified biological consultant) to determine 1) if a property is located within a MSHCP-designated Cell Group or Criteria Cell (this property is not) and 2) if it is in either a Cell or Cell Group then there will be Conservation Description which outlines how conservation should be organized in that particular area (not applicable to the subject property). The property is not in an area which requires conservation outright. Conservation in some manner can be subsequently required if the property in question supports one or more of the target species previously described. To reiterate, this property does not support any of the resources which would be mandated for conservation under the MSHCP.

The site is not located within a Cell or Cell Group targeted for conservation, nor is it in a linkage area or constrained linkage area identified as connective habitat to other conservation areas. No conservation is required on this site.

Protection of Species Associated with Riparian Riverine Areas and Vernal Pools (Section 6.1.2)

Section 6.1.2 of the MSHCP describes the process through which protection of riparian/riverine areas and vernal pools (R/R/VP areas) would occur within the MSHCP Plan Area. Protection of riparian/riverine areas and vernal pools is important to conservation of the amphibian, bird, fish, invertebrate, and plant species which occur primarily or exclusively within these habitats. These species include: amphibians (for example arroyo toad); birds (such as least Bell's vireo), fish (e.g., Santa Ana sucker); invertebrates/crustaceans (e.g., Riverside fairy shrimp) and plants (including species such as California Orcutt grass, Orcutt's brodiaea, and spreading navarretia). The stated purpose contained in Section 6.1.2 states:

"The purpose ...is to ensure that the biological functions and values of these areas... are maintained such that Habitat values for species inside the MSHCP Conservation Area are maintained."

These areas, even when they are not located in targeted conservation lands, can sometimes require on-site preservation of R/R/VP areas or additional off-site mitigation as negotiated.

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The MSHCP defines a riparian/riverine area as: *"...lands which contain Habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year..."* (MSHCP 6-21).

A vernal pool is described as *"... seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records* (MSHCP 6-22).

Artificial (Human-Created) Areas: Section 6.1.2 language clarifies that *"...areas demonstrating characteristics as described above which are artificially created are not included in these definitions."* Exceptions to this are as follows: *"...wetlands created for the purpose of providing wetlands Habitat or resulting from human actions to create open waters or from the alteration of natural stream courses..."*

The MSHCP requires assessment of riparian/riverine areas and vernal pools including consideration of species composition, topography, and soil analysis. Section 6.1.2 states: *"Factors to be considered include hydrologic regime, flood storage and flood flow modification, nutrient retention and transformation, sediment trapping and transport, toxicant trapping, public use, wildlife Habitat, and aquatic Habitat. The functions and values assessment will focus on those areas that should be considered for priority acquisition for the MSHCP Conservation Area, as well as those functions that may affect downstream values related to Conservation of Covered Species within the MSHCP Conservation Area."*

Findings - Riparian/Riverine and Vernal Pool Habitat

TERACOR field personnel explored the property thoroughly to determine if riparian/riverine areas or vernal pools were present based on the MSHCP-Section 6.1.2 defined criteria. We conducted a review of aerial photography, both recent and historic dating back to 1962, and subsequently performed comprehensive evaluation of the property to assess if any features on-site met the criteria established in MSHCP Section 6.1.2 to be considered as either vernal pool or riparian/riverine.

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Our assessment also included, under separate cover, a preliminary jurisdictional assessment for “waters” of the U.S. as regulated in the federal Clean Water Act for both the U.S. Army Corps of Engineers and the California Regional Water Quality Control Board and a preliminary determination of the presence of streambeds or lakes, under the State of California’s Fish and Game Code. That document was previously named on page 1 of this Assessment, and referenced in again in Appendix C. This preliminary assessment was revised once in 2020 at the City’s request and again in early 2021 as a result of review by, and discussions with, the Wildlife Agencies.

Soils on-site are comprised exclusively of sandy loams that drain well and generally slope broadly from northeast to southwest. The northwest portion of the site drains from north to south. Historic mechanical modifications likely were the stimulus for colonization by non-native trees across the property. Most of the site (except for the northwest portion) was conclusively determined to have been a tree grove as recently as the 1990’s, and perhaps somewhat later. The exact date is not particularly relevant to biological issues.

There are no vernal pools on the property. The sandy loam soils on-site are not conducive to ponding, and there was no evidence across the property that any location on the site ponded. Soils on-site are shallow and underlain by granitic basement rock which, when subsurface water comes into contact with it, conducts water laterally and downward via hydraulic pressure and gravitational forces. We detected no standing water or evidence thereof. Vernal pool associated species were absent. We noted positive hydrology with no retention, either short-lived or extended, and no artificial (human-created) storage of surface water.

To complete the 6.1.2 analysis, we examined existing conditions across all areas of the property, the USDA characterization of the loam soils on the property, we identified and mapped different vegetative structures and species on-site, and we noted various disturbances on the property. We walked and mapped all drainage patterns on-site in order to comprehensively determine which, if any, of the features we identified would likely fall under provisions of MSHCP Section 6.1.2. Our evaluation included field identification and consideration of overland sheet-flow drainage as well as evidence of concentrated, fairly well-defined drainage with overstory vegetation in the northwest corner of the property. Only stream-associated vegetation mapped by TERACOR meets riparian/riverine criteria. Several non-native trees around the feature do not qualify for inclusion and were mapped as ornamental.

MSHCP Section 6.1.2 indicates that eight (8) functions and values (all listed below) should be described “... *with respect to the species listed above...*” (i.e., the Section 6.1.2 animals and plants). Using the eight (8) criteria (functions and values) that are specifically described in Section 6.1.2, we applied those criteria to the feature on-site that could be either observed or reasonably inferred:

- *Hydrologic Regime:* Determined Present as recommended by the Wildlife Agencies on 13 January 2021 and Fed by Urban Runoff: Features 1, 2, 4, 5, and 5A are supplied urban runoff in or via recently-constructed artificial ditches (i.e., Features 1 and 4). None of the

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five features sustain surface water outside rainfall events, which renders all the features "ephemeral". Field evidence indicating the five features are connected hydrologically to downstream riverine features (with the possible exception of Feature 4 which itself has been artificially created as a linear roadside ditch) was not detected by TERACOR during field investigations. During DBESP review, the Wildlife Agencies noted concentration of surface flow to downstream "waters", therefore, Features 1, 2, 4, 5, and 5A are not determined to be connected to downstream areas hydrologically.

- *Flood storage and Flood Flow Modification:* Determined Present for all 5 Features. Field evidence indicates there is a lack of downstream connectivity. Therefore, the water entering the site is detained and largely absorbed into underlying substrate thereby naturally reducing downstream runoff (Features 1, 2, 4 and 5) except that Features 1 and 4 are artificially created roadside ditches. Very large storm events could produce enough water volume and velocity to move overland via sheetflow in Features 1, 2, 3 and 5. Feature 4, a roadside ditch, likely does convey stormwater into subsurface and surface waters, but nonetheless it likely also absorbs some water that passes through it and therefore is likely to modify and decrease storm runoff to some extent.
- *Nutrient Retention and Transformation:* Determined Likely Present in Features 1, 2 and 5 due to presence of riparian vegetation which has the potential to secure, store and transform contaminant urban runoff minerals and organic nutrients from off-site sources. Features 3, 4, and 5A appear to be unlikely to function in this regard due to the absence of transformative vegetation and no persistent water. (Features 1 and 4, however, are artificial).
- *Sediment Trapping and Transport:* Determined Trapping is Present due to field evidence related to sediment build up around vegetation in Features 1, 2, 4 and 5, the resulting deposition of sediment in these features, and the lack of connectivity off-site. Sediment transport to downstream sources is Absent in all Features except for Feature 4 which may transport sediment on a regular basis.
- *Toxicant Trapping:* Presumed Possibly Present in Features 1, 2, and 5, because of residential runoff which is generated upstream, and the likely utilization by stream-associated vegetation of nitrates, pet feces and other waterborne contaminants usually contained in urban runoff. Feature 4 is not vegetated or connected hydrologically downstream and likely filters rainfall and nuisance runoff and stores toxicants in substrate on-site.
- *Public Use:* Determined Not Present.
- *Wildlife Habitat:* Determined Present for common species as documented in this report. Not

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suitable habitat for MSHCP Section 6.1.2 organisms. Therefore, wildlife habitat for the Section 6.1.2 listed species is not present in any of the five features.

- *Aquatic Habitat:* Determined Not Present as presence of water is only ephemeral.

TERACOR preliminarily determined that **Feature 1** was an artificial roadside drainage and is not Riparian/Riverine by definition. The Wildlife Agencies found otherwise in their review of historic aerial analysis. Due to persistent urban runoff from development to the north, Feature 1 supports riparian vegetation. Feature 1 exhibited six (6) of the eight (8) MSHCP-listed functions and values described in Section 6.1.2. Despite its artificial origins and declining riparian shrub cover (resulting from retrenching the Lurin Avenue ditch) the Wildlife Agencies have concluded Feature 1 (**0.03 acre**) is Riparian/Riverine.

Feature 2 exhibits six (6) of the eight (8) MSHCP-listed functions and values. Historic aerial analysis demonstrates the feature has been present since 1962. Because the feature lies within an elongate topographic swale and receives urban runoff, several small arroyo willows have developed since 1990 when we confirmed that a tree grove was still in operation on the property. The feature, therefore, is a naturally-occurring swale that has been altered by human agricultural development and now subsequently receives urban nuisance runoff which induced the riparian scrub development within it. Because the source of runoff is persistent and unlikely to change, the hydrologic regime is now naturalized. Feature 2 therefore, warrants classification as Riparian/Riverine.

Feature 3 is a narrow swale on the property with no clear origin or terminus on-site. The alignment of the feature can be detected in historic aerial photography dated back to 1962; but it is shallow, and supports only non-native grasses with the exception of one or two scrubby senescent willow shrubs. It has no defined riverine characteristics and does not flow off-site. Feature 3 exhibited none of the eight (8) MSHCP-listed functions and values for Riparian/Riverine sites. Because of these factors and the resulting conclusion that the feature does not in any discernable manner support or contribute to the conservation of the 146 species covered under the MSHCP, the feature is not Riparian/Riverine.

Feature 4 is an artificial roadside drainage and has been determined to be Riparian/Riverine by the Wildlife Agencies. Historic aerial analysis confirms this determination. It exhibits four (4) of the eight (8) Riparian/Riverine functions and values. The feature does not support riparian vegetation.

Feature 5 exhibits six (6) of the eight (8) MSHCP-listed functions and values. It originates on the south side of Lurin Avenue, at the discharge point of a 12-inch corrugated metal pipe (CMP) under Lurin Avenue. The drain is heavily damaged and drainage was nearly blocked. Overflow drainage appears to originate across Lurin Avenue in a plant nursery, crosses Lurin Avenue, then enters the Project site where sandy loam soils appear to absorb most runoff. The small willow cell has developed at this location, surrounded by volunteer Palo Verde trees, one Mexican fan palm, and agave-type cactus. Feature 5 is **0.03 acre** in extent.

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Feature 5A: Field evidence indicated that larger storm events enter into the grassy field. Flows run through the field via sheetflow in a very broad manner with no discernable point of concentration or bed or bank. Aerial photography suggests the presence of a feature and the Wildlife Agencies asserted that the historic imagery was sufficient to identify Feature 5A. We projected the width of 5A at three (3) feet. Its length past Feature 5 is 608 feet, therefore, Feature 5A is **0.04 acre** in extent and is riverine. We performed soils analyses, recorded vegetation, and searched for ordinary high water marks to no avail. Soils were all upland and no hydric soils were present, except at the 12" cmp. Vegetation consisted of non-native brome grasses, Bermuda grass, knotweed (*Polygonum* sp.), goldfields (*Lasthenia gracilis*), curly dock (*Rumex crispus*), rattail fescue (*Vulpia myuros*), foxtail barley (*Hordeum murinum*), bindweed (*Convolvulus arvensis*), bur clover (*Medicago polymorpha*), and May weed (*Anthemis cotula*). Feature 5A is primarily a grassy swale.

Table 3 - Riparian/Riverine Calculations and Determination

| | Acreage | Length | No. of Functions/Values |
|--------------|-------------------------------|------------------|-------------------------|
| Feature 1 | 0.03 acre | 329 feet | 6 of 8 |
| Feature 2 | 0.10 | 329 feet | 6 of 8 |
| Feature 3 | 0.0 (isolated/discontinuous) | N/A | 0 of 8 |
| Feature 4 | 0.08 acre | 646 feet | 4 of 8 |
| Feature 5 | 0.03 (5 small willows, 1 ash) | 20 feet | 6 of 8 |
| Feature 5A | 0.04 acre | 608 feet | 3 of 8 |
| TOTAL | 0.28 acre | 1932 feet | N/A |

These features (1-5A) are depicted in *Exhibit 10 - Potential Section 6.1.2 Features 1-5A*.

MSHCP Covered Species and the Project Site

Each organism presented in Table 4 – MSHCP Covered Species, below, will be designated as present, not present, or potentially occurring within the subject property.

TERACOR based its predictive analysis on the known distribution or range of each species, including elevation, the subject property disturbance levels, history of disturbance, and remnant site resources. Each individual is listed in common and scientific name, with habitat and distributional information. An "occurrence probability rating" has been designated for each species based on the above described factors. Species occurrence has been: 1) **Confirmed Present**, 2) **determined Not Present**, or 3) **potential presence** judged to be one of the following:

- **Low** - The subject property is within the historic range or distribution of the species. Habitat on-site is marginal to suitable, but other conditions may exist (adjacent urbanization, isolation, etc.) to

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suggest a low probability of occurrence. Transitory presence is not necessarily precluded, but site conditions are such that sustained or seasonal presence is unlikely.

- **Moderate** - The subject property is within the historic range or distribution of the species. The species has a reasonable possibility of occurrence on-site, habitats are suitable, and the species is known to occur in the area. Some areas of habitat may be slightly altered or degraded from original condition but overall conditions are such that sustained or seasonal presence is possible.
- **High** - The subject property is within the historic range or distribution of the species. The subject property contains suitable to very favorable habitat for the species. The organism has recently been recorded in the vicinity, or ecological conditions are such that qualified personnel can reasonably anticipate presence.

Table 4 – MSHCP-Covered Species

| Species | Regulatory Status | Status of the Species on the Subject Property/Life History/Habitat Description |
|---|--|--|
| Plants | | |
| Yucaipa onion (<i>Allium marvinii</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species has no potential to occur on-site. This perennial bulbiferous herb blooms from April through May and occurs on clay soils, dry slopes, ridges and openings in chaparral between 760 and 1,065 meters in elevation. According to the CNPS, this species is known only from the Yucaipa and Beaumont area of the southern San Bernardino Mountains. The subject property, therefore, does not contain suitable habitat is located outside of this onion's known geographic distribution. This species was not detected on-site. |
| Munz's onion (<i>Allium munzii</i>) | CNPS Rare Plant 1B.1 FE, ST | Not Present. The MSHCP does not require surveys for this species in this area. This perennial bulbiferous herb was listed as federally endangered on 13 October 1998 and as state threatened in January 1990. It occurs on clay soils in mesic grassy openings in coastal sage scrub, chaparral, cismontane woodland and pinyon and juniper woodland between 297 and 1070 meters in elevation. It blooms from March through May. Clay soils are not present on-site therefore, suitable habitat is absent. Munz's onion was not detected on-site during surveys. |
| San Diego ambrosia (<i>Ambrosia pumila</i>) | CNPS Rare Plant Rank 1B.1 FE | Not Present. This perennial rhizomatous herb was listed as federally endangered on 02 July 2002. It occurs on sandy loam or clay soils in coastal scrub, chaparral, valley and foothill grassland and vernal pools. San Diego Ambrosia has few localities in Riverside County, mainly Skunk Hollow and the Lake Elsinore/Murrieta areas. Suitable habitat is not present on-site. San Diego ambrosia was not detected on-site. |

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| Species | Regulatory Status | Status of the Species on the Subject Property/Life History/Habitat Description |
|--|--|--|
| Rainbow manzanita (<i>Arctostaphylos rainbowensis</i>) | CNPS Rare Plant Rank 1B.1 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in western Riverside County in both the Aqua Tibia Mountains and the hills above Murrieta in chaparral on basalt flows. This perennial evergreen shrub blooms from December through March and occurs on granitic outcrops in chaparral between 205 and 670 meters in elevation. Suitable habitat for this shrub is not present, and this species is not known to occur within the area. Rainbow manzanita is not on the site. |
| Jaeger's bush milkvetch (<i>Astragalus pachypus</i> var. <i>jaegeri</i>) Also: Jaeger's milk-vetch | CNPS Rare Plant Rank 1B.1 This variety has no formal federal or state governmental listing status | Not Present. This variety of <i>Astragalus</i> is found on steep sedimentary slopes in the San Jacinto Mtns and foothills near Beaumont and near Vail Lake in southwest Riverside County. No Suitable habitat is not present on-site. Several species occur in western Riverside County, but no <i>Astragalus</i> was detected on the Project site. |
| San Jacinto Valley crownscale (<i>Atriplex coronata</i> var. <i>notator</i>) | CNPS Rare Plant Rank 1B.1 FE | Not Present. This annual herb was listed as federally endangered on 13 October 1998. It occurs in alkaline playas, mesic valley and foothill grasslands and vernal pools from 139 to 500 meters in elevation. San Jacinto Valley crownscale blooms from April through August. It is threatened by flood control, agriculture, non-native plants, urbanization, vehicles, road maintenance, and pipeline construction. According to the MSHCP, this species is primarily restricted to the alkali floodplains of the San Jacinto River, Mystic Lake and Salt Creek in association with Willows, Domino and Traver soils. This variety is also known to occur north of Diamond Valley Lake and on Willows soils at Alberhill Creek near Lake Elsinore. Suitable habitat is not present on-site. San Jacinto Valley crownscale was not detected on the subject property. |
| Parish's brittlescale (<i>Atriplex parishii</i>) | CNPS Rare Plant Rank 1B.1 This species has no formal federal or state governmental listing status | Not Present. Once presumed extinct, this species was rediscovered along the San Jacinto River in 1993. It blooms June through October, and occurs on alkaline or clay soils in playas, vernal pools, and chenopod scrub below 1900 meters. The species is known to occur near Highways 74 and 79 in Winchester and Homeland, Hemet and near Lakeview Hot Springs. Suitable habitat is not present on-site and it was not detected on-site. |

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| Species | Regulatory Status | Status of the Species on the Subject Property/Life History/Habitat Description |
|---|--|--|
| Davidson's saltscale (<i>Atriplex serenana</i> var. <i>davidsonii</i>) | CNPS Rare Plant Rank 1B.2 This variety has no formal federal or state governmental listing status | Not Present. An annual herb which blooms from April through October, this variety occurs below 200 meters in alkaline conditions in coastal bluff scrub and coastal scrub. The nearest known occurrence we know of to the project site is located near Murrieta Creek, south of the intersection of Clinton Keith Road and Palomar Street, west of Interstate 15, a considerable distance. Suitable habitat is not present on-site, and the subject property is outside of this variety's known geographic range. This variety was not detected on-site. |
| Nevin's barberry (<i>Berberis nevini</i>) | CNPS Rare Plant Rank 1B.1 FE, SE | Not Present. This MSHCP-covered plant is a perennial evergreen shrub was listed as federally endangered on 13 October 1998 and as state endangered in January 1987. It blooms from March through June, and occasionally as early as February. It occurs in sandy or gravelly conditions in washes, coastal scrub, chaparral, cismontane woodland, and riparian scrub from 70 to 825 meters msl. Boyd et al note that the Vail Lake occurrence is the largest known. Suitable habitat is not present on-site. This species was not detected on-site. |
| Johnston's rockcress (<i>Boechera johnstonii</i>) Formerly known as <i>Arabis johnstonii</i> | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This species has no potential to occur on-site. This perennial herb blooms from February through June and often occurs on eroded clay in chaparral and lower montane coniferous forest between 1,350 and 2,150 meters in elevation. According to the CNPS, Johnston's rockcress is only known from the southern San Jacinto Mountains. The subject property, therefore, is outside of this species' known geographic and elevational range, suitable habitat is not present, and it was not detected on-site. |
| thread-leaved brodiaea (<i>Brodiaea filifolia</i>) | CNPS Rare Plant Rank 1B.1 FT, SE | Not Present. This MSHCP-covered species occurs in western Riverside County. It is a bulbiferous perennial herb that blooms from March through June and is known to occur in chaparral openings, cismontane woodland, coastal scrub, playas, valley and foothill grasslands, and most often in vernal pool complexes and clay soils. It was listed as federally threatened on 13 October 1998 and as state endangered in January 1982. It can be locally common in vernal pools complexes on the Santa Rosa Plateau and on alkali flats along the San Jacinto River. Suitable habitat is not present. This species was not detected and was not expected to occur on-site. |

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|---|--|--|
| Orcutt's brodiaea (<i>Brodiaea orcuttii</i>) | CNPS Rare Plant Rank 1B.1 This species has no formal federal or state governmental listing status | Not Present. Boyd et al note that this MSHCP-covered species occurs in the southern Santa Ana Mtns and on the Santa Rosa Plateau. This perennial bulbiferous herb blooms from May through July and occurs on mesic and clay soils in closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland and vernal pools between 30 and 1,692 meters in elevation. Suitable habitat is not present on-site, and the subject property is not located within the known geographic distribution of this species. Orcutt's brodiaea was not detected on-site. |
| round-leaved filaree (<i>California macrophylla</i>) | CNPS Rare Plant Rank CBR This species has no formal federal or state governmental listing status | Not Present. This annual, biennial herb blooms from March through July and occurs in vertic clay and occasionally serpentine soils in scrub, cismontane woodland and valley and foothill grassland between 15 and 1200 meters above msl. It has a broad distribution throughout central and southern California. The CNPS changed the rare plant rank on this species from 1B.2 to CBR on 11 December 2017 because CNPS considers this species to be too common statewide to include in the rare plant inventory. Clay or serpentine soils required by this species are not present on-site, and the species was not detected due to habitat unsuitability. |
| San Jacinto mariposa lily (<i>Calochortus palmeri</i> var. <i>munzii</i>) Formerly known as Munz's mariposa lily | CNPS Rare Plant Rank 1B.2 This variety has no formal federal or state governmental listing status | Not Present. This perennial bulbiferous herb blooms from April through July and occurs in chaparral, lower montane coniferous forest and meadows and seeps between 855 and 2,200 meters in elevation. According to the CNPS, this variety is known only from a few occurrences in the San Jacinto Mountains. The subject property, therefore, is located outside of this variety's known geographic and elevational range. Habitat on-site is not suitable for this mariposa lily, and it was not detected on the subject property. |
| Plummer's mariposa lily (<i>Calochortus plummerae</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This perennial bulbiferous herb is considered to be rare by the <i>Jepson Manual</i> . The CNPS notes that this species is more common than previously thought. This plant is usually found on granitic, rocky slopes within chaparral, cismontane woodland, coastal scrub, and grassland from 100 to 1700 meters. According to Jepson, the nearest occurrence to the project site is located southeast of the intersection of Highways 74 and 79 near Green Acres, north of Diamond Valley Lake. Boyd et al cite the northeastern Santa Ana Mtns, Box Springs Mtn, and Skinner Lake as occurrences. Suitable habitat is absent due to disturbance factors and non-native plant invasion. This species was not detected on-site. |

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| intermediate mariposa lily (<i>Calochortus weedii</i> var. <i>intermedius</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs around Lake Skinner and Vail Lake. This perennial bulbiferous herb blooms from May through July and occurs in rocky, calcareous areas in chaparral, coastal scrub and grassland between 105 and 855 meters in elevation. According to Jepson, the nearest occurrence to the subject property was located north of Clinton Keith Road, between I-215 and Whitewood Road. Suitable habitat is absent due to disturbance factors and non-native plant invasion. This variety was not detected on the subject property. |
| Payson's jewelflower (<i>Caulanthus simulans</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This annual herb occurs between 90 and 2200 meters, and is generally associated with sandy and granitic areas in chaparral, coastal scrub, and pinyon/juniper woodland. Payson's jewelflower blooms from February through June. According to <i>Jepson</i> , the nearest occurrence we are aware of is east of I-15 and south of Bundy Canyon Road. Suitable habitat is absent especially considering disturbance factors and non-native plant invasion. This species is not present on-site. |
| Vail Lake ceanothus (<i>Ceanothus ophiochilus</i>) | CNPS Rare Plant Rank 1B.1 FT, SE | Not Present. Vail Lake ceanothus was listed as federally threatened on 13 October 1998 and as state endangered in January 1994. This perennial evergreen shrub blooms from February through March and occurs on gabbroic or pyroxenite-rich outcrops in chaparral from 580 to 1,065 meters in elevation. According to the CNPS, this species is known from only three (3) occurrences near Vail Lake. These basement rock types are not present and the site, and the subject property is outside this shrub's known geographic distribution. It is absent on-site. |
| smooth tarplant (<i>Centromadia pungens</i> ssp. <i>laevis</i>) | CNPS Rare Plant Rank 1B.1 This subspecies has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in Riverside County and blooms from April through September and occurs below 640 meters in elevation. Smooth tarplant occurs in open, poorly drained flats, depressions, waterway banks and beds, grassland and disturbed sites. CNPS states that this subspecies occurs in alkaline areas in chenopod scrub, meadows and seeps, playas, riparian woodland and grassland. Although suitable habitat is potentially present, we have not detected this species on-site. In addition, smooth tarplant conservation is not targeted for this area. |
| peninsular spineflower (<i>Chorizanthe leptotheca</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This annual herb blooms from May through August and occurs on alluvial fans and granitic areas in chaparral, coastal scrub and lower montane coniferous forests from 300 to 1,900 meters in elevation. Suitable habitat is not present on-site. It occurs on alluvial benches at the base of both the Santa Ana and Agua Tibia Mtns (Vail Like). This spineflower was not detected on-site. |

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| Parry's spineflower (<i>Chorizanthe parryi</i> var. <i>parryi</i>) | CNPS Rare Plant Rank 1B.1 This variety has no formal federal or state governmental listing status | Not Present. This annual herb occurs in sandy or rocky openings in chaparral, cismontane woodland, coastal scrub and grassland between 275 and 1220 meters in elevation. It blooms from April through June and is currently known from approximately 20 occurrences in Riverside County. Habitat on-site is considered to be too disturbed for this variety to occur on the subject property. |
| long-spined spineflower (<i>Chorizanthe polygonoides</i> var. <i>longispina</i>) | CNPS Rare Plant Rank 1B.2 This species has no federal or state formal governmental listing status | Not Present. This MSHCP-covered species occurs in southwestern Riverside County on clay soils derived from gabbro near Temecula, Lake Skinner, and the Agua Tibia Mtns. This annual herb occurs in sandy and often clayey areas in chaparral, coastal scrub, meadows and seeps, grassland and vernal pools between 30 and 1530 meters in elevation. The requisite basement rock types are not present and the site is not characteristic support habitat for the species. This variety flowers from April through July. No spineflowers were detected on-site in 2019 surveys. |
| prostrate spineflower (<i>Chorizanthe procumbens</i>) | CNPS Rare Plant Rank CBR This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs on the western periphery of Riverside County (Santa Ana Mtns, Agua Tibia Mtns, Santa Rosa Plateau. This annual herb occurs in sand or gravel from approximately sea level to 1,300 meters in elevation and is considered common by Jepson. It is not found on-site as the property is outside of the range of the species. |
| San Miguel savory (<i>Clinopodium chandleri</i>) Formerly known as <i>Satureja chandleri</i> | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This uncommon MSHCP-covered species is a perennial shrub that occurs in western Riverside County, in rocky, gabbroic or metavolcanic areas in chaparral, cismontane woodland. It blooms from March through July. Habitat on-site is not suitable for this species on the subject property, and it was not detected. |
| small-flowered morning-glory (<i>Convolvulus simulans</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. Jepson notes this MSHCP-covered species occurs on wet clay and serpentine ridges within chaparral, coastal scrub, and grasslands between 30 and 740 meters. It blooms from March through July. The CNPS notes that it is rare in southern California; Boyd et al note that it occurs in the Gavilan Hills, Temescal Valley and Lake Skinner. Moist clay and serpentine soils are not present; suitable habitat is not present on-site. and it was not detected. |
| Mojave tarplant (<i>Deinandra mohavensis</i>) | CNPS Rare Plant Rank 1B.3 SE | Not Present. This MSHCP-covered species is primarily a species found in the San Jacinto Mtns., however, it is also known to occur along washes at the eastern fringes of western Riverside Co. This annual herb blooms from May through January and occurs in mesic areas in chaparral, coastal scrub and riparian scrub between 640 and 1,600 meters in elevation. The subject property is outside this species' known geographic distribution, and this tarplant was not detected on-site. |

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| Cleveland's bush monkeyflower (<i>Diplacus clevelandii</i>) Formerly known as <i>Mimulus clevelandii</i> | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered plant occurs in upper elevation chaparral in the Santa Ana and Agua Tibia Mtns;. This perennial rhizomatous herb blooms from April through July and occurs in gabbroic, often in disturbed areas, openings and rocky areas in chaparral, cismontane woodland and lower montane coniferous forest between 450 and 2000 meters in elevation. Suitable habitat is not present, and the subject property is outside this species' known geographic range. This species was not detected on-site. |
| slender-horned spineflower (<i>Dodecahema leptoceras</i>) | CNPS Rare Plant Rank 1B.1 FE, SE | Not Present. Occurs in Riverside County mostly on old alluvial benches along the San Jacinto River, Bautista Canyon, Temescal Valley, and lower Agua Tibia Mtns. Listed as federally endangered on 28 September 1987 and state endangered in January 1982, this annual herb requires flood deposited terraces and washes in chaparral/coastal scrub and cismontane woodland between 200 and 760 meters. It is also found at Vail Lake on sandstone. It blooms from April through June. This species was not expected due to lack of support habitat and did not occur on-site. |
| many-stemmed dudleya (<i>Dudleya multicaulis</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. The MSHCP does not require focused surveys for this species for this area. This dudleya grows in heavy or clayey soils and sandstone outcrops in chaparral, coastal scrub and valley and foothill grassland, below 790 meters throughout the south coast (Los Angeles, Orange, San Bernardino, San Diego, and Riverside Counties). It blooms from April through July. Clay and other heavy soils are not present on-site. This species is not present on-site. |
| sticky dudleya (<i>Dudleya viscida</i>) Formerly known as sticky-leaved dudleya | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in western Riverside County. This perennial herb blooms from May through June and occurs in steep, rocky scrub, chaparral, and cismontane woodland between ten (10) and 550 meters in elevation. Necessary support habitat is absent. This dudleya is not present on-site. |
| Santa Ana River woollystar (<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>) | CNPS Rare Plant Rank 1B.1 FE, SE | Not Present. This MSHCP-covered plant species was listed as federally endangered on 28 September 1987 and state endangered in January 1987, this perennial herb occurs in sandy or gravelly washes, floodplains, and dry riverbeds in chaparral and alluvial fan sage scrub from 91 to 610 meters in elevation. It blooms from April through September. This subspecies primarily occurs along the Santa Ana River from San Bernardino to Riverside. Suitable habitat is not present on-site. . |

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| San Diego button-celery (<i>Eryngium aristulatum</i> var. <i>parishii</i>) | CNPS Rare Plant Rank 1B.1 FE, SE | Not Present. This MSHCP-covered species was listed as federally endangered on 03 August 1993 and state endangered in July 1979, this herb blooms from April through June and occurs in mesic areas in coastal scrub, valley and foothill grassland, vernal pools and marshes between 20 and 620 meters in elevation. Suitable habitat is not present on-site as it is only known to occur in vernal pools on the Santa Rosa Plateau. |
| Palomar monkeyflower (<i>Erythranthe diffusa</i>) Formerly known as <i>Mimulus diffusus</i> | CNPS Rare Plant Rank 4.3 This species has no formal federal or state governmental listing status | Not Present. This annual herb blooms from April through June and occurs on sandy or gravelly substrates in chaparral and lower montane coniferous forest between 1220 and 1830 meters in elevation. Suitable habitat is not present on-site, and the subject property is outside this species' known geographic and elevational range. |
| San Jacinto Mountains bedstraw (<i>Galium angustifolium</i> ssp. <i>jacinticum</i>) | CNPS Rare Plant Rank 1B.3 This subspecies has no formal federal or state governmental listing status | Not Present. This perennial herb blooms from June through August and occurs in lower montane coniferous forest between 1350 and 2100 meters in elevation. The subject property is outside of this subspecies' known geographic and elevational range, and suitable habitat is not present on-site. |
| Alvin Meadow bedstraw (<i>Galium californicum</i> ssp. <i>primum</i>) Formerly known as California bedstraw | CNPS Rare Plant Rank 1B.2 This subspecies has no formal federal or state governmental listing status | Not Present. This subspecies is found on granitic or sandy substrates in chaparral and lower montane coniferous forests. Its blooming period is May through July and elevation range is 1350 to 1700 meters above sea level. Suitable habitat is not present, and the subject property is below the subspecies' known elevational range. |
| Palmer's grappling hook (<i>Harpagonella palmeri</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This annual herb grows on clay substrates and open grassy areas in shrubland in chaparral, coastal scrub, and grassland below 955 meters. It blooms from March through May. The species has a broad distribution throughout the south coast, the Peninsular Ranges, Arizona, and into Mexico. Suitable habitat is not present on-site. |
| shaggy-haired alumroot (<i>Heuchera hirsutissima</i>) | CNPS Rare Plant Rank 1B.3 This species has no formal federal or state governmental listing status | Not Present. This perennial rhizomatous herb blooms from May through July and occurs in rocky and granitic areas in subalpine coniferous forest and upper montane coniferous forest between 1520 and 3500 meters in elevation. The subject property is outside of this species' known geographic and elevational range, and suitable habitat is not present on-site. |

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| graceful tarplant (<i>Holocarpha virgata</i> ssp. <i>elongata</i>) | CNPS Rare Plant Rank 4.2 This subspecies has no formal federal or state governmental listing status | Not Present. This MSHCP-covered annual plant blooms from May through November and occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland between 60 and 1100 meters in elevation. Disturbance factors and non-native plant invasion preclude its presence. It was not detected on-site. |
| bobtail barley (<i>Hordeum intercedens</i>) Formerly known as vernal barley | CNPS Rare Plant Rank 3.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in vernal pools, alkali flats and ephemeral saline streams within coastal dunes, coastal scrub and grasslands below 1000 meters throughout southwestern California. An annual herb, it blooms from March through June. Suitable habitat is not present on-site, and this species was not detected on the subject property. |
| beautiful hulsea (<i>Hulsea vestita</i> ssp. <i>callicarpha</i>) | CNPS Rare Plant Rank 4.2 This subspecies has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species is a perennial herb which blooms from May through October and occurs on open gravel, talus slopes, rocky and granitic areas in montane chaparral and coniferous forest between 915 and 3050 meters in elevation. Suitable habitat is not present on-site, and the subject property is outside this subspecies' known geographic and elevational range. Beautiful hulsea was not detected on the site. |
| Southern California black walnut (<i>Juglans californica</i>) Formerly <i>Juglans californica</i> var. <i>californica</i> | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in western Riverside County. This deciduous tree occurs on slopes and in canyons between 50 and 900 meters along the south coast, south Transverse Ranges, and north Peninsular Ranges. It blooms from March through August. Walnut forest is a much fragmented, declining community. Individual trees themselves are not particularly relevant. Woodland stands would be considered sensitive and might warrant conservation or mitigation, not single trees. Walnut does not occur on the Project site. |
| Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>) | CNPS Rare Plant Rank 1B.1 This subspecies has no formal federal or state governmental listing status | Not Present. Although now quite rare, this subspecies was historically widely distributed across southwestern California and into the western Mojave Desert. It occurs in moist saline areas, primarily vernal pools. This plant blossoms February through June. Suitable habitat is not present on-site. |
| heart-leaved pitcher sage (<i>Lepechinia cardiophylla</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species has no potential to occur on-site. This perennial shrub blooms from April through July and occurs in closed-cone coniferous forest, chaparral and cismontane woodland between 520 and 1370 meters in elevation. Suitable habitat is not present, and the subject property is outside of this species' known geographic distribution. |

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| ocellated Humboldt lily (<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>) | CNPS Rare Plant Rank 4.2 This subspecies has no formal federal or state governmental listing status | Not Present. This perennial bulbiferous herb blooms from March through August and occurs in openings within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest and riparian woodland between 30 and 1800 meters in elevation. Suitable habitat is not present on-site for this tall, conspicuous and easily-detected lily. |
| lemon lily (<i>Lilium parryi</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered bulbiferous plant blooms from July through August and occurs in mesic areas within lower and upper montane coniferous forest, meadows and seeps, and riparian forest between 1220 and 2745 meters in elevation. The subject property is located outside of this species' known geographic and elevational range, and suitable habitat is not present on-site |
| Parish's meadowfoam (<i>Limnanthes alba</i> ssp. <i>parishii</i>) Formerly known as <i>Limnanthes gracilis</i> var. <i>parishii</i> | CNPS Rare Plant Rank 1B.2 SE | Not Present. Parish's meadowfoam was listed as state endangered in July 1979. This annual herb blooms from April through June and occurs in vernal mesic areas and along edges of ephemeral streams in lower montane coniferous forest, meadows and seeps, and vernal pools between 600 and 2000 meters in elevation. Suitable habitat is not present on-site, and the subject property is outside this subspecies' known geographic distribution. This subspecies was not detected on-site. |
| small-flowered microseris (<i>Microseris douglasii</i> ssp. <i>platycarpa</i>) | CNPS Rare Plant Rank 4.2 This subspecies has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in western Riverside County; in heavy clay soils associated with vernal pools, grasslands and similar habitats. This annual herb blooms from March through May and occurs below 1070 meters in the South Coast region, Peninsular Ranges and San Jacinto Mountains. Suitable habitat is not present on-site, although it is found in the Gavilan hills to the west of the Project site. |
| Hall's monardella (<i>Monardella macrantha</i> ssp. <i>hallii</i>) | CNPS Rare Plant Rank 1B.3 This subspecies has no formal federal or state governmental listing status | Not Present. This perennial rhizomatous herb blooms from June through October and occurs in broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland between 730 and 2195 meters in elevation. The subject property is outside this subspecies' known elevational range, therefore it would not occur. |
| California muhly (<i>Muhlenbergia californica</i>) | CNPS Rare Plant Rank 4.3 This species has no formal federal or state governmental listing status | Not Present. This now uncommon perennial rhizomatous herb blooms from June through September and occurs in seeps and streambanks in chaparral, forests, scrub and meadows throughout the western Transverse Ranges and south coast regions. Its elevation range is between 100 and 2000 meters. Habitat on-site is considered unsuitable for this species to occur on the subject property |

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| little mouseltail (<i>Myosurus minimus</i> ssp. <i>apus</i>) | CNPS Rare Plant Rank 3.1 This subspecies has no formal federal or state governmental listing status | Not Present. This annual herb blooms from March through June and occurs in valley and foothill grassland and alkaline vernal pools between 20 and 640 meters in elevation. Habitat on-site is considered unsuitable and generally too disturbed for this subspecies to occur on the subject property, and it was not detected on-site. |
| mud nama (<i>Nama stenocarpa</i>) Formerly known as <i>Nama stenocarpum</i> | CNPS Rare Plant Rank 2B.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species is very scarce in Riverside County, known only from the north shore of Mystic Lake (Boyd et al). This herb blooms from January through July and occurs on marshes, swamps, lake margins and streambanks between 5 and 500 meters. Habitat on-site is unsuitable, it has a restricted distribution, and it was not detected on-site. |
| spreading navarretia (<i>Navarretia fossalis</i>) | CNPS Rare Plant Rank 1B.1 FT | Not Present. This MSHCP-covered species occurs in southwest Riverside County; however, focused surveys are not required for the subject property. Listed as federally threatened on 13 October 1998, this annual blooms from April through June and occurs in vernal pools, ditches, chenopod scrub, marshes and swamps with assorted shallow freshwater, and playas. Habitat on-site is not suitable for this species to occur on the subject property, and it was not detected on-site. |
| prostrate vernal pool navarretia (<i>Navarretia prostrata</i>) | CNPS Rare Plant Rank 1B.1 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in western Riverside County; however, focused surveys are not required for the subject property. This annual herb blooms from April through July and occurs in mesic areas in coastal scrub, meadows and seeps, alkaline valley and foothill grassland, and vernal pools between three (3) and 1210 meters in elevation. Suitable habitat is not present on-site, and this species was not detected on the subject property. |
| California Orcutt grass (<i>Orcuttia californica</i>) | CNPS Rare Plant Rank 1B.1 FE, SE | Not Present. This species is broadly distributed geographically, but confined to vernal pool complexes between fifteen (15) and 660 meters. It blooms from April through August. No vernal pools are present on-site. Habitat on the subject property, therefore, is unsuitable for this species, surveys are not required for the species in this area, and it was not detected on-site. |
| California beardtongue (<i>Penstemon californicus</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This perennial herb blooms from May to August and occurs on sandy substrates in chaparral, lower montane coniferous forest, pinyon and juniper woodland between 1170 and 2300 meters in elevation. The project site is below the plants' known elevational range. Suitable habitat is not present on-site. |

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| Brand's star phacelia (<i>Phacelia stellaris</i>) | CNPS Rare Plant Rank 1B.1 This species has no formal federal or state governmental listing status | Not Present. Known only to occur along the Santa Ana River in Riverside County, this annual herb blooms from March through June. Elsewhere in CA it occurs in open areas within coastal dunes and coastal sage scrub below 400 meters. Habitat on-site is not suitable, and the subject property is outside of this species' known geographic range. Further, this species was not expected, due to habitat conditions, and it did not occur on-site. |
| Fish's milkwort (<i>Polygala cornuta</i> var. <i>fishiae</i>) | CNPS Rare Plant Rank 4.3 This variety has no formal federal or state governmental listing status | Not Present. This perennial deciduous shrub blooms from May through August and occurs in chaparral, oak woodland and riparian woodland between 100 and 1000 meters in elevation. Suitable habitat is not present on-site, and this variety was not detected on the subject property. |
| cliff cinquefoil (<i>Potentilla rimicola</i>) | CNPS Rare Plant Rank 2B.3 This species has no formal federal or state governmental listing status | Not Present. This perennial herb occurs in granitic and rocky crevices in subalpine coniferous forest and upper montane coniferous forest between 2400 and 2800 meters in elevation. This species blooms from July through September. According to the CNPS, cliff cinquefoil is known only to occur in the San Jacinto Mountains. Suitable habitat is not present on-site, and the subject property is outside of this species' known geographic and elevational range. This species was not detected on-site. |
| Engelmann oak (<i>Quercus engelmannii</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in western Riverside County; however, the subject property contains only juvenile oaks (<i>Q. agrifolia</i>) within mixed willow tree cells. This southern California oak occurs in chaparral, cismontane woodland, riparian woodland and valley and foothill grassland. Its elevation range is 50 to 1300 meters. This perennial deciduous tree blooms from March through June. It does not occur on-site. |
| Coulter's matilija poppy (<i>Romneya coulteri</i>) | CNPS Rare Plant Rank 4.2 This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in Riverside County. The matilija poppy is distinctive in that it has the largest flowers of any plant native to California. It typically blooms from March to July, and occasionally as late as August. It is often found in burns in chaparral and coastal scrub in the Peninsular Ranges, Western Transverse Ranges, and the south coast area from 20 to 1200 meters in elevation. Suitable habitat is not present, and this species is not present. |
| Hammitt's clay-cress (<i>Sibaropsis hammittii</i>) | CNPS Rare Plant Rank 1B.2 This species has no formal federal or state governmental listing status | Not Present. This annual herb blooms from March through April and occurs on clay soils in chaparral openings and valley and foothill grassland between 720 and 1065 meters in elevation. Clay soils are not present on-site; therefore, suitable habitat on the subject property is absent. This species was not detected on the subject site. |

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| chickweed oxytheca (<i>Sidotheca caryophylloides</i>) Formerly known as <i>Oxytheca caryophylloides</i> | CNPS Rare Plant Rank 4.3 This species has no formal federal or state governmental listing status. | Not Present. This annual herb occurs on sandy substrates in lower montane coniferous forest. It blooms from July to October and its elevation range is 1114 to 2600 meters. The subject property is outside of this species' known geographic range, and suitable habitat is not present on-site. It occasionally can be found in the San Jacinto River wash. This species was not detected on the subject site. |
| Wright's trichocoronis (<i>Trichocoronis wrightii</i> var. <i>wrightii</i>) | CNPS Rare Plant Rank 2B.1 The variety has no formal federal or state governmental listing status | Not Present. The MSHCP does not require focused surveys for this variety for this area because it has no potential to occur on-site. This annual herb blooms from May through September and occurs at elevations of five (5) to 435 meters. Habitats for this variety include moist and alkaline places, drying riverbeds, meadows and seeps, marshes and swamps, riparian forests and vernal pools; these support habitat types are absent on the property. The subject property is above this variety's known elevational range. This variety was not detected on-site. |
| Invertebrates | | |
| vernal pool fairy shrimp (<i>Branchinecta lynchi</i>) | FT | Not Present. The property contains no vernal pools and thus was determined to be unsuitable for this species in the Habitat Suitability Assessment. Potential habitat includes short lived, cool temperature vernal pools. No vernal pools are present on-site; therefore, suitable habitat for this fairy shrimp is not present on the subject property. |
| Quino checkerspot butterfly (<i>Euphydryas editha quino</i>) | FE | Not Present. The property was determined to be unsuitable for this species due to lack of host plant and the degraded condition. The quino checkerspot butterfly occurs sporadically now in sunny openings in chaparral and coastal sage shrublands in parts of Riverside and San Diego Counties. This subspecies frequents hills and mesas near the coast and hilly areas east of Temecula, and requires high densities of food plants including <i>Plantago erecta</i> , <i>Plantago ovata</i> var. <i>insularis</i> and <i>Castilleja exserta</i> ssp. <i>exserta</i> . None of the quino checkerspot butterfly's host plants are present on-site; and it has grown progressively more rare with extended drought conditions and deleterious erosion of habitat quality throughout its known range, therefore this subspecies does not occur on the project site. |

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| Santa Rosa Plateau fairy shrimp (<i>Linderiella santarosae</i>) | This species has no formal federal or state governmental listing status | Not Present. The property was determined to be unsuitable for this species in the Habitat Suitability Assessment. This species of fairy shrimp is restricted to cool-water vernal pools which are formed on Southern Basalt Flows. In the Plan Area, this species, and its microhabitat are only known to occur on the Santa Rosa Plateau. Habitat on the subject property is not suitable, and the project site is outside of this species' known geographic range. Vernal pools are absent at this location. Santa Rosa Plateau fairy shrimp was not detected on the subject site. |
| Delhi Sands flower-loving fly (<i>Rhaphiomidas terminatus abdominalis</i>) | FE | Not Present. The property was determined to be unsuitable for this species. Suitable habitat includes fine, sandy soils, often with wholly or partly consolidated dunes referred to as the "Delhi" series. The fly is typically found in relatively intact, open, sparse, native habitats with less than 50% vegetative cover and is restricted to the Colton Dunes in northwestern Riverside and southwestern San Bernardino Counties; this substrate is not present south of the Santa Ana River. The subject property is outside this subspecies' known geographic range; therefore the flower-loving fly would not occur on-site. |
| Riverside fairy shrimp (<i>Streptocephalus woottoni</i>) | FE | Not Present. The property was determined to be unsuitable for this species due to the lack of ponds and vernal pools. This species of fairy shrimp is endemic to western Riverside, Orange, and San Diego Counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. It inhabits seasonally astatic pools filled by winter/spring rains, and hatches in warm water later in the season. Suitable habitat is not present as vernal pools are not present on the subject property. This species is not present on-site. |
| Crotch bumble bee (<i>Bombus crotchii</i>) | SSA | Low. This species ranges from coastal California east to the Sierra-Cascade Crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> . These plant species (which are necessary support resources for the bumble bee) are not found on-site or are present in very low densities on an irregular basis which would not support the organism. |

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| monarch – California overwintering population <i>(Danaus plexippus pop. 1)</i> Formerly known as monarch butterfly <i>(Danaus plexippus)</i> | SSA | Not Present. The monarch is perhaps the most well-known insect in North America. This species spends summers in the northern portion of the United States and southern Canada, and migrates several thousand miles south to overwinter in Southern California, Mexico, and many southern states in the United States. They host on several species of milkweed (<i>Asclepias</i> spp.), and sequester cardiac glycosides from these plants, making them unpalatable to predators. Milkweed has not been detected on-site but individuals could of course forages on-site from time to time as it is a common butterfly. Roosting sites are generally coastal, and do not occur on-site. |
| Fish | | |
| Santa Ana sucker <i>(Catostomus santaanae)</i> | FT | Not Present. The property contains no aquatic habitat and was determined to be unsuitable for this species. This species is not present on the subject property. |
| arroyo chub <i>(Gila orcutti)</i> | SSC | Not Present. The property was determined to be unsuitable for this species and no focused surveys were conducted. There are no aquatic resources for fish on-site. This species is not present on the subject property. |

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| Reptiles | | |
| orange-throated whiptail (<i>Aspidoscelis hyperythra</i>) (<i>Cnemidophorus hyperythrus beldingi</i>) | SWL | Not Present. This MSHCP-covered species occur in intact, core habitat areas, but the property does not adjoin natural habitats that would better support this organism. This species inhabits washes, streams, terraces, and other sandy areas often where there are rocks and patches of brush and rocky hillsides. Orange-throated whiptail frequents coastal chaparral, thornscrub, and streamside growth. All CNDDB records for the Steele Peak and Riverside East Quads are at 20 years old, and were present in nearby County parks at that time. Dense non-native grassland such as that found on-site is not suitable support habitat. Orange-throated whiptail was not detected on the Project site. |
| coastal whiptail (<i>Aspidoscelis tigris stejnegeri</i>) Formerly known as the coastal western whiptail (<i>Cnemidophorus tigris multiscutatus</i>) | SSC | Low. This MSHCP-covered subspecies is not likely to occur on-site. This species inhabits deserts and semiarid habitats, usually where plants are sparse and there are open areas for running, conditions not present as the site is densely vegetated. It ranges from deserts to montane pine forests where it prefers warmer, drier areas. Coastal whiptail is also found in woodland and streamside growth and avoids dense grassland and thick growth of shrubs. Dense non-native grassland such as that found on-site is not suitable support habitat. It uses firm, sandy or rocky soil. This whiptail was not detected on-site. |
| southern rubber boa (<i>Charina umbratica</i>) Formerly known as <i>Charina bottae umbratica</i> | ST | Low. This MSHCP-covered species is unlikely to occur on-site. The southern rubber boa frequents grassland, broken chaparral, woodland, and forest, in and beneath rotting logs, under rocks, and under bark of fallen and standing dead trees. Habitat on-site is not particularly suitable because of dense non-native grassland, periodic discing, and the removal of natural micro-habitat elements (leaf and organic matter, logs, etc.). |
| San Diego banded gecko (<i>Coleonyx variegatus abbotti</i>) | SSC | Not Present. This MSHCP-covered subspecies occurs in western Riverside County, and can live in extremely dry parts of the desert due to nocturnal and subterranean habits. It ranges from creosote bush flats and sagebrush desert to pinyon-juniper belt, and from catclaw-cedar-grama grass plant community in the eastern part of its range to chaparral areas in its western range. This gecko is often associated with rocks, and may seek shelter under them or in crevices. Suitable habitat is not present on-site. |

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| red diamond rattlesnake (<i>Crotalus ruber</i>) Formerly (<i>Crotalus ruber ruber</i>) | SSC | Low. This MSHCP-covered species might still occur in the area, but the species docility and relatively gentle nature suggest it would not persist in close proximity to existing residential neighborhoods. Urban dwellers are naturally afraid of rattlesnakes, and usually kill them when encountered out of fear or ignorance. Isolation of the site in an increasingly urban matrix also suggests the possibility of occurrence on-site is unlikely. This species frequents chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains in Riverside County. It occurs in rocky areas and dense vegetation and suitable habitat is not present on-site. |
| western pond turtle (<i>Emys marmorata</i>) Formerly known as <i>Clemmys marmorata pallida</i> | SSC | Not Present. This MSHCP-covered species occurs in western Riverside County in aquatic sites. The western pond turtle inhabits permanent or nearly permanent bodies of water in a number of habitat types below 1830 meters. It requires basking sites such as logs, rocks, vegetation mats, or open mud banks. Suitable habitat is not present on the subject property as the blue line stream is ephemeral. This species is not present on-site. |
| California mountain kingsnake (San Bernardino population) (<i>Lampropeltis zonata [parvirubra]</i>) California mountain kingsnake (San Diego population) (<i>Lampropeltis zonata [pulchra]</i>) | SWL | Not Present. These MSHCP-covered subspecies can occur in southwest Riverside County; however, focused surveys are not specified in the MSHCP and are not required for the subject property. The California mountain kingsnake inhabits mountainous regions across southern California. It prefers moist woods, coniferous forests, oak woodlands, and chaparral above 1000 meters. They are quite secretive, residing in rock crevices or beneath rock and debris piles. They may also utilize rotting logs and seek cover under dense shrubs. Habitat on-site is not particularly suitable, and the subject property is located below this snake's known elevational range. |

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| coast horned lizard (<i>Phrynosoma blainvillii</i>) Formerly (San Diego) horned lizard (<i>Phrynosoma coronatum</i>) – <i>blainvillii</i> population | SSC | Not Present. This MSHCP-covered species occurs in western Riverside County. Favorable habitat for this lizard includes open, flat, sandy areas in which several colonies of harvester ants (<i>Pogonomermex</i> spp.) are established. Harvester ants are the coast horned lizard's preferred prey item and is necessary to its diet. Plant communities associated with habitation of the coast horned lizard include coastal sage scrub, desert scrub, and native grasslands. Historically, the site would have probably supported horned lizard, but pressures from weed and grass invasion, easy collection, and fragmentation of its habitat have all contributed to its decline. CNDDDB records include a high-density population in Harford Springs Park (1992), the Three Sisters area approximately 4 mi. NE of Lake Matthews (1957), and Motte Rimrock Reserve to the southeast near Perris (2003). Isolation, collection, predation and habitat degradation suggest this species is no longer present in the area. |
| southern sagebrush lizard (<i>Sceloporus graciosus vandenburgianus</i>) | This subspecies has no formal federal or state governmental listing status | Not Present. This MSHCP-covered subspecies occurs in western Riverside County; however, this lizard is found within the San Jacinto and Santa Rosa Mountains above 1,524 meters in elevation. Suitable habitat includes montane chaparral, sagebrush (<i>Artemisia</i> sp.), hardwood and conifer forests and woodlands and juniper woodlands. Habitat on-site is not suitable, and the subject property is outside of this subspecies' known geographic range. |
| granite spiny lizard (<i>Sceloporus orcutti</i>) | This species has no formal federal or state governmental listing status | Not Present. This widespread species occurs in a wide variety of habitats but is restricted to granite outcrops and boulder fields in chaparral, coastal sage scrub, riparian areas, yellow pine forest, and pinyon-juniper woodlands at all elevation levels. Suitable habitat is not present on-site. |
| granite night lizard (<i>Xantusia henshawi</i>) Formerly known as <i>Xantusia henshawi henshawi</i> | This species has no formal federal or state governmental listing status | Not Present. This lizard occurs in localized populations distributed east of I-215, but primarily within the eastern portion of the Plan Area. This organism is often found in flaking granite, rock outcrops, and boulder fields most commonly in chaparral, sage scrub, mixed conifer forest, and oak woodland. Suitable habitat is not present on-site. The subject property is outside of this species' known geographic range. |
| San Bernardino ring-necked snake (<i>Diadophis punctatus modestus</i>) | SSA | Not Present. This small, slender snake is a secretive subspecies. It prefers moist areas and will inhabit moist meadows, rocky hillsides, gardens, grassland, chaparral, and mixed woodlands. Habitat on-site is not particularly suited for this species as non-native grasses are too dense for this animal. Agricultural practices in the past and periodic disking for weed abatement also suggest the species is likely absent. This subspecies was not detected on-site. |

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| Amphibians | | |
| arroyo toad <i>(Anaxyrus californicus)</i> Formerly known as <i>(Bufo californicus)</i> | FE, SSC | Not Present. This species has no potential to occur on-site. The arroyo toad breeds in sandy river washes and arroyos; hence the name arroyo toad. This species has a very specialized breeding habitat in that it requires shallow, slow moving water or overflow pools within a stream system comprised of silt-free sandy or gravelly substrates. This species also requires streamside terraces for burrowing. Suitable breeding habitat is not present on the subject property, and widespread habitat disturbances preclude its' presence. |
| California red-legged frog <i>(Rana draytonii)</i> Formerly known as <i>Rana aurora draytonii</i> | FT, SSC | Not Present. Populations of this frog are in serious decline primarily due to the introduction of non-native predators such as the American bullfrog (<i>Lithobates catesbeianus</i>), habitat loss, and pollutants. This species prefers pond habitats for breeding; however, it will also utilize slow, permanent streams. Necessary habitat is not present on-site. |
| southern mountain yellow-legged frog <i>(Rana muscosa)</i> Formerly known as the mountain yellow-legged frog | FE, SE, SWL | Not Present. This species has no potential to occur on-site. This frog species, once abundant, has lost approximately 99% of its former range. Chytrid fungus, introduction of bullfrogs and trout species, pollution, fires, drought and cattle grazing are just a few of the suspected causes of this, likely fatal, decline of the species. Suitable habitat is not present. This species is not present on-site. |
| western spadefoot <i>(Spea hammondi)</i> Formerly known as <i>Scaphiopus hammondi)</i> | SSC | Low and Unlikely to be Present. This MSHCP-covered species occurs in western Riverside County. This species is generally found in washes, lowlands stream courses, man-made ponds, floodplains, and vernal pools. Occurs in wide range of habitats but grassland with seasonal pools considered optimal. The CNDDDB notes several detections, including the Motte Rimrock Reserve as well as detections south of Santa Rosa Mine Road. The habitat on the subject property is not suitable due to lack of standing water on-site or nearby. |
| coast range newt <i>(Taricha torosa)</i> Formerly known as <i>Taricha torosa torosa</i> | SSC | Not Present. This MSHCP-covered species occurs in western Riverside County. Populations of the coast range newt are scattered throughout the south coast, and are confined to slow-moving streams and pools in which surface flows last year-round, as their larvae require one (1) year to develop. The habitat on the subject property is not suitable due to lack of year-round water sources. This species would not occur on-site. |

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|--|---|--|
| Birds | | |
| Cooper's hawk (<i>Accipiter cooperii</i>) | SWL (Nesting) | Present. Observed foraging on-site, but the property is not in a conservation cell and not designated for conservation. It was seen in the riparian cell at the northwest corner of the property. Cooper's hawk is a crow-sized raptor and typically breeds throughout the state. It is tolerant of human activity and population numbers appear to be on the rise. It nests in open forests, groves, or trees along rivers, or low scrub of otherwise treeless areas. This species has been detected foraging on-site; no nesting was detected. |
| northern goshawk (<i>Accipiter gentilis</i>) | SSC (Nesting) Third Priority | Not Present. This MSHCP-covered species can occur in western Riverside County. Northern goshawks nest in mature and old-growth forests with more than 60% closed canopy. Breeding sites in its western range include Douglas-fir and pine forests, aspen groves, and stands of paper birch (in Alaska). Goshawks often build nests near breaks in the canopy, such as a forest trail, jeep road, or openings created by a downed tree, and prefer sites with a nearby creek, pond or lake. This species hunts in the forest, along riparian corridors, and in more open habitat such as sagebrush steppes. Suitable nesting habitat is not present, and this hawk was not detected on-site. |
| sharp-shinned hawk (<i>Accipiter striatus</i>) | SWL (Nesting) | Low (Not Nesting – Winter Resident). This MSHCP-covered species could occur on-site, but the property is not in a conservation cell and not designated for conservation. This species is a common winter visitor to southern California. It prefers forested or woodland riparian habitats, but will also occur in urban areas. |
| tricolored blackbird (<i>Agelaius tricolor</i>) | SCE, SSC (Nesting Colonies Only) First Priority | Not Present. This MSHCP-covered species could possibly forage on-site as blackbird flocks can be wide ranging, but the property is not in a conservation cell and not designated for conservation. The tricolored blackbird occurs in southern California along the coast and at some inland localities. Nesting habitat for the tricolored blackbird includes both brackish and freshwater marshes. Foraging habitats include cultivated fields, feedlots associated with dairy farms, and wetlands. This species forms the largest nesting colonies of any Passerine bird in the United States. The species has declined primarily from habitat loss, which can result in enormous nest failure due to the colonial nesting habit of this species. Suitable foraging habitat is present on-site, breeding habitat is probably not present., nor are there any reported occurrences within the vicinity of the site. |

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| Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>) | SWL | Not Present. This MSHCP-covered species is unlikely to occur on-site. This secretive, medium-sized sparrow inhabits mainly coastal sage scrub habitats, preferring those dominated by California sagebrush (<i>Artemisia californica</i>), and mixed chaparral. It frequents relatively steep, often rocky hillsides with grass and forb patches. CNDDDB detections of this sparrow are listed for several RSS habitat areas on the Gavilan Plateau, and along Cajalco Road (2005, 2015). Suitable habitat is not present on-site. |
| grasshopper sparrow (<i>Ammodramus savannarum</i>) | SSC (Nesting) Second Priority | Low (Nesting). This MSHCP-covered species is not likely to utilize the subject property. The species prefers grasslands with sparse shrub cover. It occurs mainly on hillsides and mesas in coastal districts, but has bred up to 1500 meters in the San Jacinto Mountains. Marginally suitable habitat is present on-site, but this sparrow is uncommonly observed. It was not detected on the subject property. |
| golden eagle (<i>Aquila chrysaetos</i>) | SFP, SWL (Nesting and Wintering) | Not Present. This species nests and winters in cliff walls, large trees, and foothill and mountain areas supporting sage-juniper and desert vegetation. No suitable nesting habitat is present on-site, and golden eagle has not been detected on-site. |
| great blue heron (<i>Ardea herodias</i>) | SSA (Nesting Colony) | Not Present. This species is the most widespread heron in North America. It commonly occurs along river and lake edges, and forages for fish, amphibians, reptiles, and mammals. Habitats on-site lack appropriate cover and open water. Flyovers are common over many habitat types, but this species has not been detected on-site and is not expected due to lack of water resources. |
| Bell's sage sparrow (<i>Artemisospiza belli belli</i>) Formerly known as <i>Amphispiza belli belli</i> | SWL | Not Present. This subspecies prefers coastal sage scrub and open chaparral habitats in southern California. It nests on the ground beneath shrubs or in shrubs six (6) to 18 inches above ground. The nearest CNDDDB sighting is between Cajalco Road and Gavilan Peak (2003). Suitable habitat is not present, and this sparrow has not been detected on the subject property. |

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| burrowing owl (<i>Athene cunicularia</i>) Formerly known as <i>Athene cunicularia hypugaea</i> | SSC (Burrow Sites and some Wintering Sites) Second Priority | Not Present. Focused surveys for this organism were required under the MSHCP. 2019 surveys did not detect BUOW on-site. This species is found in grasslands and sparse scrub habitats throughout Riverside County. It is found throughout the state during fall and spring migration. The habitat for this species consists of open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The burrowing owl is a subterranean nester, and is dependent upon burrowing mammals to initiate burrow construction. The CNDDB notes BUOW have been detected about a mile west of the project site east of Wood Road along Lurin Avenue. Another record reports 17+ individuals in Mead Valley south of the site in 2007. Burrowing owl, however, was not detected on-site during 2019 surveys or incidentally when TERACOR has been on-site intermittently since mid-2016. |
| American bittern (<i>Botaurus lentiginosus</i>) | SSA | Not Present. American bitterns in California are found almost exclusively in emergent habitat of freshwater marshes and vegetated borders of ponds and lakes, and occasionally sparsely vegetated wetlands. Wetland habitat on-site is not suitable for this species. American bittern has not been detected on the property. |
| ferruginous hawk (<i>Buteo regalis</i>) | SWL (Wintering) | Low. This MSHCP-covered species could occasionally forage on-site, but the property is not in a conservation cell and not designated for conservation. This raptor frequents open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. It eats mostly lagomorphs (rabbits), ground squirrels, and mice. The ferruginous hawk breeds in the northern Midwest in the U.S. and southern Canada, and is only known to occur in California during the winter. Suitable foraging habitat was present in the area prior to widespread development, and ferruginous hawk has not been detected on-site. |

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| Swainson's hawk (<i>Buteo swainsoni</i>) | ST (Nesting) | Low (Low Migratory Occurrence Potential). This MSHCP-covered species could forage during migration on-site, but the property is not in a conservation cell and not designated for conservation. This raptor is a summer migrant to North America, and spends the winter in South America, making it the longest migrant of any North American raptor. Habitat preferences for this species include broken woodlands, savannah, higher deserts with scattered groves of trees, and ranch lands with scattered trees. Prey items for this species range from small mammals to insects with small birds and reptiles taken occasionally. The subject property is located outside of this species' known breeding range; therefore, this species does not nest on-site. Swainson's hawk generally migrates in flocks along established flyways, and is not expected to be seen on the project site. |
| cactus wren (<i>Campylorhynchus brunneicapillus</i>) | This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species can occur in southwest Riverside County; however, focused surveys are not specified in the MSHCP and are not required for the subject property. This species is narrowly distributed at relatively few locations within the Plan Area. Preferred habitat includes cactus-dominated coastal sage scrub, desert scrub, and Riversidean alluvial fan sage scrub in the Riverside Lowland and San Jacinto Foothill Bioregions of the Plan Area. Suitable habitat is not present on-site, and this species was not detected on the subject property. |
| Wilson's warbler (<i>Cardellina pusilla</i>) Formerly <i>Wilsonia pusilla</i> | This species has no formal federal or state governmental listing status | Not Present (Low Migratory Occurrence Potential). The Wilson's warbler has a sparse and widespread distribution within almost every habitat within the MSHCP Plan Area. This species forages in lowlands and foothills as a transient in the spring and fall and breeds within the mountains in shrub and scrub habitat, wet and montane meadow, and edges of riparian and forested habitats. It is not known to winter within the Plan Area. The subject property is outside of this warbler's breeding range, although Wilson's warbler could utilize the subject site as a migratory stopover. |
| turkey vulture - breeding (<i>Cathartes aura</i>) | This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species might forage on and above the site. The turkey vulture is generally widely distributed throughout the Plan Area. In western North America, the turkey vulture tends to occur most regularly in areas of pastured rangeland, non-intensive agriculture, or wild areas, with rock outcrops suitable for nesting but generally not in the high mountains. Suitable habitat consists of extensive open areas with protected nest and roost sites provided by large trees, snags, thickets, shrubs, and rock outcrops. Nesting habitat occurs in forests, rocky cliffs or slopes, and deciduous forests; these habitats do not occur on-site. |

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| mountain plover (<i>Charadrius montanus</i>) | SSC (Wintering) Second Priority | Not Present. This MSHCP-covered species probably would not utilize the site, and the property is not in a conservation cell and not designated for conservation. A winter resident in California, the mountain plover is currently primarily found in the Imperial Valley, California. Historically, large numbers of mountain plovers wintered on dry plain between the Pacific Ocean and Los Angeles. Wintering populations prefer agricultural fields, such as alfalfa; however, historically this species preferred native grassland plains. Marginally suitable habitat is present on the subject property, but invasive plants have probably rendered the site too densely vegetated for this particular species. This species was not detected on-site. |
| northern harrier (<i>Circus cyaneus</i>) | SSC (Nesting) Third Priority | Low. This MSHCP-covered species could forage on-site, but the property is not in a conservation cell and not designated for conservation. The subject property is located within this species' current breeding range, but the small size of riparian areas and lack of marsh habitat renders the property unsuitable for nesting. The northern harrier has a worldwide distribution and a wide range during migration. This species prefers to forage in expansive open, treeless areas. Marginally suitable nesting habitat is present. This species was not detected on-site. |
| western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>) | FT, SE (Nesting) | Not Present. The property is not unsuitable for this species and therefore, no focused surveys were conducted. The western yellow-billed cuckoo prefers dense riverine woodlands. This subspecies is common in parts of its range, but has experienced serious declines due to habitat loss and fragmentation. This subspecies was not detected on-site, and the small amount of Willow riparian habitat is not sufficient for nesting. |
| black swift (<i>Cypseloides niger</i>) | SSC (Nesting) Third Priority | Not Present (Low Migratory Occurrence Potential). This MSHCP-covered species could forage on-site, but the property is not in a conservation cell and not designated for conservation. In southern California this species breeds in the San Gabriel, San Bernardino, and San Jacinto Mountains. Most breeding sites are associated with steep cliffs, or near and behind waterfalls. Suitable nesting habitat is not present, and the subject property is located outside of this species' known breeding range; therefore, this species does not occur on-site. |

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| white-tailed kite (<i>Elanus leucurus</i>) | SFP (Nesting) | Low. This species has not been seen on-site, and the willow scrub is too small in extent for raptor nesting. It may forage on-site from time to time. The property is not in a conservation cell and not designated for conservation, therefore, potential presence is not problematic. This species is fairly common in open fields, and is a yearlong resident in coastal and valley lowlands throughout California. It occurs in low elevation grassland, agricultural, wetland, or oak-woodland habitats. Riparian areas adjacent to open areas can be used by this species for nesting, but no nesting or foraging was observed. |
| southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) | FE, SE (Nesting) | Not Present. The property was determined to be unsuitable for this species based on the very limited extent of willow scrub on-site and because there does not appear to be any standing water (at least seasonally). The subspecies southwestern willow flycatcher occupies the southernmost breeding range of the willow flycatcher. It was listed as federally endangered in 1993, and it is estimated that only 900 to 1000 breeding pairs remain. Habitat loss and parasitism from brown-headed cowbirds have reduced the populations to the threshold of extinction. This species would not utilize the site. |
| California horned lark (<i>Eremophila alpestris actia</i>) | SWL | Low; not detected. This MSHCP-covered species might utilize the site occasionally. Ongoing urbanization of the Riverside area causes the removal of foraging habitat, such as that which has occurred outside the City limits to the east across Barton Avenue the property is probably renders area remnant habitats too small in the area of the project. The California horned lark is fairly common in grasslands and open scrublands throughout California; however, numbers have been declining near urbanized areas of southern California. One older 1992 CNDDB record notes it occurred on March AFB about a half mile from the project site. This subspecies generally occurs in grasslands and open habitats. Suitable habitat is present, but horned lark may no longer occur in the area. |
| merlin (<i>Falco columbarius</i>) | SWL (Wintering) | Low. It seems unlikely that this MSHCP-covered species would utilize the site, and the property is not in a conservation cell and not designated for conservation even if it did occur. This species winters mainly in the western half and southern portion of California below 1500 meters. It is seldom found in heavily wooded areas or open deserts. It occurs in coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, and various ecotones (edge habitats). Although somewhat structurally-suitable wintering habitat is present, it is very small for foraging raptors. Other nearby, similar habitats in the City are fragmented. This species was not detected on-site, and it was not expected to occur. |

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| prairie falcon (<i>Falco mexicanus</i>) | SWL (Nesting) | Low. This MSHCP-covered species could forage on-site, but the property is not in a conservation cell and not designated for conservation. This species occurs throughout California, and breeds in the northern, central and southeastern portions of the state. This species inhabits primarily open habitats such as grasslands, savannahs, and open shrub habitats. Although some structurally-suitable foraging habitat is present, it is very small for foraging raptors. Other nearby, similar habitats in the City are fragmented. This species was not detected. |
| American peregrine falcon (<i>Falco peregrinus anatum</i>) Formerly known as the peregrine falcon (<i>Falco peregrinus</i>) | FDL, SDL, SFP (Nesting) | Not Present. This MSHCP-covered species can occur in western Riverside County. This subspecies occurs along the coast year-round, breeding from Santa Barbara to northern California. This subspecies also breeds in the Sierra Nevada and the Salton Sea. The wintering range for this subspecies extends into the Central Valley and more inland in southern California. Most commonly occupied habitats contain cliffs for nesting, with open gulfs of air and generally open landscapes for foraging. In addition to natural habitats, many artificial habitats are now used by this subspecies (urban, human-built environments such as towers, buildings, etc.). Suitable habitat is not present, and this subspecies has not been observed to nest on the subject property. |
| MacGillivray's warbler (<i>Geothlypis tolmiei</i>) Formerly known as <i>Oporornis tolmiei</i> | This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species can occur in this area. The MacGillivray's warbler has a sparse but widespread distribution throughout the MSHCP Plan Area within a variety of shrubby and riparian habitats. It occurs within the lowland and foothill regions of the Plan Area as a transient in spring and fall but does not winter within these regions. Breeding pairs are typically found in moist brushy areas within coniferous forests between 2,000 and 2,800 meters in elevation but may also be found in clear-cuts or mixed deciduous forests up to 3,000 meters in elevation. The species prefers secondary-growth woodlands, brushy areas near water and dense willow canyon drainages. The habitats on the project site are below its elevational range, and do not support this species. MacGillivray's warbler would not be resident on-site. |

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| bald eagle (<i>Haliaeetus leucocephalus</i>) | FDL, SE, SFP (Nesting and wintering) | Not Present. Bald eagles typically nest in forested areas adjacent to large bodies of water and avoid heavily developed areas when possible. This species tolerates human activity when feeding, and may congregate around fish processing plants, dumps, and below dams where fish concentrate. Bald eagles prefer tall, mature coniferous or deciduous trees for perching, and can be seen in open, dry uplands if there is access to open water for fishing in winter. The CNDDDB reports a single bald eagle at Lake Matthews in 1975. They forage throughout the MSHCP Plan area now with increasing frequency. The nearest substantial bodies of water are Lake Matthews and Lake Perris. Suitable habitat is not present on-site. This eagle would not be expected to occur on-site. |
| yellow-breasted chat (<i>Icteria virens</i>) | SSC (Nesting) Third Priority | Not Present. This species prefers shrubby riparian habitats, especially in the vicinity of lowland watercourses. The cell of riparian vegetation on-site might serve as a migratory stopover. The species is not expected to occur on-site as the riparian vegetation is not structurally suitable and too small in extent. The organism has not been detected on the property. |
| loggerhead shrike (<i>Lanius ludovicianus</i>) | SSC (Nesting) Second Priority | Not Present. This MSHCP-covered species has not been detected on-site, and would not be expected, given the lack of expansive open habitat preferred by this bird. The CNDDDB notes a population of approximately 10 – 15 pairs (1994) between Trautwein Road and the former Highway 395 (now the 215) in annual grasslands with willow riparian and sage scrub nearby. They are described as nesting in mulefat, coyote brush, and Junipers. The subject property lies within the loggerhead shrike's year-round range and it likely still occurs nearby in MSHCP-designated conservation areas. This species occurs in a variety of habitats, but prefers open areas with short vegetation. The loggerhead shrike is often referred to as the "butcher bird," because of its tendency to impale prey items on thorns, barb wire fencing, other sharp edges, to be consumed later. This species preys on arthropods, amphibians, and small reptiles, birds, and mammals. We believe the remnant habitat on-site is too small and isolated now to support the species. Suitable habitat is not present on-site. |

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| Lincoln's sparrow - breeding (<i>Melospiza lincolni</i>) | This species has not formal federal or state governmental listing status | Low. The Lincoln's sparrow has a sparse and widespread distribution throughout the MSHCP Plan Area within a wide variety of habitats. This species occurs within the lowland and foothills of the Plan Area as a transient in the spring and fall and may overwinter within the area. This sparrow prefers dense, low underbrush often in disturbed edges with grasses and weeds mixed with shrubs. It occurs in a variety of habitats including willow-sedge swamp, scrub-meadow, and flat land aspen. Breeding in southern California occurs in wet montane meadows of corn lily, sedges and low willows. At lower elevations, this organism prefers mesic willow shrubs and can be found in mixed deciduous groves such as aspen and cottonwoods, mixed shrub-willows, bogs as well as a variety of other riparian habitats. Suitable habitat is absent. No Lincoln sparrows were observed or heard. |
| black-crowned night heron (<i>Nycticorax nycticorax</i>) | SSA (Nesting Colony) | Not Present. This MSHCP-covered species would not occur on-site. This bird is a fairly common year-round resident in lowlands and foothills throughout the state. It occurs in freshwater marshes, coastal mudflats, shores of lakes and rivers, estuaries, and rocky shores, where it forages on a variety of organisms including small fish, crustaceans, aquatic invertebrates, amphibians, reptiles, small mammals, and rarely young birds. It breeds from the Oregon border to San Diego County. They roost in tall bulrushes and tules, but will also roost in tall trees including conifers, oaks, and <i>Eucalyptus</i> . Suitable habitat is absent. |
| mountain quail (<i>Oreortyx pictus</i>) | This species has no formal federal or state governmental listing status | Not Present. The mountain quail has a wide distribution within all of the mountain ranges west of the deserts and of the northern interior of California. It inhabits montane chaparral and brushy vegetation within coniferous forests. This species may occur throughout a greater portion of suitable habitat within the MSHCP Plan Area, but no records exist in the MSHCP database. Suitable habitat is not present on-site, and the subject property is below this species' known geographic range. |
| Nashville warbler (<i>Oreothlypis ruficapilla</i>) Formerly <i>Vermivora ruficapilla</i> | This species has no formal federal or state governmental listing status | Not Present (Low Migratory Occurrence Potential). The Nashville warbler likely breeds in the San Bernardino National Forest within the Plan Area. This species is widely distributed but uncommon during migration periods. This warbler uses a variety of habitats within montane regions for breeding, including chaparral, riparian, deciduous woodland and coniferous woodland, and occurs in a variety of habitats during migration in all regions including brush and scrub habitats, desert scrub and wooded areas. Suitable habitat is absent. The subject property is outside of this species' known breeding range, although this species could utilize this site as a migratory stopover |

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| osprey (<i>Pandion haliaetus</i>) | SWL (Nesting) | Not Present. This species is an uncommon winter visitor along the coast of southern California. Breeding areas are largely limited to northern California. This species is associated strictly with large, fish-bearing waters. Suitable habitat is not present on the subject property. |
| double-crested cormorant (<i>Phalacrocorax auritus</i>) | SWL (Nesting Colony) | Not Present. The double-crested cormorant is a communal nester and rookeries are located on rock ledges on cliffs, rugged slopes, and tall trees. Rookeries must be within five (5) to ten (10) miles of a dependable food source. No suitable rookery habitat is present on the subject property. This species does not occur on-site. |
| downy woodpecker (<i>Picoides pubescens</i>) | This species has not formal federal or state governmental listing status | Low. This MSHCP-covered species could occur on-site, but the property is not in a conservation cell and not designated for conservation. The downy woodpecker is sparsely distributed throughout the MSHCP Plan Area. This species utilizes riparian scrub, forest and woodland, and oak woodland and forest. Suitable support habitat is not extensively enough to support this woodpecker, and this woodpecker was not detected on the subject property. |
| white-faced ibis (<i>Plegadis chihi</i>) | SWL (Nesting Colony) | Not Present (Low Foraging Potential). The white-faced ibis is sparsely distributed throughout the Riverside lowlands of the MSHCP Plan Area. It typically breeds in freshwater marshes. The species utilizes a wide variety of habitats for foraging during winter and transient visits including agricultural land, grassland, and areas at the edges of drainages. Suitable habitat for the species is not present. |
| coastal California gnatcatcher (<i>Poliophtila californica californica</i>) | FT, SSC | Not Present. This MSHCP-covered species occurs in western Riverside County; however, the California gnatcatcher is a habitat specialist in that it requires sage scrub which is absent on-site. The CNDDDB has several records near Harford Springs Park to the west of the Project site in Riversidean sage scrub. It is not difficult to detect during breeding season as it defends established habitat during breeding season and responds to a number of vocalizations. This subspecies would not occur on the property due to area development and historic removal of scrub habitat in the area. Suitable scrub habitat is absent on-site. |

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| purple martin (<i>Progne subis</i>) | SSC (Nesting) Second Priority | Not Present. The purple martin has been recorded in very low numbers spread widely over the Plan Area. This species is typically associated with water, either within a drainage or open water body. Potential nesting habitat includes riparian and oak woodland, montane coniferous forests, and human structures with habitable crevices and openings, and appropriately-sized colonial bird nesting houses. Suitable habitat for purple martin nesting is absent. Purple martin is susceptible to harassment from non-native sparrows and starlings, and rare enough that it would not be expected to nest on or near the subject property so close to an urban area. This easily-detected species does not occur on the project site. |
| yellow warbler (<i>Setophaga petechia</i>) Formerly known as <i>Dendroica petechia brewsteri</i> | SSC (Nesting) Second Priority | Low. This MSHCP-covered species occurs in riparian scrub and woodlands, which are present but limited to less than one-half acre on-site. This species breeds in southern California in the dense understory of riparian thickets. Yellow warbler populations have been severely impacted by brown-headed cowbird parasitism. We would not expect the species to occur at this location due to the underdeveloped condition of riparian scrub on-site. This species has not been detected on-site. |
| Williamson's sapsucker (<i>Sphyrapicus thyroideus</i>) | This species has no formal federal or state governmental listing status | Not Present. This species has declined throughout its' range presumably from loss of large snags for nesting. Habitat includes montane coniferous forest dominated by lodge pole pines and firs, and oak woodlands and forests in the San Bernardino and San Jacinto Mountains. Suitable habitat is not present on-site, and the subject property is outside this species' known range. Williamson's sapsucker was not detected on the project site. |
| California spotted owl (<i>Strix occidentalis occidentalis</i>) | SSC Second Priority | Not Present. The California spotted owl has a sparse distribution within the Santa Ana Mountains, San Bernardino Mountains and the San Jacinto Mountains within the MSHCP Plan Area within montane coniferous forest and oak-deciduous woodlands and forests. Suitable habitat is not present on-site, and the subject property is outside this owl's known geographic range. This subspecies would not occur on the subject property. |
| tree swallow (<i>Tachycineta bicolor</i>) | This species has no formal federal or state governmental listing status | Low. This MSHCP-covered species was not detected on-site, and the property is not in a conservation cell and not designated for conservation. The tree swallow is widely but sparsely distributed throughout the MSHCP Plan Area. Habitat characteristics include open water for foraging and riparian scrub and water-associated woodland and forest for nesting; these habitat types do not occur on or near the property. This species could forage on-site but would not expect to nest. |

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| least Bell's vireo (<i>Vireo bellii pusillus</i>) | FE, SE | Not Present. This riparian-obligate subspecies generally requires less-disturbed areas of dense willow-associated riparian habitat and prefers areas with standing water. CNDDDB records include detections in Mockingbird Canyon (2015) to the south and west. The nearest CNDDDB location is about 2.5 miles south of the project site between Barton and Cole Avenue in Mead Valley (2015). The small riparian cells on-site do not support standing water even seasonally, and is much too small to support a nesting pair. This subspecies does not occur on-site. |
| great egret (<i>Ardea alba</i>) | SSA (Nesting Colony) | Not Present – Not Nesting. The great egret is found worldwide. They nest in colonies in trees and shrubs over water, and on islands. They prefer to feed in wetland habitats including streams, lakes, ponds, marshes, and tide flats, but will take prey opportunistically. Prey items include fish, reptiles, amphibians, birds, and small mammals. Suitable habitat is not present on-site. Nesting colonies are not present on-site due to lack of ponds or streams with standing water. |
| oak titmouse (<i>Baeolophus inornatus</i>) | SSA (Nesting) | Not Present. The oak titmouse resides in warm, open, dry oak or oak-pine woodlands from southern Oregon to Baja California. It will use scrub oaks or other brush as long as woodlands are nearby. Oak titmice eat seeds and other plant materials as well as insects and other invertebrates. Mature oak woodlands are not present on-site; therefore, suitable habitat is not present on-site. This species has no potential of occurrence on-site. |
| Costa's hummingbird (<i>Calypte costae</i>) | SSA (Nesting) | Low. The subject property is located within the year-round range of this hummingbird species. Costa's hummingbird primarily occurs in the desert and semi-desert; but also occurs in arid brushy foothills and chaparral, and in adjacent mountains, open meadows and gardens during migration and winter. This species has a low probability of occurrence on-site due to the paucity of flowering plants, and the limited foraging resources on-site. |
| snowy egret (<i>Egretta thula</i>) | SSA (Nesting Colony) | Not Present. The snowy egret is generally found along the coast, but does occasionally occur inland along rivers, streams, and the Salton Sea. Preferred habitats include saltwater marshes, tidal flats, coastal lagoons, and the margins of lakes, rivers, and streams. These habitat types are absent on-site and in the immediate area. Their preferred diet is aquatic invertebrates and insects. Standing water is not present on the subject property. Foraging habitats are not particularly suitable. This species has not been detected on-site. |

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| red-breasted sapsucker (<i>Sphyrapicus ruber</i>) | SSA (Nesting) | Not Present. This sap-dependent species occurs in mixed coniferous forests near the coast, and mixed deciduous woodlands in the interior mountains of California. They forage by drilling holes in trees, then later returning to drink sap and eat insects attracted to the sap. They commonly breed in Northern California and the Sierra-Nevada Mountains from sea level to about 2750 meters in elevation. In Southern California this species is limited to breeding in higher mountainous regions (i.e., San Gabriel Mountains, San Bernardino Mountains, and San Jacinto Mountains). Suitable nesting habitat is not present, and the subject property is located outside of this species' known breeding range; therefore, this species does not nest on the subject property. |
| Lawrence's goldfinch (<i>Spinus lawrencei</i>) | SSA (Nesting) | Low (Moderate Migratory Occurrence Potential). This species occurs in the vicinity of the subject property during the nesting season. Suitable habitat is comprised of open woodlands, chaparral and weedy fields. Although marginally suitable nesting habitat is present, this species has a low probability of nesting on the subject property due to the limited extent of suitable habitat present. Additionally, this species has not been detected on-site. This notwithstanding, Lawrence's Goldfinch has a moderate potential of utilizing the subject property as a migratory stopover. |

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| Mammals | | |
| coyote (<i>Canis latrans</i>) | This species has no formal federal or state governmental listing status | Present. This MSHCP-covered species has been detected on-site, but coyote is common and widespread throughout the Plan Area. It occurs in all areas of the Plan Area except the most highly urbanized commercial and industrial areas. This species is highly tolerant of human activity and coexists well with humans unless trapped, hunted or otherwise harassed (e.g., disturbance of breeding dens). It would not den on-site due to human presence and periodic discing. |
| northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>) | SSC | Low. This MSHCP-covered species could occur on-site, but the degraded nature and plant density of the grassland on-site due to non-native grass and herb invasion may preclude it from being on the property. The northwestern San Diego pocket mouse occurs in sandy, herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and in sagebrush. The CNDDDB reports several nearby detections at the San Jacinto Wildlife Refuge, along the Ramona Expressway near the San Jacinto River, and just east of Lake Perris. Marginally suitable habitat is present on-site, however, isolation and periodic discing likely preclude its presence. Surveys are not required in this area of the MSHCP. |
| Earthquake Merriam's kangaroo rat (<i>Dipodomys merriami collinus</i>) Also called the Aguanga kangaroo rat | SSA | Not Present. The Earthquake Merriam's kangaroo rat has a narrow distribution within western Riverside County, with known localities in Temecula Creek in the Aguanga area and Wilson Creek in the Sage area. It is typically found in Riversidean alluvial fan sage scrub, but may occur in Riversidean sage scrub, chaparral and grassland in uplands and tributaries near Riversidean alluvial fan sage scrub habitats. Suitable habitat is not present on-site; therefore this subspecies would not be expected to occur on the subject property. |
| San Bernardino kangaroo rat (<i>Dipodomys merriami parvus</i>) | FE, SSC | Not Present. The San Bernardino kangaroo rat has a narrow distribution within western Riverside County, being primarily restricted to 1) the San Jacinto River from around Highway 79 (Lamb Canyon Road/Sanderson Avenue) and 2) Bautista Creek from around Bautista Dam to the north and the Hixon Flat trailhead to the south. This kangaroo rat primarily utilizes Riversidean alluvial fan sage scrub, but can also frequent nearby Riversidean upland sage scrub, chaparral and grassland in uplands and tributaries. Suitable habitat is not present on-site; therefore, this subspecies would not be expected to occur on the subject property. |

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| Dulzura kangaroo rat (<i>Dipodomys simulans</i>) | SSA | Moderate. This MSHCP-covered species might potentially occur on-site, but the property is not in a conservation cell and not designated for conservation. The Dulzura kangaroo rat occurs throughout western Riverside County in coastal sage scrub (including upland sage scrub and alluvial fan sage scrub), sage scrub/grassland ecotones, chaparral, and desert scrubs up to 2,600 feet in elevation. This species is considered fairly common in suitable habitat. Somewhat suitable habitat is present on-site, but we did not detect <i>Dipodomys</i> burrows with frequency. |
| Stephens' kangaroo rat (<i>Dipodomys stephensi</i>) | FE, ST | Moderate. This MSHCP-covered species could occur on-site, but the property is not in a conservation cell and not designated for conservation. The Stephens' kangaroo rat occurs primarily in annual and perennial grasslands, but also occurs in open coastal sage scrub. Preferred habitat species include buckwheat (<i>Eriogonum</i> sp.), chamise (<i>Adenostoma fasciculatum</i>), brome and filaree (<i>Erodium</i> sp.). Suitable habitat is present on-site, and burrows typical of kangaroo rats are present. Multiple CNDDDB occurrences suggest broad distribution across the Lake Matthews Estelle Mountain area and eastward toward Perris, Mead Valley and Moreno Valley. The nearest CNDDDB location is 1.2 miles south of the Trautwein Rd/Van Buren Blvd intersection (1988). Somewhat suitable habitat is present on-site, but we did not detect <i>Dipodomys</i> burrows with frequency. Should they occur mitigation is already in place via fee payment for SKR impacts. |
| San Bernardino flying squirrel (<i>Glaucomys oregonensis californicus</i>) Formerly <i>Glaucomys sabrinus californicus</i> | SSC | Not Present. This MSHCP-covered species occurs in Riverside County; however, habitat for the San Bernardino flying squirrel in the Plan Area only occurs in the San Jacinto Mountains. Suitable habitat is not present on-site. This squirrel would, therefore, not occur on the subject property. |

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| San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>) | SSC Addition to List | Low. This MSHCP-covered species occurs in intermediate canopy stages of shrub habitats and open shrub/herbaceous and tree/herbaceous edges in southern California coastal sage scrub habitats and agricultural lands. The black-tailed jackrabbit is common throughout the state; however, habitat loss and fragmentation in southern California has caused declines. This notwithstanding, all subspecies in California are legally hunted and seasons are open year-round with no limit of take. Although the small habitat areas on-site are structurally-suitable for the organism, jackrabbit does not persist in small habitat blocks like the one found on-site, especially within an urban environment. We do not expect for jackrabbit to persist in the area, and it was not detected. San Diego black-tailed jackrabbit was not observed on the subject property. |
| bobcat (<i>Lynx rufus</i>) | This species has no formal federal or state governmental listing status | Low. This MSHCP-covered species could occur on-site, but the general area in which the site is located has become quite isolated from larger habitat zones, rendering access to the site problematic. This secretive animal also does not frequent urban areas. The bobcat is widespread throughout the Plan Area. This species requires large expanses of relatively undisturbed brushy and rocky habitats near springs or other perennial water sources. Suitable foraging habitat is present on-site, although the bobcat was not detected on the subject property. |
| long-tailed weasel (<i>Mustela frenata</i>) | This species has no formal federal or state governmental listing status | Low. This MSHCP-covered species could occur on-site but is an unlikely visitor due to habitat fragmentation in the area. The long-tailed weasel occurs throughout the Plan Area in virtually all types of habitat, including agricultural and disturbed areas. The small size and isolation of the site both indicate the species is very unlikely to occur in this area. It may occur wherever there is sufficient prey. Suitable habitat is present on-site, but this species was not detected on the subject property. |
| San Diego desert woodrat (<i>Neotoma lepida intermedia</i>) | SSC Addition to List | Low. This MSHCP-covered species may occur on-site, but one <i>Neotoma</i> nest observed likely belongs to the dusky-footed woodrat in the riparian cell. This subspecies is rather widely distributed throughout southern California in sage scrub, chaparral and desert regions. It prefers rocky areas, nesting in cracks and crevices; this type of habitat is not present on-site. The San Diego desert woodrat is not believed to occur on-site. |

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| Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>) | SSC Highest Priority | Low. This MSHCP-covered species can occur in western Riverside County; however, focused surveys are not required for the subject property. Pocket mice are the smallest members of the family Heteromyidae. Los Angeles pocket mouse occurs on open ground with fine, sandy soils in low elevation grasslands and open canopy sage scrub. Relevant CNDDDB records include the Box Springs area. This subspecies may not dig extensive burrows, and prefers hiding under weeds and dead leaves instead. Marginally suitable habitat is present on-site, but trapping was not required or conducted for this subspecies on the subject property. |
| mountain lion (<i>Puma concolor</i>) | This species has no formal federal or state governmental listing status | Not Present. This MSHCP-covered species occurs in more remote areas of southwest Riverside County. The mountain lion is known from the Santa Ana Mountains, San Bernardino Mountains, San Jacinto Mountains, Santa Rosa Mountains, and brushy foothills and riparian areas that may serve as habitat connections between mountainous areas. It has also been seen in lowland areas including Lake Mathews-Estelle Mountain, Lake Skinner-Diamond Valley Lake, the Badlands and the San Jacinto Wildlife Area. This species requires large expanses of relatively undisturbed brushy and rocky habitats where its main prey – mule deer – also occur. The site is not suitable for lion foraging. |
| brush rabbit (<i>Sylvilagus bachmani</i>) | This species has no formal federal or state governmental listing status | Low. This MSHCP-covered species was not observed on-site, although Audubon's cottontail was fairly common. The brush rabbit occurs throughout the Plan Area. Suitable habitat includes chaparral, coastal sage scrub, riparian and woodland habitats, coniferous forest, and agricultural areas (grove/orchard and field crops). This species occurs at all elevations up to 6,000 feet. Suitable habitat is present on-site, although the brush rabbit was not detected on the subject property. |
| silver-haired bat (<i>Lasiorycteris noctivagans</i>) | SSA | Not Present. This species occurs primarily within or near forested or woodland areas, usually near a water source. It roosts in loose bark, secondary cavities (i.e., unused woodpecker holes), and hollow trees. The woodland habitat on the subject property is quite small, and marginal, suggesting it is not present on-site. |
| hoary bat (<i>Lasiurus cinereus</i>) | SSA | Low. This species prefers deciduous and coniferous forests, and often roosts in those types of trees. Moths are the preferred food item; however, other species of flying insects and occasionally small bat species will be consumed. This species has a low potential of occurring and potentially roosting on the subject property. Habitat conditions are not suitable for this species. |

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| western small-footed myotis (<i>Myotis ciliolabrum</i>) | SSA | Low. The western small-footed myotis roosts singly or in small communal groups in rock crevices, mines, caves, under exfoliating bark, or in buildings. This species consumes a wide variety of flying insects including moths and beetles. Suitable habitat includes desert, short-grass prairies, riparian areas, and coniferous forests. Marginally suitable roost sites, such as rock crevices and area barns or old structures, are situated near the subject property. Habitats on the subject property are marginal; therefore, this species has a low possibility of occurrence on-site. Roosting habitat is absent on-site. |
| long-eared myotis (<i>Myotis evotis</i>) | SSA | Not Present. The long-eared myotis occurs mainly in forested areas up to 3000 meters. This species gleans moths and beetles from vegetation. Researchers believe that this species may rely more upon hearing to locate prey, rather than echolocation. The long-eared myotis roosts in a variety of areas, but the habitat on the subject property is not suitable. Site conditions are such that sustained presence is unlikely for this species on the subject property. |
| fringed myotis (<i>Myotis thysanodes</i>) | SSA | Not Present. The fringed myotis occurs in oak, pinyon, and ponderosa pine forests and desert scrub from 1,200 to 2,750 meters in elevation. This species captures prey in flight; however, it may also glean moths and beetles from vegetation. The fringed myotis roosts in caves, mines, and buildings. The habitat on the subject property is not suitable; therefore this bat would not be expected to occur on-site. |
| Yuma myotis (<i>Myotis yumanensis</i>) | SSA | Low. The Yuma myotis roosts in large groups in vertical cracks in cliff faces, buildings, and under bridges. This species' distribution is often closely tied to bodies of water. Suitable habitat includes humid forest to desert. This species has a low potential of foraging over the subject property. Roosting habitat is absent on-site. Area urbanization and lack of specific host resources suggest it would not occur on-site. |

Protection of Narrow Endemic Plant Species (MSHCP Section 6.1.3)

When the MSHCP was adopted, it was acknowledged that the MSHCP database did not provide a sufficient level of detail required to assess presence or absence of many endemic plant species and subsequently to target properties which support these species for conservation. As a result, assumptions about known habitat requirements and plant distributions within the Plan Area were made and survey requirements to assess properties for endemic plant presence were established. Properties which support narrow endemics have specific interim conservation requirements until it is established that adequate conservation of these species has occurred.

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The Project site did not contain any parcels that were required to conduct habitat assessments and focused surveys for any of the specified endemic plants. As demonstrated in Table 4 above, the property did not contain the habitat components necessary to support these species. No further compliance actions are necessary for this Project site with regard to the protection of narrow endemic plant species.

Urban/Wildlands Interface (MSHCP Section 6.1.4)

MSHCP Section 6.1.4 provides a framework for locating development projects near conservation areas and preventing the incidental impacts of development (e.g., use of invasive plant species, lighting impacts, noise impacts, and downstream drainage consequences). The Project site, however, is not near any existing, proposed or reasonably-foreseeable conservation areas and the guidelines do not apply.

Fuels Management (MSHCP Section 6.4)

The MSHCP states: *"Fuels management focuses on hazard reduction for humans and their property... management ...shall continue in a manner that is compatible with public safety and conservation of biological resources."* MSHCP Section 6.4 outlines a framework for working to minimize effects of establishing and maintaining fuel modification zones within designated conservation areas. Because the Project site proposes no conservation on-site and it is not adjacent or near to any existing or proposed conservation area, Section 6.4 does not apply to the proposed project.

5.0 BIOGEOGRAPHY, CORRIDORS, AND AREA WILDLIFE

BACKGROUND AND THEORY

Biogeographic theory as a discipline has given rise to concepts such as biodiversity, extirpation event causes, wildlife corridors, habitat patches and fragmentation, edge effect, and reserve design and management. Land use decisions increasingly must consider not only the direct effects to organisms impacted by project implementation, but longer term and less obvious effects to organismal population vitality and organism dispersal and movement.

Movement pathways (small scale, or "micro-corridors") and corridors (large scale, or "macro-corridors") are differentiated by their roles. Actual wildlife corridors are often "hard-wired" into a species, such as caribou (*Rangifer tarandus*) moving across the tundra in seasonal patterns. Corridors are essential to the maintenance of population vigor, reproduction, and genetic variability. Corridors may be as large and diverse as the Pacific Flyway for migratory bird species, or may be smaller for animals moving between montane and valley environments on a seasonal basis, such as elk or deer seeking food resources. Movement pathways (micro-corridors) are necessary in the short-term success of mobile organisms such as mountain lion (*Puma concolor*), which require large ranges for their survival but are generally reluctant to move through an

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inhospitable urban landscape. Micro-corridors and movement pathways are generally not “hard-wired” into a species. Movement pathways represent paths to immediate necessary resources, such as water, forage, or shelter. Movement pathways are necessary variations in the geographic routine of an organism. The path is not necessarily a defined linear segment; it is an area of opportunity that an organism perceives as necessary and reasonably safe to move through in order to exploit a resource, such as water or shelter.

Biogeographic theory maintains that any habitat patch, or island, which experiences genetic isolation, will undergo eventual extinction if the habitat unit is too small to support genetic variability in any given species. It is not the movement of the individual animal which is important; it is the movement of genetic material (including floral dispersal mechanisms) on a per species basis through an ecosystem which is important over time. The connection is vital not so that individual animals can move freely (although that can be true with meso-predators like bobcat (*Lynx rufus*) but so that floral and faunal genetic exchange and corresponding genetic variability carried with the individual species can be achieved incrementally throughout the habitat through reproductive processes.

BIOGEOGRAPHIC SETTING

The subject property is located atop a very small surface feature of the California batholith (locally referred to as the Perris pluton), a large Mesozoic Era igneous intrusion into the crust of the earth which has, over tens of millions of years, been uplifted between major fault systems. These systems include the San Andreas/San Jacinto system to the east and the Elsinore-Whittier fault system and small local faults to the west.

Numerous fault systems throughout the state have altered the landscape to create multiple isolated river valleys and hill systems which support evolved floral and faunal assemblages unique from other nearby areas by virtue of ongoing uplift and isolation. This is the primary reason we find rapid evolution of many species such as kangaroo rats (*Dipodomys* sp.), pocket mice (*Perognathus* sp.), and annual buckwheats (*Eriogonum* sp.) across the state. Isolation of species between valleys and montane systems resulted in specialization and subsequent speciation thereby producing a high diversity of plants and animals across the southern California, as well as the entire state.

Exhibit 7 - Biogeographic Aerial Photo portrays a generalized depiction of MSHCP-designated reserves, quasi-public lands (like Lake Matthews/Estelle Mountain Reserve and Lake Perris State Recreation Area to the west and east, respectively, from the Project site), and very generalized connective linkages in Criteria Areas and Plan Areas where reserve assembly will also occur. The Project site, as shown in the exhibit, is not within or near these conservation areas and habitat linkages. The Project, therefore, would not affect connectivity between core reserves or the habitat linkages between the core areas.

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WILDLIFE UTILIZATION OF CORRIDORS

Wildlife use of corridors may be fixed or flexible, depending upon the type of organism and the size and complexity of the corridor zone. Animals that move along corridors as part of an evolutionary-based pattern of migration or dispersal may be genetically programmed to follow predetermined and sometimes ancient migration routes (i.e., "hard-wired", or for example, as with anadromous fish species like spawning salmon [*Oncorhynchus* spp.]). Animals with hard-wired behavior patterns usually have little or no individual ability to modify their behavior, even in the face of abrupt physical changes or barriers. When confronted with impassible barriers, they may have no appropriate alternative response behaviorally. In such cases, actions that physically obstruct corridors may result in population dislocation, inability to reach essential seasonal resource areas, loss of individual animals, and overall population declines.

Organisms are generally driven to disperse through mechanisms such as the scarcity of support resources (for example, food, water, microhabitats, shelter), dispersal of young from parental territories, migratory genetic programming, and accidental dispersal, such as flooding events carrying individuals to downstream locations, fire-driven flight, or similar mechanisms. Organisms sometimes disperse along defined corridors (for example, migratory routes in the Arctic for caribou or through connected stream systems in the case of amphibians dependent on moist environments). Highly mobile terrestrial generalists (for example, mountain lion or mule deer [*Odocoileus hemionus*] can have large ranges but move based on food availability and competition from members of their own species. Rattlesnakes [*Crotalus* spp.], woodrats [*Neotoma* spp.], and pocket mice [*Chaetodipus* spp.]) do not migrate or move substantial distances. Some moderately-mobile organisms (raccoons, and jack-rabbits) will move if seasonal, reproductive, or ecological factors necessitate movement in order to locate and exploit critical support resources.

Connectivity and the Project Site: The project site is located in the Orangecrest neighborhood, in an area undergoing expanding urbanization due to increasing population and development pressures in the City and Riverside County. As such, the project site is not situated to serve as a movement or migratory corridor, and the MSHCP did not specify any critical habitat connectivity, constrained or otherwise, in the immediate area. Additionally, *Exhibit 8 - RCA MSHCP Information Map – Public Quasi Public Conserved Areas Lands* shows the nearest intended connective habitat areas related to Sycamore Canyon Wilderness Park habitat areas. Sycamore Canyon is a different watershed than the Project site, which is in the Mockingbird Canyon watershed. Recent mass grading and development to the east of the Project site now precludes overland connectivity between the Project area and conserved lands to the east and north. Lastly, we found no evidence to support the possibility that the subject site functions as a corridor or movement pathway for any MSHCP-covered animals.

WILDLIFE IN THE VICINITY OF THE SUBJECT PROPERTY

Due to the relatively level terrain associated with the Gavilan, considerable natural habitat area in the general region has been lost due to agricultural and other development. The remaining habitats found

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on-site and in remnant undeveloped areas of this district generally provide habitat for a decreased diversity of southern California wildlife which formerly were more numerous and diverse.

Several MSHCP-covered and regulatory status organisms are known to occur in larger and more intact habitat blocks, including burrowing owl, Stephen's kangaroo rat (*Dipodomys stephensi*), western spadefoot (*Spea hammondi*), ferruginous hawk (*Buteo regalis*), California horned lark (*Eremophila alpestris actia*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*).

Wildlife known to occur in the vicinity includes larger mobile species such as coyote, Audubon's cottontail, and numerous species of birds such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*) and numerous songbird species. Snakes and lizards would include coastal whiptail (*Aspidoscelis tigris stejnegeri*), western fence lizard (*Sceloporus occidentalis*), site-blotched lizard (*Uta stansburiana*), California striped racer (*Masticophis lateralis lateralis*), southern Pacific rattlesnake (*Crotalus oreganus helleri*), and San Diego gopher snake (*Pituophis catenifer annectens*), and others.

The Project site, however, is surrounded by both rural residential development and higher intensity development on all sides, therefore, fewer and fewer of these organisms are likely to occur on the site.

WILDLIFE WITHIN THE SUBJECT PROPERTY

Because the subject property was utilized for intensive agricultural purposes (citrus grove), habitat on-site is disturbed and supports dense non-native grasses and herbs. Of course, native species are also found. These grassland areas have a low to moderate value to sedentary wildlife and high value for raptors still foraging in this area, including hawks listed previously and nocturnal owls. The rock ornamental trees on-site provide perching habitat for red-tailed hawk, red-shouldered hawk, Cooper's hawk (*Accipiter cooperii*) and even possibly white-tailed kite (*Elanus leucurus*), though only red-tailed hawk and Coopers hawk were actually detected on-site. No raptor nesting on-site would be expected due to the relatively small size of trees on-site. The agricultural field on-site also provides suitable foraging habitat for California horned lark and loggerhead shrike (*Lanius ludovicianus*), but we consider occurrence of these two increasingly rare birds unlikely and only incidentally.

During the course of 2019 surveys, TERACOR field personnel have detected a number of avian species which utilize habitats on-site either year-round or seasonally. These species include red-tailed hawk, Cooper's hawk, lesser goldfinch (*Spinus psaltria*), California scrub-jay (*Aphelocoma californica*), house finch (*Haemorhous mexicanus*), American kestrel (*Falco sparverius*), and common raven (*Corvus corax*). Appendix B contains a complete list of birds detected as well as those which have the potential to occur on-site.

In addition to bird species that were easily detected and recorded, there are other animals that are less easy to observe that also likely occur within the 35.8 gross acre (32.54 net acre) property from time to

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time. These include the dusky-footed woodrat (*Neotoma fuscipes*) and bat species such as western yellow bat (*Lasiurus xanthinus*) and western mastiff bat (*Eumops perotis californicus*). Additionally, there are a couple of species of white-footed mice that could still occur on-site relictually (*Peromyscus* sp.), California kingsnake (*Lampropeltis californiae*), southern Pacific rattlesnake, red racer (*Masticophis flagellum piceus*), western toad (*Anaxyrus boreas*), and Pacific tree frog (*Pseudacris regilla*).

SPATIAL ANALYSIS AND BIOGEOGRAPHIC CONDITIONS

As shown in the previously-referenced *Exhibit 7 – Biogeographic Aerial Photograph* and discussed in the foregoing analysis, no existing wildlife movement corridors are present in the vicinity of the project site. Project implementation therefore would not result in the removal of any MSHCP-recognized existing corridors or habitat linkages. Localized movement of free-ranging animals would of course be affected via development of a residential project on currently vacant and open land.

6.0 POTENTIAL “WATERS” OF THE U.S. AND STATE OF CALIFORNIA

Please refer to the *Preliminary Jurisdictional Delineation and Determination* previously referenced on page 1 of this report for more detailed information that is summarized below.

As previously described, TERACOR field personnel identified five (5) potentially jurisdictional features on-site. These features have been internally labeled for reference purposes as Feature 1, Feature 2, Feature 3, Feature 4, Feature 5, and Feature 5A. Features and their potential Army Corps, RWQCB and CDFW jurisdictional areas are illustrated in the attached *Exhibit 13 – ACOE Non- Jurisdictional Features*, *Exhibit 14 – RWQCB Jurisdictional Areas* and *Exhibit 15 – CDFW Jurisdictional Areas*. Feature conditions recorded in the field are depicted in the attached *Exhibit 16 – Drainage Area Photos*. Based on foregoing the analysis in this report, TERACOR has made the following preliminary jurisdictional determinations.

Feature 1: Feature 1 is an artificial roadside ditch with an adjacent willow scrub cell. Based on our observations since 2016, the willow scrub cell is poor condition and in decline because a ditch has been re-trenched along Lurin Avenue and the trench diverts water away from the willow scrub area. The remaining jurisdictional area is **0.03 acre**.

Vegetation associated with Feature 1 includes red willow, Goodding's black willow, cattail (*Typha* sp.), curly dock (*Rumex crispus*), tamarisk (*Tamarix* sp.), rabbitfoot grass (*Polypogon monspeliensis*), common sunflower (*Helianthus annuus*), wild oat, agapanthus (*Agapanthus praecox*), cheeseweed, sow thistle (*Sonchus* sp.), crimson fountain grass and a juvenile Mexican fan palm (*Washingtonia robusta*). As described above, much of the red willow and Goodding's black willow trees, as well as tree.

According to the *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in*

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Rapanos v. United States & Carabell v. United States, dated 02 December 2008 ("2008 Guidance"), the Army Corps generally will not assert jurisdiction over roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. Additionally, Feature 1 is an ephemeral roadside ditch that reflects the guidance description and also is no longer regulated as an "ephemeral" feature under the 2020 *Navigable Waters Protection Rule*; therefore, TERACOR preliminarily determined that Feature 1 is not Army Corps jurisdictional.

The RWQCB and CDFW seem unlikely to assert jurisdiction over the willow cell as it appears the willow cell is no longer connected hydrologically and is in decline. The ditch is 329 linear feet long, and 1,498.25 square feet (**0.03 acre**) in size. We believe RWQCB and CDFW will likely assert jurisdictional over the **0.03 acre** ditch, but the willow cell appears hydrologically isolated and in decline, and not jurisdictional.

Feature 2: Feature 2 displays no actual bed and bank, but there is a winding swale through this portion of the site where evidence of surface flow (e.g., bent grass and minor drift deposits) are detectable after storm events. The upstream portion of Feature 2 is comprised only of grassy and herbaceous vegetation. Four small arroyo willows (*Salix lasiolepis*) are present in the swale.

Feature 2 is isolated with no discernable downstream connectivity. Due to its' isolation and ephemeral nature, it does not comprise "waters" of the U.S. Additionally, Feature 2 does not have an actual bed or bank. Field-staking for the feature has deflected mechanical discing since 2016 in the feature, and a bed and bank were still not present at the end of 2019.

Jurisdictional status with RWQCB and CDFW is uncertain but TERACOR's preliminary determination is that the feature is likely to be determined to be jurisdictional by both CDFW and RWQCB. It totals **0.10 acre**.

Feature 2 totals 329 linear feet. The swale (not including willow vegetation as would be calculated by the Corps) is (**0.03 acre**). The broader swale area, including the willow tree canopies and no clear evidence of regular interval surface flows, measured a total of 4,243 square feet (**0.10 acre**). Our preliminary determination is that the RWQCB will assert **0.03 acre** of jurisdiction at this location, and CDFW will assert **0.10 acre** of jurisdiction.

Feature 3: Feature 3 is located in the central portion of the subject property. It originates and terminates on-site. This feature is only slightly defined and it is disarticulated in the field. Flows eventually transition to sheetflow on-site. Feature 3 is therefore an isolated, **0.02 acre** erosional feature. Vegetation is dominated by non-native grasses with patchy tamarisk and a single emergent willow (*Salix* sp.). TERACOR utilized 27 stakes to mark the flowline associated with Feature 3.

According to the 2008 Guidance, the Army Corps generally does not assert jurisdiction over swales or erosional features with low volumes of flow. Because Feature 3 is an isolated erosional feature, TERACOR

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preliminarily determined that this feature does not fall under the jurisdiction of the Army Corps.

Feature 3 totals 552 linear feet. The total surface area of Feature 3 is 828 square feet (**0.02 acre**). We observed a slight feature in the field and on aerial photos, however, we detected no stream functions, values, or characteristics are present. TERACOR, therefore, determined Feature 3 is not jurisdictional for any agency.

Feature 4: Feature 4 is a roadside drainage ditch constructed in uplands that runs parallel to Mariposa Avenue. The ditch enters the site through a small partially-buried CMP outlet under Cole Avenue, and then conveys flows along the southern property boundary. Flows eventually enter a CMP inlet, which conveys flows under Mariposa Avenue and disperses nuisance runoff and stormwater into downstream properties in an uncontrolled fashion.

Feature 4 contains no riparian vegetation. It contains weedy, water-tolerant species such as curly dock (*Rumex crispis*), common sunflower, knotweed (*Polygonum areanstrum*) and dandelion (*Sonchus oleraceus*).

The Army Corps does not assert jurisdiction over small roadside drainage ditches with low volumes of flow. TERACOR therefore preliminarily determined that Feature 4 does not fall under the jurisdiction of the Army Corps. CDFW and RWQCB might assert jurisdiction over this feature due to the presence of a human-created bed and bank, but the ditch has been excavated in uplands, and likely not jurisdictional.

Feature 4 totals 646 linear feet. It has a total surface area of 3,448 square feet, or **0.08 acre**. It discharges in an uncontrolled fashion into private single-family residential lots, where it has an uncertain disposition downstream. We were not able to discern a streambed continuously through the residential neighborhood to any defined or mapped drainage over one-third mile to the south, therefore, not only is the feature artificially created in uplands, but it is isolated. It also has no riparian characteristics. We have concluded that CDFW or RWQCB are not likely to assert jurisdiction over this recently created, largely unvegetated, roadside drainage ditch.

Feature 5: The willow cell at this location is approximately **0.03 acre** in extent and is over-storied with willow and a single ash tree. Surface water collects during storm events along Lurin Avenue and then flows southward through a 0.12-acre broad grassy swale. The small willow cell and the grassy meadow where water flows broadly together comprise a total surface area of **0.13 acre**. The length of the grassy swale (366 feet) and willow cell (20 feet) is 386 linear feet

The Army Corps generally does not assert jurisdiction over small isolated human-induced willow trees along roadsides, or grassy swales, or features that do not display an ordinary high-water mark. Because Feature 5 is an isolated, ephemeral, and poorly-defined feature, we determined on a preliminary basis that the feature is not Corps jurisdictional.

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We were not able to discern a streambed continuously through the property past the point where water flows in a gentle swale during storm events. We also could not detect any connection to upper tributaries of Mockingbird Canyon, which are over one-third mile away. Feature 5 lacks a bed and bank. It is isolated, and aside from the **0.03 acre** willow cell, it has no riparian characteristics beyond the small **0.03 acre** willow cell. We have, therefore, concluded that the grassy swale is comprised of overland sheet-flow, not natural focused stream runoff, and that CDFW or RWQCB-jurisdiction is limited to **0.03 acre** willow cell along Lurin Avenue.

Feature 5A: This area was added at the request of CDFW and the U.S. Fish and Wildlife Service during consultations regarding MSHCP Riparian/Riverine resources. TERACOR discerned no connection, however, the Wildlife Agencies reviewed aerial photography in this Preliminary Jurisdictional Delineation and Determination and concluded a hydrological connection existed, therefore, Feature 5A was added between Feature 5 and the south property line. CDFW is likely to consider this **0.04 acre** area to qualify as a streambed.

All of TERACOR's preliminary jurisdictional determinations require confirmation by the agencies.

PRELIMINARY U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL AREA

TERACOR has preliminarily determined that Army Corps has no jurisdiction on-site. Features 1, 3 and 5 are not jurisdictional due to isolation. Features 1 and 4 are artificial roadside ditches and therefore, and as such would not have been considered Corps jurisdictional since 2008. Furthermore, the 2020 Navigable Waters Protection Rule generally precludes ephemeral "waters" from Corps regulatory purview.

Table 5 - Preliminary RWQCB Jurisdiction

| Preliminary RWQCB Jurisdiction | | |
|--------------------------------|--------------------------------|-------------------------------|
| | Acreage | Length |
| Feature 1 | 0.03 acre | 329 feet |
| Feature 2 | 0.03 acre | 329 feet |
| Feature 3 | 0.02 acre (Not Jurisdictional) | 552 feet (non-jurisdictional) |
| Feature 4 | 0.04 acre | 646 feet |
| Feature 5 | 0.03 acre | 20 feet (jurisdictional) |
| Feature 5A | 0.04 acre | 608 feet |
| TOTAL | 0.17 acre | 1932 feet |

California Department of Fish and Wildlife: Features 1 through 5 were all considered for California Department of Fish and Wildlife (CDFW, or Department) jurisdictional attributes. Only portions of 3 of the 5 features are likely to fall under the regulatory authority of the Department. There are several existent

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conditions that complicate jurisdictional status. First, site alterations over several decades have obscured the original condition of the site. Secondly, native plant communities are almost absent. Additionally, area residential development to the north has increased runoff values during storm events. The increase in hard surface area that accompanies development also contributes to urban “slobber” or daily nuisance runoff.

TERACOR determined on a preliminary basis that the total CDFW jurisdictional area on-site is 0.14 acre, including defined bed and bank as well as riparian tree canopy. The Preliminary Jurisdictional Delineation and Determination (TERACOR, 29 December 2019) (revised per City of Riverside comments 24 July 2020) evaluated jurisdictional criteria thoroughly, in light of current practice and procedures endorsed by the Department. CDFW will be reviewing TERACOR delineation data at the time a Lake or Streambed Alteration Notification is submitted by the Applicant. The Department cannot make a decision on the authorization, however, until such time as the City as Lead Agency makes a final CEQA determination.

Table 6 - Preliminary CDFW Jurisdiction

| Preliminary CDFW Jurisdiction | | |
|-------------------------------|--------------------------------|-------------------------------|
| | Acreage | Length |
| Feature 1 | 0.03 acre | 329 feet |
| Feature 2 | 0.10 acre | 329 feet |
| Feature 3 | 0.02 acre (non-jurisdictional) | 552 feet (non-jurisdictional) |
| Feature 4 | 0.08 | 646 feet |
| Feature 5 | 0.03 acre | 20 feet |
| Feature 5A | 0.04 acre | 608 feet |
| TOTAL | 0.28 acre | 1932 feet |

7.0 MSHCP PROJECT IMPACTS AND RECOMMENDED MITIGATION MEASURES

MSHCP PROJECT IMPACTS

Project-associated impacts within the MSHCP-Plan Area are typically offset and mitigated via a number of processes. When projects are within Criteria Cells various combinations of fee-payment, land dedication/purchase, and other mechanisms as applicable can be utilized to offset impacts to sensitive species and habitats of all types. Some project areas are required to survey for specific biological resources, such as burrowing owls or fairy shrimp. When those focused surveys are positive and target organisms or their habitats are identified on-site, then on-site land conservation and often dedication and other mitigation measures unique to specific resources may be necessary.

Tentative Tract No. 37731, however, is not within a Criteria Cell, therefore there are no outright land dedications which might otherwise be required. There are no MSHCP species present which require

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protection on the property. There are no burrowing owls present, therefore, at this time no specific BUOW-related mitigation is necessary. The Riparian/Riverine area is comprised of fragmented cells which are poor in habitat quality. These cells are very small in extent, and do not warrant conservation because reasonable large scale mitigation is available at the Riverpark Mitigation Bank within another subunit of the Santa Ana River watershed; the San Jacinto River watershed. MSHCP fee payment is, of course, required for all projects located within the MSHCP Plan Area in order to offset the overall and on-going County-wide loss of biological resources regionally. This report describes the loss of 33.62 acres of native or naturalized habitat area that would occur with the implementation of Tentative Tract No. 37731.

Project implementation would result in the removal of 33.62 acres of native and semi-naturalized habitat. Of that 33.62 acres, 33.05 acres consist of upland habitats comprised of annual brome grasslands, fiddleneck wildflower field and ornamental trees. 0.2 acres are comprised of willow riparian scrub vegetation. These native and naturalized upland habitat areas would be permanently removed. Impacts to these upland vegetation communities would be mitigated as described above, through MSHCP-fee and SKR-fee payment.

TERACOR and the Wildlife Agencies identified **0.28 acre** of Riparian Riverine habitat that is present on the Project site. Mitigation will occur off-site as evaluated in the DBESP and discussed below. This information was reviewed first by the City, then reviewed by the Wildlife Agencies. The review and approval process is described in MSHCP Section 6.1.2 as follows:

"Prior to Approval of Biologically Equivalent or Superior Preservation Determinations, the Wildlife Agencies shall be notified and be provided a 60-day review and response period. A written record of determinations shall be maintained and shall be included in the annual reporting documentation prepared by the Permittees and submitted to the Wildlife Agencies as set forth in Section 6.11 of [the MSHCP] ..."

Therefore, the report entitled: *Determination of Biologically Equivalent or Superior Preservation (DBESP) For Tentative Tract No. 37731 in the City of Riverside, CA*, dated 17 January 2020 (revised per City of Riverside comments 24 July 2020) has been reviewed by the Wildlife Agencies and revised as stated in other reports. Mitigation has been proposed and approved in the DBESP to identify impacts to Riparian/Riverine resources. That mitigation is identified below.

The proposed project would not directly affect any MSHCP-covered plant and animal species which are dependent on the habitat types present in Riparian/Riverine areas on-site, but incidental use of the Riparian Riverine area is possible by animals such as Stephens kangaroo rat, coyote, and several bird species. These impacts, however, are what the MSHCP anticipated in areas not situated in Criteria Area Cells (i.e., potential future MSHCP Reserve lands). Impacts are primarily offset through MSHCP fee payment, SKR fee payment, and via Wildlife Agency-approved purchase of off-site mitigation bank credits for impacts to Riparian/Riverine resources. Additionally, development of the Project site requires adherence to BMP's to avoid impacts to other natural areas which could otherwise occur through contamination of

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atmospheric and water resources. Adherence to standard mitigation measures will avoid impacts to nesting birds. Lastly, invasive plants that could potentially be used in landscape plan for the Project will not be allowed, thus avoiding accidental introduction of exotic invasive species into the local environment from the Project site.

Riparian/Riverine impacts comprise a total of **0.28 acre**. The Project Applicant proposes to mitigate the impacts to **0.28 acre** of riparian/riverine area with the purchase of **0.28 acre** of rehabilitation credits and purchase of **0.28 acre** of re-establishment credits at the Riverpark Mitigation Bank.

With the implementation of the mitigation measures described below, none of these effects are considered to be significant.

“WATERS” OF THE U.S. AND STATE OF CALIFORNIA PROJECT IMPACTS

U.S. Army Corps of Engineers: The subject property is not expected to be considered jurisdictional under current regulations, rules, guidance, and practice of the U.S. Army Corps of Engineers (Corps). Should regulatory conditions change in the future that would render drainage features on-site jurisdictional, the affected area would not be expected to exceed 0.07 acre of “waters” of the U.S. The calculation would be expected to be very similar in magnitude to 0.07 acre (i.e., less than a one-tenth acre) to that determined by TERACOR.

Santa Ana Regional Water Quality Board: The total preliminary RWQCB “waters” on-site is **0.17 acre**. This acreage is subject to confirmation by the RWQCB, but a final area calculation would be expected to be very similar in magnitude to **0.17 acre** to that determined by TERACOR.

California Department of Fish and Wildlife: Site alterations over several decades have obscured the original condition of the site. Native plant communities are almost absent; naturally-occurring streams do not occur on the Project site. TERACOR determined on a preliminary basis that the total CDFW jurisdictional area on-site is 0.16 acre, including defined bed and bank as well as riparian tree canopy. This calculation will need to be verified by CDFW during future consultations; minor non-significant adjustments are possible. Mitigation at a 2:1 ratio is recommended.

RECOMMENDED MITIGATION MEASURES

1. Prior to the commencement of grading activities, the developer of the site shall make the appropriate mitigation fee payment into the MSHCP Stephens' kangaroo rat fee payment program for conservation of Stephens' kangaroo rat-occupied habitats in order to offset the loss of potentially suitable Stephens' kangaroo rat habitat on-site through project implementation.
2. Prior to the issuance of certificate of occupancy permits, the developer of the site shall make the

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appropriate MSHCP mitigation fee payment that will contribute to conservation and management of conservation land for all MSHCP-covered organisms.

3. Prior to vegetation clearance, the Project applicant shall retain a qualified biologist to conduct a pre-construction nesting bird survey in accordance with the following:
 - a) The survey shall be conducted no more than three (3) days prior to the initiation of clearance/construction work;
 - b) If pre-construction surveys indicate that bird nests are not present or are inactive, or if potential habitat is unoccupied, no further mitigation is required;
 - c) If active nests of birds are found during the surveys, a species-specific no-disturbance buffer zone shall be established by a qualified biologist around active nests until a qualified biologist determines that all young have fledged (i.e., no longer reliant upon the nest).
 - d) It is recommended that close coordination between the developer of the site, the City of Riverside, the project engineer, and the consulting qualified biologist to consider vegetation clearance outside of the normal bird nesting season (usually February 15 – Sept 15) to avoid impacts to nesting birds which would potentially violate the federal Migratory Bird Treaty Act. It should be noted that bird nesting season is increasingly less-definitive for some year-round resident species such as hummingbirds and raptors. Further, ground-dwelling birds such as burrowing owls, can be affected nearly any time of the year if present. It is therefore advisable to conduct a preconstruction bird survey no matter the time of year.
 - e) Removal of vegetation necessitates installation of appropriate Storm Water Pollution Prevention Plan "SWPPP" measures, particularly if grading is not undertaken immediately, therefore careful timing of the project schedule and implementation measures is necessary to avoid water quality impacts.
4. The Project Developer shall retain a qualified biologist to conduct a 30 day pre-construction survey for BUOW. The results of the single one-day survey would be submitted to the City prior to obtaining a grading permit. If BUOW are not detected during the pre-construction survey, no further mitigation is required. If BUOW are detected during the pre-construction survey, the Project applicant and a qualified consulting biologist will be required to prepare and submit for approval a BUOW-relocation program.
5. In accordance with MSHCP provisions limiting the use of exotic and invasive plant species, the Project's landscape plan shall exclude invasive species such as, but not limited to crimson fountain grass (*Pennisetum setaceum*), pampas grass (*Cortaderia selloana*), giant reed (*Arundo donax*), tree

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of heaven (*Ailanthus altissima*), *Eucalyptus*, *Acacia* groundcovers (*Acacia* sp.) and other ornamental landscape elements on the list of exotic invasive plants listed in MSHCP Section 6.1.4 which have to potential to spread into adjoining or nearby areas and watersheds.

6. The Project Developer shall implement dust control and all other project-specific Storm Water Pollution Prevention Plan ("SWPPP") measures during grading and construction required by the City of Riverside.
7. The Applicant shall demonstrate that the following federal and state resource agency permits have been obtained, or that authorization(s) from each agency were not required by that agency.
 - U.S. Army Corps of Engineers
 - California Department of Fish and Wildlife
 - Santa Ana Regional Water Quality Board
8. MSHCP Riparian/Riverine Mitigation: Prior to the issuance of grading permits impacts shall be mitigated, Riparian/Riverine at the Riverpark Mitigation Bank. Riparian/Riverine area comprises **0.28 acre**. Purchase of credits as recommended below shall be required if such credits are available for purchase and are acceptable to all associated Agencies including CDFW, RWQCB, and the USACOE, if applicable. If these credits are not available or acceptable to the aforementioned Agencies, then alternative mitigation shall be identified and approved by each agency, including the City of Riverside. *Table 7 – Summary of Impacted MSHCP Riparian/Riverine Areas and Mitigation* summarizes the specific mitigation requirements.

Table 7 – Summary of Impacted MSHCP Riparian/Riverine Areas and Mitigation

| Name | Acreage | Mitigation |
|------------|-----------|--|
| Feature 1 | 0.03 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 2 | 0.10 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 4 | 0.08 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 5 | 0.3 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 5A | 0.04 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Total | 0.28 acre | 0.28 acre Mitigation Credit for Rehabilitation plus 0.28 acre Mitigation Credit for Re-Establishment |

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Impacts and mitigation outlined below are related to potentially jurisdictional resources described in detail within this technical report. Specific impacts and mitigation are as follows.

U.S. Army Corps of Engineers

TERACOR has preliminarily determined that all of the five features (Features 1 – 5A) do not fall under the regulatory authority of the U.S. Army Corps of Engineers due to their ephemeral nature. Therefore, we anticipate no impact to “waters” of the U.S. that would result from the implementation of Tentative Tract No. 37731.

The Army Corps will either confirm the Approved Jurisdictional Determination when it is submitted or will inform the Applicant that authorization under a Nationwide Permit will be required for the project when the Applicant requests confirmation of the Determination.

Santa Ana Regional Water Quality Control Board

TERACOR has preliminarily determined that up to **0.17 acre** of RWQCB-jurisdictional surface could be permanently affected through implementation of Tentative Tract No. 37731.

Due to this preliminary impact, either a Clean Water Act Section 401 Water Quality Certification and/or a Report of Waste Discharge will be required prior to development. The type of authorization depends on whether the Corps of Engineers asserts jurisdiction over the Project site. If the Corps determines that “waters” of the U.S. are present on the project site, then a 401 Water Quality Certification would be required to be issued which would allow the Corps to then authorize impacts to “waters” via a Nationwide Permit. If the Corps confirms that jurisdictional “waters” are not present, then the RWQCB will have the option of not asserting jurisdiction at all, or of asserting jurisdiction over one or more of the five features, and then issuing a Report of Waste Discharge.

The 2020 *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* could affect how the RWQCB views this particular site in terms of whether “wetlands” are present, or seek additional information about the presumed extent of wetlands under the State’s new wetland definition. As of the time of report preparation, it is understood that the RWQCB has not fully implemented procedures to identify and regulate wetlands as now defined by that agency. Confirmation that the Project is compliant with all current requirements of the RWQCB will need to be provided prior to Project implementation.

TERACOR recommends that the applicant mitigate for the loss of **0.17 acre** of jurisdictional area through the purchase of at least **0.17 acre** rehabilitation credits for “waters” and the additional purchase of at least **0.17 acre** re-establishment credits at the Riverpark Mitigation Bank. The Riverpark Mitigation Bank.

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Evidence of compliance with RWCQB requirements will be submitted to the City of Riverside prior to the issuance of grading permits for the Project site.

California Department of Fish and Wildlife

TERACOR in consultation with CDFW during MSHCP Wildlife Agency consultations determined that up to **0.28 acre** of CDFW-jurisdictional “streambeds” are likely present on-site and would be directly impacted by Project implementation (E. Chan, 08 February 2021 via email communication). Due to these impacts, a CDFW California Fish and Game Code Section 1600 Lake or Streambed Alteration Agreement will need to be processed and approved by the Department prior to Project implementation.

TERACOR recommends that the Applicant mitigate for the loss of **0.28 acre** of jurisdictional area through the purchase of **0.28 acre** of rehabilitation credits for streambeds (waters of the State) and purchase of **0.28 acre** of re-establishment credit at the Riverpark Mitigation Bank. Evidence of compliance with CDFW requirements will be submitted to the City of Riverside prior to the issuance of grading permits for the Project site.

Applicability of Mitigation for Each Resource Agency: Rehabilitation and Re-establishment mitigation credits are not required to be duplicated for more than one resource agency, including the Corps, the RWQCB, and CDFW. The largest mitigation requirement by any one agency is usually suitable for all. Furthermore, mitigation credits purchased for impacts to streambeds, (i.e., “waters” of the U.S. or waters of the State) can generally also be used for impacts to MSHCP-regulated Riparian/Riverine areas as long as each agency agrees that credits at Riverpark are suitable mitigation for impacts to each agency’s jurisdictional area. If all agencies agree Riverpark is suitable for mitigation purposes for their respective mitigation, then only the highest amount of mitigation credits required by any one agency will be considered suitable for all the agencies with jurisdiction over water-related resources including “waters” of the U.S., waters of the State, CDFW jurisdictional lakes or streambeds, and MSHCP Riparian/Riverine areas.

Purchase of these rehabilitation and re-establishment credits shall be required if such credits are available for purchase and are acceptable to all associated agencies including CDFW, RWQCB, and the USACOE, if applicable. If these credits are not available or acceptable to the aforementioned agencies, then alternative mitigation shall be identified and approved by each agency, including the City of Riverside.

Justification to Utilize the Riverpark Mitigation Bank for Mitigation

The **Riverpark Mitigation Bank** is located in Riverside County, within the MSHCP Plan Area. The bank’s service area includes western Riverside County, and portions of San Bernardino County. The bank offers credits for rehabilitated and re-established “waters” of the United States and waters of the state of California. The San Diego Habitat Conservancy will provide long-term management of the bank, and the San Diego Foundation will manage the non-wasting endowment. The Western Riverside Regional

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Conservation Authority (RCA) will hold the conservation easement, along with an additional monitoring endowment.

The primary service area of Riverpark Mitigation Bank is all of the upper and lower portions of the San Jacinto River, and the middle Santa Ana River, Temescal Wash, and San Timoteo Wash. Secondary service areas include upper Temecula Creek, Wilson Creek, lower Temecula Creek, Murrieta Creek, and the Santa Margarita River. The Project site lies within the Santa Ana River watershed, therefore, it lies within the bank's primary agency-approved service area.

The bank encompasses 613 acres of land almost entirely within the 100 year floodplain of the San Jacinto River. Over 550 acres of vernal pool and alkali playa, as well as upland buffer habitat will be restored through rehabilitation and/or re-establishment of natural habitat areas. Restoration will involve re-grading along the river to remove human-emplaced fill and berms established to control flooding along the river. The control of non-native invasive plants and trees and recruitment and establishment of native vegetation is also planned. The first phase of the program is open at this time and is expected to restore lost functions and values of riparian and riverine habitats, vernal pools and alkali playas across the bank lands. These functions and values which are being restored can be purchased on one acre per one credit basis, thereby guaranteeing offset replacement values for habitats impacted by future development within the specified service areas.

Functions of Restored Habitat at Riverpark

The functions and values of the rehabilitated Riverpark Mitigation Bank (subsequent to habitat restoration) would reasonably be expected to meet or exceed the existing habitat values and functions presently found within the on-site Riparian/Riverine area, based on the information provided above regarding the Riverpark Mitigation Bank. Habitat would be improved for terrestrial, aquatic and avian species which utilize the mitigation bank area. Management by the San Diego Habitat Conservancy will provide long-term management functions, and the San Diego Foundation will manage the non-wasting financial endowment to ensure availability of funds into the future to properly restore and manage the site. The Western Riverside Regional Conservation Authority (RCA) has agreed to hold the conservation easement, along with an additional monitoring endowment for specific MSHCP requirements.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the proposed mitigation measures described above would reduce all the impacts to the biological resources discussed in this biological assessment to a level considered not significant.

CERTIFICATION: I hereby certify that the statements and exhibits contained in this report present data and information required for this General Biological Assessment, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



10 December 2019

Samuel Reed, Principal, Scientific Collecting Permit No. 002267
USFWS Recovery Permit No. TE839896-6

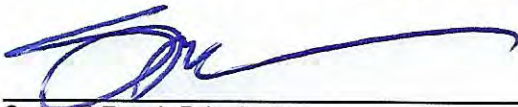
Date



(Revised per City of Riverside comments 24 July 2020)

Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

Date



(Revised per Wildlife Agency comments 13 January 2021)

Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

Date

Tentative Tract No. 37731

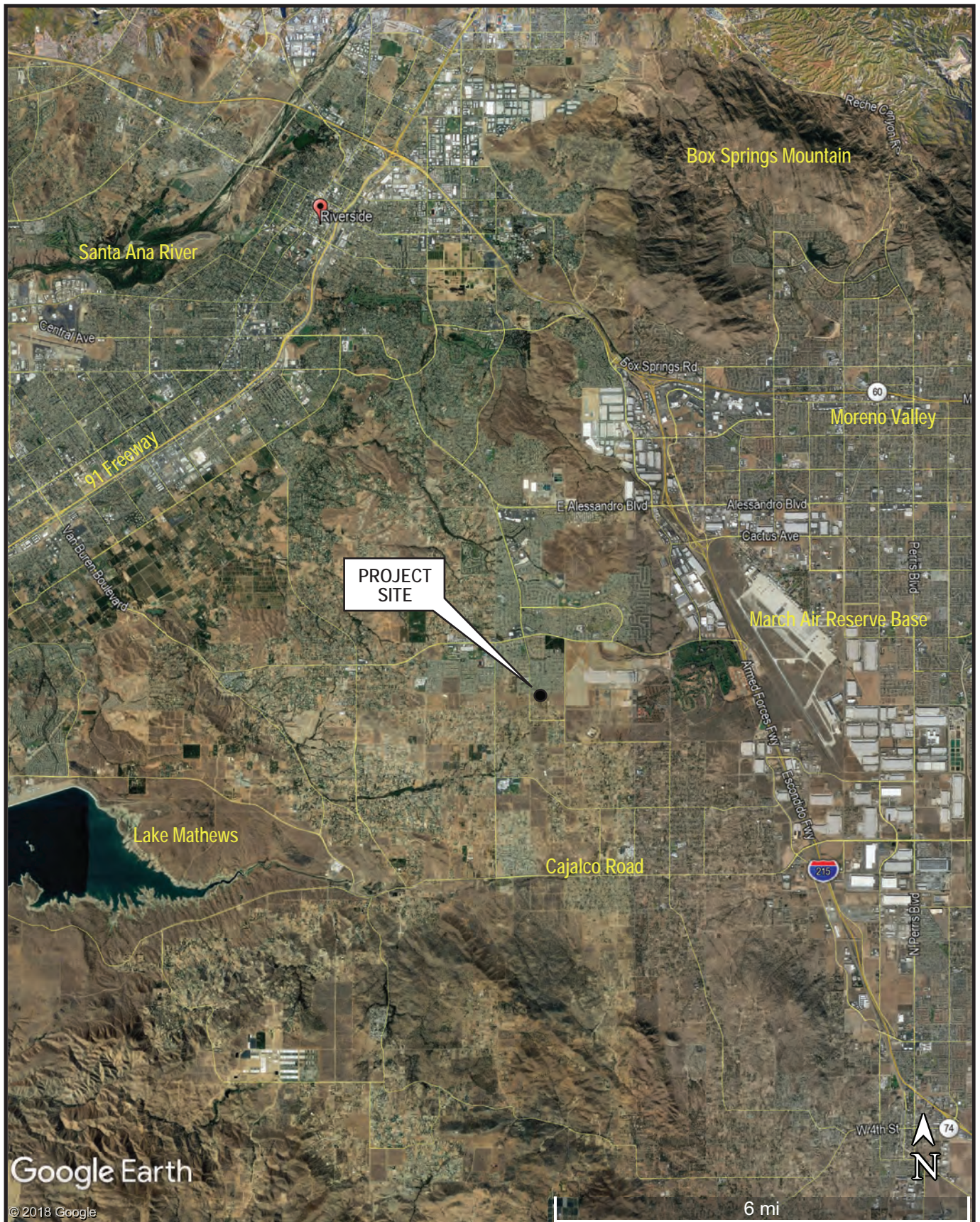
Lurin Land, LLC

Riverside, California

10 December 2019

Revised per City Comments 24 July 2020

Revised per Wildlife Agency Comments 13 January 2021







LEGEND

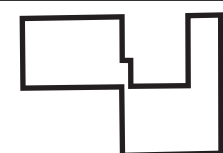
- FbC2 - Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded
- FtC2 - Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded
- MmB - Monserate sandy loam, 0 to 5 percent slopes





LEGEND

| Vegetation Alliance | Acres |
|---|---------------------------|
| AG - Annual Grassland | 33.05 |
| O - Ornamental (CA Pepper, Olive, Eucalyptus, Mexican Fan Palm, Tamarisk, Palo Verde) | 0.37 |
| W - Mixed Willow Scrub/MS Mulefat Scrub | 0.2 |
| Asphalt Roadway (Not Mapped/Not Habitat) | 2.18 |
| TOTAL | 35.8 (gross acres) |



- Property Configuration



Photo 1 - Northwest end of Tentative Tract Map No 37731. This north-facing photo portrays a non-native grassland which seasonally conveys sheetflows. Common knotweed (*Polygonum sp.*) is the reddish-brown plant, a common yard weed.



Photo 2 - South end of Tentative Tract Map No. 37731. Photo faces west. The annual non-native grassland contains pepper trees in this area.

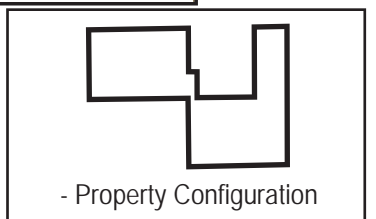


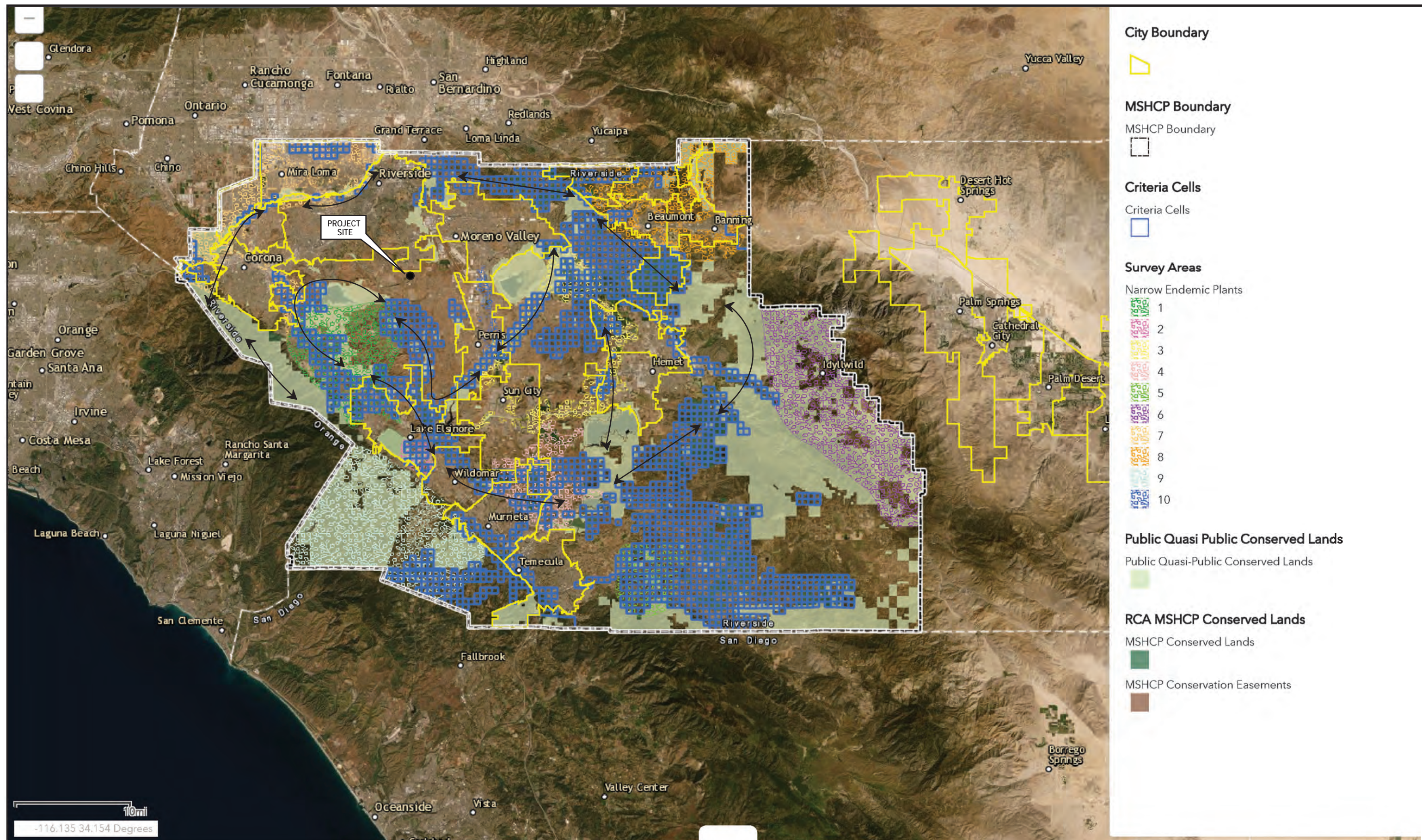
Photo 3 - East end of Tentative Tract Map No. 37731 property. Photo faces south along Cole Avenue.

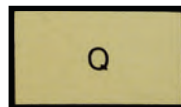
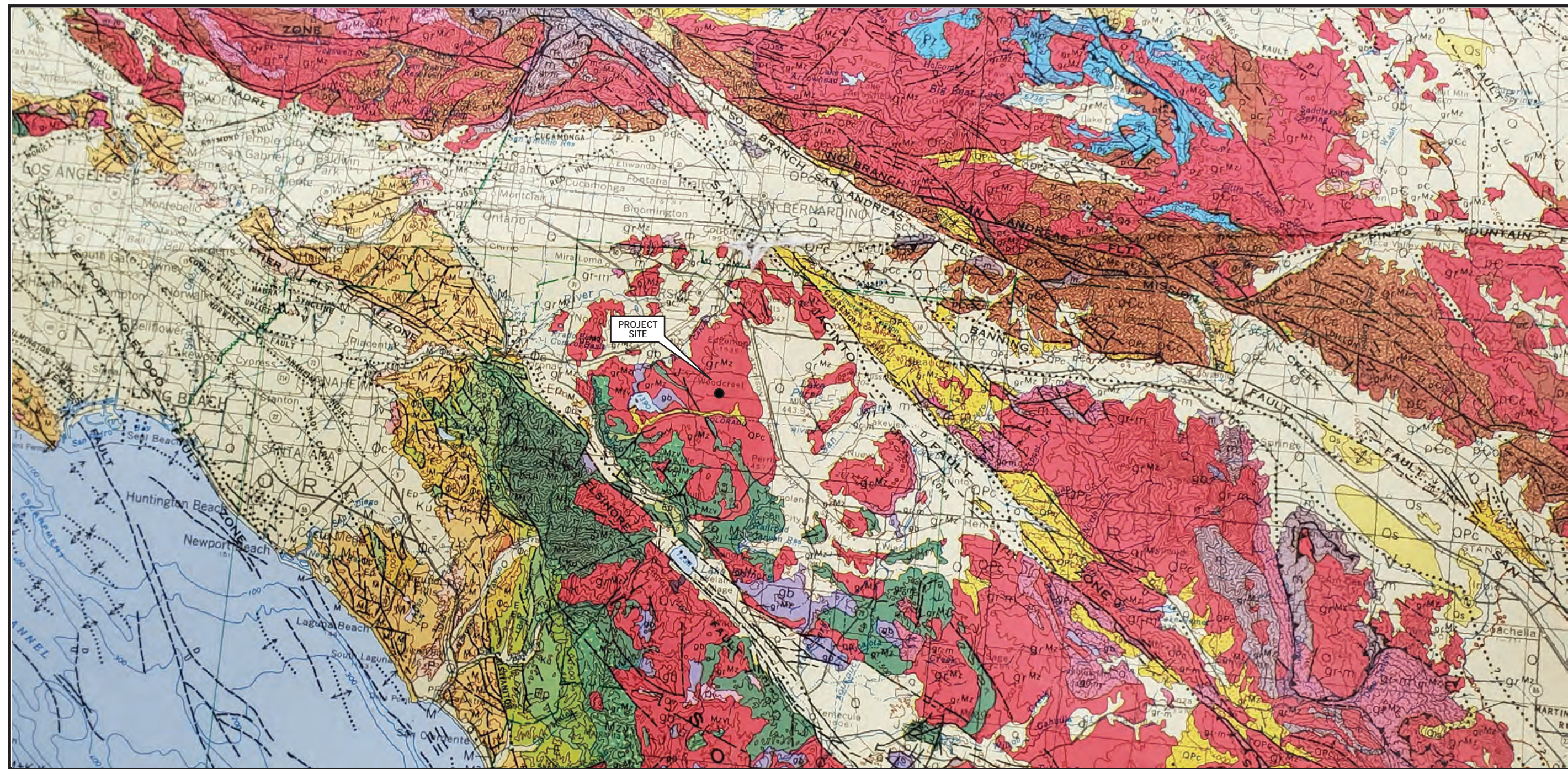


Google Earth

© 2018 Google



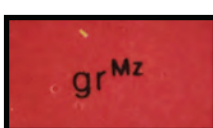




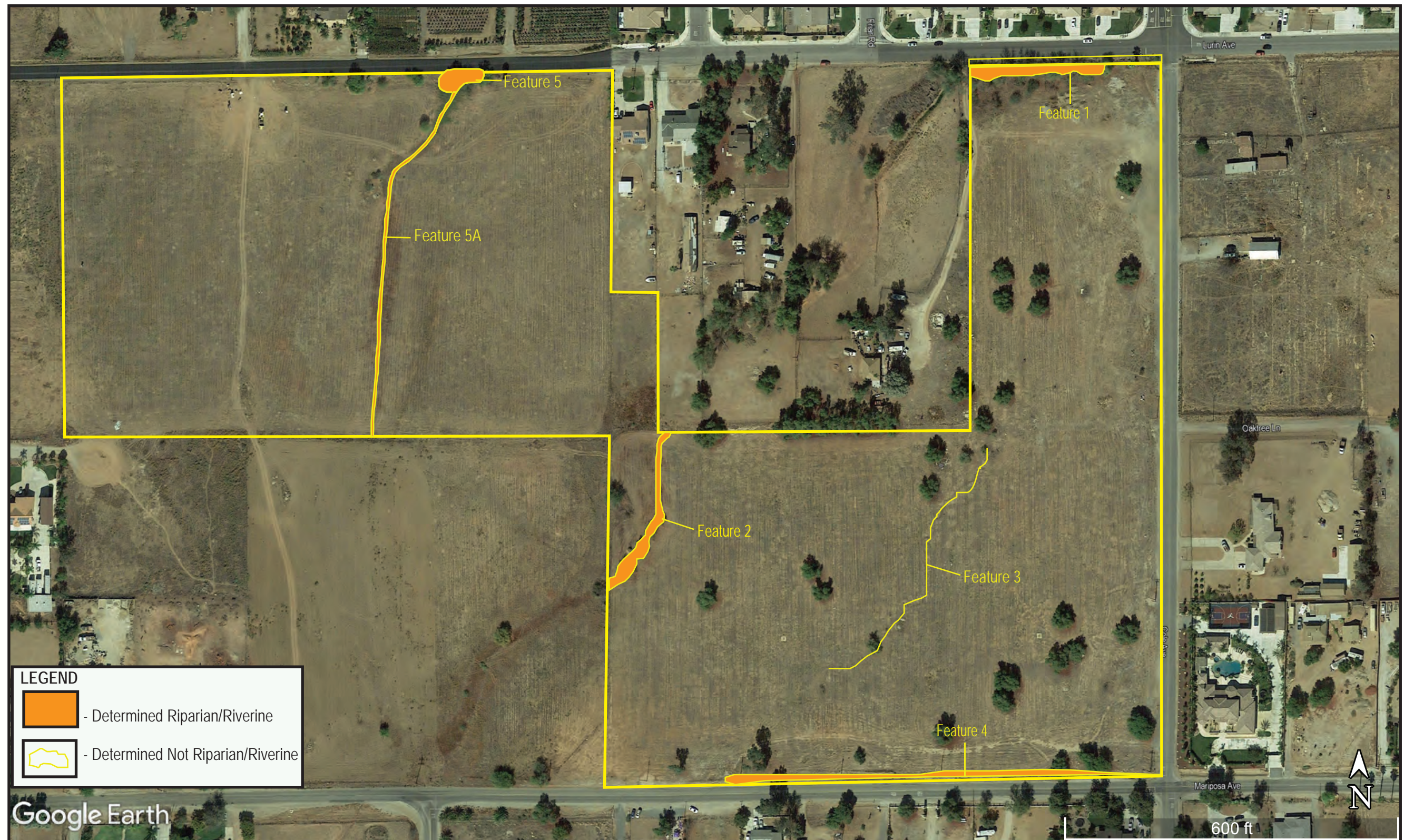
Q - Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated. Mostly nonmarine, but includes marine deposits near the coast.



Mzv - undivided Mesozoic volcanic and metavolcanic rocks. Addesite and rhyolite flow rocks, greenstone, volcanic breccia and other pyroclastic rocks; of Franciscan Complex: basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks.



grMz - Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite.



LEGAL DESCRIPTION:

PARCEL 1: (APN: 266-140-021, 266-140-022)

LOT 23 OF WOODCREST ACRES, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11, PAGE 62 OF MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA..

PARCEL 2 (APN 266-140-029, 266-140-030)

PARCELS 1 AND 2 OF PARCEL MAP NO. 8704, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 38, PAGE 76 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

PARCEL 3: (APN 266-140-049, 266-140-050)

THAT PORTION OF THE WEST HALF OF LOT 22 OF WOODCREST ACRES, IN THE CITY OF RIVERSIDE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11, PAGE 62 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, TOGETHER WITH A PORTION OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHERLY LINE OF SAID LOT 22, DISTANT THEREON, SOUTH 88°49'30" WEST, 100.00 FEET FROM THE NORTHEAST CORNER OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, SAID POINT ALSO BEING ON THE CENTER LINE OF LURIN AVENUE (30 FEET IN HALF WIDTH); THENCE SOUTHERLY LEAVING SAID NORTHERLY LINE ALONG A LINE PARALLEL TO THE WEST LINE OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, 300 FEET; THENCE NORTH 88°49'30" EAST, PARALLEL TO SAID NORTHERLY LINE, 100 FEET TO THE EASTERLY LINE OF SAID WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22; THENCE SOUTHERLY ALONG SAID EASTERLY LINE, 362.05 FEET TO THE SOUTHEAST CORNER OF SAID WEST HALF OF WEST HALF OF THE EAST HALF OF SAID LOT 22; THENCE SOUTH 88°47'15" WEST, ALONG THE SOUTHERLY LINE OF SAID LOT 22, 414.95 FEET TO THE SOUTHWEST CORNER OF SAID LOT 22; THENCE NORTH 00°17'00" WEST, ALONG THE WESTERLY LINE OF SAID LOT 22, 662.09 FEET TO THE NORTHWEST CORNER THEROF, SAID POINT ALSO BEING ON THE CENTER LINE OF SAID LURIN AVENUE; THENCE ALONG SAID NORTHERLY LINE, NORTH 88°49'30" EAST, 314.90 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE NORTHERLY 33 FEET OF ABOVE DESCRIBED PARCEL.

SAID LAND IS DESCRIBED AND DELINEATED AS LOT A ON THAT CERTAIN "CERTIFICATE OF COMPLIANCE FOR LOT LINE ADJUSTMENT RECORDED DECEMBER 23, 2016 AS INSTRUMENT NO. 2016-0575044 OF OFFICIAL RECORDS.

PROJECT SCOPE OF WORK:

1. TOTAL PROJECT GROSS ACREAGE IS 35.80 AC.

| ACREAGE SUMMARY | | |
|--------------------------|---------|---------|
| ITEM | AGREAGE | PERCENT |
| A. LOT GROSS AREA | 18.4 | 51% |
| B. DRAINAGE (WQMP BASIN) | 2.38 | 7% |
| C. SLOPES/OPEN SPACE | 0.71 | 3% |
| D. PARKS | 1.31 | 6% |
| E. ROW TO ROW | 10.60 | 28% |

2. EXISTING GENERAL PLAN DESIGNATION: LDR- LOW DENSITY RESIDENTIAL (3-6 DU/AC)

3. EXISTING ZONING: R-1-13000

4. PROPOSED ZONING: RESIDENTIAL

5. PROPOSED NO. OF DWELLING UNITS: 138 LOTS.

6. PROPOSED PROJECT DENSITY: 3.86 DU/AC.

7. MINIMUM LOT SIZE: 4,235 SQ. FT.

8. AVERAGE LOT SIZE: 5,822 SQ. FT.

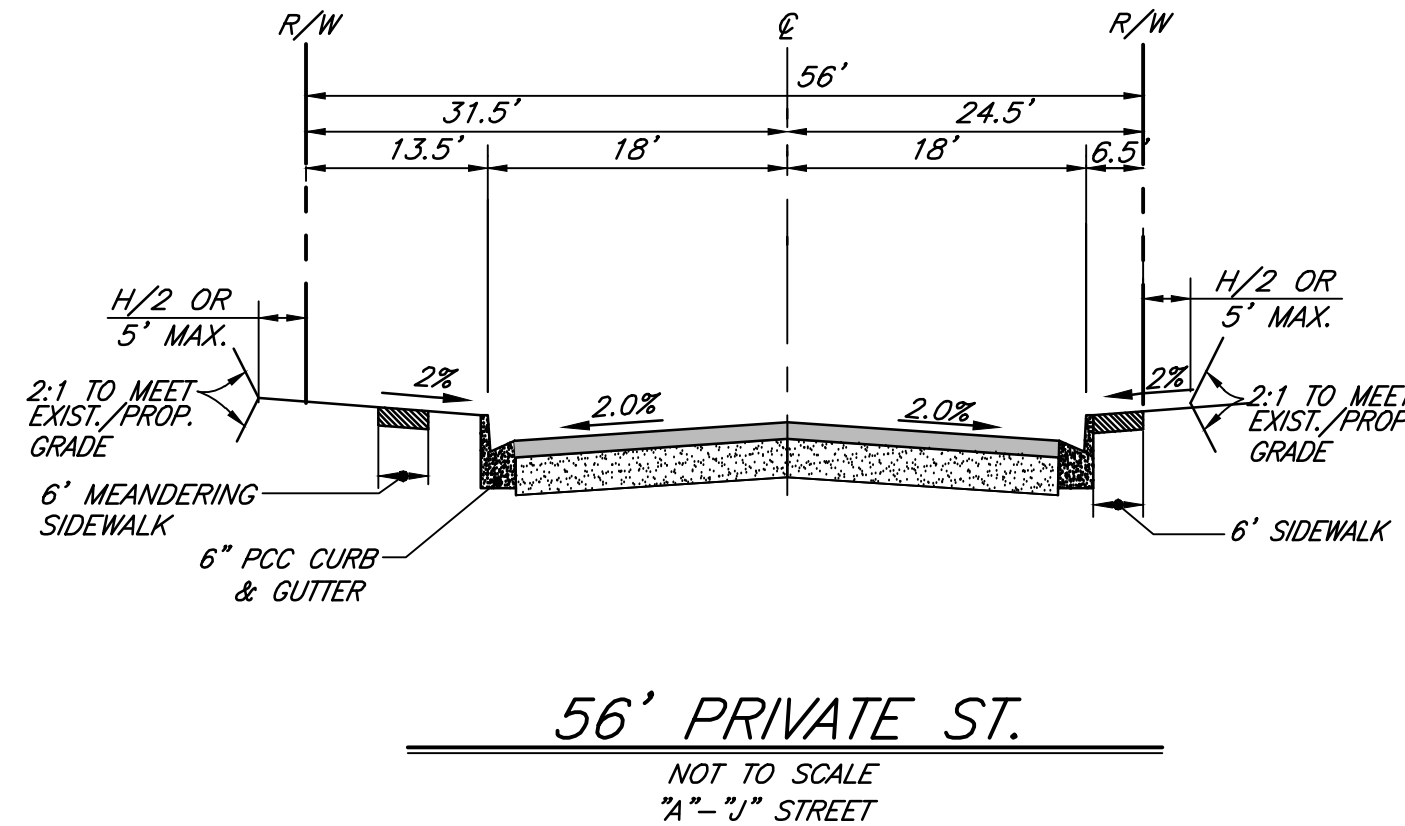
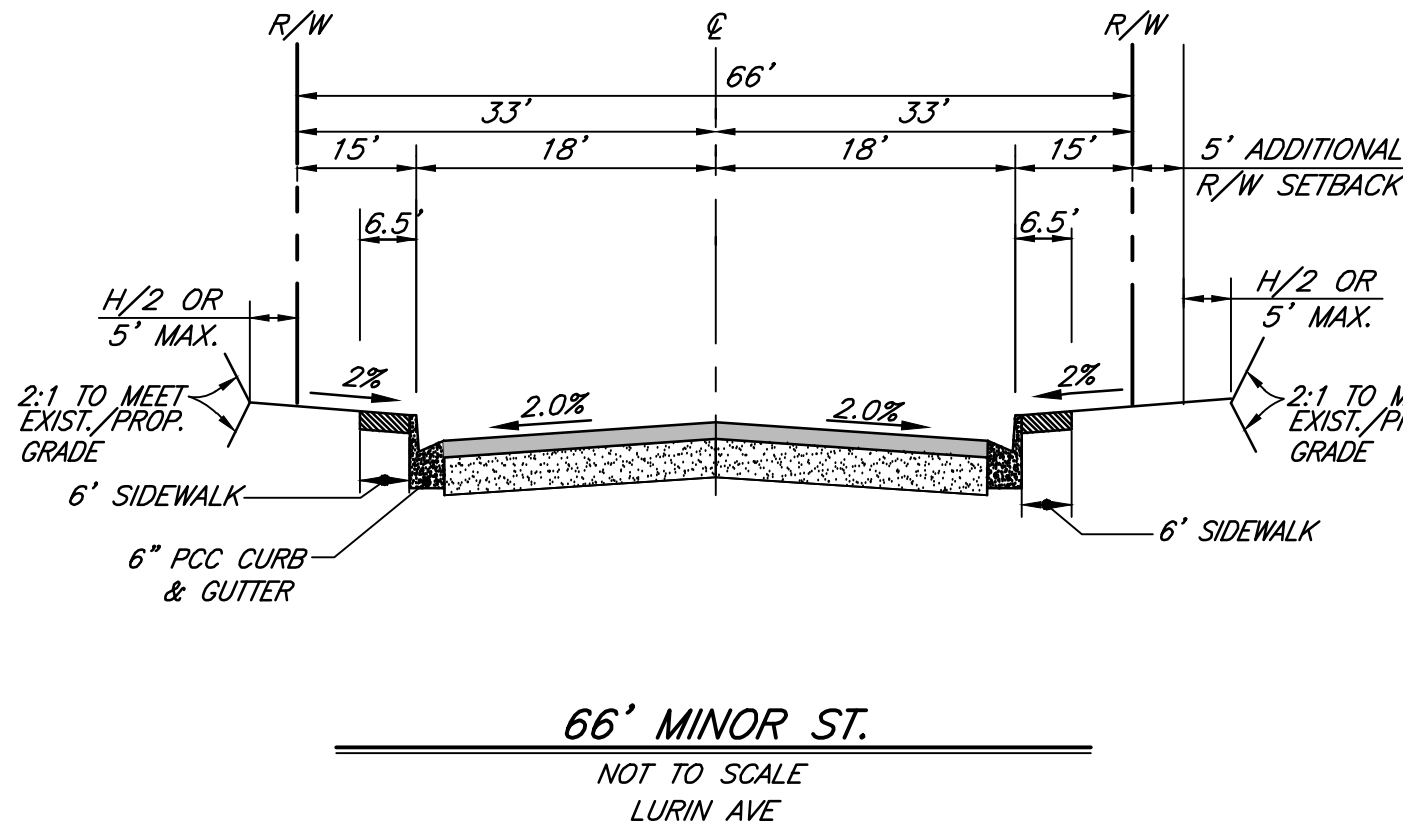
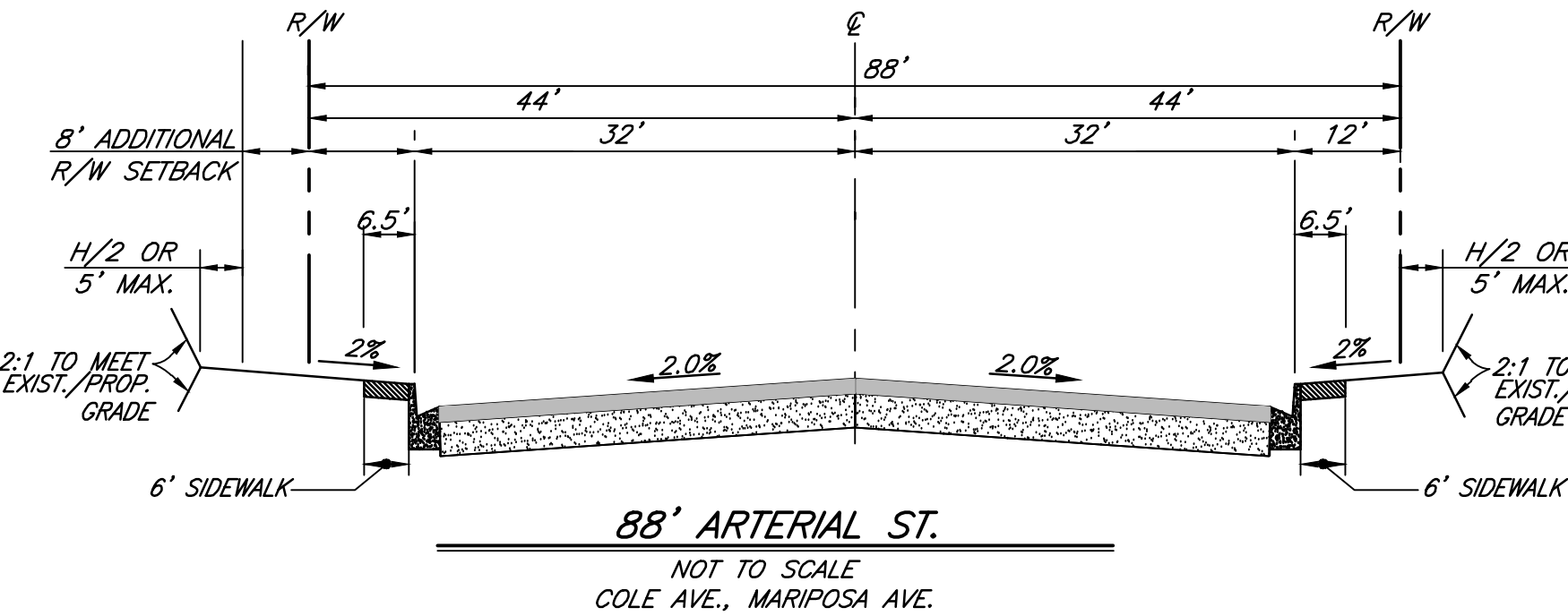
9. ZONING OF SURROUNDING PROPERTY: R-1

10. AVERAGE NATURAL SLOPE OF SITE: 0.53%

STATEMENT OF PREPARER

I HEREBY STATE THAT THIS MAP WAS PREPARED UNDER MY SUPERVISION AND THAT THE OWNER OF RECORD HAS KNOWLEDGE OF AND CONSENTS TO THE FILING OF THIS MAP.

MATTHEW L. LANINOVICH, P.E. DATE



TENTATIVE TRACT MAP NO. 37731
IN THE CITY OF RIVERSIDE

BASIS OF BEARINGS:

THE BASIS OF BEARINGS SHOWN HEREON ARE BASED ON THE CITY OF CORONA GPS MONUMENTS NO. 1183 OAK DAM (N: 2254579.060, E: 6152363.939 AND NO. 3039 LINDSON 2 1953 (N: 2249760.701, E: 6154840.535), BEING N 27°12'10" W.

PROPERTY OWNERSHIP INFO:

APNS: 266-140-029, 266-140-030, 266-140-049, 266-140-050, 266-140-022, 266-140-021

BENCHMARK:

CITY OF RIVERSIDE DESIGNATION: E8-G3

P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF THE SIDEWALK OVER THE EASTERLY WALL OF A CATCH BASIN ALONG THE SOUTHERLY CURB OF VAN BUREN BLVD AND 700 FEET EASTERLY OF WOOD ROAD.

ELEV: 1644.96' (NAD 88)

OWNER/DEVELOPER:

LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730
CONTACT: NOLAN LEGGIO

ENGINEER:

KWC ENGINEERS
1880 COMPTON AVENUE
CORONA, CA 92881-3370
(951) 734-2130
CONTACT: MATTHEW LANINOVICH, P.E.

UTILITY NOTES:

SEWER & WATER: WESTERN MUNICIPAL WATER DISTRICT

GAS: SOCAL GAS

ELECTRICITY: SOUTHERN CALIFORNIA EDISON

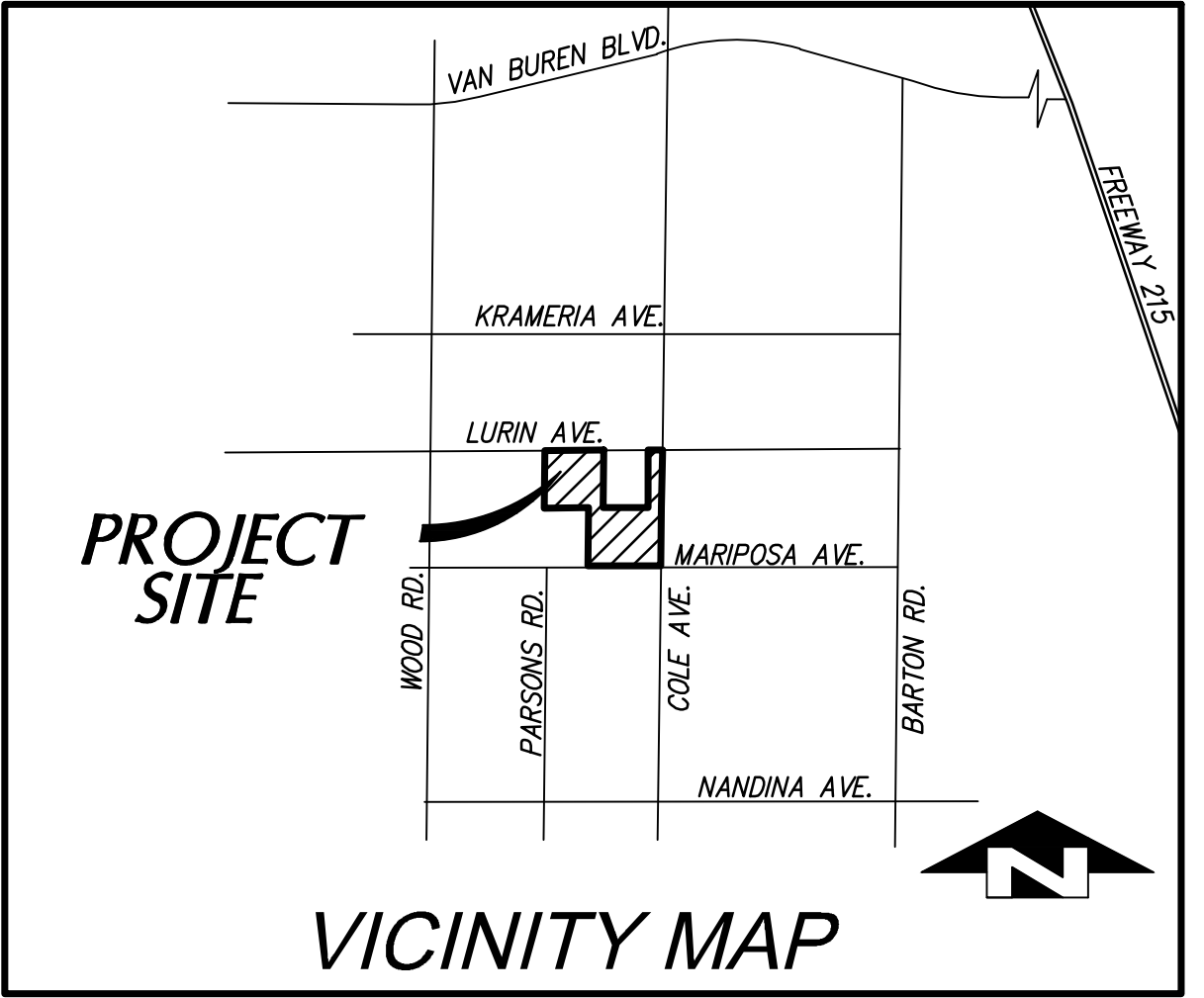
SCHOOL DISTRICT: RIVERSIDE UNIFIED SCHOOL DISTRICT

LURIN LAND PRD

| TR 37731 | | | | | Acres |
|------------|----------|-------------------|--------|-------|-------|
| Units/AC | Zoning | Percentage of Map | Acres | Lots | |
| 4.8 | 13000 | 58% | 20.76 | 99.67 | |
| 3 | 1/2 Acre | 21% | 7.52 | 22.55 | |
| 3 | 1 Acre | 21% | 7.52 | 22.55 | |
| Total Lots | | | 144.78 | | |

NUMBERED LOTS:

| LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE |
|---------|-----------------------|-------|-------|-----------|---------|-----------------------|-------|-------|-----------|-----------------|-----------------------|-------|-------|-----------|
| 1 | 5968 | 74 | 90 | 2 | 48 | 4750 | 50 | 95 | 1 | 95 | 5350 | 50 | 107 | 1 |
| 2 | 4500 | 50 | 90 | 1 | 49 | 4750 | 50 | 95 | 2 | 96 | 5350 | 50 | 107 | 2 |
| 3 | 4725 | 52 | 90 | 4 | 50 | 4750 | 50 | 95 | 5 | 97 | 7305 | 70 | 107 | 4 |
| 4 | 5934 | 76 | 89 | 3 | 51 | 4750 | 50 | 95 | 1 | 98 | 7610 | 73 | 107 | 2 |
| 5 | 4467 | 50 | 89 | 5 | 52 | 4750 | 50 | 95 | 2 | 99 | 5349 | 50 | 107 | 5 |
| 6 | 4631 | 50 | 89 | 1 | 53 | 4750 | 50 | 95 | 4 | 100 | 5348 | 50 | 107 | 2 |
| 7 | 5435 | 63 | 91 | 5 | 54 | 6505 | 70 | 95 | 3 | 101 | 5348 | 50 | 107 | 4 |
| 8 | 4534 | 50 | 91 | 3 | 55 | 4750 | 50 | 95 | 1 | 102 | 5347 | 50 | 107 | 3 |
| 9 | 4919 | 61 | 91 | 5 | 56 | 4750 | 50 | 95 | 3 | 103 | 5346 | 50 | 107 | 5 |
| 10 | 5615 | 62 | 90 | 1 | 57 | 4750 | 50 | 95 | 1 | 104 | 5346 | 50 | 107 | 3 |
| 11 | 5297 | 58 | 91 | 4 | 58 | 4750 | 50 | 95 | 5 | 105 | 5345 | 50 | 107 | 1 |
| 12 | 5314 | 58 | 91 | 2 | 59 | 4750 | 50 | 95 | 3 | 106 | 5344 | 50 | 107 | 3 |
| 13 | 4235 | 50 | 87 | 3 | 60 | 4750 | 50 | 95 | 5 | 107 | 5344 | 50 | 107 | 5 |
| 14 | 4304 | 50 | 87 | 3 | 61 | 4750 | 50 | 95 | 1 | 108 | 5285 | 50 | 105 | 1 |
| 15 | 4713 | 50 | 93 | 5 | 62 | 5301 | 57 | 95 | 5 | 109 | 4935 | 50 | 100 | 3 |
| 16 | 4556 | 50 | 91 | 3 | 63 | 4868 | 51 | 95 | 3 | 110 | 5350 | 50 | 107 | 3 |
| 17 | 4339 | 51 | 90 | 1 | 64 | 4956 | 50 | 99 | 5 | 111 | 5350 | 50 | 107 | 5 |
| 18 | 9312 | 67 | 142 | 5 | 65 | 4882 | 50 | 98 | 4 | 112 | 5350 | 50 | 107 | 3 |
| 19 | 5538 | 55 | 97 | 4 | 66 | 5011 | 52 | 100 | 2 | 113 | 5350 | 50 | 107 | 2 |
| 20 | 4478 | 50 | 91 | 5 | 67 | 4915 | 50 | 99 | 5 | 114 | 5350 | 50 | 107 | 4 |
| 21 | 4606 | 50 | 92 | 3 | 68 | 4901 | 50 | 99 | 4 | 115 | 5350 | 50 | 107 | 1 |
| 22 | 4671 | 50 | 94 | 1 | 69 | 5129 | 50 | 103 | 2 | 116 | 5350 | 50 | 107 | 5 |
| 23 | 4732 | 50 | 94 | 3 | 70 | 5374 | 50 | 106 | 3 | 117 | 5350 | 50 | 107 | 2 |
| 24 | 4772 | 50 | 95 | 1 | 71 | 5215 | 50 | 105 | 2 | 118 | 5301 | 50 | 106 | 1 |
| 25 | 5597 | 59 | 96 | 3 | 72 | 5133 | 50 | 103 | 3 | 119 | 5846 | 62 | 104 | 4 |
| 26 | 5862 | 61 | 97 | 3 | 73 | 5208 | 50 | 105 | 1 | 120 | 6598 | 62 | 104 | 3 |
| 27 | 4907 | 50 | 98 | 1 | 74 | 5370 | 50 | 107 | 2 | 121 | 5303 | 50 | 106 | 1 |
| 28 | 4977 | 50 | 99 | 5 | 75 | 5308 | 50 | 106 | 4 | 122 | 5350 | 50 | 107 | 3 |
| 29 | 5006 | 50 | 99 | 1 | 76 | 5253 | 50 | 105 | 5 | 123 | 5350 | 50 | 107 | 2 |
| 30 | 4793 | 50 | 96 | 3 | 77 | 5227 | 49 | 105 | 2 | 124 | 5350 | 50 | 107 | 3 |
| 31 | 6317 | 70 | 94 | 5 | 78 | 5987 | 62 | 99 | 4 | 125 | 5350 | 50 | 107 | 4 |
| 32 | 13833 | 112 | 104 | 1 | 79 | 4996 | 50 | 100 | 2 | 126 | 5350 | 50 | 107 | 1 |
| 33 | 7362 | 68 | 117 | 2 | 80 | 5157 | 50 | 103 | 5 | 127 | 5350 | 50 | 107 | 4 |
| 34 | 6300 | 52 | 121 | 1 | 81 | 5321 | 50 | 107 | 2 | 128 | 5350 | 50 | 107 | 1 |
| 35 | 6549 | 52 | 126 | 4 | 82 | 5506 | 50 | 110 | 1 | 129 | 5350 | 50 | 107 | 2 |
| 36 | 9144 | 75 | 126 | 5 | 83 | 5542 | 50 | 111 | 5 | 130 | 16393 | 82 | 207 | 1 |
| 37 | 5472 | 59 | 95 | 4 | 84 | 5542 | 50 | 111 | 4 | 131 | 11420 | 75 | 150 | 2 |
| 38 | 4750 | 50 | 95 | 1 | 85 | 5542 | 50 | 111 | 5 | 132 | 10964 | 75 | 154 | 5 |
| 39 | 4750 | 50 | 95 | 2 | 86 | 5798 | 50 | 117 | 1 | 133 | 11618 | 75 | 154 | 3 |
| 40 | 4750 | 50 | 95 | 4 | 87 | 5842 | 50 | 117 | 5 | 134 | 11549 | 75 | 154 | 4 |
| 41 | 4750 | 50 | 95 | 5 | 88 | 5842 | 50 | 117 | 4 | 135 | 11483 | 75 | 154 | 3 |
| 42 | 4750 | 50 | 95 | 4 | 89 | 5749 | 50 | 114 | 5 | 136 | 11479 | 75 | 153 | 2 |
| 43 | 4750 | 50 | 95 | 3 | 90 | 5180 | 50 | 105 | 3 | 137 | 11461 | 75 | 153 | 3 |
| 44 | 4751 | 50 | 95 | 5 | 91 | 6608 | 54 | 144 | 4 | 138 | 11392 | 75 | 152 | 4 |
| 45 | 6372 | 70 | 95 | 4 | 92 | 6088 | 57 | 136 | 5 | AVERAGE | 5822 | 55 | 106 | |
| 46 | 6147 | 70 | 95 | 1 | 93 | 4596 | 50 | 95 | 3 | TOTAL LOT AREA= | 803,376 | | | |
| 47 | 4750 | 50 | 95 | 4 | 94 | 5177 | 50 | 107 | 5 | MAX LOT AREA = | 16,393 | | | |
| | | | | | | | | | | MIN LOT AREA = | 4,235 | | | |



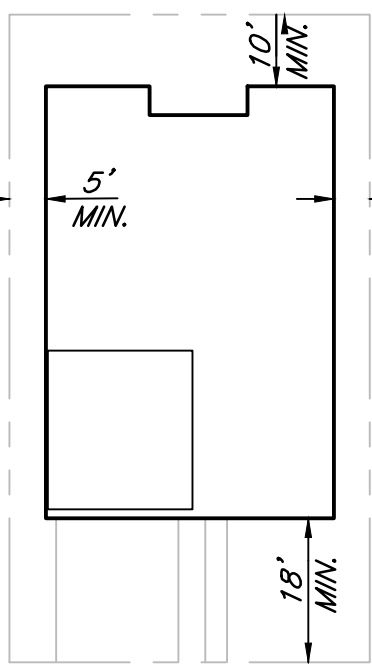
LETTERED LOTS:

| LOT NO. | GROSS AREA (SQ.FT.) | DESCRIPTION |
|-----------------|---------------------|-----------------|
| A | 3940 | OPEN SPACE |
| B | 45160 | OPEN SPACE |
| C | 66150 | WQMP BASIN |
| D | 23378 | PARK |
| E | 865 | OPEN SPACE |
| F | 13282 | OPEN SPACE/PARK |
| G | 5177 | OPEN SPACE |
| H | 4853 | OPEN SPACE |
| J | 1800 | OPEN SPACE |
| K | 15839 | OPEN SPACE |
| L | 15,615 | OPEN SPACE |
| M | 35727 | PARK |
| N | 37711 | WQMP BASIN |
| O | 20012 | OPEN SPACE |
| P | 8487 | OPEN SPACE |
| TOTAL LOT AREA= | | 240607 |
| MAX LOT AREA = | | 64008 |
| MIN LOT AREA = | | 866 |

PARK AREA CALCULATION

| LOT | AREA IN SQ.FT. |
|---------------------------------|----------------|
| LOT "C" | 21,149 |
| TOTAL | 21,149 |
| PARK AREA REQ. (PLOTSX500 SQFT) | 21,000 |

TYPICAL LOT SETBACKS



| TTM DATE IDENTIFIER |
|---|
| DATE OF LATEST CHANGE TO THIS MAP: 01/09/20 |
| DATE OF THIS PLAN: 01/09/20 |

TENTATIVE TRACT MAP NO. 37731
CITY OF RIVERSIDE

PREPARED FOR:

LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730

PREPARED BY:

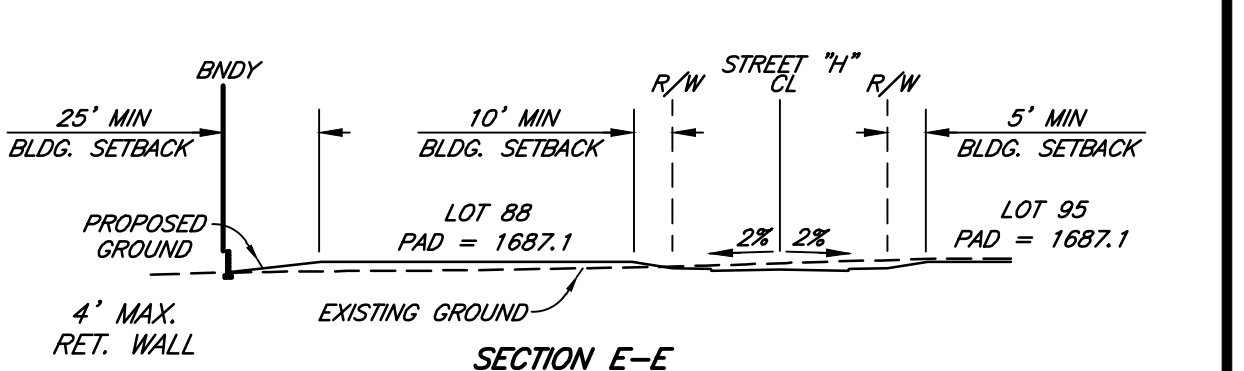
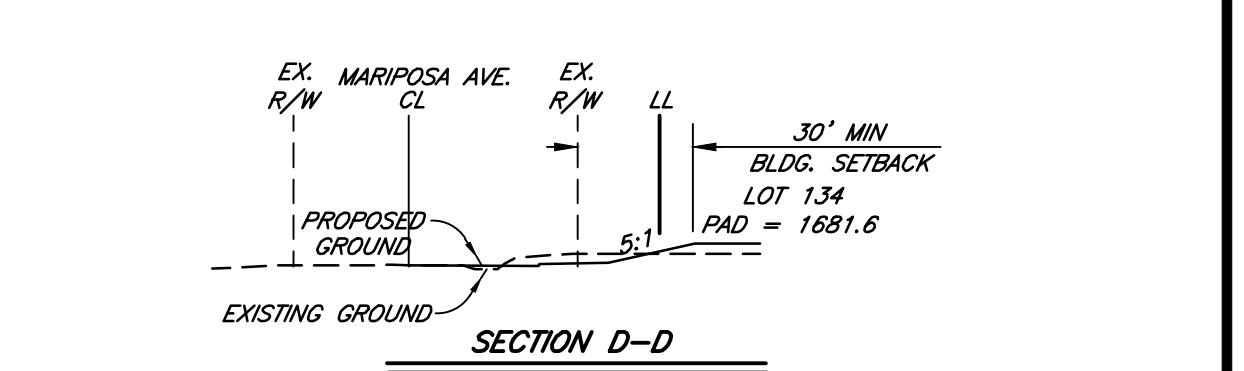
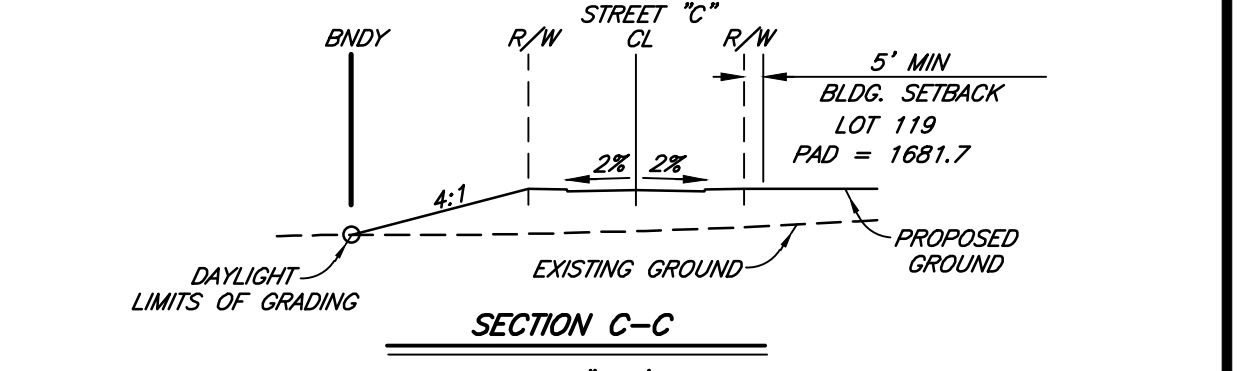
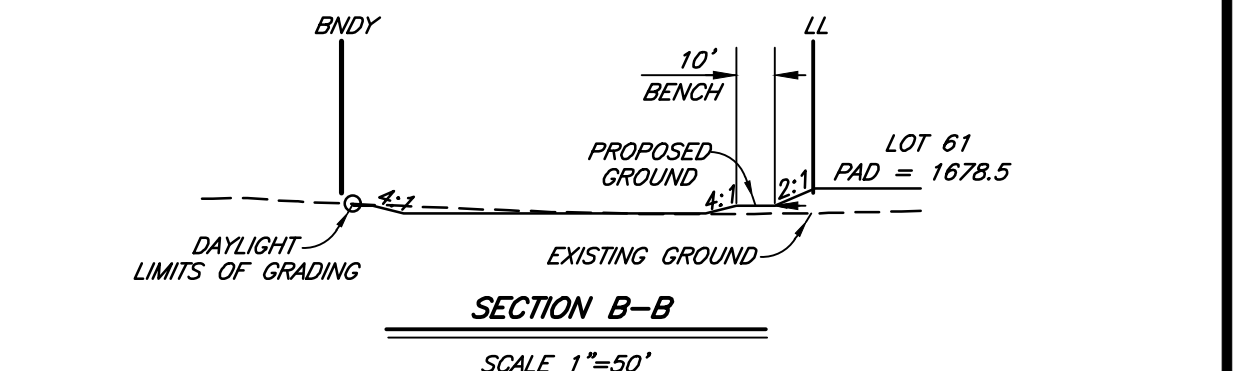
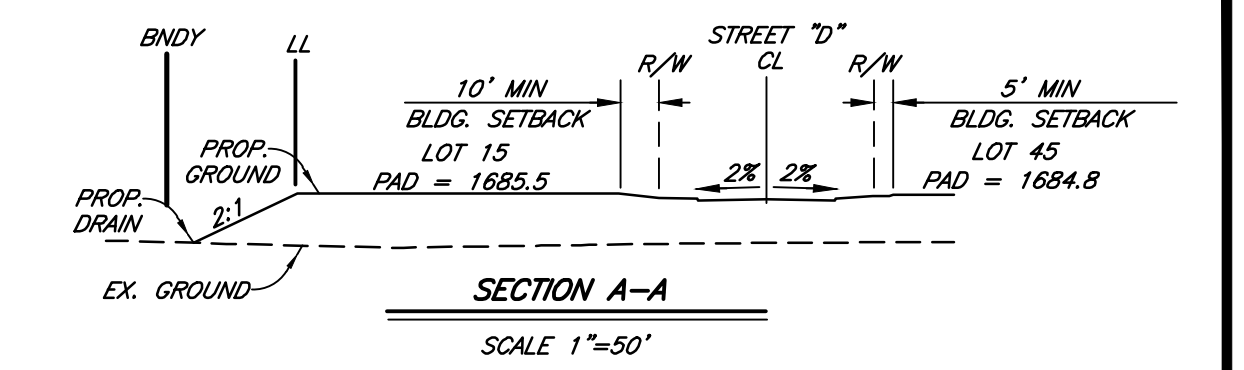
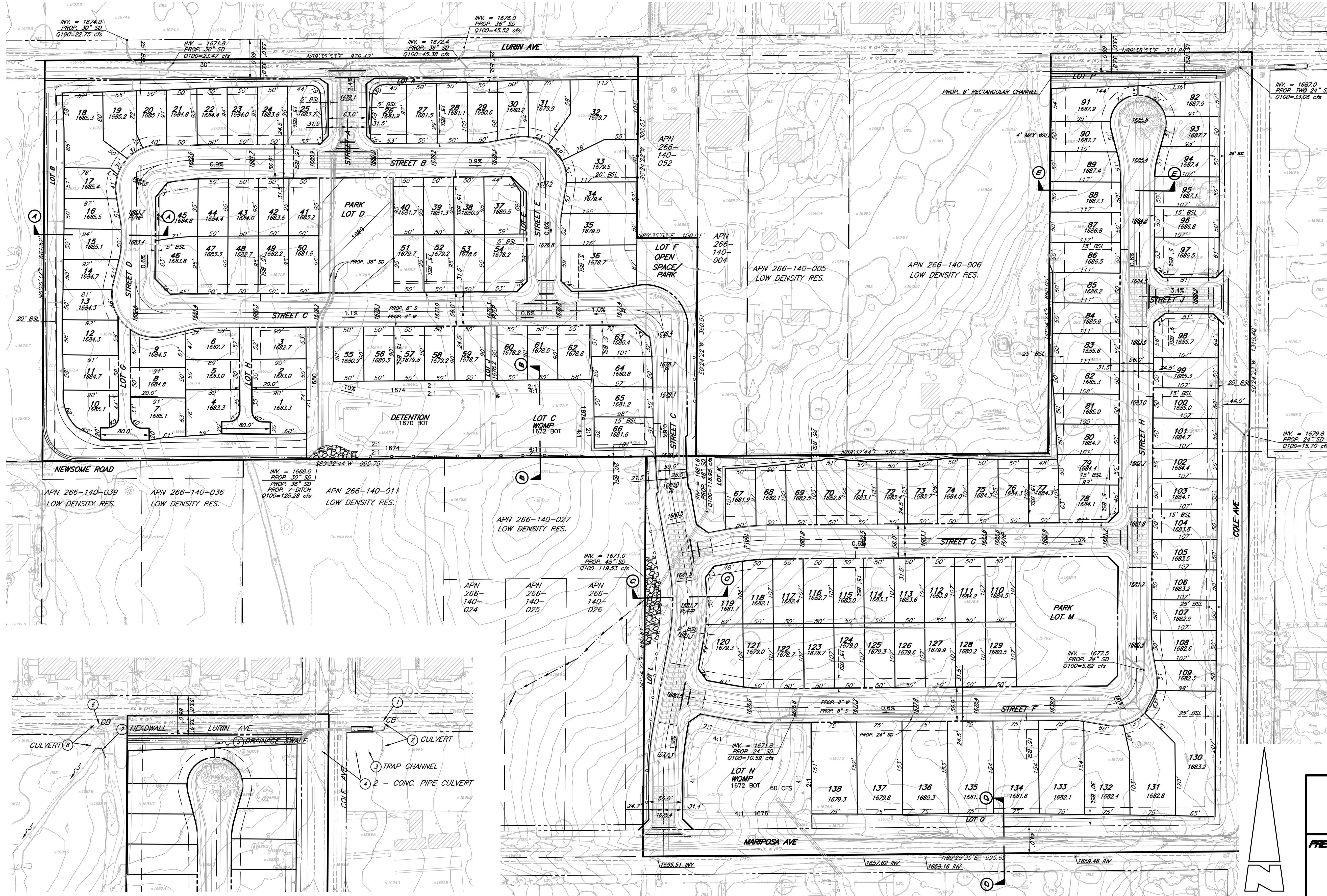


CIVIL ENGINEERS • PLANNERS • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 CORONA, CA 92881-3378 951-734-2130

SHEET
1 OF 2
SHEETS

TENTATIVE TRACT MAP NO. 37731

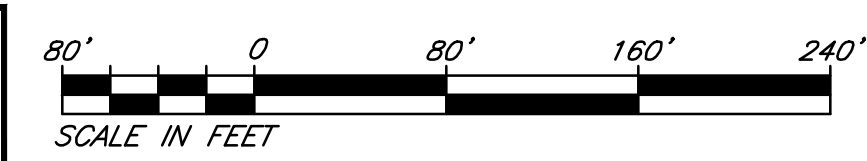
IN THE CITY OF RIVERSIDE



- LEGEND:**
- PROPOSED WATER
 - PROPOSED SEWER
 - PROPOSED RECLAIMED WATER
 - PROPOSED STORM DRAIN
 - EXISTING WATER
 - EXISTING SEWER
 - EXISTING RECLAIMED WATER
 - EXISTING STORM DRAIN
 - EXISTING CONTOUR ELEVATION
 - EXISTING SURFACE ELEVATION
 - PROPOSED PAD ELEVATION
 - ELEV. = ELEVATION
 - FG = FINISH GRADE
 - FL = FLOWLINE
 - FS = FINISHED SURFACE
 - D.G. = DECOMPOSED GRANITE
 - L = LENGTH
 - W = WIDTH
 - MIN. = MINIMUM
 - PL = PROPERTY LINE
 - R/W = RIGHT OF WAY
 - GB = GRADE BREAK
 - TC = TOP OF CURB
 - 45 = LOT NUMBER
 - TOE OF SLOPE
 - TOP OF SLOPE
 - DAYLIGHT LINE
 - DECORATIVE PAVEMENT

LURIN AVE. & COLIN AVE. DRAINAGE DETAIL
SCALE: 1"=80'

| TIM DATE IDENTIFIER | |
|---------------------|--------|
| 01/09/20 | BY: AC |
| DATE OF THIS PLAN | |
| 01/09/20 | |



TENTATIVE TRACT MAP NO. 37731

CITY OF RIVERSIDE

PREPARED FOR:
LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 • CORONA, CA 92681-3378 951-734-2130

SHEET
2 OF 2
SHEETS

Appendix A Floral Compendium

Vegetation List

The species listed below were detected within the subject property during field surveys performed in 2016, 2017, and 2019. Field identifications are a composite list prepared by S. Reed, J. Reed, and M. Long. Scientific names follow *The Jepson Manual, Vascular Plants of California - Second Edition*, 2012, and have been updated following the Jepson Online Interchange for California Floristics database (2014). Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|--|-------------------------|
| Amaranthaceae | Amaranth Family |
| <i>Amaranthus albus</i> * | tumbleweed |
| Anacardiaceae | Sumac Family |
| <i>Schinus molle</i> * | pepper tree |
| Arecaceae | Palm Family |
| <i>Washingtonia robusta</i> * | Mexican fan palm |
| Asteraceae | Sunflower Family |
| <i>Ambrosia acanthicarpa</i> | annual bur-sage |
| <i>Ambrosia psilostachya</i> | western ragweed |
| <i>Baccharis salicifolia</i> ssp. <i>salicifolia</i> | mule fat |
| <i>Carthamus tinctorius</i> * | safflower |
| <i>Centaurea benedicta</i> | blessed thistle |
| <i>Corethrogyne filaginifolia</i> | common sandaster |
| <i>Deinandra fasciculata</i> | fascicled tarplant |
| <i>Deinandra paniculata</i> | paniculate tarplant |
| <i>Erigeron canadensis</i> | horseweed |
| <i>Helianthus annuus</i> | common sunflower |
| <i>Heterotheca grandiflora</i> | telegraph weed |
| <i>Lactuca serriola</i> * | prickly lettuce |
| <i>Lasthenia gracilis</i> | goldfields |
| <i>Lessingia filaginifolia</i> | California aster |
| <i>Matricaria discoidea</i> | pineapple weed |
| <i>Oncosiphon piluliferum</i> * | stinknet |
| <i>Pseudognaphalium californicum</i> | California everlasting |
| <i>Sonchus asper</i> * | prickly sow thistle |
| <i>Taraxacum officinale</i> * | common dandelion |

| Scientific Name | Common Name |
|---|-----------------------------|
| <i>Uropappus lindleyi</i> | silver puffs |
| <i>Xanthium strumarium</i> | cocklebur |
| | |
| Boraginaceae | Borage Family |
| <i>Amsinckia intermedia</i> | common fiddleneck |
| <i>Amsinckia menziesii</i> | small-flowered fiddleneck |
| <i>Cryptantha intermedia</i> | popcorn flower (common) |
| <i>Heliotropium curassavicum</i> var. <i>oculatum</i> | alkali heliotrope |
| <i>Pectocarya linearis</i> ssp. <i>ferocula</i> | slender combbur |
| <i>Plagiobothrys collinus</i> | California popcorn flower |
| | |
| Brassicaceae | Mustard Family |
| <i>Brassica nigra</i> * | black mustard |
| <i>Hirschfeldia incana</i> * | short-pod mustard |
| <i>Raphanus sativus</i> * | radish |
| <i>Sisymbrium irio</i> * | London rocket |
| | |
| Cactaceae | Cactus Family |
| <i>Opuntia</i> sp. | |
| | |
| Chenopodiaceae | Goosefoot Family |
| <i>Chenopodium album</i> * | Lamb's quarters |
| <i>Salsola tragus</i> * | Russian thistle |
| <i>Atriplex rosea</i> * | Redscale, tumbling oracle |
| | |
| Convolvulaceae | Morning-glory Family |
| <i>Calystegia macrostegia</i> | morning-glory |
| <i>Convolvulus arvensis</i> | field bindweed |
| <i>Cuscuta californica</i> var. <i>californica</i> | California dodder |
| | |
| Crassulaceae | Crassila Family |
| <i>Crassula connata</i> | sand pygmy-stonecrop |
| | |
| Cucurbitaceae | Gourd Family |
| <i>Cucurbita foetidissima</i> | buffalo gourd |
| <i>Marah macrocarpus</i> | wild cucumber |
| | |
| Euphorbiaceae | Spurge Family |
| <i>Croton setiger</i> (formally <i>Eremocarpus</i>) | doveweed |
| <i>Euphorbia polycarpa</i> | smallseed sandmat |
| <i>Euphorbia prob. albomarginata</i> | rattlesnake spurge |
| | |
| Fabaceae | Legume Family |

| Scientific Name | Common Name |
|---|--------------------------------|
| <i>Acmispon glaber</i> | deerweed |
| <i>Cercidium</i> sp.* | Palo Verde |
| <i>Lupinus bicolor</i> | miniature lupine |
| <i>Melilotus officinalis</i> * | yellow sweetclover |
| <i>Cercis occidentalis</i> * | redbud |
| | |
| Geraniaceae | Geranium Family |
| <i>Erodium cicutarium</i> * | redstem filaree |
| | |
| Hydrophyllaceae | Water Leaf Family |
| <i>Nemophila menziesii</i> | baby blue eyes |
| | |
| Lamiaceae | Mint Family |
| <i>Marrubium vulgare</i> * | horehound |
| <i>Salvia columbariae</i> | chia |
| <i>Salvia mellifera</i> | black sage |
| <i>Trichostema lanceolatum</i> | vinegar weed |
| | |
| Liliaceae | Lily Family |
| <i>Dichelostemma capitatum</i> | bluedicks |
| | |
| Malvaceae | Mallow Family |
| <i>Malva parviflora</i> * | cheeseweed |
| | |
| Nyctaginaceae | Four O'Clock Family |
| <i>Mirabilis laevis</i> var. <i>crassifolia</i> | wishbone bush |
| | |
| Oleaceae | Olive Family |
| <i>Fraxinus</i> sp. | ash |
| <i>Olea europaea</i> | olive |
| | |
| Onagraceae | Evening Primrose Family |
| <i>Camissoniopsis bistorta</i> | southern sun cup |
| <i>Epilobium</i> prob. <i>cilatum</i> | green willow-herb |
| | |
| Papaveraceae | Poppy Family |
| <i>Eschscholzia californica</i> | California poppy |
| | |
| Poaceae | Grass Family |
| <i>Avena barbata</i> * | slender wild oat |
| <i>Bromus diandrus</i> * | ripgut grass |
| <i>Bromus madritensis</i> ssp. <i>rubens</i> * | red brome |
| <i>Distichlis spicata</i> | salt grass |

| Scientific Name | Common Name |
|-----------------------------|----------------------------|
| <i>Cynodon sp.*</i> | Burmuda grass |
| <i>Festuca myuros*</i> | rattail sixweeks grass |
| <i>Hordeum murinum*</i> | wall barley |
| <i>Schismus barbatus*</i> | common Mediterranean grass |
| <i>Sorghum halepense*</i> | Johnsongrass |
| | |
| Polygonaceae | Buckwheat Family |
| <i>Rumex crispus*</i> | curly dock |
| | |
| Portulacaceae | Purslane Family |
| <i>Calandrinia ciliata</i> | redmaids |
| <i>Portulaca oleracea*</i> | common purslane |
| | |
| Salicaceae | Salix Family |
| <i>Salix laevigata</i> | red willow |
| <i>Salix lasiolepis</i> | arroyo willow |
| <i>Salix gooddingii</i> | Gooding's black willow |
| | |
| Solanaceae | Nightshade Family |
| <i>Datura wrightii</i> | jimson weed |
| <i>Nicotiana glauca*</i> | tree tobacco |
| | |
| Tamaricaceae | Tamarisk Family |
| <i>Tamarix sp.*</i> | tamarisk |
| | |
| Urticaceae | Nettle Family |
| <i>Urtica urens*</i> | dwarf nettle |
| | |
| Zygophyllaceae | Caltrop Family |
| <i>Tribulus terrestris*</i> | common puncture vine |

Appendix B

Faunal Compendium

Birds

Birds were observed with 10x42 binoculars. Birds were identified following The Sibley Field Guide to Birds of Western North America (2003), and updated to conform to changes in nomenclature consistent with the most recent American Ornithological Society checklist. Species observed on the subject property are noted by a bold dot (●). Bird species not observed but could occur foraging on the subject site, or as a migratory stopover have also been included. Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|-------------------------------------|-------------------------------|
| Accipitridae | Hawks, Eagles, Kites |
| <i>Accipiter cooperii</i> ● | Cooper's hawk |
| <i>Accipiter striatus</i> | sharp-shinned hawk |
| <i>Buteo jamaicensis</i> ● | red-tailed hawk |
| <i>Buteo lineatus</i> | red-shouldered hawk |
| <i>Buteo regalis</i> | ferruginous hawk |
| <i>Circus cyaneus</i> | northern harrier |
| <i>Elanus leucurus</i> | white-tailed kite |
| | |
| Aegithalidae | Bushtits |
| <i>Psaltiriparus minimus</i> ● | bushtit |
| | |
| Alaudidae | Larks |
| <i>Eremophila alpestris actia</i> ● | California horned lark |
| | |
| Bombycillidae | Waxwings |
| <i>Bombycilla cedrorum</i> | cedar waxwing |
| | |
| Caprimulgidae | Nightjars, Goatsuckers |
| <i>Phalaenoptilus nuttallii</i> | common poorwill |
| | |
| Cardinalidae | Cardinals |
| <i>Passerina caerulea</i> | blue grosbeak |
| <i>Pheucticus melanocephalus</i> | black-headed grosbeak |
| | |
| Cathartidae | American Vultures |
| <i>Cathartes aura</i> | turkey vulture |
| | |

| Scientific Name | Common Name |
|-------------------------------------|--------------------------------|
| Charadriidae | Plovers |
| <i>Charadrius vociferus</i> ● | killdeer |
| Columbidae | Pigeons, Doves |
| <i>Columba livia</i> *● | rock pigeon |
| <i>Columbina passerina</i> | common ground-dove |
| <i>Patagioenas fasciata</i> | band-tailed pigeon |
| <i>Streptopelia decaocto</i> * | Eurasian collared-dove |
| <i>Zenaida macroura</i> ● | mourning dove |
| Corvidae | Crows, Jays |
| <i>Aphelocoma californica</i> ● | California scrub-jay |
| <i>Corvus brachyrhynchos</i> ● | American crow |
| <i>Corvus corax</i> ● | common raven |
| Cuculidae | Cuckoos and Roadrunners |
| <i>Geococcyx californianus</i> ● | greater roadrunner |
| Falconidae | Falcons |
| <i>Falco sparverius</i> ● | American kestrel |
| Fringillidae | Finches |
| <i>Haemorhous mexicanus</i> ● | house finch |
| <i>Haemorhous purpureus</i> | purple finch |
| <i>Spinus lawrencei</i> | Lawrence's goldfinch |
| <i>Spinus psaltria</i> ● | lesser goldfinch |
| <i>Spinus tristis</i> | American goldfinch |
| Hirundinidae | Swallows, Martins |
| <i>Hirundo pyrrhonota</i> ● | cliff swallow |
| <i>Hirundo rustica</i> | barn swallow |
| <i>Stelgidopteryx serripennis</i> ● | northern rough-winged swallow |
| <i>Tachycineta bicolor</i> | tree swallow |
| Icteridae | Blackbirds |
| <i>Euphagus cyanocephalus</i> ● | Brewer's blackbird |
| <i>Icterus bullockii</i> | Bullock's oriole |
| <i>Icterus cucullatus</i> ● | hooded oriole |
| <i>Quiscalus mexicanus</i> | great-tailed grackle |
| <i>Molothrus ater</i> ● | brown-headed cowbird |
| <i>Sturnella neglecta</i> ● | western meadowlark |
| | |
| | |

| Scientific Name | Common Name |
|-------------------------------------|--|
| Mimidae | Mockingbirds, Thrashers |
| <i>Mimus polyglottos</i> ● | northern mockingbird |
| | |
| Parulidae | Wood Warblers |
| <i>Geothlypis trichas</i> | common yellowthroat |
| <i>Oreothlypis celata</i> | orange-crowned warbler |
| <i>Setophaga coronata</i> | yellow-rumped warbler |
| | |
| Passerellidae | New World Sparrows |
| <i>Aimophila ruficeps canescens</i> | Southern California rufous-crowned sparrow |
| <i>Chondestes grammacus</i> | lark sparrow |
| <i>Junco hyemalis</i> | dark-eyed junco |
| <i>Melospiza melodia</i> | song sparrow |
| <i>Melospiza crissalis</i> ● | California towhee |
| <i>Passerculus sandwichensis</i> ● | savannah sparrow |
| <i>Zonotrichia atricapilla</i> | golden-crowned sparrow |
| <i>Zonotrichia leucophrys</i> ● | white-crowned sparrow |
| | |
| Passeridae | Old World Sparrows |
| <i>Passer domesticus</i> *● | house sparrow |
| | |
| Phasianidae | Pheasant Family |
| <i>Callipepla californica</i> ● | California quail |
| | |
| Picidae | Woodpeckers |
| <i>Colaptes auratus</i> | northern flicker |
| <i>Picoides nuttallii</i> ● | Nuttall's woodpecker |
| | |
| Ptiliognathidae | Silky Flycatchers |
| <i>Phainopepla nitens</i> | phainopepla |
| | |
| Strigidae | Typical Owls |
| <i>Bubo virginianus</i> | great horned owl |
| <i>Megascops kennicottii</i> | western screech-owl |
| | |
| Sturnidae | Starlings |
| <i>Sturnus vulgaris</i> *● | European starling |
| | |
| Trochilidae | Hummingbirds |
| <i>Archilochus alexandri</i> | black-chinned hummingbird |
| <i>Calypte anna</i> ● | Anna's hummingbird |
| <i>Calypte costae</i> | Costa's hummingbird |
| <i>Selasphorus sasin</i> | Allen's hummingbird |
| | |

| Scientific Name | Common Name |
|--------------------------------|---------------------------|
| Troglodytidae | Wrens |
| <i>Thryomanes bewickii</i> | Bewick's wren |
| <i>Troglodytes aedon</i> ● | house wren |
| | |
| Turdidae | Thrushes |
| <i>Sialia mexicana</i> | western bluebird |
| <i>Turdus migratorius</i> | American robin |
| | |
| Tyrannidae | Tyrant Flycatchers |
| <i>Contopus cooperi</i> | olive-sided flycatcher |
| <i>Contopus sordidulus</i> | western wood pewee |
| <i>Empidonax oberholseri</i> | dusky flycatcher |
| <i>Sayornis nigricans</i> ● | black phoebe |
| <i>Sayornis saya</i> ● | Say's phoebe |
| <i>Tyrannus verticalis</i> ● | western kingbird |
| <i>Tyrannus vociferans</i> ● | Cassin's kingbird |
| <i>Myiarchus cinerascens</i> ● | Ash-throated flycatcher |
| | |
| Tytonidae | Barn Owls |
| <i>Tyto alba</i> | barn owl |

Mammals

Records included herein were derived from TERACOR field observations and peer-reviewed literature. Species seen or otherwise detected are noted with a bold dot (●). Nomenclature follows *Peterson Field Guides: Mammals of North America* (Reid 2006). Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|----------------------------------|--|
| Canidae | Coyotes, Dogs, Foxes, Jackals, and Wolves |
| <i>Canis latrans</i> ● | coyote |
| | |
| Cricetidae | Hamsters, Voles, New World Rats and Mice |
| <i>Microtus californicus</i> | California vole |
| <i>Mus musculus</i> * | house mouse |
| <i>Neotoma lepida intermedia</i> | San Diego desert woodrat |
| <i>Peromyscus californicus</i> | California mouse |
| <i>Peromyscus maniculatus</i> | American deer mouse |
| <i>Rattus norvegicus</i> * | Norway rat |
| <i>Rattus rattus</i> * | black rat |
| <i>Reithrodontomys megalotis</i> | western harvest mouse |
| | |
| Didelphidae | American Opossums |
| <i>Didelphis virginiana</i> * | Virginia opossum |

| Scientific Name | Common Name |
|------------------------------------|--|
| Felidae | Cats |
| <i>Felis silvestris catus*</i> | domestic cat |
| <i>Lynx rufus</i> | bobcat |
| Geomyidae | Pocket Gophers |
| <i>Thomomys bottae</i> ● | Botta's pocket gopher |
| Heteromyidae | Pocket Mice and Kangaroo Rats |
| <i>Chaetodipus californicus</i> | California pocket mouse |
| <i>Chaetodipus fallax fallax</i> | northwestern San Diego pocket mouse |
| <i>Dipodomys simulans</i> | Dulzura kangaroo rat |
| <i>Dipodomys stephensi</i> | Stephens' kangaroo rat |
| Leporidae | Rabbits and Hares |
| <i>Sylvilagus audubonii</i> ● | Audubon's cottontail |
| Mephitidae | Skunks and Stink Badgers |
| <i>Mephitis mephitis</i> | striped skunk |
| Molossidae | Free-Tailed Bats |
| <i>Eumops perotis californicus</i> | western mastiff bat |
| <i>Nyctinomops femorosaccus</i> | pocketed free-tailed bat |
| <i>Nyctinomops macrotis</i> | big free-tailed bat |
| <i>Tadarida brasiliensis</i> | Brazilian free-tailed bat |
| Mustelidae | Badgers, Otters, Weasels, and Relatives |
| <i>Mustela frenata</i> | long-tailed weasel |
| Procyonidae | Raccoons and Relatives |
| <i>Procyon lotor</i> | northern raccoon |
| Sciuridae | Squirrels, Chipmunks and Marmots |
| <i>Ostospermophilus beecheyi</i> ● | California ground squirrel |
| Vespertilionidae | Vesper Bats |
| <i>Antrozous pallidus</i> | pallid bat |
| <i>Corynorhinus townsendii</i> | Townsend's big-eared bat |
| <i>Eptesicus fuscus</i> | big brown bat |
| <i>Euderma maculatum</i> | spotted bat |
| <i>Lasionycteris noctivagans</i> | silver-haired bat |
| <i>Lasiurus blossevillei</i> | western red bat |
| <i>Lasiurus cinereus</i> | hoary bat |

| Scientific Name | Common Name |
|----------------------------|-----------------------------|
| <i>Lasiurus xanthinus</i> | western yellow bat |
| <i>Myotis californicus</i> | California myotis |
| <i>Myotis ciliolabrum</i> | western small-footed myotis |

Amphibians and Reptiles

Identification of amphibians and reptile species were made visually, with nomenclature following R.C. Stebbins (2003) *A Field Guide to Western Reptiles and Amphibians*, third edition, updated to conform to the most recent changes in nomenclature utilizing The Center for North American Herpetology. Species seen or otherwise detected are noted with a bold dot (●).

| Scientific Name | Common Name |
|---|--|
| Amphibians | |
| | |
| Frogs and Toads | |
| | |
| Bufonidae | True Toads |
| <i>Anaxyrus boreas</i> | western toad |
| | |
| Hylidae | Treefrogs and Allies |
| <i>Pseudacris regilla</i> | Pacific treefrog |
| | |
| Salamanders | |
| | |
| Plethodontidae | Lungless Salamanders |
| <i>Batrachoseps major major</i> | garden slender salamander |
| | |
| Reptiles | |
| | |
| Lizards | |
| | |
| Anguidae | Glass Lizards and Alligator Lizards |
| <i>Elgaria multicarinata webbia</i> | San Diego alligator lizard |
| | |
| | |
| Phrynosomatidae | Zebra-tailed, Fringe-toed, Spiny, Tree, Side-Blotched, and Horned Lizards |
| | |
| <i>Sceloporus occidentalis</i> ● | western fence lizard |
| <i>Uta stansburiana</i> | common side-blotched lizard |
| | |
| Scincidae | Skinks |
| <i>Plestiodon gilberti rubricaudatus</i> | western red-tailed skink |
| <i>Plestiodon skiltonianus skiltonianus</i> | Skilton's skink |

| Scientific Name | Common Name |
|--|-----------------------------------|
| | |
| Teiidae | Whiptails and Allies |
| <i>Aspidoscelis hyperythra</i> | orange-throated whiptail |
| <i>Aspidoscelis tigris stejnegeri</i> | coastal whiptail |
| | |
| Snakes | |
| | |
| Colubridae | Harmless Egg-Laying Snakes |
| <i>Masticophis flagellum piceus</i> | red racer |
| <i>Masticophis lateralis lateralis</i> | California striped racer |
| <i>Pituophis catenifer annectens</i> | San Diego gophersnake |
| | |
| Crotalidae | Pitvipers |
| <i>Crotalus oreganus helleri</i> | southern Pacific rattlesnake |

Appendix C

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Appendix D

List of Abbreviations/Acronyms

| Acronyms | |
|----------|---|
| BUOW | Burrowing owl |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CNDDDB | California Natural Diversity Data Base |
| CNPS | California Native Plant Society |
| FC | Federal Candidate Species |
| FDL | Federally Delisted |
| FE | Federally listed as Endangered |
| FESA | Federal Endangered Species Act |
| FPD | Federally Proposed for delisting |
| FPE | Federally Proposed as Endangered |
| FPT | Federally Proposed as Threatened |
| FT | Federally listed as Threatened |
| MSHCP | Western Riverside County Multiple Species Habitat Conservation Plan |
| MSL | Mean Sea Level |
| RWQCB | California Regional Water Quality Control Board – Santa Ana |
| SCE | State Candidate for Endangered |
| SCT | State Candidate for Threatened |
| SDL | State Delisted |
| SE | State listed as Endangered |
| SFP | State Fully Protected |
| SSA | State Special Animal |
| SSC | Species of Special Concern |
| ST | State listed as Threatened |
| SWL | State Watch List Species |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |

**Step I Habitat Assessment, Step II, Part a Focused Burrow Survey and
Step II, Part B Focused Burrowing Owl Survey for Tentative Tract No.
37731 a 138 Lot Subdivision of 35.8 Gross Acres (32.54 Net Acres) in the
City of Riverside,
Riverside County, California**

Assessor Parcel Numbers: 266-140-021, 266-140-022, 266-140-029,
266-140-030, 266-140-049, 266-140-050

Located within Section 29, Township 3 South
Range 4 West of the Riverside East and Steele Peak, CA Quadrangles

Prepared for:

City of Riverside

and

Lurin Land, LLC
10621 Civic Center Drive
Rancho Cucamonga, California 91730

Prepared by:

TERACOR Resource Management, Inc.
27393 Ynez Road, Suite 253
Temecula, California 92591
Office: (951) 694-8000
Fax: (951) 694-8035

Surveys Conducted By:
S. Reed, Principal



05 December 2019
Revised per City Comments 24 July 2020

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| Exhibit 7 – Soils | attached in order |

1.0 INTRODUCTION

PURPOSE

Step I Habitat Assessment and Step II, Part A Focused Burrow Survey

TERACOR Resource Management, Inc. ("TERACOR") initially conducted a focused habitat suitability assessment on 22 July 2019 to evaluate the biological resources on-site to determine if: 1) suitable burrowing owl (*Athene cunicularia*) ("BUOW") habitat is present on the 35.8 gross acre (32.54 net acre) site, and 2) determine if any burrows on-site could potentially be utilized by BUOW.

Due to the presence of some suitable habitat on the project site, TERACOR conducted a Step II, Part A Focused Burrow Survey on the subject property on the same date to locate and mapped California ground squirrel (*Otospermophilus beecheyi*) burrows on-site which were within areas considered suitable for BUOW, as this owl is known to opportunistically utilize ground squirrel burrows. Additionally, TERACOR examined the outer structure of each burrow encountered and mapped for evidence of BUOW occupation. We concluded that a number of potentially-occupiable burrows were present on-site, but that all potentially suitable burrows lacked any BUOW diagnostic sign. Due to the presence of potentially suitable BUOW burrows and the relatively high mobility of the organism, TERACOR recommended focused surveys be conducted throughout a broad range of the survey season.

For purposes explained in the Background section of this report, most of the project site was considered suitable for BUOW occupation with the exception of the riparian scrub vegetation along Lurin Avenue in the northwest corner of the property where vegetative density was too high for the organism to be present. We based this exclusion on the unsuitability of this habitat type to support the target organism. Large numbers of ground squirrels and their burrows were noted on-site. Properties surrounding the site are comprised of residential housing, and were found to be largely unsuitable for the organism.

Step II, Part B Focused Burrowing Owl Survey

After conducting the habitat assessment on 22 July 2019, TERACOR proceeded with focused surveys on the subject property on 31 July, 07 August, 14 August and 22 August 2019. These surveys were performed to determine the following:

1. Confirm the geographic extent of any suitable BUOW habitat present on the 35.8 gross acre (32.54 net acre) site;
2. Assess whether burrows detected on-site showed any evidence of utilization by BUOW;
3. Detect and record all parameters of occupation of BUOW if detected; and
4. Establish the number of BUOW individuals if encountered on-site.

Information contained herein is based on known BUOW life history parameters as described in MSHCP documentation and information published by the California Department of Fish and Wildlife, our field reconnaissance over several months in Spring and Summer in 2019, and other pertinent information. As required by the Survey Guidelines for the Plan Area, we visually scanned areas within 150 meters of the

subject property, but we made no intentional entry into adjoining lands as we did not have permission from property owners to do so. On-site, we conducted transect surveys across suitable areas. We scanned these areas from a distance with 10x42 Ziess binoculars and continued to scan off-site areas as we proceeded with on-site investigations. Exhibit 2 – Transect Map illustrates survey routes.

PROPERTY LOCATION AND DESCRIPTION

The property is located within the **City of Riverside** ("City"), California. The property is bounded by Lurin Avenue to the north, Mariposa Avenue to the south, Cole Avenue to the east, and existing large lot rural residential housing and vacant property to the west. The property is geographically located within Section 29 of Township 3 South, Range 4 West of the *Riverside East and Steele Peak, California 7.5 Minute Series U.S.G.S. Topographic Quadrangles*, as depicted in the attached *Exhibit 1 – USGS Topo*.

The subject site is comprised of six (6) parcels totaling 35.8 gross acres (32.54 net acres); Assessor Parcel No's. 266-140-021, 022, 029, 030, 049, and 050. Elevations on-site range from approximately 1736 feet above mean sea level (msl) on the northernmost edge of the site along Lurin Avenue, to 1710 feet msl at the southwest corner of the property at Mariposa Avenue. There is vertical fall of approximately 26 feet across the site. The relief of the property was characterized as gently rolling.

Elevations on-site range from approximately 1685 feet above mean sea level (msl) on the northernmost edge of the site along Lurin Avenue, to 1680 feet msl at the south edge of the property at Mariposa Avenue. There is vertical fall of approximately 5 feet across the site. The relief of the property is best characterized as generally level or gently rolling.

The topography of the site generally slopes from north to south. The property is mainly comprised of an annual non-native grassland with common annual wildflowers prevalent during Spring and Summer months. A roadside ditch along Lurin Avenue appears to provide stormwater and urban nuisance runoff to the northeast corner of the property, where a disturbed stand of mixed willow and mulefat scrub is present. Ornamental trees are present in several places on-site. Vegetation community alliances are discussed in Section 3.0 – Vegetation and Plant Communities.

The property is located on the roof of uplifted, Mesozoic (approximately 600 to 65 million years BCE) granite (grmz). Soils on-site are derived the underlying eroded granite. The soils are shallow and well drained.

The site is currently vacant. Grassland and open fields on the property were structurally suitable in terms of slope, soils types, and vegetation to support BUOW. The property is routinely disked and mowed for weed abatement and fire suppression purposes, which maintains suitability or grass and weed growth would become more dense and less likely to support BUOW.

PROJECT DESCRIPTION

Lurin Land, LLC. is currently processing the following entitlements to facilitate the establishment of an 138-unit Planned Residential Development: 1) Tentative Tract Map (TM 37731) to subdivide 35.8 gross acres (32.54 net acres) into 138 single-family residential lots and lettered lots for private streets and common open space; 2) Planned Residential Development for the establishment of detached single-family dwellings, private

streets and common open space; 3) Variance to allow a reduced perimeter setback; and 4) Design Review of project plans with the City of Riverside ("City"), CA. Gross acreage calculations include easement areas which extend into the collector streets surrounding the Project site.

BACKGROUND

BUOW is a **California Department of Fish and Wildlife** ("CDFW") "Species of Special Concern – Second Priority." Both the federal and some state resource agencies have declined to list the species as endangered or threatened based on abundance of the species in some California locations and other western states. The Western Riverside County Multiple Species Habitat Conservation Plan ("MSHCP", or "Plan") affords special consideration to BUOW due largely to localized declines. The Plan requires evaluations as to their potential presence within specified survey areas across the Plan Area. BUOW can inhabit grasslands, deserts, and open scrublands characterized by low-growing vegetation.

Independent of the MSHCP, the CDFW has undertaken a statewide effort to identify and protect occupied burrowing owl habitat in its "*Staff Report on Burrowing Owl Mitigation*" (07 March 2012) the CDFW described preferred habitat for the species as follow:

"The burrowing owl is ... well adapted to open, relatively flat expanses. In California, preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils..... owls may occur in some agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat in proximity"

Burrows are an essential component of BUOW habitat, which provide protection, shelter, and nests for BUOW (Henny and Blus 1981). BUOW typically utilize burrows made by fossorial mammals, such as California ground squirrels and/or even more secretive mammals such as American badger (*Taxidea taxus*). BUOW are also known to utilize man-made structures, such as cement culverts, pipes, asphalt or wood debris piles, and in openings beneath cement or asphalt pavement (*Burrowing Owl Survey Instructions*, Riverside County Environmental Planning Department ["EPD"], 29 March 2006).

BUOW may utilize a site for breeding, wintering, foraging, and/or migration stopovers. BUOW often exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992, Consortium Guidelines). The Guidelines also state a site may be assumed "occupied" if at least one (1) BUOW has been observed occupying a burrow within the last three (3) years, although recent observations of widespread absence locally within the MSHCP Plan Area suggest it may not be prudent to assert "active occupation" by this species if determined not currently present within a shorter timeframe.,

Occupation status of suitable BUOW habitat can also be verified at a site by observation of at least one BUOW, or, alternatively, its molted feathers, cast pellets with characteristic prey remains, prey remains, eggshell fragments, or excrement at or near a burrow entrance (*Burrowing Owl Consortium, Occupied Burrowing Owl Habitat*). Other occupation indicators can include Orthoptera (i.e., grasshoppers, katydids, and crickets) and Coleoptera (beetles) exoskeletal material when in proximity of the burrow. None of these secondary indicators was observed during the site evaluation or during focused surveys.

2.0 METHODS

BURROWING OWL SURVEY METHODS

There are no federally adopted survey requirements for BUOW, however, the County of Riverside adopted the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (Environmental Programs Department [“EPD”], 2006) (“Survey Instructions”). The California Department of Fish and Game recommends utilizing their 2012 *Staff Report on Burrowing Owl Mitigation*, however, the EPD recommended instructions supersede CDFW recommendations at this time. The Survey Instructions were published to replace the *Burrowing Owl Consortium Guidelines* to address consistency with:

- 1) Specific conservation requirements of the MSHCP for BUOW, and
- 2) Ensure direct mortality of BUOW is avoided through implementation of preconstruction surveys.

Step I: Habitat Assessment: is the first step in the survey process to assess the presence/absence of BUOW, specifically BUOW habitat, on the project site. TERACOR conducts physical walkovers of individual sites to determine if BUOW habitat, as described above, is present on-site. If suitable habitat is found on-site, then walkovers of an approximate 150-meter (500 feet) buffer zone surrounding the project is required. If permission to access surrounding private properties has not been granted, then TERACOR field personnel visually inspect surrounding properties utilizing 10x40 or 10x42 binoculars.

Further, if BUOW habitat is present on-site, TERACOR subsequently conducts a Step II: Locating Burrows and Burrowing Owls Survey. Step II surveys must be conducted during the breeding season (March 1 to August 31), and must be comprised of a minimum of one (1) site visit. Moreover, all Step II surveys are to be performed during weather that is conducive to observing owls outside of burrow complexes, and are not accepted if they are conducted during rain, high winds (>20 mph), dense fog, or temperatures over 90°F. BUOW sign may not be detectable if surveys are conducted within five days following rain.

Step II surveys are comprised of two (2) components; *Part A: Focused Burrow Surveys* and *Part B: Focused Burrowing Owl Surveys*.

Part A: Focused Burrow Surveys consist of a systematic survey for burrows by walking through suitable habitat areas. Suitable habitat areas are walked at maximum transect intervals spaced at approximately 30 meters (100 feet), with transect interval variations to accommodate terrain, vegetation density, and ground surface visibility. Project sites of 100 acres or more are generally transected by two (2) or more TERACOR field personnel. Burrow Surveys are physical inspections of burrows located within suitable habitat or potential foraging habitat on-site. If BUOW burrows or BUOW are recorded during surveys, BUOW and BUOW burrow locations are mapped using a hand-held G.P.S. unit and on aerial or topographic mapping. In contrast, if no potential burrows are observed during burrow surveys then no further surveys are required.

Part B: Focused Burrowing Owl Surveys are conducted if burrows which could potentially support BUOW are determined to be present during Part A: Focused Burrow Surveys. Part B surveys are conducted on four (4) separate survey dates, though the first may be conducted concurrently with the Focused Burrow

Survey. Initially, these surveys are performed by scanning all suitable habitat areas, mapped burrows, owl sign, and owls both on-site and within the 150 meter buffer zone utilizing 10x42 or 8x32 binoculars. Subsequently, TERACOR field personnel conduct walkovers at maximum transect intervals spaced at approximately 30 meters (100 feet), with transect interval variations to accommodate terrain, vegetation density, and ground surface visibility. During field surveys, TERACOR field personnel minimize disturbance near all burrows encountered. No BUOW-occupied burrows were observed.

Step III: Reporting Requirements: states that once the appropriate surveys have been completed, a report shall be submitted to EPD and the Western Riverside County Regional Conservation Authority Monitor Program Administrator which outlines the survey methodologies, transect width, duration, conditions, and results of the survey. The property, however, is located within the City; therefore, the report will be submitted to the City. Further, appropriate maps showing BUOW burrow locations and/or individual BUOW sightings must be included in the report.

Preconstruction Surveys: must be conducted on all subject properties containing burrows or suitable habitat (based on Step I: Habitat Assessment) whether owls were detected or not within 30 days prior to ground disturbance to avoid direct take of BUOW (MSHCP Species – Specific Objective 6).

CNDDDB QUERY

The State of California maintains the *Natural Diversity Data Base* ("CNDDDB"), which is a computerized inventory of information on the location of California rare, threatened, endangered, and otherwise sensitive plants, animals, and natural communities. Updates to the CNDDDB are issued monthly. Valuable information regarding the species occurrence, population numbers, observers, occurrence dates and potential threats to the organism(s) are included for each occurrence record. TERACOR queried the *Riverside East and Steele Peak Quadrangles* specifically for BUOW location records. The results of that query are presented below in Section 3.0.

SOIL ANALYSIS

In accordance with the MSHCP, all biological surveys must include a description of soils present on-site. TERACOR, therefore, based our soil survey analysis on the **Natural Resources Conservation Service** ("NRCS") Web Soil Survey of the Western Riverside Area, California mapped soils on the property. Soil types present on the property are presented below in Section 3.0.

VEGETATION CLASSIFICATIONS

Literature reviewed from which plant names and identifications, vegetation communities and associations, and relevant descriptions were derived include: *The Jepson Manual, Vascular Plants of California - Second Edition* (Baldwin et. al. 2012), the CDFW's *California Natural Community List* (2018), and *A Manual of California Vegetation - Second Edition* (Sawyer, Keeler-Wolf and Evens 2009). A complete list of references has been included as Appendix D.

FIELD VISITS

TERACOR Principal Biologist S. Reed, assisted by field assistant E. Siordia, conducted a Step II, Part A Focused Burrow Survey on 22 July 2019 to obtain G.P.S. locations of all potentially suitable burrows and map any areas which would be excluded from surveys.

TERACOR detected numerous California ground squirrel burrows and burrow complexes on the property. We inventoried all ground squirrel burrow locations, and conducted surveyed all suitable open grassland areas on-site, as depicted in the attached *Exhibit 5 – Suitable Burrow Locations*. Burrows and burrow complexes were concentrated in the central and northern portion of the subject site. No BUOW utilization sign, however, was detected within or near any of these burrows.

TERACOR also detected other small mammal burrows throughout the property. These burrows appeared to be utilized by deer mice (*Peromyscus* sp.), pocket mice (*Chaetodipus* sp.) or kangaroo rats (*Dipodomys* sp.) and were considered too small to be utilized by BUOW. The G.P.S. locations of the potential owl burrows detected are presented in Appendix C – Burrow UTM Locations.

TERACOR field personnel conducted a Step II, Part B Focused Burrowing Owl Survey on the following dates: 31 July, 07 August, 14 August, and 22 August 2019. Weather conditions during the survey dates were favorable for detection of the species and are presented in *Table 1 - Meteorological Data*, presented below.

Table 1 - Meteorological Data

| Date | Surveyors | Time of Survey | | Temperature (°F) | | Percent Cloud Cover | | Wind Speed (mph) | | Annual Precipitation to Date (inches) |
|--------------|-----------|----------------|------|------------------|-----|----------------------------------|----------------------------------|------------------|-------|---------------------------------------|
| | | Start | End | Start | End | Start | End | Start | End | |
| 31 July 2019 | S. Reed | 0500 | 0620 | 63 | 65 | clear | clear | calm | calm | 4.54 prior season |
| 07 Aug: 2019 | S. Reed | 0620 | 0730 | 69 | 70 | 40% | 40% | calm | calm | 4.54 prior season |
| 14 Aug 2019 | S. Reed | 0605 | 0730 | 67 | 69 | Clear | clear | 0- 2 | 0 - 5 | 4.54 prior season |
| 22 Aug 2019 | S. Reed | 0615 | 0730 | 59 | 60 | Intermittent fog waited to clear | Intermittent fog waited to clear | calm | calm | 4.54 prior season |

Source: TERACOR field investigators

*Annual precipitation data was obtained from <http://weathercurrents.com/riverside-orangecrest-morenovalley>. The annual precipitation season extends from July 1 2018 to June 30 2019

Fieldwork was conducted on foot through the site at transects spaced no greater than 30 meters (approximately 100 feet). Visibility was very good. *Exhibit 2 – Transect Map – 2018 Aerial Photo*, attached, depicts TERACOR field personnel's approximate transects. Faunal and floral species present were identified in the field and recorded by S. Reed.

3.0 RESULTS

FAUNA

TERACOR field personnel detected and recorded various bird and other animal species incidentally during the focused BUOW surveys on-site.

Avian species detected included, but were not limited to, mourning dove (*Zenaida macroura*), California towhee (*Pipilo crissalis*), western meadowlark (*Sturnella neglecta*), lark sparrow (*Chondestes grammacus*), common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*), song sparrow (*Melospiza melodia*), western kingbird (*Tyrannus verticalis*), hooded oriole (*Icterus cucullatus*), lesser goldfinch (*Carduelis psaltria*), American pipit (*Anthus rubescens*), red-tailed hawk (*Buteo jamacensis*), Anna's hummingbird (*Calypte anna*), and lesser goldfinch (*Carduelis psaltria*).

Mammals detected included California ground squirrel, and Audubon's cottontail (*Sylvilagus audubonii*). We also recorded coyote (*Canis latrans*) at the south end of the property, and foraging on area roadways.

The only reptile detected was western fence lizard (*Sceloporus occidentalis*).

A complete list of faunal species detected on-site is provided in Appendix A – Faunal Species Observed.

VEGETATION

Geographically, the property is located within the California Floristic Province Southwestern California region, specifically in the South Coast subregion. The South Coast subregion extends along the Pacific Coast from Point Conception to Mexico.

The site is primarily composed of two major vegetation community types: annual non-native grassland/wildflower field across the majority of the site. Several small, willow scrub vegetation cells were mapped on the property, and closely matched descriptions of alliances of plants contained in the *Manual of California Vegetation* (Sawyer, Keeler-Wolfe, 2nd edition), discussed below.

Only sparsely vegetated scrub and annual grassland areas would be occupiable by BUOW, because this ground-dwelling organism depends heavily on its' ability to see approaching predators and to forage freely for very small prey on the ground.

The pattern of disking in flatter areas suggests it has been performed for fire suppression purposes. A review of historic aerial photography by TERACOR suggests the property was under agricultural production into the 1970's and possibly 1980's, but that was discontinued as the City continued to urbanize.

Designations for each community type and its' respective California Natural Community Codes ("CaCodes") have been assigned as described below. Vegetation community boundaries are depicted in the attached *Exhibit 3 - Vegetation Communities - 2018 Aerial Photograph*.

Annual Non-native Grassland and Wildflower Field – Located throughout the property in former agricultural fields, this designation is a weedy catch-all term and is comprised of multiple alliances under the Sawyer-Keeler-Wolf classification system. These alliances include **Wild Oat Grassland** (*Avena barbata*) (CaCode 44.150.01), **Fiddleneck Field** (*Amsinckia intermedia*) (CaCode 42.110.03), **(Mustard Semi-Natural Herbaceous Stand** (*Hirschfeldia incana*) (CaCode 42.011.05), **Red Brome Semi-Natural Herbaceous Stand** (*Bromus rubens*) (CaCode 42.026.11) - Non-native species identified include stink net (*Oncosiphon piluliferum*), short-pod mustard (*Hirschfeldia incana*), Maltese star thistle (*Centaurea melitensis*), riggut grass (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), wild oat (*Avena* sp.), wall barley (*Hordeum murinum*) and redstem filaree (*Erodium cicutarium*).

Native species are also present in this landscape type and include paniculate tarplant (*Deinandra paniculata*), vinegar weed (*Trichostema lanceolatum*), common sunflower (*Helianthus annuus*), common fiddleneck (*Amsinckia intermedia*), buffalo gourd (*Cucurbita foetidissima*), doveweed (*Croton setiger*) and miniature lupine (*Lupinus bicolor*).

Red willow (*Salix laevigata*) (CaCode 61.205.01), and **Goodling's black willow** (*Salix goodingii*) (CaCode 61.211.02) mixed with a low density of **mulefat** (*Baccharis salicifolia*) are present at the north end of the site along Lurin Avenue. This area, along with cells of other native and non-native trees, generally were not included in the survey, as BUOW generally avoid densely-vegetated areas.

CNDDDB QUERY RESULTS

The CNDDDB query of the resulted in 8 nearby historic recorded sightings of BUOW from 2005 to 2009, on the west side Interstate 215 in the vicinity of the project. These detections are depicted in the attached *Exhibit 4 – Burrowing Owl CNDDDB Locations*.

SOIL ANALYSIS RESULTS

The property is historically comprised of three (3) soil series according to the NRCS *Web Soil Survey: Western Riverside Area, California*. The soils historically present on the property are as follows:

Table 2 - Soil Types

| CODE | SOIL TYPE | PROPERTY LOCATION |
|------|--|---|
| FbC2 | Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded | Southeast corner of property |
| FfC2 | Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded | Approx. west half of property and along Cole Ave. |
| MmB | Monserate sandy loam, 0 to 5% slopes, eroded | Approx. center of site |

All three soils within the property are considered structurally suitable for occupation by BUOW and other burrowing organisms based on the sandy loam composition of each soil. *Exhibit 7 – Soils*, depicts the different soils series present on-site.

SURVEY RESULTS

On-Site: Photographs were taken during TERACOR's field survey, and are depicted in the attached *Exhibit 6 – Site Photos*.

No BUOW were observed during the course of the four (4) focused surveys

Off-Site: TERACOR did not obtain permission to transect the surrounding properties for BUOW. TERACOR field personnel did, however, scan the 150 meter off-site survey zone utilizing 10 x 42 binoculars as appropriate. Residential properties were adjacent to the west and south. Properties to the east were being mass-graded during surveys and could not support BUOW at this time. The property to the north is developed with single family residential housing. No owls were observed off-site.

4.0 CONCLUSION AND RECOMMENDATIONS

We detected no primary or secondary/evidence of BUOW occupation. No BUOW were observed during TERACOR's field surveys.

In accordance with MSHCP requirements TERACOR recommends conducting a pre-construction survey within 30 days prior to ground disturbance since suitable habitat is present on-site.

A list of references is presented in Appendix D – References.

CERTIFICATION: I hereby certify that the statements and exhibits contained in this report present 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.



Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. **839896-6**
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

05 December 2019

Date

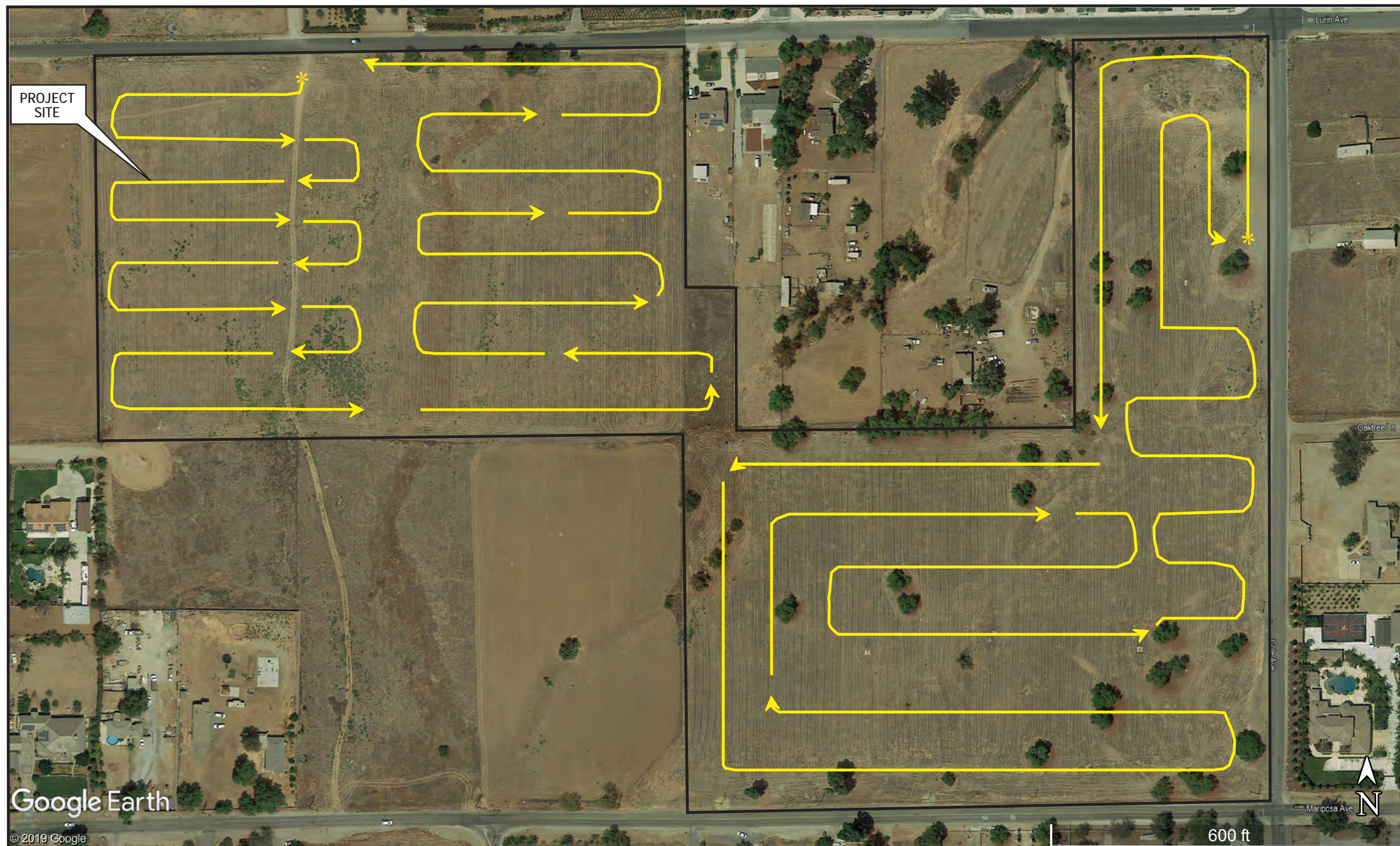


Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. **839896-6**
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

(Revised per City of Riverside comments 24 July 2020)

Date

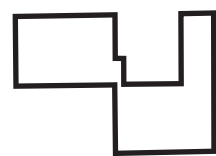




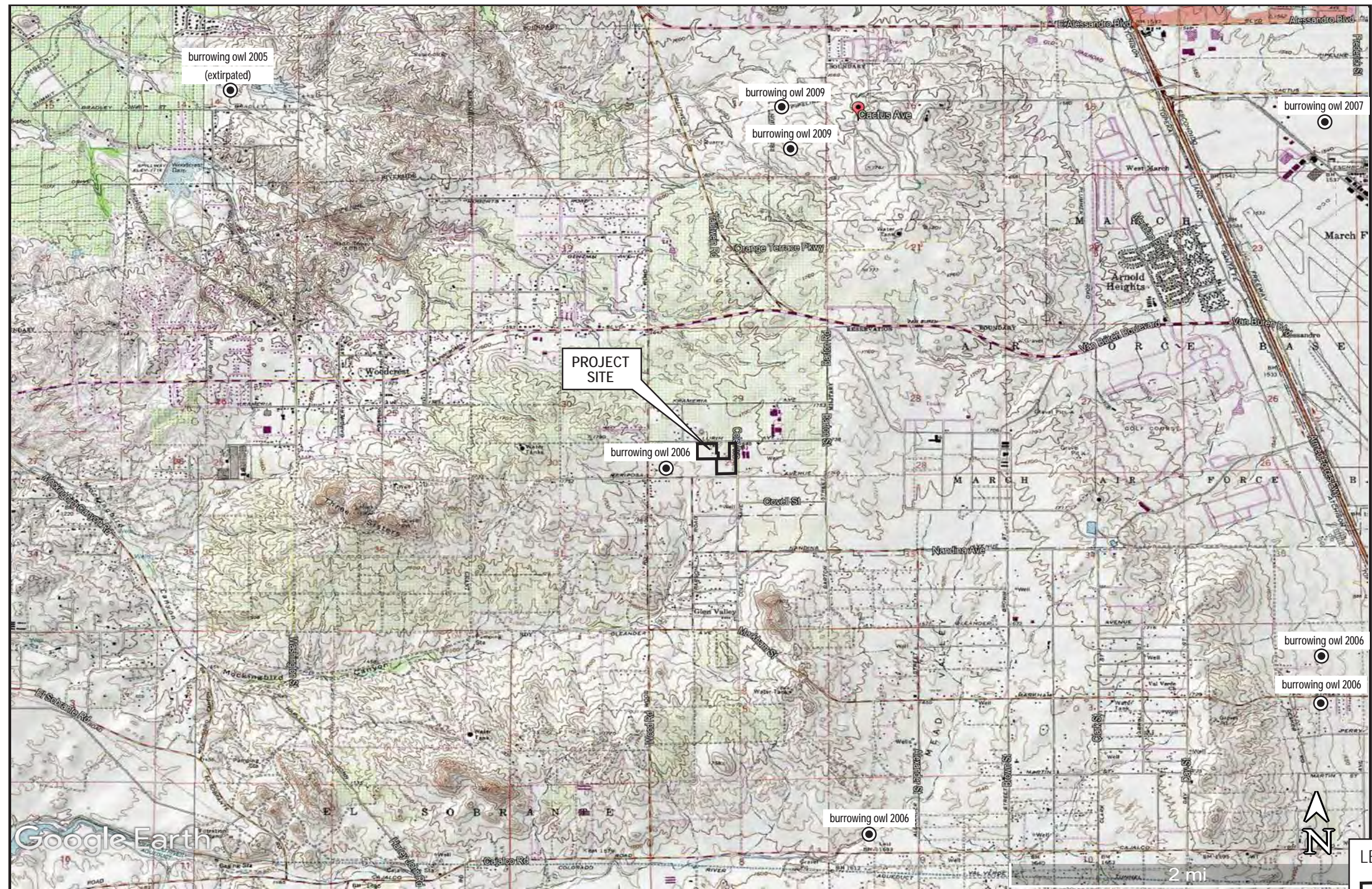


LEGEND

| Vegetation Alliance | Acres |
|---|---------------------------|
| AG - Annual Grassland | 33.05 |
| O - Ornamental (CA Pepper, Olive, Eucalyptus, Mexican Fan Palm, Tamarisk, Palo Verde) | 0.37 |
| W - Mixed Willow Scrub/MS Mulefat Scrub | 0.2 |
| Asphalt Roadway (Not Mapped/Not Habitat) | 2.18 |
| TOTAL | 35.8 (gross acres) |



- Property Configuration



LEGEND



- Subject Site





Photo 1 - Facing south-southeast from along Cole Avenue shortly after sunrise.



Photo 2 - Southwest facing view from along Cole Avenue several minutes after sunrise.



Photo 3 - View facing southwest toward Mariposa Avenue from southerly section of property.



Photo 4 - Western property line in the Northeast corner of the Tentative Tract Map.



Photo 5 - View from Lurin Avenue facing south along the east property line.



Photo 6 - In the southeast section of property facing Mariposa Avenue. A number of CA pepper trees are present, in addition to willows and salt cedar in drainage areas.



PROJECT
SITE

LEGEND

- FbC2 - Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded
- FfC2 - Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded
- MmB - Monserate sandy loam, 0 to 5 percent slopes

Appendix A

Faunal Compendium

Birds

Birds were observed with 10x42 binoculars. Birds were identified following The Sibley Field Guide to Birds of Western North America (2003), and updated to conform to changes in nomenclature consistent with the most recent American Ornithological Society checklist. Species observed on the subject property are noted by a bold dot (●). Bird species not observed but could occur foraging on the subject site, or as a migratory stopover have also been included. Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|-------------------------------------|-------------------------------|
| Accipitridae | Hawks, Eagles, Kites |
| <i>Accipiter cooperii</i> ● | Cooper's hawk |
| <i>Accipiter striatus</i> | sharp-shinned hawk |
| <i>Buteo jamaicensis</i> ● | red-tailed hawk |
| <i>Buteo lineatus</i> | red-shouldered hawk |
| <i>Buteo regalis</i> | ferruginous hawk |
| <i>Circus cyaneus</i> | northern harrier |
| <i>Elanus leucurus</i> | white-tailed kite |
| | |
| Aegithalidae | Bushtits |
| <i>Psaltirparus minimus</i> ● | bushtit |
| | |
| Alaudidae | Larks |
| <i>Eremophila alpestris actia</i> ● | California horned lark |
| | |
| Bombycillidae | Waxwings |
| <i>Bombycilla cedrorum</i> | cedar waxwing |
| | |
| Caprimulgidae | Nightjars, Goatsuckers |
| <i>Phalaenoptilus nuttallii</i> | common poorwill |
| | |
| Cardinalidae | Cardinals |
| <i>Passerina caerulea</i> | blue grosbeak |
| <i>Pheucticus melanocephalus</i> | black-headed grosbeak |
| | |
| Cathartidae | American Vultures |
| <i>Cathartes aura</i> | turkey vulture |
| | |
| | |

| Scientific Name | Common Name |
|-------------------------------------|--------------------------------|
| Charadriidae | Plovers |
| <i>Charadrius vociferus</i> ● | killdeer |
| | |
| Columbidae | Pigeons, Doves |
| <i>Columba livia</i> *● | rock pigeon |
| <i>Columbina passerina</i> | common ground-dove |
| <i>Patagioenas fasciata</i> | band-tailed pigeon |
| <i>Streptopelia decaocto</i> * | Eurasian collared-dove |
| <i>Zenaida macroura</i> ● | mourning dove |
| | |
| Corvidae | Crows, Jays |
| <i>Aphelocoma californica</i> | California scrub-jay |
| <i>Corvus brachyrhynchos</i> ● | American crow |
| <i>Corvus corax</i> ● | common raven |
| | |
| Cuculidae | Cuckoos and Roadrunners |
| <i>Geococcyx californianus</i> | greater roadrunner |
| | |
| Falconidae | Falcons |
| <i>Falco sparverius</i> ● | American kestrel |
| | |
| Fringillidae | Finches |
| <i>Haemorhous mexicanus</i> ● | house finch |
| <i>Haemorhous purpureus</i> | purple finch |
| <i>Spinus lawrencei</i> | Lawrence's goldfinch |
| <i>Spinus psaltria</i> ● | lesser goldfinch |
| <i>Spinus tristis</i> | American goldfinch |
| | |
| Hirundinidae | Swallows, Martins |
| <i>Hirundo pyrrhonota</i> ● | cliff swallow |
| <i>Hirundo rustica</i> | barn swallow |
| <i>Stelgidopteryx serripennis</i> ● | northern rough-winged swallow |
| <i>Tachycineta bicolor</i> | tree swallow |
| | |
| Icteridae | Blackbirds |
| <i>Euphagus cyanocephalus</i> ● | Brewer's blackbird |
| <i>Icterus bullockii</i> | Bullock's oriole |
| <i>Icterus cucullatus</i> ● | hooded oriole |
| <i>Quiscalus mexicanus</i> | great-tailed grackle |
| <i>Molothrus ater</i> ● | brown-headed cowbird |
| <i>Sturnella neglecta</i> ● | western meadowlark |
| | |
| Mimidae | Mockingbirds, Thrashers |
| <i>Mimus polyglottos</i> ● | northern mockingbird |

| Scientific Name | Common Name |
|-------------------------------------|--|
| Parulidae | Wood Warblers |
| <i>Geothlypis trichas</i> | common yellowthroat |
| <i>Oreothlypis celata</i> | orange-crowned warbler |
| <i>Setophaga coronata</i> | yellow-rumped warbler |
| Passerellidae | New World Sparrows |
| <i>Aimophila ruficeps canescens</i> | Southern California rufous-crowned sparrow |
| <i>Chondestes grammacus</i> | lark sparrow |
| <i>Junco hyemalis</i> | dark-eyed junco |
| <i>Melospiza melodia</i> | song sparrow |
| <i>Melospiza crissalis</i> ● | California towhee |
| <i>Passerculus sandwichensis</i> ● | savannah sparrow |
| <i>Zonotrichia atricapilla</i> | golden-crowned sparrow |
| <i>Zonotrichia leucophrys</i> ● | white-crowned sparrow |
| Passeridae | Old World Sparrows |
| <i>Passer domesticus</i> *● | house sparrow |
| Phasianidae | Pheasant Family |
| <i>Callipepla californica</i> ● | California quail |
| Picidae | Woodpeckers |
| <i>Colaptes auratus</i> | northern flicker |
| <i>Picoides nuttallii</i> ● | Nuttall's woodpecker |
| Ptiliognathidae | Silky Flycatchers |
| <i>Phainopepla nitens</i> | phainopepla |
| Strigidae | Typical Owls |
| <i>Bubo virginianus</i> | great horned owl |
| <i>Megascops kennicottii</i> | western screech-owl |
| Sturnidae | Starlings |
| <i>Sturnus vulgaris</i> *● | European starling |
| Trochilidae | Hummingbirds |
| <i>Archilochus alexandri</i> | black-chinned hummingbird |
| <i>Calypte anna</i> ● | Anna's hummingbird |
| <i>Calypte costae</i> | Costa's hummingbird |
| <i>Selasphorus sasin</i> | Allen's hummingbird |
| Troglodytidae | Wrens |
| <i>Thryomanes bewickii</i> | Bewick's wren |

| Scientific Name | Common Name |
|--------------------------------|---------------------------|
| <i>Troglodytes aedon</i> ● | house wren |
| Turdidae | Thrushes |
| <i>Sialia mexicana</i> | western bluebird |
| <i>Turdus migratorius</i> | American robin |
| Tyrannidae | Tyrant Flycatchers |
| <i>Contopus cooperi</i> | olive-sided flycatcher |
| <i>Contopus sordidulus</i> | western wood pewee |
| <i>Empidonax oberholseri</i> | dusky flycatcher |
| <i>Sayornis nigricans</i> ● | black phoebe |
| <i>Sayornis saya</i> ● | Say's phoebe |
| <i>Tyrannus verticalis</i> ● | western kingbird |
| <i>Tyrannus vociferans</i> ● | Cassin's kingbird |
| <i>Myiarchus cinerascens</i> ● | Ash-throated flycatcher |
| Tytonidae | Barn Owls |
| <i>Tyto alba</i> | barn owl |

Mammals

Records included herein were derived from TERACOR field observations and peer-reviewed literature. Species seen or otherwise detected are noted with a bold dot (●). Nomenclature follows *Peterson Field Guides: Mammals of North America* (Reid 2006). Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|----------------------------------|--|
| Canidae | Coyotes, Dogs, Foxes, Jackals, and Wolves |
| <i>Canis latrans</i> ● | coyote |
| Cricetidae | Hamsters, Voles, New World Rats and Mice |
| <i>Microtus californicus</i> | California vole |
| <i>Mus musculus</i> * | house mouse |
| <i>Neotoma lepida intermedia</i> | San Diego desert woodrat |
| <i>Peromyscus californicus</i> | California mouse |
| <i>Peromyscus maniculatus</i> | American deer mouse |
| <i>Rattus norvegicus</i> * | Norway rat |
| <i>Rattus rattus</i> * | black rat |
| <i>Reithrodontomys megalotis</i> | western harvest mouse |
| Didelphidae | American Opossums |
| <i>Didelphis virginiana</i> * | Virginia opossum |
| Felidae | Cats |

| Scientific Name | Common Name |
|------------------------------------|--|
| <i>Felis silvestris catus</i> * | domestic cat |
| <i>Lynx rufus</i> | bobcat |
| | |
| Geomyidae | Pocket Gophers |
| <i>Thomomys bottae</i> ● | Botta's pocket gopher |
| | |
| Heteromyidae | Pocket Mice and Kangaroo Rats |
| <i>Chaetodipus californicus</i> | California pocket mouse |
| <i>Chaetodipus fallax fallax</i> | northwestern San Diego pocket mouse |
| <i>Dipodomys simulans</i> | Dulzura kangaroo rat |
| <i>Dipodomys stephensi</i> | Stephens' kangaroo rat |
| | |
| | |
| Leporidae | Rabbits and Hares |
| <i>Sylvilagus audubonii</i> ● | Audubon's cottontail |
| | |
| Mephitidae | Skunks and Stink Badgers |
| <i>Mephitis mephitis</i> | striped skunk |
| | |
| Molossidae | Free-Tailed Bats |
| <i>Eumops perotis californicus</i> | western mastiff bat |
| <i>Nyctinomops femorosaccus</i> | pocketed free-tailed bat |
| <i>Nyctinomops macrotis</i> | big free-tailed bat |
| <i>Tadarida brasiliensis</i> | Brazilian free-tailed bat |
| | |
| Mustelidae | Badgers, Otters, Weasels, and Relatives |
| <i>Mustela frenata</i> | long-tailed weasel |
| | |
| Procyonidae | Raccoons and Relatives |
| <i>Procyon lotor</i> | northern raccoon |
| | |
| Sciuridae | Squirrels, Chipmunks and Marmots |
| <i>Ostospermophilus beecheyi</i> ● | California ground squirrel |
| | |
| Vespertilionidae | Vesper Bats |
| <i>Antrozous pallidus</i> | pallid bat |
| <i>Corynorhinus townsendii</i> | Townsend's big-eared bat |
| <i>Eptesicus fuscus</i> | big brown bat |
| <i>Euderma maculatum</i> | spotted bat |
| <i>Lasionycteris noctivagans</i> | silver-haired bat |
| <i>Lasiurus blossevillii</i> | western red bat |
| <i>Lasiurus cinereus</i> | hoary bat |
| <i>Lasiurus xanthinus</i> | western yellow bat |
| <i>Myotis californicus</i> | California myotis |

| Scientific Name | Common Name |
|---------------------------|-----------------------------|
| <i>Myotis ciliolabrum</i> | western small-footed myotis |

Amphibians and Reptiles

Identification of amphibians and reptile species were made visually, with nomenclature following R.C. Stebbins (2003) *A Field Guide to Western Reptiles and Amphibians*, third edition, updated to conform to the most recent changes in nomenclature utilizing The Center for North American Herpetology. Species seen or otherwise detected are noted with a bold dot (●).

| Scientific Name | Common Name |
|---|--|
| Amphibians | |
| Frogs and Toads | |
| Bufonidae | True Toads |
| <i>Anaxyrus boreas</i> | western toad |
| Hylidae | Treefrogs and Allies |
| <i>Pseudacris regilla</i> | Pacific treefrog |
| Salamanders | |
| Plethodontidae | Lungless Salamanders |
| <i>Batrachoseps major major</i> | garden slender salamander |
| Reptiles | |
| Lizards | |
| Anguidae | Glass Lizards and Alligator Lizards |
| <i>Elgaria multicarinata webbia</i> | San Diego alligator lizard |
| Phrynosomatidae | Zebra-tailed, Fringe-toed, Spiny, Tree, Side-Blotched, and Horned Lizards |
| <i>Sceloporus occidentalis</i> ● | western fence lizard |
| <i>Uta stansburiana</i> | common side-blotched lizard |
| Scincidae | Skinks |
| <i>Plestiodon gilberti rubricaudatus</i> | western red-tailed skink |
| <i>Plestiodon skiltonianus skiltonianus</i> | Skilton's skink |
| Teiidae | Whiptails and Allies |

| Scientific Name | Common Name |
|--|-----------------------------------|
| <i>Aspidoscelis hyperythra</i> | orange-throated whiptail |
| <i>Aspidoscelis tigris stejnegeri</i> | coastal whiptail |
| | |
| Snakes | |
| | |
| Colubridae | Harmless Egg-Laying Snakes |
| <i>Masticophis flagellum piceus</i> | red racer |
| <i>Masticophis lateralis lateralis</i> | California striped racer |
| <i>Pituophis catenifer annectens</i> | San Diego gophersnake |
| | |
| Crotalidae | Pitvipers |
| <i>Crotalus oreganus helleri</i> | southern Pacific rattlesnake |

Appendix B Floral Compendium

Vegetation List

The species listed below were detected within the subject property during field surveys performed in 2016, 2017, and 2019. Field identifications are a composite list prepared by S. Reed, J. Reed, and M. Long. Scientific names follow *The Jepson Manual, Vascular Plants of California - Second Edition*, 2012, and have been updated following the Jepson Online Interchange for California Floristics database (2014). Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|--|-------------------------|
| Amaranthaceae | Amaranth Family |
| <i>Amaranthus albus</i> * | tumbleweed |
| Anacardiaceae | Sumac Family |
| <i>Schinus molle</i> * | pepper tree |
| Arecaceae | Palm Family |
| <i>Washingtonia robusta</i> * | Mexican fan palm |
| Asteraceae | Sunflower Family |
| <i>Ambrosia acanthicarpa</i> | Annual bur-sage |
| <i>Ambrosia psilostachya</i> | Western ragweed |
| <i>Baccharis salicifolia</i> ssp. <i>salicifolia</i> | mule fat |
| <i>Carthamus tinctorius</i> * | safflower |
| <i>Centaurea benedicta</i> | blessed thistle |
| <i>Corethrogyne filaginifolia</i> | common sandaster |
| <i>Deinandra fasciculata</i> | fascicled tarplant |
| <i>Deinandra paniculata</i> | paniculate tarplant |
| <i>Erigeron canadensis</i> | horseweed |
| <i>Helianthus annuus</i> | common sunflower |
| <i>Heterotheca grandiflora</i> | Telegraph weed |
| <i>Lactuca serriola</i> * | prickly lettuce |
| <i>Lasthenia gracilis</i> | goldfields |
| <i>Lessingia filaginifolia</i> | California aster |
| <i>Matricaria discoidea</i> | pineapple weed |
| <i>Oncosiphon piluliferum</i> * | Stinknet |
| <i>Pseudognaphalium californicum</i> | California everlasting |

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| Scientific Name | Common Name |
|---|-----------------------------|
| <i>Sonchus asper</i> * | prickly sow thistle |
| <i>Taraxacum officinale</i> * | common dandelion |
| <i>Uropappus lindleyi</i> | silver puffs |
| <i>Xanthium strumarium</i> | Cocklebur |
| | |
| Boraginaceae | Borage Family |
| <i>Amsinckia intermedia</i> | common fiddleneck |
| <i>Amsinckia menziesii</i> | small-flowered fiddleneck |
| <i>Cryptantha intermedia</i> | popcorn flower (common) |
| <i>Heliotropium curassavicum</i> var. <i>oculatum</i> | alkali heliotrope |
| <i>Pectocarya linearis</i> ssp. <i>ferocula</i> | slender combbur |
| <i>Plagiobothrys collinus</i> | California popcorn flower |
| | |
| Brassicaceae | Mustard Family |
| <i>Brassica nigra</i> * | black mustard |
| <i>Hirschfeldia incana</i> * | short-pod mustard |
| <i>Raphanus sativus</i> * | radish |
| <i>Sisymbrium irio</i> * | London rocket |
| | |
| Cactaceae | Cactus Family |
| <i>Opuntia</i> sp. | |
| | |
| Chenopodiaceae | Goosefoot Family |
| <i>Chenopodium album</i> * | Lamb's quarters |
| <i>Salsola tragus</i> * | Russian thistle |
| <i>Atriplex rosea</i> * | Redscale, tumbling oracle |
| | |
| Convolvulaceae | Morning-glory Family |
| <i>Calystegia macrostegia</i> | morning-glory |
| <i>Convolvulus arvensis</i> | field bindweed |
| <i>Cuscuta californica</i> var. <i>californica</i> | California dodder |
| | |
| Crassulaceae | Crassila Family |
| <i>Crassula connata</i> | sand pygmy-stonecrop |
| | |
| Cucurbitaceae | Gourd Family |
| <i>Cucurbita foetidissima</i> | buffalo gourd |
| <i>Marah macrocarpus</i> | wild cucumber |
| | |
| Euphorbiaceae | Spurge Family |
| <i>Croton setiger</i> (formally <i>Eremocarpus</i>) | doveweed |
| <i>Euphorbia polycarpa</i> | smallseed sandmat |

| Scientific Name | Common Name |
|--|--------------------------------|
| <i>Euphorbia prob. albomarginata</i> | rattlesnake spurge |
| Fabaceae | Legume Family |
| <i>Acemisson glaber</i> | deerweed |
| <i>Cercidium sp.*</i> | Palo Verde |
| <i>Lupinus bicolor</i> | miniature lupine |
| <i>Melilotus officinalis*</i> | yellow sweetclover |
| <i>Cercis occidentalis*</i> | redbud |
| Geraniaceae | Geranium Family |
| <i>Erodium cicutarium*</i> | redstem filaree |
| Hydrophyllaceae | Water Leaf Family |
| <i>Nemophila menziesii</i> | baby blue eyes |
| Lamiaceae | Mint Family |
| <i>Marrubium vulgare*</i> | horehound |
| <i>Salvia columbariae</i> | chia |
| <i>Salvia mellifera</i> | black sage |
| <i>Trichostema lanceolatum</i> | vinegar weed |
| Liliaceae | Lily Family |
| <i>Dichelostemma capitatum</i> | bluedicks |
| Malvaceae | Mallow Family |
| <i>Malva parviflora*</i> | cheeseweed |
| Nyctaginaceae | Four O'Clock Family |
| <i>Mirabilis laevis var. crassifolia</i> | wishbone bush |
| Oleaceae | Olive Family |
| <i>Fraxinus sp.</i> | ash |
| <i>Olea europaea</i> | olive |
| Onagraceae | Evening Primrose Family |
| <i>Camissoniopsis bistorta</i> | southern sun cup |
| <i>Epilobium prob. cilatum</i> | green willow-herb |
| Papaveraceae | Poppy Family |
| <i>Eschscholzia californica</i> | California poppy |
| Poaceae | Grass Family |

| Scientific Name | Common Name |
|--|----------------------------|
| <i>Avena barbata</i> * | slender wild oat |
| <i>Bromus diandrus</i> * | ripgut grass |
| <i>Bromus madritensis</i> ssp. <i>rubens</i> * | red brome |
| <i>Cynodon</i> sp.* | Burmuda grass |
| <i>Distichlis spicata</i> | salt grass |
| <i>Festuca myuros</i> * | rattail sixweeks grass |
| <i>Hordeum murinum</i> * | wall barley |
| <i>Schismus barbatus</i> * | common Mediterranean grass |
| <i>Sorghum halepense</i> * | Johnsongrass |
| | |
| Polygonaceae | Buckwheat Family |
| <i>Rumex crispus</i> * | curly dock |
| | |
| Portulacaceae | Purslane Family |
| <i>Calandrinia ciliata</i> | redmaids |
| <i>Portulaca oleracea</i> * | common purslane |
| | |
| Salicaceae | Salix Family |
| <i>Salix laevigata</i> | red willow |
| <i>Salix lasiolepis</i> | arroyo willow |
| <i>Salix gooddingii</i> | Gooding's black willow |
| | |
| Solanaceae | Nightshade Family |
| <i>Datura wrightii</i> | jimson weed |
| <i>Nicotiana glauca</i> * | tree tobacco |
| | |
| Tamaricaceae | Tamarisk Family |
| <i>Tamarix</i> sp.* | tamarisk |
| | |
| Urticaceae | Nettle Family |
| <i>Urtica urens</i> * | dwarf nettle |
| | |
| Zygophyllaceae | Caltrop Family |
| <i>Tribulus terrestris</i> * | common puncture vine |

Appendix C Burrow UTM Locations

UTM coordinates were obtained utilizing a *Garmin GPSmap 64s* handheld unit.

| Feature | No. of Burrows | Datum/UTM Zone | Easting | Northing |
|----------------|----------------|----------------|---------|----------|
| Burrows | | | | |
| Burrow No. 1 | 1 | NAD83 11S | 469828 | 3748432 |
| Burrow No. 2 | 1 | NAD83 11S | 469682 | 3748495 |
| Burrow No. 3 | 1 | NAD83 11S | 470121 | 3748491 |
| Burrow No. 4 | 1 | NAD83 11S | 469605 | 3748465 |
| Burrow No. 5 | 1 | NAD83 11S | 469579 | 3748462 |
| Burrow No. 6 | 1 | NAD83 11S | 496558 | 3748441 |
| Burrow No. 7 | 1 | NAD83 11S | 469679 | 3748434 |
| Burrow No. 8 | 1 | NAD83 11S | 469685 | 3748426 |
| Burrow No. 9 | 1 | NAD83 11S | 469790 | 3748426 |
| Burrow No. 10 | 1 | NAD83 11S | 469821 | 3748422 |
| Burrow No. 11 | 1 | NAD83 11S | 469780 | 3748400 |
| Burrow No. 12 | 1 | NAD83 11S | 469639 | 3748389 |
| Burrow No. 13 | 1 | NAD83 11S | 469601 | 3748390 |
| Burrow No. 14 | 1 | NAD83 11S | 469807 | 3748490 |
| Burrow No. 15 | 1 | NAD83 11S | 470085 | 3748384 |
| Burrow No. 16 | 1 | NAD83 11S | 469586 | 3748364 |
| Burrow No. 17 | 1 | NAD83 11S | 469807 | 3748362 |
| Burrow No. 18 | 1 | NAD83 11S | 469853 | 3748333 |
| Burrow No. 19 | 1 | NAD83 11S | 469751 | 3748307 |
| Burrow No. 20 | 1 | NAD83 11S | 469727 | 3748302 |
| Burrow No. 21 | 1 | NAD83 11S | 469705 | 3748334 |
| Burrow No. 22 | 1 | NAD83 11S | 469725 | 3748485 |
| Burrow No. 23 | 1 | NAD83 11S | 470125 | 3748348 |
| Burrow No. 24 | 1 | NAD83 11S | 470147 | 3748247 |
| Burrow No. 25 | 1 | NAD83 11S | 469669 | 3748494 |
| Burrow No. 26 | 1 | NAD83 11S | 469609 | 3748497 |
| Burrow No. 27 | 1 | NAD83 11S | 470147 | 3748497 |
| Burrow No. 28 | 1 | NAD83 11S | 469585 | 3748496 |
| Burrow No. 29 | 1 | NAD83 11S | 470135 | 3748195 |
| Burrow No. 30 | 1 | NAD83 11S | 469555 | 3748498 |
| Burrow No. 31 | 1 | NAD83 11S | 470049 | 3748161 |

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| Feature | No. of Burrows | Datum/UTM Zone | Easting | Northing |
|-------------------------|----------------|----------------|---------|----------|
| Burrow No. 32 | 1 | NAD83 11S | 469622 | 3748482 |
| Burrow No. 33 | 1 | NAD83 11S | 469870 | 3748111 |
| Burrow No. 34 | 1 | NAD83 11S | 469692 | 3748474 |
| Burrow No. 35 | 1 | NAD83 11S | 469873 | 3748132 |
| Burrow No. 36 | 1 | NAD83 11S | 469793 | 3748460 |
| Burrow Complexes | | | | |
| Burrow Complex No. 1 | 2 | NAD83 11S | 469792 | 3748484 |
| Burrow Complex No. 2 | 3 | NAD83 11S | 469817 | 3748491 |
| Burrow Complex No. 3 | 4 | NAD83 11S | 470115 | 3748489 |
| Burrow Complex No. 4 | 3 | NAD83 11S | 469760 | 3748490 |
| Burrow Complex No. 5 | 2 | NAD83 11S | 470105 | 3748474 |
| Burrow Complex No. 6 | 3 | NAD83 11S | 469712 | 3748490 |
| Burrow Complex No. 7 | 5 | NAD83 11S | 470094 | 3748477 |
| Burrow Complex No. 8 | 4 | NAD83 11S | 469640 | 3748498 |
| Burrow Complex No. 9 | 4 | NAD83 11S | 470088 | 3748448 |
| Burrow Complex No. 10 | 2 | NAD83 11S | 470120 | 3748455 |
| Burrow Complex No. 11 | 3 | NAD83 11S | 469624 | 3748500 |
| Burrow Complex No. 12 | 3 | NAD83 11S | 469559 | 3748478 |
| Burrow Complex No. 13 | 4 | NAD83 11S | 470070 | 3748431 |
| Burrow Complex No. 14 | 3 | NAD83 11S | 470067 | 3748353 |
| Burrow Complex No. 15 | 3 | NAD83 11S | 469593 | 3748482 |
| Burrow Complex No. 16 | 3 | NAD83 11S | 469563 | 3748445 |
| Burrow Complex No. 17 | 7 | NAD83 11S | 469894 | 3748194 |
| Burrow Complex No. 18 | 5 | NAD83 11S | 469698 | 3748431 |

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TERACOR Resource Management, Inc. *General Biological Assessment And MSHCP Consistency Analysis For Tentative Tract No. 37731 A Subdivision of 35.8 Gross Acres (32.54 Net Acres) into 138 Single Family Residential Lots Located in the City of Riverside, CA*, dated 10 December 2019 (Revised per City Comments 24 July 2020)

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**Determination of Biologically Equivalent or Superior Preservation
for Tentative Tract No. 37731, a 35.8 Gross Acre (32.54 Net Acre)
Property Located in the
City of Riverside,
County of Riverside, California**

Assessor Parcel Numbers: 266-140-021, 022, 029, 030, 049, 050

Located within Section 29, Township 3 South
Range 4 West of the Riverside East and Steele Peak, CA Quadrangles

Prepared for:

City of Riverside

and

Lurin Land, LLC

Prepared by:

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17 January 2020

Revised per City Comments 24 July 2020

Revised per Wildlife Agency Comments 13 January 2021

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1.0 Executive Summary

This Determination of Biologically Equivalent or Superior Preservation (DBESP) was prepared for Tentative Tract No. 37731, a residential project currently under consideration for approval by the City of Riverside. Previously, and incorporated herein by reference, **TERACOR Resource Management, Inc.** ("TERACOR") provided the following reports to the **City of Riverside** ("City").

1. *Step I Habitat Assessment, Step II, Part A Focused Burrow Survey and Step II, Part B Focused Burrowing Owl Survey for Tentative Tract No. 37731 a 138 Lot Subdivision of 35.8 Gross Acres (32.54 Net Acres) in the City of Riverside, Riverside County, California, dated, 05 December 2019, TERACOR Resource Management, Inc. (Revised per City Comments 24 July 2020)*
2. *General Biological Assessment and MSHCP Consistency and Consistency Analysis for Tentative Tract No. 37731 A Subdivision of 35.8 Gross Acres (32.54 Net Acres) into 138 Single Family Residential Lots Located in the City of Riverside, CA, dated 10 December 2019, TERACOR Resource Management, Inc. (Revised per City Comments 24 July 2020) (Revised per Wildlife Agency Comments 13 January 2021)*
3. *Preliminary Jurisdictional Delineation and Determination of California Department of Fish and Wildlife and California Regional Water Quality Control Board – Santa Ana Region, and U.S. Army Corps of Engineers Jurisdiction for Tentative Tract No. 37731 a 138 Lot Subdivision of 35.8 Gross Acres (32.54 Net Acres) in the City of Riverside, Riverside County, California, dated 29 December 2019, TERACOR Resource Management, Inc. (Revised per City Comments 24 July 2020) (Revised per Wildlife Agency Comments 13 January 2021)*

The Project site is located in the City of Riverside, in the Orangecrest neighborhood. The irregularly-shaped site is located on the south side of Lurin Avenue, at the southwest corner of Lurin Avenue and Cole Avenue. The southerly boundary of the property is along Mariposa Avenue. As such, it is removed from any Core Areas, designated Habitat Linkages, Public or Quasi-Public conserved lands, Criteria Cells, or Cell Groups.

The General Biological Assessment, referenced above, considered the potential that the proposed Project site had to support all of the 146 MSHCP-covered species. The habitat assessment for each species demonstrated that suitable habitat was not present, however, to support any of the species which can require focused surveys, with the exception of burrowing owl. The RCA's Map Inquiry Website specified that a habitat assessment was required for burrowing owl, and that assessment determined that focused surveys should be performed. 2019 surveys found that BUOW was not present on the site.

TERACOR initially preliminarily tabulated the Riparian Riverine habitat we believed is present on the Project site. On 13 January 2021 the Wildlife Agencies met with the City of Riverside and the Project Applicant via remote meeting and indicated that it was their opinion that 4 of the 5 identified features on-site were riverine, and that additional one area (**Area 5A**) was extended to the south property line to indicate a flow line. TERACOR has revised this report to reflect Wildlife Agency input about which features should be considered Riparian/Riverine. TERACOR also extended Feature 5A from Feature 5 southward to the property line for a distance of 608 feet to account for a hydrological connection.

The Riparian/Riverine area is the subject of this report. Six (6) features present on the Project site (including Feature 5A) were analyzed in accordance with the characteristics described for Riparian/Riverine resources in Section 6.1.2 of the MSHCP. The revised total acreage subsequent to Wildlife Agency review is **0.28 acre**.

The Project site is not in an area that required habitat assessments/focused surveys for the following:

- Narrow Endemic Plant Species – no corresponding report section herein
- Criteria Area Plant Species – no corresponding report section herein
- Mammals – no corresponding report section herein
- Amphibians – no corresponding report section herein
- Delhi Sands Flower-loving fly – no corresponding report section herein

Focused surveys in Summer 2019 determined BUOW was not present. Five (5) potential Riparian/Riverine features were assessed and mapped; four (4) met sufficient criteria as determined by the Wildlife Agencies to be Riparian/Riverine which totaled **0.28 acre**, including one area (Feature 5A) which was extended southerly 608 feet which was also considered Riparian/Riverine. Mitigation is proposed to consist of two parts: 1:1 mitigation ratio for **0.28 acre** purchase of Rehabilitation credits as well as 1:1 mitigation ratio for **0.28 acre** purchase of Re-establishment credits at the Riverpark Mitigation Bank.

2.0 Introduction

Purpose

This report has been prepared in accordance with the Western Riverside County Multiple Species Habitat Conservation Plan ("MSHCP") Section 6.1.2 Protection of Species Associated with Riparian/Riverine

Areas and Vernal Pools. This determination has been prepared for Tentative Tract No. 37731, a residential subdivision of 35.8 gross acres (32.54 net acres) into 138 single family residential lots, in the City of Riverside. This report summarizes compliance and incorporates mitigation measures to address Project consistency with the MSHCP.

The stated purpose of Section 6.1.2 is to protect those areas important to conservation of 33 rare organisms; 3 amphibian species, 5 bird species, a single fish species, 2 invertebrate species, and 23 plant species, all listed in Section 6.1.2. These organisms were evaluated for potential presence on the project site in the General Biological Assessment and MSHCP Consistency Analysis referenced above.

Site Location/Physiography

The property is located within the **City of Riverside** ("City"), California, in the Orangecrest neighborhood. The property is bounded by Lurin Avenue to the north, Mariposa Avenue to the south, Cole Avenue to the east, and existing large lot rural residential housing to the south. The property encircles several large ranchette type properties. *Exhibit 1 – Regional Location*, attached, depicts the property's location relatively to local thoroughfares and regional freeways. The property is geographically located within Section 29 of Township 3 South, Range 4 West of the *Riverside East and Steele Peak, California 7.5 Minute Series U.S.G.S. Topographic Quadrangles*, as depicted in the attached *Exhibit 2 - USGS Topo*.

The subject site is comprised of six (6) parcels totaling 35.8 gross acres (32.54 net acres); Assessor Parcel No's. 266-140-021, 022, 029, 030, 049, and 050. Elevations on-site range from approximately 1685 feet above mean sea level (msl) on the northernmost edge of the site along Lurin Avenue, to 1680 feet msl at the south edge of the property at Mariposa Avenue. There is vertical fall of approximately 5 feet across the site. The relief of the property is best characterized as level to gently rolling. The topography of the site generally slopes from northeast to southwest.

Project Description

The 35.8 gross acre (32.54 net acre) Project site is currently vacant. Most of the site (in the south and east) formerly was a citrus grove from the late 1960's to approximately 2000, when the grove was removed and residential housing projects were considered for the site. The site has been vacant and unused since removal of the grove. There are two human-constructed ditches along Lurin Avenue and Mariposa Avenue. The grassy areas of the property are routinely disked and mowed each Fall for weed abatement and fire suppression purposes. Some of these grassy areas contain broad swales which convey sheetflow and surface runoff without producing beds and banks or ordinary high-water marks within them.

Tentative Tract No. 37731 proposes the following entitlements to facilitate the establishment of an 138-unit Planned Residential Development: 1) Tentative Tract Map (TM 37731) to subdivide 35.8 gross acres (32.54 net acres) into 138 single-family residential lots and lettered lots for private streets and common

open space; 2) Planned Residential Development for the establishment of detached single-family dwellings, private streets and common open space; 3) Variance to allow a reduced perimeter setback; and 4) Design Review of project plans. Water detention/treatment facilities would receive stormwater runoff from the residential lots and street system. Stormwater would be temporarily detained to allow for a reduction in peak stormflow runoff and treatment of low flow runoff from residential lots and streets.

Proposed water detention facilities would receive stormwater runoff from the residential lots and street system. Stormwater would be temporarily detained to allow for a reduction in peak stormflow runoff and treatment of low flow runoff from residential lots and streets. Specifically with regard to the purpose of this report, the Project proposes to remove the 3 human-induced riparian features and two roadside ditches (total 5 features) on-site in order to widen Lurin, Cole and Mariposa Avenues, construct neighborhood streets, extend subsurface storm drain infrastructure up to the southerly and western property lines and construct single family homes, two neighborhood “pocket” parks, and two WQMP treatment basins across the property.

Vegetation

The General Biological Assessment and other TERACOR reports, referenced previously, provide in-depth analysis of the vegetation alliances (communities) on-site and in the area, as well as historic disturbances and conditions over the last 50+ years.

The vegetation composition of the majority of the Project site is primarily an annual, non-native Brome grassland with an associated fiddleneck field (*Amsinkia intermedia*, *A. menziesii*) emergent seasonally in Spring. Other herbaceous flowering plants are less prevalent, including miniature lupine (*Lupinus bicolor*), popcorn flower (*Cryptantha* sp.), goldfields (*Lasthenia gracilis*), doveweed (*Croton setiger*), and tarplant (*Deinandra* sp.) and many weedy species, notably stinknet (*Oncosiphon piluliferum*). Occasional scrub pioneer species can be found on-site, such as California aster (*Corethrogene filaginifolia*), but decades of human utilization and conversions have almost erased the native scrub cover.

As described in more detail later in this report, a human-induced willow thicket recently emerged in the northeast corner of the property after the residential tracts on the north side of Lurin Avenue discharged urban runoff onto the Project site around 2005. Regular roadside ditch maintenance along Lurin Avenue conveys water entering the property from under Cole Avenue and conveys it westward toward an adjacent property.

There are two other small willow cells. One is comprised of 5 small willow trees and 1 small ash tree in the northwest portion of the project along Lurin Avenue (Feature 5). The second is a small willow area in the approximate center of the tract map (Feature 2) and is a continuation of the first feature discussed (Feature 1). Feature 4 is a second roadside ditch along Mariposa Avenue, and it is also largely unvegetated.

The characteristics, functions and values of these six (6) drainage features are described in the General Biological Assessment and MSHCP Consistency Analysis, previously referenced, and subsequently revised in accordance with Wildlife Agency comments on the DBESP.

The balance of the 35.8 gross acre (32.54 net acre) property is comprised of annual non-native brome grassland. Non-native trees, mainly California pepper trees (*Schinus molle*) and *Tamarix* occur sporadically across the grassland.

Consistency Analysis Summary

The *General Biological Assessment and MSHCP Consistency and Consistency Analysis for Tentative Tract No. 37731* (TERACOR, 10 December 2019 – revised 24 July 2020) analyzed the origin and extent of any riparian riverine features on the Project site. There are no natural streams on-site, but there are two (2) human constructed ditches (Features 1 and 4), a broad swales with several scrubby willow trees (Feature 2), a very narrow and shallow feature with primarily non-native grass (Feature 3), and a roadside outflow area that receives runoff via a 12 inch CMP under Lurin Avenue.

The features analyzed in the Project's Consistency Analysis are summarized below:

Feature 1: Feature 1 receives urban runoff from the residential area on the north side of Lurin Avenue. Based on review of historic aerials from 1962 to present, the riparian scrub cell did not exist in 1962, and is more recently created. By the 1980's there was a tree grove at that location. Development to the north shunted nuisance flows into the property and willows emerged. A roadside ditch along Lurin Avenue was re-trenched after our initial 2016 evaluation along Lurin Avenue, which conveyed stormflow in a westerly direction toward an adjacent property. The area is now **0.03 acre**, but the entire area is human created, induced and modified within a historically upland environment. Discussion with the Wildlife Agencies have revealed that Feature 1 should be considered Riverine, therefore, it has been included in the Riparian/riverine tabulations.

Feature 2: Feature 2 is located along the westerly property line of the larger southern parcel on-site. This feature actually is a continuation of Feature 1, however Feature 1 winds through an adjoining rural residential property before entering the site. The feature displays no actual bed and bank, but there is a broad, winding swale through this portion of the site. The upstream portion of Feature 2 is comprised only of grassy and herbaceous vegetation. We recorded brome, tumbleweed, bindweed (*Convolvulus arvensis*), common sunflower (*Helianthus annuus*) and common plantain (*Plantago major*) this upstream portion. The feature transitions to a small cell of several individual arroyo trees spaced apart from one another and exists the property at the west property line. Feature 2 totals **0.10 acre**. It has a permanent water source in the form of an underground culvert which discharges urban runoff into upstream (and off-site) at Lurin Avenue. Though induced from human actions in an upland environment, it nonetheless has developed as a result of a permanent discharge of water from new homes to the north. This "naturalized" condition indicates that

Feature 2 should be classified as Riparian/Riverine.

Feature 3: Feature 3 is a discontinuous grassy swale. There is no developed riparian vegetation in it. Though it is **0.02 acre** in extent, it exhibits no Section 6.1.2 functions or values, and therefore is not Riparian/Riverine. The Wildlife Agencies agreed with this determination.

Feature 4: Feature 4 is a roadside ditch with no riparian vegetation. It contains weedy, water-tolerant species such as curly dock (*Rumex crispis*), common sunflower, knotweed (*Polygonum areanstrum*) and dandelion (*Sonchus* sp.). Feature 4 is a **0.08 acre** human-constructed roadside ditch, and discussion with the Wildlife Agencies indicated that Feature 4 should be considered Riparian/Riverine. Therefore, Feature 4 has been included in the Riparian/Riverine tabulations.

Feature 5: The westerly-most cell is comprised of several small trees; it receives stormwater and nuisance water discharges from a 12-inch CMP drain under Lurin Avenue. Other non-native trees have emerged recently in this area as well, including non-native Palo Verde trees and a single palm tree. This small willow cell and Palo Verde/palm trees developed as other nearby properties across Lurin Avenue redirected water toward it in the 1980's and 1990's. The willow cell at this location is **0.03 acre** in extent, and because of the consistent urban runoff flow into it which has become the "naturalized" condition, it should be considered Riparian/Riverine. Sheetflow drainage continues to the south in a broad swale that is not a riverine feature.

Feature 5A: On 13 January 2021, the Wildlife Agencies identified that Feature 5 would likely connect to downstream drainages, therefore, Feature 5A has been added to the mapping. Feature 5A now extends south of Feature 5, for a total length of 608 feet. The projected width of any hydrological connection was projected to be three (3) feet in width (**0.04 acre**). This has been designated **Feature 5A** and included in riverine tabulations.

Effects on Conserved Habitats: No habitats are conserved on-site or in close proximity to the site. The property is not within, adjacent to, or near a conservation cell or cell group. *Exhibit 4 – RCA MSHCP Information Map – Public Quasi-Public Conserved Lands* depicts the location of the property relative to MSHCP Criteria Cells and Cell Groups.

The nearest conserved Riparian Riverine area we could detect was the blueline stream system along Van Buren Boulevard, which is approximately 1.5 miles from the Project site. Van Buren Boulevard road widening and mass grading operations at the former Air Force base property have partially avoided these distant, off-site blueline stream habitat areas. These distant streams are about 1.5 miles away and are outside of the Mockingbird Canyon watershed (the Project site is in the Mockingbird Canyon watershed). The Project site sits at the very edge and top of its respective watershed. Nonetheless, we have included a recommended condition that the Project avoid the use of any invasive plants listed in MSHCP Section 6.1.4 to avoid drift via wind or runoff to downstream waterbodies.

The proposed Project, therefore, has no discernable effect on conserved lands.

3.0 Riparian/Riverine Mitigation

The Purpose contained in Section 6.1.2 states:

"The purpose ...is to ensure that the biological functions and values of these areas... are maintained such that Habitat values for species inside the MSHCP Conservation Area are maintained."

The MSHCP defines a riparian/riverine area as: *"...lands which contain Habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year..."* (MSHCP 6-21).

A vernal pool is described as *"... seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records* (MSHCP 6-22).

Soils: TERACOR reviewed published description of soils present on-site prepared by the USDA. Specifically, we reviewed the **Natural Resources Conservation Service ("NRCS")** Web Soil Survey of the Western Riverside Area, California mapped soils on the property, as shown in *Exhibit 3 – Soils*. The property is historically comprised of three (3) soil series, according to the NRCS *Web Soil Survey: Western Riverside Area, California*. The soils historically present on the property are as follows:

Table 1 - Soil Types

| Code | Soil Type | Property Location |
|------|---|---|
| FbC2 | Fallbrook sandy loam, shallow, 5 to 8% slopes, eroded | Southeast corner of property |
| FfC2 | Fallbrook fine sandy loam, 2 to 8% slopes, eroded | Approximate west half of site and along Cole Avenue |
| MmB | Monserate sandy loam, 0 to 5% slopes, eroded | Approximate center of site |

The project site is believed to be underlain by Mesozoic-aged granitic rock. Soils are relatively shallow overlying decomposing granite material. All of the soils on-site are sandy loams; meaning they exhibit relatively high porosity (i.e., percolation of water) and contain no known layers of clay lenses or hardpan structures that might otherwise serve to retard percolation and produce seasonal ponds or pools.

Assessments performed on the site, previously referenced, found the on-site soils to be broadly associated with common plants and animals, but not organisms often linked to clay, saline, or alkaline substrates, or to vernal pool-like conditions. Predictive analyses and field assessment considered soil characteristics in confirming the absence of MSHCP-specified vernal pool associates and related rare organisms on the project site.

Vernal Pool Analytical Methodology

A vernal pool is described as "... seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics, and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records (MSHCP 6-22).

The sandy loam soils on-site are not conducive to ponding, and there was no evidence across the property that any location ponded. Soils are shallow and underlain by granitic basement rock which, when subsurface water comes into contact with it, conducts water laterally via hydraulic pressure and gravitational forces. We detected no standing water or evidence thereof. Vernal pool associated species were absent. We noted positive hydrology with no retention, either short-lived or extended, and no artificial (human-created) storage of surface water.

As documented in the *General Biological Assessment and MSHCP Consistency Analysis* TERACOR did not detect any of the vernal pool associated narrow endemic plant species on the property. Furthermore, as previously stated, focused surveys for any of those species also were not required by the *RCA MSHCP Information Map Inquiry Website*. Lastly, conditions on the property clearly did not warrant multiple, broadly spaced seasonal surveys any vernal pool or floodplain-associated species.

In summary, there was a lack of natural or human-created topographic depressions, basins, ponds, or vernal pools. The soils on-site are not favorable for the formation of vernal pools, and the plants present on the property did not indicate presence of vernal pools on the site. We concluded that vernal pools were absent.

Artificial (Human-Created) Areas: Section 6.1.2 language clarifies that “...areas demonstrating characteristics as described above which are artificially created are not included in these definitions.” Exceptions to this are as follows: “...wetlands created for the purpose of providing wetlands Habitat or resulting from human actions to create open waters or from the alteration of natural stream courses...”

Analysis of Natural Topographic Detail: With the exception of two ditches (Features 1 and 4), the natural topography of the site appears to be largely intact, based on historic aerial photographic analysis contained the Preliminary Jurisdictional Delineation and Determination dated 29 December 2019, previously referenced. That JD excluded from jurisdictional totals the excavated ditches which comprise Features 1 and 4. The site exhibits limited topographic relief and is situated at the top of its’ watershed, so drainage was never concentrated historically. Rather, drainage was largely via sheetflow through broad swales as it is today throughout the property.

Parameters Regarding the Term “Artificial”: Each of the five features on-site are either artificial roadside ditches (Features 1 and 4) or broad upland swales (Features 1, 2, 4, 5, and 5A) that have had urban runoff from development to the north shunted into them via stormdrains. Feature 3 is just a natural upland swale with no human-directed water in it. Features 1, 2, 4, 5, and 5A function in some manner like water quality treatment/bio-swales for water discharges which originate from off-site.

TERACOR originally mapped and assessed the features as potentially Riparian/Riverine in order to provide a thorough basis for this consideration. TERACOR determined on a preliminary basis that the features on-site did not have clear or direct capability of supporting the protection of species downstream in Mockingbird Canyon and the Santa Ana River, however, the Wildlife Agencies indicated on 13 January 2021 that Features 1, 2, 4, and 5 and 5A were all Riparian/Riverine, therefore, those areas are included in the Riparian/Riverine tabulations.

The Wildlife Agencies concurred that Feature 3 was not Riparian or Riverine.

Water Quality Parameters

Current water quality practices require builders to only treat the nuisance water that is generated from their Project site. Current regulations do not, however, require developers to treat discharged water from an upstream source; they need only provide facilities to convey that flow through or around their project site. Therefore, the City will require the developer to route these foreign discharges through or around the

Project site, and to discharge it at the same location where it flows to at this time without treatment.

The extent to which Features 1, 2, 4, 5, and 5A actually purify the off-site runoff which is now discharged into the Project site is somewhat speculative and has not been conclusively established. For the purposes of evaluating functions and values, we assumed the discharge could contain typical urban contaminants, but that discharge has not actually been tested or verified. It is nonetheless reasonably clear that the point of discharge for Features 1, 2, 4 and 5 would be transferred from the south and west edges of the Project property where detention/water quality treatment basins are proposed. It is also reasonable to assume that any treatment characteristics that Features 1, 2, 4, 5, and 5A possess would be transferred to downstream properties. Stormflows currently pass through the Project site and into adjoining properties in an uncontrolled manner and the proposed Project would discharge this water in engineer-designed facilities in a manner superior to the existing condition.

Riparian/Riverine and Vernal Pool Habitat Assessment

Methods: TERACOR field personnel explored the property thoroughly to determine if riparian/riverine areas or vernal pools were present based on the MSHCP-Section 6.1.2 defined criteria. We conducted a review of aerial photography, both recent and historic dating back to 1962, and subsequently performed comprehensive evaluation of the property to assess if any features on-site met the criteria established in MSHCP Section 6.1.2 to be considered as either vernal pool or riparian/riverine.

As referenced above, TERACOR prepared a preliminary jurisdictional assessment for “waters” of the U.S. as regulated in the federal Clean Water Act for both the U.S. Army Corps of Engineers and the California Regional Water Quality Control Board. TERACOR also conducted a preliminary determination of the presence of streambeds or lakes, under the State of California’s Fish and Game Code. That document, referenced previously on page 1, contains technical information and additional information not contained in this report. That technical information specifically addresses federal and state regulatory requirements to establish jurisdictional status, so while it is related information, it is not relevant to establishing Riparian/Riverine status of Feature 1 on-site.

After conducting fieldwork and performing an analysis of historic aerial photography and topographic mapping, we concluded that the property is at the top of the local watershed, and receives off-site runoff in only in two roadside ditches (Features 1 and 4) and a small 12 inch CMP (Feature 5 and 5A). Further, soils on-site are comprised exclusively of sandy loams that drain well and generally slope broadly from northeast to southwest. Minor historic mechanical rearrangement of the surface seems probable when the citrus grove was installed several decades ago, and those modifications (along with irrigation) may have been the stimulus for colonization by non-native pepper trees and *Tamarix* trees. The extent of topographic alteration, however, was not possible to determine.

To complete the MSHCP 6.1.2 analysis, we examined existing conditions across all areas of the property, the USDA characterization of the loam soils on the property, we identified and mapped different vegetative structures and species on-site, and we noted various disturbances on the property. We walked and mapped all drainage patterns on-site in order to comprehensively determine which, if any, of the features we identified would likely fall under provisions of MSHCP Section 6.1.2.

Field Survey Summary

TERACOR field survey personnel included S. Reed and J. Reed on 31 October 2017, 25 January 2018, 29 January 2018 and January 2019. Analysis subsequent to that time was performed by S. Reed. Uncertain plant identifications were confirmed by Michael Long. The results of the field survey regarding Riparian/Riverine resources are described above and detailed in the *General Biological Analysis and MSHCP Consistency Analysis, dated 10 December 2019* (Revised 24 July 2020) (Revised per Wildlife Agency Comments 13 January 2021), in the section entitled *Findings – Riparian/Riverine and Vernal Pool Habitat* (see page 20) of that report. *Exhibit 5 – Potential Section 6.1.2 Features 1-5A, attached, depicts the location of Features 1 – 5A.*

Most of the Project site is comprised of upland grassy habitat and ornamental California pepper trees. Sheet-flow drainage patterns were noted in aerial photography, but ground inspections revealed growth of annual grasses. These patterns were weakly associated with some riparian or riverine functions and values, detailed below. Sheet-flow patterns in shallow swales across the property also do not generally meet state or federal jurisdictional criteria.

Functions and Values

The MSHCP requires assessment of riparian/riverine areas and vernal pools including consideration of species composition, topography, and soil analysis. Section 6.1.2 states: *“Factors to be considered include hydrologic regime, flood storage and flood flow modification, nutrient retention and transformation, sediment trapping and transport, toxicant trapping, public use, wildlife Habitat, and aquatic Habitat. The functions and values assessment will focus on those areas that should be considered for priority acquisition for the MSHCP Conservation Area, as well as those functions that may affect downstream values related to Conservation of Covered Species within the MSHCP Conservation Area.”*

Using the eight (8) criteria (functions and values) that are specifically described in Section 6.1.2, we applied those criteria to the feature on-site that could be either observed or reasonably inferred:

- *Hydrologic Regime:* Determined Present as recommended by the Wildlife Agencies on 13 January 2021 and Fed by Urban Runoff: Features 1, 2, 4, 5, and 5A are supplied urban runoff in or via recently-constructed artificial ditches (i.e., Features 1 and 4). None of the

five features sustain surface water outside rainfall events, which renders all the features "ephemeral". Field evidence indicating the five features are connected hydrologically to downstream riverine features (with the possible except of Feature 4 which itself has been artificially created as a linear roadside ditch) was not detected by TERACOR during field investigations. During DBESP review, the Wildlife Agencies noted concentration of surface flow to downstream "waters", therefore, Features 1, 2, 4, 5, and 5A are not determined to be connected to downstream areas hydrologically.

- *Flood storage and Flood Flow Modification:* Determined Present Field evidence indicates that water entering the site is detained and absorbed into underlying substrate thereby naturally reducing downstream runoff (Features 1, 2, 4 and 5) except that Features 1 and 4 are artificially created roadside ditches.
- *Nutrient Retention and Transformation:* Determined Possibly Present due to presence of riparian vegetation in Features 1, 2, 5, and 5A which secure, store and transform minerals and organic nutrients from off-site sources to persist (Feature 1 is artificial, however).
- *Sediment Trapping and Transport:* Determined Trapping is Present due to field evidence related to sediment build up around vegetation in Features 1, 2, 4 and 5, the resulting deposition of sediment in these features, and the lack of connectivity off-site. Sediment transport to downstream sources is not Present.
- *Toxicant Trapping:* Presumed Possibly Present due to the source of water to Features 1, 2, 4, and 5 being residential runoff in the upper watershed, and the likely utilization by stream-associated vegetation of nitrates, pet feces and other waterborne contaminants usually contained in urban runoff. Feature 4 is not vegetated or connected hydrologically downstream, but may filter rainfall and nuisance runoff and stores toxicants in substrate on-site.
- *Public Use:* Determined Not Present.
- *Wildlife Habitat:* Determined Present for common wildlife, but not the MSHCP-designated Riparian/Riverine dependent species.
- *Aquatic Habitat:* Determined Not Present as presence of water is only ephemeral.

TERACOR determined the following:

Feature 1 was determined by TERACOR to be an artificial roadside drainage and was not initially considered Riparian/Riverine by TERACOR. However, Wildlife Agencies indicated on 13 January 2021 that Feature 1 should be considered Riparian/riverine. Due to persistent urban runoff from development to the north, Feature 1 nonetheless has supported riparian scrub vegetation. That vegetation, however, is in decline as the recently-trenched drainage ditch along Lurin Avenue seems to have deprived nuisance flow and stormflow from the scrub. Feature 1 exhibited six (6) of the eight (8) MSHCP-listed functions and values described in Section 6.1.2.

Feature 2 exhibits six (6) of the eight (8) MSHCP-listed functions and values. Historic aerial analysis demonstrates the feature has been present since 1962. Because the feature lies within an elongate topographic swale and receives urban runoff, several small arroyo willows have developed since 1990 when we confirmed that a tree grove was still in operation on the property. The feature, therefore, is a naturally-occurring swale that has been altered by human agricultural development and now subsequently receives urban nuisance runoff which induced the riparian scrub development within it. The upper half of the feature contains only weedy and grass vegetation, and the lower portion supports pampas grass. Because the source of runoff is persistent and unlikely to change, the hydrologic regime is now naturalized. Feature 2 therefore, warrants classification as Riparian/Riverine.

Feature 3 is a narrow swale on the property with no clear origin or terminus on-site. The alignment of the feature can be detected in historic aerial photography dated back to 1962; but it is shallow, and supports only non-native grasses with the exception of one or two scrubby senescent willow shrubs. It has no defined riverine characteristics and does not flow off-site. Feature 3 exhibited none of the eight (8) MSHCP-listed functions and values for Riparian/Riverine sites (i.e., wildlife habitat). Because of these factors and the resulting conclusion that the feature does not in any discernable manner support or contribute to the conservation of the 146 species covered under the MSHCP, the feature is not Riparian/Riverine. The Wildlife Agencies concurred with this determination 13 January 2021.

Feature 4 is an artificial roadside drainage and TERACOR initially believed the feature was not Riparian/Riverine by definition. Historic aerial analysis was considered by both TERACOR and the Wildlife Agencies. It does exhibit four (4) of the eight (8) Riparian/Riverine functions and values. The feature does not support riparian vegetation, and the Wildlife Agencies concluded Feature 4 is Riparian/Riverine.

Feature 5 exhibits six (6) of the eight (8) MSHCP-listed functions and values characteristic of Riparian/Riverine areas. It originates on the south side of Lurin Avenue, at the discharge point of a 12-inch corrugated metal pipe (CMP) under Lurin Avenue. The drain is heavily damaged and drainage was nearly blocked. Overflow drainage appears to originate across Lurin Avenue in a plant nursery, crosses Lurin, then

enters the Project site where sandy loam soils appear to absorb most runoff. 2 or 3 willow trees have developed at this location, surrounded by volunteer Palo Verde trees, one Mexican fan palm, and agave-type cactus. Feature 5 is primarily a grassy swale; the **0.03 acre willow cell** is Riparian/Riverine as it meets Section 6.1.2 criteria.

Feature 5A contained field evidence that indicated that larger storm events flow past the trees into the grassy field. Flows run through the field via sheetflow in a very broad manner with no discernable point of concentration or bed or bank in the field. Aerial photography suggests the presence of a feature but, TERACOR concluded on a preliminary basis that the dark image of a feature is a dense non-native grass that benefits from the overland sheet blow on the property. The Wildlife Agencies discerned a flow pattern however to the south property line, therefore, TERACOR has designated a three (3) foot wide connection extended down to the south property line for a distance of 608 feet. Soils were all upland and no hydric soils were present. Vegetation consisted of non-native brome grasses, invasive Bermuda grass, knotweed (*Polygonum* sp.), goldfields (*Lasthenia gracilis*), curly dock (*Rumex crispus*), Rattail fescue (*Vulpia myuros*), foxtail barley (*Hordeum murinum*), bindweed (*Convolvulus arvensis*), bur clover (*Medicago polymorpha*), and May weed (*Anthemis cotula*). The Wildlife Agencies concluded that a hydrological connection would be present. We labeled this presumed connection as Feature 5A. It is 608 feet long and three (3) feet wide (**0.04 acre**).

Relationship of Section 6.1.2 Riparian Area to Existing Wetland Regulations

TERACOR conducted the jurisdictional determination and riparian/riverine and vernal pool assessment in October and November 2017.

TERACOR determined that the total **California Department of Fish and Wildlife** ("CDFW") jurisdiction on-site is **0.28 acre**, which lies within Features 1, 2, 4, 5, and 5A (see the PJD dated 29 December 2019 —2nd Revision).

TERACOR determined on a preliminary basis that the property is isolated and ephemeral flows do not comprise "waters" of the U.S. Should the U.S. Army Corps of Engineers (Corps) disagree, and assert jurisdiction under the regulatory authority of the Clean Water Act, then jurisdictional "waters" of the U.S would be **0.07 acre**. The **California Regional Water Quality Board** jurisdictional boundaries usually mirror the Corps boundaries even when the Corps does not assert jurisdiction on a given site.

Exhibit 5 – Potential Section 6.1.2 Features 1-5A, attached, depicts the potential riparian/riverine area on-site, and it correlates fairly well with CDFW jurisdictional mapping.

Habitat Values Summary

Wildlife habitat within the Riparian Riverine habitat is limited based on its' size, isolation, and history of disturbance. Several of the 146 MSHCP-covered species might occur within this area, such as coastal whiptail, Cooper's hawk (foraging), coyote, and possibly *Dipodomys* species. However, none of the Section 6.1.2-listed Criteria Area or Narrow Endemic plants are present. No focused narrow endemic plant surveys were specifically prescribed for any of the six (6) parcels which comprise the Project site by the *RCA MSHCP Information Map*.

This notwithstanding, common riparian wildlife species including hummingbird species, song sparrow (*Melospiza melodia*) and common yellowthroat (*Geothlypis trichas*) and Bullock's oriole (*Icterus bullockii*), likely utilize the riparian area, and raptors may utilize the trees for perching.

We determined that the riparian/riverine habitat on-site is not suitable for least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Riverside fairy shrimp (*Streptocephalus woottoni*), or vernal pool fairy shrimp (*Branchinecta lynchi*). The site is too small, too isolated, and does not support standing water.

Exhibits 7a and 7b - Feature Photos, attached, depicts the site conditions in the riparian/riverine area.

Riparian Riverine Sensitive Species Potential Presence and Utilization

The MSHCP-covered species bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*), would not occur on-site. No suitable nesting areas are located on-site. No bald eagles or peregrine falcons were expected or observed on-site.

The Riparian/Riverine area on-site is not suitable for the MSHCP-listed riparian songbirds: least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. None of these species were observed on-site nor would they occur on-site.

Habitats on-site are not suitable for fish, specifically the Santa Ana sucker (*Catostomus santaanae*), or MSHCP-listed Invertebrates and Crustaceans: Riverside fairy shrimp and vernal pool fairy shrimp. Persistent surface water is not present. Vernal pool features are also no present on-site.

None of the MSHCP-listed amphibian riparian/riverine species would be expected to occur within these riparian/riverine areas. Arroyo toad (*Anaxyrus californicus*), California red-legged frog (*Rana draytonii*) and southern mountain yellow-legged frog (*Rana muscosa*) all have narrow habitat requirements and limited distribution within Western Riverside County. The riparian/riverine areas on-site are not located within the

existing ranges of these three (3) species. Additionally, the site is not listed as a target conservation area for any of the three (3) species. Habitat quality is low due to the highly disturbed nature of the site's five features.

None of the MSHCP-listed riparian/riverine plant species were observed within the riparian/riverine areas. Habitat within the riparian/riverine area is patchy, discontinuous, isolated, and is invaded with non-native species in the persistent emergent and shrub layers. Habitat within potential riparian/riverine areas is not suitable for MSHCP Section 6.1.2 Covered plant species.

Habitat on-site is also not considered suitable for any MSHCP-listed mammals which require focused surveys under provisions of the MSHCP.

Avoidance Analysis

Background: Avoidance of the Riparian/Riverine area and all the five features generally on-site was considered by the Project Applicant. Discussions were held with the Project Engineer (Matthew Laninovich, KWA Engineers) and the Applicant (Nolan Leggio, Lurin Land, LLC), about possible avoidance of any potential features on-site. Those evaluations began with a stated understanding of the actual functions and values of the five features on the site.

Unavoidable Effects: **Feature 1 (0.03 acre)** lies within the designated Lurin Avenue right-of-way. **Feature 4 (0.08 acre)** lies within the designated right-of-way of Mariposa Avenue. **Feature 5 (0.03 acre)** lies within the designated right-of-way of Lurin Avenue. Avoidance of these 3 features would create a permanent, unsafe condition in the community where roadways need to be constructed within a narrowed footprint, and sidewalks could not be constructed along either Lurin Avenue or Mariposa Avenue. Additionally, area intersection improvements also could not be constructed to meet City requirements because Features 1 and 4 begin at the current edge of Cole Avenue and avoidance would preclude proper intersection improvements at both locations. Drainage improvements have not been designed in Lot P, but may include an earthen ditch similar to the existing ditch. If that occurs, post-construction water quality would remain in a re-aligned Feature 1.

Feature 2 lies at the juncture between the central portion of Tract No. 37731 and its northwest section. This proposed roadway connection is considered important for future circulation purposes. In order to avoid Feature 2, Street C would have to be severed between the north and south portions of the tract. A replacement vehicular access point will be needed along Lurin Avenue somewhere between Lots 18 and 32, as well as another access point along Cole or Mariposa Avenues. Tract design changes would likely result in the loss of up to 4 residential lots. Feature 2 is a broad swale but it has a larger watershed that produces a 100-year storm event flow of 119 cubic feet per second (cfs). To avoid the floodplain of Feature 2, several more lots would likely need to be eliminated, such as lots 67, 68, 118, 119, and 120 (5 additional lots lost). Water quality functions of Feature 2, which is almost always dry, most likely occur primarily on the adjoining

property to the north in a ditch with cattail vegetation which is usually inundated. The loss of Feature 2, while not unavoidable with the loss of 9 lots, would appear to not be warranted due to its very small size (**0.10 acre**) and limited functions and values as a Riparian Riverine feature.

Feature 3 lies in the east-central area of the tract. It is very faint, and TERACOR determined it is not Riparian or Riverine due to its' isolation and lack of functions and values that are specified in Section 6.1.2 of the MSHCP (see TERACOR's *General Biological Assessment and MSHCP Consistency Analysis*, dated 10 December 2019 – Revised 24 July 2020). The Wildlife Agencies agreed with this determination.

Feature 4 is a roadside ditch along the southerly boundary of the tract. It is artificial and the Wildlife Agencies determined it is Riparian/ Riverine. Diversion into an existing subsurface drain under Mariposa Avenue is planned as a consequence of street widening which must occur for the Project to be constructed, therefore there will be a corresponding loss to Riparian/Riverine area (**0.08 acre**).

Feature 5 and **Feature 5A** are considered Riparian/Riverine. - Lurin Avenue must be widened to meet current City transportation safety standards, therefore, **Feature 5 (0.03 acre)** loss is unavoidable. The central location of **Feature 5A (0.04 acre)** and the paucity of functional values in **Feature 5A** suggest avoidance is not a feasible alternative.

The Applicant, the Project Engineer (KWC Engineers) and TERACOR together considered avoidance of the **Feature 2**, as it is the only Riparian Riverine feature that is not artificially constructed or not Riparian Riverine. The following are the consequences of avoidance of **Feature 2**:

Costs Associated with Loss of 4 Lots: Avoidance of **Feature 2** would be considered feasible with the loss of approximately 9 lots and transportation connectivity within the tract. If **Feature 2** was avoided, then stormflows of 119 cfs would enter the project site at **Feature 2** and would require housing to remain out of the 100 year floodplain. The loss of 9 lots and vehicular connectivity does not achieve a discernably beneficial water quality effect, nor does it achieve a benefit that is discernably beneficial to covered species listed in Section 6.1.2 of the MSHCP. Avoidance does not appear warranted due to negative socio-economic effects and lack of discernable beneficial effects.

Unavoidable Impacts

Based on TERACOR's riparian/riverine field determination and design of Tentative Tract No. 37731, **0.28 acre** of recently and incidentally-induced Riparian/Riverine area would be permanently impacted with project implementation.

Impacts to this area will be mitigated in two ways 1:1 (**0.28 acre**) purchase of rehabilitation credit and also purchase of 1:1 (**0.28 acre**) re-establishment credit. The Riverpark Mitigation Bank is the preferred

choice to obtain credits for each type of mitigation. The proposed impact/mitigation ratio is appropriate because the **0.28 acre** of Riparian/Riverine is comprised of recently-induced, relatively poor-quality habitat with marginal functional value. The low functional value of the area proposed for removal does, however, justify replacement ratios.

As noted above, impacts to the existing Riparian/Riverine area are not unavoidable. Avoidance, however, is not warranted due to negative safety issues that would occur if roadways were not constructed to full width right-of-way and negative socio-economic effects (loss of housing). These matters outweigh the beneficial effect of avoidance of small and non-significant drainage features.

4.0 Additional Survey Needs

Surveys for burrowing owl (*Athene cunicularia*) ("BUOW") were conducted on-site in July and August 2019. No evidence of BUOW or BUOW utilization was detected during the focused surveys. No additional surveys for BUOW are necessary, except for the 30-Day Preconstruction Survey for burrowing owl and other nesting birds.

No other habitat assessments were prescribed for the parcels in question by the RCA, and no focused surveys are warranted for Section 6.1.2-listed birds or invertebrates due to the absence of support resources for each of those organisms. Furthermore, the property was evaluated in the General Biological Assessment for all the 146 MSHCP-Covered Species, and no further surveys or evaluations were warranted at this time.

A list of floral and faunal species observed during field surveys is included in this report as Appendix A - Floral Compendium. Those animals observed and considered potentially occurring on-site are listed in Appendix B - Faunal Compendium.

5.0 Impact Minimization through 6.1.4 Urban/Wildlands Interface Guidelines

Minimization of Direct and Indirect Effects: Minimization of direct effects was analyzed but avoidance could not be justified. Impacts to Feature 1 (**0.03 acre**) and Feature 5 (**0.03 acre**) were unavoidable as those two areas are within the Lurin Avenue right-of-way and the street must be widened for safety reasons.

Impacts to Feature 4 (**0.08 acre**) were also unavoidable because that ditch is along a narrow roadway which must be widened to meet full width City standards for Mariposa Avenue.

Impacts to Feature 2 (**0.10 acre**) were evaluated for avoidance, however, the preservation of this human-induced feature with relatively low function value did not warrant the loss of housing units and tract design changes to preserve such a small, isolated human-induced feature.

Feature 5A is a grassy swale with no field evidence of surface flows and a paucity of functional values. The Wildlife Agencies reasoned that there should be a hydrological connection to downstream riparian/riverine areas, therefore, the **0.04 acre** area was included in the impact tabulations.

Feature 3 is not considered Riparian/Riverine by the Wildlife Agencies. It has not been included in Riparian/Riverine tabulations because it originates and terminates on-site, and it does not have sufficient characteristics to be considered Riparian or Riverine.

Since on-site preservation is not proposed, and no other conservation properties are located within or adjacent to the subject property, no urban/interface zones, structures or other mechanisms to protect adjacent habitat are proposed.

Adjacency of Conservation Lands or Plan Reserve

The subject property is not located within a Criteria Cell or near the Plan Reserve lands; therefore, the Project area will not be included within the MSHCP Reserve Assembly. The Project site is not adjacent or near to any Plan Reserve Area/Conservation Lands, or Public or Quasi-Public lands, therefore, there would be no direct or indirect effects with respect to possible negative effects of the Project.

The types of negative effects which would otherwise have been considered had the Project been adjacent to a natural conservation area are as follows:

- a) Lighting –the project's lighting could not affect any Criteria Cell areas, Plan Reserve areas, or Public or Quasi-Public lands.
- b) Noise - Noise associated with the Project will not affect areas within Reserve lands due to the distance that the Project is located away from the Reserve or any conservation lands.
- c) Trash/debris – The Project is not near or adjacent to any Plan Reserve area or conservation parcels, therefore, trash would not affect the Plan Reserve Areas or Conservation lands.
- d) Urban and storm water runoff - Urban and storm water runoff will be treated as required by the RWQCB and the City. Therefore, urban runoff will not affect any downstream Reserve or conservation lands.

- e) Toxic material - Because there are no Conservation areas near the subject site, toxic material from the site is not would not affect areas within the MSHCP Plan Reserve.
- f) Exotic plant and animal infestations - As per the MSHCP Section 6.1.4 Guidelines Pertaining to Urban/Wildlands Interface, any invasive vegetative species within the project's landscape plan listed in **Table 6-2 Plants that Should be Avoided Adjacent to the MSHCP Conservation Area** of the MSHCP will be avoided in the landscape plan.
- g) Dust – Dust is not expected to affect areas within the Reserve Assembly due to two factors: Air Quality Management Plan requirements, and implementation of grading and construction Best Management Practices ("BMPs") for dust control which will be required by the City.
- h) Trampling and unauthorized recreational use - Because the nearest Criteria Cell is several miles away from subject site, trampling and unauthorized recreational use from the site would not occur within the Reserve as a result of project implementation.

6.0 Mitigation Measures and Equivalency Findings

The following mitigation measures have been included in the General Biological Assessment/Consistency Analysis for Tentative Tract No. 37731:

1. Prior to the commencement of grading activities, the developer of the site shall make the appropriate mitigation fee payment into the MSHCP Stephens' kangaroo rat fee payment program for conservation of Stephens' kangaroo rat-occupied habitats in order to offset the loss of potentially suitable Stephens' kangaroo rat habitat on-site through project implementation.
2. Prior to the issuance of certificate of occupancy permits, the developer of the site shall make the appropriate MSHCP mitigation fee payment that will contribute to conservation and management of conservation land for all MSHCP-covered organisms.
3. Prior to vegetation clearance, the Project applicant shall retain a qualified biologist to conduct a pre-construction nesting bird survey in accordance with the following:
 - a) The survey shall be conducted no more than three (3) days prior to the initiation of clearance/construction work;
 - b) If pre-construction surveys indicate that bird nests are not present or are inactive, or if potential habitat is unoccupied, no further mitigation is required;

- c) If active nests of birds are found during the surveys, a species-specific no-disturbance buffer zone shall be established by a qualified biologist around active nests until a qualified biologist determines that all young have fledged (i.e., no longer reliant upon the nest).
 - d) It is recommended that close coordination between the developer of the site, the City of Riverside, the project engineer, and the consulting qualified biologist to consider vegetation clearance outside of the normal bird nesting season (usually February 15 – Sept 15) to avoid impacts to nesting birds which would potentially violate the federal Migratory Bird Treaty Act. It should be noted that bird nesting season is increasingly less-definitive for some year-round resident species such as hummingbirds and raptors. Further, ground-dwelling birds such as burrowing owls, can be affected nearly any time of the year if present. It is therefore advisable to conduct a preconstruction bird survey no matter the time of year.
 - e) Removal of vegetation necessitates installation of appropriate Storm Water Pollution Prevention Plan "SWPPP" measures, particularly if grading is not undertaken immediately, therefore careful timing of the project schedule and implementation measures is necessary to avoid water quality impacts.
- 4. The Project Developer shall retain a qualified biologist to conduct a 30-day pre-construction survey for BUOW. The results of the single one-day survey would be submitted to the City prior to obtaining a grading permit. If BUOW are not detected during the pre-construction survey, no further mitigation is required. If BUOW are detected during the pre-construction survey, the Project applicant and a qualified consulting biologist will be required to prepare and submit for approval a BUOW-relocation program.
 - 5. In accordance with MSHCP provisions limiting the use of exotic and invasive plant species, the Project's landscape plan shall exclude invasive species such as, but not limited to crimson fountain grass (*Pennisetum setaceum*), pampas grass (*Cortaderia selloana*), giant reed (*Arundo donax*), tree of heaven (*Ailanthus altissima*), *Eucalyptus*, *Acacia* (*Acacia* sp.), and other ornamental landscape elements on the list of exotic invasive plants utilized by the Riverside Conservation Authority which have the potential to spread into adjoining, downstream, or nearby areas
 - 6. The Project Developer shall implement dust control and all other project-specific Storm Water Pollution Prevention Plan ("SWPPP") measures during grading and construction required by the City of Riverside.
 - 7. The Applicant shall demonstrate that the following federal and state resource agency permits have been obtained, or that authorization(s) from each agency were not required by that agency.

- U.S. Army Corps of Engineers
 - California Department of Fish and Wildlife
 - Santa Ana Regional Water Quality Board
8. MSHCP Riparian/Riverine Mitigation: Prior to the issuance of grading permits impacts shall be mitigated, Riparian/Riverine at the Riverpark Mitigation Bank. -Riparian/Riverine area comprises **0.28 acre**. -Purchase of credits as recommended below shall be required if such credits are available for purchase and are acceptable to all associated Agencies including CDFW, RWQCB, and the USACOE, if applicable. If these credits are not available or acceptable to the aforementioned Agencies, then alternative mitigation shall be identified and approved by each agency, including the City of Riverside. *Table 2 – Summary of Impacted MSHCP Riparian/Riverine Areas and Mitigation*, below, summarizes the specific mitigation requirements.
- 9.

Table 2 – Summary of Impacted MSHCP Riparian/Riverine Areas and Mitigation

| Name | Acreage | Mitigation |
|------------|-----------|--|
| Feature 1 | 0.03 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 2 | 0.10 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 4 | 0.08 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 5 | 0.3 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Feature 5A | 0.04 acre | 1:1 Rehabilitation 1:1 Re-Establishment |
| Total | 0.28 acre | 0.28 acre Mitigation Credit for Rehabilitation plus 0.28 acre Mitigation Credit for Re-Establishment |

Restoration of Off-site Habitat in the Riverpark Mitigation Bank

As described above in Sections 3.0 and 4.0, the Project Applicant proposes to mitigate the impacts to **0.28 acre** of riparian/riverine area with the purchase of **0.28 acre** of rehabilitation credits and purchase of **0.28 acre** of re-establishment credits. This mitigation strategy is based on the human-induced nature of associated riparian and riverine areas as well as the lower relative quality and functional values of the affected features. If credits are not available or are not acceptable to all associated Agencies, then alternative mitigation shall be identified and approved by each agency, including the City. The most important functions and values of on-site Riparian/Riverine areas include water quality benefits.

The overall biological functions and values of Riparian/Riverine area on the Project site were judged

by the Project biologist to be relatively low, thereby warranting the prescribed mitigation ratios as described in detail in this report. It has customarily been required that off-site mitigation must occur in the same watershed in which the impact site is located. This has always been interpreted to mean regional watersheds (e.g., the Los Angeles River watershed, the Santa Ana River watershed, the Santa Margarita River watershed, etc.). These “regional watersheds” all have a direct connection to the Pacific Ocean. The requirement to mitigate in a “regional” watershed has been broadly endorsed by the Army Corps of Engineers, the California Department of Fish and Wildlife (formerly CDFG), and the RWQCB. This mitigation tradition could be made more complex by the MSHCP, where impacts to the MSHCP Plan area are reasonably expected to be mitigated within the Plan Area. At this time, there is only one approved mitigation bank approved by all three Agencies; the Riverpark Mitigation Bank.

The **Riverpark Mitigation Bank** is located in Riverside County, within the MSHCP Plan Area. The bank’s service area includes western Riverside County, and portions of San Bernardino County. The bank offers credits for rehabilitated and re-established “waters” of the United States and waters of the state of California. The San Diego Habitat Conservancy will provide long-term management of the bank, and the San Diego Foundation will manage the non-wasting endowment. The Western Riverside Regional Conservation Authority (RCA) will hold the conservation easement, along with an additional monitoring endowment.

The primary service area of Riverpark Mitigation Bank is all of the upper and lower portions of the San Jacinto River, and the middle Santa Ana River, Temescal Wash, and San Timoteo Wash. Secondary service areas include upper Temecula Creek, Wilson Creek, lower Temecula Creek, Murrieta Creek, and the Santa Margarita River. The Project site lies within the Santa Ana River watershed, therefore, it lies within the bank’s primary agency-approved service area.

The bank encompasses 613 acres of land almost entirely within the 100 year floodplain of the San Jacinto River. Over 550 acres of vernal pool and alkali playa, as well as upland buffer habitat will be restored through rehabilitation and/or re-establishment of natural habitat areas. Restoration will involve re-grading along the river to remove human-emplaced fill and berms established to control flooding along the river. The control of non-native invasive plants and trees and recruitment and establishment of native vegetation is also planned. The first phase of the program is open at this time and is expected to restore lost functions and values of riparian and riverine habitats, vernal pools and alkali playas across the bank lands. These functions and values which are being restored can be purchased on one acre per one credit basis, thereby guaranteeing offset replacement values for habitats impacted by future development within the specified service areas.

Functions of Restored Habitat

The functions and values of the rehabilitated Riverpark Mitigation Bank (subsequent to rehabilitation of **0.28 acre** and re-establishment of **0.28 acre**) would reasonably be expected to meet or exceed the existing habitat values and functions presently found within the on-site Riparian/Riverine area, based on the information provided above regarding the Riverpark Mitigation Bank. Habitat would be improved for terrestrial, aquatic and avian species which utilize the mitigation bank area. Management by the San Diego Habitat Conservancy will provide long-term management functions, and the San Diego Foundation will manage the non-wasting financial endowment to ensure availability of funds into the future to properly restore and manage the site. The Western Riverside Regional Conservation Authority (RCA) has agreed to hold the conservation easement, along with an additional monitoring endowment for specific MSHCP requirements.

Overall, a superior quality habitat for invertebrates, birds, herpetofauna and mammals would be reasonably expected to be a superior condition compared to the existing condition on-site. Physical attributes, functions and values (e.g. sediment transport, MSHCP-protected wildlife habitat, toxicant trapping, etc.) within the mitigation bank area will also be rehabilitated and functions and values would likely exceed those of the Project site Riparian/Riverine area. Purchase of rehabilitation credits on a 2:1 basis, is recommended.

Goals for Restored Habitat

1. The off-site mitigation property is in the Riverpark Mitigation Bank. Areas that have been historically degraded will be re-graded and rehabilitated as required by the Wildlife Agencies in the Mitigation Bank approved plan.
2. Critical components of the Riverpark Mitigation Bank include targeted grading to reestablish natural hydrologic profiles, aggressive weed control, and facilitation of natural recruitment of narrow endemic plant species, as well as other native vegetative species believed to be present in the soil's seed bank. These species have been suppressed by agricultural operations such as establishing dikes and berms, plowing, disking, and herbicide applications. Cessation of agricultural production in combination with regrading and invasive plant control is reasonably expected to result in restoration success.
3. To ensure the long-term viability of the Riverpark Mitigation Bank property, invasive species will be controlled and managed as specified in the approved management plan for recreated and rehabilitated lands. Controlling non-native vegetation is reasonably expected to allow conditions for natural recruitment to improve substantially.

4. Vegetative restoration of the Riverpark Mitigation Bank property will allow natural ecological processes to become reestablished. These processes include but are not limited to reestablishment and stabilization of native plant communities, native plant community succession, colonization of the property by avian and terrestrial wildlife dependent on riverine and floodplain vegetative alliances/associations, and subsequent importation of beneficial seed material, minerals, gathering and storage of organic material in nests and dens, and other ecological benefits derived from wildlife utilization.
5. Both the impact site and the rehabilitation site are within the MSHCP area. Utilization of the Riverpark Mitigation Bank ensures that functions and values that would be lost by implementation of the Project will guarantee that those functions and values will be replaced and increased, resulting in improved habitat within the MSHCP Plan area.
6. A total of 0.56 acre at Riverpark Mitigation Bank will be restored utilizing two methods: 1) impact to mitigation ratios for Rehabilitation and 2) 1:1 impact to mitigation ratio for Re-establishment. This mitigation is ecologically sound in that it offsets the direct loss of the 0.28 acre Riparian/Riverine area on-site via Re-establishment and Rehabilitates another 0.28 acre acre in western Riverside County . The impacted area is isolated within the City limits of Riverside, and it is of relatively recent creation. The Mitigation Bank property is connected to adjoining MSHCP Reserve Lands. It can be reasonably expected to support thriving Riparian/Riverine/Vernal Pool vegetative structures and habitats which will be considerably more ecologically productive than the Riparian/Riverine habitat currently found at Tentative Tract No. 37731.
7. The Riverpark Mitigation Bank is in the San Jacinto River watershed, which has long been considered a southerly sub-unit of the Santa Ana River watershed. Tentative Tract No. 37731, the impact site, is located in the upper Mockingbird Canyon watershed, a sub-unit of the Santa Ana watershed. The Project site lies within the primary service area of the Riverpark Mitigation Bank. It is, therefore, appropriate to mitigate impacts resulting from Tentative Tract No. 37731 at Riverpark.

Best Management Practices and Construction BMPs

During project construction, a number of BMPs will be implemented to protect downstream water resources and sensitive human receptors in the area. Sensitive human receptors include children (disproportionately outdoors and more subject to effects of contamination), the disabled, breathing-impaired or immune-compromised individuals, and the elderly. These groups are more susceptible to the negative effects of uncontrolled dust, pollution from poorly-maintained or older construction equipment, and noise. A Preliminary Water Quality Management Plan ("WQMP"), which includes a detailed account of the BMPs that will be utilized, has been submitted with the entitlements package. The Preliminary WQMP must be accepted by Public Works Department and the Planning Division

prior to deeming the application complete. This notwithstanding, the following BMPs will be implemented for erosion, dust and sediment control.

1. Dust control: Controlled by use of water trucks and cessation of work on windy days.
2. Fiber rolls (wattles): Fiber rolls are placed on the ground to intercept surface waters which contain dirt and sand.
3. Stabilized construction entrances – These facilities prevent mud and dirt from leaving the construction site if tires are very dirty or muddy.
4. Check dams: Check dams hold back surface flows on-site during storm events.
5. Silt fencing: Silt fencing detours and redirects contaminated flow into basins or similar containment features.
6. Straw bale dikes: Straw bales stabilize dirt surfaces and prevent run-off into streets.
7. Sand bags: Sand bags detain and help filter dirty stormwater.
8. Detention basins: temporary areas to detain and filter dirty water.

The Preliminary WQMP approved by the City guarantees a clean construction site. Furthermore, there are no nearby Conservation Areas or public or quasi-public natural lands which could be affected.

Post-Construction BMPs

Once the project is constructed, a single Best Management Practice (BMP) will be in operation. It is described as follows to control erosion, sediment, and improve water quality from runoff generated by the site.

The Stormwater Bioretention Filtration System consists of basins which are designed to capture all low flows generated on the Project site and detain those flows on-site while biological processes breakdown and absorb deleterious compounds and substances.

The design of the water treatment system(s) will be approved in advance by the City and will be detailed in the above mentioned WQMP which will be on file with the City.

7.0 Finding of Biologically Superior Habitat

The on-site Riparian/Riverine area (Features 1 – 5A) is located within the middle Santa Ana River watershed. The Project proposes to remove the **0.28 acre** Riparian/Riverine area on-site, and to replace the functions and values with **0.28 acre** of rehabilitated habitat and **0.28 acre** of Re-established habitat.

The proposed off-site mitigation area will be biologically equivalent or superior to an avoidance alternative based on the following factors:

Finding No. 1: Mitigation shall occur at the Riverpark Mitigation Bank, which has recently been approved by the water resources Agencies (USACOE, CDFW, and California RWQCB), as well as the USFWS for MSHCP-related mitigation purposes.

Finding No. 2: The Mitigation Site (Riverpark Mitigation Bank) is located within the MSHCP Plan Area, therefore, is a suitable location for a mitigation site.

Finding No. 3: Native vegetation cover, diversity, and densities subsequent to the rehabilitation of the off-site mitigation area are expected to increase substantially. Riparian/Riverine areas on the Project site are subject to a high level of disturbance both from the surrounding land use and invasion of non-native, exotic species, including but not limited to Tamarisk, star thistle, short-pod mustard, brome grasses, and other invasive species. Invasive species will be removed and controlled at the Riverpark Mitigation Bank.

Finding No. 4: Habitat within the proposed off-site mitigation area is expected to become more suitable for species listed in Section 6.1.2 of the MSHCP. As the existing on-site habitat is currently structured at the impact site (Tentative Tract No. 37731), none of the MSHCP listed sensitive species utilize the riparian/riverine area.

Finding No. 5: Negative effects on riparian linkages would not occur due to the lack of any intact, continuous linkage existing on the Project site. Downstream riparian values could not reasonably be expected to decrease following project implementation. Water quality functions should be improved with implementation of the Project as designed. Biological functions and water quality improvement can reasonably be expected to increase within the Riverpark Mitigation Bank, thus providing a benefit to riparian vegetation downstream of the project site. Should mitigation credits not be available at the Riverpark Mitigation Bank, the Applicant will propose an alternative mitigation program which will need to be approved by the City, RWQCB, CDFW, USFWS, and if applicable, USACOE.

Finding No. 6: Based on the foregoing analysis, the limited functions and values recently induced and now present within the **0.28 acre** Riparian/Riverine on the Project site would be replaced by the

permanent rehabilitation of **0.28 acre** of land and the re-establishment of an additional **0.28 acre** of land at the Riverpark mitigation Bank (San Jacinto/Santa Ana Watershed). This Mitigation Plan would result in Biologically-Superior Preservation.

CERTIFICATION: I hereby certify that the statements and exhibits contained in this report present 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.



17 January 2020

U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

Date



(Revised per City of Riverside comments 24 July 2020)

Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

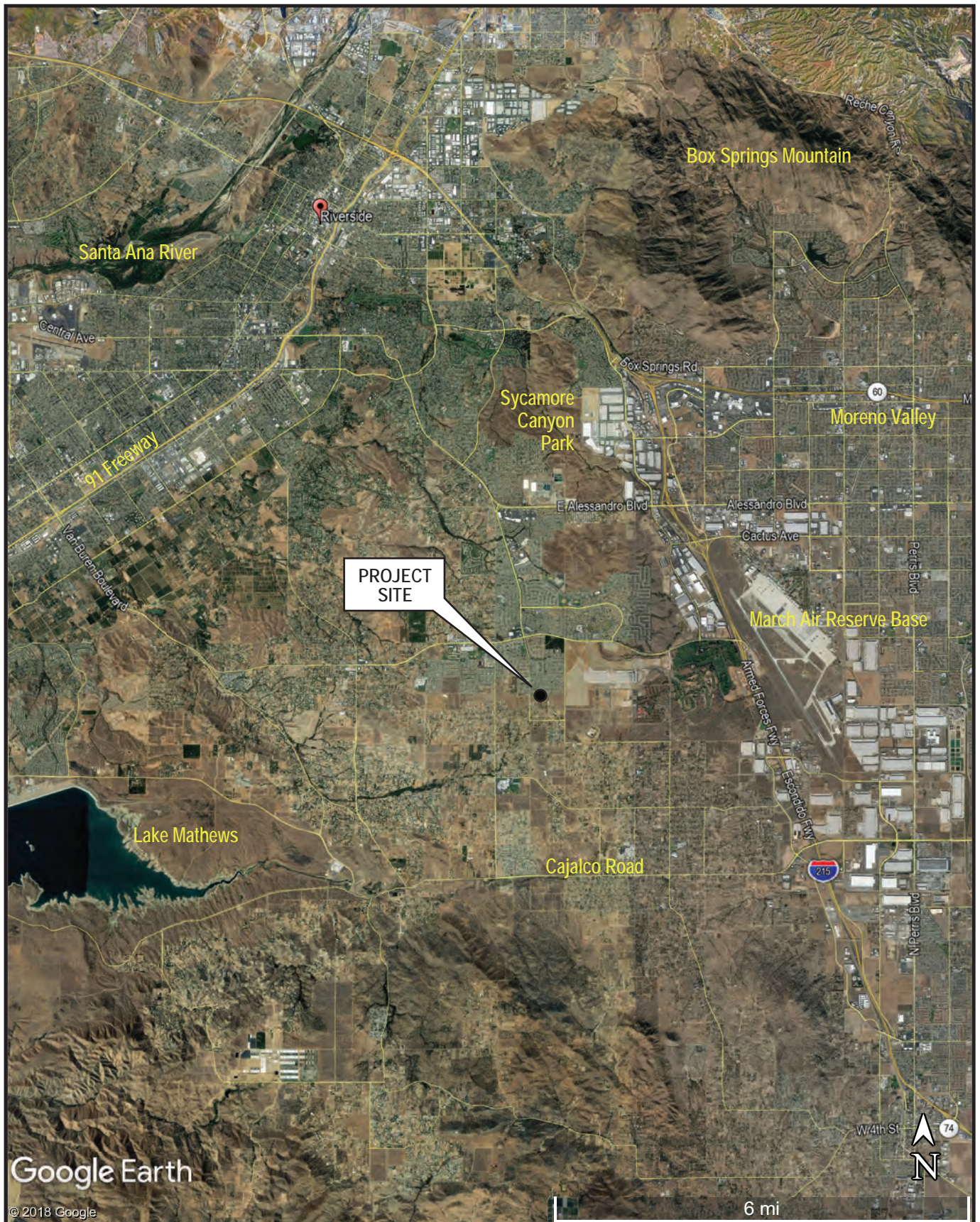
Date



(Revised per Wildlife Agency comments 13 January 2021)

Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267

Date

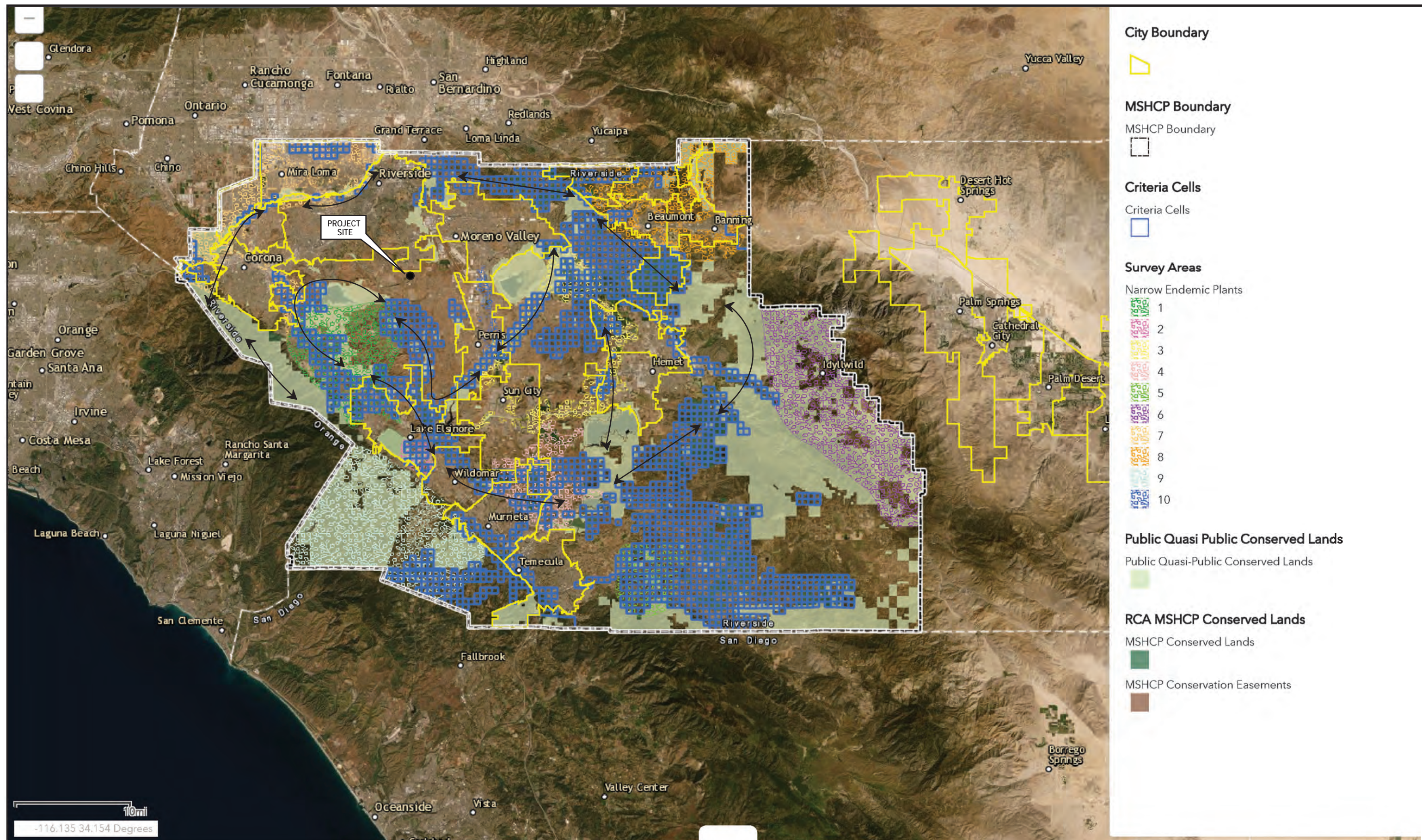


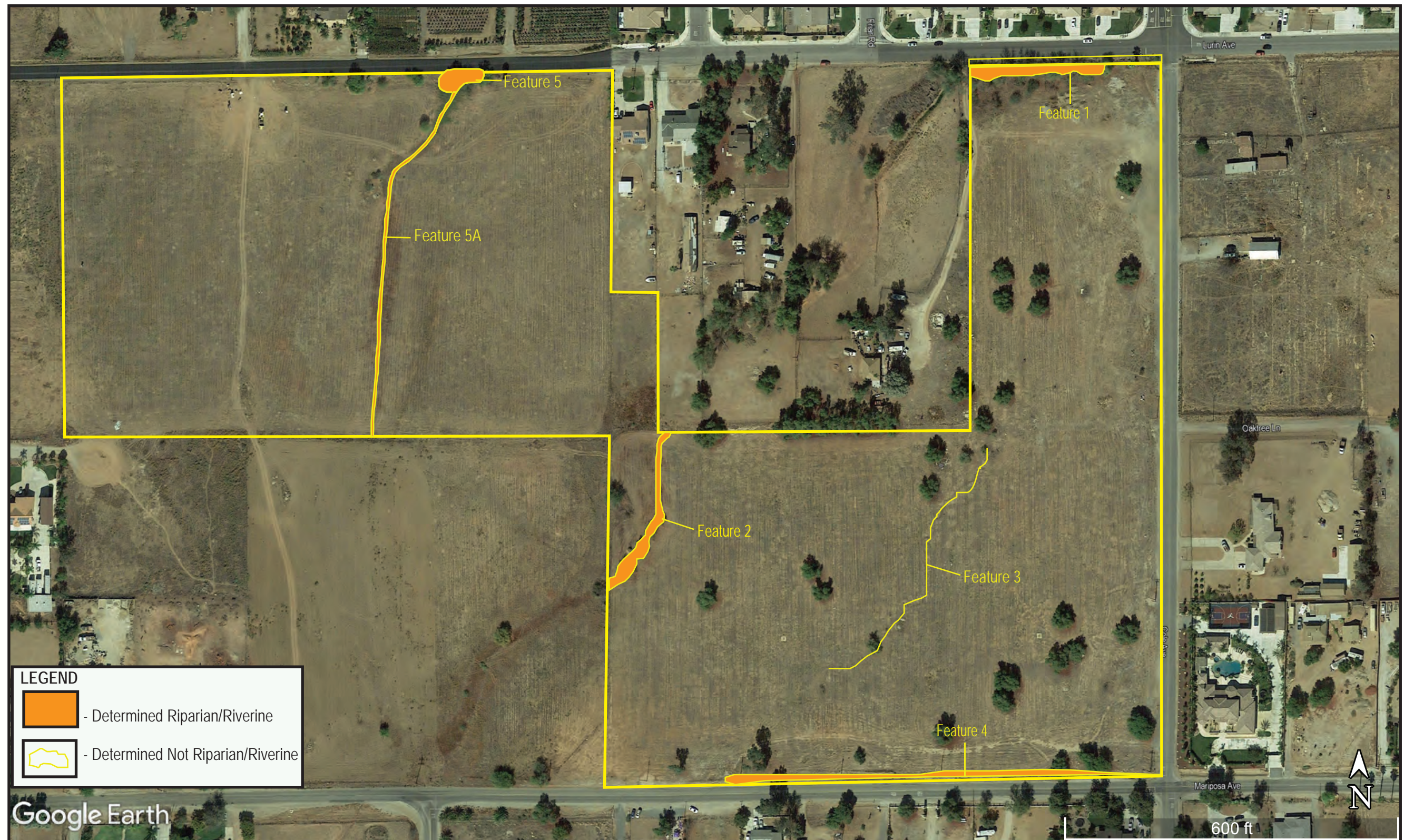




LEGEND

- FbC2 - Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded
- FtC2 - Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded
- MmB - Monserate sandy loam, 0 to 5 percent slopes

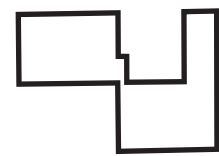






LEGEND

| Vegetation Alliance | Acres |
|---|--------------------|
| AG - Annual Grassland | 33.05 |
| O - Ornamental (CA Pepper, Olive, Eucalyptus, Mexican Fan Palm, Tamarisk, Palo Verde) | 0.37 |
| W - Mixed Willow Scrub/MS Mulefat Scrub | 0.2 |
| Asphalt Roadway (Not Mapped/Not Habitat) | 2.18 |
| TOTAL | 35.8 (gross acres) |



- Property Configuration



Photo 1 - TERACOR personnel shown at the downstream end of Feature 1 at the northwest corner of the project site. Note the stressed condition of the willows due to re-trenching the earthen channel along Lurin Avenue, and subsequent water-deprivation.



Photo 2 - Upstream view of Feature 2 facing property line where stormwater enters the site and flows along the western property line. No discernible water marks, or other stream features are apparent.



Photo 3 - Downstream view of the arroyo willow / mulefat scrub associated with Feature 2.

Photo 4 - An emergent willow and a dead mature tamarisk tree are present in the downstream portion of Feature 3.



Photo 5 - Downstream view of Feature 4, a roadside drainage ditch along the southern property boundary along Mariposa Avenue.



27 January 2018

Photo 1 - Feature 5: A test pit to assess soil characteristics was evaluated at the stormdrain outlet near Lurin Avenue, for hydric characteristics.



27 January 2018

Photo 2 - Vegetation within Feature 5 transitions from a willow/mulefat scrub cell to non-native grassland in its upstream portion near Lurin Avenue. The brown vegetation is Bermuda grass, and a plant listed as an invasive by the MSHCP.

Photo 4 - North-facing view of Feature 5, which was potentially considered Riverine. Drainage patterns are poorly-defined and a bed and bank is not detectable.



30 January 2018

Photo 3 - Soils investigated within Feature 5 showed marginal evidence of periodic inundation.

Photo 5 - This southern view shows that Feature 5 conveys water via sheetflow in the non-native grassland field. No drainage patterns are detectable, however, Wildlife Agencies discerned a hydrological connection via aerial imagery, therefore, Feature 5A was determined Riverine.



27 January 2018



27 January 2018

LEGAL DESCRIPTION:

PARCEL 1: (APN: 266-140-021, 266-140-022)

LOT 23 OF WOODCREST ACRES, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11, PAGE 62 OF MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA..

PARCEL 2 (APN 266-140-029, 266-140-030)

PARCELS 1 AND 2 OF PARCEL MAP NO. 8704, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 38, PAGE 76 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

PARCEL 3: (APN 266-140-049, 266-140-050)

THAT PORTION OF THE WEST HALF OF LOT 22 OF WOODCREST ACRES, IN THE CITY OF RIVERSIDE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11, PAGE 62 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, TOGETHER WITH A PORTION OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHERLY LINE OF SAID LOT 22, DISTANT THEREON, SOUTH 88°49'30" WEST, 100.00 FEET FROM THE NORTHEAST CORNER OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, SAID POINT ALSO BEING ON THE CENTER LINE OF LURIN AVENUE (30 FEET IN HALF WIDTH); THENCE SOUTHERLY LEAVING SAID NORTHERLY LINE ALONG A LINE PARALLEL TO THE WEST LINE OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, 300 FEET; THENCE NORTH 88°49'30" EAST, PARALLEL TO SAID NORTHERLY LINE, 100 FEET TO THE EASTERLY LINE OF SAID WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22; THENCE SOUTHERLY ALONG SAID EASTERLY LINE, 362.05 FEET TO THE SOUTHEAST CORNER OF SAID WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22; THENCE SOUTH 88°47'15" WEST, ALONG THE SOUTHERLY LINE OF SAID LOT 22, 414.95 FEET TO THE SOUTHWEST CORNER OF SAID LOT 22; THENCE NORTH 00°17'00" WEST, ALONG THE WESTERLY LINE OF SAID LOT 22, 662.09 FEET TO THE NORTHWEST CORNER THEROF, SAID POINT ALSO BEING ON THE CENTER LINE OF SAID LURIN AVENUE; THENCE ALONG SAID NORTHERLY LINE, NORTH 88°49'30" EAST, 314.90 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE NORTHERLY 33 FEET OF ABOVE DESCRIBED PARCEL.

SAID LAND IS DESCRIBED AND DELINEATED AS LOT A ON THAT CERTAIN "CERTIFICATE OF COMPLIANCE FOR LOT LINE ADJUSTMENT RECORDED DECEMBER 23, 2016 AS INSTRUMENT NO. 2016-0575044 OF OFFICIAL RECORDS.

PROJECT SCOPE OF WORK:

1. TOTAL PROJECT GROSS ACREAGE IS 35.80 AC.

| ACREAGE SUMMARY | | |
|--------------------------|---------|---------|
| ITEM | AGREAGE | PERCENT |
| A. LOT GROSS AREA | 18.4 | 51% |
| B. DRAINAGE (WQMP BASIN) | 2.38 | 7% |
| C. SLOPES/OPEN SPACE | 0.71 | 3% |
| D. PARKS | 1.31 | 6% |
| E. ROW TO ROW | 10.60 | 28% |

2. EXISTING GENERAL PLAN DESIGNATION: LDR- LOW DENSITY RESIDENTIAL (3-6 DU/AC)

3. EXISTING ZONING: R-1-13000

4. PROPOSED ZONING: RESIDENTIAL

5. PROPOSED NO. OF DWELLING UNITS: 138 LOTS.

6. PROPOSED PROJECT DENSITY: 3.86 DU/AC.

7. MINIMUM LOT SIZE: 4,235 SQ. FT.

8. AVERAGE LOT SIZE: 5,822 SQ. FT.

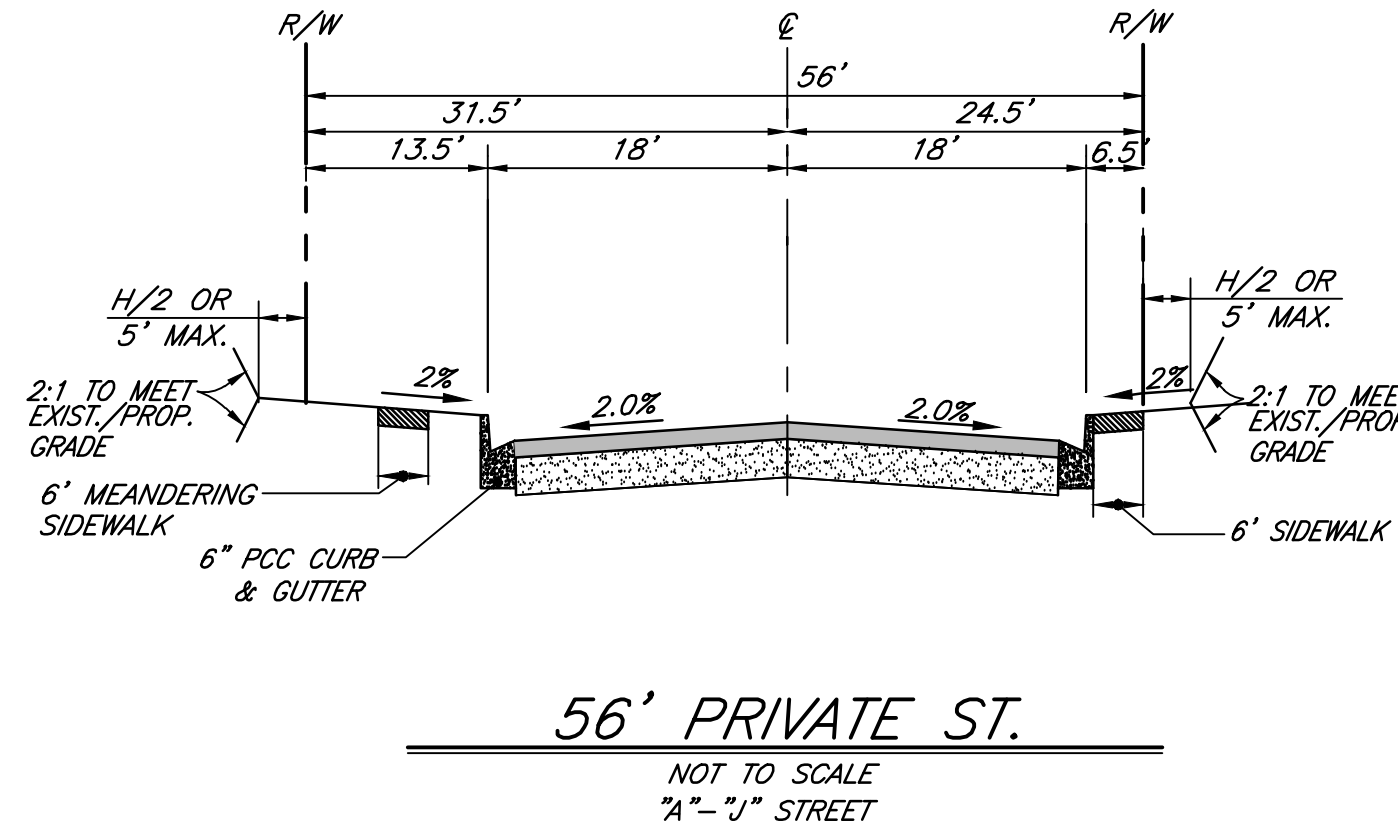
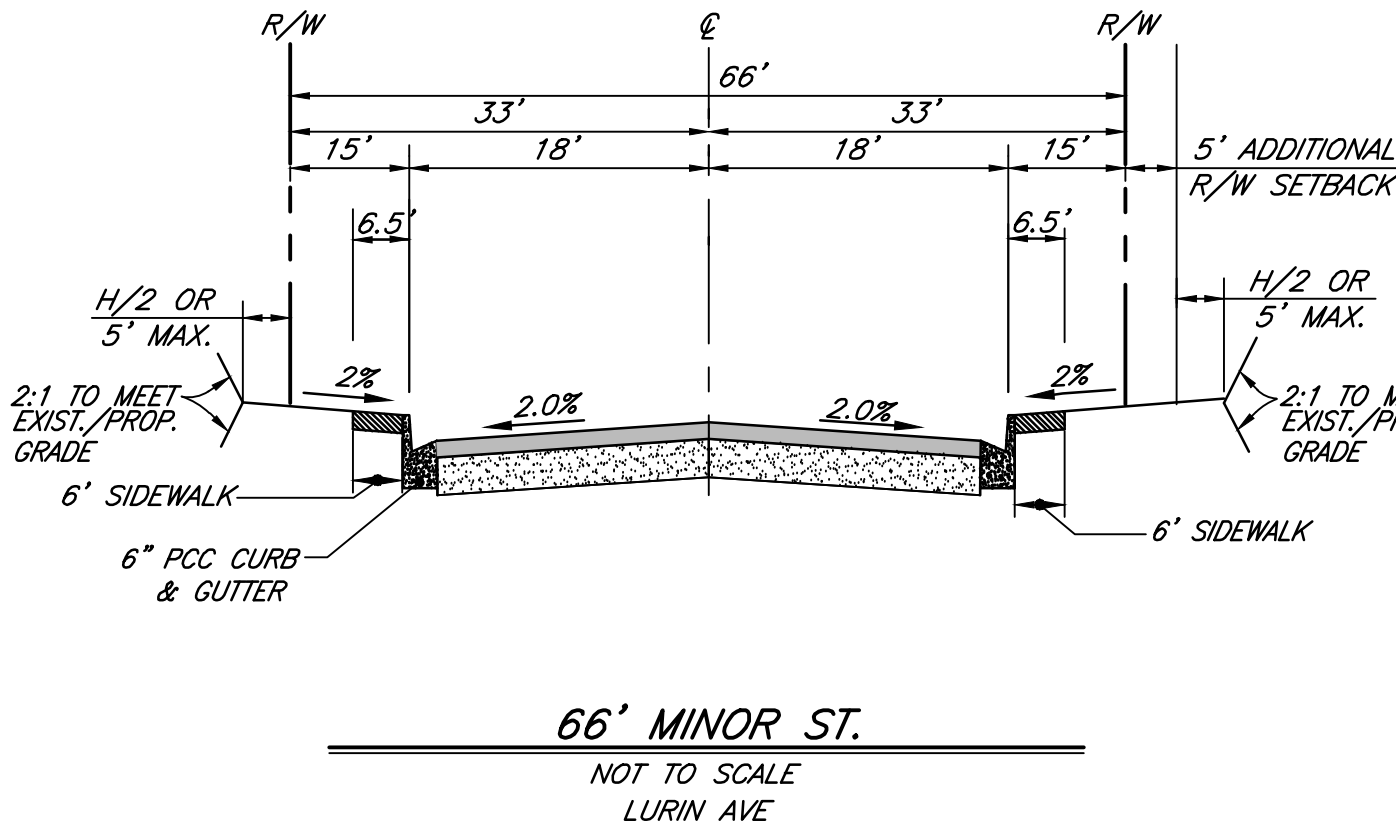
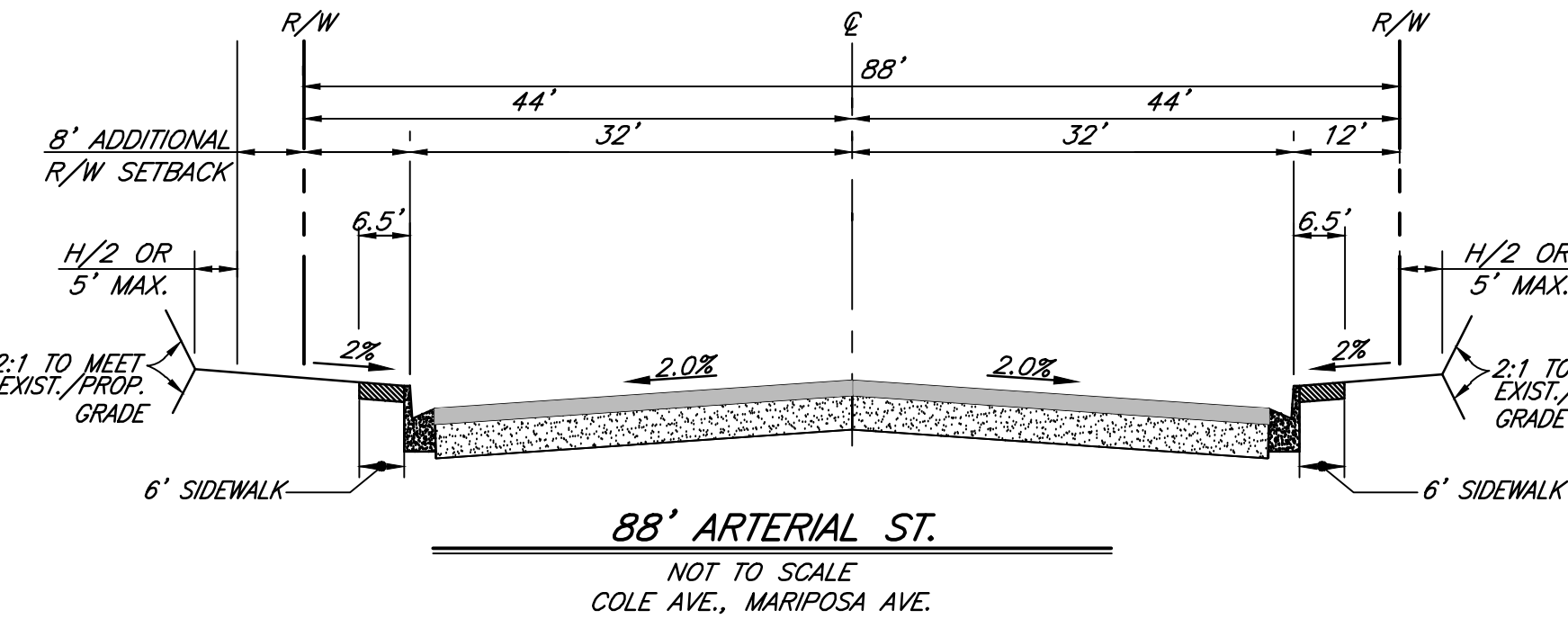
9. ZONING OF SURROUNDING PROPERTY: R-1

10. AVERAGE NATURAL SLOPE OF SITE: 0.53%

STATEMENT OF PREPARER

I HEREBY STATE THAT THIS MAP WAS PREPARED UNDER MY SUPERVISION AND THAT THE OWNER OF RECORD HAS KNOWLEDGE OF AND CONSENTS TO THE FILING OF THIS MAP.

MATTHEW L. LANINOVICH, P.E. DATE



TENTATIVE TRACT MAP NO. 37731
IN THE CITY OF RIVERSIDE

BASIS OF BEARINGS:

THE BASIS OF BEARINGS SHOWN HEREON ARE BASED ON THE CITY OF CORONA GPS MONUMENTS NO. 1183 OAK DAM (N: 2254579.060, E: 6152363.939 AND NO. 3039 LINDSON 2 1953 (N: 2249760.701, E: 6154840.535), BEING N 27°12'10" W.

PROPERTY OWNERSHIP INFO:

APNS: 266-140-029, 266-140-030, 266-140-049, 266-140-050, 266-140-022, 266-140-021

BENCHMARK:

CITY OF RIVERSIDE DESIGNATION: E8-G3

P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF THE SIDEWALK OVER THE EASTERLY WALL OF A CATCH BASIN ALONG THE SOUTHERLY CURB OF VAN BUREN BLVD AND 700 FEET EASTERLY OF WOOD ROAD.

ELEV: 1644.96' (NAD 88)

OWNER/DEVELOPER:

LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730
CONTACT: NOLAN LEGGIO

ENGINEER:

KWC ENGINEERS
1880 COMPTON AVENUE
CORONA, CA 92881-3370
(951) 734-2130
CONTACT: MATTHEW LANINOVICH, P.E.

UTILITY NOTES:

SEWER & WATER: WESTERN MUNICIPAL WATER DISTRICT

GAS: SOCAL GAS

ELECTRICITY: SOUTHERN CALIFORNIA EDISON

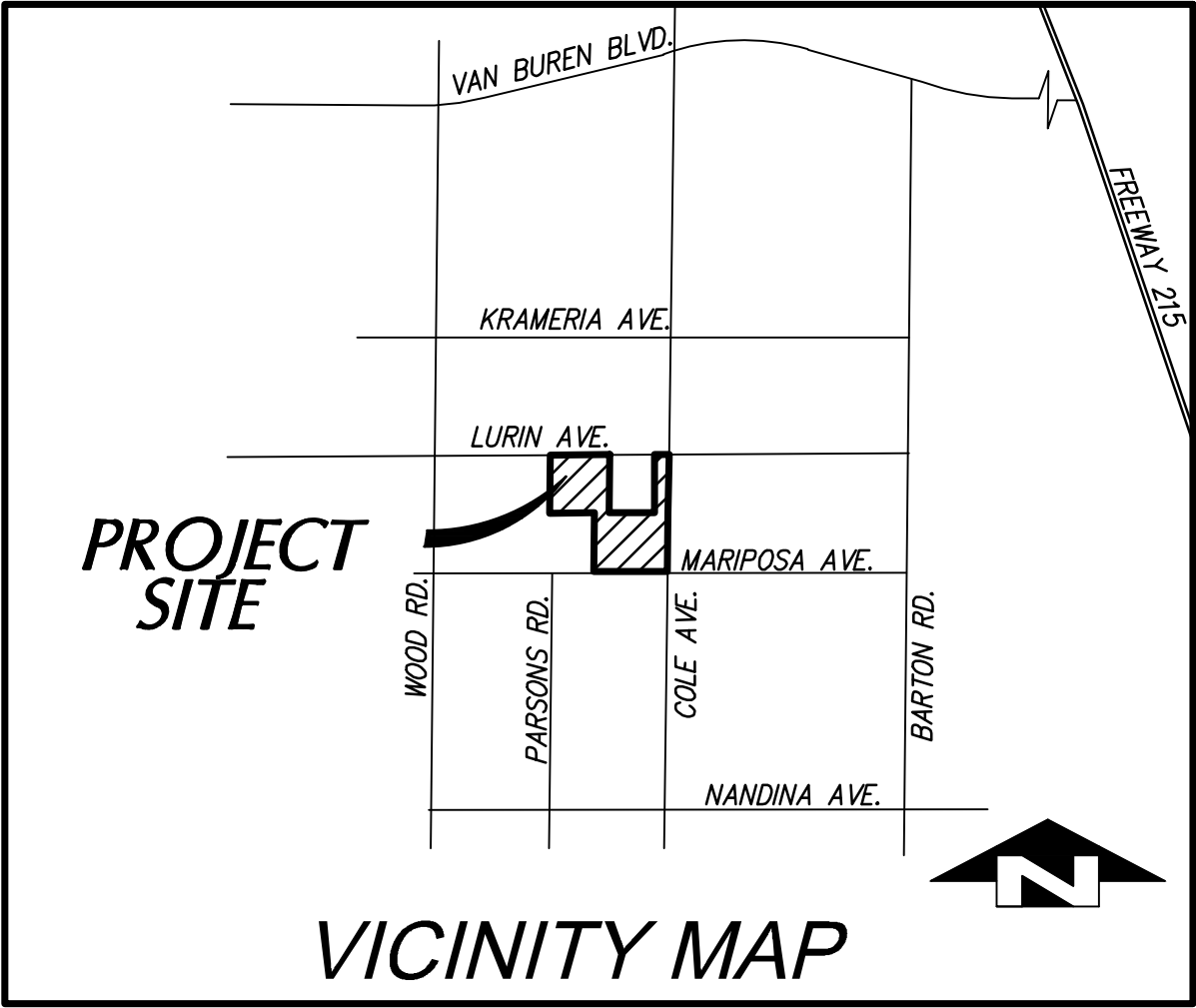
SCHOOL DISTRICT: RIVERSIDE UNIFIED SCHOOL DISTRICT

LURIN LAND PRD

| TR 37731 | | | | | Acres |
|------------|----------|-------------------|--------|-------|-------|
| Units/AC | Zoning | Percentage of Map | Acres | Lots | |
| 4.8 | 13000 | 58% | 20.76 | 99.67 | |
| 3 | 1/2 Acre | 21% | 7.52 | 22.55 | |
| 3 | 1 Acre | 21% | 7.52 | 22.55 | |
| Total Lots | | | 144.78 | | |

NUMBERED LOTS:

| LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | |
|---------|-----------------------------|-------|-------|-----------|---------|-----------------------------|-------|-------|--------------|-----------------|-----------------------------|-------|-------|-----------|-------|
| 1 | 5968 | 74 | 90 | 2 | 48 | 4750 | 50 | 95 | 1 | 95 | 5350 | 50 | 107 | 1 | |
| 2 | 4500 | 50 | 90 | 1 | 49 | 4750 | 50 | 95 | 2 | 96 | 5350 | 50 | 107 | 2 | |
| 3 | 4725 | 52 | 90 | 4 | 50 | 4750 | 50 | 95 | 5 | 97 | 7305 | 70 | 107 | 4 | |
| 4 | 5934 | 76 | 89 | 3 | 51 | 4750 | 50 | 95 | 1 | 98 | 7610 | 73 | 107 | 2 | |
| 5 | 4467 | 50 | 89 | 5 | 52 | 4750 | 50 | 95 | 2 | 99 | 5349 | 50 | 107 | 5 | |
| 6 | 4631 | 50 | 89 | 1 | 53 | 4750 | 50 | 95 | 4 | 100 | 5348 | 50 | 107 | 2 | |
| 7 | 5435 | 63 | 91 | 5 | 54 | 6505 | 70 | 95 | 3 | 101 | 5348 | 50 | 107 | 4 | |
| 8 | 4534 | 50 | 91 | 3 | 55 | 4750 | 50 | 95 | 1 | 102 | 5347 | 50 | 107 | 3 | |
| 9 | 4919 | 61 | 91 | 5 | 56 | 4750 | 50 | 95 | 3 | 103 | 5346 | 50 | 107 | 5 | |
| 10 | 5615 | 62 | 90 | 1 | 57 | 4750 | 50 | 95 | 1 | 104 | 5346 | 50 | 107 | 3 | |
| 11 | 5297 | 58 | 91 | 4 | 58 | 4750 | 50 | 95 | 5 | 105 | 5345 | 50 | 107 | 1 | |
| 12 | 5314 | 58 | 91 | 2 | 59 | 4750 | 50 | 95 | 3 | 106 | 5344 | 50 | 107 | 3 | |
| 13 | 4235 | 50 | 87 | 3 | 60 | 4750 | 50 | 95 | 5 | 107 | 5344 | 50 | 107 | 5 | |
| 14 | 4304 | 50 | 87 | 3 | 61 | 4750 | 50 | 95 | 1 | 108 | 5285 | 50 | 105 | 1 | |
| 15 | 4713 | 50 | 93 | 5 | 62 | 5301 | 57 | 95 | 5 | 109 | 4935 | 50 | 100 | 3 | |
| 16 | 4556 | 50 | 91 | 3 | 63 | 4868 | 51 | 95 | 3 | 110 | 5350 | 50 | 107 | 3 | |
| 17 | 4339 | 51 | 90 | 1 | 64 | 4956 | 50 | 99 | 5 | 111 | 5350 | 50 | 107 | 5 | |
| 18 | 9312 | 67 | 142 | 5 | 65 | 4882 | 50 | 98 | 4 | 112 | 5350 | 50 | 107 | 3 | |
| 19 | 5538 | 55 | 97 | 4 | 66 | 5011 | 52 | 100 | 2 | 113 | 5350 | 50 | 107 | 2 | |
| 20 | 4478 | 50 | 91 | 5 | 67 | 4915 | 50 | 99 | 5 | 114 | 5350 | 50 | 107 | 4 | |
| 21 | 4606 | 50 | 92 | 3 | 68 | 4901 | 50 | 99 | 4 | 115 | 5350 | 50 | 107 | 1 | |
| 22 | 4671 | 50 | 94 | 1 | 69 | 5129 | 50 | 103 | 2 | 116 | 5350 | 50 | 107 | 5 | |
| 23 | 4732 | 50 | 94 | 3 | 70 | 5374 | 50 | 106 | 3 | 117 | 5350 | 50 | 107 | 2 | |
| 24 | 4772 | 50 | 95 | 1 | 71 | 5215 | 50 | 105 | 2 | 118 | 5301 | 50 | 106 | 1 | |
| 25 | 5597 | 59 | 96 | 3 | 72 | 5133 | 50 | 103 | 3 | 119 | 5846 | 62 | 104 | 4 | |
| 26 | 5862 | 61 | 97 | 3 | 73 | 5208 | 50 | 105 | 1 | 120 | 6598 | 62 | 104 | 3 | |
| 27 | 4907 | 50 | 98 | 1 | 74 | 5370 | 50 | 107 | 2 | 121 | 5303 | 50 | 106 | 1 | |
| 28 | 4977 | 50 | 99 | 5 | 75 | 5308 | 50 | 106 | 4 | 122 | 5350 | 50 | 107 | 3 | |
| 29 | 5006 | 50 | 99 | 1 | 76 | 5253 | 50 | 105 | 5 | 123 | 5350 | 50 | 107 | 2 | |
| 30 | 4793 | 50 | 96 | 3 | 77 | 5227 | 49 | 105 | 2 | 124 | 5350 | 50 | 107 | 3 | |
| 31 | 6317 | 70 | 94 | 5 | 78 | 5987 | 62 | 99 | 4 | 125 | 5350 | 50 | 107 | 4 | |
| 32 | 13833 | 112 | 104 | 1 | 79 | 4996 | 50 | 100 | 2 | 126 | 5350 | 50 | 107 | 1 | |
| 33 | 7362 | 68 | 117 | 2 | 80 | 5157 | 50 | 103 | 5 | 127 | 5350 | 50 | 107 | 4 | |
| 34 | 6300 | 52 | 121 | 1 | 81 | 5321 | 50 | 107 | 2 | 128 | 5350 | 50 | 107 | 1 | |
| 35 | 6549 | 52 | 126 | 4 | 82 | 5506 | 50 | 110 | 1 | 129 | 5350 | 50 | 107 | 2 | |
| 36 | 9144 | 75 | 126 | 5 | 83 | 5542 | 50 | 111 | 5 | 130 | 16393 | 82 | 207 | 1 | |
| 37 | 5472 | 59 | 95 | 4 | 84 | 5542 | 50 | 111 | 4 | 131 | 11420 | 75 | 150 | 2 | |
| 38 | 4750 | 50 | 95 | 1 | 85 | 5542 | 50 | 111 | 5 | 132 | 10964 | 75 | 154 | 5 | |
| 39 | 4750 | 50 | 95 | 2 | 86 | 5798 | 50 | 117 | 1 | 133 | 11618 | 75 | 154 | 3 | |
| 40 | 4750 | 50 | 95 | 4 | 87 | 5842 | 50 | 117 | 5 | 134 | 11549 | 75 | 154 | 4 | |
| 41 | 4750 | 50 | 95 | 5 | 88 | 5842 | 50 | 117 | 4 | 135 | 11483 | 75 | 154 | 3 | |
| 42 | 4750 | 50 | 95 | 4 | 89 | 5749 | 50 | 114 | 5 | 136 | 11479 | 75 | 153 | 2 | |
| 43 | 4750 | 50 | 95 | 3 | 90 | 5180 | 50 | 105 | 3 | 137 | 11461 | 75 | 153 | 3 | |
| 44 | 4751 | 50 | 95 | 5 | 91 | 6608 | 54 | 144 | 4 | 138 | 11392 | 75 | 152 | 4 | |
| 45 | 6372 | 70 | 95 | 4 | 92 | 6088 | 57 | 136 | 5 | AVERAGE | 5822 | 55 | 106 | | |
| 46 | 6147 | 70 | 95 | 1 | 93 | 4596 | 50 | 95 | 3 | TOTAL LOT AREA= | | | | 803,376 | |
| 47 | 4750 | 50 | 95 | 4 | 94 | 5177 | 50 | 107 | 5 | MAX LOT AREA = | | | | 16,393 | |
| | | | | | | | | | | | MIN LOT AREA = | | | | 4,235 |



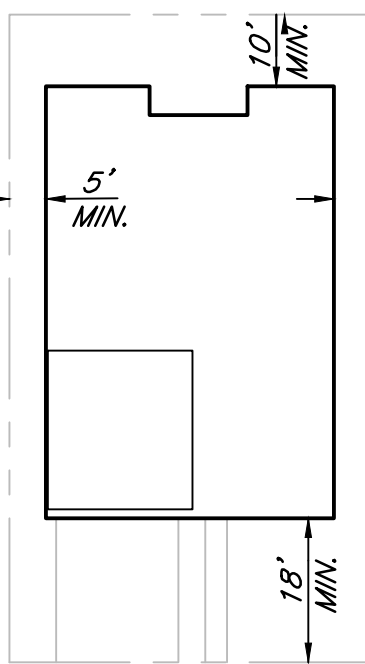
LETTERED LOTS:

| LOT NO. | GROSS AREA (SQ.FT.) | DESCRIPTION |
|-----------------|---------------------|-----------------|
| A | 3940 | OPEN SPACE |
| B | 45160 | OPEN SPACE |
| C | 66150 | WQMP BASIN |
| D | 23378 | PARK |
| E | 865 | OPEN SPACE |
| F | 13282 | OPEN SPACE/PARK |
| G | 5177 | OPEN SPACE |
| H | 4853 | OPEN SPACE |
| J | 1800 | OPEN SPACE |
| K | 15839 | OPEN SPACE |
| L | 15,615 | OPEN SPACE |
| M | 35727 | PARK |
| N | 37711 | WQMP BASIN |
| O | 20012 | OPEN SPACE |
| P | 8487 | OPEN SPACE |
| TOTAL LOT AREA= | | 240607 |
| MAX LOT AREA = | | 64008 |
| MIN LOT AREA = | | 866 |

PARK AREA CALCULATION

| LOT | AREA IN SQ.FT. |
|---------------------------------|----------------|
| LOT "C" | 21,149 |
| TOTAL | 21,149 |
| PARK AREA REQ. (PLOTSX500 SQFT) | 21,000 |

TYPICAL LOT SETBACKS



| TTM DATE IDENTIFIER |
|---|
| DATE OF LATEST CHANGE TO THIS MAP: 01/09/20 |
| DATE OF THIS PLAN: 01/09/20 |
| BY: AC |

TENTATIVE TRACT MAP NO. 37731
CITY OF RIVERSIDE

PREPARED FOR:

LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730

PREPARED BY:

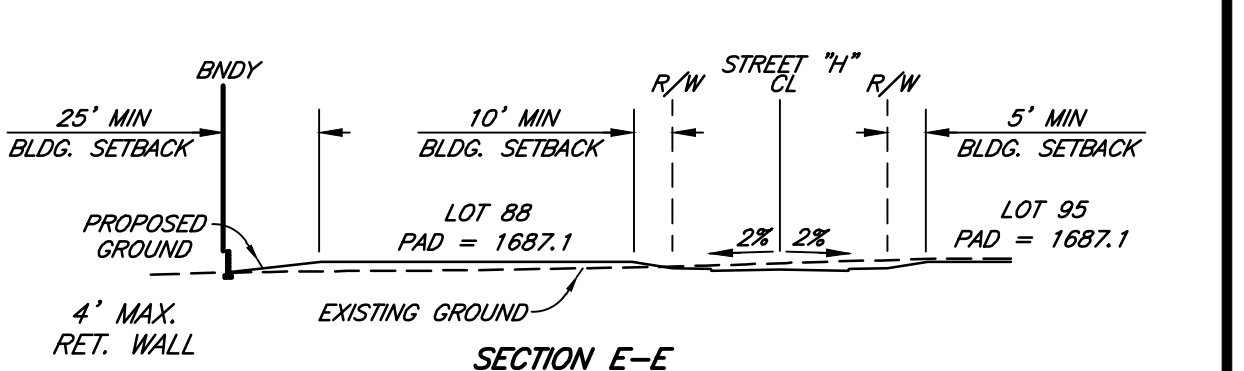
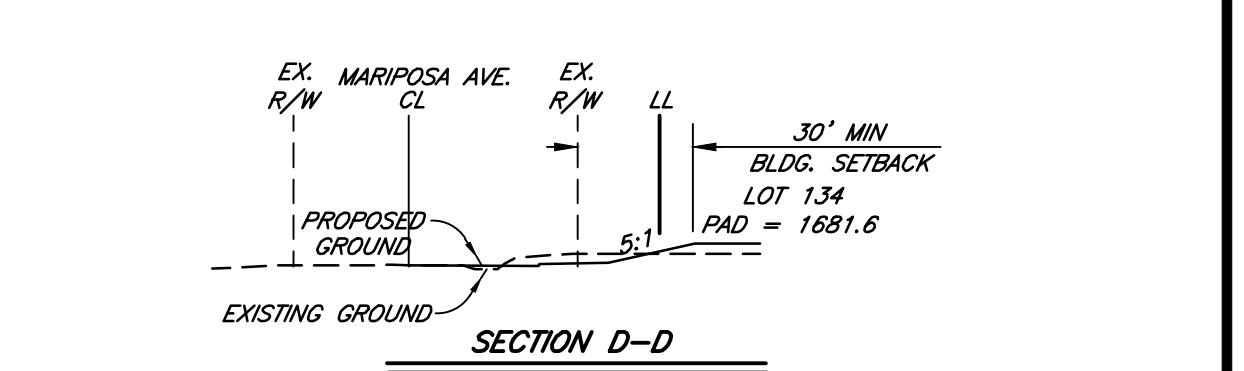
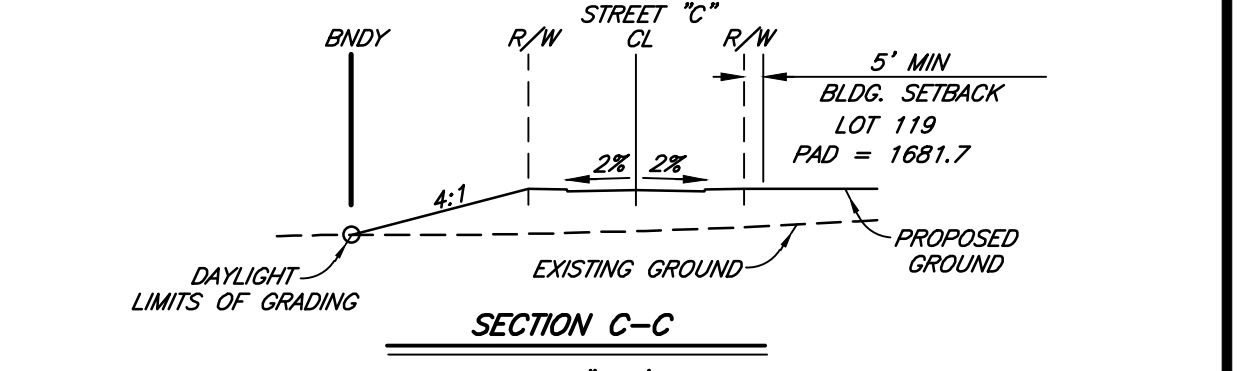
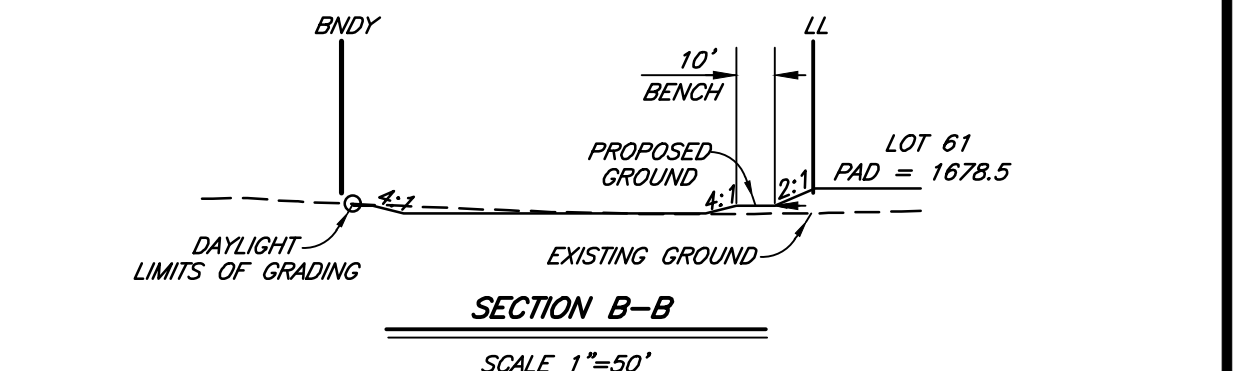
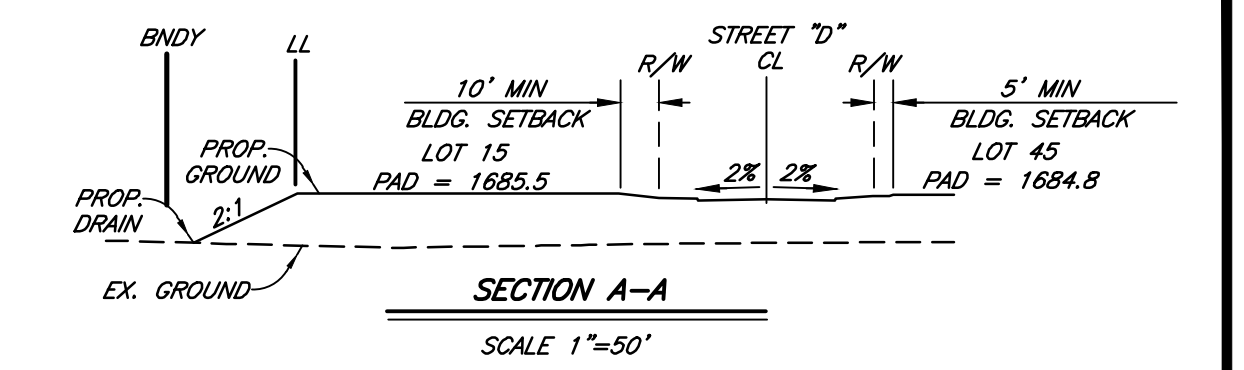
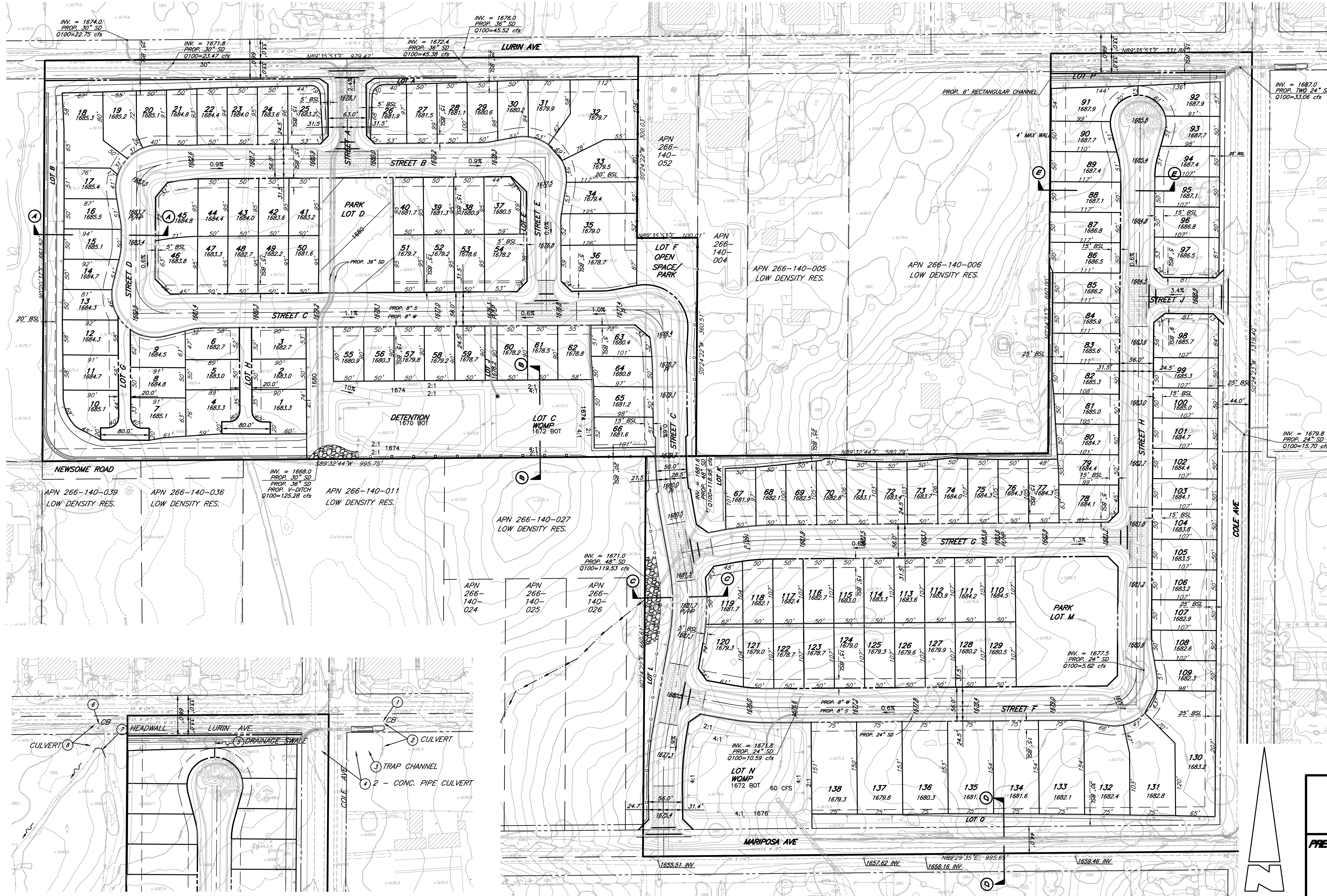


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SHEET
1 OF 2
SHEETS

TENTATIVE TRACT MAP NO. 37731

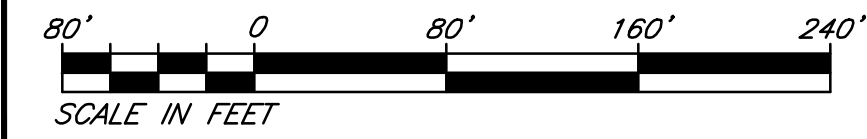
IN THE CITY OF RIVERSIDE



- LEGEND:**
- PROPOSED WATER
 - PROPOSED SEWER
 - PROPOSED RECLAIMED WATER
 - PROPOSED STORM DRAIN
 - EXISTING WATER
 - EXISTING SEWER
 - EXISTING RECLAIMED WATER
 - EXISTING STORM DRAIN
 - EXISTING CONTOUR ELEVATION
 - EXISTING SURFACE ELEVATION
 - PROPOSED PAD ELEVATION
 - ELEV. = ELEVATION
 - FG = FINISH GRADE
 - FL = FLOWLINE
 - FS = FINISHED SURFACE
 - D.G. = DECOMPOSED GRANITE
 - L = LENGTH
 - W = WIDTH
 - MIN. = MINIMUM
 - PL = PROPERTY LINE
 - R/W = RIGHT OF WAY
 - GB = GRADE BREAK
 - TC = TOP OF CURB
 - 45 = LOT NUMBER
 - TOE OF SLOPE
 - TOP OF SLOPE
 - DAYLIGHT LINE
 - DECORATIVE PAVEMENT

LURIN AVE. & COLIN AVE. DRAINAGE DETAIL
SCALE: 1"=80'

| TIM DATE IDENTIFIER | |
|---------------------|--------|
| 01/09/20 | BY: AC |
| DATE OF THIS PLAN | |
| 01/09/20 | |



TENTATIVE TRACT MAP NO. 37731
CITY OF RIVERSIDE

PREPARED FOR:
LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
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SHEET
2 OF 2
SHEETS

J.N. 17.1711.2 R:\17\1711\PRELIM\MAPS\TENT\1711_TMO2_COLE.dwg 01/10/20 8:38am

Appendix A Floral Compendium

Vegetation List

The species listed below were detected within the subject property during field surveys performed in 2016, 2017, and 2019. Field identifications are a composite list prepared by S. Reed, J. Reed, and M. Long. Scientific names follow *The Jepson Manual, Vascular Plants of California - Second Edition*, 2012, and have been updated following the Jepson Online Interchange for California Floristics database (2014). Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|--|-------------------------|
| Amaranthaceae | Amaranth Family |
| <i>Amaranthus albus</i> * | tumbleweed |
| Anacardiaceae | Sumac Family |
| <i>Schinus molle</i> * | pepper tree |
| Arecaceae | Palm Family |
| <i>Washingtonia robusta</i> * | Mexican fan palm |
| Asteraceae | Sunflower Family |
| <i>Ambrosia acanthicarpa</i> | Annual bur-sage |
| <i>Ambrosia psilostachya</i> | Western ragweed |
| <i>Baccharis salicifolia</i> ssp. <i>salicifolia</i> | mule fat |
| <i>Carthamus tinctorius</i> * | safflower |
| <i>Centaurea benedicta</i> | blessed thistle |
| <i>Corethrogyne filaginifolia</i> | common sandaster |
| <i>Deinandra fasciculata</i> | fascicled tarplant |
| <i>Deinandra paniculata</i> | paniculate tarplant |
| <i>Erigeron canadensis</i> | horseweed |
| <i>Helianthus annuus</i> | common sunflower |
| <i>Heterotheca grandiflora</i> | Telegraph weed |
| <i>Lactuca serriola</i> * | prickly lettuce |
| <i>Lasthenia gracilis</i> | goldfields |
| <i>Matricaria discoidea</i> | pineapple weed |
| <i>Oncosiphon piluliferum</i> * | Stinknet |
| <i>Pseudognaphalium californicum</i> | California everlasting |
| <i>Sonchus asper</i> * | prickly sow thistle |
| <i>Taraxacum officinale</i> * | common dandelion |
| <i>Uropappus lindleyi</i> | silver puffs |
| <i>Xanthium strumarium</i> | Cocklebur |
| | |

| Scientific Name | Common Name |
|---|-----------------------------|
| Boraginaceae | Borage Family |
| <i>Amsinckia intermedia</i> | common fiddleneck |
| <i>Amsinckia menziesii</i> | small-flowered fiddleneck |
| <i>Cryptantha intermedia</i> | popcorn flower (common) |
| <i>Heliotropium curassavicum</i> var. <i>oculatum</i> | alkali heliotrope |
| <i>Pectocarya linearis</i> ssp. <i>ferocula</i> | slender combbur |
| <i>Plagiobothrys collinus</i> | California popcorn flower |
| | |
| Brassicaceae | Mustard Family |
| <i>Brassica nigra</i> * | black mustard |
| <i>Hirschfeldia incana</i> * | short-pod mustard |
| <i>Raphanus sativus</i> * | radish |
| <i>Sisymbrium irio</i> * | London rocket |
| | |
| Cactaceae | Cactus Family |
| <i>Opuntia</i> sp. | Beavertail (ornamental) |
| | |
| Chenopodiaceae | Goosefoot Family |
| <i>Chenopodium album</i> * | Lamb's quarters |
| <i>Salsola tragus</i> * | Russian thistle |
| | |
| Convolvulaceae | Morning-glory Family |
| <i>Calystegia macrostegia</i> | morning-glory |
| <i>Convolvulus arvensis</i> | field bindweed |
| <i>Cuscuta californica</i> var. <i>californica</i> | California dodder |
| | |
| Crassulaceae | Crassila Family |
| <i>Crassula connata</i> | sand pygmy-stonecrop |
| | |
| Cucurbitaceae | Gourd Family |
| <i>Cucurbita foetidissima</i> | buffalo gourd |
| <i>Marah macrocarpus</i> | wild cucumber |
| | |
| Euphorbiaceae | Spurge Family |
| <i>Croton setiger</i> (formally <i>Eremocarpus</i>) | doveweed |
| <i>Euphorbia polycarpa</i> | smallseed sandmat |
| | |
| Fabaceae | Legume Family |

| Scientific Name | Common Name |
|--|--------------------------------|
| <i>Acmispon glaber</i> | deerweed |
| <i>Cercidium sp.*</i> | Palo Verde |
| <i>Lupinus bicolor</i> | miniature lupine |
| <i>Mellilotus officinalis*</i> | yellow sweetclover |
| | |
| Geraniaceae | Geranium Family |
| <i>Erodium cicutarium*</i> | redstem filaree |
| | |
| Hydrophyllaceae | Water Leaf Family |
| <i>Nemophila menziesii</i> | baby blue eyes |
| | |
| Lamiaceae | Mint Family |
| <i>Marrubium vulgare*</i> | horehound |
| <i>Salvia columbariae</i> | chia |
| <i>Salvia mellifera</i> | black sage |
| <i>Trichostemma lanceolatum</i> | vinegar weed |
| | |
| Malvaceae | Mallow Family |
| <i>Malva parviflora*</i> | cheeseweed |
| | |
| Onagraceae | Evening Primrose Family |
| <i>Camissoniopsis bistorta</i> | southern sun cup |
| | |
| Papaveraceae | Poppy Family |
| <i>Eschscholzia californica</i> | California poppy |
| | |
| | |
| Poaceae | Grass Family |
| <i>Avena barbata*</i> | slender wild oat |
| <i>Bromus diandrus*</i> | ripgut grass |
| <i>Bromus madritensis ssp. rubens*</i> | red brome |
| <i>Cortaderia jubata</i> | pampas grass |
| <i>Distichlis spicata</i> | salt grass |
| <i>Festuca myuros*</i> | rattail sixweeks grass |
| <i>Hordeum murinum*</i> | wall barley |
| <i>Schismus barbatus*</i> | common Mediterranean grass |
| | |
| Polygonaceae | Buckwheat Family |

| Scientific Name | Common Name |
|------------------------------|--------------------------|
| <i>Rumex crispus</i> * | curly dock |
| | |
| Portulacaceae | Purslane Family |
| <i>Calandrinia ciliata</i> | redmaids |
| | |
| Salicaceae | Salix Family |
| <i>Salix laevigata</i> | red willow |
| <i>Salix lasiolepis</i> | arroyo willow |
| <i>Salix gooddingii</i> | Gooding's black willow |
| | |
| Solanaceae | Nightshade Family |
| <i>Datura wrightii</i> | jimson weed |
| <i>Nicotiana glauca</i> * | tree tobacco |
| | |
| Tamaricaceae | Tamarisk Family |
| <i>Tamarix</i> sp.* | tamarisk |
| | |
| Zygophyllaceae | Caltrop Family |
| <i>Tribulus terrestris</i> * | common puncture vine |

Appendix B Faunal Compendium

Birds

Birds were observed with 10x42 binoculars. Birds were identified following The Sibley Field Guide to Birds of Western North America (2014), and updated to conform to changes in nomenclature consistent with the most recent American Ornithological Society checklist. Species observed on the subject property are noted by a bold dot (●). Bird species not observed but could occur foraging on the subject site, or as a migratory stopover have also been included. Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|-------------------------------------|-------------------------------|
| Accipitridae | Hawks, Eagles, Kites |
| <i>Accipiter cooperii</i> ● | Cooper's hawk |
| <i>Accipiter striatus</i> | sharp-shinned hawk |
| | |
| <i>Buteo jamaicensis</i> ● | red-tailed hawk |
| <i>Buteo lineatus</i> | red-shouldered hawk |
| <i>Buteo regalis</i> | ferruginous hawk |
| | |
| <i>Circus cyaneus</i> | northern harrier |
| <i>Elanus leucurus</i> | white-tailed kite |
| | |
| Aegithalidae | Bushtits |
| <i>Psaltiriparus minimus</i> ● | bushtit |
| | |
| Alaudidae | Larks |
| <i>Eremophila alpestris actia</i> ● | California horned lark |
| | |
| Bombycillidae | Waxwings |
| <i>Bombycilla cedrorum</i> | cedar waxwing |
| | |
| Caprimulgidae | Nightjars, Goatsuckers |
| <i>Phalaenoptilus nuttallii</i> | common poorwill |
| | |
| Cardinalidae | Cardinals |
| <i>Passerina caerulea</i> | blue grosbeak |
| <i>Pheucticus melanocephalus</i> | black-headed grosbeak |
| | |
| Cathartidae | American Vultures |
| <i>Cathartes aura</i> | turkey vulture |
| | |
| Charadriidae | Plovers |
| <i>Charadrius vociferus</i> ● | killdeer |

| Scientific Name | Common Name |
|-------------------------------------|--------------------------------|
| Columbidae | Pigeons, Doves |
| <i>Columba livia</i> ● | rock pigeon |
| <i>Columbina passerina</i> | common ground-dove |
| <i>Patagioenas fasciata</i> | band-tailed pigeon |
| <i>Streptopelia decaocto</i> * | Eurasian collared-dove |
| <i>Zenaida macroura</i> ● | mourning dove |
| Corvidae | Crows, Jays |
| <i>Aphelocoma californica</i> ● | California scrub-jay |
| <i>Corvus brachyrhynchos</i> ● | American crow |
| <i>Corvus corax</i> ● | common raven |
| Cuculidae | Cuckoos and Roadrunners |
| <i>Geococcyx californianus</i> ● | greater roadrunner |
| Falconidae | Falcons |
| <i>Falco sparverius</i> ● | American kestrel |
| Fringillidae | Finches |
| <i>Haemorhous mexicanus</i> ● | house finch |
| <i>Haemorhous purpureus</i> | purple finch |
| <i>Spinus lawrencei</i> | Lawrence's goldfinch |
| <i>Spinus psaltria</i> ● | lesser goldfinch |
| <i>Spinus tristis</i> | American goldfinch |
| Hirundinidae | Swallows, Martins |
| <i>Hirundo pyrrhonota</i> ● | cliff swallow |
| <i>Hirundo rustica</i> | barn swallow |
| <i>Stelgidopteryx serripennis</i> ● | northern rough-winged swallow |
| <i>Tachycineta bicolor</i> | tree swallow |
| Icteridae | Blackbirds |
| <i>Euphagus cyanocephalus</i> ● | Brewer's blackbird |
| <i>Icterus bullockii</i> | Bullock's oriole |
| <i>Icterus cucullatus</i> ● | hooded oriole |
| <i>Quiscalus mexicanus</i> | great-tailed grackle |

| Scientific Name | Common Name |
|-------------------------------------|--|
| <i>Molothrus ater</i> ● | brown-headed cowbird |
| <i>Sturnella neglecta</i> ● | western meadowlark |
| | |
| Mimidae | Mockingbirds, Thrashers |
| <i>Mimus polyglottos</i> ● | northern mockingbird |
| | |
| Parulidae | Wood Warblers |
| <i>Geothlypis trichas</i> | common yellowthroat |
| <i>Oreothlypis celata</i> | orange-crowned warbler |
| <i>Setophaga coronata</i> | yellow-rumped warbler |
| | |
| Passerellidae | New World Sparrows |
| <i>Aimophila ruficeps canescens</i> | Southern California rufous-crowned sparrow |
| <i>Chondestes grammacus</i> | lark sparrow |
| <i>Junco hyemalis</i> | dark-eyed junco |
| <i>Melospiza melodia</i> | song sparrow |
| <i>Melospiza crissalis</i> ● | California towhee |
| <i>Passerculus sandwichensis</i> ● | savannah sparrow |
| <i>Zonotrichia atricapilla</i> | golden-crowned sparrow |
| <i>Zonotrichia leucophrys</i> ● | white-crowned sparrow |
| | |
| Passeridae | Old World Sparrows |
| <i>Passer domesticus</i> *● | house sparrow |
| | |
| Phasianidae | Pheasant Family |
| <i>Callipepla californica</i> ● | California quail |
| | |
| Picidae | Woodpeckers |
| <i>Colaptes auratus</i> | northern flicker |
| <i>Picoides nuttallii</i> ● | Nuttall's woodpecker |
| | |
| Ptiliognathidae | Silky Flycatchers |
| <i>Phainopepla nitens</i> | phainopepla |
| | |
| Strigidae | Typical Owls |
| <i>Bubo virginianus</i> | great horned owl |
| <i>Megascops kennicottii</i> | western screech-owl |
| | |

| Scientific Name | Common Name |
|------------------------------|---------------------------|
| Sturnidae | Starlings |
| <i>Sturnus vulgaris</i> *● | European starling |
| | |
| Trochilidae | Hummingbirds |
| <i>Archilochus alexandri</i> | black-chinned hummingbird |
| <i>Calypte anna</i> ● | Anna's hummingbird |
| <i>Calypte costae</i> | Costa's hummingbird |
| <i>Selasphorus sasin</i> | Allen's hummingbird |
| | |
| Troglodytidae | Wrens |
| <i>Thryomanes bewickii</i> | Bewick's wren |
| <i>Troglodytes aedon</i> ● | house wren |
| | |
| Turdidae | Thrushes |
| <i>Sialia mexicana</i> | western bluebird |
| <i>Turdus migratorius</i> | American robin |
| | |
| Tyrannidae | Tyrant Flycatchers |
| <i>Contopus cooperi</i> | olive-sided flycatcher |
| <i>Contopus sordidulus</i> | western wood pewee |
| <i>Empidonax oberholseri</i> | dusky flycatcher |
| <i>Sayornis nigricans</i> ● | black phoebe |
| <i>Sayornis saya</i> ● | Say's phoebe |
| <i>Tyrannus verticalis</i> ● | western kingbird |
| <i>Tyrannus vociferans</i> ● | Cassin's kingbird |
| | |
| Tytonidae | Barn Owls |
| <i>Tyto alba</i> | barn owl |

Mammals

Records included herein were derived from TERACOR field observations and peer-reviewed literature. Species seen or otherwise detected are noted with a bold dot (●). Nomenclature follows *Peterson Field Guides: Mammals of North America* (Reid 2006). Non-native species have been noted below with an asterisk (*) following the scientific name.

| Scientific Name | Common Name |
|-----------------|--|
| Canidae | Coyotes, Dogs, Foxes, Jackals, and Wolves |

| Scientific Name | Common Name |
|----------------------------------|---|
| <i>Canis latrans</i> ● | coyote |
| | |
| Cricetidae | Hamsters, Voles, New World Rats and Mice |
| <i>Microtus californicus</i> | California vole |
| <i>Mus musculus</i> * | house mouse |
| <i>Neotoma lepida intermedia</i> | San Diego desert woodrat |
| | |
| | |
| <i>Peromyscus californicus</i> | California mouse |
| <i>Peromyscus maniculatus</i> | American deer mouse |
| <i>Rattus norvegicus</i> * | Norway rat |
| <i>Rattus rattus</i> * | black rat |
| <i>Reithrodontomys megalotis</i> | western harvest mouse |
| | |
| Didelphidae | American Opossums |
| <i>Didelphis virginiana</i> * | Virginia opossum |
| | |
| Felidae | Cats |
| <i>Felis silvestris catus</i> * | domestic cat |
| <i>Lynx rufus</i> | bobcat |
| | |
| Geomyidae | Pocket Gophers |
| <i>Thomomys bottae</i> ● | Botta's pocket gopher |
| | |
| Heteromyidae | Pocket Mice and Kangaroo Rats |
| <i>Chaetodipus californicus</i> | California pocket mouse |
| <i>Chaetodipus fallax fallax</i> | northwestern San Diego pocket mouse |
| <i>Dipodomys simulans</i> | Dulzura kangaroo rat |
| <i>Dipodomys stephensi</i> | Stephens' kangaroo rat |
| | |
| | |
| Leporidae | Rabbits and Hares |
| <i>Sylvilagus audubonii</i> ● | Audubon's cottontail |
| | |
| Mephitidae | Skunks and Stink Badgers |
| <i>Mephitis mephitis</i> | striped skunk |
| | |

| Scientific Name | Common Name |
|------------------------------------|--|
| Molossidae | Free-Tailed Bats |
| <i>Eumops perotis californicus</i> | western mastiff bat |
| <i>Nyctinomops femorosaccus</i> | pocketed free-tailed bat |
| <i>Nyctinomops macrotis</i> | big free-tailed bat |
| <i>Tadarida brasiliensis</i> | Brazilian free-tailed bat |
| | |
| Mustelidae | Badgers, Otters, Weasels, and Relatives |
| <i>Mustela frenata</i> | long-tailed weasel |
| | |
| Procyonidae | Raccoons and Relatives |
| <i>Procyon lotor</i> | northern raccoon |
| | |
| Sciuridae | Squirrels, Chipmunks and Marmots |
| <i>Ostospermophilus beecheyi</i> ● | California ground squirrel |
| | |
| Vespertilionidae | Vesper Bats |
| <i>Antrozous pallidus</i> | pallid bat |
| <i>Corynorhinus townsendii</i> | Townsend's big-eared bat |
| <i>Eptesicus fuscus</i> | big brown bat |
| <i>Euderma maculatum</i> | spotted bat |
| <i>Lasionycteris noctivagans</i> | silver-haired bat |
| <i>Lasiurus blossevillei</i> | western red bat |
| <i>Lasiurus cinereus</i> | hoary bat |
| <i>Lasiurus xanthinus</i> | western yellow bat |
| <i>Myotis californicus</i> | California myotis |
| <i>Myotis ciliolabrum</i> | western small-footed myotis |

Amphibians and Reptiles

Identification of amphibians and reptile species were made visually, with nomenclature following R.C. Stebbins (2003) *A Field Guide to Western Reptiles and Amphibians*, third edition, updated to conform to the most recent changes in nomenclature utilizing The Center for North American Herpetology. Species seen or otherwise detected are noted with a bold dot (●).

| Scientific Name | Common Name |
|------------------------|-------------|
| Amphibians | |
| | |
| Frogs and Toads | |

| Scientific Name | Common Name |
|---|---|
| Bufonidae | |
| <i>Anaxyrus boreas</i> | True Toads |
| | western toad |
| Hylidae | |
| <i>Pseudacris regilla</i> | Treefrogs and Allies |
| | Pacific treefrog |
| Salamanders | |
| Plethodontidae | |
| <i>Batrachoseps major major</i> | Lungless Salamanders |
| | garden slender salamander |
| Reptiles | |
| Lizards | |
| Anguidae | |
| <i>Elgaria multicarinata webbia</i> | Glass Lizards and Alligator Lizards |
| | San Diego alligator lizard |
| Phrynosomatidae | |
| | Zebra-tailed, Fringe-toed, Spiny, Tree, Side-Blotched, and Horned Lizards |
| <i>Sceloporus occidentalis</i> ● | |
| <i>Uta stansburiana</i> | western fence lizard |
| | common side-blotched lizard |
| Scincidae | |
| <i>Plestiodon gilberti rubricaudatus</i> | Skinks |
| <i>Plestiodon skiltonianus skiltonianus</i> | western red-tailed skink |
| | Skilton's skink |
| Teiidae | |
| <i>Aspidoscelis hyperythra</i> | Whiptails and Allies |
| <i>Aspidoscelis tigris stejnegeri</i> | orange-throated whiptail |
| | coastal whiptail |
| Snakes | |
| Colubridae | |
| <i>Masticophis flagellum piceus</i> | Harmless Egg-Laying Snakes |
| <i>Masticophis lateralis lateralis</i> | red racer |
| | California striped racer |

| Scientific Name | Common Name |
|--------------------------------------|------------------------------|
| <i>Pituophis catenifer annectens</i> | San Diego gophersnake |
| | |
| Crotalidae | Pitvipers |
| <i>Crotalus oreganus helleri</i> | southern Pacific rattlesnake |

Appendix C References

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- TERACOR Resource Management, Inc. *Preliminary Jurisdictional Delineation and Determination of California Department of Fish and Wildlife and California Regional Water Quality Control Board – Santa Ana Region, and U.S. Army Corps of Engineers Jurisdiction for Tentative Tract No. 37731 a 138 Lot Subdivision of 35.8 Gross Acres (32.54 Net Acres) in the City of Riverside, Riverside County, California*, dated 29 December 2019 (Revised per City Comments 24 July 2020) (Revised per Wildlife Agency comments 13 January 2021)
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**Preliminary Jurisdictional Delineation and Determination of California
Department of Fish and Wildlife and California Regional Water Quality
Control Board – Santa Ana Region, and U.S. Army Corps of Engineers
Jurisdiction for Tentative Tract No. 37731 a 138 Lot Subdivision of 35.8
Gross Acres (32.54 Net Acres) in the City of Riverside, Riverside County,
California**

Assessor Parcel No's: 266-140-021, 022, 029, 030, 049, and 050,

Located within Section 29, Township 3 South
Range 4 West of the Riverside East and Steele Peak, CA Quadrangles

Prepared for:

California Department of Fish and Wildlife

California Regional Water Quality Control Board – Santa Ana Region

U.S. Army Corps of Engineers – Regulatory Division

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29 December 2019
Revised per City Comments 24 July 2020
Revised per Wildlife Agency Comments 23 January 2021

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1.0 INTRODUCTION

Purpose

Lurin Land, LLC ("Project Applicant") proposes a subdivision of a 35.8 gross acre (32.54 net acre) property into 138 residential lots, as well as four (4) detention or water treatment basins. **TERACOR Resource Management, Inc.** ("TERACOR") has prepared this update jurisdictional evaluation at the request of Lurin Land, LLC. The purpose of this jurisdictional evaluation is to determine the extent of:

- 1) those areas on-site which likely qualify as **California Department of Fish and Wildlife** ("CDFW") jurisdictional streambeds under the State of California Fish and Game Code;
- 2) any areas on-site which may qualify as either **U.S. Army Corps of Engineers** ("Corps") or **California Regional Water Quality Control Board – Santa Ana Region** ("RWQCB") jurisdiction under provisions of the federal Clean Water Act and the Porter-Cologne Water Quality Control Act; and
- 3) any jurisdiction within the project associated development footprint, assess and map the geographic extent of those jurisdictional areas and determine the extent of impact for those areas proposed for development.

As discussed later in this report, we expect the Corps to process and to consider an Approved Jurisdictional Determination ("Approved JD") which we believe demonstrates that the site is isolated and not connected to Mockingbird Canyon or its watershed, or other area watershed. The RWQCB usually will assert jurisdiction over those areas which would normally be considered "waters" of the U.S. (absent isolation the factors that may affect whether the Corps will assert jurisdiction on the Project site. Based on analysis conducted in the field and off-site, there is a reasonable expectation that the Corps may determine the single feature on-site to lie outside of its jurisdiction. The draft Approved JD will be submitted along with this Preliminary Jurisdictional Delineation to the Corps.

All CDFW and RWQCB (and potential Corps) jurisdictional boundary findings presented in this report will be utilized to assess impacts associated with the proposed project. Appropriate mitigation for areas where avoidance is not feasible will be proposed at the Riverpark Mitigation Bank.

Biological Information: This report is not a General Biological Assessment and therefore does not fully describe biological resources present or potentially present on-site. The Western Riverside County Multiple Species Habitat Conservation Plan ("MSHCP") allows preparation of General Biological Assessments for properties such as this, but each City as a Permittee under the MSHCP has the option of requesting as much biological information as they determine to reach a decision about the environmental effects of a project. For more detailed information, TERACOR has prepared a General Biological Assessment dated 10 December 2019 (revised 24 July 2020) (revised 13 January 2021), and referenced in Appendix C – References in this report. Basic biological information about the site is contained in Section 3.0 of this report.

Riverside County MSHCP: This report is also not a MSHCP Consistency Analysis and therefore does not describe the project's compliance with the MSHCP. The MSHCP Consistency Analysis is contained within the General Biological Assessment, discussed above, and referenced in *Appendix C – References*.

Project Description

Tentative Tract No. 37731 proposes the following entitlements to facilitate the establishment of an 138-unit Planned Residential Development: 1) Tentative Tract Map (TM 37731) to subdivide 35.8 gross acres (32.54 net acres) into 138 single-family residential lots and lettered lots for private streets and common open space; 2) Planned Residential Development for the establishment of detached single-family dwellings, private streets and common open space; 3) Variance to allow a reduced perimeter setback; and 4) Design Review of project plans. Water detention/treatment facilities would receive stormwater runoff from the residential lots and street system. Stormwater would be temporarily detained to allow for a reduction in peak stormflow runoff and treatment of low flow runoff from residential lots and streets.

Supporting infrastructure for the project includes fully improved street rights-of-way within and adjoining the subdivision, construction and maintenance of four (4) water quality treatment or stormwater detention basins, and a community “pocket park” for the residents of the neighborhood.

Property Location

The 35.8 gross acre (32.54 net acre) site is generally located in the Orangecrest Specific Plan of the City of Riverside, California. The site is approximately one (1) mile north and west of Glen Valley. The site is bounded by Lurin Avenue to the north, Mariposa Avenue to the south and Cole Avenue to the east. The subject property is comprised of several rectilinear-shaped parcels (Assessor's Parcel Numbers 266-140-021, 022, 029-030, 049, and 050, which lie in juxtaposition to one another as depicted by the attached *Appendix A - Tentative Tract Map No. 37731*. The location of the site relative to local thoroughfares is illustrated in the attached *Exhibit 1 – Regional Location*.

The subject site is situated between an existing contemporarily-designed single-family residential subdivision to the north of Lurin Avenue, and existing large lot rural-type residential properties to the south across Mariposa Avenue. The property's configuration is such that it “wraps around” several existing rural residential properties. There is no adjoining dedicated open space or conserved areas in proximity to the property. We noted generally that large acreages to the east past Cole Avenue and Barton Street have been mass graded and are rapidly being developed.

The property is situated in Section 29 of Township 3 South, Range 4 West of the *Riverside East* (dated 1978, photorevised 1980) and *Steele Peak* (dated 1973, photorevised 1978), *California USGS Quadrangles*, as depicted by the attached *Exhibit 2 – USGS Topo*.

Site Description - Watershed

The nearest **United States Geological Survey** ("USGS")-designated blue-line stream is located approximately 0.37 mile southwest of the subject property. We determined the project site lies within the watershed of this un-named blue-line feature. This blue-line stream originates near the intersection of Cole Avenue and Dallas Avenue and is ultimately tributary to Mockingbird Canyon. The subject property is therefore located in an uppermost portion of the Mockingbird Canyon watershed. We were not able to detect a surface connection to this watershed, and have determined that drainage from the Project site travels overland via sheet-flow drainage through an older large rural lot style existing residential neighborhood. There is no direct concentrated connectivity via defined drainages or creeks. *Exhibit 2A - USGS Topo and Watershed Units*, attached in order, indicates the site's position in an uppermost area of the Mockingbird Canyon watershed.

Drainage Patterns/Hydrology

This area in which the Project site is contained is characterized by low-lying rolling hills and shallow, and wide elongated drainage patterns characterized mainly by sheet-flow. Focused drainage in the immediate area of the property is generally in human-created roadside ditches. Drainage on-site is for the most part poorly defined throughout the property. The property receives engineered stormwater runoff discharged from the contemporary style residential tract north of the site via underground culverts, and drainage along Mariposa Avenue occurs within a roadside ditch. This condition has resulted in the establishment of relatively recently-established riparian cells comprised mostly of scattered willow trees in three (3) areas on the Project site. In all, we identified five (5) drainage features (Features 1 – 5A) which required assessment and evaluation to determine the jurisdictional status of each. Analysis indicates some of these five features are likely not jurisdictional; but regulatory methodologies to define jurisdiction are nuanced for each agency.

Topography

Elevations on-site range from approximately 1,667 feet above mean sea level ("msl") at the southwestern property boundary to approximately 1,680 feet above msl at the northeast corner of the site near the intersection of Lurin and Cole Avenues. The site is comprised of gently-rolling topography that has undergone historic, surficial agricultural modifications.

Soils

Descriptions of the soil series on-site are discussed below, based on soil series information presented in the *USDA Western Riverside Area Soil Survey*, issued 1971. The project site contains three (3) series of soils. The soil types consist of Fallbrook sandy loam, 5 to 8 percent slopes, eroded (FbD2), Fallbrook fine sandy loam, shallow, 2 to 8 percent slopes, eroded (FfC2) and Monserate sandy loam, 0 to 5 percent slopes, eroded (MmB). None of these soil series are listed as a hydric soil series recognized by the *United States Department of Agriculture ("USDA") Natural Resources Conservation Service National List of Hydric Soils: California List*, updated 2017. Soils on-site are depicted in the attached *Exhibit 3 – Soils*.

Table 1 - Soils

| CODE | SOIL TYPE | PROPERTY LOCATION |
|------|--|---|
| FbC2 | Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded | Southeast corner of property |
| FfC2 | Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded | Approx. west half of property and along Cole Ave. |
| MmB | Monserate sandy loam, 0 to 5% slopes, eroded | Approx. center of site |

All of the soils on-site are loams; meaning they have the necessary components and characteristics to support a vigorous and diverse vegetative cover, and to also support subsurface burrows, tunnels or animal dens. These loam soils also drain well, so small mammal burrows are ubiquitously located across much of the property. These loam soils include sand (see *Table 1 - Soils*), which generally increases porosity (i.e., percolation of water). Sand alone is highly porous as compared to clay, for example, as clay retards percolation and sometimes leads to surface ponding

These soil types have implications when considering whether the property is suitable for seasonal ponding, or for different types of plants and organisms to reside on it. We would consider these soils to be broadly associated with many Riverside County plants and animals, but not those organisms which prefer or even require clay or alkaline substrates. Clays consist of very fine particles, tightly packed together. Clay soils can support organisms specifically adapted to poor drainage and poor aeration. These characteristics are important to help predict presence or absence of vernal pools and associated rare organisms, as discussed in TERACOR's *General Biological Assessment and MSHCP Consistency Analysis* (2019) (revised 24 July 2020) for this project

2.0 METHODOLOGIES AND REGULATORY BACKGROUND

Literature Review

Literature reviewed from which plant names and identifications, vegetation communities and associations, and relevant descriptions were derived include: *The Jepson Manual, Vascular Plants of California - Second Edition* (Baldwin et. al. 2012), *The Vascular Plants of Western Riverside County, California – An Annotated Checklist* (Boyd et al., 2004), the CDFW's *List of Vegetation Alliances and Associations* (2010), and *A Manual of California Vegetation - Second Edition* (Sawyer, Keeler-Wolf and Evens 2009). A complete list of references has been included as Appendix C.

Literature utilized to conduct the CDFW and RWQCB jurisdictional determinations are described below.

Historic Aerial Photographic Research

TERACOR conducted historic aerial photographic research to determine past natural hydrologic conditions of the subject property's sub-region to review relative to current conditions. A combination of commercially available historic aerials from the **Riverside County Flood Control and Water Conservation**

District (1962, 1974, 1980 and 1990 aerials) and Google Earth Pro (1994, 2003, 2005 and 2014) were utilized for the analysis.

U.S. Army Corps of Engineers – “Waters” of the United States

The U.S. Army Corps of Engineers (Corps) exercises regulatory authority under the federal Clean Water Act (CWA). Its regulatory districts operate under a complex web of evolving regulations, guidelines, rules and Supreme Court rulings regarding discharges into the nation’s “waters” of the United States (“waters”).

Effective 22 June 2020, the Corps recently adopted the new *Navigable Waters Protection Rule*. This new rule, formulated under the Trump Administration, establishes the scope of federal regulatory authority under the CWA. The Navigable Waters Protection Rule includes four categories of jurisdictional waters and provides specific exclusions for many water features that traditionally have not been regulated. The most far-reaching of its intended changes is to not regulate ephemeral streams. Because some uncertainty exists in the future about the legal standing of this new Rule, it could be challenged in federal court or undergo revision. In the meantime, the Rule will be allowed to stand at this time. The Navigable Water Protection Rule eliminates some ephemeral “waters” from federal jurisdiction. This site would likely be considered non-jurisdictional by the Corps at this time.

The Army Corps regulates the discharge of dredged or fill material into jurisdictional “waters” of the U.S. through Section 404 of the Clean Water Act, as it is amended or interpreted from time to time. Prior to the current 2020 Rule, the Corps utilized the “Clean Water Rule: Definition of ‘Waters of the United States’” by the Army Corps and U.S. Environmental Protection Agency (“EPA”) published on 29 June 2015 (“the 2015 Rule”), attempting to clarify the definition of “waters”. The Army Corps and EPA added an applicability date of 06 February 2020 for the 2015 Rule. On 27 August 2015, the U.S. District Court for the District of North Dakota enjoined the applicability of the 2015 Rule in the thirteen (13) States challenging the 2015 Rule in that court. On 09 October 2015, the U.S. Court of Appeals for the Sixth Circuit stayed the 2015 Rule nationwide pending further action of the court. On 22 January 2018, the Supreme Court held that the courts of appeals do not have original jurisdiction to review challenges to the 2015 Rule. With this final rule, the Army Corps and EPA intended to maintain the status quo by adding an applicability date to the 2015 Rule and thus providing continuity and regulatory certainty for regulated entities, the States and Tribes, and the public while the Army Corps and EPA continued to consider possible revisions to the 2015 Rule.

Current regulations (33 CFR 328.3) define “waters” as:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate commerce including any such waters:

- (i) Which are or could be used by interstate or foreign travelers for recreation or other purposes; or
- (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
- (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
- (6) The territorial seas;
- (7) Wetlands adjacent to waters (other than waters which are themselves waters) identified in paragraphs (a) (1)-(6) of this section. (33 CFR 328.3(a))

The limits of "non-tidal waters," as described in 33 Code of Federal Regulations (CFR) 328.3(a) is expressed in the field by the ordinary high water mark ("OHWM") which includes "physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area."

Wetlands

Wetlands are included in the definition of "waters" but also have additional criteria for delineation because these areas are generally considered to have higher ecological and water quality value. The Army Corps and the EPA defines wetlands as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (Federal Register, 1980).

Positive indicators, in most cases, are required for the three (3) wetland parameters used (vegetation, hydrology and soils) to make a positive wetland determination. Criteria are less rigorous for human-induced wetlands or for conditions considered "atypical."

Recent Regulatory Guidance and Court Decisions

Arid West Supplement

TERACOR specifically utilizes the *Army Corps of Engineers Wetland Delineation Manual* (1987), as well as the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* ("Regional Supplement") (2008) to conduct delineations. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region, which consists of all or significant portions of eleven (11) states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming. The subject site is located within the Arid West

Region.

Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers

The SWANCC v. U.S. Army Corps of Engineers (2001) case was a result of the Army Corps claiming jurisdiction over an excavated, isolated sand and gravel pit that had become seasonal or permanent ponds. The Army Corps had applied the migratory bird rule, stating that since migratory birds utilized the ponds, the ponds were jurisdictional based on the presumption that “interstate commerce” could be affected. The pits were not tributaries or wetlands adjacent to “traditional navigable waters” and did not meet the definition of “traditional navigable waters.” The Supreme Court ruled that the Army Corps cannot claim jurisdiction over an isolated, non-navigable, intrastate feature that is not adjacent or tributary to a navigable, open water body, even if the body is seasonally or permanently ponded. Additionally, the Army Corps cannot claim jurisdiction simply based on application of the migratory bird rule, presuming “interstate commerce” would be affected.

Rapanos v. United States and Carabell v. United States

The EPA and Army Corps released new guidance and jurisdictional information on 02 December 2008 regarding the Rapanos decision in the *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*. Based on the Rapanos decision by the Supreme Court, the Army Corps may assert jurisdiction over waters that have a significant nexus or are associated with a traditional navigable water. The significant nexus will be determined by fact-specific analysis, which will assess flow characteristics, and functions of tributaries and adjacent wetlands to determine if they significantly affect the chemical, physical and biological processes of downstream traditional navigable waters, and also consider hydrological and ecological factors. The Army Corps will generally not assert jurisdiction over swales or erosional features with low, infrequent or short duration flows or ditches, including roadside ditches, with no relatively permanent flow of water.

California Department of Fish and Wildlife

The State of California Fish and Game Code states that CDFW regulates activities which “will substantially divert, obstruct or change the natural flow or bed, channel or bank of any river, stream, or lake designated by the Department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit, or will use material from the streambeds.” CDFW is charged with the authority through provisions of the Fish and Game Code (Section 1600 et seq) to issue agreements for any alteration of rivers, streams, or lakes where fish and wildlife resources may be adversely affected through modification or removal of support resources (e.g., vegetation, diversion of water, structural modification of riparian areas).

Streams are generally defined by the presence of bed and banks, channels, shorelines, and similar features. CDFW has discretion to assert jurisdiction over ecological systems (i.e., riparian communities) associated with streams and waterbodies, as well as isolated waterbodies. Determination of CDFW jurisdictional “streambeds” was made using several techniques, including both on-site and remote analysis. Remote, or off-site, analysis included a review of historic aerial photography and analysis of topographic

mapping. CDFW may also assert jurisdiction over some human-constructed drainages, including those on the Project site.

California Regional Water Quality Control Board

RWQCB, along with the State Water Resources Control Board, is the principal state agency with primary responsibility for the coordination and control of water quality. RWQCB regulates discharges of fill and dredged material through Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (California Water Code Division 7. Water Quality) grants RWQCB the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the state. RWQCB considers "waters of the State" (or "waters of the U.S." if present) to be its broadest possible measure of jurisdictional area.

These recent changes to the definition of the State of California's "wetlands" have been enacted which apparently will broaden the RWQCB's authority with regard to protecting wetlands with a less rigorous definition than the Corps of Engineers currently utilizes at the federal level. Implementation of the new definition has been somewhat delayed due to a number of administrative factors in 2020 since the new regulation went into effect in May 2020.

Field Surveys

Utilizing Army Corps and CDFW recommended procedures, practices, and guidance, TERACOR field personnel conducted a jurisdictional delineation of the subject site to determine on a preliminary basis the presence/absence and/or extent of Army Corps jurisdictional waters" and as well as CDFW jurisdictional "streambeds".

The field determination was conducted over several days on the Project site; initially on 31 October 2017 for general reconnaissance purposes and again on 25, 29 and 30 January 2018 to delineate the property. The field survey was conducted by TERACOR Principal Biologist, S. Reed, and Senior Biologist J. Reed. TERACOR field personnel traversed the entire site for field evidence of potentially jurisdictional drainages. A follow up field inspection was conducted by S. Reed on 30 May 2019 to assess the general status of the site following Spring rains, with emphasis on Feature 5 (discussed below).

Field personnel staked the jurisdictional boundaries of five (5) drainage features on-site features in order to record and calculate the geographic extent of CDFW jurisdiction. The survey firm **Dennis Janda, Inc.** ("DJI") then recorded GPS coordinates of the 128 stakes on 13 November 2017 and 04 February 2018. DJI then mapped the GPS coordinates and drew polygons or lines based on each stake location. The CDFW jurisdictional area for each drainage segment was then calculated from each drainage polygon or linear feature.

Transect widths and ecological and hydrological conditions of potential Army Corps "waters" and areas considered potentially CDFW-jurisdictional as well were recorded on TERACOR field data worksheets.

Transects were established every 100 feet. TERACOR and DJI then calculated the jurisdictional area of each linear feature from these measurements.

Drainage Feature Analysis

This section provides descriptive information unique to each of five (5) drainage features (Feature 5 has an additional area designated 5A after CDFW confirmed that Feature 5 extended down to the south property line) (Eric Chan, email communication, 08 February 2021). Acreage calculations are included, and are repeated in *5.0 Survey Results*.

Feature 1. Review of historic aerials from 1962 to present indicated the roadside ditch and adjacent willow scrub thicket which comprise Feature 1 is of recent artificial origin. In 1962 there were no hydrologic features in this area. In the 1970's or 1980's a tree grove was established where Feature 1 is now.

In the early 2000's the grove was removed. By 2005/2006, no feature was apparent, but urban development was underway on the north side of Lurin Avenue.

By 2014, two (2) 24 inch stormdrains discharged urban runoff onto the project site from underneath Cole Avenue. Presumably a ditch was excavated along Lurin Avenue to convey flows, but the ditch became dysfunctional or blocked and filled in with sediment. Stormflows spread onto the site and created a willow scrub cell.

Since our initial investigations in 2016, a public entity (probably a utility company) re-trenched the roadside ditch along Lurin Avenue on-site to convey the runoff, rather than just allowing uncontrolled discharge out toward the west in the former agricultural field. The willow thicket was trimmed back substantially when the channel was re-trenched presumably to avoid the utility lines along Lurin Avenue.

Since 2016, most of the willow growth has died; a few remain. The cell remains scrubby, senescent, and underdeveloped. This cell, including both the ditch and the willow thicket, has declined substantially in extent and vigor since the ditch was retrenched. The ditch is now a **0.03 acre** area. It appeared to the site investigators that the willow cell will no longer be jurisdictional at the federal (Corps) level, and because the source of water for the thicket was collected following re-trenching a roadside ditch. The cell is in decline and is likely to not persist in the near future. CDFW confirmed the **0.03 acre** area would be considered jurisdictional by CDFW (Eric Chan, email communication, 08 February 2021), therefore, it has been included in jurisdiction calculations.

Feature 2: Feature 2 is located along the westerly property line of the larger southern parcel on-site. Feature 2 is actually a continuation of Feature 1, however Feature 1 joins with another swale (see Exhibit 6 – May 1974 Aerial) and winds through an adjoining rural residential property before entering the site. One (1) sample point in Feature 2 was investigated for determining wetland presence/absence within this drainage. Wetland determinations taken were recorded on Arid West Region Wetland Determination Data Forms. It was

marginally positive for 3 parameters, however Feature 2 is small and isolated as it is not connected downstream to other “waters”.

Feature 2 displays no actual bed and bank, it consists of a broad, winding swale through the middle section of the Project site. The upstream portion of Feature 2 is comprised only of grassy and herbaceous weedy vegetation. The swale, including the four willow scrub trees located within it, is **0.10 acre** in extent. The actual hydrological “pathway”, however, was quite narrow and was calculated at **0.03 acre**, not including the willow overstory. Should the Corps assert jurisdiction, it would be over **0.03 acre** of the drainage. The RWQCB acreage is also **0.03 acre**. We recorded brome, tumbleweed (*Amaranthus* sp.), bindweed (*Convolvulus arvensis*), common sunflower (*Helianthus annuus*) and common plantain (*Plantago major*) this upstream portion. The feature transitions to a discontinuous stand of small arroyo willow trees spaced apart from one another. CDFW has confirmed that Feature 2 contains **0.10 acre** of jurisdictional streambed including the willow overstory (Eric Chan, email communication, 08 February 2021).

Feature 3: Feature 3 is an isolated, grassy swale, which can be detected in aerial photography but is very faint in the field. The photography suggests more moist and denser grass, not water. There is no developed riparian vegetation in it with the exception of one or two small senescent shrubs. Feature 3 is **0.02 acre** in extent, and does not constitute “waters” of the U.S., and its jurisdictional standing with RWQCB and CDFW also seems improbable since it has no detectable stream functions and does not have functions or values normally considered necessary for RWQCB and CDFW to assert jurisdiction. CDFW confirmed this determination (Eric Chan, email communication, 08 February 2021).

Feature 4: Feature 4 is a **0.08 acre** roadside ditch with only ruderal, weedy vegetation. It contains some water-tolerant species such as curly dock (*Rumex crispis*), common sunflower, knotweed (*Polygonum areanstrum*) and dandelion (*Sonchus oleraceus*). Roadside ditches do not constitute “waters” of the U.S., and its jurisdictional status with RWQCB is not yet determined. CDFW indicated that Feature 4 would be considered jurisdictional (Eric Chan, email communication, 08 February 2021).

Feature 5: The westerly-most willow cell is comprised of 5 willow and 1 ash tree; it receives stormwater and nuisance water discharges from a 12 inch corrugated metal pipe (CMP) drain under Lurin Avenue. Other non-native trees have emerged recently in this area as well, including Palo Verde trees and a single palm tree. The west cell and Palo Verde trees developed as other nearby properties across Lurin Avenue redirected water toward it in the 1980’s and 1990’s. The willow cell at this location is approximately **0.03 acre** in extent, but surface water collects during storm events along Lurin Avenue and then flows southward through a very broad grassy swale. The dominant grass in this seasonally moist feature is Bermuda grass (*Cynodon* sp.) and species like common knotweed.

Hydrology to Feature 5 is ephemeral, and probably enhanced just along the road to some degree by irrigation runoff from the plant nursery across Lurin Avenue. It has not been determined if the RWQCB will assert jurisdiction over any portion of Feature 5. The willow cell at this location is **0.03 acre** in extent.

A total of three (3) sampling points in Feature 5 were investigated for determining wetland presence/absence. One point immediately at the 12" CMP discharge pipe under Lurin Avenue was marginally positive for wetland soils; other test pits were not. Wetland delineation data were recorded on Arid West Region Wetland Determination Data Forms. Field data worksheets and Arid West Region Wetland Determination Data Forms are included in *Appendix B – Field Data Sheets*.

Feature 5A: CDFW had suggested that a narrow band of surface flow was likely to stretch down from Feature 5 to the south property line. CDFW confirmed this determination (Eric Chan, email communication, 08 February 2021). We have added an area as 5A which is 608 feet long and three (3) feet wide, between Feature 5 and the south property line. Feature 5A comprises **0.04 acre**.

3.0 BIOLOGICAL RESOURCES

MSHCP Requirements.

The subject property is located within the Western Riverside County MSHCP area.

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP or Plan) is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on Conservation of species and their associated Habitats in Western Riverside County. This Plan has the goal of maintaining biological and ecological diversity within Riverside County, a rapidly urbanizing region.

The MSHCP Plan Area encompasses approximately 1.26 million acres (1,966 square miles); it includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto.

The MSHCP provides a coordinated and well-planned Reserve Area and implementation program to preserve biological diversity in western Riverside County.

Habitat Assessments and Focused Surveys can be required for specific organisms under the Plan. Under the MSHCP, certain habitat types and sometimes specific geographic areas and parcels within the MSHCP area require Habitat Assessments and focused surveys. In other instances, habitat conditions may be such that focused surveys are determined not necessary.

The MSHCP implementation structure is intended to set aside sufficient suitable habitat as conserved habitat for 146 covered organisms, including T&E species. The Project site is not located in a Criteria Cell, or within a Core area, or habitat linkage area targeted for conservation by the MSHCP. Habitat conditions did not warrant specific surveys for any species specified in MSHCP Section 6.1.2, such as vernal pool or Riverside fairy shrimp or least Bell's vireo.

The only focused habitat assessment/focused survey that was required for this property under the MSHCP was for burrowing owl (*Athene cunicularia*). That habitat assessment and subsequent focused surveys were performed in the Summer of 2019 and were documented in a report entitled *Step I Habitat Assessment, Step II Part A Focused Burrow Survey and Step II, Part B Focused Burrowing Owl Survey for Tentative Tract No. 37731 an 138 Lot Subdivision of 35.8 Acres in the City of Riverside*, dated 05 December 2019. Surveys were negative for burrowing owl. This report is referenced in Appendix C – References, of this report.

The requisite MSHCP Consistency Analysis is contained within the TERACOR document entitled *General Biological Assessment and MSHCP Consistency Analysis For Tentative Tract No. 37731 a Subdivision of 35.8 Gross Acres (32.54 Net Acres) into 138 Single Family Residential Lots, Riverside, CA* dated 10 December 2019 (Revised 24 July 2020) (Revised 13 January 2021). Detailed information about the site's biological resources examined within the framework of the MSHCP is presented for the consideration of the City of Riverside.

Existing Vegetation

The approximate eastern half and southerly portion of the subject site was formerly comprised of an agricultural tree grove as determined through aerial photographic research and analysis, as well as field evidence (buried irrigation lines). This tree grove has since been removed from the site within the past two (2) decades, and annual non-native grassland and weedy species now dominate the project site. The west half appears to have remained undeveloped, although Palo Verde trees and a Mexican fan palm have become established along Lurin Avenue on the upper western portion of the site. Annual non-native brome grassland is the dominant plant community on the site.

Pepper trees (*Schinus molle*) and *Eucalyptus* trees are sparsely distributed throughout the eastern and southern portions of subject site, including within the drainage we labeled as "Feature 1" in the northwest corner of the site. These historic disturbances in combination with isolation of the site, and periodic weed control and disking for fire protection purposes has probably suppressed native scrub vegetative recovery. Native riparian vegetation has a limited distribution within the Feature 1 drainage and this riparian vegetation appears to be dependent on urban runoff from the adjacent tract to the north, but drainage has been shunted away from this riparian vegetation and it is declining. Prior to the establishment of the residential area, there was no riparian vegetation in the feature. A detailed description of the vegetation communities on-site and their respective California Natural Community Codes ("CaCodes"), as applicable, are described below.

The attached *Exhibit 4 – Vegetation Communities – 2018 Aerial Photograph* depicts the below-described vegetation communities on-site.

Red Brome (*Bromus rubens*) Grasslands and Mixed Herbs Semi-Natural Alliance (CaCode 42.024.02)

Non-native grassland (CNDDDB Code CTT42200CA), or alternatively the red brome grasslands naturalized alliance on the subject property could be considered synonymous with other non-native naturalized grassland communities such as **Ripgut Grass alliance (*B. diandrus*) (CaCode 42.026.21)**, or **Cheatgrass**

grassland (42.020.00), or- Wild oat (*Avena* spp.) (CaCode 42.026.22) which is also present on-site. The precise classification has little ecological consequence in the context of this report insofar as which of many variations cover former agricultural fields and disturbed portions of the site; all are ecological impediments to wildlife utilization compared to a native plant community.

Non-native grassland, comprised of any of the invasive bromes and native and non-native herbs, functions at a diminished level of productivity or functionality compared to native grassland. It also negatively affects open substrates surrounding shrubs by crowding in between shrubs and eliminating open areas for small animals to move and forage for food. Annual non-native grassland has several negative characteristics including: 1) it maintains an excessive demand for near-surface soil moisture thereby out-competing native annual plant species; 2) it inhibits passage and access to the soil surface for most smaller ground-dwelling invertebrates, reptiles and small mammals; and 3) over time it forms an impenetrable layer over the soil precluding establishment of annual plants and wildflowers and shrubs. Non-native grassland can, however, have some positive attributes if managed properly. It can support similar assemblages of plant and animal species as native grasslands, albeit at lower densities for undetermined lengths of time, particularly if it is grazed or burned periodically. Layers of unburned thatch are particularly deleterious to small mammal and reptile presence. These grasslands comprised **21.98 acres** of the site.

Mixed Red Willow (*Salix laevigata*)/Arroyo Willow (*S. lasiolepis*) (CaCode 61.205.02) and Black willow thickets (*S. gooddingii*) (CaCode 61.211.05)

TERACOR mapped several pockets or cells of a mixed willow thicket which are located in three different areas of the property (Feature 1, Feature 2 and Feature 5). The cells are all contained within five (5) features we analyzed to assess Riparian/Riverine characteristics and state and federal jurisdictional status. We utilized digital mapping methods by staking boundaries of riparian vegetation in the field, and then mapping those staked areas with GPS data collection equipment. We included bed and bank and high-water mark indicators in the staked zone to establish the full extent of jurisdictional and/or riverine resources present on-site.

Mixed willow thicket comprised a total of **0.20 acre** on-site.

Ornamental/Pepper Tree Alliance (CaCode 79.200.02)

As described above, individual pepper trees are sparsely distributed throughout the project site. We classified this sub-classification of the Pepper Tree Semi-Natural Stands (CaCode 79.200.00) alliance. Additionally, other non-native trees on-site include Eucalyptus, Mexican fan palm, Palo Verde trees, and olive trees. Ornamental areas on-site total **0.37 acre**.

4.0 SITE MODIFICATIONS AND AERIAL PHOTOGRAPHIC ANALYSIS

A total of 23 historic aerial photographs were commercially available and reviewed. Eight (8) of these photos have been included herein as Exhibits 5 through 12 and are described below:

1962

As depicted by the attached *Exhibit 5 - January 1962 Aerial Photograph*, the project site and the off-site properties upstream of the subject site across Lurin Avenue appeared to be in a relatively natural condition in 1962. Lurin Avenue, Mariposa Avenue and Cole Avenue had already been constructed by this time. The larger photograph portrays early development of March Air Force Reserve Base (labeled as such in USGS topographic mapping) well to the east of the subject site. Rural agricultural development is detectable immediately adjacent and northwest of the project area. The project site appears to be located on a modest, flattened ridge-like land structure between three (3) sub-watersheds: 1) the Mockingbird Canyon watershed to the south, 2) the Woodcrest Dam watershed system to the north and 3) the watershed system to the northeast that flows near the former March Air Force Reserve Base. Please see the previously-referenced *Exhibit 2 – USGS Topo* for a topographic depiction of this condition. The project site appears to be associated with the uppermost, northeastern portion of the Mockingbird Canyon watershed, but drainage is poor and direct connectivity cannot be established. We conclude based on this historic photography and topographic mapping, however, that drainage from the site eventually ends up in Mockingbird Canyon and subsequently the Santa Ana River.

Tributary concentrations and patterns are poorly defined on the project site, which stands in contrast to much better-defined tributary patterns around and away from the project area. A diffused, irregular drainage pattern is observable on the site and around it. No trees or riparian cells are detectable on the project site in 1962 (which indicates Feature 1 was not present), and there are no ponds or pools in this January photo. While an overland type of broad drainage pattern is observable in the central and southern portions of the property, there is no discernible pattern in the northern portion. The photo was taken in the month of January and upland drainage patterns were probably moist from recent rainfall and supported relatively more dense annual vegetation; hence, the darker somewhat wide drainage patterns indicative of upland flows within broad swales. This is indicative of upland drainage patterns, which are somewhat darker in this photo than the surrounding area. Downstream drainage connectivity to the blueline stream tributary to Mockingbird Canyon watershed is not fully discernible.

1974

The darkened color of the approximate east half of the Project property and upstream properties suggests that this site and the upstream properties had been converted into an agricultural tree grove by 1974 as shown by the attached *Exhibit 6 - May 1974 Aerial Photograph*. None of the five features currently identified are particularly discernible on this 1974 aerial photograph, although a faint darkness can be detected in lower topographic swales on the site. Drainage appears to be collected in broad swales on-site is not connected to the blueline stream south of the Project site. No ponds, streams or pools are present. This blueline comprises

an upper reach of the Mockingbird Canyon watershed, which is shown in the lower left portion of this aerial photograph.

1980

Rural residential development within the general area had substantially increased by 1980 as shown by the attached *Exhibit 7 - April 1980 Aerial Photograph*. No streams or vernal pools are discernible in this April 1980 photo. There are several land disturbances both on-site and adjacent to the Project site, the origin of which is uncertain, but there are no apparent waterbodies. The northeasterly parcel at Lurin and Cole Avenues, and the southerly parcel show that much of the site has been converted to a grove. The orientation of Feature 3, which has no up or downstream connection can be seen and is likely related to being a low spot on the property and subject to irrigation runoff which can suppress grove development (i.e., over-irrigated). The blueline stream which is in Mockingbird Canyon is detectable in the left portion of this 1980 aerial photograph.

1990

As depicted by the attached *Exhibit 8 - January 1990 Aerial Photo* Features are not discernible. Clear evidence of stream-flow on-site is absent, and no ponding is discernable. Residential development continued to increase in the general area, particularly the relatively large residential development to the north of the project site and south of Van Buren Boulevard. The construction of this northerly tract removed faint drainage patterns shown on the earlier aerial photographs. The main conclusion we reached from this photo is that drainage features or riparian vegetation are not present as of 1990, approximately 30 years before present.

1994

The attached *Exhibit 9 - May 1994 Aerial Photograph* demonstrates that the orchard (grove) is the dominant activity on the site. While Feature 2 is not discernable, there seems to be some type of vegetative growth and drainage pattern off-site to the west which may be associated with the location of Feature 2. We presume this may be related to irrigation runoff from the grove. Downstream connectivity toward Mariposa Avenue does not appear to be focused or concentrated in any manner; rather, the site has an entirely upland aerial appearance. Either weedy or scrub vegetation appeared to be recovering on-site at this time. No ponding or vernal pools on-site are present.

2003

The attached *Exhibit 10 - November 2003 Aerial Photograph* shows that most of the agricultural tree grove had been removed and that pepper trees were either planted or began to voluntarily grow throughout the project site. Features 2 and 3 cannot be seen on this aerial photograph, which suggests that these two (2) features were essentially removed. Scrub vegetation appears to be present in the off-site, downstream swale below Feature 2, but it could also just be weedy vegetation. We are not able to determine if Feature 4, the roadside drainage ditch along Mariposa Avenue was constructed by this time, because it never clearly can be seen in any of the historic aerial photos.

2005

As depicted by the attached *Exhibit 11 – December 2005 Aerial Photograph*, the subject property had fallen into a dilapidated condition. Small patches of scrub or weedy vegetation, however, appeared in the northwest parcel and trees in the grove have died in the southerly and easterly parcels. Feature 1 was not actually discernible and there was no riparian scrub in 2005. The willow scrub cell in Feature 5 along Lurin Avenue was beginning to become established, while Mexican palo verde trees and other shrubs had also become established near Feature 5 along Lurin Avenue by 2005. Therefore, we conclude 15 years ago there was no evidence that any of the five features, except for the **0.03 acre** willow cell in Feature 5, was even present.

2014

The attached *Exhibit 12 – April 2014 Aerial Photo* shows the conditions of the subject property in April 2014. Riparian vegetation within Features 1 and 2 strongly reflects the current condition in 2020, although Features 3 and 4 are not obvious. Feature 2 dissipates as it reaches the westerly property line and does not reach Mariposa Avenue to the south.

The extent of the non-native tree growth and small willow scrub along Lurin Avenue in Feature 5 had reached its current limits in 2014. Feature 5 appears to dissipate to sheetflow as soon as it enters the property after nuisance flows are discharged from under Lurin Avenue, as shown by the extent of green herbaceous vegetation in the aerial photo, which we know to be non-native grasses along with some native annuals. This is generally reflective of the feature's current condition in 2020.

5.0 SURVEY RESULTS

As previously described, TERACOR field personnel identified five (5) potentially jurisdictional features on-site. These features have been internally labeled for reference purposes as Feature 1, Feature 2, Feature 3, Feature 4, Feature 5, and Feature 5A. Features and their potential Army Corps, RWQCB and CDFW jurisdictional areas are illustrated in the attached *Exhibit 13 – ACOE Non- Jurisdictional Features*, *Exhibit 14 – RWQCB Jurisdictional Areas* and *Exhibit 15 – CDFW Jurisdictional Areas*. Feature conditions recorded in the field are depicted in the attached *Exhibit 16 – Drainage Area Photos*. Based on foregoing the analysis in this report, TERACOR has made the following preliminary jurisdictional determinations.

Feature 1: Feature 1 is an artificial roadside ditch with an adjacent willow scrub cell. Based on our observations since 2016, the willow scrub cell is poor condition and in decline because a ditch has been re-trenched along Lurin Avenue and the trench diverts water away from the willow scrub area. In 2016, the ditch was much more shallow and much of the discharged water from under Lurin and Cole Avenues spilled into the willow scrub area which induced the riparian scrub. The senescent cell and ditch comprise **0.03 acre**.

Vegetation associated with Feature 1 includes red willow, Goodding's black willow, cattail (*Typha* sp.),

curly dock (*Rumex crispus*), tamarisk (*Tamarix* sp.), rabbitfoot grass (*Polypogon monspeliensis*), common sunflower (*Helianthus annuus*), wild oat, agapanthus (*Agapanthus praecox*), cheeseweed, sow thistle (*Sonchus* sp.), crimson fountain grass and a juvenile Mexican fan palm (*Washingtonia robusta*). As described above, much of the red willow and Goodding's black willow trees, as well as tree.

According to the *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*, dated 02 December 2008 ("2008 Guidance"), the Army Corps generally will not assert jurisdiction over roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. Additionally, Feature 1 is an ephemeral roadside ditch that reflects the guidance description and also is no longer regulated as an "ephemeral" feature under the 2020 *Navigable Waters Protection Rule*; therefore, TERACOR preliminarily determined that Feature 1 is not Army Corps jurisdictional.

It has not yet been determined if the RWQCB will assert jurisdiction over the willow cell as it appears the willow cell is no longer connected hydrologically and is in decline. The ditch is 329 linear feet long, and **0.03 acre** in size. CDFW has indicated it is likely to assert jurisdictional over the **0.03 acre** ditch, (Eric Chan, email communication, 08 February 2021) but the willow cell appears hydrologically isolated and in decline, and not jurisdictional.

Feature 2: Feature 2 displays no actual bed and bank, but there is a winding swale through this portion of the site where evidence of surface flow (e.g., bent grass and minor drift deposits) are detectable after storm events. The upstream portion of Feature 2 is comprised only of grassy and herbaceous vegetation. Four small arroyo willows (*Salix lasiolepis*) are present in the swale.

Feature 2 appears isolated with no discernable downstream connectivity present in the field. Due to its' isolation and ephemeral nature, it does not comprise "waters" of the U.S. Additionally, Feature 2 does not have an actual bed or bank.

Jurisdictional status with RWQCB is uncertain. CDFW has determined that Feature 2 is likely jurisdictional (Eric Chan, email communication, 08 February 2021). The feature totals **0.10 acre**.

Feature 2 totals 329 linear feet. The swale (not including willow vegetation as would be calculated by the Corps) is (**0.03 acre**). The broader swale area, including the willow tree canopies and no clear evidence of regular interval surface flows, measured a total of 4,243 square feet (**0.10 acre**). Our preliminary determination is that the RWQCB will assert **0.03 acre** of jurisdiction at this location, and CDFW will assert **0.10 acre** of jurisdiction.

Feature 3: Feature 3 is located in the central portion of the subject property. It originates and terminates on-site. This feature is only slightly defined and it is disarticulated in the field. Flows eventually transition to sheetflow on-site. Feature 3 is therefore an isolated, **0.02 acre** erosional feature. Vegetation is dominated by non-native grasses with patchy tamarisk and a single emergent willow (*Salix* sp.). TERACOR utilized 27 stakes to mark the flowline associated with Feature 3.

According to the 2008 Guidance, the Army Corps generally does not assert jurisdiction over swales or erosional features with low volumes of flow. Because Feature 3 is an isolated erosional feature, TERACOR preliminarily determined that this feature does not fall under the jurisdiction of the Army Corps.

Feature 3 totals 552 linear feet. The total surface area of Feature 3 is 828 square feet (**0.02 acre**). We observed a slight feature in the field and on aerial photos, however, we detected no stream functions, values, or characteristics are present. TERACOR, therefore, determined on a preliminary basis that Feature 3 is not jurisdictional for any agency.

Feature 4: Feature 4 is a roadside drainage ditch constructed in uplands that runs parallel to Mariposa Avenue. The ditch enters the site through a small partially-buried CMP outlet under Cole Avenue, and then conveys flows along the southern property boundary. Flows eventually enter a CMP inlet, which conveys flows under Mariposa Avenue and disperses nuisance runoff and stormwater into downstream properties in an uncontrolled fashion.

Feature 4 contains no riparian vegetation. It contains weedy, water-tolerant species such as curly dock (*Rumex crispis*), common sunflower, knotweed (*Polygonum areanstrum*) and dandelion (*Sonchus oleraceus*).

The Army Corps does not assert jurisdiction over small roadside drainage ditches with low volumes of flow. TERACOR therefore preliminarily determined that Feature 4 does not fall under the jurisdiction of the Army Corps. RWQCB might assert jurisdiction over the portion of this feature that the Corps would assert if it was jurisdictional (0.04 acre) but the ditch has been excavated in uplands, and may not be either Corps or RWQCB-jurisdictional. CDFW has indicated it is likely to assert jurisdiction over the feature, which comprises 0.08 area (Eric Chan, email communication, 08 February 2021).

Feature 4 totals 646 linear feet. It has a total surface area of 3,448 square feet, or **0.08 acre**. It discharges in an uncontrolled fashion into private single-family residential lots, where it has an uncertain disposition downstream.

Feature 5: The willow cell at this location is approximately **0.03 acre** in extent and is over-storied with willow and a single ash tree. Surface water collects during storm events along Lurin Avenue and then flows southward through a 0.12-acre broad grassy swale. The length of the grassy swale (366 feet) and willow cell (20 feet) is 386 linear feet

The Army Corps generally does not assert jurisdiction over small isolated human-induced willow trees along roadsides, or grassy swales, or features that do not display an ordinary high-water mark. Because Feature 5 is an isolated, ephemeral, and poorly-defined feature, we determined on a preliminary basis that the feature is not Corps jurisdictional. Hydrology to Feature 5 is ephemeral, and probably enhanced just along the road to some degree by irrigation runoff from the plant nursery across Lurin Avenue. CDFW has indicated it is likely to assert jurisdiction over the feature. It has not been determined if the RWQCB will assert jurisdiction over Feature 5. The willow cell at this location is **0.03 acre** in extent.

A total of three (3) sampling points in Feature 5 were investigated for determining wetland presence/absence. One point immediately at the 12" CMP discharge pipe under Lurin Avenue was marginally positive for wetland soils; other test pits were not. Wetland delineation data were recorded on Arid West Region Wetland Determination Data Forms. Field data worksheets and Arid West Region Wetland Determination Data Forms are included in *Appendix B – Field Data Sheets*.

Feature 5A: CDFW had suggested that a narrow band of surface flow was likely to stretch down from Feature 5 to the south property line. CDFW confirmed this determination (Eric Chan, email communication, 08 February 2021). We have added an area as 5A which is 608 feet long and three (3) feet wide, between Feature 5 and the south property line. Feature 5A comprises **0.04 acre**.

All of TERACOR's preliminary jurisdictional determinations require confirmation by the agencies.

PRELIMINARY U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL AREA

TERACOR has preliminarily determined that Army Corps has no jurisdiction on-site. Features 1, 3 and 5 are not jurisdictional due to isolation. Features 1 and 4 are artificial roadside ditches and therefore, and as such would not have been considered Corps jurisdictional since 2008. Furthermore, the 2020 Navigable Waters Protection Rule generally precludes ephemeral "waters" from Corps regulatory purview.

Table 2 - Preliminary Santa Ana Regional Water Quality Control Board Jurisdictional Area

| Potential RWQCB Jurisdiction | | |
|------------------------------|--------------------------------|-------------------------------|
| | Acreage | Length |
| Feature 1 | 0.03 acre | 329 feet |
| Feature 2 | 0.03 acre | 329 feet |
| Feature 3 | 0.02 acre (Not Jurisdictional) | 552 feet (non-jurisdictional) |
| Feature 4 | 0.04 acre | 646 feet |
| Feature 5 | 0.03 acre | 20 feet (jurisdictional) |
| Feature 5A | 0.04 acre | 608 feet |
| TOTAL | 0.17 acre | 1932 feet |

Table 3 – Preliminary CDFW Jurisdictional Area

| Potential CDFW Jurisdiction | | |
|-----------------------------|--------------------------------|-------------------------------|
| | Acreage | Length |
| Feature 1 | 0.03 acre | 329 feet |
| Feature 2 | 0.10 acre | 329 feet |
| Feature 3 | 0.02 acre (non-jurisdictional) | 552 feet (non-jurisdictional) |
| Feature 4 | 0.08 | 646 feet |
| Feature 5 | 0.03 acre | 20 feet |
| Feature 5A | 0.04 acre | 608 feet |
| TOTAL | 0.28 acre | 1932 feet |

6.0 PROJECT ASSOCIATED IMPACTS AND MITIGATION

Impacts and mitigation outlined below are related to potentially jurisdictional resources described in detail within this technical report. Specific impacts and mitigation are as follows.

U.S. Army Corps of Engineers

TERACOR has preliminarily determined that all of the six features (Features 1 – 5A) do not fall under the regulatory authority of the U.S. Army Corps of Engineers due to their ephemeral nature. Therefore, we anticipate no impact to “waters” of the U.S. that would result from the implementation of Tentative Tract No. 37731.

The Army Corps will either confirm the Approved Jurisdictional Determination when it is submitted or will inform the Applicant that authorization under a Nationwide Permit will required for the project when the Applicant requests confirmation of the Determination.

Santa Ana Regional Water Quality Control Board

TERACOR has preliminarily determined that up to **0.17 acre** of RWQCB-jurisdictional surface could be permanently affected through implementation of Tentative Tract No. 37731.

Due to this preliminary impact, either a Clean Water Act Section 401 Water Quality Certification and/or a Report of Waste Discharge will be required prior to development. The type of authorization depends on whether the Corps of Engineer asserts jurisdiction over the Project site. If the Corps determines that “waters” of the U.S. are present on the project site, then a 401 Water Quality Certification would be required to be issued which would allow the Corps to then authorize impacts to “waters” via a Nationwide Permit. If the Corps confirms that jurisdictional “waters” are not present, then the RWQCB will have the option of not asserting

jurisdiction at all, or of asserting jurisdiction over one or more of the five features, and then issuing a Report of Waste Discharge.

The 2020 *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* could affect how the RWQCB views this particular site in terms of whether “wetlands” are present, or seek additional information about the presumed extent of wetlands under the State’s new wetland definition. As of the time of report preparation, it is understood that the RWQCB has not fully implemented procedures to identify and regulate wetlands as now defined by that agency. Confirmation that the Project is compliant with all current requirements of the RWQCB will need to be provided prior to Project implementation.

California Department of Fish and Wildlife

TERACOR in consultation with CDFW during MSHCP Wildlife Agency consultations determined that up to **0.28 acre** of CDFW-jurisdictional “streambeds” are likely present on-site and would be directly impacted by Project implementation. Due to these impacts, a CDFW California Fish and Game Code Section 1600 Lake or Streambed Alteration Agreement will likely need to be processed and approved by the Department prior to Project implementation.

Proposed Mitigation Measures

RWQCB mitigation: TERACOR recommends that the applicant mitigate for the loss of **0.17 acre** of jurisdictional area through the purchase of at least **0.17 acre** rehabilitation credits for “waters” and the additional purchase of at least **0.17 acre** re-establishment credits at the Riverpark Mitigation Bank. The Riverpark Mitigation Bank. Evidence of compliance with RWQCB requirements will be submitted to the City of Riverside prior to the issuance of grading permits for the Project site.

CDFW mitigation: TERACOR recommends that the Applicant mitigate for the loss of **0.28 acre** of jurisdictional area through the purchase of **0.28 acre** of rehabilitation credits for streambeds (waters of the State) and purchase of **0.28 acre** of re-establishment credit at the Riverpark Mitigation Bank. Evidence of compliance with CDFW requirements will be submitted to the City of Riverside prior to the issuance of grading permits for the Project site.

Applicability of Mitigation for Each Resource Agency: Rehabilitation and Re-establishment mitigation credits are not required to be duplicated for each resource agency, including the Corps, the RWQCB, and CDFW. Furthermore, mitigation credits purchased for impacts to streambeds, (i.e., “waters” of the U.S. or waters of the State) can generally also be used for impacts to MSHCP-regulated Riparian/Riverine areas as long as each agency agrees that credits at Riverpark are suitable mitigation for impacts to each agency’s jurisdictional area. If all agencies agree Riverpark is suitable for mitigation purposes for their respective mitigation, then only the highest amount of mitigation credits required by any one agency will be considered suitable for all the agencies with jurisdiction over water-related resources including “waters” of the U.S., waters of the State, CDFW jurisdictional lakes or streambeds, and MSHCP Riparian/Riverine areas.

Purchase of these rehabilitation and re-establishment credits shall be required if such credits are available for purchase and are acceptable to all associated agencies including CDFW, RWQCB, and the USACOE, if applicable. If these credits are not available or acceptable to the aforementioned agencies, then alternative mitigation shall be identified and approved by each agency, including the City of Riverside.

Justification to Utilize the Riverpark Mitigation Bank for Mitigation

The **Riverpark Mitigation Bank** is located in Riverside County, within the MSHCP Plan Area. The bank's service area includes western Riverside County, and portions of San Bernardino County. The bank offers credits for rehabilitated and re-established "waters" of the United States and waters of the state of California. The San Diego Habitat Conservancy will provide long-term management of the bank, and the San Diego Foundation will manage the non-wasting endowment. The Western Riverside Regional Conservation Authority (RCA) will hold the conservation easement, along with an additional monitoring endowment.

The primary service area of Riverpark Mitigation Bank is all of the upper and lower portions of the San Jacinto River, and the middle Santa Ana River, Temescal Wash, and San Timoteo Wash. Secondary service areas include upper Temecula Creek, Wilson Creek, lower Temecula Creek, Murrieta Creek, and the Santa Margarita River. The Project site lies within the Santa Ana River watershed, therefore, it lies within the bank's primary agency-approved service area.

The bank encompasses 613 acres of land almost entirely within the 100 year floodplain of the San Jacinto River. Over 550 acres of vernal pool and alkali playa, as well as upland buffer habitat will be restored through rehabilitation and/or re-establishment of natural habitat areas. Restoration will involve re-grading along the river to remove human-emplaced fill and berms established to control flooding along the river. The control of non-native invasive plants and trees and recruitment and establishment of native vegetation is also planned.

The first phase of the program is open at this time and is expected to restore lost functions and values of riparian and riverine habitats, vernal pools and alkali playas across the bank lands. These functions and values which are being restored can be purchased on one acre per one credit basis, thereby guaranteeing offset replacement values for habitats impacted by future development within the specified service areas.


Functions of Restored Habitat at Riverpark

The functions and values of the rehabilitated Riverpark Mitigation Bank (subsequent to habitat restoration) would reasonably be expected to meet or exceed the existing habitat values and functions presently found within the on-site Riparian/Riverine area, based on the information provided above regarding the Riverpark Mitigation Bank. Habitat would be improved for terrestrial, aquatic and avian species which utilize the mitigation bank area. Management by the San Diego Habitat Conservancy will provide long-term management functions, and the San Diego Foundation will manage the non-wasting financial endowment to ensure availability of funds into the future to properly restore and manage the site. The Western Riverside Regional Conservation Authority (RCA) has agreed to hold the conservation easement, along with an additional monitoring endowment for specific MSHCP requirements.

CERTIFICATION: I hereby certify that the statements and exhibits contained in this report present data and information required for this Preliminary Jurisdictional Determination, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



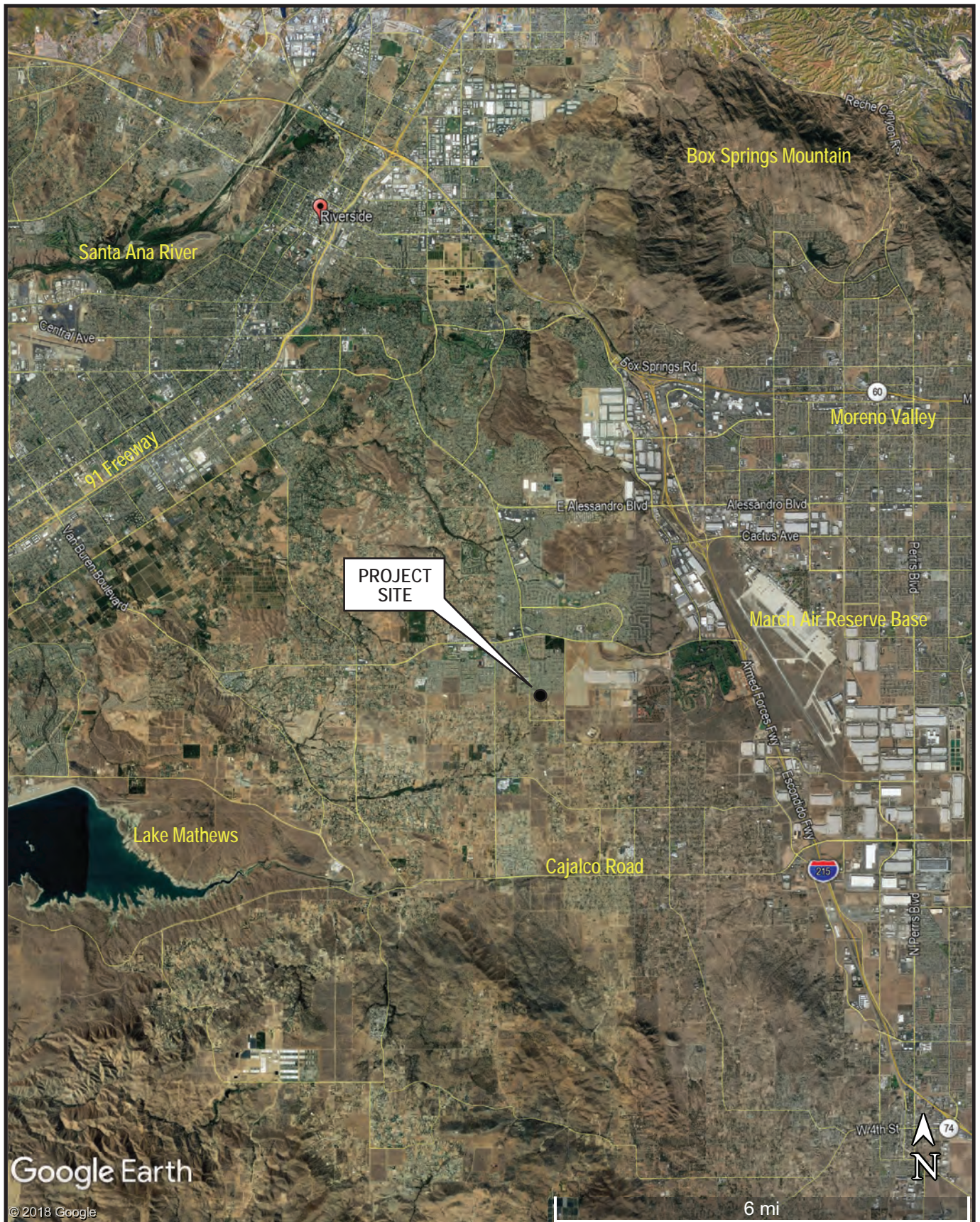
Samuel Reed, Principal, Scientific Collecting Permit No. 002267
USFWS Federal Recovery Permit No. TE839896-6
29 December 2019
Date



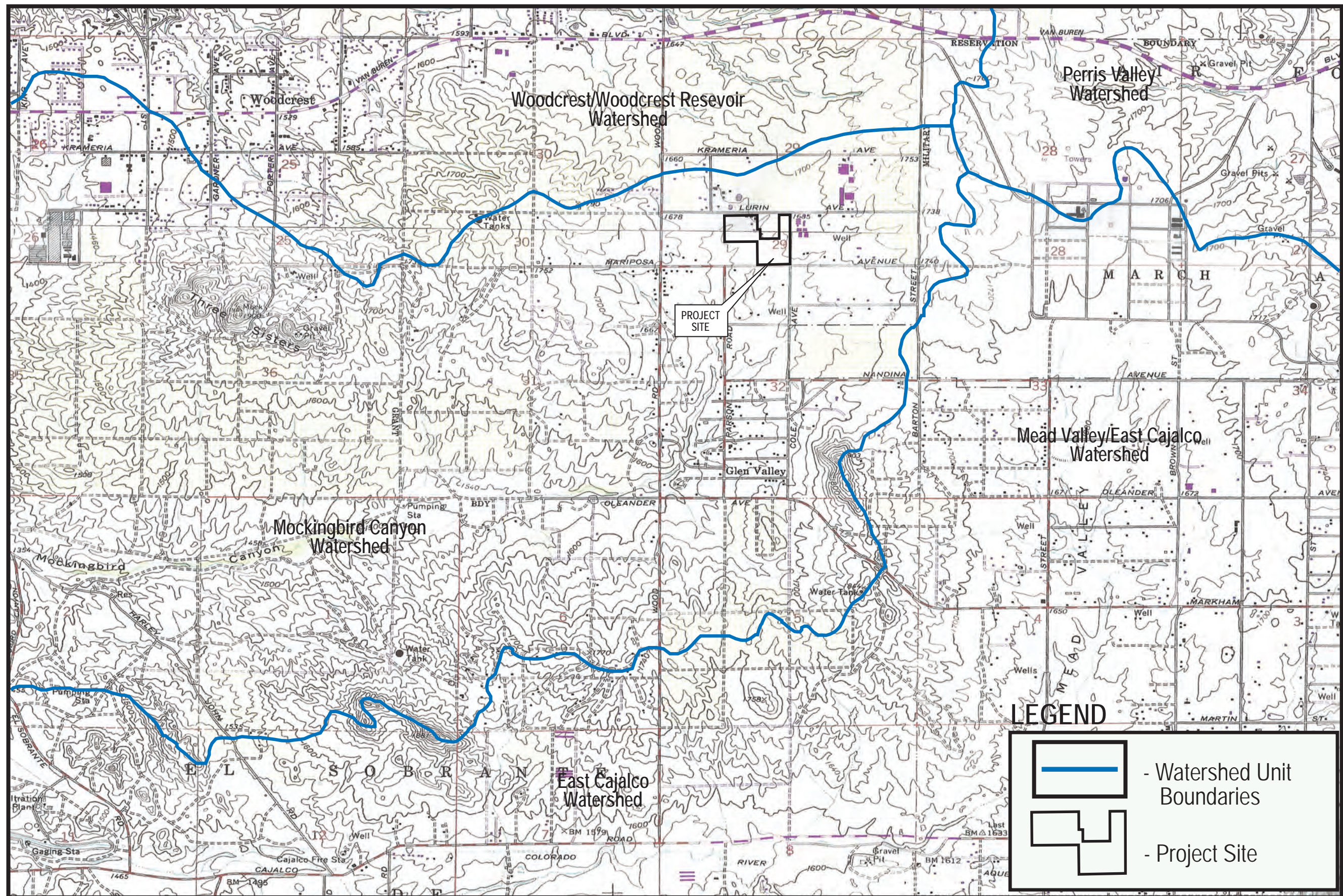
(Revised per City of Riverside comments 24 July 2020)
Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267
Date



(Revised per Wildlife Agency comments 13 January 2021)
Samuel Reed, Principal
U.S. Fish & Wildlife Service Recovery Permit No. 839896-6
Samuel Reed, Principal, Scientific Collecting Permit No. 002267
Date









LEGEND

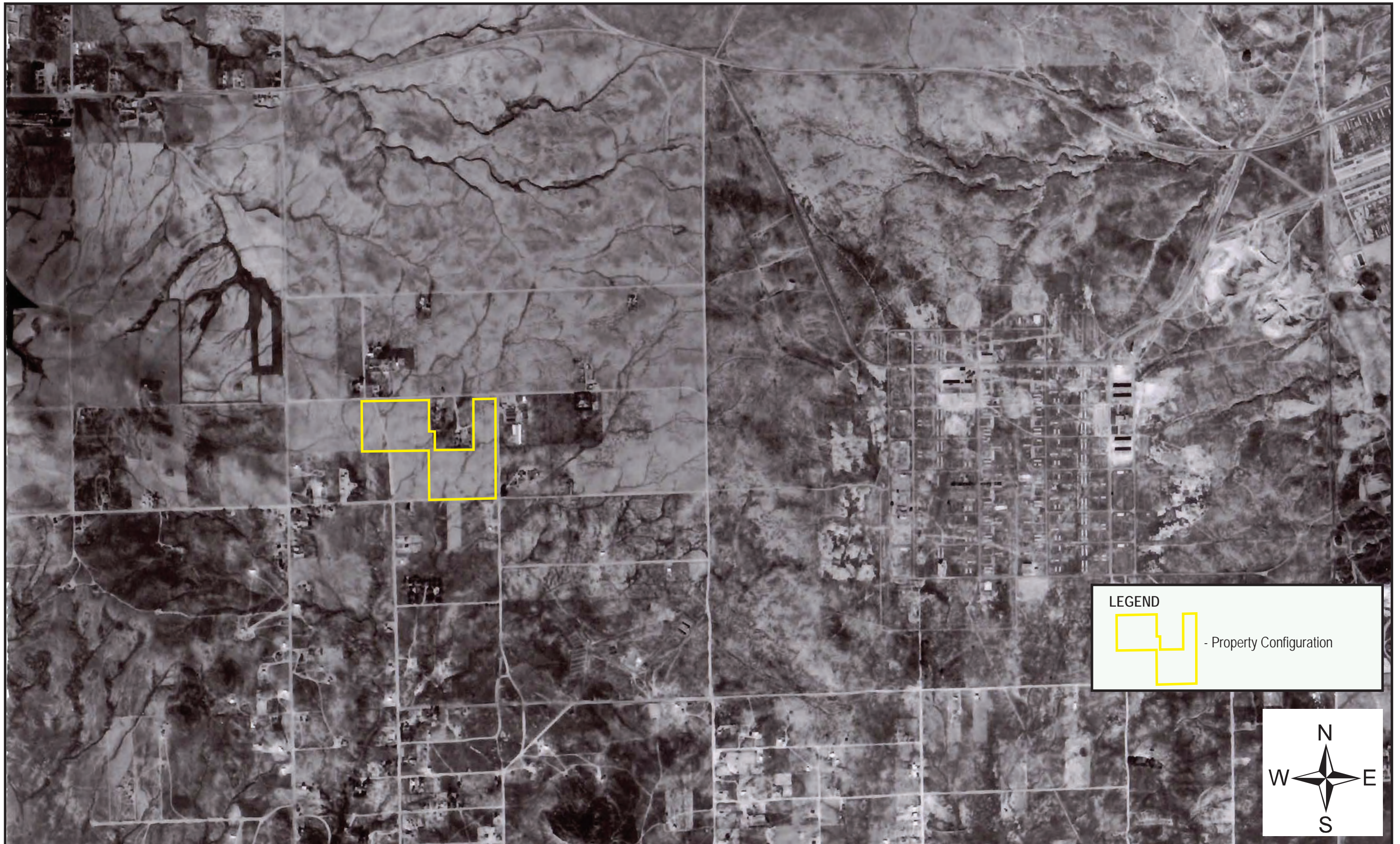
- FbC2 - Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded
- FtC2 - Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded
- MmB - Monserate sandy loam, 0 to 5 percent slopes



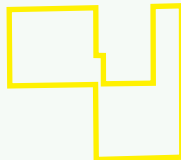
- Property Configuration

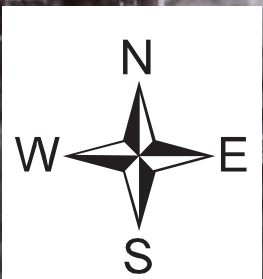
LEGEND

| Vegetation Alliance | Acres |
|---|---------------------------|
| AG - Annual Grassland | 33.05 |
| O - Ornamental (CA Pepper, Olive, Eucalyptus, Mexican Fan Palm, Tamarisk, Palo Verde) | 0.37 |
| W - Mixed Willow Scrub/MS Mulefat Scrub | 0.2 |
| Asphalt Roadway (Not Mapped/Not Habitat) | 2.18 |
| TOTAL | 35.8 (gross acres) |

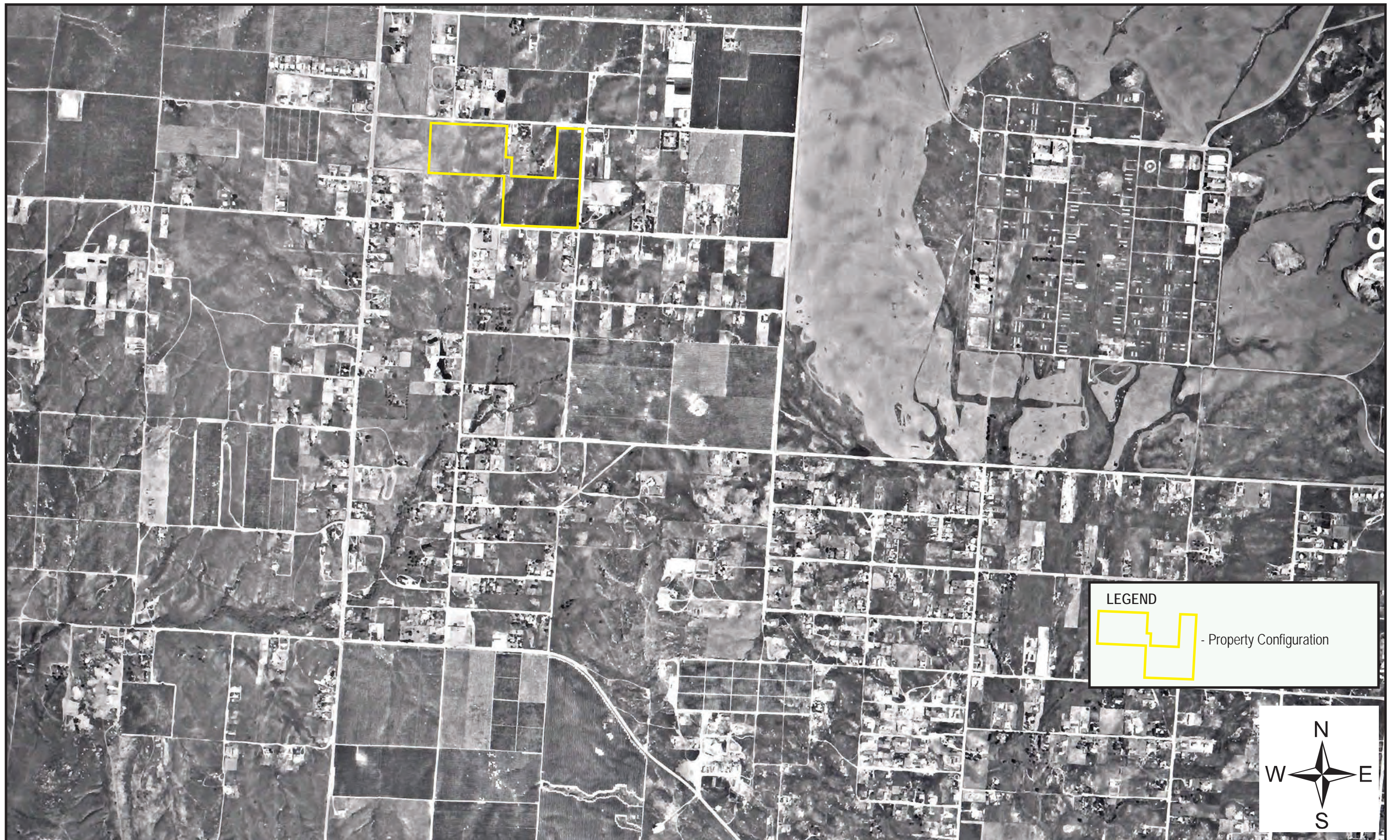


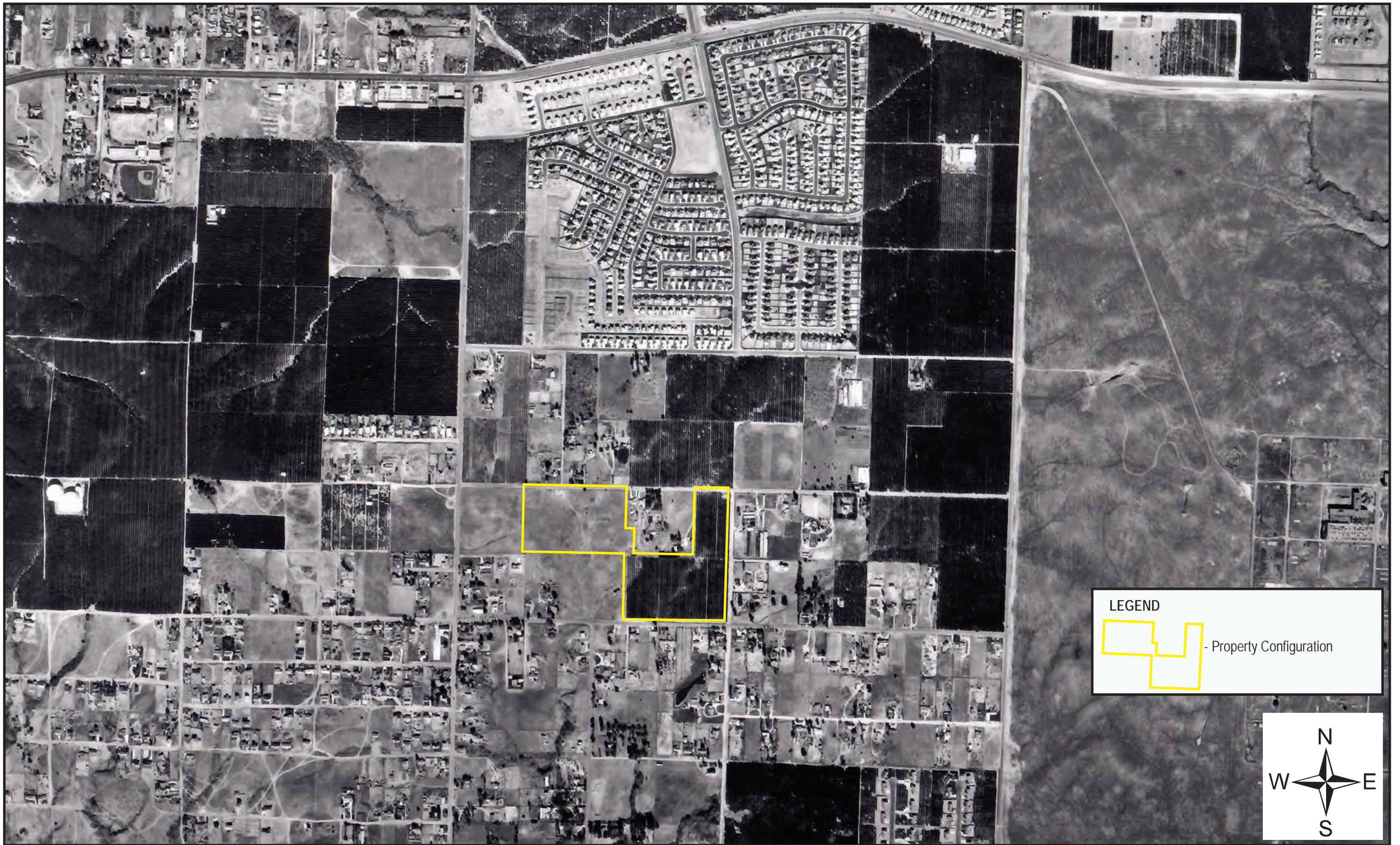
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 - Property Configuration

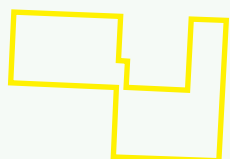








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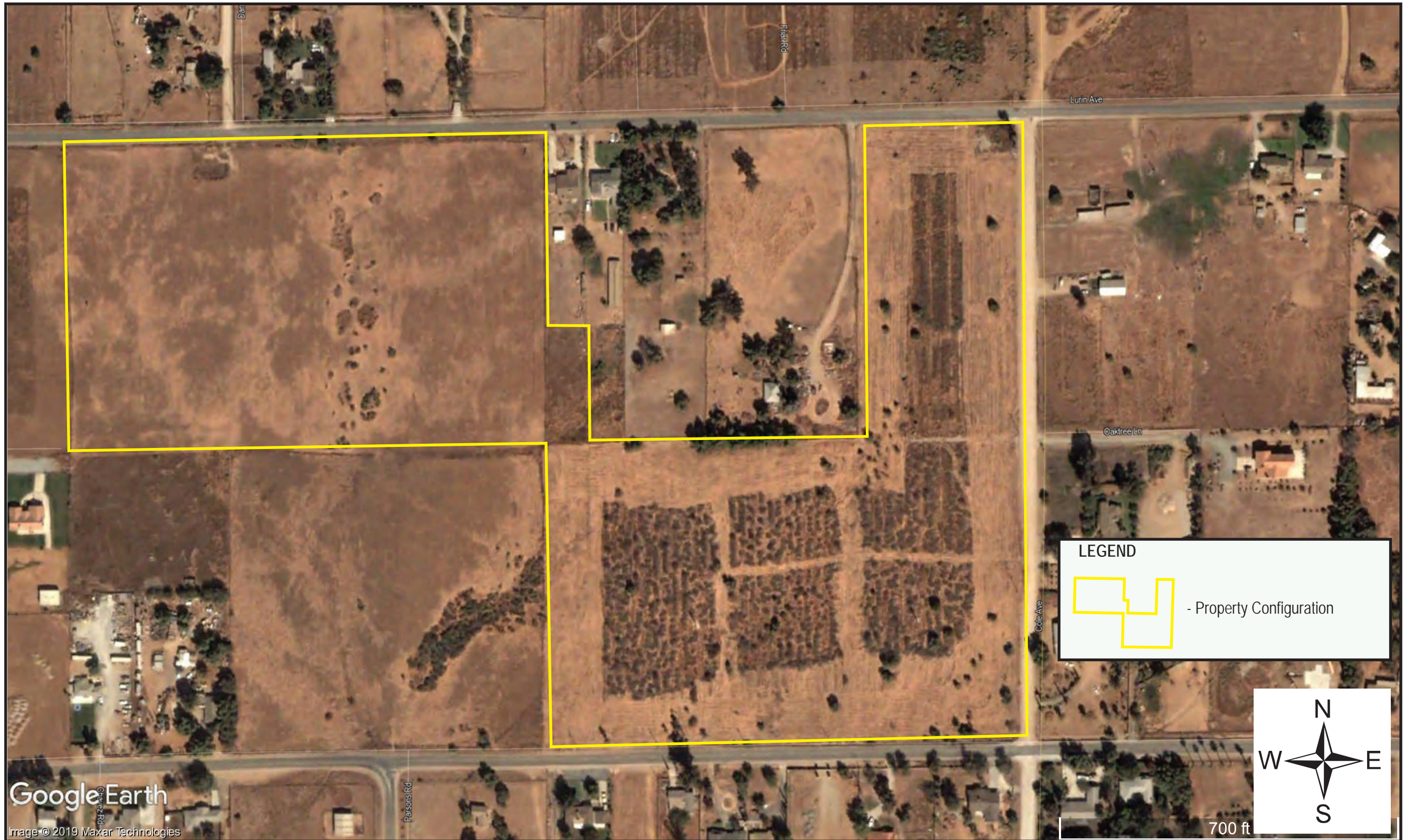
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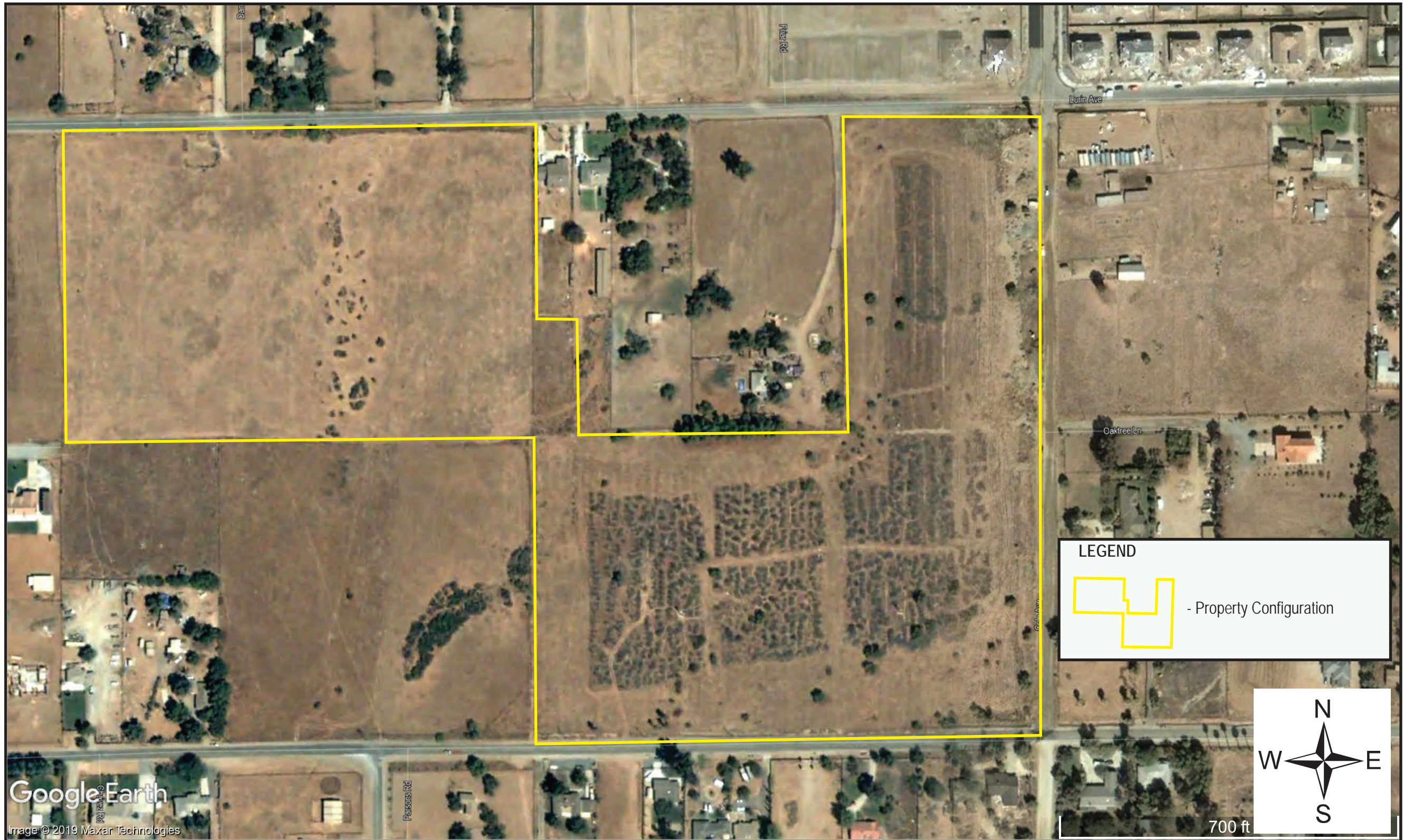


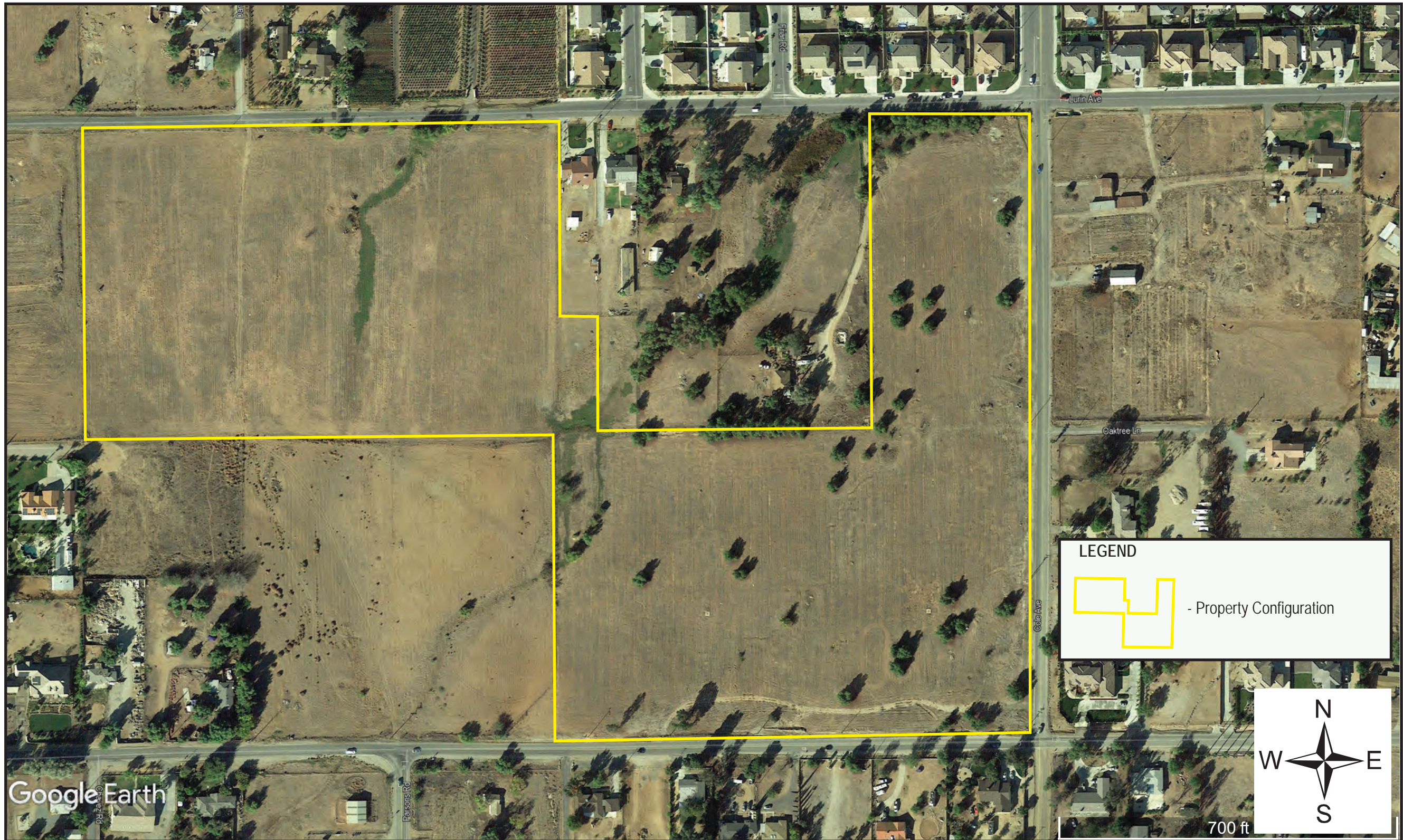
Lurin Land, LLC - Tentative Tract Map 37731
Report Date: December 2019
Source: Riverside County Flood Control and Water Conservation District

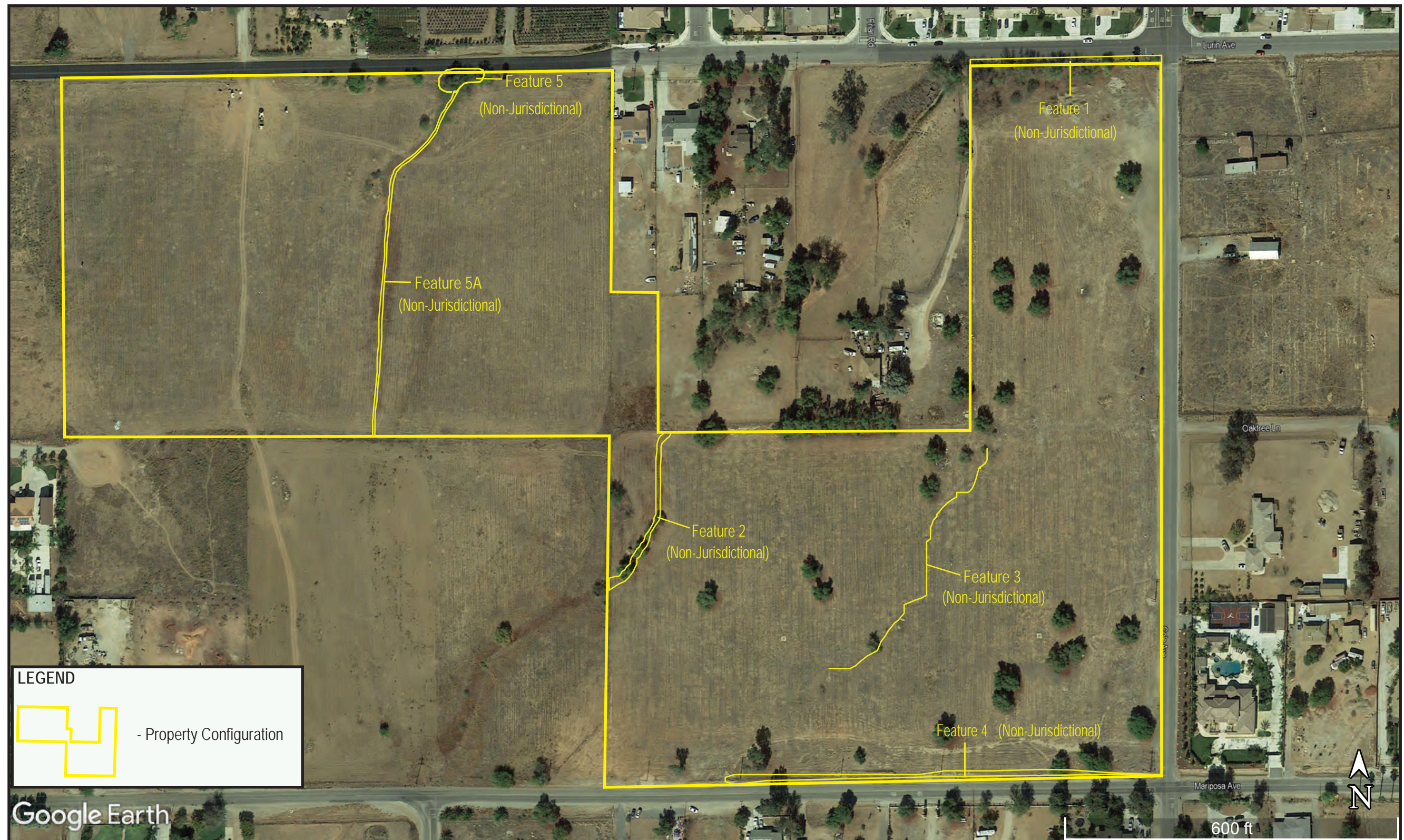
Exhibit 8
January 1990 Aerial Photo

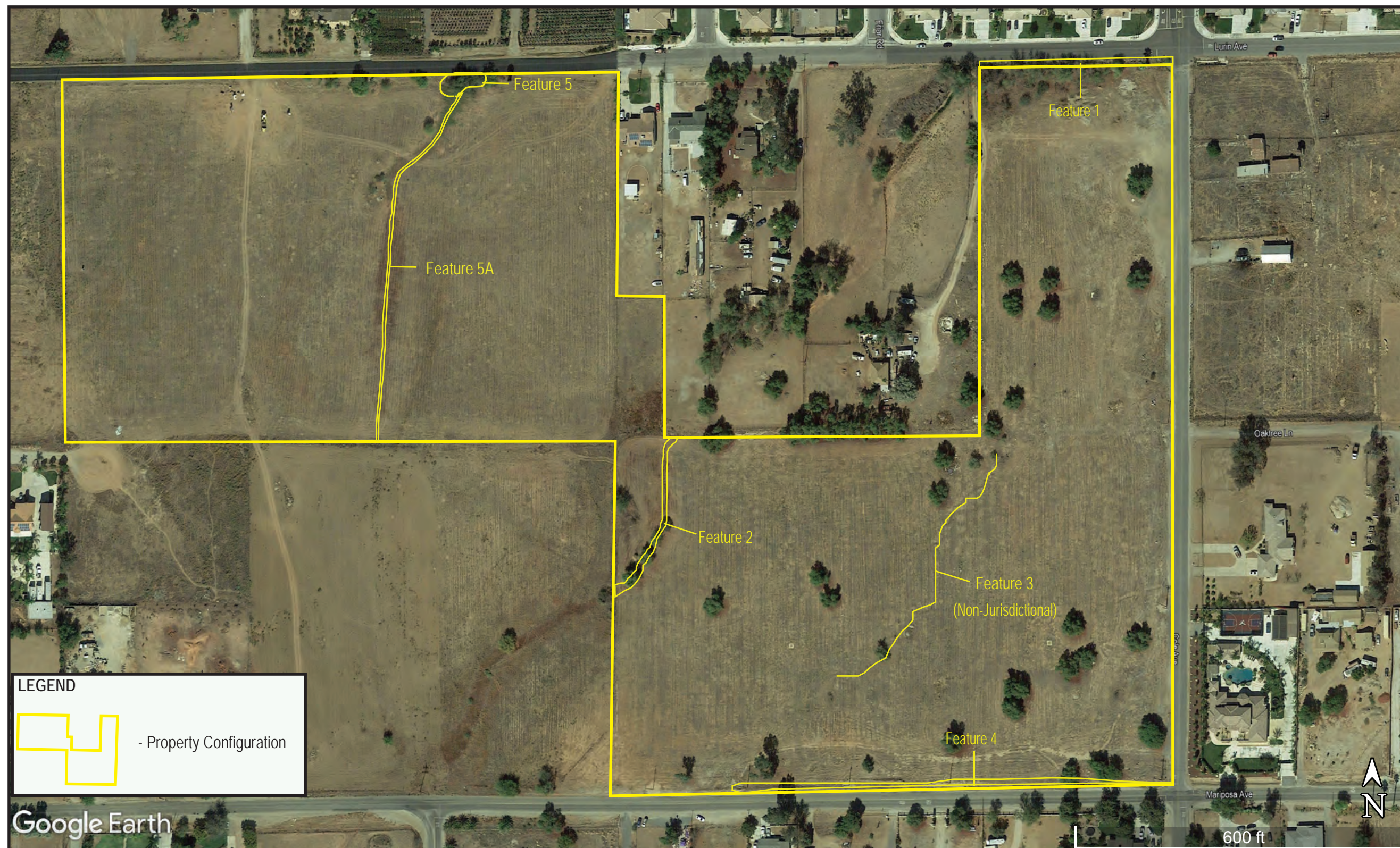












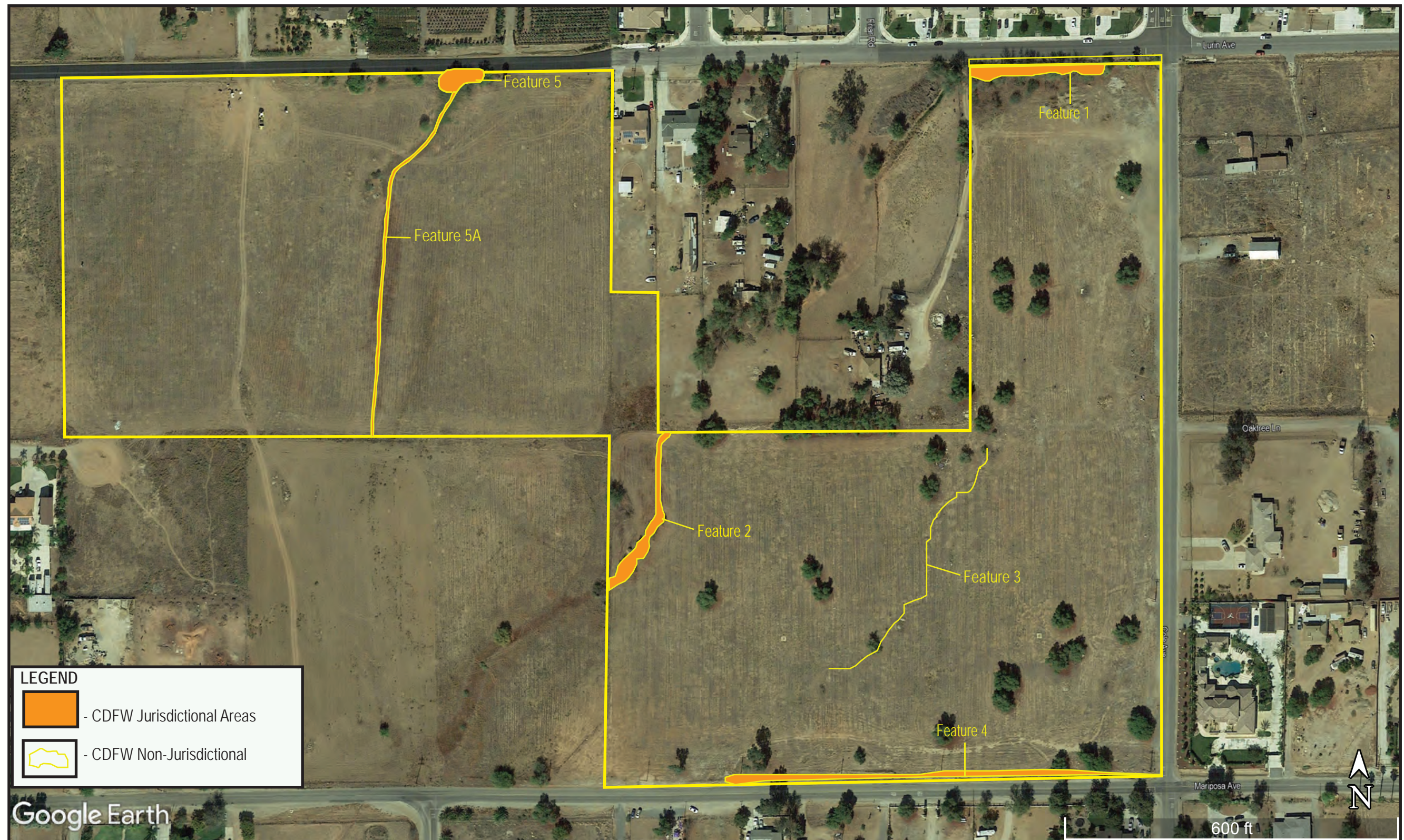




Photo 1 - TERACOR personnel shown at the downstream end of Feature 1 at the northwest corner of the project site. Note the stressed condition of the willows due to re-trenching the earthen channel along Lurin Avenue.



Photo 2 - Upstream view of Feature 2 facing property line where stormwater enters the site and flows along the western property line. No discernible high water mark or bed and bank is present.



Photo 3 - Downstream view of the arroyo willow / mulefat scrub associated with Feature 2.

Photo 4 - An emergent willow and a dead mature tamarisk tree are present in the downstream portion of Feature 3.



Photo 5 - Downstream view of Feature 4, a roadside drainage ditch along the southern property boundary near Mariposa Avenue.



Photo 1 - Feature 5: A test pit to assess soil characteristics was evaluated at the stormdrain outlet near Lurin Avenue, for hydric characteristics.



Photo 2 - Vegetation within Feature 5 transitions from a willow/mulefat scrub cell to non-native grassland in its upstream portion near Lurin Avenue. The brown grass was determined to be Bermuda grass, which sometimes remains dormant in Winter months.



Photo 3 - Soils investigated within Feature 5 showed marginal evidence of periodic inundation.

Photo 4 - North-facing view of Feature 5. Drainage patterns are poorly-defined and a bed and bank is not detectable.



Photo 5 - This southern view shows that Feature 5 illustrates how stormwater transitions to sheetflow in the non-native grassland field. No drainage patterns are detectable.



Appendix A
Tentative Tract Map No. 37731

LEGAL DESCRIPTION:

PARCEL 1: (APN: 266-140-021, 266-140-022)

LOT 23 OF WOODCREST ACRES, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11, PAGE 62 OF MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA..

PARCEL 2 (APN 266-140-029, 266-140-030)

PARCELS 1 AND 2 OF PARCEL MAP NO. 8704, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 38, PAGE 76 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

PARCEL 3: (APN 266-140-049, 266-140-050)

THAT PORTION OF THE WEST HALF OF LOT 22 OF WOODCREST ACRES, IN THE CITY OF RIVERSIDE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11, PAGE 62 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, TOGETHER WITH A PORTION OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHERLY LINE OF SAID LOT 22, DISTANT THEREON, SOUTH 88°49'30" WEST, 100.00 FEET FROM THE NORTHEAST CORNER OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, SAID POINT ALSO BEING ON THE CENTER LINE OF LURIN AVENUE (30 FEET IN HALF WIDTH); THENCE SOUTHERLY LEAVING SAID NORTHERLY LINE ALONG A LINE PARALLEL TO THE WEST LINE OF THE WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22, 300 FEET; THENCE NORTH 88°49'30" EAST, PARALLEL TO SAID NORTHERLY LINE, 100 FEET TO THE EASTERLY LINE OF SAID WEST HALF OF THE WEST HALF OF THE EAST HALF OF SAID LOT 22; THENCE SOUTHERLY ALONG SAID EASTERLY LINE, 362.05 FEET TO THE SOUTHEAST CORNER OF SAID WEST HALF OF WEST HALF OF THE EAST HALF OF SAID LOT 22; THENCE SOUTH 88°47'15" WEST, ALONG THE SOUTHERLY LINE OF SAID LOT 22, 414.95 FEET TO THE SOUTHWEST CORNER OF SAID LOT 22; THENCE NORTH 00°17'00" WEST, ALONG THE WESTERLY LINE OF SAID LOT 22, 662.09 FEET TO THE NORTHWEST CORNER THEROF, SAID POINT ALSO BEING ON THE CENTER LINE OF SAID LURIN AVENUE; THENCE ALONG SAID NORTHERLY LINE, NORTH 88°49'30" EAST, 314.90 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE NORTHERLY 33 FEET OF ABOVE DESCRIBED PARCEL.

SAID LAND IS DESCRIBED AND DELINEATED AS LOT A ON THAT CERTAIN "CERTIFICATE OF COMPLIANCE FOR LOT LINE ADJUSTMENT RECORDED DECEMBER 23, 2016 AS INSTRUMENT NO. 2016-0575044 OF OFFICIAL RECORDS.

PROJECT SCOPE OF WORK:

1. TOTAL PROJECT GROSS ACREAGE IS 35.80 AC.

| ACREAGE SUMMARY | | |
|--------------------------|----------------|----------------|
| <u>ITEM</u> | <u>AGREAGE</u> | <u>PERCENT</u> |
| A. LOT GROSS AREA | 18.4 | 51% |
| B. DRAINAGE (WQMP BASIN) | 2.38 | 7% |
| C. SLOPES/OPEN SPACE | 0.71 | 3% |
| D. PARKS | 1.31 | 6% |
| E. ROW TO ROW | 10.60 | 28% |

2. EXISTING GENERAL PLAN DESIGNATION: LDR- LOW DENSITY RESIDENTIAL (3-6 DU/AC)

3. EXISTING ZONING: R-1-13000

4. PROPOSED ZONING: RESIDENTIAL

5. PROPOSED NO. OF DWELLING UNITS: 138 LOTS.

6. PROPOSED PROJECT DENSITY: 3.86 DU/AC.

7. MINIMUM LOT SIZE: 4,235 SQ. FT.

8. AVERAGE LOT SIZE: 5,822 SQ. FT.

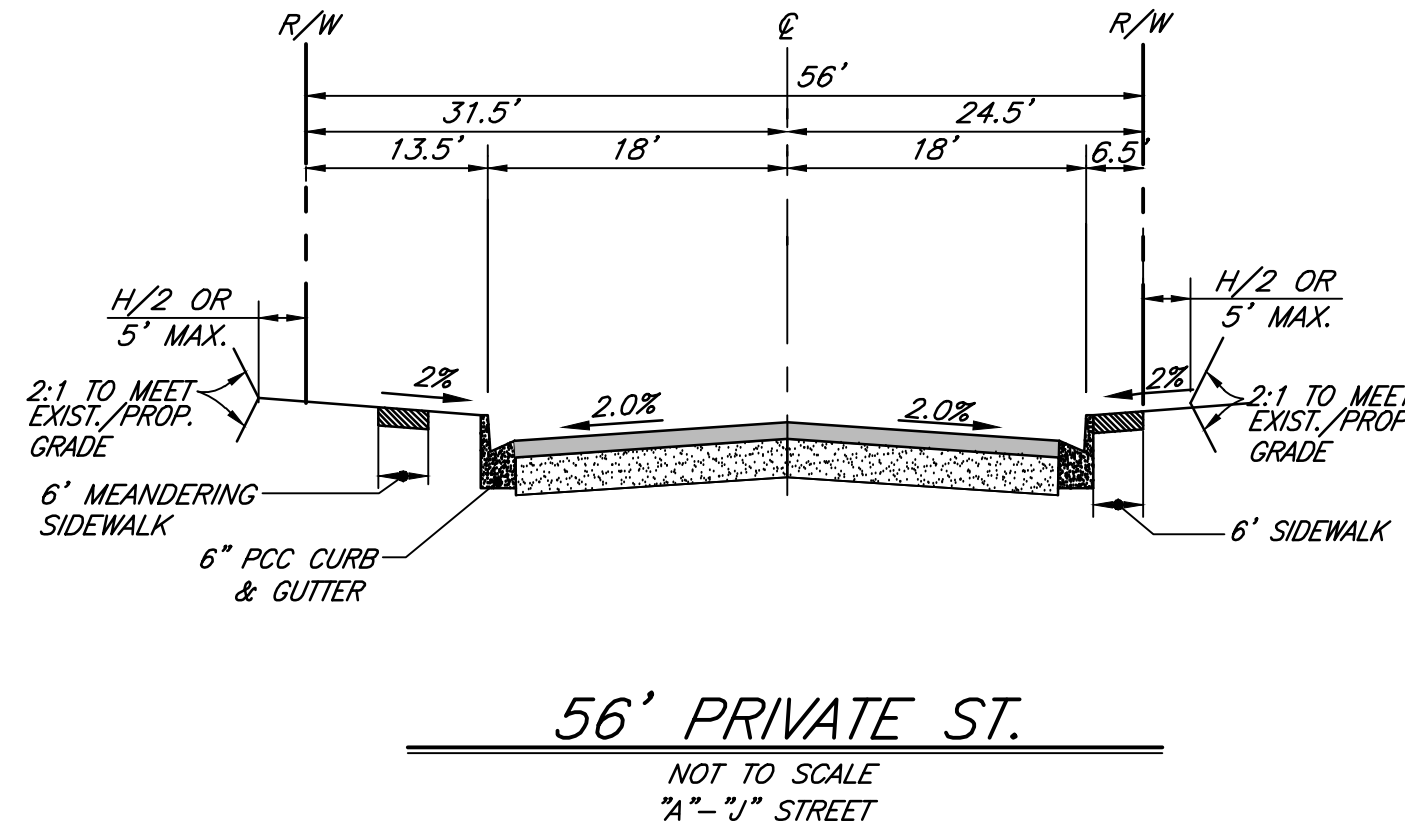
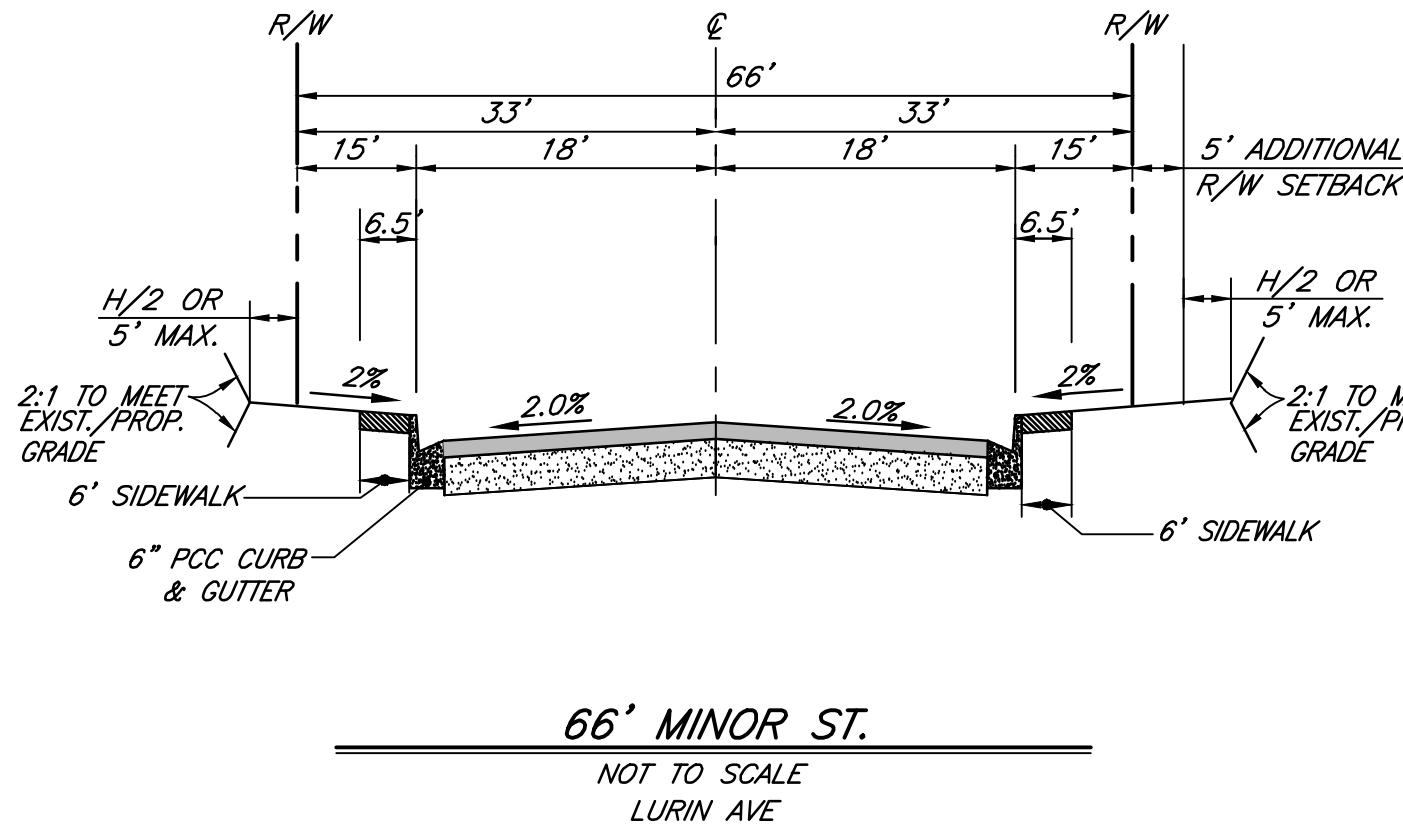
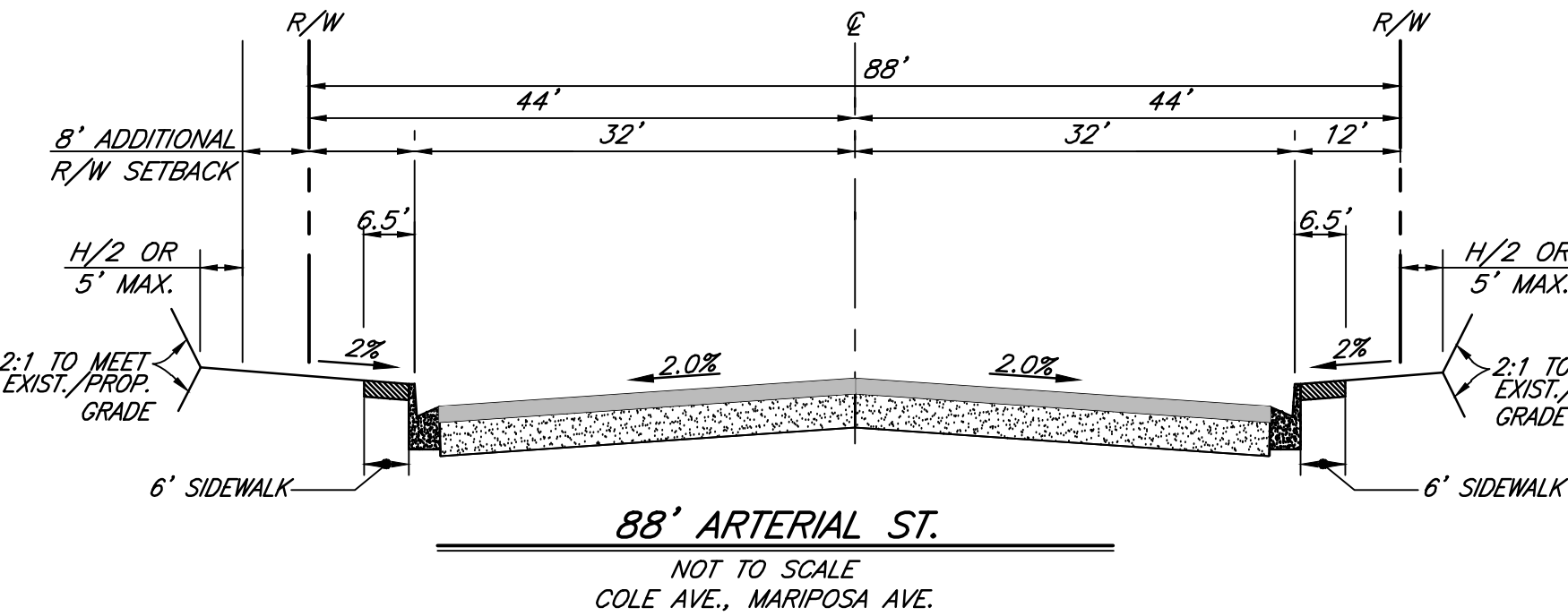
9. ZONING OF SURROUNDING PROPERTY: R-1

10. AVERAGE NATURAL SLOPE OF SITE: 0.53%

STATEMENT OF PREPARER

I HEREBY STATE THAT THIS MAP WAS PREPARED UNDER MY SUPERVISION AND THAT THE OWNER OF RECORD HAS KNOWLEDGE OF AND CONSENTS TO THE FILING OF THIS MAP.

MATTHEW L. LANINOVICH, P.E. DATE



TENTATIVE TRACT MAP NO. 37731
IN THE CITY OF RIVERSIDE

BASIS OF BEARINGS:

THE BASIS OF BEARINGS SHOWN HEREON ARE BASED ON THE CITY OF CORONA GPS MONUMENTS NO. 1183 OAK DAM (N: 2254579.060, E: 6152363.939 AND NO. 3039 LINDSON 2 1953 (N: 2249760.701, E: 6154840.535), BEING N 27°12'10" W.

PROPERTY OWNERSHIP INFO:

APNS: 266-140-029, 266-140-030, 266-140-049, 266-140-050, 266-140-022, 266-140-021

BENCHMARK:

CITY OF RIVERSIDE DESIGNATION: E8-G3

P.K. NAIL AND CITY ENGINEER TAG IN THE TOP OF THE SIDEWALK OVER THE EASTERLY WALL OF A CATCH BASIN ALONG THE SOUTHERLY CURB OF VAN BUREN BLVD AND 700 FEET EASTERLY OF WOOD ROAD.

ELEV: 1644.96' (NAD 88)

OWNER/DEVELOPER:

LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730
CONTACT: NOLAN LEGGIO

ENGINEER:

KWC ENGINEERS
1880 COMPTON AVENUE
CORONA, CA 92881-3370
(951) 734-2130
CONTACT: MATTHEW LANINOVICH, P.E.

UTILITY NOTES:

SEWER & WATER: WESTERN MUNICIPAL WATER DISTRICT

GAS: SOCAL GAS

ELECTRICITY: SOUTHERN CALIFORNIA EDISON

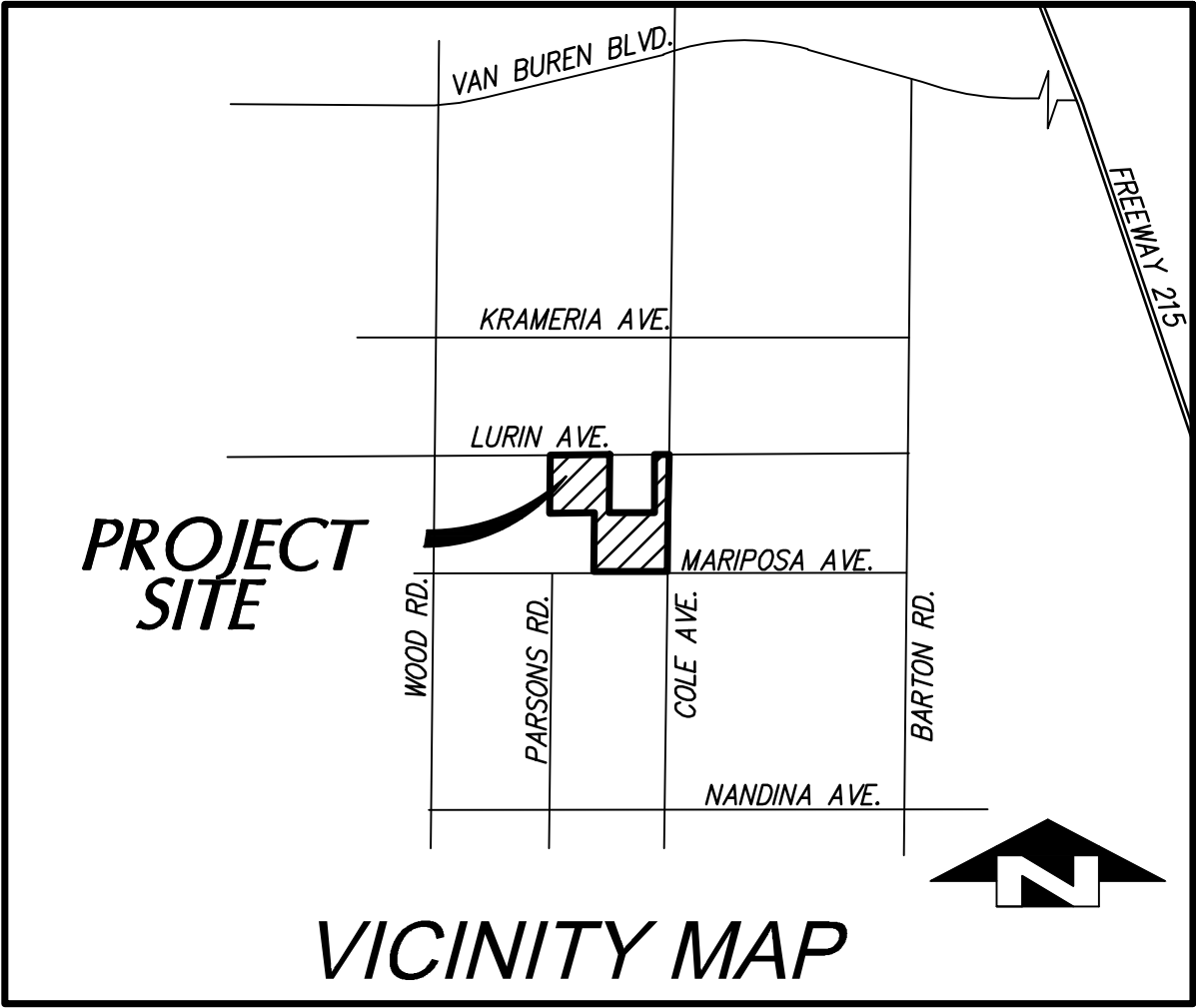
SCHOOL DISTRICT: RIVERSIDE UNIFIED SCHOOL DISTRICT

LURIN LAND PRD

| TR 37731 | | | | | Acres |
|------------|----------|-------------------|--------|-------|-------|
| Units/AC | Zoning | Percentage of Map | Acres | Lots | |
| 4.8 | 13000 | 58% | 20.76 | 99.67 | |
| 3 | 1/2 Acre | 21% | 7.52 | 22.55 | |
| 3 | 1 Acre | 21% | 7.52 | 22.55 | |
| Total Lots | | | 144.78 | | |

NUMBERED LOTS:

| LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE | LOT NO. | GROSS AREA IN SQ. FT. | WIDTH | DEPTH | PLAN TYPE |
|---------|-----------------------|-------|-------|-----------|---------|-----------------------|-------|-------|-----------|-----------------|-----------------------|-------|-------|-----------|
| 1 | 5968 | 74 | 90 | 2 | 48 | 4750 | 50 | 95 | 1 | 95 | 5350 | 50 | 107 | 1 |
| 2 | 4500 | 50 | 90 | 1 | 49 | 4750 | 50 | 95 | 2 | 96 | 5350 | 50 | 107 | 2 |
| 3 | 4725 | 52 | 90 | 4 | 50 | 4750 | 50 | 95 | 5 | 97 | 7305 | 70 | 107 | 4 |
| 4 | 5934 | 76 | 89 | 3 | 51 | 4750 | 50 | 95 | 1 | 98 | 7610 | 73 | 107 | 2 |
| 5 | 4467 | 50 | 89 | 5 | 52 | 4750 | 50 | 95 | 2 | 99 | 5349 | 50 | 107 | 5 |
| 6 | 4631 | 50 | 89 | 1 | 53 | 4750 | 50 | 95 | 4 | 100 | 5348 | 50 | 107 | 2 |
| 7 | 5435 | 63 | 91 | 5 | 54 | 6505 | 70 | 95 | 3 | 101 | 5348 | 50 | 107 | 4 |
| 8 | 4534 | 50 | 91 | 3 | 55 | 4750 | 50 | 95 | 1 | 102 | 5347 | 50 | 107 | 3 |
| 9 | 4919 | 61 | 91 | 5 | 56 | 4750 | 50 | 95 | 3 | 103 | 5346 | 50 | 107 | 5 |
| 10 | 5615 | 62 | 90 | 1 | 57 | 4750 | 50 | 95 | 1 | 104 | 5346 | 50 | 107 | 3 |
| 11 | 5297 | 58 | 91 | 4 | 58 | 4750 | 50 | 95 | 5 | 105 | 5345 | 50 | 107 | 1 |
| 12 | 5314 | 58 | 91 | 2 | 59 | 4750 | 50 | 95 | 3 | 106 | 5344 | 50 | 107 | 3 |
| 13 | 4235 | 50 | 87 | 3 | 60 | 4750 | 50 | 95 | 5 | 107 | 5344 | 50 | 107 | 5 |
| 14 | 4304 | 50 | 87 | 3 | 61 | 4750 | 50 | 95 | 1 | 108 | 5285 | 50 | 105 | 1 |
| 15 | 4713 | 50 | 93 | 5 | 62 | 5301 | 57 | 95 | 5 | 109 | 4935 | 50 | 100 | 3 |
| 16 | 4556 | 50 | 91 | 3 | 63 | 4868 | 51 | 95 | 3 | 110 | 5350 | 50 | 107 | 3 |
| 17 | 4339 | 51 | 90 | 1 | 64 | 4956 | 50 | 99 | 5 | 111 | 5350 | 50 | 107 | 5 |
| 18 | 9312 | 67 | 142 | 5 | 65 | 4882 | 50 | 98 | 4 | 112 | 5350 | 50 | 107 | 3 |
| 19 | 5538 | 55 | 97 | 4 | 66 | 5011 | 52 | 100 | 2 | 113 | 5350 | 50 | 107 | 2 |
| 20 | 4478 | 50 | 91 | 5 | 67 | 4915 | 50 | 99 | 5 | 114 | 5350 | 50 | 107 | 4 |
| 21 | 4606 | 50 | 92 | 3 | 68 | 4901 | 50 | 99 | 4 | 115 | 5350 | 50 | 107 | 1 |
| 22 | 4671 | 50 | 94 | 1 | 69 | 5129 | 50 | 103 | 2 | 116 | 5350 | 50 | 107 | 5 |
| 23 | 4732 | 50 | 94 | 3 | 70 | 5374 | 50 | 106 | 3 | 117 | 5350 | 50 | 107 | 2 |
| 24 | 4772 | 50 | 95 | 1 | 71 | 5215 | 50 | 105 | 2 | 118 | 5301 | 50 | 106 | 1 |
| 25 | 5597 | 59 | 96 | 3 | 72 | 5133 | 50 | 103 | 3 | 119 | 5846 | 62 | 104 | 4 |
| 26 | 5862 | 61 | 97 | 3 | 73 | 5208 | 50 | 105 | 1 | 120 | 6598 | 62 | 104 | 3 |
| 27 | 4907 | 50 | 98 | 1 | 74 | 5370 | 50 | 107 | 2 | 121 | 5303 | 50 | 106 | 1 |
| 28 | 4977 | 50 | 99 | 5 | 75 | 5308 | 50 | 106 | 4 | 122 | 5350 | 50 | 107 | 3 |
| 29 | 5006 | 50 | 99 | 1 | 76 | 5253 | 50 | 105 | 5 | 123 | 5350 | 50 | 107 | 2 |
| 30 | 4793 | 50 | 96 | 3 | 77 | 5227 | 49 | 105 | 2 | 124 | 5350 | 50 | 107 | 3 |
| 31 | 6317 | 70 | 94 | 5 | 78 | 5987 | 62 | 99 | 4 | 125 | 5350 | 50 | 107 | 4 |
| 32 | 13833 | 112 | 104 | 1 | 79 | 4996 | 50 | 100 | 2 | 126 | 5350 | 50 | 107 | 1 |
| 33 | 7362 | 68 | 117 | 2 | 80 | 5157 | 50 | 103 | 5 | 127 | 5350 | 50 | 107 | 4 |
| 34 | 6300 | 52 | 121 | 1 | 81 | 5321 | 50 | 107 | 2 | 128 | 5350 | 50 | 107 | 1 |
| 35 | 6549 | 52 | 126 | 4 | 82 | 5506 | 50 | 110 | 1 | 129 | 5350 | 50 | 107 | 2 |
| 36 | 9144 | 75 | 126 | 5 | 83 | 5542 | 50 | 111 | 5 | 130 | 16393 | 82 | 207 | 1 |
| 37 | 5472 | 59 | 95 | 4 | 84 | 5542 | 50 | 111 | 4 | 131 | 11420 | 75 | 150 | 2 |
| 38 | 4750 | 50 | 95 | 1 | 85 | 5542 | 50 | 111 | 5 | 132 | 10964 | 75 | 154 | 5 |
| 39 | 4750 | 50 | 95 | 2 | 86 | 5798 | 50 | 117 | 1 | 133 | 11618 | 75 | 154 | 3 |
| 40 | 4750 | 50 | 95 | 4 | 87 | 5842 | 50 | 117 | 5 | 134 | 11549 | 75 | 154 | 4 |
| 41 | 4750 | 50 | 95 | 5 | 88 | 5842 | 50 | 117 | 4 | 135 | 11483 | 75 | 154 | 3 |
| 42 | 4750 | 50 | 95 | 4 | 89 | 5749 | 50 | 114 | 5 | 136 | 11479 | 75 | 153 | 2 |
| 43 | 4750 | 50 | 95 | 3 | 90 | 5180 | 50 | 105 | 3 | 137 | 11461 | 75 | 153 | 3 |
| 44 | 4751 | 50 | 95 | 5 | 91 | 6608 | 54 | 144 | 4 | 138 | 11392 | 75 | 152 | 4 |
| 45 | 6372 | 70 | 95 | 4 | 92 | 6088 | 57 | 136 | 5 | AVERAGE | 5822 | 55 | 106 | |
| 46 | 6147 | 70 | 95 | 1 | 93 | 4596 | 50 | 95 | 3 | TOTAL LOT AREA= | 803,376 | | | |
| 47 | 4750 | 50 | 95 | 4 | 94 | 5177 | 50 | 107 | 5 | MAX LOT AREA = | 16,393 | | | |
| | | | | | | | | | | MIN LOT AREA = | 4,235 | | | |



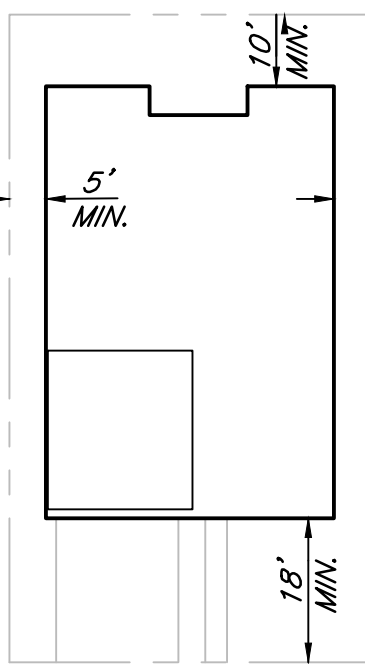
LETTERED LOTS:

| LOT NO. | GROSS AREA (SQ.FT.) | DESCRIPTION |
|-----------------|---------------------|-----------------|
| A | 3940 | OPEN SPACE |
| B | 45160 | OPEN SPACE |
| C | 66150 | WQMP BASIN |
| D | 23378 | PARK |
| E | 865 | OPEN SPACE |
| F | 13282 | OPEN SPACE/PARK |
| G | 5177 | OPEN SPACE |
| H | 4853 | OPEN SPACE |
| J | 1800 | OPEN SPACE |
| K | 15839 | OPEN SPACE |
| L | 15,615 | OPEN SPACE |
| M | 35727 | PARK |
| N | 37711 | WQMP BASIN |
| O | 20012 | OPEN SPACE |
| P | 8487 | OPEN SPACE |
| TOTAL LOT AREA= | | 240607 |
| MAX LOT AREA = | | 64008 |
| MIN LOT AREA = | | 866 |

PARK AREA CALCULATION

| LOT | AREA IN SQ.FT. |
|---------------------------------|----------------|
| LOT "C" | 21,149 |
| TOTAL | 21,149 |
| PARK AREA REQ. (PLOTSX500 SQFT) | 21,000 |

TYPICAL LOT SETBACKS



| TTM DATE IDENTIFIER |
|---|
| DATE OF LATEST CHANGE TO THIS MAP: 01/09/20 |
| DATE OF THIS PLAN: 01/09/20 |

TENTATIVE TRACT MAP NO. 37731
CITY OF RIVERSIDE

PREPARED FOR:

LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730

PREPARED BY:

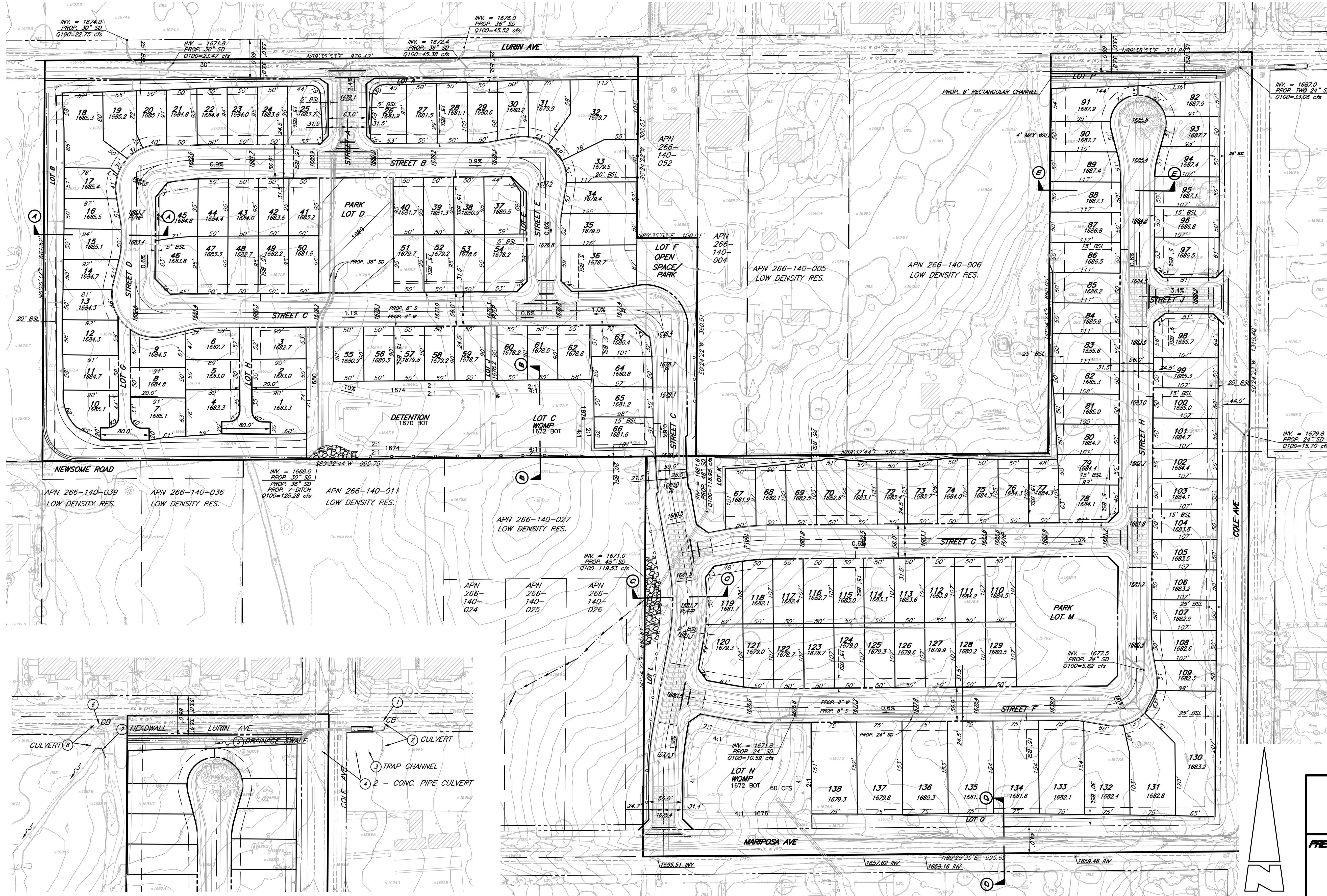


CIVIL ENGINEERS • PLANNERS • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 CORONA, CA 92881-3378 951-734-2130

SHEET
1 OF 2
SHEETS

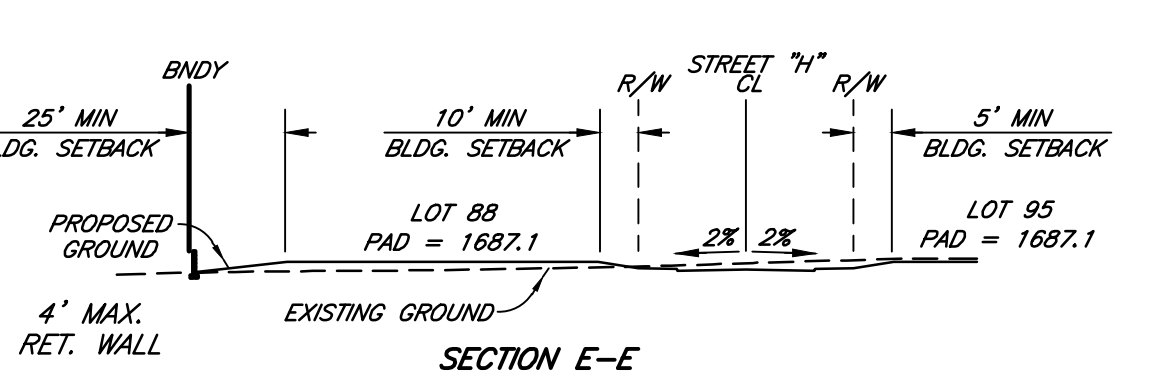
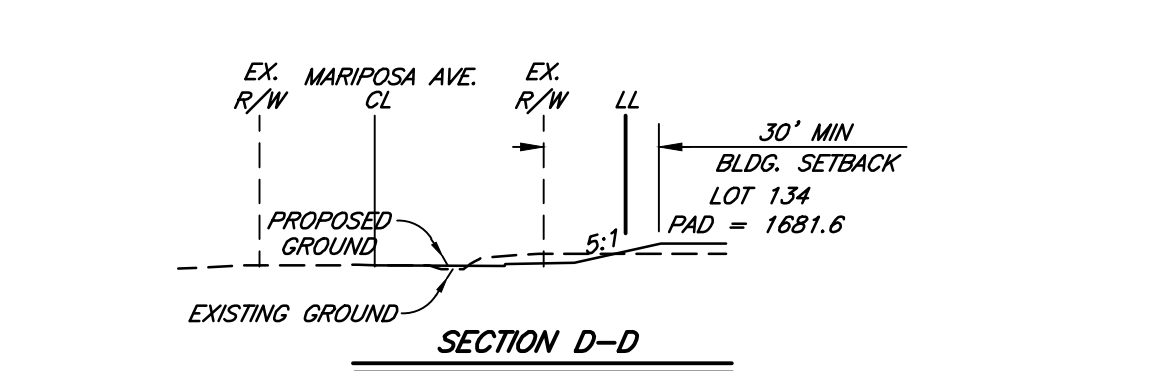
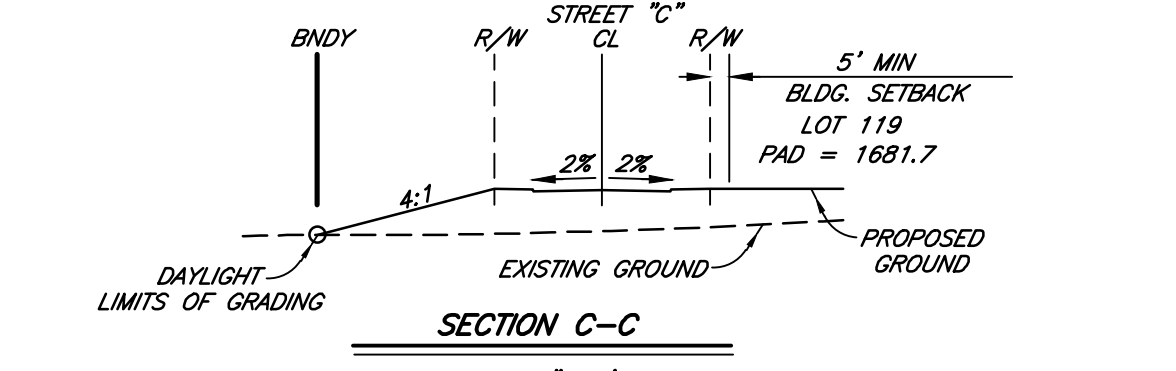
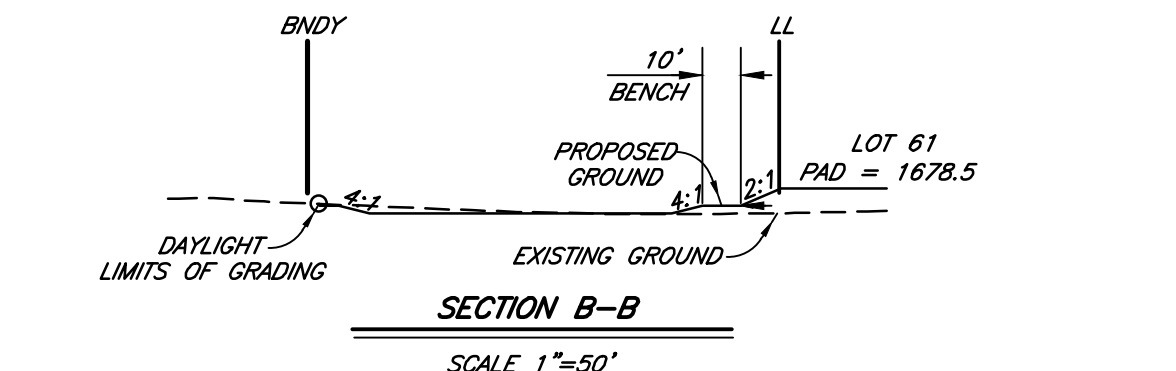
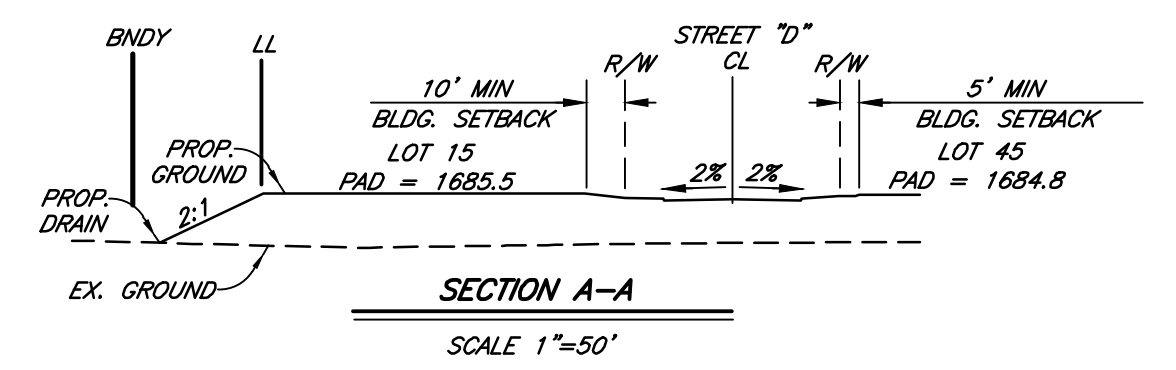
TENTATIVE TRACT MAP NO. 37731

IN THE CITY OF RIVERSIDE



LURIN AVE. & COLIN AVE. DRAINAGE DETAIL

SCALE: 1"=80'



- LEGEND:**
- PROPOSED WATER
 - PROPOSED SEWER
 - PROPOSED RECLAIMED WATER
 - PROPOSED STORM DRAIN
 - EXISTING WATER
 - EXISTING SEWER
 - EXISTING RECLAIMED WATER
 - EXISTING STORM DRAIN
 - EXISTING CONTOUR ELEVATION
 - EXISTING SURFACE ELEVATION
 - PROPOSED PAD ELEVATION
 - ELEV. = ELEVATION
 - FG = FINISH GRADE
 - FL = FLOWLINE
 - FS = FINISHED SURFACE
 - D.G. = DECOMPOSED GRANITE
 - L = LENGTH
 - W = WIDTH
 - MIN. = MINIMUM
 - PL = PROPERTY LINE
 - R/W = RIGHT OF WAY
 - GB = GRADE BREAK
 - TC = TOP OF CURB
 - 45 = LOT NUMBER
 - TOE OF SLOPE
 - TOP OF SLOPE
 - DAYLIGHT LINE
 - DECORATIVE PAVEMENT

TENTATIVE TRACT MAP NO. 37731

CITY OF RIVERSIDE

PREPARED FOR:
LURIN LAND, LLC
10621 CIVIC CENTER DRIVE
RANCHO CUCAMONGA, CA 91730

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 CORONA, CA 92681-3378 951-734-2130

SHEET
2 OF 2
SHEETS



Appendix B
Field Data Sheets

TERACOR Resource Management

WETLANDS/"WATERS" and STREAMBEDS DETERMINATION WORKSHEET

Project Name: Wynland-Jack 33481 TR# 3773 Page No. 1

Field Personnel: J. Reed & C. Penhale

Date: DD/MM/YY 29/01/208
Location: South of Wynland-Jack

| Segment | Transect No. | Segment I.D. Measurement (in feet) | | | Ecological and Hydrological Information |
|---------|--------------|------------------------------------|-----------------------------|-------------------|--|
| | | Corps Jurisdiction | | CDFW Jurisdiction | |
| | | Waters | Wetlands (Subset of waters) | | |
| A | 100' 0 | 6 | N/A | | Roadside drainage ditch carries flows just south of Lynn Ave. Hydrological source is two 24" CMPs, which collect from under Cde Ave. Vegetation generally limited to weedy NUG species. Arenca sp., Agrostis, Nolina parviflora, Sandbar sp. |
| | | | | | |
| | | | | | |
| | | | | | |
| | 1 | 4 | N/A | | Evidence of flow comprised of flattened vegetation. NUG. Fountain grass on north bank. |
| | | | | | |
| | | | | | |
| | 2 | 5 | N/A | | Same species. |
| | | | | | |
| | 3* | 3.5 | N/A | | * Transect totaled 129'. Flows are collected by a partially-buried 2" CMP inlet. Near unimproved road @ west property line. |
| | | | | | |

TERACOR Resource Management

WETLANDS/"WATERS" and STREAMBEDS DETERMINATION WORKSHEET

Project Name: Waring land-Tract 33481 TR# 37731 Page No. 2

Field Personnel: J. Reed & C. Montre

Date: (DD/MM/YY) 20/01/8
Location: Kaibab, AZ

| Segment | Transect No. | Segment I.D. Measurement (in feet) | | | Ecological and Hydrological Information |
|---------|--------------|------------------------------------|--------------------------------|-------------------|--|
| | | Corps Jurisdiction | | CDFW Jurisdiction | |
| | | Waters | Wetlands (Subset of waters) | | |
| | | | | | |
| B | 1001 | 6 | N/A | | Segment B enters property through chain-link fence. Drift deposits indicate CDFW. Broken concrete pieces present. NUG. |
| | | | | | |
| | | | | | |
| | | | | | |
| | 1 | 3.5 | N/A | | NUG. Drift deposits along flowline. Just upstream of CDFW Station B-5 and B-24. |
| | | | | | |
| | | | | | |
| | 2 | 3 | 3 | | Willow scrub cell. NUG understory. |
| | | | | | |
| | 3* | 6 | 6 | | * Transect is 105'. Drainage exists primarily at transect. |
| | | | | | |
| | | | | | |
| | | | | | |

Reviewed by frank

TERACOR Resource Management
WETLANDS/"WATERS" and STREAMBEDS DETERMINATION WORKSHEET

Date: (DD/MM/YY) 29/01/2018
Location: Between Turin & Marjorie Ave, Riverside

Project Name: Turin Island - Tract 33481
Field Personnel: J. Reed & C. Montane

TR # 3773

Page No. 3

| Segment | Transect No. | Segment I.D. Measurement (in feet) | | | Ecological and Hydrological Information |
|-----------------|--------------|------------------------------------|-----------------------------|-------------------|---|
| | | Corps Jurisdiction | | CDFW Jurisdiction | |
| | | Waters | Wetlands (Subset of waters) | | |
| Remanded 3 C | — | 1.5 | N/A | 1.5 | Isolated drainage swale originates from where sheet flow concentrates. Vegetation dominated by NUG with patchy tallgrass and emergent willow. ACOE and CDFW jurisdiction is co-terminal. Throat swale length, except for one location at State (-22) where CDFW jurisdiction with is 3 ft wide due to the presence of an emergent willow. |
| | | 1.5 | N/A | 3 | |
| | | | | | |
| | | | | | |
| | | | | | |
| Remanded 4 D | — | | | | ACOE and CDFW jurisdiction is co-terminal. Throat reaches drainage ditch and is delineated by stakes. Ditch enters site thru a small CUP outlet. Flows are collected at downstream end by a CUP inlet and are conveyed under Marjorie Ave to downstream sites. |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wetland Tract 33481 TR #37731 Rinaside City/County: Sampling Date: 1/30/18
 Applicant/Owner: Lucin Land, LLC State: CA Sampling Point: B-2
 Investigator(s): J. Reed & C. Mauthe Section, Township, Range: Section 29, T 3 S, R 4 W
 Landform (hillslope, terrace, etc.): Diagonal slope Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRR): C-Mediterranean California Lat: 33.87410° Long: 117.32568° Datum: NAD83
 Soil Map Unit Name: Fallbrook fine sandy loam, 2 to 8% slopes, eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☒ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No ☒
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---|--|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <u> </u> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <u> </u> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <u> </u> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <u> </u> | |
| Remarks: <u>Prolonged drought. Only one substantial rain event in 2d/7/2018 storm season. The site has undergone long standing agricultural practices.</u> | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u> </u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|---|----------------------------------|-------------------|------------------|--|
| 1. <u>N/A</u> | | | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) |
| 2. <u>N/A</u> | | | | Total Number of Dominant Species Across All Strata: <u>2</u> (B) |
| 3. <u> </u> | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) |
| 4. <u> </u> | | | | |
| = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot size: <u>5x5 ft.</u>) | | | | Prevalence Index worksheet: |
| 1. <u>Salix lasiolepis</u> | <u>80</u> | <u>yes</u> | <u>FACW</u> | Total % Cover of: <u>0</u> Multiply by: <u> </u> |
| 2. <u> </u> | | | | OBL species <u>0</u> x 1 = <u>0</u> |
| 3. <u> </u> | | | | FACW species <u>85</u> x 2 = <u>170</u> |
| 4. <u> </u> | | | | FAC species <u>0</u> x 3 = <u>0</u> |
| 5. <u> </u> | | | | FACU species <u>0</u> x 4 = <u>0</u> |
| = Total Cover | | | | UPL species <u>90</u> x 5 = <u>450</u> |
| Herb Stratum (Plot size: <u>5x5 ft.</u>) | | | | Column Totals: <u>175</u> (A) <u>620</u> (B) |
| 1. <u>Bromus diandrus</u> | <u>90</u> | <u>yes</u> | <u>UPL</u> | Prevalence Index = B/A = <u>3.5</u> |
| 2. <u>Polygonum monspeliensis</u> | <u>5</u> | <u>no</u> | <u>FACW</u> | |
| 3. <u> </u> | | | | |
| 4. <u> </u> | | | | |
| 5. <u> </u> | | | | |
| 6. <u> </u> | | | | |
| 7. <u> </u> | | | | |
| 8. <u> </u> | | | | |
| = Total Cover | | | | |
| Woody Vine Stratum (Plot size: <u> </u>) | | | | Hydrophytic Vegetation Indicators: |
| 1. <u>N/A</u> | | | | <u> </u> Dominance Test is >50% |
| 2. <u>N/A</u> | | | | <u> </u> Prevalence Index is ≤3.0 ¹ |
| = Total Cover | | | | <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| % Bare Ground in Herb Stratum <u>5</u> | % Cover of Biotic Crust <u>0</u> | | | <input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| Remarks: <u>Vegetation on the drought-affected site is substantially the same as that on a nearby wetland site, in the same general area having similar soils and known wetland hydrology. Present vegetation is ∴ considered hydrophytic.</u> | | | | |

SOIL

Sampling Point: **B-2**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | Type ¹ | Loc ² | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | | | | |
| 0-2 | 10YR 3/2 | 60 | 7.5YR 3/4 | 40 | C | M | Sandy loam | |
| 7 | 10YR 3/3 | 90 | 7.5YR 3/3 | 10 | C | M | Sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input checked="" type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (Riverine)
☒ Sediment Deposits (B2) (Riverine)
☒ Drift Deposits (B3) (Riverine)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**TERACOR Resource Management
WETLANDS/"WATERS" and STREAMBEDS DETERMINATION WORKSHEET**

Date: (DD/MMYY) 30/01/18
Location: Riverside, CT

Project Name: Wynland-Tract 33482
Field Personnel: J. Reed & C. Munter

Page No. 1[illegible]

U:\Forms and Formats\Delineation Forms\wetland-waters and streambeds form.wpd

$$A = \frac{9+2}{2} = \frac{3+8}{2} = \frac{1}{2}(30) = 5.5(30) = 165$$

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: TR # 33482 TR 37731 City/County: Riverside Sampling Date: 1/25/18
 Applicant/Owner: Winnland LLC State: CA Sampling Point: TP-A1
 Investigator(s): S. Reed & J. Reed Section, Township, Range: 29, T35, R4W
 Landform (hillslope, terrace, etc.): SWale Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): Fallbrook fine sandy loam, 2-8% slopes, eroded Lat: 33.67639° Long: -117.32681° Datum: NAD83
 Soil Map Unit Name: Fallbrook fine sandy loam, 2-8% slopes, eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---|---------------------------|--|
| Hydrophytic Vegetation Present? | Yes <u> </u> No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soil Present? | Yes <u>X</u> No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> No <u> </u> | |
| Remarks: <u>Human created atypical. Roadside ditch periodically maintained. Persistent drought</u> | | |

VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|--------------------------------------|------------------|-------------------|------------------|---|
| 1. <u>Salix lasiolepis</u> | <u>90</u> | <u>yes</u> | <u>HEW</u> | Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Total Number of Dominant Species Across All Strata: <u>2</u> (B) |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>90</u> x 5 = <u>450</u> Column Totals: <u>180</u> (A) <u>630</u> (B) Prevalence Index = B/A = <u>3.5</u> |
| Total Cover: <u>90</u> | | | | |
| Sapling/Shrub Stratum | | | | |
| 1. <u>N/A</u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u> </u> No <u> </u> |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| Total Cover: <u>90</u> | | | | Woody Vine Stratum 1. <u>N/A</u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> Total Cover: <u> </u> % Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust <u>0</u> Remarks: |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 11. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |

SOIL

TR 33482 1

Sampling Point:

TP-A1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
|----------------|----------------------|---|------------------------------|---|-------------------|------------------|-----------------|------------------------|
| 0-2" | 10YR/2/2 | | | | | | silt loam | under roadside willows |
| 2-4" | 7.5Y/3/2 | | | | | | sandy loam | a storm drain outlet |
| 4-6" | 7.5YR/2.5/2 | | | | | | very sandy loam | |
| 6-10" | 10YR/3/2 | | | | | | very sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR C)
☐ 1 cm Muck (A9) (LRR D)
☐ Depleted Below Dark Surface (A11)
☒ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☒ Water Marks (B1) (Nonriverine)
☒ Sediment Deposits (B2) (Nonriverine)
☒ Drift Deposits (B3) (Nonriverine)
☐ Surface Soil Cracks (B6)
☒ Inundation Visible on Aerial Imagery (B7)
☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Plowed Soils (C6)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☒ Sediment Deposits (B2) (Riverine)
☒ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Thin Muck Surface (C7)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lurin land- Tract 33482 + 1237X31 City/County: Riverside Sampling Date: 1/30/18
 Applicant/Owner: Lurin Land, LLC State: CA Sampling Point: TP2 - R
 Investigator(s): J. Reed Section, Township, Range: Section 29, T5 South, R4 West
 Landform (hillslope, terrace, etc.): Drainage Swale Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): C- Mediterranean California Lat: 33.87631 Long: 117.32684 Datum: NAD 83
 Soil Map Unit Name: Fallbrook fine sandy loam, 2 to 8% slopes, eroded NWI classification: R1A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: <u>Atypical. Prolonged drought conditions. Only one substantial storm event in 2017/2018 storm season.</u> | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>10x10</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. <u>Salix lasiolepis</u> | <u>40</u> | <u>yes</u> | <u>FACW</u> | |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| Sapling/Shrub Stratum (Plot size: <u>6x10</u>) 1. <u>Salix lasiolepis</u> <u>10</u> <u>yes</u> <u>FACW</u> 2. _____ 3. _____ 4. _____ 5. _____ <u>40</u> = Total Cover | | | | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| Herb Stratum (Plot size: <u>10x16</u>) 1. <u>Cynodon dactylon</u> <u>97</u> <u>yes</u> <u>FACU</u> 2. <u>Rumex crispus</u> <u>2</u> <u>no</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ <u>99</u> = Total Cover | | | | |
| Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover | | | | |
| % Bare Ground in Herb Stratum <u>1</u> % Cover of Biotic Crust <u>0</u> | | | | |
| Remarks: _____ | | | | |

SOIL

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|----------------|---------------|---|----------------|---|-------------------|------------------|------------|---------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-2 | 10YR 2/2 | | | 5 | | | Silty loam | under south side of |
| 2-4 | 10YR 2/2 | | | 5 | | | Silty loam | willow scrub cell |
| 4-6 | 10YR 3/2 | | | 5 | | | Sandy loam | |
| 6-8 | 10YR 3/2 | | | 5 | | | Sandy loam | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR C)
☐ 1 cm Muck (A9) (LRR D)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☒ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☒ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (Nonriverine)
☐ Sediment Deposits (B2) (Nonriverine)
☐ Drift Deposits (B3) (Nonriverine)
☐ Surface Soil Cracks (B6)
☒ Inundation Visible on Aerial Imagery (B7)
☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)
- ☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☒ Drift Deposits (B3) (Riverine)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Faint drainage patterns

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lurin Land-Tract 33482 TR 37731 City/County: Riverside Sampling Date: 1/30/18
 Applicant/Owner: Lurin Land, LLC State: CA Sampling Point: TP 3-A
 Investigator(s): J. Reed Section, Township, Range: Section 29, T 3 South, R 4 West
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): C-Mediterranean California Lat: 33.887627 Long: -117.32687 Datum: NAD83
 Soil Map Unit Name: Fallbrook fine sandy loam, 2 to 8% slopes, eroded NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: <u>Prolonged drought. Only one substantial rain event in 2017/2018 storm season.</u> | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | |
|---|------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|-----------------------|----------------|-----------------------|-----------------|------------------------|------------------|----------------------|----------------|------------------------------|----------------|
| 1. <u>N/A</u> | | | | | | | | | | | | | | | | | | |
| 2. <u>N/A</u> | | | | | | | | | | | | | | | | | | |
| 3. <u>N/A</u> | | | | | | | | | | | | | | | | | | |
| 4. _____ | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>350</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.89</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>10</u> | x 3 = <u>30</u> | FACU species <u>80</u> | x 4 = <u>320</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>90</u> (A) | <u>350</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>10</u> | x 3 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>80</u> | x 4 = <u>320</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>90</u> (A) | <u>350</u> (B) | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: _____) 1. <u>N/A</u> 2. <u>N/A</u> 3. <u>N/A</u> 4. _____ 5. _____ | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: <u>5x5 ft.</u>) 1. <u>Cynodon dactylon</u> <u>80</u> <u>yes</u> <u>FACU</u> 2. <u>Rumex crispus</u> <u>10</u> <u>no</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: _____) 1. <u>N/A</u> 2. <u>N/A</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ | | | | | | | | | | | | | | | | | | |
| = Total Cover | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| Remarks: _____ | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: TP 3

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|---|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-2 | 10YR/3/3 | | | | | | Sandy loam | |
| 2-4 | 10YR/3/3 | | | | | | Sandy loam | |
| 4-6 | 10YR/3/3 | | | | | | Sandy loam | |
| 6-8 | 10YR/3/3 | | | | | | Sandy loam | |
| | | | | | | | | |
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| | | | | | | | | |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

| | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

| | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input checked="" type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

| | | |
|---|-----------------------|---|
| Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> | Depth (inches): _____ | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
| Water Table Present? Yes _____ No <input checked="" type="checkbox"/> | Depth (inches): _____ | |
| Saturation Present? Yes _____ No <input checked="" type="checkbox"/> (includes capillary fringe) | Depth (inches): _____ | |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C References

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United States Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey*, National Cooperative Soil Survey. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

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United States Geological Survey. 1973. Photo revised 1978. *Steele Peak, California Quadrangle*. A U.S.G.S. Topographic Quadrangle Map, one sheet.