APPENDIX C1

BIOLOGICAL RESOURCES EVALUATION

BIOLOGICAL RESOURCES EVALUATION

for the

Westside Reservoir Improvement Project

City of South Pasadena, Los Angeles County, California

Prepared for:

City of South Pasadena
Department of Public Works
1414 Mission Street
South Pasadena, California 91030

Prepared by:

UltraSystems Environmental Inc.
16431 Scientific Way
Irvine, CA 92618
(949) 788-4900

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LIST OF ABBREVIATIONS AND ACRONYMS

Acronym/Abbreviation	Term
amsl	Above mean sea level
AOU	American Ornithological Union
BCC	Bird of Conservation Concern
BIOS	Biogeographic and Information Observation System
BMPs	best management practices
BRE	biological resources evaluation
BSA	Biological Study Area
BUOW	burrowing owl
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CIMIS	California Irrigation Management System
City	City of South Pasadena
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
EPA	Environmental Protection Agency
ESA	Endangered Species Act
°F	degrees Fahrenheit
FGC	California Fish and Game Code
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
HUC	Hydrologic unit code
IPaC	Information, Planning, and Conservation System
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NCCP	Natural Community Conservation Plan
NCCP Act	California Natural Community Conservation Planning Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High-Water Mark
Porter-Cologne	Porter-Cologne Water Quality Control Act
Project	The Westside Reservoir Project

Acronym/Abbreviation	Term
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
UltraSystems	UltraSystems Environmental Inc.
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WATERS	U.S. Environmental Protection Agency's Watershed Assessment, Tracking, & Environmental Results System
WQC	Water Quality Certification
§	Section
§§	Sections

EXECUTIVE SUMMARY

UltraSystems Environmental, Inc. prepared this Biological Resources Evaluation report for the proposed Westside Reservoir Project. The project includes replacement and expansion of a reservoir within the City of South Pasadena. The project would involve replacing the existing reservoir, pump station and storage facilities as well as regrading and repaving the existing road. The project will also improve the site drainage and filtration system, fencing, an automatic sliding gate entrance, landscaping, and erosion control.

The project site and Biological Study Area occur in an urbanized area of native and non-native habitat types. Eight plant species and ten wildlife species have a moderate or higher potential to occur. It is anticipated many wildlife species would likely only visit temporarily while foraging and/or migrating.

Construction of the project has the potential to result in permanent impacts to plants and wildlife, such as nesting and breeding bird habitat. Implementation of the recommended mitigation measures would minimize or avoid these potential impacts to less than significant levels.

1.0 INTRODUCTION

UltraSystems Environmental, Inc. (UltraSystems) prepared this Biological Resources Evaluation (BRE) for the Westside Reservoir Improvement Project (project) in the City of South Pasadena, California.

The project is intended to improve and expand the reservoir such that it may sustain anticipated loads should a major earthquake occur. The current reservoir capacity is approximately two million gallons; the new reservoir capacity will be approximately 2.95 million gallons. The water height will remain at 30 feet. A pump station and supporting infrastructure will also be replaced on the site. The new pump station will have the same pumping capacity as the one it is replacing, and the replacement storage facility will be approximately the same size as the existing buildings. The existing road will be regraded and repaved, and inlet and outlet pipelines will be set to match regulations from the Division of Drinking Water (DDW), Department of Water Resources Control Board, State of California. Further facility improvements include a site drainage and filtration system, fencing, an automatic sliding gate entrance, landscaping, and erosion control.

UltraSystems' biologists conducted a literature review and a reconnaissance-level field survey of the biological resources potentially associated with the project site and of areas within a 500-foot zone around the project site; collectively, this area is referred to as the Biological Study Area (BSA). An UltraSystems biologist visited the BSA to conduct a reconnaissance-level biological survey in which the following resources were assessed: land cover types, waters of the U.S. or State, including wetlands; plant and wildlife species; burrowing owl (BUOW; *Athene cunicularia*) habitat; and wildlife corridors.

1.1 Report Purpose

This report documents the methods and results of the literature review and the field surveys and provides a summary of existing conditions, an assessment of the potential presence of sensitive biological resources, and an analysis of the potential impacts to those resources from project construction and development. It summarizes the biological resources present within the BSA at the time of the field surveys including vegetation communities, plants, and wildlife, and the potential occurrence of special-status plant and wildlife species, critical habitat, and potential wildlife corridors.

Plant and wildlife species listed under the federal Endangered Species Act (ESA) or under the California Endangered Species Act (CESA) as endangered, threatened or as a candidate for listing will be referred to collectively as *listed species* in this document. Plant and wildlife species not listed under ESA or CESA but still protected by federal agencies, state agencies, local or regional plans, and/or conservation organizations such as the California Native Plant Society (CNPS), are collectively referred to as *sensitive species* in this document. The term *special-status species* will be used when collectively referring to both listed and sensitive species. Some of these plant and wildlife species are afforded special legal or management protection because they are limited in population size and typically have a limited geographic range and/or limited habitat.

This report also identifies and analyzes the potential impacts to biological resources of site construction and development in view of federal, state, and local laws, regulations, policies, orders, ordinances and/or management plans. Finally, it recommends, as appropriate, mitigation measures

(best management practices [BMPs], avoidance and protection measures, and mitigation measures) to avoid or reduce potential environmental impacts to less than significant levels.

The study of biological resources associated with the BSA was conducted to comply with the California Environmental Quality Act (CEQA) requirements for a biological evaluation of projects that would potentially impact natural resources. CEQA is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. This report is intended to satisfy the biological resource needs of the CEQA process. This report will also assist federal and state resource agencies in their review of the project and support permits that may be required for the project from these resource agencies.

1.2 Project Location

The project site is located at 821 Glen Place in the City of South Pasadena in Los Angeles County, California (**Appendix A***;* Figure 1, *Regional Location;* Figure 2*, Project Vicinity; and* Figure 3*, Project Location*).The project site and a 500-foot buffer surrounding it is collectively referred to as the Biological Study Area (BSA; **Appendix A** Figure 4, *Project Boundary and Biological Study Area [BSA]*).) within this report.

The project site is located on the United States Geological Survey (USGS) 7.5-Minute Topographic Map *Los Angeles* Quadrangle, in Township 1 South, Range 12 West, Section 8 (**Appendix A** Figure 5, *USGS Topographic Map*; USDOI-USGS, 2025). The approximate center of the project site is located at 34.104657–-118.159866°. The project site is generally between 646 to 771 feet above mean sea level (amsl).

The project site is located in the jurisdiction of the following resource agency field offices:

- **United States Fish and Wildlife Service (USFWS)**
  Carlsbad Fish and Wildlife Office
  2177 Salk Avenue Suite 250
  Carlsbad, California 92008
  Phone: (760) 431-9440

- **California Department of Fish and Wildlife (CDFW)**
  South Coast Region 5
  3883 Ruffin Road
  San Diego, California 92123
  Phone: (858) 467-4201

- **United States Army Corps of Engineers (USACE)**
  Los Angeles District
  915 Wilshire Boulevard, Suite 980
  Los Angeles, California 90017
  Phone: (213) 452-3333

- **Regional Water Quality Control Board (RWQCB)**
  Los Angeles Region (Region 4)
  320 West Fourth Street, Suite 200
  Los Angeles, California 90013
  Phone: (213) 576-6600

2.0 PROJECT DESCRIPTION

The Westside Reservoir (reservoir), located at 821 Glen Place in the City of South Pasadena ("City"), is a two-million-gallon water storage facility that supplies both water and system pressure to the surrounding area. Built in 1963, the reservoir is now over 60 years old. Due to its age, a Seismic and Structural Analysis Report was prepared by AKD Consulting in March 2024 to assess its performance during a seismic event. The analysis found that the reservoir was constructed prior to the adoption of key design standards, including the American Concrete Institute (ACI) and the American Water Works Association (AWWA) D115 standards for circular prestressed concrete structures. This project is aimed at creating a new reservoir that meets current code and design requirements and includes an access road, pump station, and storage room to support reservoir operations. The new reservoir's capacity should be 2.95 million gallons, as compared to the two million gallons of the existing reservoir.

3.0 REGULATORY CONTEXT

Each project must comply with applicable federal, state and local environmental laws, regulations, ordinances, policies, programs, and environmental management plans. The following is a summary of the key federal and state laws and regulations that apply to protecting plants and wildlife.

3.1 Federal Statutes, Regulations and Executive Orders

3.1.1 Clean Water Act

Section 401 – Clean Water Act

Section 401 is implemented through issuance of a Water Quality Certification (WQC). In the State of California, the U.S. Environmental Protection Agency (EPA) has given the responsibility for issuing Section 401 WQCs to the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs), unless a discharge of dredged or fill material is proposed within more than one region. If a project proposes discharges of dredged or fill material in more than one region, responsibility for issuance of a Section 401 WQC will lay either with the SWRCB, or, upon agreement of the RWQCBs for the affected regions, with the RWQCB chosen in the discretion of the RWQCBs. (Cal. Water Code, § 13160; Cal. Code Regs., tit. 23, § 3838). Certification must be based on a finding that the proposed discharge will comply with water quality standards, which include numeric and narrative water quality objectives applicable to identified surface waters in the Water Quality Control Plan for the region (Basin Plan) in which a discharge of fill is proposed.

The Los Angeles RWQCB (Region 4) would provide review and certification services for this project.

Section 404 – Clean Water Act

Section 404 Clean Water Act (CWA) requires authorization from the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), for the discharge of dredged or fill material into waters of the United States, including wetlands, (per the current definition of *Waters of the United States* as determined by the U.S. Supreme Court in *Sackett v. EPA* [*Sackett*; see 88 FR 61964]). Authorizations are conducted through the issuance of Nationwide (or General) Permits for activities that would cause only minimal (between 0.1 and 0.5 acre) permanent individual and cumulative impacts; through Individual (or Standard) Permits for activities that are likely to have more than a minimal (greater than 0.5 acre) permanent or cumulative impact to waters of the U.S.; and through Letters of Permission (LOPs) which are a type of individual permit issued through an abbreviated process that includes coordination with federal and state fish and wildlife agencies and a public interest evaluation, but without the 30-day permit notice period that is required for Individual Permits.

Wetlands and other waters that do not meet the current definition of waters of the U.S. are not covered by the CWA (see 88 FR 61964 [Revised Definition of "Waters of the United States"; Conforming]); however, wetlands and other waters not meeting the definition of waters of the U.S. are regulated by the State of California through the Porter-Cologne Water Quality Control Act (Porter-Cologne) and SWRCB Resolution No. 2019-0015 (SWRCB, 2019; see **Section 3.2.9** and **Section 3.2.10**).

The Los Angeles District of the USACE would provide review and permitting services for this project.

3.1.2 Endangered Species Act (ESA)

The federal Endangered Species Act of 1973 (Title 16, United States Code [U.S.C.] Sections (§§) 1531-1543) (ESA), as amended, designates and provides for protection of listed threatened and endangered plant and animal species, and their critical habitat. The United States Fish and Wildlife Service (USFWS), in the Department of the Interior, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), in the Department of Commerce, share responsibility for administration of the ESA. These responsibilities include listing and delisting species, designating critical habitat, and formulating recovery plans. The ESA is divided into 18 sections that work together to prevent species from going extinct by helping to stabilize populations, reduce the threats to their survival, and to help species recover to the point that they no longer require federal protection.

Section 4 (Determination of Endangered Species and Threatened Species)

Section 4 of the ESA addresses listing of species in need of the ESA's protection. Species are listed as either endangered or threatened under Section 4 of the ESA. A federally endangered species is one that is facing extinction throughout all or a significant portion of its range. A federally threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Under Section 4, actions needed to recover those species and conserve their habitats are also identified, along with a process for reaching recovery goals that allow for a species' removal from federal protection. The presence on a project site of any fish or wildlife species that is federally listed as endangered or threatened generally imposes constraints on development to the extent that development is likely to result in a prohibited "take" of the species or substantial adverse modification of its habitat as described in **Section 3.1.2**, *Section 9 (Prohibited Acts)*, below.

Section 7 (Interagency Cooperation)

Two sections of the ESA (§§ 7 and 10) authorize incidental take. Section 7 of the ESA regulates take associated with federal projects or projects that require a federal permit. It also requires federal agencies to use their authority to carry out conservation programs to benefit endangered and threatened species. Under § 7, federal agencies are required to consult with the USFWS or the NMFS to ensure that any action the agency carries out, including those they fund or authorize (such as through a permit) will not likely jeopardize the continued existence of listed species, or result in the destruction or adverse modification of proposed or designated critical habitat of such species. Under § 7, consultations can either be informal or formal.

Section 9 (Prohibited Acts)

Once a species is listed, § 9 of the ESA makes it unlawful for any person, including private and public entities, to take species listed as endangered or without a permit issued pursuant to Section 10 or an incidental take statement issued pursuant to § 7. Section 9 defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The term "harm" is defined as "an act which kills or injures wildlife. Such an act may include substantial habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

ESA § 9's take prohibitions apply to listed wildlife and fish species, but not to plants. Endangered plants are not protected from take, although it is unlawful to remove, possess, or maliciously damage or destroy them on federal lands. Removing or damaging listed plants on state and private lands in

knowing violation of state law, or in the course of violating a state criminal trespass law, also is illegal under the ESA.

Section 10 (Incidental Take Permits and Habitat Conservation Plans)

An incidental take permit pursuant to § 10(a)(1)(B) is required when non-Federal, otherwise lawful activities, including lawful project development, will result in take of threatened or endangered wildlife. Under this provision, the USFWS and/or NMFS may, where appropriate, authorize the taking of federally listed wildlife or fish if such taking occurs incidentally during otherwise legal activities. § 10(a)(2)(B) requires an application for an incidental take permit to include a habitat conservation plan (HCP). The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate avoidance, minimization and mitigation measures to address the effects of the authorized incidental take. Section 10 provides a clear regulatory mechanism to permit the incidental take of federally listed fish and wildlife species by private interests and non-Federal governmental agencies.

3.1.3 Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) of 1918 (Title 16, U.S.C. Sections 703 - 712), as amended, implements various treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory exceptions apply. Take is defined in regulations implementing the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to carry out these activities." The MBTA prohibits the collection and destruction of a migratory bird, its nest, and birds or eggs contained in the nest. Take under the MBTA does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The USFWS has statutory authority and responsibility for enforcing the MBTA (USFWS, 2024a).

3.1.4 National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §§ 4321) requires federal agencies carrying out, funding, or permitting projects, or implementing any other major federal action that significantly adversely affects the quality of the human environment to prepare a detailed environmental impact analysis for the major Federal action. The analysis, known as the Environmental Impact Statement or an Environmental Assessment, must address the adverse environmental impacts of the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. The Council on Environmental Quality (CEQ) has promulgated regulations for implementing NEPA's requirements. (40 Code of C.F.R. §§ 1502 et seq.) Pursuant to state and federal law, NEPA evaluations may be prepared in combination with, or may rely upon environmental analyses prepared under the California Environmental Quality Act 40 C.F.R. §§ 1506.2 and 1506.4.

3.1.5 Prevention and Control of Invasive Species – Executive Order 13112

Executive Order 13112 (February 3, 1999) directs all federal agencies to work cooperatively to prevent and control the introduction of invasive non-native species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The Invasive Species Council and Advisory Committee oversee and facilitate implementation of the Executive Order, including preparation of a National Invasive Species Management Plan.

3.2 State Statutes and Regulations

3.2.1 California Environmental Quality Act (CEQA)

The California Environmental Quality Act of 1970 (Title 14, California Code of Regulations, §§ 15002-15387) (CEQA) is California's broadest environmental law. CEQA applies to certain activities of state and local public agencies. It requires lead agencies - that is, those making land use decisions – as well as any other responsible state agencies issuing discretionary permits, to evaluate and disclose the significance of all potential environmental impacts of a project. The lead agency is also responsible for identifying, negotiating and implementing feasible impacts avoidance, minimization, or mitigation measures that reduce and compensate for significant environmental impacts with the goal of reducing those impacts to less than significant levels. Lead agencies determine significance on a project-by-project basis because they must consider all potential risk, including cumulative impacts, within a local and regional context, as well as evaluate unique factors particular to the project area when exercising their discretion to approve or disapprove a project.

The CEQA Guidelines specify that a project has a significant impact to the environment if, among other things, it has the potential to "substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or an animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species…." [CEQA Guidelines § 15065(a)(1)] (CDFW, 2025d).

3.2.2 California Endangered Species Act (CESA)

The CESA; California Fish and Game Code §§ 2050-2089) was enacted in 1984 to parallel the federal ESA and allows the Fish and Game Commission to designate species, including plants, as *threatened* or *endangered*. CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Unlike the ESA, the CESA does not include listing provisions for non-aquatic invertebrate species.

CESA makes it illegal to import, export, take, possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by the California Department of Fish and Wildlife (CDFW). Section 2080 of the California Fish and Game Code (FGC) prohibits take of any species that the commission determines to be an endangered species or a threatened species. "Take" is defined in § 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Under CESA, CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for incidental take are that the take is minimized and fully mitigated, adequate funding is ensured for this mitigation, and that the activity will not jeopardize the continued existence of the species. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species populations and their essential habitats (CDFW, 2025c).

3.2.3 Fully Protected Species - California Fish and Game Code § 3511, § 4700, § 5050 and § 5515

The classification of fully protected was the State of California's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for birds (§ 3511), mammals (§ 4700), amphibians and reptiles (§ 5050), and fish (§ 5515). Fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except for collecting these species for scientific research and relocation of the species for certain purposes. "Take" is defined in § 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Under § 2835 of the Fish and Game Code, CDFW may only issue permits allowing incidental take of fully protected species if a National Community Conservation Plan (NCCP) is prepared that provides for the protection of that species in accordance with the requirements and standards applicable to NCCPs (Fish and Game Code §§ 2800-2835). Alternatively, avoidance measures sufficient to prevent incidental take of fully protected species must be incorporated into project design, and construction plans and operations.

3.2.4 Bird Nests and Eggs - California Fish and Game Code § 3503

California Fish and Game Code § 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take. Avoidance measures sufficient to prevent incidental take of bird nests and eggs protected by this statute must be incorporated into project design, and construction plans and operations.

3.2.5 Birds of Prey and their Eggs – California Fish and Game Code § 3503.5

The word "raptor" is the term used for a group of birds consisting of hawks, falcons, kites, eagles, vultures and owls. Raptors, also referred to as "birds of prey," are a valuable resource to the State of California. More than 30 species of raptors inhabit California at some point in their life cycle. California Fish and Game Code § 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (raptors) or to take, posses, or destroy the nest or eggs of any such birds except as otherwise provided by this code or any regulation adopted pursuant thereto. The order Falconiformes is comprised of four families with around 311 species. These are the birds of prey (falcons, hawks, eagles, vultures, and ospreys). The order Strigiformes, comprised solely of owls, contains two families and over 130 species. All raptors and their nests are protected under § 3503.5. Avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into project design, and construction plans and operations.

3.2.6 Migratory Birds – California Fish and Game Code § 3513

California Fish and Game Code § 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated by the MBTA, except as authorized in regulations adopted by the federal government under provisions of the MBTA. Avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into project design, and construction plans and operations.

3.2.7 Native Plant Protection Act – California Fish and Game Code §§ 1900-1913

The Native Plant Protection Act (NPPA), enacted in 1977, allows the Fish and Game Commission to designate native plants as state endangered or rare, mirroring the designations created for animal species by the CESA of 1970. The NPPA, administered by CDFW, requires all state agencies to utilize their authority to preserve, protect and enhance endangered or rare native plants of California. Section 1908 of the NPPA prohibits the take, possession, propagation, import, export, or sale of any native plant that the Fish and Game Commission determines to be an endangered or rare native plant, except when the take is incidental to agricultural and nursery operations, emergencies, or the possession or sale of real property on which the plant is growing.

CDFW may authorize the take, possession, import, or export of some plants that are protected by the NPPA. It may also authorize take and possession for scientific, educational or management purposes, or authorize take that is incidental to otherwise lawful activities if certain conditions are met. CDFW issues most of these permits to individuals to identify, document and voucher listed plant species, typically during botanical surveys, and may also issue permits to individuals or organizations for other scientific, educational or management purposes, most typically research or recovery actions for state-listed plant species.

3.2.8 Natural Community Conservation Planning Act of 2003 (NCCP Act)

The California Natural Community Conservation Planning Act (NCCP Act) was enacted to encourage broad-based planning to provide for effective protection and conservation of the State's wildlife resources while continuing to allow appropriate development and growth (California Fish and Game Code §§ 2800 to 2835). NCCPs may be implemented, which identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses. An approved NCCP enables the California Department of Fish and Wildlife to authorize take of species consistent with the NCCP Act and California Fish and Game Code § 2835.

3.2.9 Porter-Cologne Water Quality Control Act

The Porter-Cologne defines water quality objectives as the allowable "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisances within a specific area." Thus, water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives apply to both waters of the U.S. and waters of the State. In the State of California, Porter-Cologne is administered jointly with the § 401 CWA WQC for waters of the U.S. For waters of the State, Porter-Cologne is administered as part of SWRCB Resolution No. 2019-0015 (SWRCB, 2019; Procedures; see **Section 3.2.9**).

As with § 401 CWA, the Los Angeles RWQCB (Region 4) would provide review and permitting services for Porter-Cologne.

3.2.10 State Water Resources Control Board Resolution No. 2019-0015

The California Code of Regulations, Title 23, § 3831(w) states that "[a]ll waters of the United States are also 'waters of the state.'" This regulation has remained in effect to protect waters that are outside the scope of federal jurisdiction; it is consistent with the SWRCBs intent to include both historic and current definitions of waters of the U.S. into the SWRCBs wetland jurisdictional framework.

On April 2, 2019, the SWRCB adopted **Resolution No. 2019-0015**, *Amendment to the Water Quality Control Plan for Ocean Waters of California and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California to Establish a State Wetland Definition and Procedures for Discharges of Discharges of Dredged or Fill Material to Waters of the State* (Procedures). for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. As they apply to this project, the Procedures provide the SWRCB and its nine RWQCBs to approve a project only if the applicant has demonstrated compliance with certain requirements. (SWRCB, 2019).

On April 6, 2021, the SWRCB issued **Resolution No. 2021-0012** confirming that the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" (1) are in effect as state policy for water quality control for all waters of the State and (2) shall be applied via the inland surface waters and enclosed bays and estuaries plan to only waters of the United States. Examples of waters of the State include (but are not limited to) ephemeral streams and isolated wetlands.

When a discharge is proposed to waters outside of federal jurisdiction, the SWRCB and the RWQCBs regulate the discharge under Porter-Cologne through the issuance of Water Discharge Requirements (WDRs). WDRs and waivers of WDRs are referred to as orders or permits. The SWRCB and its nine RWQCBs have the authority to regulate the discharge of dredged or fill material under Resolution Nos. 2019-0015 and 2021-0012. Dischargers that do not require a federal permit or license that authorizes impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as § 404 CWA and § 10 of the Safe Rivers and Harbors Act, must obtain a WDR or a waiver of a WDR from the SWRCB or RWQCB to ensure that the discharge does not violate state water quality standards or any other appropriate requirement of State law.

The Los Angeles RWQCB (Region 4) would provide review and certification/permitting for this project.

3.2.11 Basin Plans.

The SWRCB requires its nine RWQCBs to develop water quality control plans (Basin Plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Basin Plans designate beneficial uses for surface waters and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Basin Plans incorporate by reference all applicable State and Regional Board plans and policies, and other pertinent water quality policies and regulations. This project is under the jurisdiction of the Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (RWQCB, 2025).

3.2.12 Lake or Streambed Alteration Agreement.

Sections 1600-1617 of the FGC protect the natural flow and the bed, channel, and bank of any river, stream, or lake designated by the CDFW which is at any time an existing fish or wildlife resource, or a waterbody from which these resources derive benefit. General project plans must be submitted to CDFW in sufficient detail to indicate the nature of the project proposed for construction, if the project would:

- Divert, obstruct, or change a streambed;
- Use material from the streambeds;
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

The South Coast Region (Region 5) of the CDFW would provide the Lake or Streambed Alteration Agreement (LSAA) and Notification Review for this project.

3.3 Local Management Plans

3.3.1 South Pasadena General Plan

Several policies within the South Pasadena General Plan may pertain to this project, including but not limited to:

- A3.3c: Promote retaining natural open space as much as feasible with both existing and proposed development.
- A3.3d: Work with necessary agencies to mitigate potential fire hazards in the "High Fire" designated Hillside Area, including responsible utility companies (i.e. Edison on above ground power line maintenance or future under grounding options).
- A3.3e: Reduce new construction impacts in sensitive hillside areas including reducing extreme excavation or construction methods.
- P5.2: Plant, protect, and maintain trees in South Pasadena.
- A5.2: Adopt an Urban Forest Management Plan that prescribes resilient and drought tolerant trees to plant on public and private property.
- A9.15c: Encourage incorporation of natural features, existing trees, and archaeological sites into new development projects with sensitivity to ensure their protection and public enjoyment.

3.3.2 City of South Pasadena Chapter 34 Trees and Shrubs

Protected Trees. The City protects heritage trees, mature oak trees, mature native species trees, significant trees, and shrubs. Heritage trees are those which have historical value as a South Pasadena landmark, whether on private or public property. Mature trees are those which have a caliper (diameter at four feet above the natural grade) of four inches or more. In the case of trees with multiple trunks, the sum of all trunks must be equal to or surpass four inches at four feet above the

natural grade to be considered mature. The City defines oak trees as any species within the genus Quercus, and native species trees as "any species of tree native to Southern California as defined by ordinance or resolution adopted by the city council" (City of South Pasadena, 2025). Significant trees include "any variety of tree that has a caliper of one foot or more," and protected shrubs are woody plants greater than 16 feet in height whose trunk(s) are at least four inches in diameter (City of South Pasadena, 2025). The dripline is defined as "a series of points formed by the vertical dripping of water from the outermost branches and leaves of a tree" (City of South Pasadena, 2025).

The City requires the following protections in relation to development activity:

> (a) Development must not interfere with tree standards of care. Irrigation should be administered to replace any soil moisture lost due to site excavation and a tree should continue to receive the amount of irrigation needed to thrive.
>
> (b) Development shall not cause any physical damage to the limbs, bark, crown, or where the roots join the stem.
>
> (c) No grading shall occur within the drip line of a protected tree. All work conducted within the protected drip line area should be accomplished only with hand tools and all activity within this area should be kept to a minimum to minimize soil compaction. This area should not be subjected to incidental construction work or to disposal of construction debris, including but not limited to paint, plaster or chemical solutions.
>
> (d) Natural or preconstruction grade should be maintained per the recommendations of the city arborist in accordance with ANSI standards. At no time during or after construction should soil be in contact with the trunk of any tree above natural grade.
>
> (e) No structure shall be located nor shall any construction requiring a permit occur within six feet of the trunk of a protected tree. No building, structure, wall or impervious paving shall be constructed within the drip line of any mature oak tree. Limited exceptions may be allowed by the director and documented on the permit.
>
> (f) Any required trenching should be routed to minimize root damage and cutting of roots should be avoided by placing pipes and cables above or below uncut roots. (Ord. No. 2328, § 1 (part), 2019.)

It is unlawful for any person to harm by any means, damage or cause to be damaged any tree located within the city, or fail to comply with the standards of care described in SPMC 34.1(y) for any tree located on their property or in an adjacent parkway (34.16.a).

3.3.3 Los Angeles County Significant Ecological Areas (SEAs)

Significant Ecological Areas (SEAs) are officially designated areas within Los Angeles County with irreplaceable biological resources. The SEA Program objective is to conserve genetic and physical diversity within Los Angeles County by designating biological resource areas that are capable of sustaining themselves into the future (LACDRP, 2025). Title 22 of the Los Angeles County Code of Ordinances ("Zoning Ordinance") establishes the permitting, design standards, and review process for development within SEAs (County of Los Angeles, 1982).

4.0 STUDY METHODS

This section describes the study methods used by biologists for evaluating the biological resources associated with the BSA and project vicinity.

4.1 Literature Review

Prior to the field survey, UltraSystems biologists conducted a literature review to identify habitats, special-status plant and wildlife species, critical habitats, and wildlife movement corridors potentially associated with the project site. Biologists reviewed relevant literature, databases, agency web sites, reports and management plans, Geographic Information System (GIS) data, maps, and aerial imagery obtained from public domain sources. The review also helped to determine which biological field surveys may be required prior to site construction and development.

4.1.1 Topography and Physical Features

To gain a perspective of the topographic and physical features associated with the BSA and project vicinity, biologists reviewed maps such as the USGS 7.5-Minute Topographic Map *Los Angeles* Quadrangle and current aerial imagery (Google Earth Pro, 2025). Information obtained from this review included onsite and offsite locations of city and county boundaries and jurisdictions; valleys, hills, and mountain ranges; park boundaries; natural and man-made drainages, and open waters (lakes, ponds, etc.); plant community boundaries; land use such as developed land, agriculture, and natural open space; important landmarks; roads, highways, paths, and trails; and potential wildlife movement corridors.

4.1.2 Soils

The Web Soil Survey, operated by the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS), was used to create a custom soils resource report for a description of the soils associated with the BSA. The Web Soil Survey provides soil data and information produced by the National Cooperative Soil Survey.

4.1.3 Sensitive Plant Communities and Special-Status Species

The methods described below were used to research and derive a comprehensive project-specific list of sensitive habitats, and special-status plants and wildlife to target during the field surveys. The literature review and query of the databases for reported locations of special-status species and habitats helped to identify the known locations of these resources in the project region and assisted in identifying the potential for onsite occurrence of such species.

- CDFW's California Natural Diversity Database (CNDDB) was used to identify sensitive vegetation communities and special-status species that may be observed within the project site and within a two-mile radius of the site (CNDDB, 2025a).

- The USFWS' Information, Planning, and Conservation (IPaC) system was used to identify federal threatened and endangered plant and wildlife species and other natural resources of concern that may be observed within the BSA (USFWS, 2025a).

- The online editions of the CNPS *Inventory of Rare and Endangered Plants of California* and *A Manual of California Vegetation* were used to identify the distribution and habitats of special-

status vascular plants that may have a potential to occur within the vicinity of the BSA (CNPS, 2025a, b).

Although the inventory list of special-status plant and wildlife species was not exhaustive of all species that might be of concern for the BSA, it provides a wide range of species that are representative of the habitats in the area.

4.1.3.1 Sensitive Plant Communities

Sensitive vegetation communities (sensitive habitats) are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental impacts of projects. Sensitive habitats are often threatened with local extirpation and are therefore considered as valuable biological resources. The most current version of CDFW's *California Natural Community List* indicates which natural communities are sensitive given the current state of the California classification. The *California Natural Community List* and *A Manual of California Vegetation* were all referenced for ranking the conservation status of vegetation communities within the BSA (CDFW, 2025b; CNPS, 2025b). The *California Natural Community List* includes alliance rankings according to their degree of imperilment. For this BRE, vegetation communities are considered sensitive if they meet any of the following criteria:

- Recognized and considered sensitive by CDFW, USFWS, and/or special interest groups such as the CNPS.
- Habitat is under the jurisdiction of CDFW pursuant to §§ 1600-1612 of the California Fish and Game Code.
- Known or believed to be of high priority for inventory in the CNDDB.
- Considered regionally rare.
- Has undergone a large-scale reduction due to increased encroachment and development.
- Supports special-status plant and/or wildlife species.
- Functions as an important corridor for wildlife movement.

Except for waters and wetland habitats, which cannot be filled without authorization from the USACE and/or RWQCBs, sensitive habitats are not afforded legal protection unless they support protected special-status plant or wildlife species.

No sensitive vegetation communities were determined through literature review or observed onsite, however, the vegetation communities observed may provide resources to special-status species.

4.1.3.2 Special-Status Plants

Queries of IPaC, CNPS, CNDDB, and local management plans resulted in a list of special-status plant species known to occur in the region. Special-status plant/wildlife species are those designated as listed or sensitive. Listed species are those determined to be endangered, threatened, rare, or under candidacy for listing by the federal and California Endangered Species Acts (ESA and CESA, respectively). Sensitive species are those determined to be sensitive, rare, or locally important by

federal, state, or local agencies, as well as nonprofit organizations such as CNPS or the International Union for Conservation of Nature (IUCN). Collectively, listed and sensitive plant/wildlife species are referred to as special-status plant species or special-status wildlife species in this BRE. Some of these plant and wildlife species are afforded special legal or management protection because they are limited in population size and typically have a limited geographic range and/or habitat.

Each special-status plant species was assessed for its potential to occur within the BSA by comparing its habitat, and elevation range with the habitat and location of the BSA. A species was determined as not expected to occur within the BSA if the BSA is outside the species' known distribution and/or the species' known elevation range and/or habitat type. It is anticipated that the project would have no impacts on species that are not expected to occur or have low potential to occur; therefore species with low or no expectation to occur are not discussed further in this BRE. Of the 67 special-status plant species identified in the literature search as having been recorded in the region, ten are listed and 57 are sensitive.

More information can be found in **Appendix A,** Figure 6, *CNDDB Known Occurrences - Plant Species and Habitats*, **Appendix B** *Species Occurrence Potential Determination,* and **Section 5.5** *Plants.*

4.1.3.3 Special-Status Wildlife

The literature review found 67 wildlife species recorded within ten miles of the project site. Ten of these wildlife species are federal or state listed endangered, threatened, or candidate species under the ESA and/or the CESA, and are referred to as listed species. Fifty-seven of the special-status wildlife species are considered sensitive and have no designated status under the ESA and/or the CESA but are designated as sensitive or locally important by federal agencies, state agencies, local agencies, and nonprofit resource organizations.

Each special-status wildlife species was assessed for its potential to occur within the BSA by comparing its habitat range and distribution (if known) with the location of the BSA. A species was determined as not expected to occur within the BSA if the BSA is outside the species' known distribution and/or the species' known range. Through this analysis, 43 special-status wildlife species are not expected to occur within the BSA and were eliminated from further evaluation; it is anticipated that the project would have no impact to these species, and they are not further discussed in this BRE.

Special-status wildlife species recorded within two miles of the BSA are shown in **Appendix A,** Figure 7, *CNDDB Known Occurrences - Wildlife Species*. More information about species in the inventory can be found in **Appendix B** *Species Occurrence Potential.*

4.1.4 Waters of the U.S. and State, Including Wetlands

Prior to conducting the onsite field investigation, a review of readily available data relevant to the project was performed and the results were compiled from federal, state, and regional agency websites, databases, and management plans; aerial imagery, USGS topographic maps, National Wetland Inventory (NWI) maps, data from the U.S. Environmental Protection Agency's Watershed Assessment, Tracking, & Environmental Results System (WATERS), and NRCS soil surveys to determine areas of potential USACE, RWQCB, and CDFW jurisdiction (i.e., waters of the U.S. and State, including wetlands).

Aerial imagery was reviewed to identify natural and man-made drainages, open water (lakes, ponds, etc.), and other features that may be subject to federal or state jurisdictional authority within watersheds within the BSA. The USGS 7.5-Minute Topographic Map *Los Angeles* Quadrangle was reviewed to identify potential presence or absence of onsite and offsite watercourses. and other mapped water features. Topographic maps do not show all drainages or streams that may exist.

The NWI database and maps developed by the USFWS were used as preliminary indicators of potential wetland areas based on changes in vegetation patterns as observed from satellite imagery. The NWI data were viewed in GIS platforms (Google Earth Pro, 2025) to identify potential waters and wetland features within the project area as indicated from topographic changes or visible ephemeral stream patterns. The NWI Wetlands Mapper was used to review and download the digital wetland data for the project vicinity (USFWS, 2025d).

Additionally, the watershed boundary data set containing the most current 10-digit and 12-digit hydrologic unit codes (HUCs) was obtained in geodatabase form from the USGS to aid with assessing USACE jurisdiction of waters draining the project site (USGS, 2025a). The following were also reviewed and consulted:

- United States Department of Agriculture National Resources Conservation Service State Hydric Soils List (USDA-NRCS, 2025).

The project site was assessed for the presence of waters of the U.S. and State according to the methodology set forth in:

- *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987).
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Arid West Supplement; USACE, 2008).
- *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar, 2010).

4.1.5 Critical Habitat

When a species is listed as federal endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. Under the ESA, the federal government is required to designate critical habitat for each species it lists under the ESA. Federal agencies are prohibited from authorizing, funding or carrying out actions that destroy or adversely modify critical habitat. Section 3 of the ESA defines critical habitat for a threatened or endangered species as [ESA § 3(5)(A)]:

- The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of § 4 of the ESA, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and

- Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of § 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Designated critical habitat is described in Title 50 of the Code of Federal Regulations (CFR), Parts 17 and 226. Critical habitat may include areas that are not currently occupied by the species, but that will be needed for its recovery. In addition, the USFWS normally excludes developed areas within mapped critical habitat boundaries as critical habitat. The USFWS' Critical Habitat Portal was reviewed to identify federal threatened and endangered species designated final and proposed critical habitat designations within two miles of the project site (USFWS, 2025e).

4.1.6 Wildlife Corridors

A wildlife corridor is a connection of habitat, generally native vegetation, which joins two or more larger areas of similar habitat that are otherwise separated by natural barriers, changes in vegetation composition, or land permanently altered for human activities, such as farms, and some infrastructure. When native vegetation is cleared, fragmented patches of open space or isolated "islands" of wildlife habitat are created. Fragmentation and habitat loss are the two main contributors to the continuing biodiversity decline. The main goal of corridors is to facilitate movement of individuals, through dispersal, seasonal migration, and movement for foraging, breeding, cover, etc. Corridors allow for physical and genetic exchange between isolated wildlife populations and are critical for the maintenance of ecological processes, including allowing for the movement of animals and the continuation of viable populations and higher species diversity.

Habitat within the corridor generally contains biological and physical features that are needed to temporarily support wildlife and allow avian and ground-dwelling wildlife to safely move through it. Wildlife corridors may either be contiguous strips of vegetation and habitat, such as ridgelines or riverbeds, or intermittent patches of habitat or physical features spaced closely enough to allow safe travel. Corridors can be natural, such as a riparian corridor, or man-made, such as culverts, tunnels, drainage pipes, underpasses, or overpasses. Man-made corridors are often referred to as "wildlife crossings" and they allow wildlife to pass over, under, or through physical barriers that otherwise hinder movement, such as roads or highways. Wildlife corridors also vary greatly in size, shape, and composition. Generally, there are three types of wildlife corridors:

- **Regional corridor:** a primary landscape connection between larger important areas of habitat. They are generally substantial in width (more than 2,000 feet) and not only provide for dispersal of individual species but also act as habitat in their own right for a range of species. These areas provide adequate food, water, cover, and shelter to support wildlife within the corridor.

- **Sub-regional corridor:** a landscape connection not as wide as a regional corridor, but wide enough (generally more than 1,000 feet) to provide species movement and dispersal. Sub-regional corridors typically connect larger vegetated landscape features such as ridgelines and valley floors.

- **Local corridor:** smaller, shorter, less defined linkages that provide local connection of remnant patches of vegetation and landscape features such as creek lines, gullies, and wetlands. They may in some cases be less than 160 feet wide and thus may be influenced by edge effects. Many of wildlife crossings are considered local corridors.

In general, the wider and more safeguarded a wildlife corridor is from adjacent human activities, noise, traffic, and light, the better it functions for the movement of wildlife. To determine the potential for the BSA to contain wildlife corridors, biologists reviewed the USGS 7.5-Minute Topographic Map *Los Angeles* Quadrangle and viewed aerial images to search for physical features that might serve as

wildlife corridors. Biologists also used the Biogeographic and Information Observation System (BIOS) Habitat Connectivity Viewer to search for CDFW Essential Connectivity Areas, Natural Landscape Blocks, and Interstate Connections within the BSA and vicinity (CDFW, 2025a).

4.2 Field Survey Methods

This section describes the field survey methods used by UltraSystems within the BSA. An UltraSystems biologist visited the BSA to conduct the following biological surveys and jurisdictional delineation field surveys:

- Habitat and Land Cover Type Assessment
- General Plant Survey
- General Wildlife Survey
- Jurisdictional Assessment
- Wildlife Movement Evaluation

The purpose of the biological field surveys was to evaluate the initial results of the literature review and to collect additional data on existing site conditions; those surveys were performed by UltraSystems biologist Mr. Hugo Flores on August 21 and August 25 of 2025.

The general biological field surveys covered all accessible areas of the BSA, including all areas that would be impacted by the project. The surveys were conducted during the daytime on foot by walking slowly and methodically across each area. The biologist used binoculars from strategic vantage points to survey areas of private property with no access rights.

Mr. Flores used topographic and aerial maps to help them navigate in the field and used pertinent regional flora and fauna field guides during the field surveys to identify and record special-status species and to assist identifying habitats and physical features. The biologist also used Global Positioning System (GPS) units, GIS, and other survey-related techniques, hardware and software to collect data and to populate any attributes required by the relevant agencies. Digital color photographs were taken during the field surveys to record site conditions at the time of the surveys. The methods for each type of biological survey are described in the following sections.

Field surveys were conducted as described in **Table 5.0-1**.

4.2.1 Habitat Assessment and Land Cover Type Mapping

UltraSystems biologist Mr. Flores characterized existing habitat and searched for the presence of sensitive vegetation communities during both surveys. The purpose of this habitat assessment was to identify and map habitat areas and land cover types, and to ascertain if the existing site conditions could be suitable for special-status plant and wildlife species.

The vegetation communities observed by the biologist were mapped in the field with the use of a GPS unit. Descriptions of vegetation types and habitats within the biological survey areas were based on the dominant perennial species. Generally, classifications of habitat types or vegetation communities were based on *A Manual of California Vegetation Online Edition* with modifications to better represent

existing site conditions (CNPS, 2025a). The classifications were then checked against CDFW's *California Natural Community List* (CDFW, 2025b).

Topography, soil characteristics, substrates, disturbed, and developed areas were also components of the habitat assessment to help search for special-status plants and wildlife species. Following the field mapping, UltraSystems GIS staff digitized the habitat boundaries from the aerial map and/or downloaded the data from the GPS unit and incorporated the boundaries into an ArcGIS file. Once the boundaries were in ArcGIS, the acreage of each land cover present within the BSA was then calculated.

4.2.2 General Plant Survey

Prior to the field surveys, biologists researched information on the blooming periods and habitat preferences for the special-status plants determined to have potential to occur within the BSA based on the distribution and elevation range. Biologists then surveyed the BSA for existing habitat, vegetation, and the presence of special-status plant species which was conducted concurrently with other field surveys. Special attention was noted to habitat areas that appeared to provide suitable habitat for special-status plant species. Plant species were identified using plant field guides and taxonomical guides, such as *A Manual of California Vegetation* (CNPS, 2025). All identifiable plant species encountered during the field surveys were recorded in field notes. Refer to **Table 5.0-1** for information regarding the dates and conditions of the general plant surveys.

After the field surveys and mapping of the vegetation communities within the BSA were complete, an additional evaluation was conducted in the office for each special-status plant species in the plant inventory. The evaluation considered whether the BSA contained suitable habitats and soils to support those special-status plant species. A species was determined to be not expected to occur within the BSA if the existing habitats and/or soils on the BSA were clearly absent or clearly unsuitable to support the species. For example, plant species that are only found within sand dunes, desert scrub, and conifer forests, would be determined to not be expected to occur in the BSA because those habitats are clearly absent from the BSA. In addition, plant species that are only known to grow within highly alkaline or highly acidic soils would be determined to not be expected to occur because those soils are absent from the BSA. Those special-status plant species determined to not be expected to occur within the BSA were eliminated from further evaluation and are not discussed further in this report. The occurrence potential analysis can be found in **Appendix B**, *Species Occurrence Potential Determination***.**

4.2.3 General Wildlife Survey

Prior to the start of field surveys, biologists researched information on the natural history and habitat preferences for the special-status wildlife determined to have some potential to occur within the BSA based on distribution and range. The location of the BSA is within the general distributional range of several special-status vertebrate species; however, most of the special-status terrestrial wildlife species that could occur within the BSA are not subject to specific published survey protocols.

Biologists surveyed the BSA for common wildlife and the presence of special-status wildlife species concurrently with the other field surveys. The purpose of the wildlife surveys was to record those species observed, ascertain general site conditions, and identify habitat areas that could be suitable for special-status wildlife species.

All wildlife species encountered visually or audibly during the field surveys were identified and recorded in field notes. Refer to **Table 5.0-1** for information regarding the dates and conditions of the various general wildlife surveys. Biologists recorded signs of wildlife including animal tracks, burrows, dens, nests, nest sites, scat, and remains. The biologist also surveyed areas that could potentially serve as roosting habitat and/or hibernacula for bat species. Binoculars and wildlife field guides were used to aid in identifying observed wildlife. The general wildlife survey also searched for burrows of fossorial mammals such as California ground squirrels, because such burrows also provide habitat to the avian species burrowing owl.

After the field surveys and vegetation community mapping within the BSA were complete, an additional evaluation was conducted in the office for each special-status wildlife species in the wildlife inventory. The evaluation considered whether the BSA contained suitable habitat to support those special-status wildlife species. A species was determined to not be expected to occur within the BSA if suitable and adequate biological and physical features that are needed to support the wildlife species are clearly absent from the BSA. Those special-status wildlife species determined to not be expected to occur within the BSA, and therefore would not be impacted, were eliminated from further evaluation and are not discussed further in this report. The occurrence potential analysis can be found in **Appendix B**, *Species Occurrence Potential Determination*.

4.2.4 Burrowing Owl Habitat Assessment

Prior to conducting the BUOW habitat assessment, biologists conducted a literature search and reviewed the results of a search of the CNDDB (CNDDB, 2025a) within a 10-mile radius of the project site to determine recorded observations of BUOW on and adjacent to the BSA. The habitat assessment is to address, at a minimum, the potential of the BSA to support suitable habitat for BUOW.

The burrowing owl habitat assessment was conducted on August 21 and 25, 2025 by UltraSystems biologist, Hugo Flores. Burrowing owl natural history, ecology, behavior, and field identification, and its sign were reviewed prior to conducting the survey. The survey was conducted during breeding season (BUOW breeding season occurs between February 1 and August 31; CDFW, 2012).

4.2.5 Waters of the U.S. and State

On August 25 and 31 2025, UltraSystems biologist Hugo Flores conducted a survey for potential waters and wetland features within the project site. The biologist searched for the location and extent of waters and wetlands subject to jurisdiction of the USACE, RWQCB, and CDFW. Biologists also noted the surrounding environment, topography, land uses, substrates, and vegetation within and adjacent to potential drainages. At each potential waters and wetland site, biologists searched for the presence of wetland hydrology, hydric soils, hydrophytic vegetation, signs of an ordinary high-water mark (OHWM), the presence of a well-defined bed and bank, evidence of recent water flow, and/or areas of scour. Mr. Flores observed no waters of the U.S. or State, including wetlands, within the project site. Wetlands that may be located outside of the BSA and not within known or anticipated areas of project-related ground disturbance would not be affected by the project and therefore were not delineated.

4.2.6 Wildlife Movement Evaluation

Potential wildlife movement corridors within the BSA and immediate vicinity were evaluated through the literature review, field surveys, and by examining aerial imagery and maps. While in the field, the biologist searched for potential natural and man-made travel routes that wildlife would use

to traverse the site, such as drainages, canyons, riparian courses, ridgelines, trails, and other linear features. Biologists assumed that wildlife species would use these linear features for travel if they occurred within the site. Biologists also searched for natural and man-made barriers to wildlife movement that may interfere with the movement of some wildlife species.

5.0 RESULTS

This section describes the results of the literature review and the existing conditions within the BSA at the time the biological field survey was conducted (environmental baseline). Photographs of the BSA that were taken during the field survey can be found in **Appendix D**, *Site Photographs*. Refer to **Table 5.0-1** for the field survey information of the three survey visits.

Table 5.0-1
FIELD SURVEY INFORMATION

Survey Date	Survey Time	Temperature	Weather (cloud cover)	Surveyors	Survey Conducted
August 21, 2025	8:15 a.m. – 4:05 p.m.	73-97°F	0%	HF	Habitat Assessment
August 25, 2025	8:00 p.m. – 4:00 p.m..	70-91°F	0%	HF	Habitat Assessment

HF = Hugo Flores

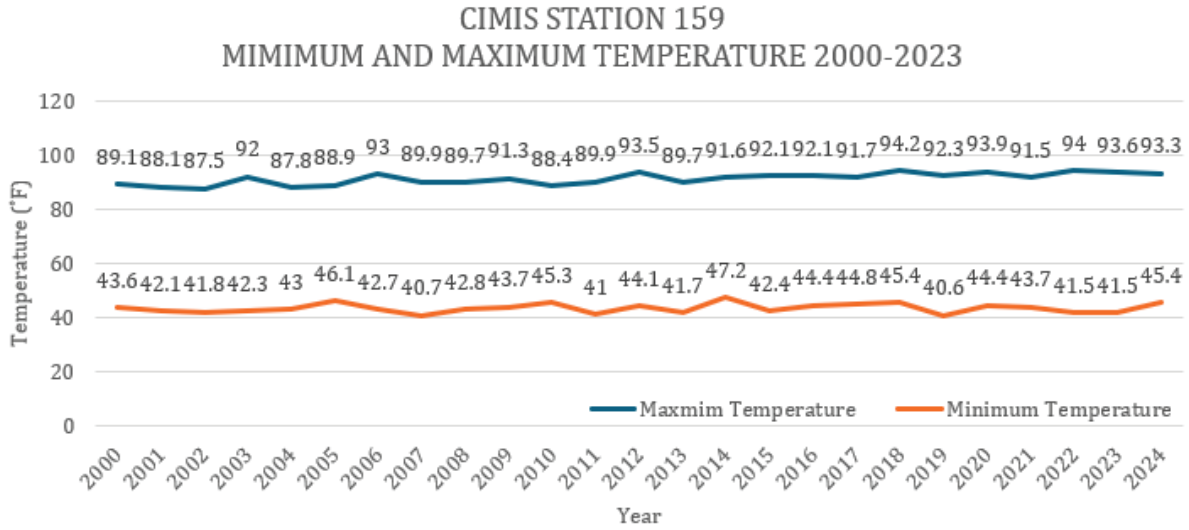
5.1 Environmental Setting

The BSA is hilly with elevations ranging approximately 590 to 800 feet above mean sea level. The project site is primarily encompassed by residential homes, though a mix of native and non-native land cover types occupy BSA as well (**Section 5.4** *Land Cover Types*).

5.2 Local Climate

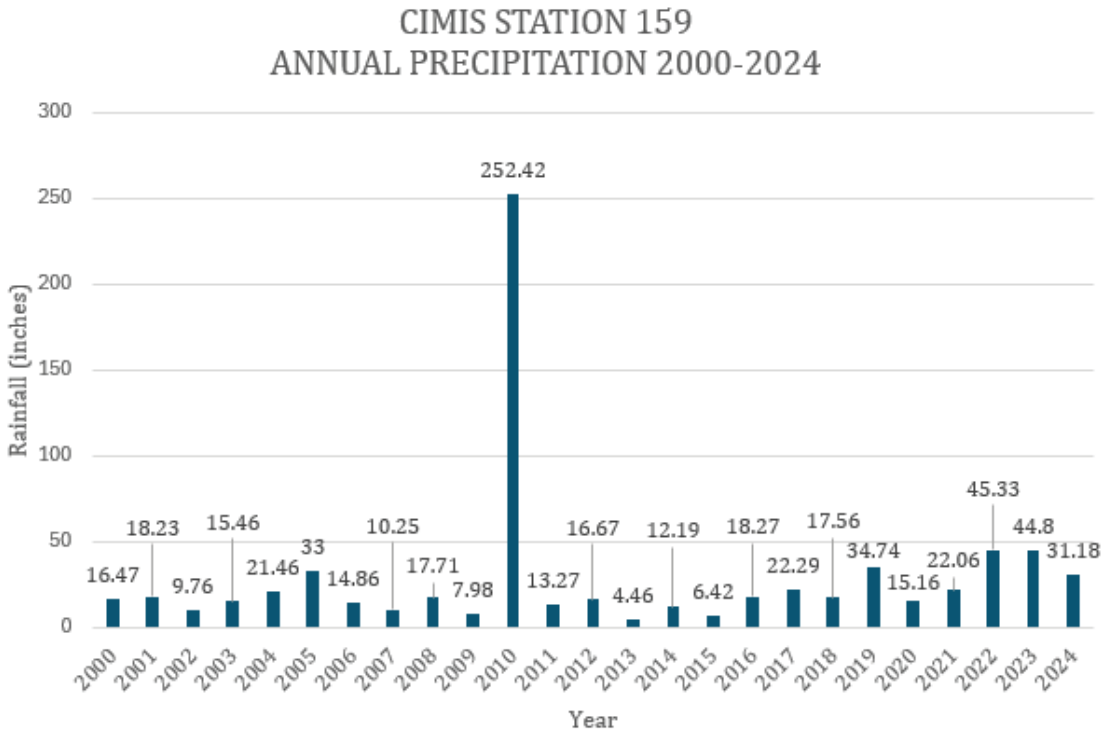
The City of South Pasadena has a mild semi-arid climate with Mediterranean characteristics. Semi-arid climates tend to support short or scrubby vegetation and are usually dominated by either grass or shrubs. California Irrigation Management System (CIMIS) Station 159, located in Monrovia (approximately 11 miles northeast of the project site), has been in operation since October 1999. Between January 1, 2000, and December 31, 2024 (period of record), this station recorded a mean maximum temperature of 91.2 degrees Fahrenheit (°F) and mean minimum temperature of 43.3 °F (CIMIS, 2025). Ranges in the maximum and minimum temperatures recorded each year are available in **Table 5.2-1.** Annual precipitation ranges from 4.46 inches to 252.42 inches, as seen in **Table 5.2-2**.

TABLE 5.2-1
CIMIS STATION 159: TEMPERATURES FOR THE PERIOD OF RECORD



Source: CIMIS 2025.

TABLE 5.2-2
CIMIS STATION 159: PRECIPITATION FOR THE PERIOD OF RECORD



Source: CIMIS 2025.

5.3 Soils

Based on the United States Department of Agriculture (USDA) NRCS Web Soil Survey for the Western Riverside Area, California, the BSA contains two mapped soil units (**Appendix A**, Figure 8, *USDA Soils* and **Appendix C**, *Soils Report.* Soil Survey Staff, 2025*).* As seen in **Table 5.3-1**, neither of the soil map units are listed on the National Hydric Soils List as hydric (USDA-NRCS, 2025).

Table 5.3-1
SOILS MAPPED WITHIN THE BSA

Name	Symbol	Land Form	Drainage Class	Hydric Status
Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes	1136	Fan Aprons, fan remnants	Urban (N/A) Sorrento (Well-drained) Arbolado (Well-drained)	Not hydric
Counterfeit-Nacimiento, warm-Urban land association, 20 to 55 percent slopes	1241	Hillslopes	Counterfeit (Somewhat poorly drained) Nacimiento, warm (well-drained)	Not hydric

Source: Soil Survey Staff 2025, USDA-NRCS, 2025.

Natural drainage class refers to the frequency and duration of wet periods under conditions similar to those under which the soil developed. Alteration of the water regime by humans, either through drainage or irrigation, is not a consideration unless the alterations have significantly changed the morphology of the soil.

Well drained soils are soils in which water is removed from the soil readily but not rapidly. Internal free water occurrence is typically deep or very deep; annual duration is not specified. Water is available to plants throughout most of the growing season in humid regions. Wetness does not inhibit root growth for significant periods during most growing seasons. Well drained soils are mainly free of, or are deep or very deep to, redoximorphic features related to wetness (Soil Survey Staff, 2025).

Soils may still be considered hydric without a positive hydric soils rating if they a) based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or b) show evidence that the soils meet the definition of a hydric soil.

5.4 Land Cover Types

This section describes the land cover types (vegetation communities and non-vegetated features) determined to be present within the BSA by the literature review and field surveys as augmented by examining aerial imagery. Seven land cover types were observed and mapped within the BSA (**Table 5.4-1**; and, **Appendix A**, Figure 9, *Land Cover Types.* Photographs of different land cover types are located in **Appendix D**, *Site Photographs*. Classifications of the vegetation communities are based on *A Manual of California Vegetation* online edition with modifications to better represent existing site conditions (CNPS, 2025a).

Table 5.4-1
AREA OF MAPPED LAND COVER TYPES

Mapped Land Cover	MCV Alliance Name[1]	Acreage Mapped within the Project Site	Acreage Mapped within the BSA
California Buckwheat Scrub	*Eriogonum fasciculatum* shrubland alliance	0.12	0.21
Developed/Ornamental	N/A	1.51	35.03
Disturbed Coast Live Oak Woodland and Forest	*Quercus agrifolia* Woodland alliance	0.47	2.33
Disturbed Toyon Chaparral	N/A	0.90	1.78
Eucalyptus Groves	Eucalyptus spp. - *Ailanthus altissima - Robinia pseudoacacia)* Woodland semi-natural alliance	0.16	0.23
Upland Mustards	*Brassica nigra - Centaurea* (*solstitialis*, *melitensis*) herbaceous semi-natural alliance	0	0.18
Wild Oat Grassland	*Avena* spp. - *Bromus* spp. alliance	0.82	1.20
	Total	**3.97**	**40.97**

5.4.1 California buckwheat scrub (*Eriogonum fasciculatum)* Shrubland Alliance

Approximately 0.16 acre of California buckwheat scrub were on the project site; approximately 0.21 acre were mapped within the BSA. California buckwheat scrub (*Eriogonum fasciculatum* shrubland alliance) occurs on upland slopes, arroyos experiencing intermittent flooding, channels, washes, and rarely flooded low-gradient deposits. This alliance occurs on coarse, well drained soils that are moderately acidic to slightly saline (CNPS, 2025a). California buckwheat or chaparral yucca (*Hesperoyucca whipplei*) are dominant or co-dominant in the shrub canopy with California sage brush (*Artemisia californica)*, coyote brush, *Baccharis pilularis*, sticky monkey-flower (*Diplacus aurantiacus)*, California brittlebush (*Encelia californica)*, brittlebush (*Encelia farinose)*, Menzies goldenbush (*Isocoma menziesii)*, deerweed (*Lotus scoparius)*, white sage *(Salvia apiana)*, black sage (*Salvia mellifera)* or *Malacothamnus* spp. Emergent trees like California juniper (J*uniperus californica)* may be present at low cover.

California buckwheat scrub (32.040.00) is not considered sensitive globally or statewide (G5/S5; CDFW, 2025b). However, California buckwheat scrub is considered a sensitive and protected vegetation community when found to support special status (listed) species, such as the California gnatcatcher.

5.4.2 Developed/Ornamental

Approximately 1.51 acres of developed/ornamental land cover were mapped on the project site; approximately 35.03 acres were mapped within the BSA. The developed/ornamental land cover type includes man-made structures and ornamental landscaping. Relevant man-made structures include houses, roads, and culverts. Ornamental landscaping is typically non-native, however both native and non-native trees were observed within the BSA. Developed/ornamental areas are not considered a sensitive natural community; however, they may receive protection when found to host protected species.

5.4.3 Disturbed Coast Live Oak (*Quercus agrifolia)* Woodland and Forest Alliance

Approximately 2.33 acres of disturbed coast live oak woodland and forest was identified in the BSA (0.47 in the project site). Disturbed Coast live oak woodlands are generally characterized by the dominance of coast live oak in the tree canopy layer alongside sparse to intermittent non-native understories. Coast live oak woodland forests are known to occupy canyon bottoms, slopes, and flats, and prefer deep, highly organic soils with sandy or loamy conditions (CNPS, 2025a). The *Quercus agrifolia* alliance (71.060.00) is not considered a sensitive community globally or state-wide (G5/S4 ranking); however, it may receive protection when found to host protected species (CNPS, 2025b).

5.4.4 Disturbed Toyon Chaparral

Approximately 0.90 acre of disturbed toyon occur within the project site and 1.78 acres occur within the BSA. Toyon is dominant in the shrub canopy with sparse to intermittent non-native shrubs. This land cover does not meet any classification in *A Manual of California Vegetation Online Edition* (CNPS, 2025a); this land cover is not considered sensitive and does not have a state or global rank (CDFW, 2025b).

5.4.5 Eucalyptus Groves

Approximately 0.16 acre of eucalyptus groves were identified in the project site (0.23 in the BSA). The Eucalyptus groves observed do not fit any alliance defined in *A Manual of California Vegetation* and are considered a sensitive habitat type (CNPS, 2025a; CDFW, 2025b).

5.4.6 Upland Mustards (*Brassica nigra – Centaurea* [*solstitialis*, *melitensis*]) Herbaceous Semi-Natural Alliance

Approximately 0.19 acre of upland mustards or star-thistle fields (upland mustard fields) were mapped in the BSA; however, upland mustards fields were not observed or mapped on the project site. Upland mustard fields are characterized by the dominance of black mustard, short-podded mustard, or other mustards occurring with non-native plants in densities greater than 80 percent of relative cover in the herbaceous layer; cover is open to continuous. This community is typically found on fallow fields, rangelands, grasslands, roadsides, levee slopes, disturbed coastal scrub, riparian areas, cleared roadsides, waste places in clay to sandy loam soils (CNPS, 2025). This community is not considered sensitive (CDFW, 2025).

5.4.7 Wild Oats/Annual Brome Grasslands (*Avena* spp. - *Bromus* spp.)

Approximately 1.2 acres of wild oats and annual brome grasslands were mapped within the BSA (0.82 within the project site). The wild oats and annual brome grasslands alliance (42.027.00) is dominant or co-dominant with wild oat *(Avena* spp.), big quaking grass (*Briza maxima)*, brome

(*Brachypodium distachyon* and *Bromus* spp.*)* and/or wall barley (*Hordeum murinum)* in the herbaceous layer (CDFW, 2025b). It commonly occupies foothills, rangelands, and openings in woodlands (CNPS, 2025a). This vegetation community is not considered sensitive.

5.5 Plants

5.5.1 Plant Species Observed During the Field Surveys

Thirty-six plant species from 26 distinct families were observed at the project site. Of the 36 plant species observed, 13 were native and 23 were non-native (**Appendix E** *Species Observed*).

5.5.2 Non-native Plants

Twelve of the documented non-native plant species have a Cal-IPC (California Invasive Plant Council) rating of watch, limited, moderate, or high (Cal-IPC, 2025; **Table 5.5-2**). These ratings are briefly described below. No federally listed noxious weeds were observed onsite during the field surveys per the USDA Animal and Plant Health Inspection Service (APHIS) Federal Noxious Weed List (USDA, 2010).

Cal-IPC Ratings

The Cal-IPC Invasive Plant Inventory categorizes non-native invasive plants that threaten the state's wildlands. Categorization is based on an assessment of the ecological impacts of each plant. The Inventory represents the best available knowledge of invasive plant experts in the state. However, it has no regulatory authority and should be used with full understanding of the limitations described below (Cal-IPC, 2025).

High: These species have severe ecological impacts to physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts to physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Table 5.5-2
RECORDED PLANT SPECIES WITH A CAL-IPC RATING

Scientific Name (=Synonym)	Common Name (=Synonym)	Cal-IPC Rating
Acacia melanoxylon	blackwood acacia	limited
Ailanthus altissima	tree-of-heaven	Moderate
Avena fatua	wild oat	Moderate
Brassica nigra	black mustard	Moderate
Bromus diandrus	ripgut grass	Moderate
Cotoneaster pannosus	silverleaf cotoneaster (=woolly cotoneaster)	Moderate
Eucalyptus globulus	blue gum eucalyptus	Limited
Marrubium vulgare	horehound	Limited
Phoenix sp.	date palm	Possibly limited*
Ricinus communis	castor bean	Limited
Salsola tragus	Russian thistle (=tumbleweed)	Limited
Washingtonia robusta	Mexican fan palm	Moderate

**Phoenix canariensis* has a rating of limited, however the species has not been identified beyond *Phoenix* sp.

5.5.3 Special-Status Plants with Potential to Occur in the BSA

Based on a literature review and query from publicly available databases for reported observations within a ten-mile radius of the BSA, ten listed and 57 sensitive plant species were identified by one of the following means: reported in the IPaC or CNDDB databases, recognized as occurring based on previous surveys or knowledge of the area, or observed during the habitat assessment survey; the collective list of species identified from these resources is referred to as the *plant inventory* in this report (USFWS, 2025a; CNDDB 2025a). Of the 67 total special-status species in the plant inventory, it was determined that three special-status species have high occurrence potential, five have moderate occurrence potential, 15 have low occurrence potential, and 43 are not anticipated to occur onsite. Special-status species were added to the inventory if observed onsite. **Appendix B**, *Species Occurrence Potential Determination* provides more information. Note, the detection of suitable habitat does not indicate presence or absence of a species and plant nomenclature is based on Calflora (Calflora, 2025).

Prior to the field surveys, biologists assessed the probability of occurrence rather than make a definitive conclusion about plant species presence or absence. Population numbers and failure to detect the presence of a plant species are not definitive and vary from year to year. This may be due to variable effects associated with wildfires, drought, rainfall patterns, temperatures, and/or season.

5.5.4 Listed Endangered, Threatened, Candidate, and State Rare Plants

The literature review and field surveys concluded that one listed species has moderate potential to occur, one listed species has low potential to occur, and the remaining eight listed species are not expected to occur within the BSA due to low quality habitat, a lack of suitable habitats, soils, and/or other factors (**Appendix B**, *Species Occurrence Potential Determination*). The species with moderate potential is Braunton's milk-vetch (*Astragalus brauntonii*). Low or “not expected to occur” species

are not further discussed in this report. No listed plants, including the plants in the plant inventory, were observed within the BSA during the biological survey.

5.5.5 Sensitive Plants

The literature review and field surveys determined three sensitive species have high potential to occur within the BSA and four sensitive species have moderate potential to occur within the BSA. Low or "not expected to occur" species are not further discussed in this report in anticipation of the BSA providing low-quality or unsuitable habitat value for these species (Appendix B, Species Occurrence Potential Determination). One sensitive plant (i.e., coast live oak) was observed within the BSA during the surveys. *Romneya* sp. was observed in the northwest corner of the project area and immediately northwest of the project area, however, species was undetermined due to the absence of flowers and fruits so the biologist was unable to determine if it was a sensitive species.

5.6 Wildlife

This section describes the wildlife observed and/or detected during the field surveys and the special-status wildlife that have a potential to occur within the BSA as determined by the literature review and field surveys.

5.6.1 Wildlife Species Observed and/or Detected During the Field Surveys

Seventeen bird and three mammal species were recorded within the BSA during the field surveys (**Table 5.0-1**). Nomenclature throughout this BRE is based on the following sources: 1) The American Ornithologists Union's (AOU's) *AOU Check-list of North American Birds. 7th Edition* (Chesser et al., 2025) for bird species, and 2) CDFW's *Life History Accounts* for species other than birds (CDFW, 2025e). A list of wildlife species recorded within the BSA during the field surveys is provided in **Appendix E,** *Species Observed*. Wildlife survey limitations include:

- The biological field surveys were conducted during the daytime to maximize the detection of most wildlife. Birds represent the largest component of the fauna observed because most birds are active in the daytime. In contrast, daytime surveys usually result in few observations of mammals, many of which may only be active at night. Many mammal species may also have been underrepresented due to lack of nocturnal survey visits.

- Many wildlife species are wide-ranging, transient, migratory, and would be expected to occur seasonally at a particular location; therefore, many taxa may not have been present at the time of the field surveys.

- Many species of amphibians, reptiles, and mammals are secretive and may require focused surveys with specialized equipment for capture and release (e.g., mist netting, box traps, or pitfall traps) which were not included in the scope of work for this project.

- A survey is a "snapshot in time"; therefore, true baseline surveys require high-frequency, repeated visits over several years to best characterize wildlife use at a location.

Wildlife depend upon a variety of vegetation communities (habitats) for survival. Most wildlife species are inextricably linked to certain habitats that form the basis for shelter, food, and reproductive opportunities. All wildlife depends upon land and vegetation for nesting and denning sites, escape and movement cover, and protection from adverse weather. Some taxa are habitat

specific or "obligate species" which require a narrow array of vegetation communities for all their survival requirements. Others move freely between different vegetation communities to obtain all their survival needs. In general, complex habitats with varying strata (vertical vegetation layers), greater horizontal interspersion (lateral habitat zonation) and greater plant species assemblage provide higher value wildlife habitat than less complex vegetation communities. More complex communities have more niches for wildlife and usually support more animal species than less complex communities.

Although less complex communities support wildlife species that are more adaptable, those few species may occur in greater numbers than would be expected in a more diverse habitat. In other words, urban areas support high numbers of urban-adapted species.

5.6.2 Special-Status Wildlife with a Potential to Occur in the Biological Study Area

Based on a literature review and query from publicly available databases for reported observations within a ten-mile radius of the BSA, there were nine listed and 28 sensitive wildlife species identified by one of the following means: reported in the search, recognized as occurring based on previous surveys or knowledge of the area, or observed during the habitat assessment survey, the collective list of species identified from these resources is named the wildlife inventory in this report.

Of the 37 species identified in literature review, two have high potential to occur, eight have moderate potential, eight have low potential, and nineteen are not expected to occur within the BSA. Those with low or no expectation to occur are not discussed further in this BRE. Two sensitive bird species, oak titmouse (*Baeolophus inornatus*, BCC), and yellow warbler (*Setophaga petechia*, SCC) were observed during one of the field surveys and are considered present. These species were added to **Appendix B**, *Species Occurrence Potential Determination*.

Wildlife biologists assessed probability of occurrence rather than making definitive conclusions about species' presence or absence. Failure to detect the species is not definitive and may be due to variable effects associated with migration, weather, fire, and/or time of day and year.

5.6.3 Listed Endangered, Threatened, and Candidate Wildlife

No listed wildlife species were observed within the BSA during the field surveys. The literature review and field survey concluded that two listed wildlife species have at least a moderate potential to occur within the BSA. These species include burrowing owl (*Athene cunicularia*) and Crotch's bumble bee (*Bombus crotchii*; see **Appendix B**, *Species Occurrence Potential Determination)*.

5.6.3.1 Burrowing Owl (BUOW)

The BUOW is a small, crepuscular (active at dusk and dawn), ground-inhabiting owl that is found largely throughout the United States (Wilkerson and Siegel, 2011). Its overall length is about seven to ten inches. Its coloring is sandy brown on its head, back and upper wings, with noticeable white spotting on its back and upper wings (Sibley, 2000). Adults are barred on their breast, while juveniles are buffy with a white collar. The brown and white mottling helps to provide camouflage in their dry habitat. BUOWs have yellow eyes, long legs, a short tail, with relatively long, narrow wings and a flat, round head (Sibley, 2000). Their long legs help them to see over grasses and short vegetation and aid them in catching their prey.

Burrowing owls are the only North American owl species that lives underground; typical BUOW habitat is open, dry, on level to mildly sloping topography with short and sparse vegetation structure and available burrows for nesting and roosting (Gallagher, 1997; Haug et al., 1993; Shuford et al., 2008; Center for Biological Diversity et al., 2024). BUOWs spend most of their time on the ground or on low perch sites such as fence posts and dirt mounds. Typical habitat includes prairies, grasslands, shrub steppe, deserts, and some agricultural areas (Haug et al., 1993). Nesting habitat also includes rolling hills, and occasionally on steep slopes or cliffs (Center for Biological Diversity, 2024). BUOW nesting habitat also occurs in urban landscaped areas and includes ruderal grassy fields, roadsides, airport infields, rural parks, college campuses, golf courses, athletic fields, and other similar areas (Center for Biological Diversity et al., 2024). In California, BUOW nesting habitat also includes fallow agricultural fields, the edges of cultivated fields (e.g., along roads or agricultural canals; Rosenberg and Haley, 2004). They are the only small owls likely to be seen perched in the open daylight (Sibley, 2000).

During the habitat assessment, no BUOWs, BUOW signs, or suitable burrows were observed. Focused surveys are however recommended due to their moderate potential to occur onsite and the limitations of general habitat surveys in conjunction with burrowing owl habits (**Section 7.0**).

5.6.3.2 Crotch's Bumble Bee (CBB)

Crotch's bumble bee (*Bombus crotchii*) inhabits open grassland and scrub habitats. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California.

Bumble bees, including *Bombus crotchii*, are generalist foragers and have been reported visiting a wide variety of flowering plants. Crotch's bumble bee has a very short tongue and thus is best suited to forage at open flowers with short corollas. The plant families most commonly associated with Crotch's bumble bee observations or collections from California include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae. In California, Crotch's bumble bee is primarily associated with plants in the Leguminosae (=Fabaceae), Labiatae (=Lamiaceae), Hydrophyllaceae (=Hydrophylloideae), Asclepiadaceae (=Asclepiadoideae), and Compositae (=Asteraceae) families. Plants in the genera *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia* have been recorded as example food plants. Note that these floral associations do not necessarily represent this species' preference for these plants over other flowering plants but rather may represent the prevalence of these flowers in the landscape where this Crotch's bumble bee occurs (Xerces et al., 2018).

In southern California, Crotch's bumble bee has been observed predominantly in arid grassland and scrub habitats, nesting primarily (NatureServe, 2019; Xerces et al., 2018).

During the habitat assessment, no Crotch's bumble bees were observed. Focused surveys are however recommended due to their moderate potential to occur onsite (see **Section 7.0**).

5.6.4 Sensitive Wildlife

Two special-status species were observed onsite during the field surveys. The species considered present onsite include oak titmouse, bird of conservation concern (BCC), and yellow warbler, species of special concern (SSC, S3; USFWS, 2021). The following species have high or moderate potential to occur but were not yet observed within the BSA: American bumble bee (*Bombus pensylvanicus*; high potential), California legless lizard (*Anniella pulchra*; moderate potential), San Diegan whiptail (*Aspidoscelis tigris stejnegeri*; moderate potential), Blainville's horned lizard (*Phrynosoma blainvillii*;

high potential), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; moderate potential), western mastiff bat (*Eumops perotis californicus*; moderate potential), hoary bat (*Lasiurus cinereus*; moderate potential), and Yuma mountain lion (*Puma concolor browni*; moderate potential).

5.6.4.1 Oak Titmouse (*Baeolophus inornatus*)

The oak titmouse is primarily associated with oak or pine-oak habitats, although it has also been observed in montane hardwood-conifer, montane conifer, riparian habitats, and valley habitats. They have been observed in residential areas. Oak titmouse forage in foliage, branches, twigs, trunks, or ground areas for insects, spiders, berries, acorns, and seeds. They roost in cavities of trees, including dead or dying trees, and build nests of grass, mosses, mud, fur, hair and feathers. Oak titmouse are yearlong residents who breed March-July and may join flocks of mixed species in winter. Their predators include small mammals and other birds, such as Scrub Jays who feed on their eggs and nestlings (T. Kucera, 1998). Oak titmouse are birds of conservation concern (USFWS, 2021).

5.6.4.2 Yellow warbler (*Setophaga petechia)*

Yellow warblers have been observed in several southern California mountain ranges and throughout most of San Diego county. They breed in riparian woodlands from coastal and desert lowlands, up to 8000 feet in Sierra Nevada and seemingly prefer montane breeding habitat like chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush. They have been observed singing and foraging in tall trees and nesting in heavy brush understories. The nest is an open cup placed 2 to 16 feet above ground in a deciduous sapling or shrub. The yellow warbler mostly eats insects and spiders, alongside the occasional berries (Zeiner et al. 1988-1990).

5.7 Waters of the U.S. and State, Including Wetlands

The literature review found no previously mapped NWI wetlands or mapped drainages within the BSA (see **Appendix A**, Figure 10, *USGS Surface Waters and Watersheds* and Figure 11: *USFWS National Wetlands Inventory*). No surface waters or wetlands were observed on the project site or in the BSA during the field surveys.

It was determined that the project site does not contain waters of the U.S. and State, including wetlands.

5.8 Critical Habitat

The BSA is not located within a designated or proposed critical habitat for listed plant or wildlife species. There are no critical habitat areas within two miles of the project site (**Appendix A**, Figure 12, *USFWS Critical Habitats*).

5.9 Wildlife Corridors

The BSA is one of many fragmented natural spaces within the developed area. Species likely to utilize the BSA as a wildlife corridor include coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*), among others. The BSA does not overlap with CDFW Essential Connectivity Areas or Natural Landscape Blocks (**Appendix A**, Figure 13, *CDFW Wildlife Corridors*). The nearest small natural areas are approximately 0.9 miles northwest, 0.7 miles north, one mile northeast, 0.9 miles southeast, and 0.65 miles southwest of the project site (Google Earth Pro, 2025).

5.10 Significant Ecological Areas

There are no Significant Ecological Areas (SEAs) within two miles of the project site (**Appendix A** *Figure 14 Significant Ecological Areas*).

6.0 POTENTIAL IMPACTS

This section discusses potential significant effects or impacts, if any, on the environmental baseline and sensitive biological resources that could result from project construction and development. This is an important step in the CEQA process. Biological resources may be either directly or indirectly impacted by a project (defined by CEQA Guidelines § 15358). Direct and indirect impacts may be either permanent or temporary in nature. These impact categories are defined below.

- **Direct impact**: Direct impacts are those that may cause an immediate effect on the species or its habitat and occur at the same time and place. Any loss, alteration, disturbance or destruction of biological resources that could result from project-related activities is a direct impact. Examples include vegetation clearing and loss of habitat, encroaching into wetlands, diverting natural surface water flows, and the loss of individual species.

- **Indirect impact**: As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Indirect impacts are caused by the project and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Indirect impacts can affect biological resources within the project site, adjacent to the project site, or away from the project site. Examples of indirect impacts include increased human activity, elevated noise, light, and dust levels, decreased water quality, soil compaction, erosion created by the removal of vegetation, and the introduction of invasive plants and unnatural predators. Indirect impacts may be both short term and long-term in their extent. Indirect impacts are also referred to as "edge effects."

- **Permanent impacts (long term)**: All impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources. Permanent impacts cannot be mitigated in-place.

- **Temporary impacts (short term)**: Impacts considered to have reversible impacts on biological resources can be viewed as temporary. Examples include short-term increased vehicle traffic and noise and the generation of fugitive dust during construction; or removing vegetation and either allowing the natural vegetation to recolonize or actively revegetating the impact area. Temporary impacts can be reversed with the implementation of in-place mitigation measures.

Impacts may come in the form of vegetation clearing, Earthmoving, lighting, toxins, fugitive dust, invasive species or sight, noise, and vibration. Impacts are likely from vegetative clearing, not only from the direct removal of species, but also indirectly due to increased fragmentation. Earthmoving may impact air quality (e.g., dust production), ground-dwelling species (e.g., collapse of burrows, loss of dens), hydrology (e.g., channel realignment, altered drainage patterns), and vegetation (soil compaction, encroachment to root systems, seed bank reduction). Lighting may interfere with nocturnal species by attracting, confusing, or repelling local species. Toxins may be introduced to project sites through equipment exposed to petroleum products, hydraulic fluid, anti-freeze, heavy metals, or other contaminants; such impacts may be direct and indirect. Fugitive dust conversely is most often an indirect impact, as it may inhibit photosynthesis throughout the duration of the project. Fugitive dust may also impact aquatic species by obscuring visibility, altering water temperature, or

reducing oxygen exchange. Invasive species may also be introduced to a project area through equipment or increased fragmentation; equipment may carry non-native species to the project site and fragmentation increases edge-effects, which creates more interfaces of native and non-native species. Non-native species are known to permeate into native spaces from edge areas, such as roadways or yards. Sight, noise, and vibration may also impact species and habitats by disrupting natural behavior (e.g., drowning calls and communications), collapsing trenches, or driving animals out of protective burrows.

THRESHOLDS OF SIGNIFICANCE

This section describes the significance criteria used for determining impacts on biological resources. As mentioned in the CEQA Guidelines (§ 15064.7[a]), each public agency is encouraged to develop and publish thresholds of significance (significance criteria) that it uses to determine the significance of environmental impacts. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental impact, non-compliance with which means the impact would normally be determined to be significant by the agency and compliance with which means the impact normally would be determined to be less than significant.

Significance criteria serve as benchmarks for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. CEQA Guidelines § 15065(a) states that a project may have a significant impact on the environment if the project has the potential to:

- Substantially degrade the quality of the environment,
- Substantially reduce the habitat of fish or wildlife species,
- Cause a fish or wildlife population to drop below self-sustaining levels,
- Threaten to eliminate a plant or animal community, or
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species.

The Environmental Checklist Form in Appendix G of the CEQA Statute and Guidelines (2014) was reviewed to determine the level of significance of project related impacts to biological resources. Under CEQA Guidelines impacts to biological resources are considered potentially significant if one or more of the following thresholds are exceeded with construction and operation of the project.

Threshold 1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and USFWS.

Threshold 2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW and USFWS.

Threshold 3: The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal,

etc.) through direct removal, filling, hydrological interruption, or other means.

Threshold 4: The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Threshold 5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Threshold 6: The project would conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

Significant impacts can be reduced to less than significant levels by incorporating off-setting BMPs, avoidance and protection measures, and/or mitigation measures. Less than significant impacts are those in which impacts would occur but are not expected to be substantial. Impacts to biological resources that are considered less than significant include impacts to biological resources that are reasonably widespread or may be observed in a degraded or disturbed state, rendering them less valuable as habitat to support wildlife diversity or special-status species, or impacts that do not meet or exceed the significance thresholds defined above. These less than significant impacts do not require mitigation measures.

6.1 Potential Impacts on Vegetation Communities

Direct impacts to vegetation communities have immediate consequences, such as the changes that occur when land is cleared for permanent development and vegetation communities are altered or removed during project construction activities. Direct permanent impacts include all areas within the limits of construction in the project footprint.

No sensitive vegetation communities were observed within the BSA during field surveys. The land cover types anticipated to be permanently impacted include California buckwheat scrub, developed/ornamental, disturbed coast live oak woodland and forest, disturbed toyon chaparral, eucalyptus groves, and wild oat grasslands (**Table 6.1-1; Appendix A**, Figure 15, *Impacts on Land Cover Types*). Calculations were based on the currently proposed development design in conjunction with the vegetation map created from field surveys and aerial imagery. Direct impacts to such landcover types are considered less than significant because these habitats are not considered sensitive, however, these landcover types may still support sensitive species, such as the observed oak titmouse and yellow warbler (CDFW, 2025).

Table 6.1-1
ANTICIPATED IMPACTS TO LAND COVER TYPES

Existing Land Cover	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Project Impacts			
California Buckwheat Scrub	0.00	0.00	0.00
Developed/ornamental	0.61	0.19	1.51

Existing Land Cover	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Disturbed coast live oak woodland and forest	0.03	0.07	0.10
Disturbed toyon chaparral	0.12	0.12	0.24
Eucalyptus groves	0.01	0.01	0.02
Upland mustards	0	0	0
Wild oat grassland	>0.01	0.01	0.01
Total Project Impacts	0.77	0.04	1.89

Indirect impacts to vegetation communities result in secondary consequences and are likely to be temporary. Indirect impacts could occur on vegetation communities within areas located adjacent to the limits of grading in the project footprint. Examples of indirect, temporary impacts include the effects of airborne fugitive dust and mud splatter created by construction activities. Construction-generated fugitive dust and mud splatter can adversely affect vegetation communities by settling on plant surfaces and inhibiting metabolic processes such as photosynthesis and respiration. Construction-related erosion, runoff, siltation, sedimentation, soil compaction, and alteration of drainage patterns could affect plants by altering site conditions so that the location in which they are growing becomes unfavorable. As the project site is surrounded mainly by developed/ornamental and disturbed land cover types, and the vegetation within the disturbed land cover occupies narrow roadside margins that undergo disturbances such as parked vehicles and/or pedestrian traffic, it is anticipated that indirect impacts to sensitive vegetation communities would be less than significant. Construction of the project could result in indirect impacts to non-native trees and other vegetation in landscaped areas of residential properties and disturbed vegetation along roadway margins located adjacent to the project work sites. Indirect impacts to non-native vegetation of the residential/urban/exotic land cover type do not meet or exceed significance thresholds and are considered less than significant.

Impacts would be considered significant if the project were to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.

No sensitive vegetation communities occur within or in the immediate vicinity of the BSA; therefore, direct and indirect impacts to sensitive vegetation communities are not anticipated to occur as a result of construction of the project. Regarding the significance criterion, the project is anticipated to have no substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS: **No Impact.**

6.2 Potential Impacts on Special-Status Plants

One protected species, coast live oak, was observed within the BSA during the August 2025 field surveys. Additional surveys are recommended to allow for the identification of species whose bloom periods are outside of August, such as Braunton's milk-vetch (*Astragalus brauntonii*), or Hubby's phacelia (*Phacelia hubbyi*; **Appendix B** *Species Occurrence Potential* for more information).

Impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

With the implementation of **BIO-1** *Focused Botanical Survey* and **BIO-2** *Tree Inventory,* the project is anticipated to have no substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS: **Less Than Significant Impact with Mitigation**.

6.3 Potential Impacts on Special-Status Wildlife

No listed wildlife were observed within the BSA during the general wildlife survey, however general wildlife surveys do not meet the survey criteria of all listed species. The results of the literature review and field surveys concluded that there are two species with moderate potential to occur within the BSA due to suitable habitat and range considerations that require special surveys. These species include Crotch's bumble bee and burrowing owl.

Two sensitive bird species, oak titmouse (BCC), and yellow warbler (SCC) were observed within the BSA and are considered to be present. The literature review determined eight sensitive species have a moderate to high potential to occur within the BSA (**Section 5.6.4** *Sensitive Wildlife*).

Foraging and/or nesting habitat occurs on the BSA for some tree and ground-nesting bird species. The presence of California buckwheat scrub, coast live oak woodland and forest (disturbed), and toyon chaparral (disturbed) may provide suitable habitat for additional special-status species (more information in **Section 5.4** *Land Cover Types*), like the California legless lizard, San Diegan whiptail, and Blainville's horned lizard. Low-quality foraging and/or nesting habitat also occurs on the project site for bat species such as western mastiff bat (*Eumops perotis californicus*) and hoary bat (*Lasiurus cinereus*), both of which were determined to have a moderate potential to occur. The day-time field surveys conducted are unlikely to provide a representative perspective of bat occurrences as they are primarily nocturnal species.

Six mammal burrows were observed within the project site. No small mammals with special-status were determined as moderate or highly likely to occur onsite. It is not anticipated that the project site supports sensitive fossorial wildlife species.

Potential direct impacts to common and special-status wildlife, including oak titmouse and the yellow warbler, occupying the project site could occur from construction related mortality, injury, or harassment of individuals as a result of permanent development of the project site and from the removal and direct loss of breeding, foraging, and/or sheltering habitat provided by the various tree species present within the BSA. These impacts could be considered significant and potentially significant. Project development could diminish the habitat available for common and special-status wildlife species from utilizing onsite habitat. Direct permanent impacts include all areas within the limits of grading in the project footprint.

Ground disturbing and habitat altering activities could involve significant disturbance to common and special-status ground-dwelling animals or nesting birds. Examples include grading, clearing, ripping, grubbing, excavation, trenching, paving, mowing, heavy equipment compacting, driving over habitat to access the construction work sites, vegetation management activities, and use of herbicides and pesticides. Direct impacts to less mobile fossorial (burrowing) animals that are underground during most of the day or year (e.g., small mammals or lizards) or have a life stage in the soil, or on plants (e.g., amphibians, nesting birds, insects) could occur from encounters with vehicles or heavy equipment as many of these animals do not run away from construction vehicles/equipment and would most likely be killed. These species could be expected to experience direct mortality, injury, harassment, and displacement from increased human activity and vehicle/equipment travel if they

are present onsite within the project footprint at the time of construction. Individual losses are more likely, especially during clearing and grubbing activities. Individuals could also be injured, disturbed, or killed from encounters with workers' or visitors' pets. The loss of these animals could also affect other common and special-status wildlife that depend on them as prey. Construction related direct impacts are considered a significant impact.

Indirect impacts could occur within areas located adjacent to the limits of construction in the project footprint. Indirect impacts are more subtle than direct ones. Impacts may either be short-term related to construction or long-term and may affect populations and habitat quality over an extended period of time, long after construction activities have been completed. Examples of indirect impacts, such as noise, vibration, fugitive dust, or harassment of common and special-status wildlife species that could potentially occur from the project include the following:

- The permanent loss of habitat and physical features that would occur from clearing and grading could indirectly impact wildlife species through the loss of foraging, roosting, denning, and/or breeding habitat available. Habitat loss could displace species from existing territories and reduce the home range of those species and impact nearby populations of similar species. Displaced species would then have to compete for and/or find new territories and compete for food with resident species. This could result in delayed nest building, fewer nest attempts, reduced clutch size, and an overall reduction in reproductive output.

- Project construction could increase fugitive dust, pollution, runoff, siltation, sedimentation, and erosion. This could result in increased levels of dust and contaminants settling in vegetated areas adjacent or near to the project site. Consequently, the ability of onsite and adjacent vegetation communities to support wildlife populations may decrease.

- Nighttime construction work and use of artificial lighting could disrupt natural foraging and breeding behaviors and/or alter wildlife movement patterns and migratory routes of nocturnally active species such as mammals. Most animals would attempt to avoid moving in or near the lighting; however, some animals such as insects, migratory birds, and bats might be attracted to the lighting, increasing construction-related mortalities. Artificial lighting could also indirectly affect wildlife by increasing detection by predators. The new development could also provide an increase in artificial lighting and glare which could disrupt nocturnal wildlife behavior.

- An increase and continuation of human activities within and adjacent to the project site could lead to mortality, injury, or harassment of wildlife species by providing food in the form of trash and litter or water which attracts predators such as the common raven (*Corvus corax*), northern raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and coyote.

Impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Direct and indirect impacts to special-status species are not anticipated to occur due to the implementation of **BIO-3** *Focused Burrowing Owl Survey,* **BIO-4** *Focused Crotch's Bumble Bee Survey,* **BIO-5** *Pre-Construction Breeding Bird Survey*, **BIO-6** *Pre-Construction Bat Survey*, **BIO-7** *Workers Environmental Awareness Program*, and **BIO-8** *Biological Monitor*. Potential impacts on special-status species, their nests, young, or eggs would likely be less than significant: **Less than Significant Impact with Mitigation incorporated**.

6.4 Potential Impacts on Breeding Birds

Two birds of conservation concern, oak titmouse and yellow warbler, were observed within the project site. It is unlawful to take native birds, their nests, eggs, and young under the MBTA and Fish and Game Code § 3503, § 3503.5, and § 3513. These protections extend beyond special-status species to include common species, such as those observed during the field surveys or those likely to be within the BSA.

California buckwheat scrub, coast live oak, toyon and other physical features within the BSA may provide some suitable nesting habitat for a diverse assortment of bird species addressed under the MBTA, whether year-round residents, seasonal residents, or migrants. The project site may also provide some suitable habitat for ground-foraging birds (**Appendix E**, *Species Observed*).

Activities which are most likely to result in take of migratory birds during the breeding bird season (when eggs or young are likely to be present) include but are not limited to trimming, clearing or grubbing of bird nesting habitat (e.g., trees, shrubs, grasses, burrows), tree removal, or structure demolition. The project has the potential to directly take individual bats and breeding birds, their nests, young, or eggs.

Indirect impacts to breeding birds could occur from increased noise, vibration, lighting and dust during construction, which could adversely affect the breeding behavior of some birds and lead to the loss (take) of eggs and chicks, or nest abandonment. The removal of the existing onsite trees would cause the destruction of any nests within those trees.

Impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Project construction is not expected to cause impacts to bird species that only forage at the site or occur as transient visitors. Direct and indirect impacts to breeding birds, their nests, young, or eggs could potentially occur as a result of construction of the project. Development of the project is focused on improving existing features, therefore the removal of onsite vegetation and disturbance of soil is anticipated to be minimal. Implementing the recommended **MM BIO-5** described in **Section 7.0** would help to avoid, eliminate or reduce significant impacts to breeding birds, their nests, young, or eggs to less than significant levels; it is anticipated that the project may impact breeding birds, their nests, young, or eggs, but the impacts would not be significant or result in take: **Less than Significant Impact with Mitigation Incorporated**.

6.5 Potential Impacts to Waters of the U.S. or State (Including Wetlands)

This section discusses potential significant effects or impacts, if any, to jurisdictional wetlands, waters, water quality, water quantity, and aquatic/riparian habitats that could result from project development. Impacts to waters and wetlands may be either "directly" or "indirectly" impacted by a project (defined by CEQA Guidelines § 15358). Direct and indirect impacts may be either "permanent" or "temporary" in nature. These impact categories are defined below.

- **Direct impact**: Direct impacts caused by the project are impacts that may cause an immediate effect on jurisdictional wetlands, waters, water quality, water quantity, and aquatic/riparian habitats and occur at the same time and place. Any loss, alteration, disturbance or destruction of waters and wetlands that would result from project-related

activities is a direct impact. Examples include vegetation clearing, encroaching into wetlands, diverting natural surface water flows, and the loss of habitat. Direct impacts are long-term.

- **Indirect impact**: As a result of project-related activities, jurisdictional wetlands, waters, water quality, water quantity, and aquatic/riparian habitats may also be affected in a manner that is not direct. Indirect impacts caused by the project occur later in time or farther removed in distance but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Examples of indirect impacts include increased human activity, elevated dust levels, decreased water quality, soil compaction, erosion created by the removal of vegetation, and the introduction of invasive plants. These indirect impacts may be both short term and long-term in their extent.

- **Permanent impacts**: All impacts that result in the long-term or irreversible removal of waters and wetlands are considered permanent. Examples include constructing a building or permanent road on an area containing jurisdictional areas.

- **Temporary impacts**: Any impacts considered to have reversible effects on waters and wetlands can be viewed as temporary. Examples include short-term increased vehicle traffic and the generation of fugitive dust during construction; or removing vegetation and either allowing the natural vegetation to recolonize or actively revegetating the impact area.

All impacts (permanent) to waters and wetlands are considered significant due to regulation by those agencies. Impacts are regulated by the resource agencies and would necessitate permits.

As discussed in **Section 5.7**, waters of the U.S. and State, including wetlands, were not observed on the project site.

6.5.1 Direct Impacts

Direct impacts to wetlands, waters, water quality, water quantity, and aquatic/riparian habitats have immediate consequences, such as the changes that occur when land is cleared for permanent development, and waters and wetlands are altered or filled in during project construction activities. Examples of potential direct impacts which could destroy or significantly impact waters and wetlands include any ground-disturbing activities, such as grading, clearing, ripping, grubbing, excavation, trenching, paving, or heavy equipment compacting that would remove or alter these features permanently. Other examples of potential direct impacts to waters and wetlands include filling of onsite drainages, stockpiling, channelization, bank stabilization, road crossings, or any other permanent drainage modification.

The project site does not contain waters of U.S. or State under the jurisdiction of the USACE, RWQCB, or CDFW. The project site does not contain riparian vegetation. No direct impacts to waters of the U.S. and State, including wetlands, are expected to occur.

6.5.2 Indirect Impacts

Indirect impacts to waters, water quality, water quantity, and aquatic/riparian habitats result in secondary consequences and are likely to be temporary during construction, but they could also be long-term as a result of creation of impervious surfaces and permanent development. Indirect

impacts from project implementation are not anticipated to occur, as project-generated waters would be directed into the appropriate drainage system as per standard construction BMPs.

It is not anticipated that project activities will indirectly impact waters as the project site and BSA do not contain waters of U.S. or State under the jurisdiction of the USACE, RWQCB, or CDFW, nor do they contain riparian vegetation. No indirect impacts to waters of the U.S. and State, including wetlands, are expected to occur.

6.5.3 Mitigation Measures

No mitigation is required for waters of the U.S. or State, including wetlands.

6.5.4 Impact Determination

Significance criterion: *impacts would be considered significant if the project were to have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

Regarding the significance criterion for waters of the U.S., including wetlands, the project is anticipated to have no substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (per the current definition of *Waters of the United States* as determined by the U.S. Supreme Court in *Sackett v. EPA* [*Sackett*; see 88 FR 61964]) through direct removal, filling, hydrological interruption, or other means. No federal waters or wetlands were observed within the BSA: **No Impact**.

Regarding the significance criterion for non-federal waters of the State, including wetlands (as defined in the Procedures; see **Section 3.2.10**), the project is anticipated to have no substantial adverse effect on state protected waters and wetlands through direct removal, filling, hydrological interruption, or other means. No state-protected waters or wetlands were observed within the BSA: **No Impact**.

6.6 Potential Impacts to Critical Habitat

The literature review determined that the project site is not located within a designated or proposed critical habitat for listed plant or wildlife species. No direct or indirect impacts to critical habitat are anticipated as a result of construction of the project. Therefore, no mitigation measures are required.

The project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW and USFWS.

The project is not anticipated to have direct or indirect impacts on critical habitat, and it is anticipated that the project would not adversely modify designated or proposed critical habitat. **No Impact**.

6.7 Potential Impacts to Wildlife Movement and Nursery Sites

Field surveys determined that the project site contains a wildlife movement corridor. The BSA serves as a movement corridor for wildlife such as coyotes, raccoons, skunks, and opossums. As no mammal dens were observed on the project site, it is not anticipated that project activities would have significant impacts on wildlife corridors. However, direct temporary impacts to wildlife movement corridors are anticipated as a result of the project. Construction vehicle parking, and operation,

excavation, vegetation removal, equipment storage and staging, construction laydown and debris sites, temporary ground disturbing activities, and increased human presence could cause direct impacts to wildlife movement. Indirect impacts are not anticipated to occur as there are no wildlife movement corridors adjacent to the project site and no nighttime work is scheduled (hence lighting will not impact night time use of the corridor). Wildlife corridors are anticipated to be temporarily directly impacted.

The project site and BSA do not contain native wildlife nursery sites; therefore, impacts to native wildlife nursery sites are not expected to occur.

Impacts would be considered significant if the project were to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Implementation of **MM BIO-8** *Biological Monitor* and **MM BIO-9** *Construction General Wildlife Avoidance and Protection Measures* will help minimize or avoid impacts on wildlife movement corridors to less than significant levels. These measures would require that a biological monitor conduct preconstruction surveys to ensure that movement corridors are clear of wildlife prior to construction activities and would ensure construction activities implement best practices for safety and protection. The project is not anticipated to interfere substantially with the movement of wildlife species or with the wildlife movement corridor: **Less than significant with Mitigation Incorporated.**

6.8 Potential Impacts on Local Policies or Ordinances

The literature review and field surveys determined that the project site is not within a Significant Ecological Area; however, the project site contains resources protected by local policies in the City of South Pasadena, such as coast live oak (see **Section 3.3.2**).

Impacts would be considered significant if the project were to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Approximately 0.10 acre of permanent and temporary impacts are anticipated towards oak woodlands. Mitigation measure **BIO-2** *Tree Inventory* will reduce impacts to less than significant levels by ensuring the proper use of permits and management practices: **Less than Significant with Mitigation Incorporated**.

6.9 Potential Impacts to HCPs or NCCPs

The literature review determined that the project site is not located within and HCP or NCCP.

Impacts would be considered significant if the project were to conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

The project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP: **No Impact**.

7.0 MITIGATION MEASURES

This section lists the mitigation measures to avoid, eliminate and/or reduce the project's anticipated and potential direct and indirect impacts to biological resources to less than significant levels. As used in this report, the term *mitigation measures* includes measures proposed as part of the project (project design features), as well as BMPs, avoidance and protection measures, and mitigation measures proposed to reduce the project's potentially significant impacts to biological resources as required under CEQA. Mitigation is not required for effects which are not found to be significant. State CEQA Guidelines § 15126.4 subd. (a)(3). State CEQA Guidelines § 15370, defines *mitigation* to include:

- "Avoiding" the impact altogether by not taking a certain action or parts of an action.
- "Minimizing" impacts by limiting the degree or magnitude of the action and its implementation.
- "Rectifying" the impact by repairing, rehabilitating, or restoring the impacted environment.
- "Reducing" or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- "Compensating" for the impact by replacing or providing substitute resources or environments.

The following mitigation measures would help to avoid, eliminate or reduce direct or indirect impacts to biological resources to less than significant levels and to comply with all appropriate environmental laws, ordinances, policies, regulations, and management plans.

7.1 MM-BIO-1: Focused Botanical Surveys

a. To avoid impacts to special-status plant species, a qualified biologist shall survey the BSA, including areas directly and indirectly impacted by the project, for the presence of special-status plant species likely to occur within the given conditions (e.g., habitat, soil, elevation, climate). The focused plant surveys shall be conducted in accordance with the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW, 2018). The surveys shall be conducted in the field at appropriate times of the year to coincide with the growing season and different blooming periods and when optimum conditions for identification (generally blooms, fruits, and leaves) are present. Biologists will pay special attention to those habitat areas that appear to provide suitable habitat for special-status species.

b. A minimum of two surveys would be conducted during different seasons of the same year to adequately capture the floristic diversity of a site, with a focus on areas that will be directly or indirectly receiving impacts from project activities. Every plant taxon that occurs on site will be identified to the taxonomic level necessary to determine rarity and listing status, as feasible. Plant species will be identified using plant field and taxonomical guides. All special-status plant species will be identified, recorded in field notes, counted or estimated, and mapped on an aerial map or with a GPS unit.

c. Following completion of the focused botanical surveys, the City's consultant will prepare a focused botanical survey report in accordance with agency guidelines. The report will: 1) summarize information regarding the habitat of the survey area and the habitat's suitability for special-status plants; 2) assess the potential presence of special-status plants onsite; 3) analyze the potential impacts on special-status plants from project development; and 4) recommend, as appropriate, BMPs, avoidance and protection measures, and mitigation measures to reduce or avoid potential impacts on special-status plants. The report will include: 1) methods and results of the literature review and field surveys; 2) figures depicting the location of special-status plants; 3) a complete flora compendium; and 4) site photographs. If a special-status plant is observed, its data shall be submitted to CNDDB. Because CDFW generally considers botanical surveys to be valid for a period of up to one year, some aspects of the proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if the project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

7.2 MM BIO-2: Tree Inventory

a) A certified arborist shall conduct a comprehensive tree inventory survey within the project site impact zones and a 50-foot buffer (or relevant buffer) from proposed impact zones. Only trees protected under the City of South Pasadena's Chapter 34 (**Section 3.3.2** of this report) will be surveyed and tagged. In other words, saplings and non-protected trees will be omitted from the survey, unless determined necessary by the qualified arborist.

b) The arborist will record the following: 1) protected species (as identified in City of South Pasadena's Chapter 34); 2) tree location; 3) assigned tree number; 4) diameter at breast height (DBH); 5) height; 6) canopy radius; 7) general health, vigor, structure, and condition of tree; 8) identify trees with nests, if observed during survey; and 9) photo documentation of each tree.

c) A tree inventory report shall be prepared to include: 1) methods and results of the field surveys; 2) figures depicting the location of trees; 3) a complete tree compendium with measurements; 4) site photographs; 5) an analysis of the potential impacts on trees from project development; and 5) recommendations of best management practices (BMPs), avoidance and protection measures, and mitigation measures to reduce or avoid potential impacts on trees. The responsibilities of the project proponent, contractor, and arborist should be clearly detailed, including schedule and contingencies.

d. Should trimming or removal activities be required, tree trimming and/or removal permits will be submitted to the City following guidelines within **Section 3.3.2** *City of South Pasadena Chapter 34 Trees and Shrubs* and **Section 8.1** *City of South Pasadena Tree Trimming and/or Removal Permits*. It is recommended tree trimming permits be submitted at least 35 days prior to planned tree trimming and/or removal to allow for the public comment and public hearing period (**Section 8.1** *City of South Pasadena Tree Trimming and/or Removal Permits*). Tree trimming and removal will additionally follow guidance in **Section 7.5** *Pre-Construction Breeding Bird Survey* and **Section 7.6** *Pre-Construction Bat Surveys.*

7.3 MM BIO-3: Focused Burrowing Owl Surveys

The project site is located in the known distributional range of the burrowing owl (BUOW), and the site contains suitable habitat to potentially support BUOWs. BUOW surveys are required by CDFW,

in accordance with the guidelines set forth by the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012; hereafter discussed as "*Staff Report*"). Focused surveys for burrowing owls shall be conducted during the breeding season prior to vegetation clearing or ground disturbing activities by a qualified biologist with experience conducting surveys for this species. Surveys shall be conducted in suitable habitat, as determined by the qualified biologist based on a field assessment of site conditions at the time of the survey.

a. In accordance with the *Staff Repor*t, one BUOW survey will be conducted between February 15th and April 15th and three surveys will be conducted at least three weeks apart between April 15th and July 15th, with at least one visit after June 15th. The last day to conduct a BUOW survey is June 3rd in order to get three surveys completed by July 15th. Surveys will be conducted from sunrise to 10:00 a.m. or from two hours before sunset until evening twilight when weather conditions are conducive to BUOWs observations. The results of the focused surveys are typically considered valid for one year after completion.

b. Biologists will conduct surveys within the project site and within a zone 500 feet out from the project site; defined the Biological Study Area (BSA). Surveys will be conducted in accessible portions of the BSA that contain BUOW essential habitat (nesting, foraging, wintering, and dispersal habitat). Inaccessible areas and areas of private land will be surveyed with binoculars/scopes only. Surveys will not extend beyond the BSA. Biologists will walk straight-line belt transects spaced no more than 20 meters apart to allow 100 percent visual coverage of the survey area and examine entrances of potential burrows and suitable man-made structures for BUOWs and signs of BUOWs. Biologists will identify, record, and map with a GPS unit BUOWs and potential BUOW signs. Detailed notes and wildlife species encountered during the surveys will be recorded in field notes. The purpose of the surveys is to determine if BUOWs are foraging or nesting on or adjacent to the project site.

c. Following completion of the focused BUOW surveys, the biologist will prepare a focused BUOW survey report in accordance with the guidelines described in the *Staff Report*. The report will: 1) summarize information regarding the BUOW's natural history; 2) assess the habitat of the survey area and its suitability for the BUOW; 3) describe the number, behavior, and location of any BUOWs detected during the surveys or assess the potential presence of BUOWs onsite; 4) analyze the potential impacts on the BUOW from project development; and 5) recommend, as appropriate, best management practices (BMPs), avoidance and protection measures, and mitigation measures to reduce or avoid potential impacts on BUOWs. The report will include: 1) methods and results of the literature review and field surveys; 2) figures depicting the location of BUOWs, if any; and 3) site photographs.

7.4 BIO-4: Focused Crotch's Bumble Bee Survey

The City shall have a qualified biologist conduct a preconstruction survey for Crotch's bumble bee (CBB) within 30 days prior to the start of any ground-disturbing activities. Ideally, surveys should be conducted during the species peak detection season from April to August, although surveys may be constrained to the month prior to construction. Surveys should include meandering transects through suitable habitat (e.g. open grasslands, scrub areas, with blooming native vegetation), with particular attention to floral resources and potential nesting sites (e.g. rodent burrows or dense thatch). Survey results, including coordinates of floral resources (host plants), nest burrows, figures, and photo documentation, should be submitted to CDFW within 10 days of completion, with approvals received by CDFW, prior to initiation of ground disturbing project activities. If CESA-protected bumble bees are observed, project proponents must propose site-specific measures to

avoid take through consultation with CDFW to obtain an Incidental Take Permit (ITP), if take of CESA-protected bumble bees may occur during project activities (CDFW, 2023).

- Time of Year – Ideally, pre-construction surveys would be conducted during the peak flight period from May through July, for the highest detection probability.

- Weather – Ideally, preconstruction surveys shall take place when temperatures are above 60°F and not during wet conditions (e.g., foggy, raining, or drizzling). Wait at least 1 hour after rain subsides before conducting a survey. Sunny days with low wind speeds (less than 8 mph) are optimal. Partially cloudy days or overcast conditions are permissible if a person's shadow is visible.

- Result Expiration - Focused survey results are only valid for one year and will need to be repeated if the survey results expire.

In June 2019, Crotch's bumble bee (*Bombus crotchii*, CBB), a California near-endemic, became a candidate species for listing under the California Endangered Species Act (CESA; CDFW 2019). At the time of this writing, a formal vote by the California Fish and Game Commission has not occurred. If the status of the CBB is downgraded to non-status, then this survey requirement may be omitted prior to survey, unless required by the regulatory agencies as a condition of approval.

7.5 MM BIO-5: Pre-Construction Breeding Bird Survey

a. If vegetation removal is scheduled within the nesting season, a qualified biologist will conduct a pre-construction nesting bird survey to maintain compliance with the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (§§ 3503 and 3503.5), which prohibit take of nesting birds and nests of migratory and non-game bird species. Nesting season is generally considered to be:

    - January 1-July 30 for raptors.

    - February 1-September 15 for non-raptors.

b. A qualified biologist will conduct pre-construction surveys no more than five days prior to when project activities (e.g., mobilization, excavation, grading, vegetation removal) are underway. Should a lapse in project activity be greater than five days, a qualified biologist will conduct additional surveys to maintain compliance. A wide variety of shelters and resources are used by avian species; these include barren ground, grasses, forbs, shrubs, trees, rocky outcrops, and man-made structures (dependent on species and conditions). To maximize the detection of nesting birds, surveys must be conducted in work areas (e.g., staging, stockpiling, storage, equipment yards, access roads) during favorable weather conditions. The qualified biologists will interpret physical signs for nesting structures (e.g., manipulation of materials like mud or grass) and direct signs of life (e.g., courtship behaviors, gathering, swooping, alarm calls, pellets).

c. If nests are encountered, a qualified biologist must determine if it may be feasible for construction to continue as planned without impacting nesting success, considering individual species tolerances, proximity to construction, noise impacts, line-of-sight barriers, and distance (horizontal and vertical). The rate and duration of construction activities should be considered to modify scheduled activity locations for nest avoidance. If the qualified biologist determines construction activities will potentially adversely affect a nest, the

biologist must immediately inform the construction manager to halt construction activities within minimum exclusion buffer of 100 feet for songbird nests, and 200 to 500 feet for raptor nests, by establishing a no-work zone. Construction activities within the no-work buffer may proceed after a qualified biologist determines the young have successfully fledged the nest and are no longer dependent upon the nest or the parents. If federal or state protected species are observed during the site survey, consultation shall be completed with the USFWS and CDFW to determine if work shall commence or proceed during the breeding season; and, if work may proceed, what specific measures shall be taken to ensure protected bird species are not affected.

7.6 MM BIO-6 Pre-Construction Bat Surveys

Bat species with potential to occur in the BSA employ diverse roosting strategies (e.g., solitary roosting, colonial roosting, roosting in trees, roosting near cliffs or man-made structures like homes, tunnels, or bridges) with daily/seasonal variations in structure and habitat use. If trees or other potentially suitable roosting structures are to be removed or otherwise affected by project activities, then a qualified bat biologist with knowledge of special-status bat species will conduct surveys identifying suitable roosting sites.

a. **Pre-construction surveys.** Prior to removal of roost-supporting structures, a survey for bats shall be prepared by a qualified biologist. The qualified biologists will have experience using full-spectrum acoustic equipment and avoid unnecessarily disturbing occupied roosts. The qualified biologist will prepare a report describing methods and results, including negative findings. The pre-construction surveys will involve the following:

    i) Identification of potential roosting habitat within project area.

    ii) Daytime search for bats and their sign in and around identified habitat.

    iii) Evening emergence surveys at potential day-roost sites, using night-vision goggles and/or active full-spectrum acoustic monitoring where species identification is sought.

    iv) Passive full-spectrum acoustic monitoring and analysis to detect bat use of the area from dusk to dawn over multiple nights.

    v) Additional on-site night surveys as needed following passive acoustic detection of special-status bats to determine the nature of bat use of the structure in question (e.g., use of structure as night roost between foraging bouts).

b. If bat roosting sites are identified within the survey area, then they shall be avoided during the nursery season (April 1st through August 31st). The eviction of bats shall be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with the CDFW, that allow the bats to exit the roosting site but prevent re-entry to the site. This would include but not be limited to the installation of one-way exclusion devices. The devices shall remain in place for a minimum of seven days and then the exclusion points and any other potential entrances shall be sealed immediately following the removal of the devices. This work shall be completed by a BCI recommended exclusion professional.

c. **Tree Removal.** Within 30 days before tree removal, a qualified bat biologist will conduct preconstruction surveys for presence of roosting bats. If special-status bat species are present, the following will be implemented:

i) Tree removal will not occur if maternity bat roosts are present in a tree or nearby area (including nearby buildings). Maternity roosts are typically present between April 1st and August 31st. No tree removal will occur within 300 feet of the maternity roost until all young bats have left the roost, as determined by a qualified bat biologist.

ii) If individual trees are determined to be maternity roosts, then those trees shall be avoided until the roosting season has completed. Project-related construction and activities shall not occur within 100 feet of or directly under or adjacent to an active maternity roost. A qualified bat biologist shall establish a no-disturbance buffer that shall be maintained throughout the duration of the Project's construction or until a qualified bat biologist determines that the roost is no longer active. Project-related construction and activities shall also not occur between 30 minutes before sunset and 30 minutes after sunrise.

iii) If special-status bats are present but there is not an active maternity roost, a Memorandum of Understanding (MOU) with the CDFW will be entered into in order to remove the animals prior to tree removal. Alternate habitat will be provided if bats are to be excluded from maternity roosts. A roost with comparable spatial and thermal characteristics will be constructed as directed by a qualified biologist. In the event that adult bats need to be handled and relocated, a qualified biologist will prepare and implement a relocation plan subject to approval by CDFW that includes relocating all bats found onsite to an alternate suitable habitat.

iv) If there is a potential or known maternity roost within a structure to be demolished, a replacement roost installation shall occur outside of the maternity roosting season within the biological open space easement. At least one month prior to the exclusion of bats from the roost(s), the project applicant will procure and install two bat boxes from a reputable vendor, such as Bat Conservation and Management, to allow bats sufficient time to acclimate to a new potential roost location. The bat boxes shall be installed in an area that is close to suitable foraging habitat as determined by a biologist who specializes in bats in consultation with County staff and CDFW. Additionally, the bat boxes will be oriented to the south or southwest, and the area chosen for the bat boxes must receive sufficient sunlight (at least 6 hours daily) to allow the bat boxes to reach an optimum internal temperature (approximately 90°F) to mimic natural bat roosts. The bat boxes will be suitable to house crevice-roosting bat species, and large enough to contain a minimum of 50 bats (e.g., Four Chamber Premium Bat House or Bat Bunker Plus). The bat boxes shall be installed on a 20-foot-tall steel pole. Should the bat boxes be required, maintenance of the boxes will be included in the RMP to ensure long-term use/functionality. Monitoring should be required each month during construction and quarterly thereafter until it can be established that the bat box is being used by bats and the species of bats using the box is determined. If the boxes are unsuccessful, Adaptive Management Measures will be in place.

d) Following completion of the survey the bat biologist will complete a survey report which records the findings.

7.7 MM BIO-7: Worker's Environmental Education Program

Worker Environmental Awareness Program (WEAP) for construction personnel shall be conducted and documented prior to onsite disturbances. The training shall include a discussion of the sensitive biological resources within the project site and the potential presence of special-status species, as well as common species such as mountain lions, poison oak, and snakes. The WEAP shall include a discussion of special-status species' habitats and protection measures to ensure species are not impacted by project activities in addition to project boundaries, penalties for non-compliance, and biological conditions outlined in the project permits. A Supervisor's training program shall ensure all employees are trained and certified by the Construction Supervisor with the approval of the qualified biologist. Each trained individual shall be given a distinctive helmet sticker that shall identify those who have received training, signed the training log, and demonstrated the required level of environmental awareness.

7.8 MM Bio-8: Biological Monitor

A biological monitor will be onsite to monitor activities that result in the clearing or grading of areas known to contain sensitive biological resources, such as oak woodland habitat to ensure that impacts do not exceed the limits of construction and to minimize the likelihood of inadvertent impacts to listed species and other wildlife species. The biological monitor will ensure that all biological mitigation measures, BMPs, avoidance and protection measures described in the relevant project permits and reports are in place and are adhered to. The biological monitor will take photographs throughout the construction process. Observations of special-status species will be recorded in monitoring logs, mapped, and special-status species records will be submitted to the California Natural Diversity Database (CNDDB) within five working days of the sightings, and CDFW will be provided with copies of the CNDDB forms and survey maps. Monitoring logs will be completed for each day of monitoring. The biological monitor will have the authority to halt all construction activities and all non-emergency actions if listed species are identified and will be directly impacted. The monitor will notify the appropriate resource agency and consult if needed. If needed and possible, the monitoring biologist will relocate the individual outside of the work area where it will not be harmed. Work can continue at the location if the City of South Pasadena and the consulted resource agency determine that the activity will not result in impacts on the species.

7.9 MM BIO-9 Construction General Wildlife Avoidance and Protection Measures

a. To minimize construction-related mortalities of nocturnally active species such as mammals and snakes, it is recommended that all work be conducted during daylight hours. Nighttime work (and use of artificial lighting) would not be permitted unless specifically authorized. If required, night lighting would be directed away from the preserved open space areas. The use of red light is recommended. All unnecessary lights would be turned off at night to avoid attracting wildlife such as insects, migratory birds, and bats. Similarly, if any wildlife is encountered during project activities, it will be allowed to freely leave the area unharmed and all pitfalls (trenches, holes, bores, detention basins, and other excavations) greater than two feet deep shall be completely covered at the end of each work day, or escape ramps provided.

b. To avoid impacts on wildlife, the project proponent shall comply with all litter and pollution laws and would institute a littler control program throughout project construction. All contractors, subcontractors, and employees shall adhere to this program. Trash and food items would be disposed of promptly in predator-proof containers with resealing lids. These covered trash receptacles shall be placed at each designated work site and the contents would be properly disposed at least once a week. Trash removal reduces the attractiveness of the area to

opportunistic predators such as common ravens, northern raccoons, Virginia opossums, and coyotes. Similarly, contractors, subcontractors, employees, and site visitors shall be prohibited from intentionally feeding wildlife and collecting or handling wildlife.

c. To avoid the potential for mortality and harassment of wildlife, all non-security related firearms, weapons, and domestic dogs shall be prohibited from the project site during construction. Wildlife shall not be disturbed, captured, harassed, or handled. Fishing and hunting shall be prohibited at the project site. Animal nests, burrows and dens shall not be disturbed without prior survey and authorization from the biological monitor. Animal remains, including bird feathers, shall not be collected or removed from the project site.

d. All onsite project workers shall look under their vehicles and equipment before movement. If wildlife is observed, no vehicles or equipment shall be moved until the animal has left the area voluntarily or can be legally relocated. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish and wildlife resources, resulting from project related activities will be prevented from contaminating the soil and/or entering municipal storm drains. These materials, if placed within or where they may enter drainages or municipal storm drains, will be removed immediately. No rubbish, broken concrete, cement, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or washings thereof, oil or petroleum products, or other organic or earthen material from any construction or associated activity of any nature will be allowed to enter or be placed where it may be washed by rainfall or runoff into municipal storm drains. When operations are completed, all excess materials or debris will be removed from the work area.

8.0 POTENTIAL FEDERAL, STATE, AND LOCAL BIOLOGICAL PERMITS AND APPROVALS

A tree trimming/removal permit may be required. There are no sensitive habitats, or waters of the state on the project site, and therefore it is not required to acquire permits for impacts to such resources.

8.1 City of South Pasadena Tree Trimming and/or Removal Permits

Tree Trimming Permits. The City requires a tree trimming permit should more than ten percent of live foliage or limbs of mature oak/mature native species be removed within a twelve-month period. A tree trimming permit would also be required should more than 20 percent of a heritage tree be removed within a twelve-month period. A tree removal permit is required for all proposed removals within the city.

Tree trimming permits may be issued when a qualified arborist determines a) the tree poses a reasonable risk of injury or harm to persons or property, b) the tree substantially interferes with the structural integrity of an existing structure and there is no feasible alternative to mitigate such interference, or c) the limbs of the tree are diseased or damaged. Tree trimming permits require a public comment period of fifteen days beginning when notices are mailed to all property owners within 100-foot radius of the property and may require another fifteen days should there be a date of public hearing. Applicants must receive their development permits and pay all associated application and trimming fees to be considered for permit approval. An appeal may be filed within fifteen calendar days of the director or commission's decision, and the applicant shall be responsible for costs associated with any appeals.

The tree trimming permit application requires the following in writing:

(1) The name and residence or business address of the applicant;

(2) The location and description of the property on which the trees are located;

(3) A description of the proposed work including the reason for tree trimming. Photographs may be provided as exhibits, if desired;

(4) The name and state contractor's license number of the person who will perform the work. Permits shall only be issued to persons possessing a C-27 or C-61 (D-49) state contracting license;

(5) Additional information as the director may require.

Tree Removal Permits. A tree removal permit is required for any action causing the uprooting, cutting, or severing of the main trunk of a tree.

Tree trimming permits may be issued when a) the tree possesses a reasonable risk of injury or harm to persons or property, b) is substantially interfering with the integrity of an existing structure and there is no feasible alternative to mitigate the difference, c) consideration of size, shape, topography, and existing trees create an unreasonable hardship on the property owner, d) a certified arborist provides a written determination that a tree threatens persons or property, or is no longer viable,

due to disease or damages, or e) a significant or mature tree will be replaced with tree(s) that are of greater value and provide greater benefits than the tree proposed for removal.

Tree removal permits require a public comment period of fifteen days (beginning when notices are mailed to all property owners within 100-foot radius of the property). The director or commission shall then provide the planning review authority with recommendations and conditions of approval for the proposed tree removals. Applicants must receive their development building permit, pay all fees associated with tree removal, and pay a deposit equal to the amount required for replacement trees, as determined by the city's arborist. If the approved tree replacement plan has been satisfied, the City shall reimburse the replacement tree deposit. Should the replacement tree plan not be upheld, then the City shall retain the replacement tree deposit. An appeal may be filed in accordance with the process set forth in the zoning code and the applicant shall be responsible for costs associated with any appeals.

The tree removal permit application requires the following in writing:

(1) The name and residence or business address of the applicant;

(2) Project narrative;

(3) The location or description of the property on which the proposed trees are to be removed

(4) The proposed development plan depicting the actual and proposed location of structures, topography and existing trees, whether to be retained or proposed for removal;

(5) A description of the proposed work including the reason for tree removal. Photographs may be included as exhibits, if desired;

(6) Site plan with elevations showing before and after sight lines of the properties landscaping and trees;

(7) An arborist report prepared by a certified arborist;

(8) A tree removal and replacement plan in accordance with this chapter;

(9) The name and state contractor's license number of the person who will perform the work. Permits shall only be issued to persons possessing a C-27 or C-61 (D-49) state contracting license;

(10) Additional information as the director may require. This information may include, but is not limited to, a list obtained from the county assessor of the names of the owners of all parcels within a 100-foot radius of the property upon which the trees are to be removed or trimmed.

A tree removal permit may be conditional upon the replacement or transplant of the tree on or offsite, with considerations to significance, size, number, species, and location, as well as the size of the lot, existing trees, and views from public rights-of-way. Property owners must agree to the conditions of replacement and complete a replacement tree deposit before the issuance of a permit. It is possible that multiple trees would be required to replace one tree, as dependent on size and significance. The

public works department will inspect the completed work and should the transplant or replacement tree not survive for a period of two years, the applicant will be required to replace the tree or pay the city the full cost of replacement. A tree removal permit is valid for one year with the planting of new trees.

Tree Removal and Replacement Plan. Tree removal and replacement plans are required with tree removal permit applications. The amount of required replacement trees is contingent upon the size of existing tree(s) approved for removal. Tree removal and replacement plans must contain:

(a) A drawing of the property which shows the location and species of all existing protected trees;

(b) A site plan showing the proposed development, including all existing and proposed structures, including the topography of the site, in accordance with SPMC;

(c) The tree species and trunk caliper of all trees to be removed;

(d) The reason for removal. Any trees proposed for removal due to poor health or condition shall have the condition of the tree documented in a written report prepared and signed by a certified arborist;

(e) A second drawing of the property after the proposed tree removal which shows remaining trees and all proposed replacement trees. The replacement tree sizes and species must be clearly identified; and

(f) A certified arborist review of the tree plan, if required by the director. The certified arborist shall be contracted and managed by the city and all fees incurred shall be the responsibility of the property owner. (Ord. No. 2328, § 1 (part), 2019.)

Permit exceptions. Permits are not required when a) a tree has been damaged by a natural disaster and is determined to be dangerous to life or property by the director, chief of police, fire chief, or code enforcement officer, b) the fire department has determined a tree's removal is required for creating an effective fire break, or c) the director receives a letter outlining specific trees and reasons for removal or trimming from public utility companies. Furthermore, the City and its contractors are not required to go through the permitting process but must otherwise adhere to the rules set forth in Chapter 34. Unprotected shrubs and species which will only be trimmed to less than ten or twenty percent (mature oak/native species, and heritage trees, respectively), do not require a permit.

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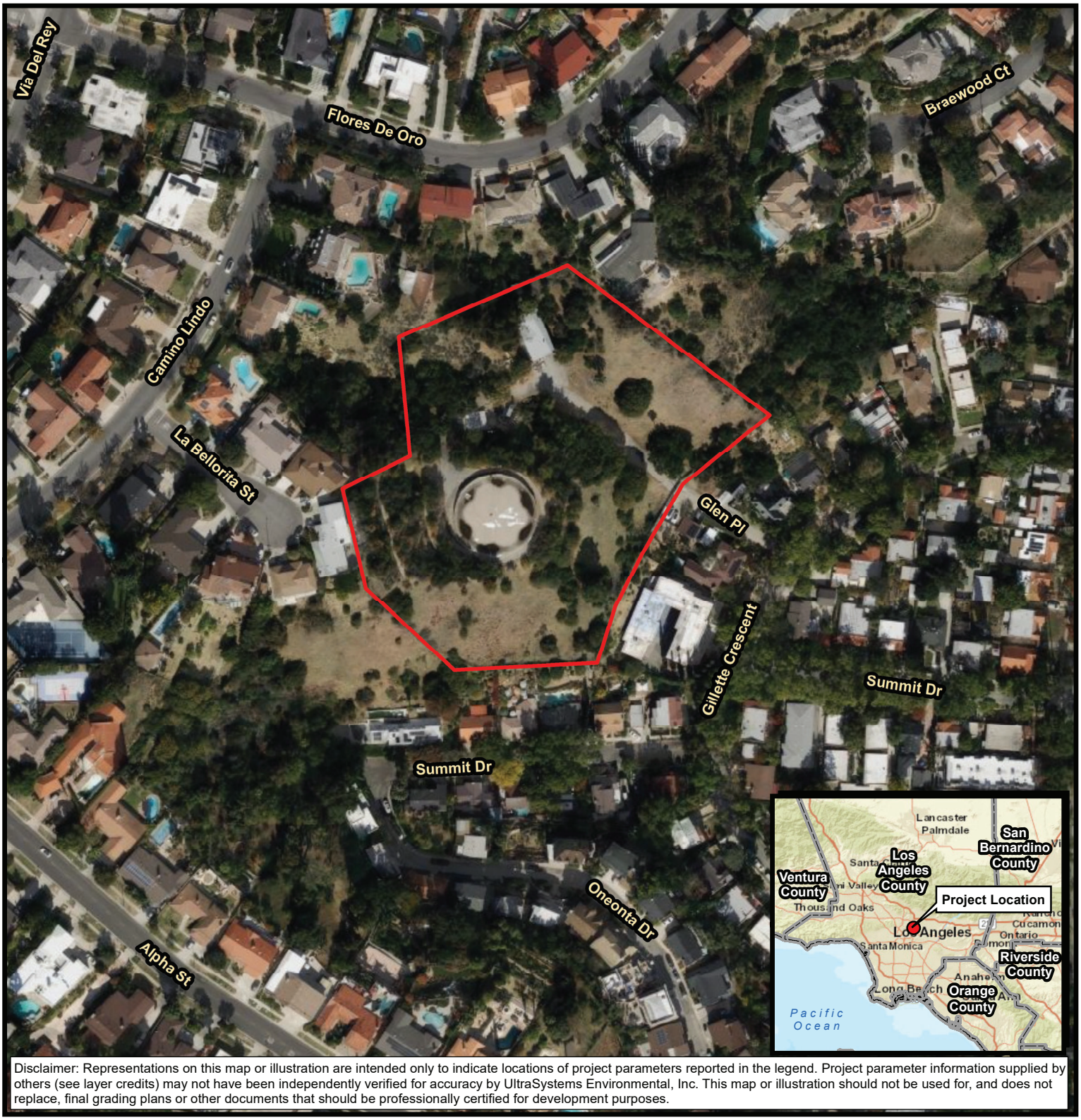
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APPENDIX A

Figures



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June 06, 2025

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, © 2025 Microsoft Corporation © 2025 Maxar ©CNES (2025) Distribution Airbus DS UltraSystems Environmental, Inc., 2025.

Legend

Project Boundary

Scale: 1:2,100

N

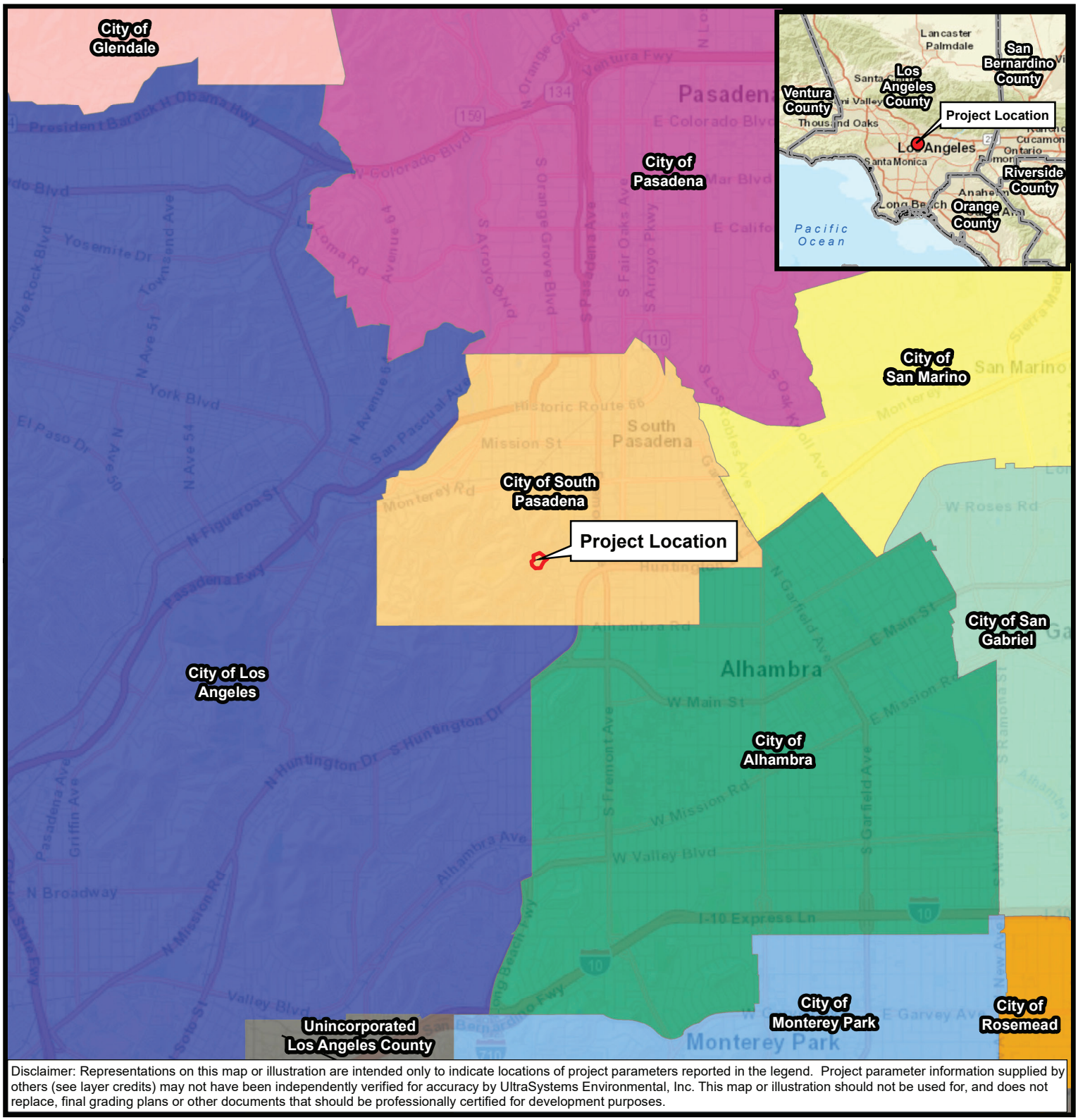
0 87.5 175 Feet

0 25 50 Meters

Westside Reservoir Improvement Project

Figure 1: Project Location

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June 06, 2025

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Scale: 1:55,200

N

0 2,300 4,600 Feet

0 0.5 1 Kilometers

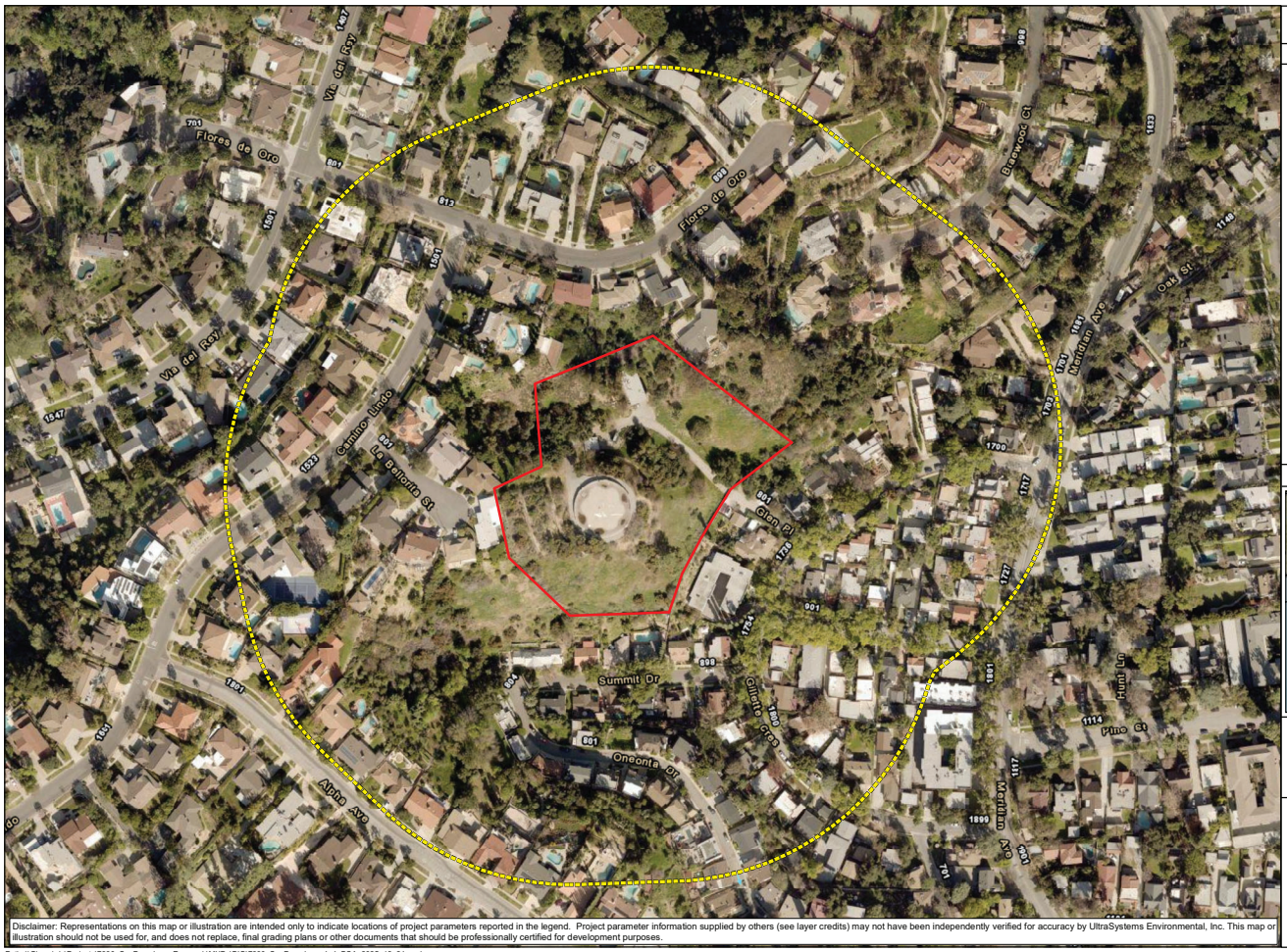
Legend

Project Boundary

Westside Reservoir Improvement Project

Figure 2: Project Vicinity

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Westside Reservoir Improvement Project

Legend

- Project Boundary
- 500 ft Biological Study Area (BSA)

Key Map



0 87.5 175 Feet

0 25 50 Meters

N

Scale: 1:2,100

Project Boundary and Biological Study Area (BSA)

Figure 3

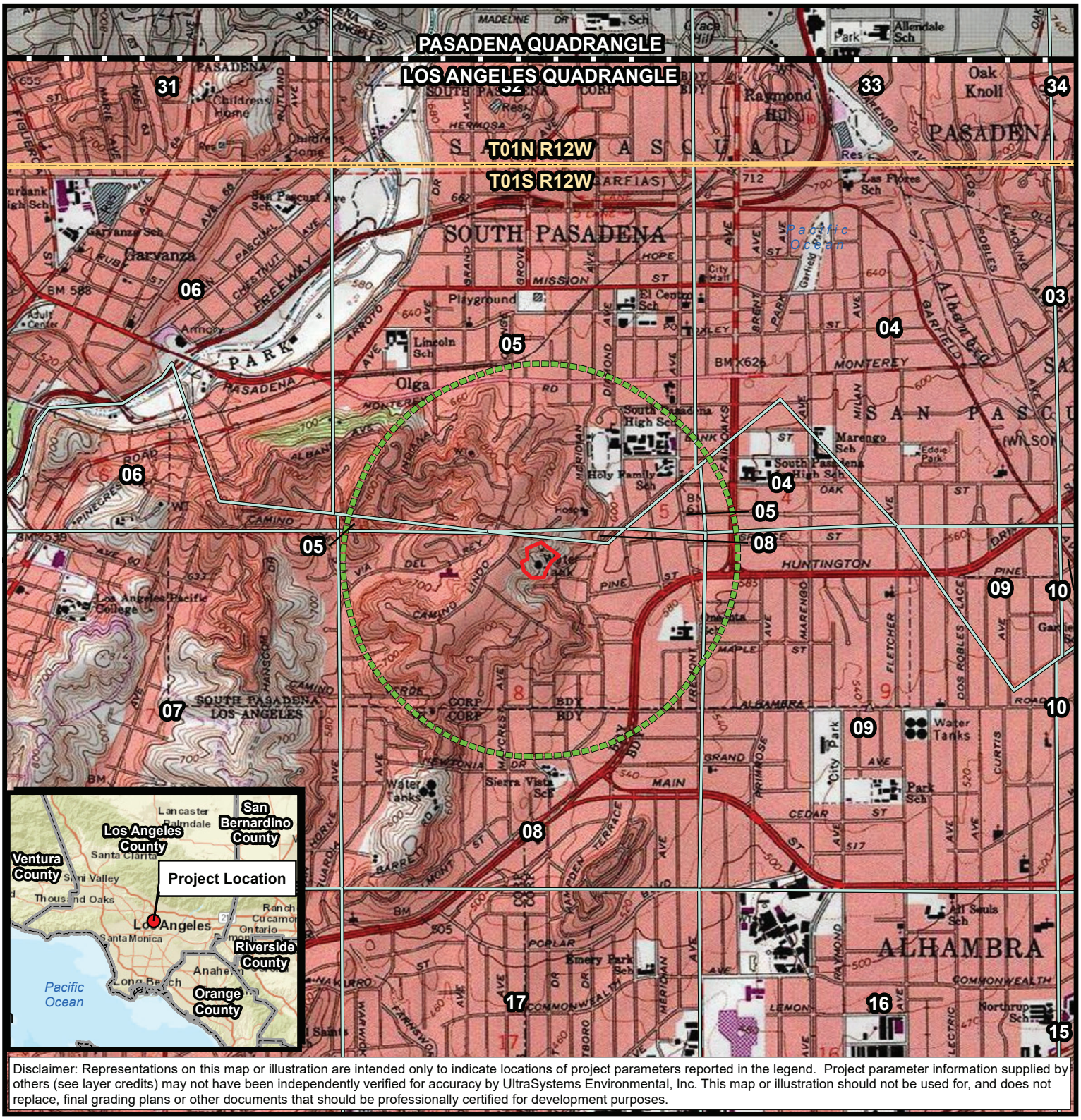
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Path: \\Gissvr\gis\Projects\7330_So_Pasadena_Reservoir\MXDs\BIO\7330_So_Pasadena_4_4_BSA_2025_12_24.mxd

December 24, 2025

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May 27, 2025

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Scale: 1:24,000

N

0 625 1,250 Feet

0 250 500 Meters

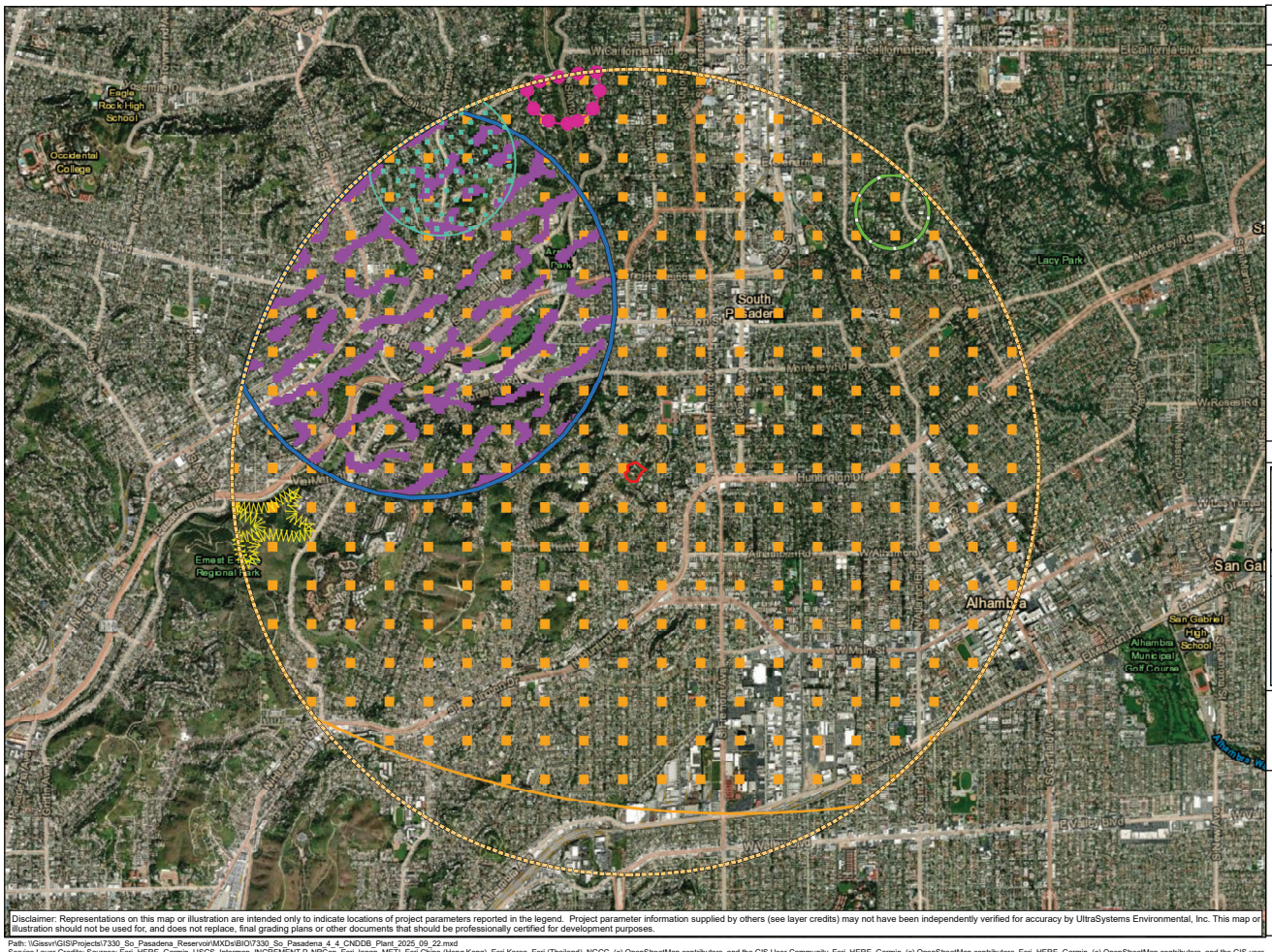
Legend

- Project Boundary
- Half-Mile Radius
- Quadrangle Boundary
- Township Boundary
- Section Boundary

Westside Reservoir Improvement Project

Figure 4: Topographic Map
Quadrangle: Los Angeles
Township: 1S Range: 12W
Section:8

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Westside Reservoir Improvement Project

Legend

- Project Boundary
- 2-Mile Radius

Common Name, *Scientific Name*

- Greata's aster *Symphyotrichum greatae*
- Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*
- Nevin's barberry *Berberis nevinii*
- Parish's gooseberry *Ribes divaricatum* var. *parishii*
- Plummer's mariposa-lily *Calochortus plummerae*
- Walnut Forest *Walnut Forest*
- mesa horkelia *Horkelia cuneata* var. *puberula*

Key Map



0 1,250 2,500 Feet

0 300 600 Meters

N

Scale: 1:30,000

CNDDB Known Occurrences Plant Species and Habitats

Figure 5

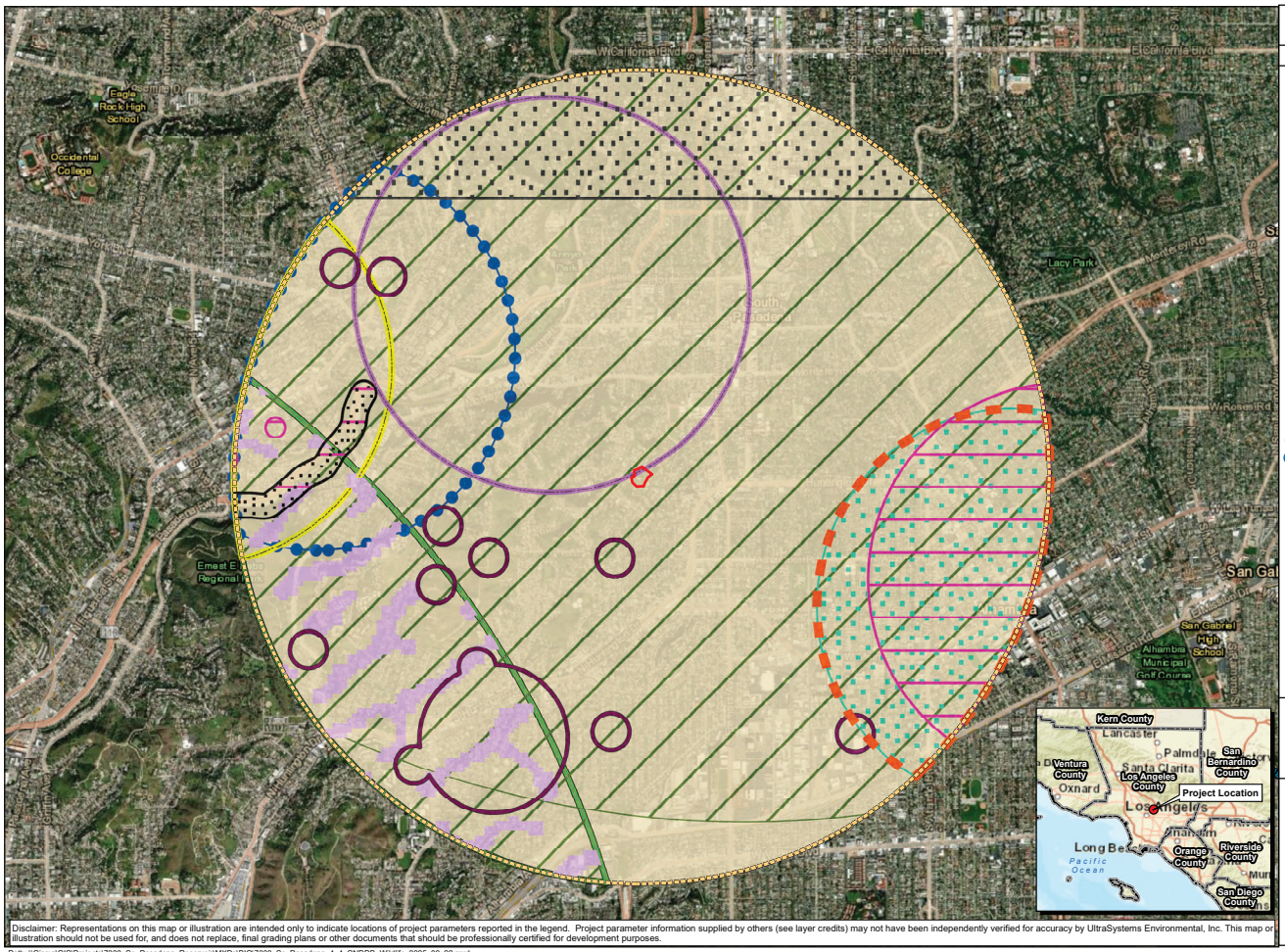
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September 22, 2025



Westside Reservoir Improvement Project

Legend

- Project Boundary
- 2-Mile Radius

Common Name, *Scientific Name*

- American badger *Taxidea*
- American bumble bee *Bombus pensylvanicus*
- American peregrine falcon *Falco peregrinus anatum*
- California glossy snake *Arizona elegans occidentalis*
- San Gabriel chestnut *Glyptostoma gabrielense*
- Southern California legless lizard *Anniella stebbinsi*
- bank swallow *Riparia riparia*
- burrowing owl *Athene cunicularia*
- coastal California gnatcatcher *Polioptila californica californica*
- least Bell's vireo *Vireo bellii*
- southwestern willow flycatcher *Empidonax traillii extimus*
- western mastiff bat *Eumops perotis californicus*
- western spadefoot *Spea hammondii*

0 1,250 2,500 Feet

0 300 600 Meters

N

Scale: 1:30,000

CNDDB Known Occurrences Wildlife Species

Figure 6

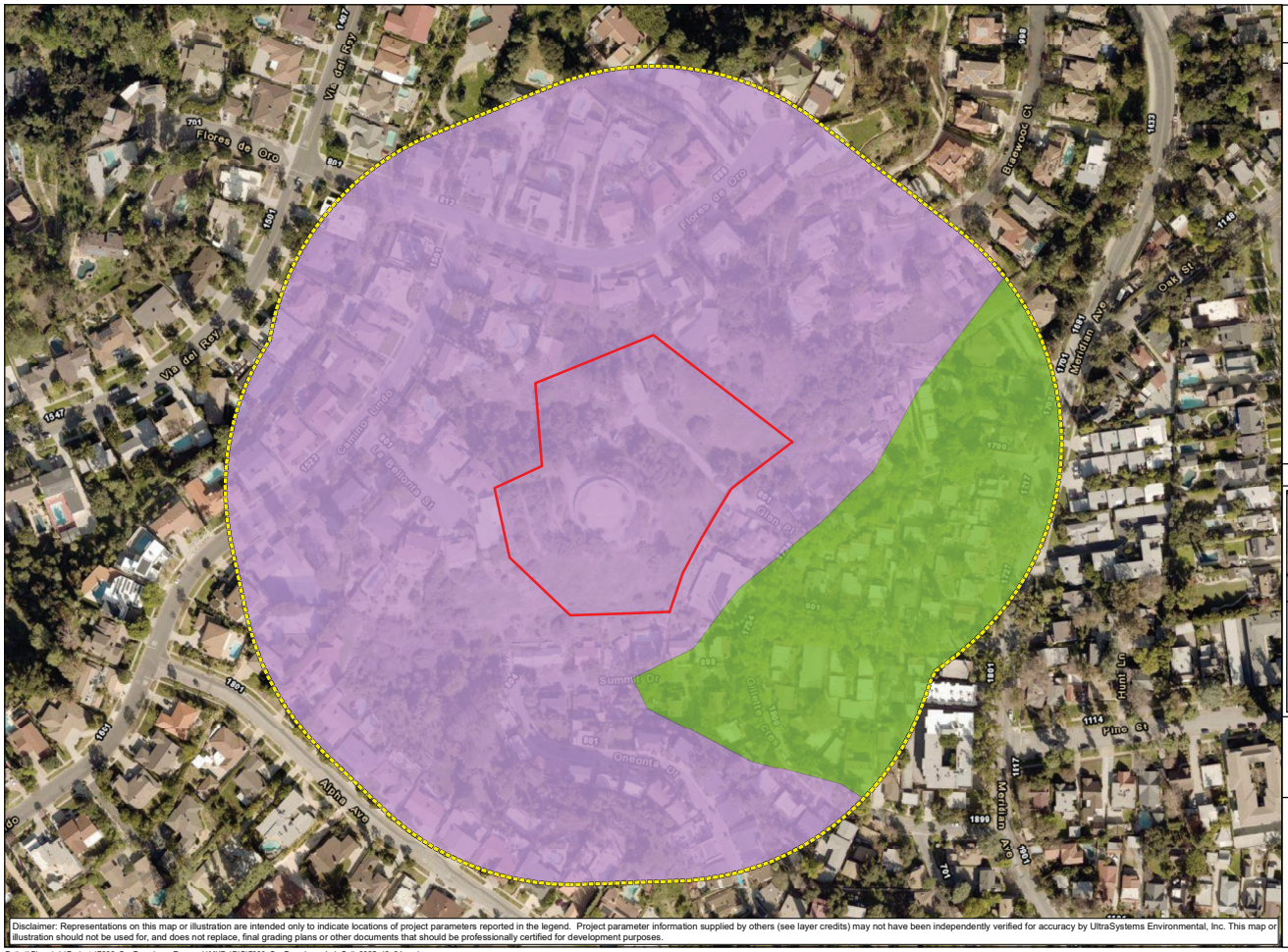
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Path: \\Gissvr\GIS\Projects\7330_So_Pasadena_Reservoir\MXDs\BIO\7330_So_Pasadena_4_4_CNDDB_Wildlife_2025_09_22.mxd

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September 22, 2025



Westside Reservoir Improvement Project

Legend

- Project Boundary
- 500 ft Biological Study Area (BSA)

USDA Soil Unit

- 1136:Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes
- 1241:Counterfeit-Nacimi... warm-Urban land association, 20 to 55 percent slopes

Key Map



0 87.5 175 Feet

0 25 50 Meters

N

Scale: 1:2,100

USDA Soils

Figure 7

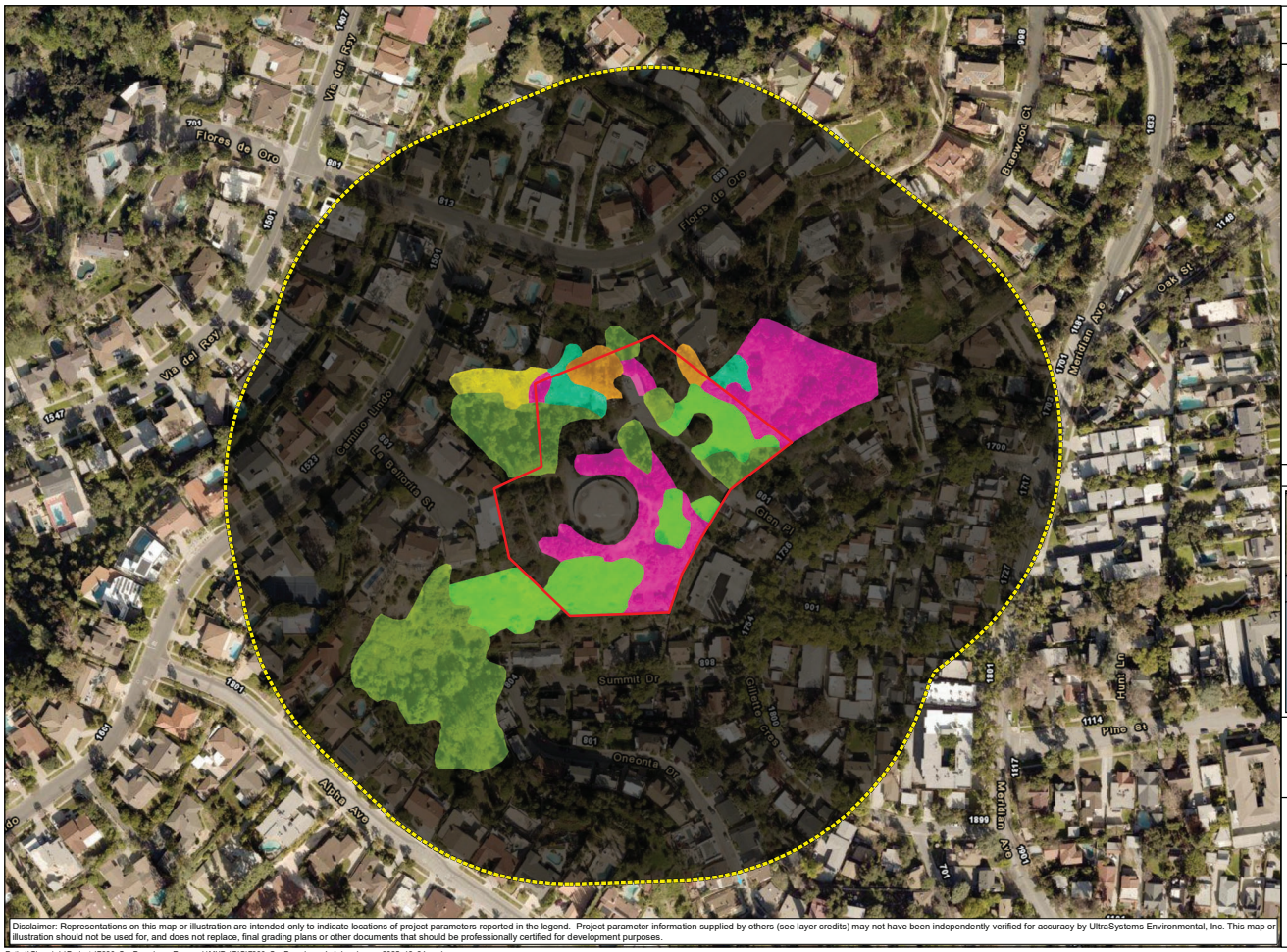
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December 24, 2025

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Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors; USDA 2022; LARIAC 6, 2021; UltraSystems Environmental, Inc., 2025.



Westside Reservoir Improvement Project

Legend

- Project Boundary
- 500 ft Biological Study Area (BSA)

Landcover Types

- California buckwheat scrub
- Developed/ornamental
- Disturbed coast live oak woodland and forest
- Disturbed toyon chaparral
- Eucalyptus groves
- Upland mustards
- Wild oat grassland

Key Map



0 87.5 175 Feet

0 25 50 Meters

N

Scale: 1:2,100

Land Cover Types

Figure 8

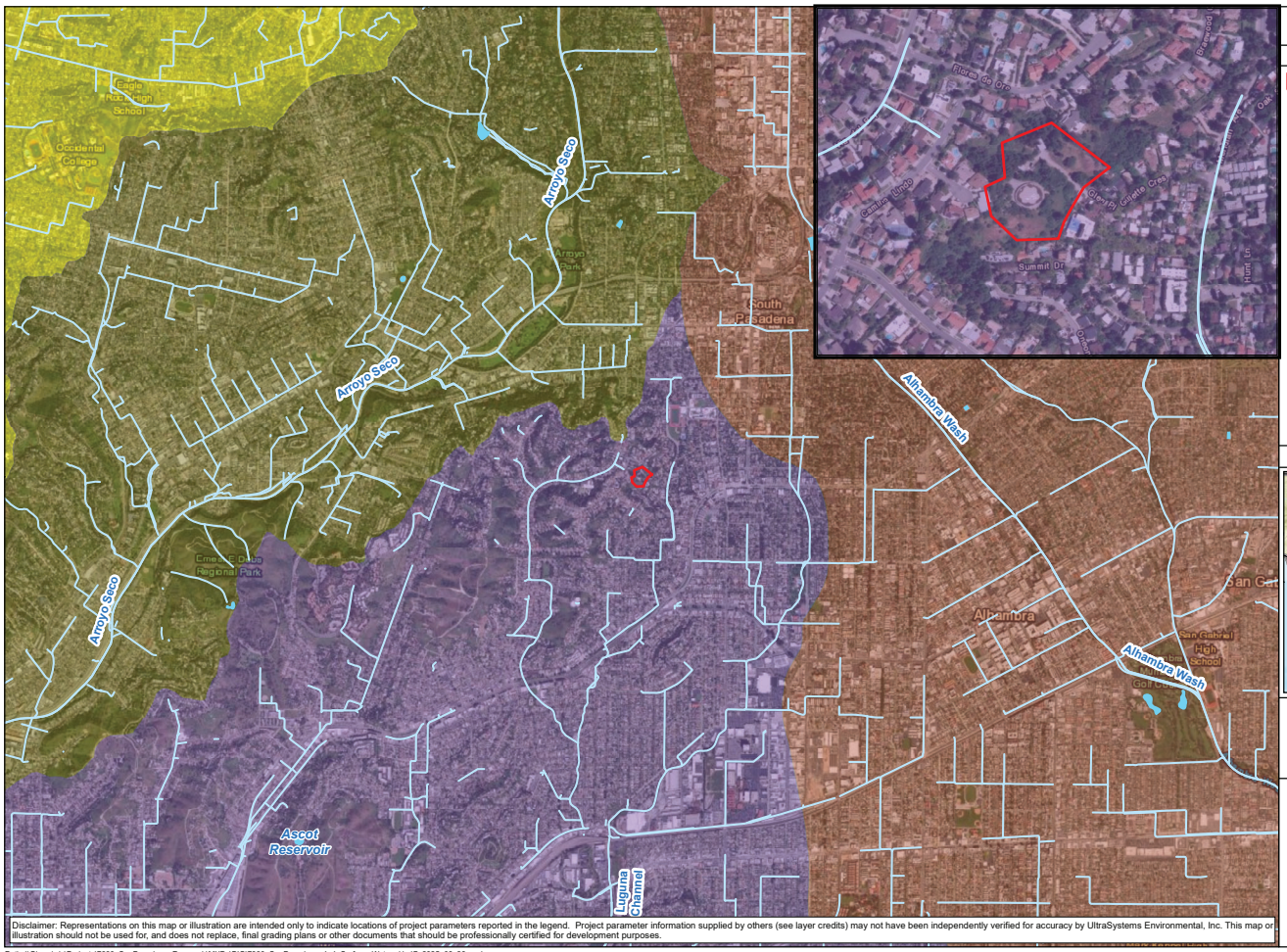
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December 24, 2025

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Westside Reservoir Improvement Project

Legend

- Project Boundary
- USGS Waterbody
- USGS Stream

HUC12, Name

- 180701050209, Arroyo Seco
- 180701050210, Scholl Canyon-Los Angeles River
- 180701050303, Alhambra Wash-Rio Hondo
- 180701050401, Chavez Ravine-Los Angeles River

Key Map



0 1,250 2,500 Feet

0 250 500 Meters

N

Scale: 1:30,000

Figure 9: USGS Surface Waters and Watersheds

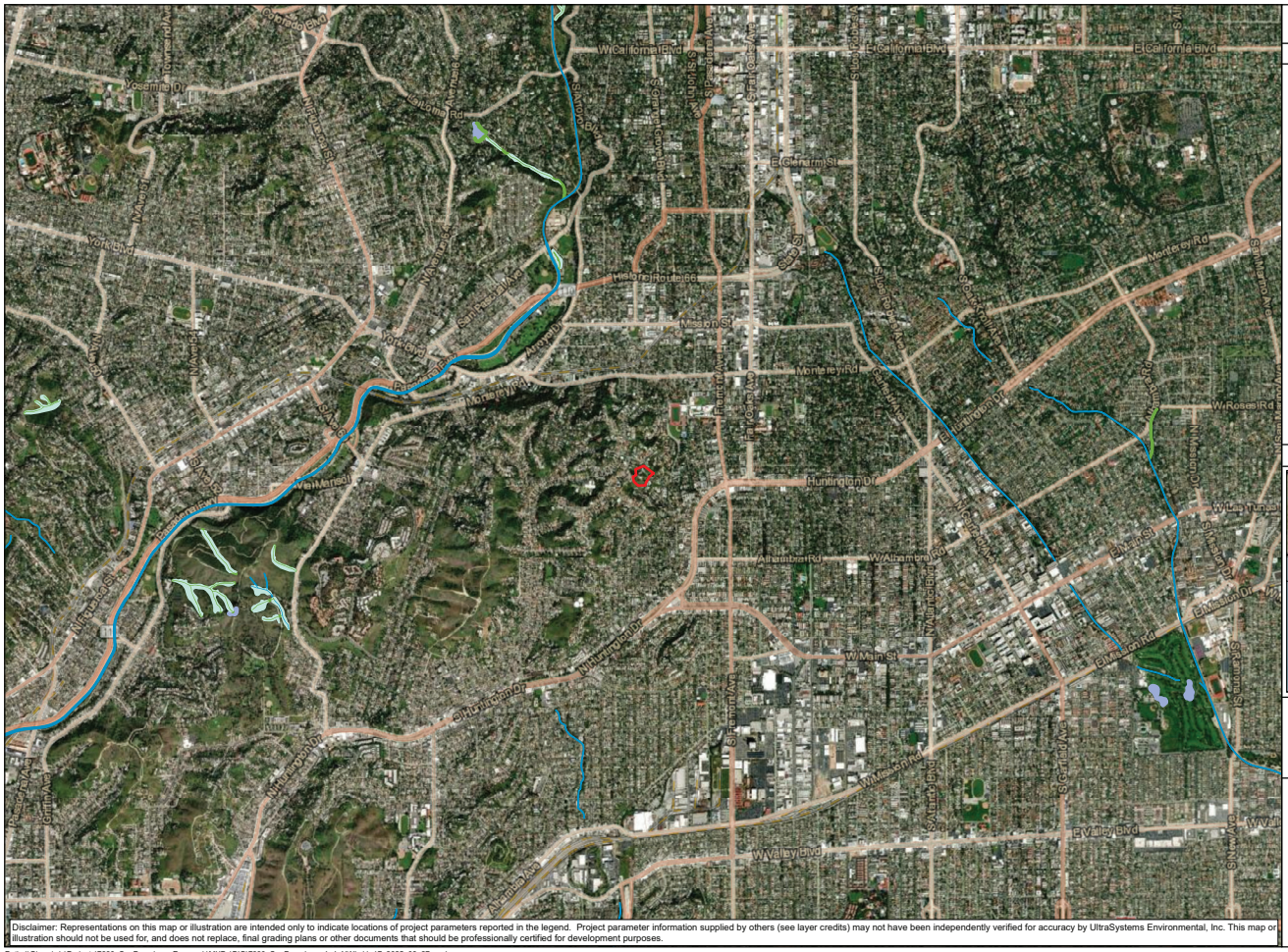
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July 08, 2025

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Westside Reservoir Improvement Project

Legend

- Project Boundary

Riparian Wetland Type

- Forested/Shrub Wetland

USFWS NWI Wetland Type

- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Key Map



0 1,250 2,500 Feet

0 250 500 Meters

N

Scale: 1:30,000

USFWS National Wetlands Inventory (NWI)

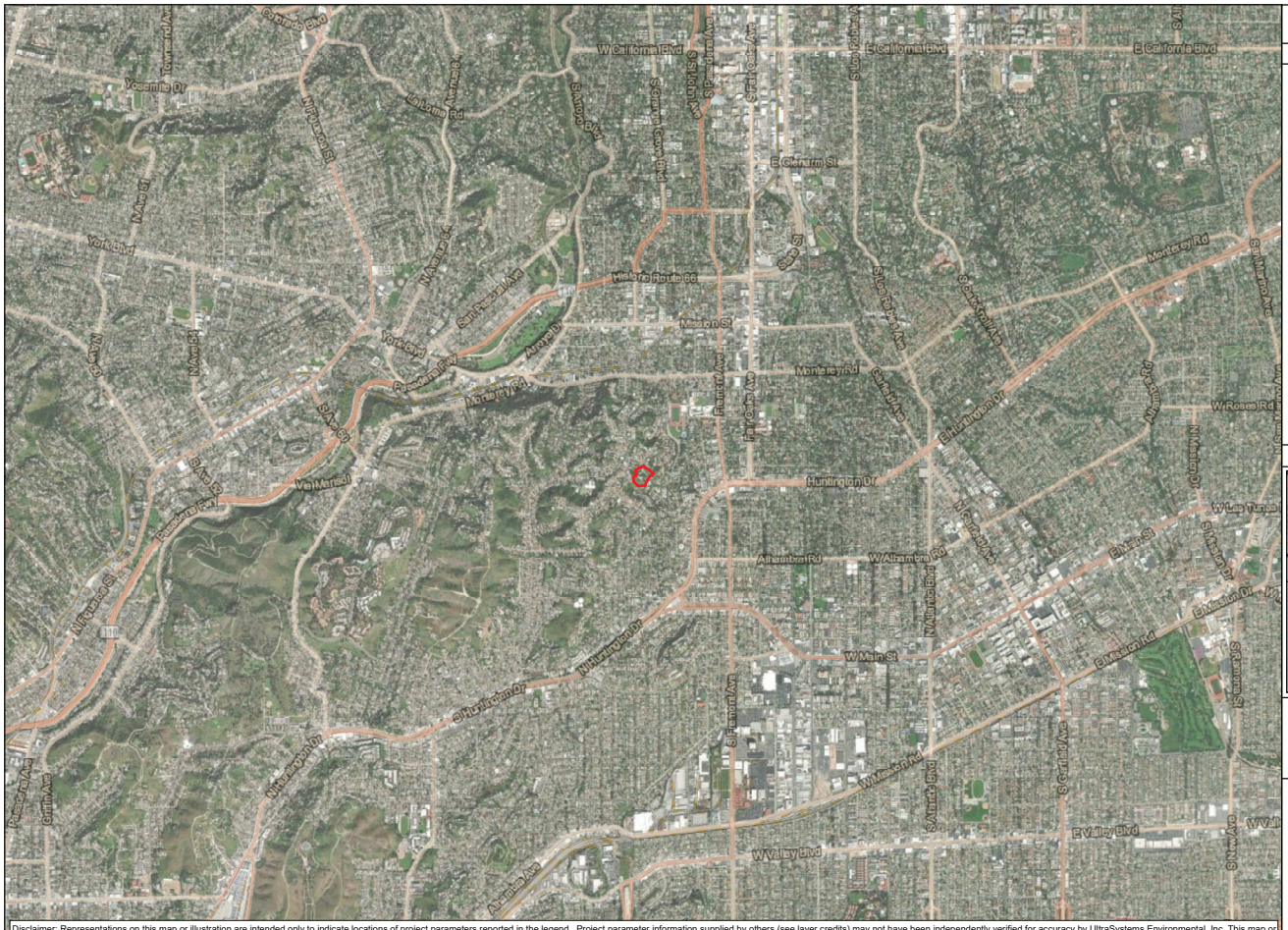
Figure 10

UltraSystems environmental • management • planning

July 08, 2025

Path: \\Gissvr\gis\Projects\7330_So_Pasadena_Reservoir\MXDs\BIO\7330_So_Pasadena_4_4_NWI_11x17_2025_06_27.mxd

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Westside Reservoir Improvement Project

Legend

Project Boundary

There are no critical habitats within 2 miles of the project site

Key Map



0 1,250 2,500 Feet

0 400 800 Meters

N

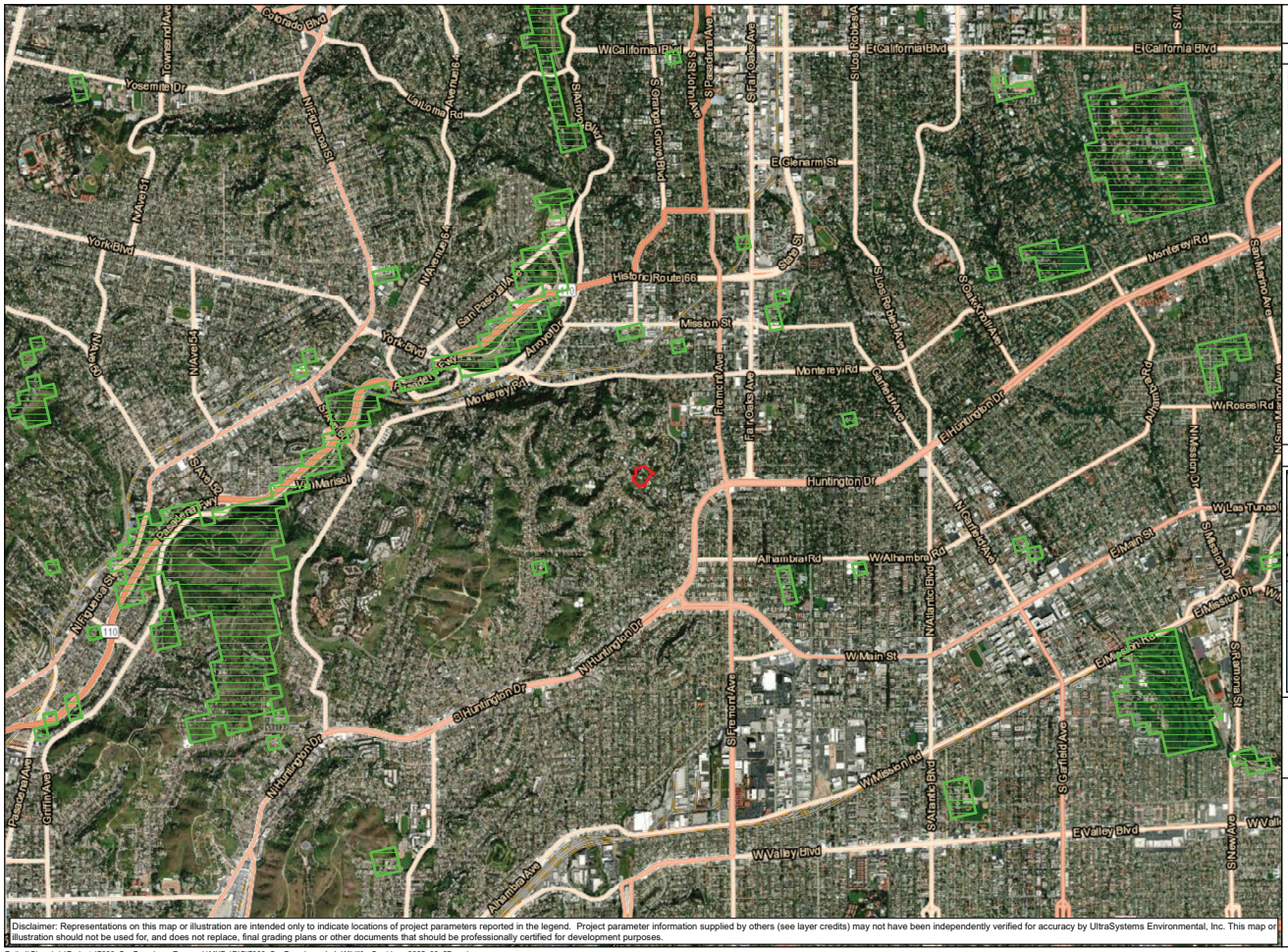
Scale: 1:30,000

USFWS Critical Habitats

Figure 11

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July 08, 2025



Westside Reservoir Improvement Project

Legend

- Project Boundary
- Small Natural Areas

Key Map



0 1,250 2,500 Feet

0 500 Meters

N

Scale: 1:30,000

CDFW Wildlife Corridors

Figure 12

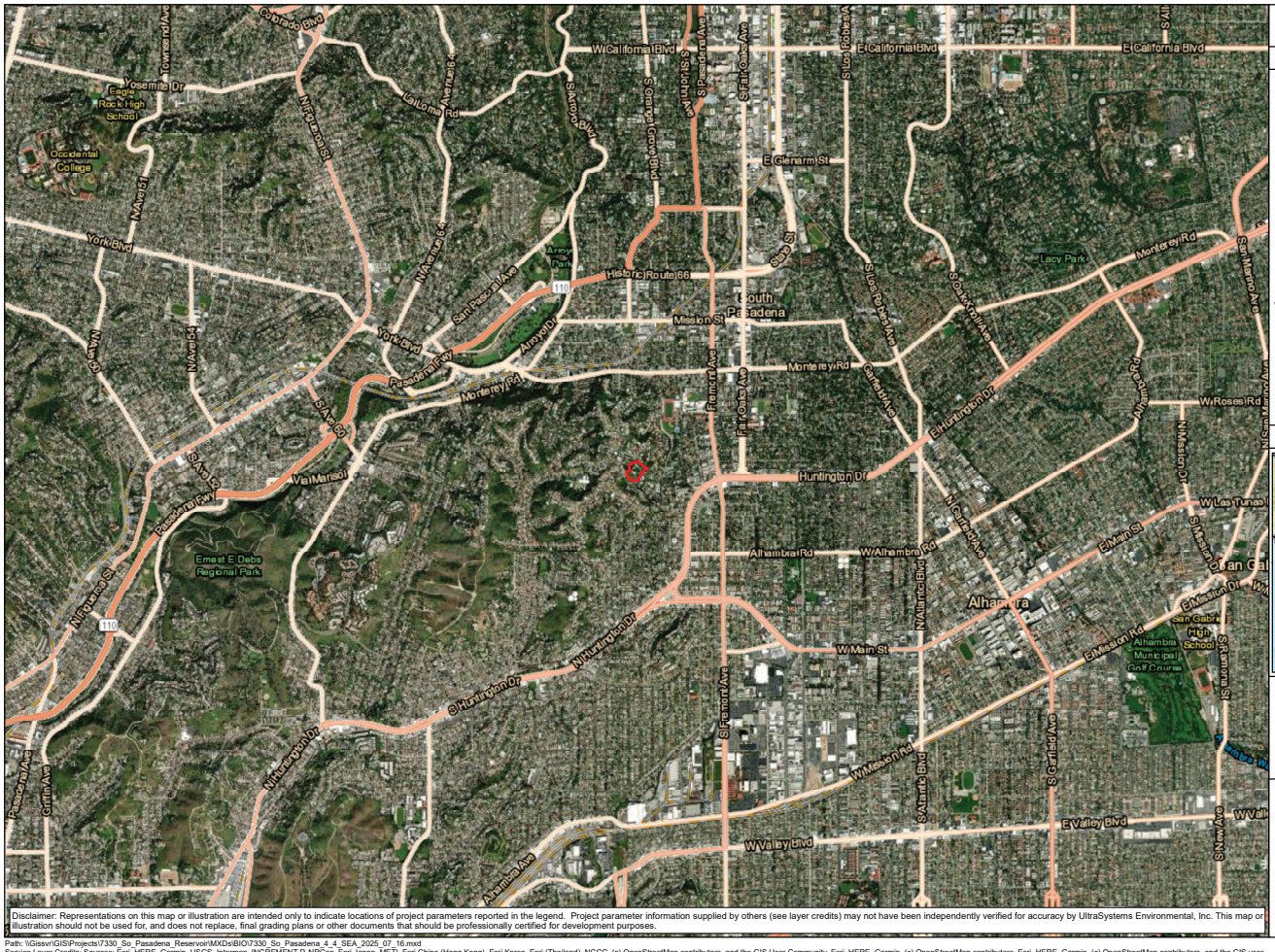
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Path: \\Gissvr\gis\Projects\7330_So_Pasadena_Reservoir\MXDs\BIO\7330_So_Pasadena_4_4_Wildlife_Corridors_2025_06_27.mxd

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July 08, 2025



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Path: \\Gissvr\GIS\Projects\7330_So_Pasadena_Reservoir\MXDs\BIO\7330_So_Pasadena_4_4_SEA_2025_07_16.mxd

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Westside Reservoir Improvement Project

Legend

Project Boundary

There are no SEA sites within 2 miles of the project site.

Key Map



0 1,250 2,500 Feet

Scale: 1:30,000

0 250 500 Meters

Significant Ecological Areas (SEAs)

Figure 13

UltraSystems environmental management planning

July 16, 2025



Westside Reservoir Improvement Project

Legend

- Project Boundary
- 500 ft Biological Study Area (BSA)
- Permanent Impact
- Temporary Impact

Landcover Types

- California buckwheat scrub
- Developed/ornamental
- Disturbed coast live oak woodland and forest
- Disturbed toyon chaparral
- Eucalyptus groves
- Wild oat grassland

No work to take place outside of the Permanent and Temporary Impact Areas

Key Map



0 37.5 75 Feet

0 10 20 Meters

N

Scale: 1:900

Impacts to Land Cover Types

Figure 14

UltraSystems

December 17, 2025

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Path: \\Gissvr\gis\Projects\7330_So_Pasadena_Reservoir\MXD\sBIO\7330_So_Pasadena_4_4_Landcover_Impact_2025_12_17.mxd

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community; LARIAC, 2020 UltraSystems Environmental, Inc., 2025.

APPENDIX B

Species Occurrence Potential Determinations

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Listed Endangered, Threatened, Candidate and State Rare Plants: Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing.									
Arenaria paludicola	marsh sandwort	FE, SE, CRPR: 1B.1		Lifeform: perennial stoloniferous herb Habitats: saturated, acidic bog soils, freshwater marshes and swamps, bogs and fens, mostly sandy with a high organic content, and seems to prefer unshaded settings with dense undergrowth Bloom Period: May to August	10 – 558	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.
Astragalus brauntonii	Braunton's milk-vetch	FE, CRPR: 1B.1		Lifeform: perennial herb Habitats: valley grasslands, coastal sage scrub, and closed-pine cone coniferous forests. Disturbed areas in chaparral. Soils: recently-burned or disturbed chaparral areas particularly on limestone-derived calcareous soils Bloom Period: January to August	13 – 2,100	Yes	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitats (disturbed chaparral and a limited amount of coastal sage scrub) to support this species. The CNDDB Database has one recent observation approximately 9.6 miles northeast of the project site. The INaturalist website has 87 research grade observations within 10 miles, the nearest occurred approximatley 7.08 miles northwest of the project site on April 7, 2024. This species was not observed during surveys.
Astragalus tener var. titi	coastal dunes milk-vetch	FE, SE, CRPR: 1B.1		Lifeform: annual herb Habitats: coastal bluff scrub and coastal dunes Soils: moist depressions on clay soils Bloom Period: March to May	3 – 164	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.
Berberis nevinii (=Mahonia nevinii)	Nevin's barberry	FE, SE, CRPR: 1B.1		Lifeform: perennial evergreen shrub Habitats: alluvial scrub community, chaparral community, and along the margins of dry washes. Steep, north-facing slopes, and rocky slopes. Soils: sandy, gravelly, coarse soils Bloom Period: February to June	< 2,706	No	Yes	Yes	**Not expected to occur.** The BSA contains suitable chaparral habitat to support this species. However, suitable soils are not present within the BSA.
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	SE, CRPR: 1B.1		Lifeform: annual herb Habitats: open areas associated with mixed grasslands, chaparral, and coastal sage scrub communities Soils: sandy and gravelly places associated with sandstone Bloom Period: April to July	492 – 4,002	Yes	Yes	No	**Not expected to occur.** The BSA contains suitable chaparral habitat to support this species. However, suitable soils are not present within the BSA.
Dodecahema leptoceras	slender-horned spineflower	FE, SE, CRPR: 1B.1		Lifeform: annual herb Habitats: flood plains and in washes. Chaparral, Cismontane woodland, Coastal scrub (alluvial fans). Soils: sandy Bloom Period: April to June	656 – 2,493	No	Yes	Yes	**Not expected to occur.** The BSA contains suitable chaparral habitat to support this species. However, suitable soils are not present within the BSA.
Eryngium aristulatum var. parishii	San Diego button-celery	FE, SE, CRPR: 1B.1		Lifeform: annual/perennial herb Habitats: moist depressions surrounded by coastal scrub chaparral, and valley and foothill grasslands Soils: vernal pools and moist clay depressions in poorly-drained adobe soil grasslands Bloom Period: April to June	66 – 2,034	No	Yes	Yes	**Not expected to occur.** The BSA is within the known distribution and elevation range but does not contain suitable habitats such as moist

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Nasturtium gambelii (=Rorippa gambelii)	Gambel's water cress	FE, ST, CRPR: 1B.1		Lifeform: perennial rhizomatous herb Habitats: freshwater and brackish marshes or swamps and grows on the margins of lakes and slowly flowing streams. During periods of drought, plants can be found growing on mud. Soils: sandy, saturated, typically high organic content Bloom Period: April to October	16 – 1,082	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat such as marshes, swamps, or streams to support this species.
Navarretia fossalis	spreading navarretia (=Moran's nosegay)	FT, CRPR: 1B.1		Lifeform: annual herb Habitats: vernal pools and depressions and ditches in areas that once supported vernal pools , in alkaline or saline scrubs (chenopod scrub) and playas, shallow freshwater marshes and swamps Soils: saline-alkaline Bloom Period: April to June	98 – 2,148	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat such as vernal pools, freshwater marshes or swamps to support this species.
Orcuttia californica (=Orcuttia californica var. californica)	California Orcutt grass	FE, SE, CRPR: 1B.1		Lifeform: annual herb Habitats: Vernal pools, wetlands, valley grasslands, wetland-riparian Soils: Clay soils Bloom Period: April to August	49 – 2,165	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitats (disturbed chaparral and a limited amount of coastal sage scrub) to support this species, however, this species has not been recorded within 10 miles of the project site. This species was not observed during surveys.
Sensitive Plants: These plants have no official status under the ESA, the CESA, and/or the NPPA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations.									
Acanthoscyphus parishii var. parishii	Parish's oxytheca	CRPR 4.2		Lifeform: annual herb Habitats: Chaparral, Lower montane coniferous forest Soils: Gravelly (sometimes), Sandy (sometimes) Bloom Period: June - September	4005-8530	No	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Arctostaphylos glandulosa ssp. gabrielensis (=Arctostaphylos gabrielensis)	San Gabriel manzanita	CRPR: 1B.2		Lifeform: perennial evergreen shrub Habitats: rocky habitats in chaparral Bloom Period: March	1,952 – 4,920	No	No	No	**Not expected to occur.** The BSA is below the known elevation for this species.
Asplenium vespertinum	western spleenwort	CRPR: 4.2		Lifeform: fern Habitats: coastal sage scrub, chaparral, southern oak woodland Bloom Period: Feb-June	820-7513	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitats (disturbed chaparral and a limited amount of coastal sage scrub) to support this species, however, this species has not been recorded within 10 miles of the project site.This species was not observed during surveys.
Atriplex coulteri	Coulter's saltbush	CRPR 1B.2		Lifeform: perennial herb Habitats : Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; ocean bluffs, ridgetops, as well as alkaline low places. Soils: alkaline or clay soils Bloom Period: March to October	10 – 1,510	Yes	Yes	Yes	**Low Potential to occur. T**he BSA contains a limited amount of suitable habitat (wild oat grassland) to support this species.
Atriplex parishii	Parish's brittlescale (=Parish's saltbush)	CRPR: 1B.1		Lifeform: annual herb Habitats: coastal bluff scrub, coastal dunes, coastal scrub, chenopod scrub and playas. Vernal pools. Freshwater wetlands, shadscale, alkali sink, wetland-riparian. Soils: alkaline or clay soils Bloom Period: March to October	0 – 1,542	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Atriplex serenana var. davidsonii	Davidson's saltscale (=Davidson's saltbush, bractscale)	CRPR: 1B.2		Lifeform: annual herb Habitats: coastal bluff scrub and coastal scrub, alkali vernal pools, alkali annual grasslands, alkali playa, and vernal plains. Soil: alkaline Bloom Period: April to October	33 – 656	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.
Calochortus clavatus var. gracilis	slender mariposa lily	CRPR: 1B.2		Lifeform: perennial bulbiferous herb Habitats: shaded foothill canyons often on grassy slopes within other habitat, chaparral and coastal scrub Bloom Period: March to June (November)	1,050 – 3,280	Yes	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Calochortus plummerae	Plummer's mariposa lily	CRPR: 4.2		Lifeform: perennial bulbiferous herb Habitats: chaparral, cismontane woodlands, coastal scrub, valley and foothill grasslands, and lower montane coniferous forests. Coastal sage scrub. Yellow pine forest. Foothill woodlands. Soils: dry, rocky slopes and soils, granite Bloom Period: May to July	0 – 5,576	Yes	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable soils to support this species.
Calochortus weedii var. intermedius	intermediate mariposa lily (=Weeds mariposa lily)	CRPR: 1B.2		Lifeform: perennial bulbiferous herb Habitats: dry, rocky open slopes and rock outcrops in coastal scrub and chaparral. Valley grasslands. Soil: heavy, rocky soil. dry Bloom Period: May to July	0 – 2,804	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable soils to support this species.
Calystegia felix	lucky morning-glory	CRPR: 1B.1		Lifeform: annual rhizomatous herb Habitats: meadows and seeps (sometimes alkaline) and alluvial riparian scrub Soils: silty loam and alkaline soils Wetlands, Drainages, or Seeps: Yes Bloom Period: March to September	98 - 705	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat (such as meadows, seeps or alluvial riparian scrub) to support this species.
Camissoniopsis lewisii	Lewis' evening-primrose (Lewis' suncup)	CRPR: 3		Lifeform: annual herb Habitats: coastal bluff scrub, cismontane woodlands, coastal dunes, coastal scrub, and valley and foothill grasslands Soils: sandy or clay soils Bloom Period: March to June	< 1700	Yes	Yes	Yes	**Low Potential to occur. T**he BSA contains a limited amount of suitable habitat (wild oat grassland) to support this species.
Centromadia parryi ssp. australis (=Hemizonia parryi ssp. australis)	southern tarplant	CRPR: 1B.1		Lifeform: annual herb Habitats: Fresh and saltwater marshes and swamps, and in vernally mesic sites within valley and foothill grasslands and vernal pools. Coastal scrub. Soils: poorly drained or alkaline soils Bloom Period: May to November	0 – 1,574	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.
Centromadia pungens ssp. laevis (=Hemizonia pungens ssp. laevis)	smooth tarplant	CRPR 1B.1		Lifeform: annual herb Habitats: Valley and foothill grassland, chenopod scrub, meadows and seeps, playas, riparian woodland, alkali meadow, alkali scrub; also in disturbed places. Marshes and swamps (margins). Vernal pools. Soils: alkaline soils Bloom Period: April to September	0 – 2,099	Yes	Yes	Yes	**Low Potential to occur. T**he BSA contains a limited amount of suitable habitat (wild oat grassland) to support this species.
Chorizanthe parryi var. parryi	Parry's spineflower	CRPR: 1B.1		Lifeform: annual herb Habitats: coastal scrub, chaparral, cismontane woodlands, and valley and foothill grasslands Soils: sandy or rocky soils Bloom Period: April to June	902 – 4,002	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable soils to support this species.
Cladium californicum	California sawgrass	CRPR: 2B.2		Lifeform: perennial rhizomatous herb Habitats: meadows and seeps and alkaline or freshwater marshes and swamps Wetlands, Drainages, or Seeps: Yes Bloom Period: June to September	197 – 2,837	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Clinopodium mimuloides	monkey-flower savory	CRPR: 4.2		Lifeform: perennial herb Habitats: Chaparral, north coast coniferous forest Soils: Alkaline Bloom Period: June to October	295 - 7,480	Yes	Yes	No	**Not Expected to Occur.** The BSA is outside of the known distribution range of the species
Convolvulus simulans	small-flowered morning-glory	CRPR: 4.2		Lifeform: annual herb Habitats: openings in chaparral, coastal sage scrub, and valley and foothill grasslands. Cismontane woodlands. Soils: friable clay soils, devoid of shrubs, seeps, serpentine Bloom Period: March to July	98 – 2,296	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitats (disturbed chaparral and a limited amount of coastal sage scrub) to support this species, however, this species has not been recorded on the CNDDB database or INaturalist website within 10 miles of the project site. This species was not observed during surveys.
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	CRPR: 2B.2		Lifeform: annual parasitic vine Habitats: freshwater marshes and swamps Bloom Period: July to October	49 - 918	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat such as freshwater marshes or swamps to support this species.
Diplacus johnstonii	Johnston's monkeyflower	CRPR: 4.3		Lifeform: annual herb Habitats: lower montane coniferous forest, disturbed sites, roadsides Soils: gravelly, rocky soils Bloom Period: May to August	3198- 9550	No	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Dudleya multicaulis	many-stemmed dudleya	CRPR: 1B.2		Lifeform: perennial herb Habitats: barrens, rocky places, and ridgelines as well as thinly vegetated openings in chaparral, valley and foothill grasslands, and coastal sage scrub Soils: clay soils, heavy soils Bloom Period: April to July	< 2,591	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitats (disturbed chaparral and a small amount of wild oat grassland) to support this species, however, the CNDDB database only has historical observations within 10 miles and the INaturalist website does not have research grade observations within 10 miles. This species was not observed during surveys.
Galium angustifolium ssp. gabrielense	San Antonio Canyon bedstraw	CRPR: 4.3		Lifeform: perennial herb Habitats: Chaparral, lower montane coniferous forest Soils: Graniti, and sometimes rocky or sandy Bloom Period: April to August	2,295 - 8,695	No	No	No	**Not expected to occur.** The BSA and project area are located outside of the known elevation for this species.
Galium angustifolium ssp. gracillimum	slender bedstraw	CRPR: 4.2		Lifeform: perennial herb Habitats: Joshua tree 'woodland', Sonoran desert scrub Soils: Granitic or rocky Bloom Period: April to June, sometimes July	425 - 7,515	No	Yes	No	**Not Expected to Occur.** The BSA is outside of the known distribution range of the species and does not contain suitable habitat.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Galium cliftonsmithii	Santa Barbara bedstraw	CRPR: 4.3		Lifeform: perennial herb Habitats: Cismontane woodland Soils: Alkaline to slightly acidic Bloom Period: May to July	0 - 4,005	No	Yes	No	**Not Expected to Occur.** The BSA is outside of the known distribution range of the species and does not contain cismontane woodland.
Galium grande	San Gabriel bedstraw	CRPR: 1B.2		Lifeform: perennial deciduous shrub Habitats: broad leafed upland forests, chaparral, cismontane woodlands, and lower montane coniferous forests Bloom Period: January to July	1,394 – 4,920	Yes	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Galium jepsonii	Jepson's bestraw	CRPR: 4.3		Lifeform: perennial herb Habitats: red fir forest, open woodland, conifer forest Soils: gravelly soils Bloom Period: July to August	5052-8202	No	No	No	**Not expected to occur.** The BSA is below the known elevation for this species.
Galium johnstonii	Johnston's bedstraw	CRPR: 4.3		Lifeform: perennial herb Habitats: chaparral, lower montane coniferous forest, pinyon and juniper woodlands, riparian woodlands Bloom Period: June to July	3,641- 7,545	Yes	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Harpagonella palmeri (=Pectocarya palmeri)	Palmer's grapplinghook	CRPR 4.2		Lifeform: annual herb Habitats: Chaparral, coastal scrub, valley and foothill grassland; openings, and open grassy areas within shrubland. Soils: clay soils Bloom Period: March to May	65 – 3,135	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitats (disturbed chaparral and a limited amount of wild oat grassland) to support this species, however, this species has not been recorded on the CNDDB database or INaturalist website within 10 miles of the project site. This species was not observed during field surveys.
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	CRPR: 1A		Lifeform: perennial rhizomatous herb Habitats: coastal salt and freshwater marshes and swamps. Wetland-riparian. Bloom Period: August to October	33 – 5,000	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.
Heuchera caespitosa (=Heuchera elegans)	urn-flowered alumroot	CRPR: 4.3		Lifeform: perennial rhizomatous herb Habitats: sandstone cliffs, sandstone outcrops, or other rocky areas, often near creeks or waterfalls, within cismontane woodlands, montane riparian forests, and lower and upper montane coniferous forests Bloom Period: May to August	3,788 – 8,692	No	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Hordeum intercedens	vernal barley (=bobtail barley)	CRPR: 3.2		Lifeform: annual herb Habitats: coastal dunes, vernal pools and (sometimes dry) saline flats and depressions in valley and foothill grasslands. Alkaline flats. Coastal scrub. Soils: alkali flats and flood plains Bloom Period: March to June	16 – 3,280	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable habitat to support this species.
Horkelia cuneata var. puberula (=Horkelia cuneata ssp. puperula)	mesa horkelia	CRPR: 1B.1		Lifeform: perennial herb Habitats: maritime chaparral, coastal scrub, and cismontane woodlands Soils: sandy or gravelly sites Bloom Period: February to September	230 – 2,657	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable soils to support this species.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Juglans californica (=Juglans californica var. californica)	Southern California black walnut	CRPR: 4.2	IUCN:NT	Lifeform: perennial deciduous tree Habitats: disturbed areas (heat, smog, and drought tolerant). Slopes, hillsides and canyons. Southern Oak Woodland, wetland-riparian Soils: moist soils. Loam or sand. Bloom Period: March to August	100 – 2,952	Yes	Yes	Yes	**High potential to occur.** The BSA contains suitable habitat (disturbed coast live oak woodland) to support this species. The INaturalist website has many research grade observations within 10 miles, the nearest occurred approximately 0.38 miles southwest of the project site on April 18, 2021. This species was not observed during surveys.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	CRPR 1B.1		Lifeform: annual herb Habitats: Coastal salt marshes, playas, vernal pools, sinks, and grasslands. Soils: Usually found on alkaline/saline soils. Bloom Period: February to June	3 – 4,002	Yes	Yes	Yes	**Low potential to occur.** The BSA contains an isolated and reduced amount of suitable habitat (wild oat grassland) to support this species. This species was not observed during surveys.
Lepechinia fragrans	fragrant pitcher sage	CRPR: 4.2		Lifeform: perennial shrub Habitats: chaparrals Bloom Period: March to October	66 – 4,297	Yes	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitat (disturbed chaparral) to support this species. The INaturalist website has 50 research grade observations within 10 miles, the nearest occurred approximately 1.95 miles northwest of the project site on May 16, 2023. This species was not observed during surveys.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	CRPR 4.3		Lifeform: annual herb Habitats: chaparral and coastal sage scrub; shrubland. Soils: dry soils Bloom Period: January to July	3 – 2,903	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitat (disturbed chaparral) to support this species, however, the CNDDB database only has historical observations within 10 miles and the INaturalist website doesn't have any research grade observations within 10 miles. This species was not observed during surveys.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Lilium humboldtii ssp. ocellatum (=Lilium fairchildii)	ocellated Humboldt lily	CRPR: 4.2		Lifeform: perennial bulbiferous herb Habitats: lower montane coniferous forests, cismontane woodlands, riparian woodlands, coastal scrub and chaparral Microhabitat: openings of vegetated areas Soil: clay, well-drained loam Bloom Period: March to August	98 – 5,904	Yes	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitat (disturbed chaparral) to support this species. The INaturalist website has 204 research grade observations within 10 miles, the nearest occurred approximately 2.04 miles southwest of the project site on July 2017. This species was not observed during surveys.
Linanthus concinnus	San Gabriel linanthus	CRPR: 1B.2		Lifeform: annual herb Habitats: chaparral, lower montane coniferous forests and upper montane coniferous forests Soils: dry rocky slopes Bloom Period: April to July	4,986 – 9,184	No	No	No	**Not expected to occur.** The BSA is below the known elevation for this species.
Malacothamnus davidsonii	Davidson's bush-mallow	CRPR: 1B.2		Lifeform: perennial deciduous shrub Habitats: sandy washes of chaparral, cismontane woodlands, coastal scrub, and riparian woodlands Bloom Period: June to January	605 - 3,740	No	Yes	Yes	**Not expected to occur.** The BSA lacks suitable habitat (such as meadows or seeps) to support this species.
Muhlenbergia californica	California muhly	CRPR: 4.3		Lifeform: perennial rhizomatous herb Habitats: chaparral, coastal scrub, lower montane coniferous forests, and meadows, usually near mesic seeps or along streambanks Bloom Period: June to September	328 – 6,560	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitat (disturbed chaparral and a small amount of coastal scrub) to support this species, however, the CNDDB database only has one historical observation (July 1899) and the INaturalist website doesn't have any research grade observations within 10 miles. This species was not observed during field surveys.
Navarretia prostrata	prostrate vernal pool navarretia (=prostrate navarretia)	CRPR 1B.2		Lifeform: annual herb Habitats: coastal scrub, valley and foothill grasslands, alkaline washes, meadows and seeps, and vernal pools. Mesic, alkaline sites. Soils: alkaline soils Bloom Period: April to July	10 - 3,970	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitat (a limited amount of wild oat grassland and California buckwheat scrub) to support this species, however, the CNDDB database only has one historical observation (May 1, 1907) and the INaturalist website doesn't have any research grade observations within 10 miles. This species was not observed during field surveys.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Pelazoneuron puberulum var. sonorense (=Thelypteris puberula var. sonorensis)	Sonoran maiden fern	CRPR: 2B.2		Lifeform: perennial rhizomatous herb Habitats: meadows and seeps along streams and seepage areas Bloom Period: January to September	164 – 2,001	No	Yes	Yes	**Not expected to occur.** The BSA lacks suitable habitat (such as meadows or seeps) to support this species.
Phacelia hubbyi	Hubby's phacelia	CRPR: 4.2		Lifeform: annual herb Habitats: Chaparral, coastal scrub, valley and foothill grassland Soils: Clay, Clay loam, Silt loam, Loam, Sandy loam, Loamy sand, Sand, gravelly, rocky, Talus. Bloom Period: April to July	< 4,660	Yes	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitat (disturbed chaparral and a limited amount of wild oat grassland and California buckwheat scrub) to support this species. The INaturalist website has 89 research grade observations within 10 miles, the nearest occurred approximately 1.24 miles northeast of the project site on April 16, 2025.This species was not observed during surveys.
Phacelia stellaris	Brand's star phacelia	CRPR 1B.1		Lifeform: annual herb Habitats: open areas in coastal dunes, coastal scrub, coastal strands. Soil: prefers looser soils Bloom Period: March to June / March to May	3 - 1,312	Yes	Yes	Yes	**Low potential to occur.** The BSA contains an isolated and reduced amount of suitable habitat (California buckwheat scrub) to support this species. This species was not observed during surveys.
Pseudognaphalium leucocephalum (=Gnaphalium leucocephalum)	white rabbit-tobacco	CRPR 2B.2		Lifeform: perennial herb Habitats: chaparral, cismontane woodlands, coastal scrub and riparian woodlands; sandy or gravelly benches, dry stream bottoms, canyon bottoms Soils: sandy and gravelly sites Bloom Period: (July) August to November (December)	0 – 6,890	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable soils to support this species.
Quercus agrifolia	Coast live oak	CRPR: 4		Lifeform: perennial tree Habitats: mixed evergreen forest, southern oak woodland, foothill woodland Soils: Clay, Silty clay loam, Clay loam, Sandy clay loam, Silt loam, Loam, Sandy loam, Loamy sand, Sand, Bedrock, Variable, Decomposed plant material Bloom Period: February to April	0 - 7,580	Yes	Yes	Yes	**Present**. This speces was observed onsite.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Quercus dumosa	Nuttall's scrub oak	CRPR 1B.1	IUCN: EN	Lifeform: perennial evergreen shrub Habitats: closed-cone coniferous forests, chaparral, and coastal scrub Soils: Generally on sandy soils near the coast; sometimes on clay loam Bloom Period: February to August	49 – 1,312	Yes	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitat (disturbed chaparral and a limited amount of California buckwheat scrub) to support this species. The INaturalist website has one research grade observation within 10 miles that occurred approximately 6.16 miles east of the project site on December 2024. The CNDDB database has one historical (April 27, 1924) observation within 10 miles. This species was not observed during field surveys.
Quercus durata var. gabrielensis	San Gabriel Oak/ Leather Oak	CRPR : 4.2		Lifeform: perennial evergreen shrub Habitats: chaparral, foothill woodlands Soils: loose slopes in non-serpentine soils Bloom Period: April-May	452-10,044	Yes	Yes	Yes	**High potential to occur.** The BSA contains suitable habitat (disturbed chaparral and disturbed coast live oak woodland) to support this species. The INaturalist website has 252 research grade observation within 10 miles, the nearest occurred approximately 1.5 miles north of the project site on May 1, 2025. This species was not observed during field surveys.
Quercus engelmannii	Engelmann oak	CRPR: 4.2	IUCN_EN	Lifeform: perennial deciduous tree Habitats: foothills, slopes and in arroyos and dry fans, cismontane woodlands, chaparral, riparian woodlands, and valley and foothill grasslands Soil: tolerates dry soil Bloom Period: March to June	0 – 4,264	Yes	Yes	Yes	**High potential to occur.** The BSA contains suitable habitat (disturbed chaparral and a limited amount of wild oat grassland) to support this species. The INaturalist website has 400 research grade observation within 10 miles, the nearest occurred approximately 0.81 miles northeast of the project site on February 9, 2019. This species was not observed during surveys.
Ribes divaricatum var. parishii	Parish's gooseberry	CRPR: 1A		Lifeform: perennial deciduous shrub Habitats: willow swales in riparian woodlands Bloom Period: February to April	213 – 984	No	Yes	Yes	**Not expected to occur.** The BSA lacks suitable habitat to support this species.
Romneya coulteri	Coulter's matilija poppy	CRPR: 4.2		Lifeform: perennial rhizomatous herb Habitats: chaparral and coastal scrub. Burned areas. Soil: sandy, gravelly, fast drainage Bloom Period: March to July (August)	66 – 3,936	No	Yes	Yes	**Not expected to occur.** The BSA does not contain suitable soils to support this species.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Rupertia rigida (=Psoralea rigida)	Parish's rupertia (=Parish's California tea)	CRPR: 4.3		Lifeform: perennial herb Habitats: chaparral, cismontane woodlands, lower montane coniferous forests, meadows and seeps, pebble (pavement) plain, and valley and foothill grasslands Bloom Period: June to August	2,296 – 8,200	Yes	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap (=southern skullcap)	CRPR: 1B.2		Lifeform: perennial rhizomatous herb Habitats: oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests Soils: gravelly streamside soils, mesic. Bloom Period: June to August	1,394 – 6,560	No	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Senecio astephanus	San Gabriel ragwort	CRPR: 4.3		Lifeform: perennial herb Habitats: Chaparral, coastal scrub, rocky slopes Bloom Period: May to July	1310 - 4920	Yes	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Sidalcea neomexicana	salt spring checkerbloom (=mountain sidalcea)	CRPR 2B.2		Lifeform: perennial herb Habitats: Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, alkali springs and marshes, mesic sites. Soil: loamy or clay. Alkaline or mesic. Bloom Period: March to June	49 – 5,018	Yes	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitat (disturbed chaparral and a limited amount of California buckwheat scrub) to support this species, however, the CNDDB database only has two observations within 10 miles, one is historical (July 1902) and the other is undated (but came from a 2003 area checklist) and occurred approximately 5.23 miles northwest from the project site. This species was not observed during surveys.
Spermolepis lateriflora	western bristly scaleseed	CRPR: 2A		Lifeform: annual herb Habitats: Sonoran desert scrub Soils: rocky (sometimes), sandy (sometimes) Bloom Period: March to April	1,200 - 2,200	No	No	No	**Not expected to occur.** The BSA is below the known elevation of this species
Symphyotrichum defoliatum (=Aster bernardinus)	San Bernardino aster	CRPR: 1B.2		Lifeform: perennial rhizomatous herb Habitats: cismontane woodlands, coastal scrub, lower montane coniferous forests, meadows and seeps, freshwater marshes and swamps, and vernally mesic valley and foothill grasslands. Disturbed sites. Soils: moist fine alluvial soils Bloom Period: July to November	7 – 6,691	Yes	Yes	Yes	**Low potential to occur.** The BSA contains a very limited amount of suitable habitat (California buckwheat scrub) to support this species. This species was not observed during surveys.
Symphyotrichum greatae (=Aster greatae)	Greata's aster	CRPR: 1B.3		Lifeform: perennial rhizomatous herb Habitats: mesic canyons of broad leafed upland forests, chaparral, cismontane woodlands, lower montane coniferous forests, and riparian woodlands Bloom Period: June to October	984 – 6,593	Yes	Yes	No	**Not Expected to Occur.** The BSA is outside of the known distribution range of this species.

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Description in California	Plant Elevation Range (feet amsl)	BSA Contains Potential Suitable Habitats	BSA is Located Within the Plant Species' Known:		Potential For Occurrence in the BSA
							Elevation Range	General Distribution	
Legend and Notes									

Federal Endangered Species Act (ESA) Listing Codes:

- **FE = federally listed as endangered:** any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT = federally listed as threatened:** any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.

California Endangered Species Act (CESA) Listing Codes:

- **SE = state-listed as endangered:** "endangered species" means 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 (Fish and Game Code § 2062).
- **ST = state-listed as threatened:** "threatened species" means 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 efforts (Fish and Game Code § 2067).

California Rare Plant Ranks (Formerly known as CNPS Lists): the CNPS is a statewide, nonprofit organization that maintains, with CDFW, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFW officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

- **CRPR: 1A** = California Rare Plant Rank 1A - plants presumed extirpated in California and either rare or extinct elsewhere: the plants with a CRPA of 1A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct as well as those plants which are presumed extirpated in California. All of the plants constituting CRPR 1A meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
- **CRPR 1B** = California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
- **CRPR 2B** = California Rare Plant Rank 2B - plants rare, threatened, or endangered in California, but more common elsewhere: except for being common beyond the boundaries of California, plants with a CRPR of 2B would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the ESA. All of the plants constituting CRPR 2B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
- **CRPR 3** = California Rare Plant Rank 3 - plants about which more information is needed - a review list: the plants that comprise CRPR 3 are united by one common theme – CNPS and CDFW lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting CRPR 3 are taxonomically problematic. Some of the plants constituting CRPR 3 meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. CNPS strongly recommends that CRPR 3 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.
- **CRPR 4** = California Rare Plant Rank 4 - plants of limited distribution - a watch list: the plants in this category are of limited distribution or infrequent throughout a broader area in California. While CNPS and CDFW cannot call these plants "rare" from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Should the degree of endangerment or rarity of a CRPR 4 plant change, CNPS and CDFW will transfer it to a more appropriate rank. Some of the plants constituting CRPR 4 meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and CNPS strongly recommends that CRPR 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

California Native Plant Society (CNPS) Threat Ranks: The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

- **.1** = seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- **.2** = moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- **.3** = not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

International Untion for the Conservation of Nature:

IUCN_EN – Endangered
IUCN_NT – Near Threatened

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Descriptions in California	The BSA:		Potential For Occurrence in the BSA
					Located Within Species' Distribution and/or Range (if known)	Contains Suitable Foraging, Roosting, and/or Breeding Habitats	
Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.							
Listed Invertebrates							
Bombus crotchii	Crotch's bumble bee	SCE	IUCN: EN	Habitats: grasslands and shrublands. Hotter and drier environment than other bumblebee species. Prefers milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats. This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California.	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable host plants to support this species. This species was not observed during surveys. The INaturalist website has multiple research grade observations within 10 miles, the nearest observation occurred on March 25, 2024, approximately 0.38 mile southeast of the BSA.
Listed Amphibians							
Rana muscosa	southern mountain yellow-legged frog	FE, SE, WL	IUCN:EN	Habitats: sunny riverbanks, meadow streams, isolated pools, lake borders, and rocky stream courses in the mountains of Southern California Characteristics: prefer open stream and lake margins that gently slope	No	No	**Not expected to occur.** The BSA is outside of its known distribution range of mountainous habitat and does not contain suitable aquatic breeding habitats within Ponderosa pine, montane hardwood-conifer, and montane riparian habitats to support this frog. This frog requires a permanent water source, which is not present in the BSA.
Listed Birds							
Athene cunicularia	burrowing owl	SCE	Season of Concern: burrowing sites and some wintering sites.	Habitats: open, dry, flat ground or low rolling hills with sparse vegetation and available burrows; may be found in desert, rural, urban, and suburban habitats Characteristics: prefer to use existing burrows dug by small mammals (e.g., gophers), but will also dig their own burrows in suitably soft soils or occupy manmade structures such as pipes or concrete piles.	Yes	Yes	**Moderate potential to occur.** The BSA is within the known distribution range, contains burrows and habitats suitable for this species. The INaturalist website has multiple research grade observations within 10 miles, the nearest observation occurred on November 17, 2017, approximately 2.72 miles northeast of the BSA. This species was not observed during surveys.
Buteo swainsoni	Swainson's hawk	ST	IUCN:LC; Season of Concern: nesting	Habitats: large, open areas with abundant prey in association with suitable nest trees, native grasslands or lightly grazed pastures and croplands, open deserts, sparse shrub lands. Common nesting trees include willow, black locust, oak, aspen, cottonwood, and conifers. Characteristics: pairs often nest near the tops of a solitary tree or small group of trees along streams. Sometimes nests are build in mesquite bushes ~3ft off the ground. Observed to nest in power poles or transmission towers.	Yes	Yes	**Low Potential to occur.** The BSA lacks large open areas with abundant prey to support this species.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT; SE, Season of Concern: nesting		Habitats: relatively dense growths of trees and shrubs in riparian habitats that lines rivers and streams Characteristics: Cuckoos have large home ranges, often exceeding 50 acres, and sometimes approaching 100 acres	Yes	No	**Not expected to occur.** The BSA does not contain riparian blocks with aquatic habitats to support this species.
Empidonax traillii extimus	southwestern willow flycatcher	FE; SE	Season of Concern: nesting	Habitats: dense riparian tree and shrub communities associated with rivers, swamps, lakes, surface water, and other wetlands. Saturated soil, or herbaceous wetland plants. Woody riparian vegetation Characteristics: adults arrive in ~May then leave by ~August, juveniles depart in September	Yes	No	**Not expected to occur.** The BSA does not contain suitable breeding and foraging dense riparian and aquatic habitats to support this species.
Polioptila californica californica	coastal California gnatcatcher	FT; SSC		Habitats: small, non-migratory, permanent resident of coastal sage scrub	Yes	Yes	**Low potential to occur.** The BSA lacks suitable coastal sage scrub habitat to support this species.
Riparia riparia	bank swallow	ST	Season of Concern: nesting; IUCN:LC	Habitats: naturally eroding habitats of major lowland river systems, sandy, vertical bluffs or riverbanks Characteristics: birds build nests within two to three-foot deep burrows that are dug perpendicularly into near vertical earthen banks along streams, coastal bluffs, and sand and gravel pits	Yes	No	**Not expected to occur.** The BSA does not contain suitable habitats with vertical banks consisting of fine-texture soils to support breeding bank swallows.
Vireo bellii pusillus	least Bell's vireo	FE; SE	Season of Concern: nesting	Habitats: dry, intermittent streams, on the desert slopes mesquite (Prosopis sp.) and sandbar willow in canyon locations, willow-dominated riverine riparian habitats with well-developed overstories, understories, and low densities of aquatic and herbaceous cover. Characteristics: Least Bell's vireos winter in southern Baja California, Mexico (habitats of mesquite scrub within arroyos, palm groves, and hedgerows bordering agricultural and residential areas). Travel south in September and return north by mid-March to late April. They breed in southern California.	Yes	No	**Not expected to occur.** The BSA does not contain suitable breeding and foraging riparian and aquatic habitats to support this species.
Sensitive Invertebrates							
*Bombus pensylvanicus (*Bombas Sonorus or *Bombus pensylvanicus* ssp. *Sonorus*)*	American bumble bee (Sonoran Bumblebee*)	Special Animals List	ICUN: VU	Habitat: farmland, open fields, gardens, orchards. Commonly visited plants include Vetches (Vicia), clovers (Trefoilium), goldenrods (Solidago), St. John's wort (Hypericum perforatum), boneset (Eupatorium), sunflowers (Helianthus), lilies (Erythronium) and columbines (Aquilegia). Characteristics: nest in low grass, underground or on the ground surface. Colony tends to pollinate in summer /autumn. The queen dies in the cold weeks of autumn after producing more queens, which mate then hibernate for the winter. Late emerging (May-October). * Some researchers consider the Sonoran Bumblebee as the westcoast subspecies of *Bombus pensylvanicus* and others consider the Sonoran Bumblebee its own species (*Bombus pensylvanicus* ssp. *sonorus* or *Bombus Sonorus*, respectively). Research is ongoing.	Yes	Yes	**High potential to occur.** The BSA contains suitable habitats such as gardens, limited open fields, and is within the known distribution range. The CNDDB database had 45 observations within 10 miles, the nearest occurred on July 19, 2023, approximately 0.34 mile south of the BSA. This species was not observed during surveys.
Danaus plexippus pop. 1	monarch butterfly	FPT: California overwintering population	IUCN: EN	Habitats:Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Adults feed on many flowering plants, however milkweed is required for reproduction (eggs are laid on milkweeds and its the only food the catipillars will eat). The overwintering population prefers a protected microclimate with moderate (not freezing) temperatures.	Yes	Yes	**Low potential to occur.** The BSA contains a limited amount of suitable roosting habitat such as eucalyptus groves. This species was not observed during surveys.
Glyptostoma gabrielense	San Gabriel chestnut	Special Animals List		Habitats: humid spots in semi-arid country; rocky hills and mountains at low elevations; found under dead cacti or vegetation debris, surface during moist conditions but aestivate underground or below rock piles during hot, dry seasons. Characteristics: need moisture (greatest threat is drying out). consume decaying plant material, as well as fungi and bacteria.	Yes	No	**Not expected to occur.** The BSA does not contain suitable habitat such as rocky hills to support this species.
Gonidea angulata	western ridged mussel	Special Animals List	IUCN:VU	Habitat: Fish-bearing, permanently inundated habitat, low gradient, well-oxygenated, creeks, streams, and rivers. Sometimes lakes. Silt, clay, and sand to boulder substrates. Originally found in most of California, now extirpated in southern and central California. Characteristics: larvae partake in a parasitic lifestage specific to only certain fish species. Takes 30 years to reach five inches.	Yes	No	**Not expected to occur.** The BSA does not contain aquatic habitats to support this species.
Palaeoxenus dohrni	Dohrn's elegant eucnemid beetle	Special Animnals List		Habitats: Endemic in the mountain ranges of southern California. Adults and larvae can be found under the bark of conifers such as incense cedar and sugar pine. Found at elevations above ~4,000 feet.	No	Yes	**Not expected to occur.** The BSA is outside its known distribution range.
Sensitive Amphibians							

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Descriptions in California	The BSA:		Potential For Occurrence in the BSA
					Located Within Species' Distribution and/or Range (if known)	Contains Suitable Foraging, Roosting, and/or Breeding Habitats	
Spea hammondii	western spadefoot	FPT, SSC	IUCN:NT	Habitats: coastal sage scrub, open chaparral, pine-oak woodlands and grassland habitats, grasslands with vernal pools or mixed grassland/coastal sage scrub areas Characteristics: upland habitats adjacent to potential breeding sites in burrows approximating 1 meter in depth	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitat such as California buckwheat scrub and open chaparral and is within the known distribution range, however, the INaturalist website has zero research grade observation within 10 miles. The CNDDB database has seven historical observations (the most recent occurred on September 30th, 1963, approximately 5.7 miles southwest of the BSA) and zero recent observation within 10 miles. This species was not observed during surveys.
Taricha torosa	Coast Range newt (=California newt)	SSC (Monterey County and south)		Habitats: terrestrial habitats (grassland, woodland and forest), but breeds in ponds, reservoirs, and slow moving streams within coastal drainages Characteristics: can migrate over 1 km to breeding areas	Yes	Yes	**Low potential to occur.** The BSA contains suitable terrestrial habitat such as disturbed coast live oak woodland and wild oat grassland but does not have much access to suitable aquatic habitat to breed. The BSA is within the known distribution range. This species was not observed during surveys.
Sensitive Reptiles							
Actinemys pallida =(Emys marmorata pallida); =(Actinemys marmorata pallida); = (Clemmys marmorata pallida)	southwestern pond turtle (=southern western pond turtle; = western pond turtle)	FPT; SSC	IUCN:VU	Habitat: A thoroughly aquatic turtle of small ponds, small lakes, marshes, rivers, intermittent streams, creeks, permanent and ephemeral shallow wetlands, stock ponds, sewage treatment lagoons, and irrigation ditches. Typically occurs with abundant aquatic vegetation, and either rocky or muddy bottoms. They are found below 6000 ft elevation in woodland, forest, and grassland habitats. Microhabitat: Needs basking sites such as logs, rocks, cattail mats, grassy open fields and exposed banks. Also needs upland habitat up to 0.5 km from water for egg-laying. May enter brackish water and even seawater. Adjacent upland areas provide overwintering and estivation sites.	Yes	No	**Not expected to occur.** The BSA does not contain suitable aquatic habitats to support this species.
Anniella spp.	California legless lizard	SSC		Habitats: A variety of habitats, especially areas with loose, moist soil; vegetated understories of pine/oak woodlands, chaparral, or grasslands. Found in leaf litter, under rocks, logs, and driftwood Characteristics: soils with a high moisture content This element represents California records of *Anniella* not yet assigned to new species within the *Anniella pulchra* complex.	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitats such as disturbed toyon chaparral and wild oat grassland and is within the known distribution range. The CNDDB database has three observations, one historical and two recent; the nearest, most recent occurred on July 14, 2018 approximately 8.69 miles northwest of the BSA. This species was not observed during surveys.
Anniella stebbinsi	southern California legless lizard	SSC		Habitats: occurs in many habitats with sandy soil. Coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. Observed in developed urban areas. Population occurs in Piute and Tehachapi mountains at elevation of 400-900 m in oak woodland and mixed conifer forest	Yes	No	**Not expected to occur.** The BSA does not contain suitable habitat such as sand dunes, sandy washes, or alluvial fans to support this species.
Arizona elegans occidentalis	California glossy snake	SSC		Habitats: all ecological zones, from the coast to the mountain foothills, light shrubby to barren desert, sagebrush flats, grassland, chaparral-covered slopes, and woodlands Characteristics: refugia takes the form of mammal burrows, rock outcrops, and to a lesser extent under surface objects such as flat rocks and vegetation residue. Individuals occasionally burrow in loose soil.	Yes	Yes	**Low potential to occur.** The BSA contains suitable habitat such as disturbed toyon chaparral and wild oat grassland and is within the known distribution range, however, the INaturalist website has zero research grade observations within 10 miles. The CNDDB database has two historical observations (the most recent occurred on May 15, 1937) and zero recent observations within 10 miles. This species was not observed during surveys.
Aspidoscelis tigris stejnegeri (=Cnemidophorus tigris multiscutatus)	San Diegan whiptail (=coastal whiptail)	SSC		Habitats: variety of ecosystems, primarily hot and dry open areas with sparse foliage such as deserts, chaparral and semiarid, found in open, often rocky areas with little vegetation or sunny microhabitats within shrub or grassland Characteristics: ground may be firm soil, sandy, or rocky	Yes	Yes	**Moderate potential to occur.** The BSA contains suitable habitat such as disturbed toyon chaparral and is within the known distribution range. The INaturalist website has multiple research grade observations within 10 miles, the nearest occurred on July of 2021, approximately 2.06 miles northeast of the BSA. The CNDDB database has three historical observations, the nearest and most recent occurred on November 17 of 2011, approximately 9.64 miles southeast of the BSA. This species was not observed during surveys.
Phrynosoma blainvillii (=Phrynosoma coronatum) (=Phrynosoma coronatum blainvillii)	Blainville's horned lizard (=coast horned lizard) (=San Diego horned lizard)	SSC	IUCN:LC	Habitats: coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. Loose, fine soils with a high sand fraction (necessary for burrowing, a tactic to protect themselves from extreme hear and predators); an abundance of native ants or other insects; and open areas with limited overstory for basking.	Yes	Yes	**High potential to occur.** The BSA is within the known distribution range and contains suitable habitats such as disturbed coast live oak woodland, disturbed toyon chaparral, California buckwheat scrub, and wild oat grassland. The INaturalist website has multiple research grade observations within 10 miles, the nearest occurred on July of 2022, approximately 2.87 miles northwest of the BSA. The CNDDB database has one undated and nine historical observations, the nearest, most recent occurred on November 17 of 2011, approximately 2.64 miles southwest of the BSA. This species was not observed during surveys.
Thamnophis sirtalis pop. 1	south coast gartersnake	SSC		Habitats: marsh and upland habitats near permanent or semi-permanent water with good strips of riparian vegetation; riparian, grasses with nearby water sources Characteristics: swimmers	Yes	No	**Not expected to occur.** The BSA does not contain suitable aquatic habitats, riparian vegetation, or basking sites to support this snake.
Sensitive Birds							
Aimophila ruficeps canescens (= Aimophila ruficeps canescens) (= Aimophila ruficeps)	southern California rufous-crowned sparrow	WL		Habitats: dry, steep sloping land and hillsides with a moderate density of low, scattered shrubs, coastal sage scrub, interspersed with grasses and forbs and occasional rock outcrops for song perches Characteristics: nests are placed in small depressions on the ground	Yes	Yes	**Moderate potential to occur.** The BSA contains sloping land and hillsides, suitable habitats such as wild oat grassland, a limited amount of California buckwheat scrub and is within the known distribution range. The INaturalist website has multiple research grade observations within 10 miles, the nearest occurred on June 1st, of 2024, approximately 6.4 miles northeast of the BSA. The CNDDB database has one recent observation within 10 miles, it occurred on October 30 of 2014, approximately 10 miles west of the BSA. This species was not observed during surveys.
Baeolophus inornatus	oak titmouse		BCC	Habitats: montane hardwood-conifer, montane hardwood, blue, valley, and coastal oak woodlands, chaparral, and montane and valley foothill riparian habitats Characteristics: nests are constructed in natural tree cavities, in old woodpecker holes, or in a bird box	Yes	Yes	**Present.** This species was observed in the BSA.
Coturnicops noveboracensis	yellow rail	SSC	BCC, IUCN:LC	Habitats: large wet meadows or shallow marshes dominated by sedges and grasses Characteristics: nest is shallow cup of sedges and grasses	Yes	No	**Not expected to occur.** The BSA does not contain suitable habitat such as meadows or marshes to support this species.
Icteria virens	yellow-breasted chat	SSC	IUCN:LC, Season of Concern: nesting	Habitats: dense riparian thickets of willows, vines, and brush associated with streams and other wetland habitats Characteristics: nest is an open cup placed in dense shrubs or thickets within 3 to 8 feet above ground along a stream or river	Yes	No	**Not expected to occur.** The BSA does not contain suitable breeding and foraging riparian habitats.
Setophaga petechia (=Dendroica petechia)	yellow warbler	SSC	WRCMSHCP: Covered, CVMSHCP: Covered , BCC, Season of Concern: nesting	Habitats: deciduous trees of the riparian woodland from coastal desert woodlands to the Sierra Nevada – willows (Salix sp.), cottonwoods (Populus sp.), aspens (Populus sp.), California sycamores (Platanus racemosa), and alders (Alnus sp.) Characteristics: nests are deep cups, placed in an upright fork in a deciduous sapling or shrub, typically 2 to 16 feet high	Yes	Yes	**Present.** This species was observed onsite.
Sensitive Mammals							

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Descriptions in California	The BSA:		Potential For Occurrence in the BSA
					Located Within Species' Distribution and/or Range (if known)	Contains Suitable Foraging, Roosting, and/or Breeding Habitats	
Antrozous pallidus	pallid bat	SSC	IUCN:LC	Habitats: variety of habitats is occupied by pallid bats, including deserts, grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests Characteristics: night roosts may be in more open sites, such as porches and open buildings	Yes	Yes	**Low potential to occur.** The BSA is within the known distribution range and contains suitable habitats such as disturbed coast live oak woodland, disturbed toyon chaparral, and wild oat grassland, however, the INaturalist website has zero research grade observations within 10 miles. The CNDDB database has six historical observations (the most recent occurred on May 4, 1971) and zero recent observations within 10 miles. This species was not observed during
Corynorhinus townsendii	Townsend's big-eared bat	SSC	IUCN:LC	Habitats: subalpine and alpine habitats, coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. Commonly associated with montane forest composed of pine, fir and aspen trees, shrubs and grasslands. Oak-hickory forests. Roosts in caves, cliffs, rock ledges, abandoned mines, and man-made structures.	No	Yes	**Not expected to occur.** The BSA is outside its known distribution range.
Eumops perotis californicus	western mastiff bat	SSC		Habitats: low-lying desert areas of southern California, desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, palm oasis, conifer and deciduous woodlands, coastal scrub, annual and perennial grassslands, chaparral, urban. Roosts in crevices in cliff faces, high buildings, trees, and tunnels Characteristics: bats often are found in large groups	Yes	Yes	**Moderate potential to occur.** The BSA is within the known distribution range and contains sutiable habitats such as disturbed toyon chaparral, California buckwheat scrub, and wild oat grassland for this species. The INaturalist website has one recent research grade observation within 10 miles, it occurred on March 20th, of 2020, approximately 6.23 miles west of the BSA. The CNDDB database has nine historical observations (nearest observation occurred approximatley 0.99 mile southeast of the BSA on July 23 of 1918 and the most recent observation occurred approximately 8.59 miles west of the BSA on April 3rd of 1991)and zero recent observations within 10 miles . This species was not observed during surveys.
Lasionycteris noctivagans	silver-haired bat		IUCN:LC	Habitats: coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats Characteristics: a forest dweller, feeding over streams, ponds, and open brushy areas	Yes	No	**Not expected to occur.** The BSA lacks suitable habitat for this species such as coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats.
Lasiurus cinereus	hoary bat		IUCN:LC	Habitats: near open grassy areas in coniferous and deciduous forest or near lakes, open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Open wooded glades, Trees along urban streets and in city parks. Characteristics: winter roosts include sides of buildings and tree trunks	Yes	Yes	**Moderate potential to occur.** The BSA contains trees along urban streets and a limited amount of open habitat. The INaturalist website has multiple recent research grade observations within 10 miles, the nearest occurred on April 2nd, of 2019, approximately 2.12 miles northeast of the BSA. The CNDDB database has 10 historical observations (the most recent occurred on April 19, 1992) and zero recent observations within 10 miles.TThis species
Lasiurus frantzii (=Lasiurus blossevillii)	western red bat	SSC	IUCN:LC	Habitats: streamside habitats dominated by cottonwoods (Populus sp.), oaks, California sycamores (Platanus racemosa), and California black walnuts (Juglans californica), and rarely is found in desert habitats Characteristics: space beneath the roost must be free of obstacles to allow the bats to drop into flight	Yes	No	**Not expected to occur.** The BSA does not contain suitable streamside habitats to support this species.
Lasiurus xanthinus	western yellow bat	SSC	IUCN:LC	Habitats: valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species almost exclusively roosts in palms. Open, grassy areas. Residential areas. Close proximity to rivers or ponds. Characteristics: occurs year-round in California	Yes	No	**Not expected to occur.** This species is typically found in open desert regions; the BSA lacks suitable habitat such as desert riparian, desert wash, and palm oasis habitats.
Neotoma lepida intermedia	San Diego desert woodrat	SSC		Habitats: variety of shrub and desert habitats primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth Characteristics: cactus patches are also a favorite den site	Yes	No	**Not expected to occur.** The BSA does not contain suitable habitat such as desert habitats with rock outcroppings, boulders, or cacti to support this species.
Nyctinomops macrotis	big free-tailed bat	SSC	IUCN:LC	Habitats: rugged, rocky habitats in arid landscapes, located in a variety of plant associations including desert shrub, woodlands, and evergreen forests. This bat roosts mainly in the crevices of cliff rocks although May 28, 2024 roost in buildings, caves, and tree cavities. Characteristics: appears to be associated with lowlands primarily below 5,900 ft in the southwestern U.S.	Yes	No	**Not expected to occur.** The BSA does not contain suitable habitat such as rugged, rocky habitats in arid landscapes to support this species.
Onychomys torridus ramona	southern grasshopper mouse	SSC		Habitats: low arid scrub and semi-scrub vegetation desert areas, especially scrub habitats with friable soils for digging. Shortgrass Praries. Desert scrub. Ceosote, hot, arid valleys. Coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats. Low to moderate shrub cover is preferred. Characteristics: often use burrows dug by other rodents	Yes	Yes	**Low potential to occur.** The BSA is within the known distribution range and contains sutiable habitats such as disturbed toyon chaparral, and California buckwheat scrub for this species, however, the INaturalist website has zero research grade observations and the CNDDB database has one historical observation (the most recent occurred on September 11, 1904) and zero recent observations within 10 miles. This species was not observed during surveys.
Puma concolor browni	Yuma mountain lion	SSC, Protected by California Fish and Game Code §§ 4800 - 4810	S1	Habitats: desert plains, mountains, riparian habitat and cottonwood-willow forests, oak-conifer woodlands. Primarily occupies the Colorado River Valley, which stretches across Arizona, Nevada, and California. Characteristics: prey on large mammals like deer, however will also consume small mammals and lizards. Disperse across large distances; will cross habitat generally unsuitable for them in order to find territory. Largely forced into remote areas like mountains and human-wildlife interfaces like suburban areas due to habitat loss.	Yes	Yes	**Moderate potential to occur.** Mountain lions have been observed in areas surrounding the project site.

Legend and Notes

Federal Endangered Species Act (ESA) Listing Codes:

- **FE =** federally listed as endangered: any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT =** federally listed as threatened: any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.
- **FPT =** federally proposed for listing as threatened: a candidate species that has been proposed by USFWS or NMFS for listing as threatened and the proposed rule, but not a final rule, to list has been published in the Federal Register.

California Endangered Species Act (CESA) Listing Codes:

- **SE =** state-listed as endangered: "endangered species" means 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 (Fish and Game Code § 2062).
- **ST =** state-listed as threatened: "threatened species" means 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 efforts (Fish and Game Code § 2067).
- **SCE =** state candidate for listing as endangered: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a

California Department of Fish and Wildlife (CDFW) Designations:

- **SSC =** species of special concern: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; 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; 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.
- **WL =** watch list: consisting of taxa that were previously SSCs, but do not meet SSC criteria. These are species for which there is concern and a need for additional information to clarify status.
- **Special Animals List:** The Special Animals List contains taxa that are actively inventoried, tracked, and mapped by the CNDDB, as well as taxa for which mapped data may not yet be incorporated into CNDDB user products.

International Union for Conservation of Nature (IUCN):

Scientific Name (=Synonym)	Common Name (=Synonym)	Federal/State Status	Other Status	General Habitat Descriptions in California	The BSA:		Potential For Occurrence in the BSA
					Located Within Species' Distribution and/or Range (if known)	Contains Suitable Foraging, Roosting, and/or Breeding Habitats	

* **EN:** Species faces a very high risk of extinction in the wild (endangered).
* **LC:** Species is widespread and abundant (lease concern).
* **NT:** Species is likely to qualify for the threatened status in the near future (near threatened).
* **VU:** Species faces a high risk of extinction in the wild (vulnerable).

APPENDIX C

Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Los Angeles County, California, Southeastern Part

7330 So. Pasadena Westside Reservoir Improvement Project



August 19, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

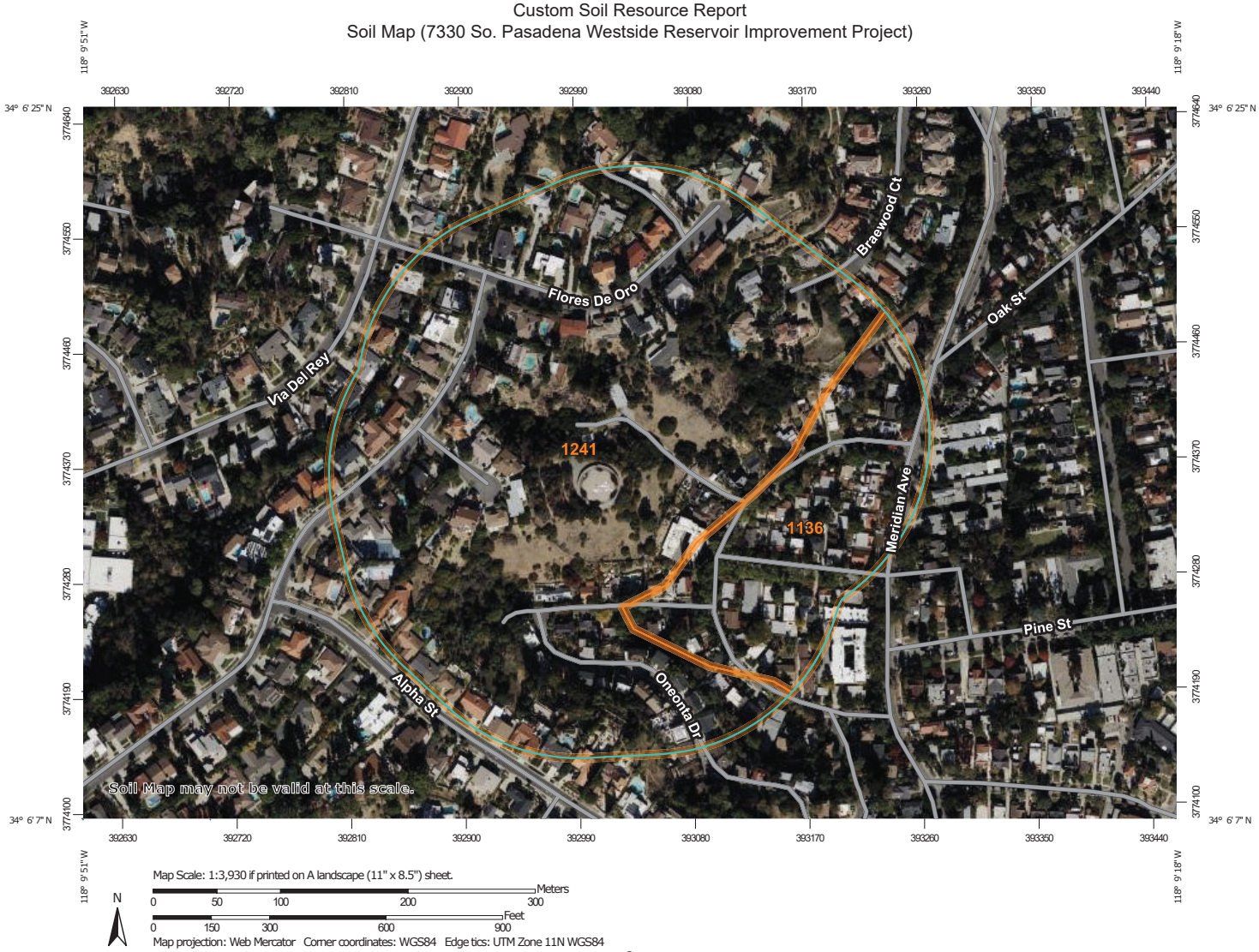
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (7330 So. Pasadena Westside Reservoir Improvement Project)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Los Angeles County, California, Southeastern Part
Survey Area Data: Version 11, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 20, 2022—Nov 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (7330 So. Pasadena Westside Reservoir Improvement Project)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1136	Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes	7.8	18.9%
1241	Counterfeit-Nacimiento, warm-Urban land association, 20 to 55 percent slopes	33.2	81.1%
Totals for Area of Interest		**41.0**	**100.0%**

Map Unit Descriptions (7330 So. Pasadena Westside Reservoir Improvement Project)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Los Angeles County, California, Southeastern Part

1136—Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2pt40
Elevation: 160 to 1,390 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 64 to 67 degrees F
Frost-free period: 355 to 365 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Urban land: 40 percent
Sorrento and similar soils: 20 percent
Arbolado and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Fan aprons

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: No

Description of Arbolado

Setting

Landform: Fan aprons
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Human-transported material consisting mostly of alluvium derived from sedimentary rock

Typical profile

^A1 - 0 to 2 inches: clay loam
^A2 - 2 to 16 inches: clay loam
^C1 - 16 to 30 inches: clay loam
^C2 - 30 to 35 inches: clay loam
^C3 - 35 to 43 inches: clay
^C4 - 43 to 59 inches: clay

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R019XG911CA - Loamy Fan
Hydric soil rating: No

Description of Sorrento

Setting

Landform: Fan aprons
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Discontinuous human-transported material over young alluvium derived from sedimentary rock

Typical profile

^Au1 - 0 to 3 inches: clay loam
^Au2 - 3 to 17 inches: loam
2Btk1 - 17 to 30 inches: clay loam
2Btk2 - 30 to 39 inches: clay loam
2BC1 - 39 to 71 inches: clay loam
2BC2 - 71 to 79 inches: loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R019XG911CA - Loamy Fan

Hydric soil rating: No

Minor Components

Ballona

Percent of map unit: 10 percent
Landform: Fan aprons
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Azuvina

Percent of map unit: 5 percent
Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Grommet, graded surface

Percent of map unit: 5 percent
Landform: Fan aprons
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

1241—Counterfeit-Nacimiento, warm-Urban land association, 20 to 55 percent slopes

Map Unit Setting

National map unit symbol: 2pt4h
Elevation: 320 to 1,330 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 65 to 66 degrees F
Frost-free period: 320 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Counterfeit and similar soils: 35 percent
Nacimiento, warm, and similar soils: 30 percent
Urban land: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Counterfeit

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, tread, riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Human-transported material consisting mostly of colluvium and/or residuum weathered from sedimentary rock

Typical profile

^Au - 0 to 5 inches: clay loam
^Cu1 - 5 to 18 inches: clay
^Cu2 - 18 to 37 inches: clay
^Cu3 - 37 to 57 inches: clay loam
^C - 57 to 79 inches: sandy loam

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 12 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F019XG913CA - Loamy Hills <30"ppt
Hydric soil rating: No

Description of Nacimiento, Warm

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or residuum weathered from sandstone and siltstone

Typical profile

A - 0 to 11 inches: loam
Bk1 - 11 to 18 inches: loam
Bk2 - 18 to 24 inches: loam
Cr - 24 to 34 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F019XG913CA - Loamy Hills <30"ppt
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes

Properties and qualities

Slope: 0 to 20 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Apollo, warm

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Zaca

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Boades

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Chemical Properties

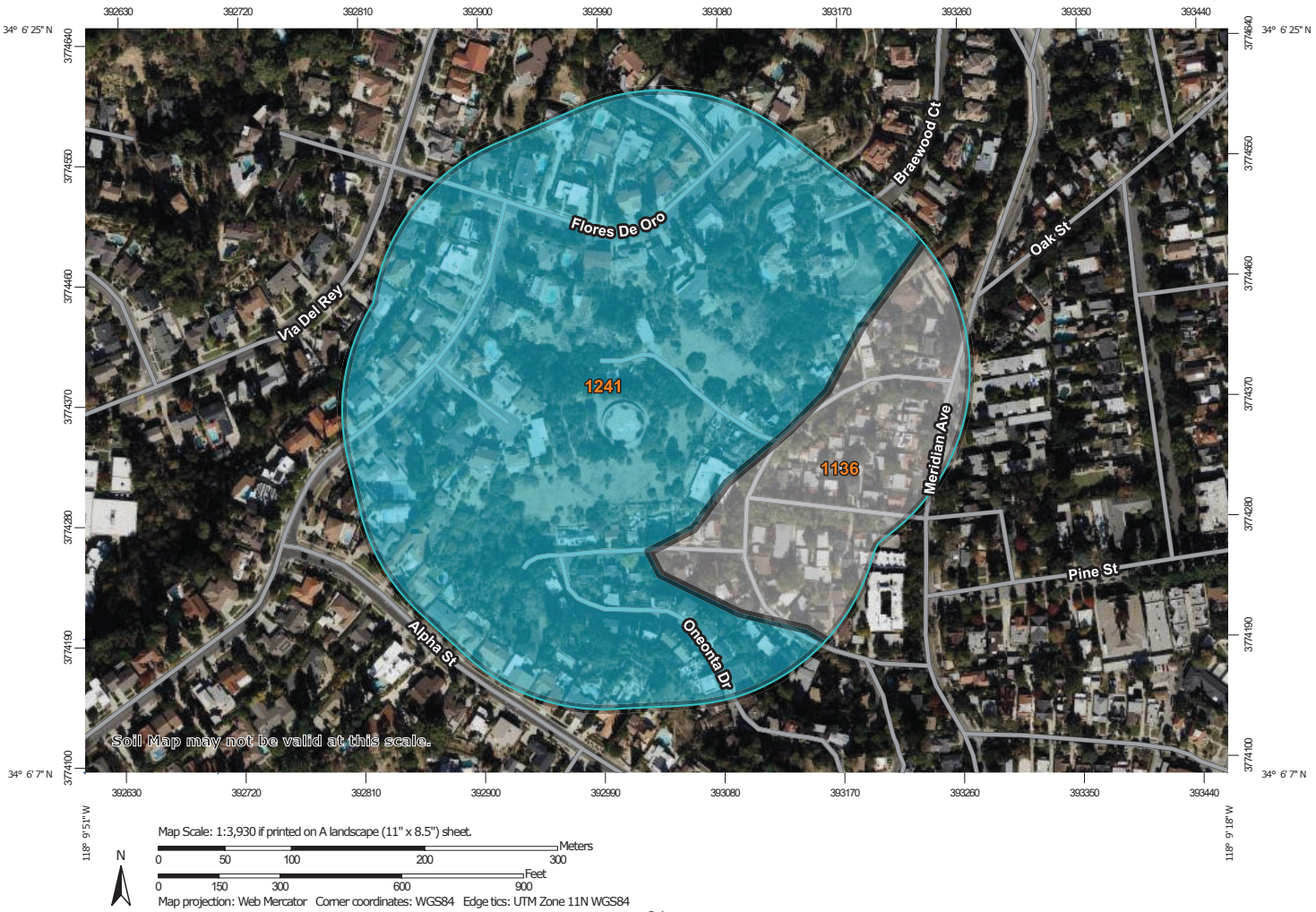
Soil Chemical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil chemical properties include pH, cation exchange capacity, calcium carbonate, gypsum, and electrical conductivity.

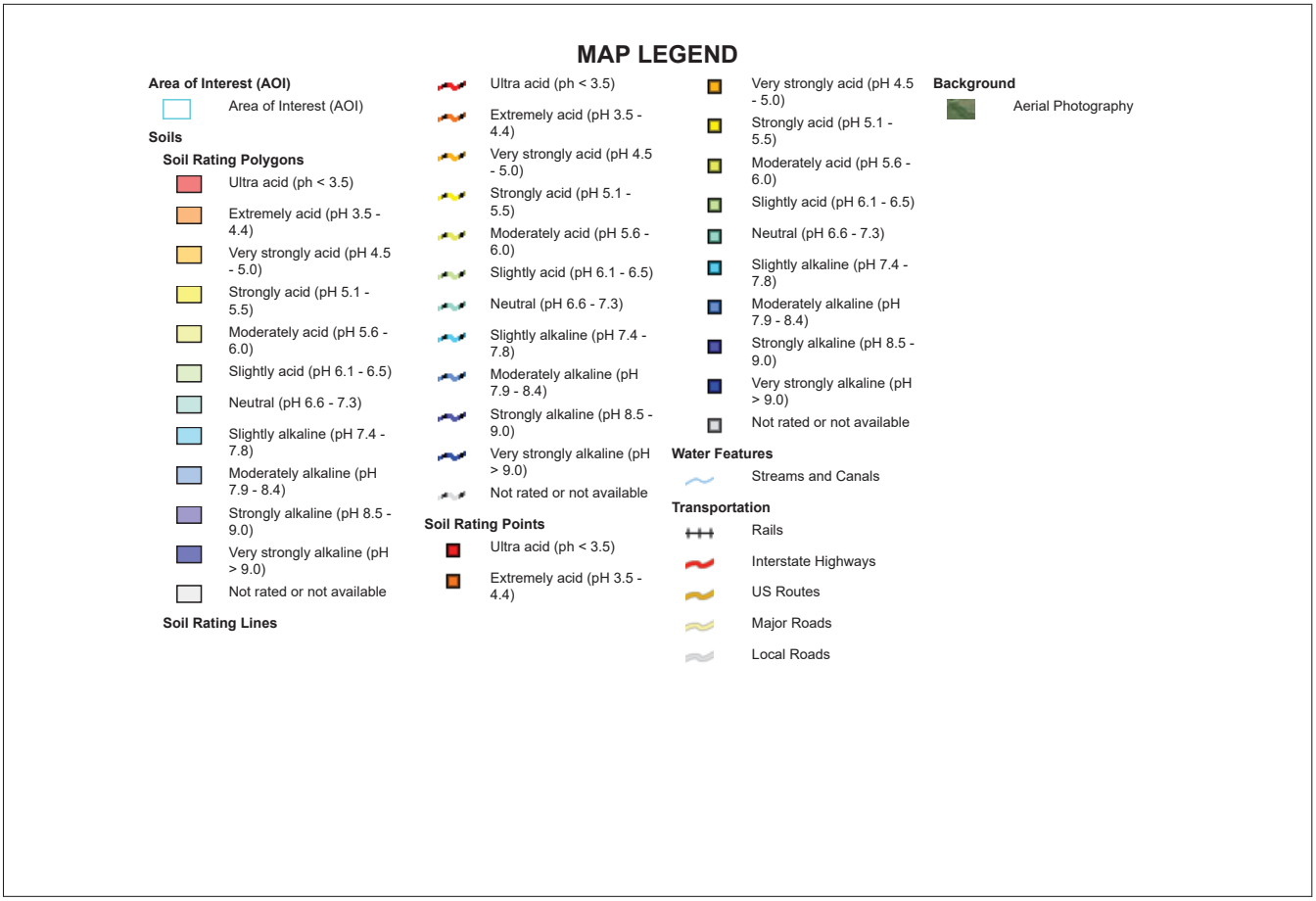
pH (1 to 1 Water) (7330 So. Pasadena Westside Reservoir Improvement Project)

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion. In general, soils that are either highly alkaline or highly acid are likely to be very corrosive to steel. The most common soil laboratory measurement of pH is the 1:1 water method. A crushed soil sample is mixed with an equal amount of water, and a measurement is made of the suspension.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—pH (1 to 1 Water) (7330 So. Pasadena Westside Reservoir Improvement Project)




MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
Ultra acid (ph < 3.5)
Extremely acid (pH 3.5 - 4.4)
Very strongly acid (pH 4.5 - 5.0)
Strongly acid (pH 5.1 - 5.5)
Moderately acid (pH 5.6 - 6.0)
Slightly acid (pH 6.1 - 6.5)
Neutral (pH 6.6 - 7.3)
Slightly alkaline (pH 7.4 - 7.8)
Moderately alkaline (pH 7.9 - 8.4)
Strongly alkaline (pH 8.5 - 9.0)
Very strongly alkaline (pH > 9.0)
Not rated or not available
Soil Rating Lines
Ultra acid (ph < 3.5)
Extremely acid (pH 3.5 - 4.4)
Very strongly acid (pH 4.5 - 5.0)
Strongly acid (pH 5.1 - 5.5)
Moderately acid (pH 5.6 - 6.0)
Slightly acid (pH 6.1 - 6.5)
Neutral (pH 6.6 - 7.3)
Slightly alkaline (pH 7.4 - 7.8)
Moderately alkaline (pH 7.9 - 8.4)
Strongly alkaline (pH 8.5 - 9.0)
Very strongly alkaline (pH > 9.0)
Not rated or not available
Soil Rating Points
Ultra acid (ph < 3.5)
Extremely acid (pH 3.5 - 4.4)
Very strongly acid (pH 4.5 - 5.0)
Strongly acid (pH 5.1 - 5.5)
Moderately acid (pH 5.6 - 6.0)
Slightly acid (pH 6.1 - 6.5)
Neutral (pH 6.6 - 7.3)
Slightly alkaline (pH 7.4 - 7.8)
Moderately alkaline (pH 7.9 - 8.4)
Strongly alkaline (pH 8.5 - 9.0)
Very strongly alkaline (pH > 9.0)
Not rated or not available
Water Features
Streams and Canals
Transportation
Rails
Interstate Highways
US Routes
Major Roads
Local Roads
Background
Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Los Angeles County, California, Southeastern Part
Survey Area Data: Version 11, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 20, 2022—Nov 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—pH (1 to 1 Water) (7330 So. Pasadena Westside Reservoir Improvement Project)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1136	Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes		7.8	18.9%
1241	Counterfeit-Nacimiento, warm-Urban land association, 20 to 55 percent slopes	7.8	33.2	81.1%
Totals for Area of Interest			**41.0**	**100.0%**

Rating Options—pH (1 to 1 Water) (7330 So. Pasadena Westside Reservoir Improvement Project)

Aggregation Method: Dominant Component

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Component" returns the attribute value associated with the component with the highest percent composition in the map unit. If more than one component shares the highest percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher attribute value should be returned in the case of a percent composition tie. The result returned by this aggregation method may or may not represent the dominant condition throughout the map unit.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Interpret Nulls as Zero: No

This option indicates if a null value for a component should be converted to zero before aggregation occurs. This will be done only if a map unit has at least one component where this value is not null.

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

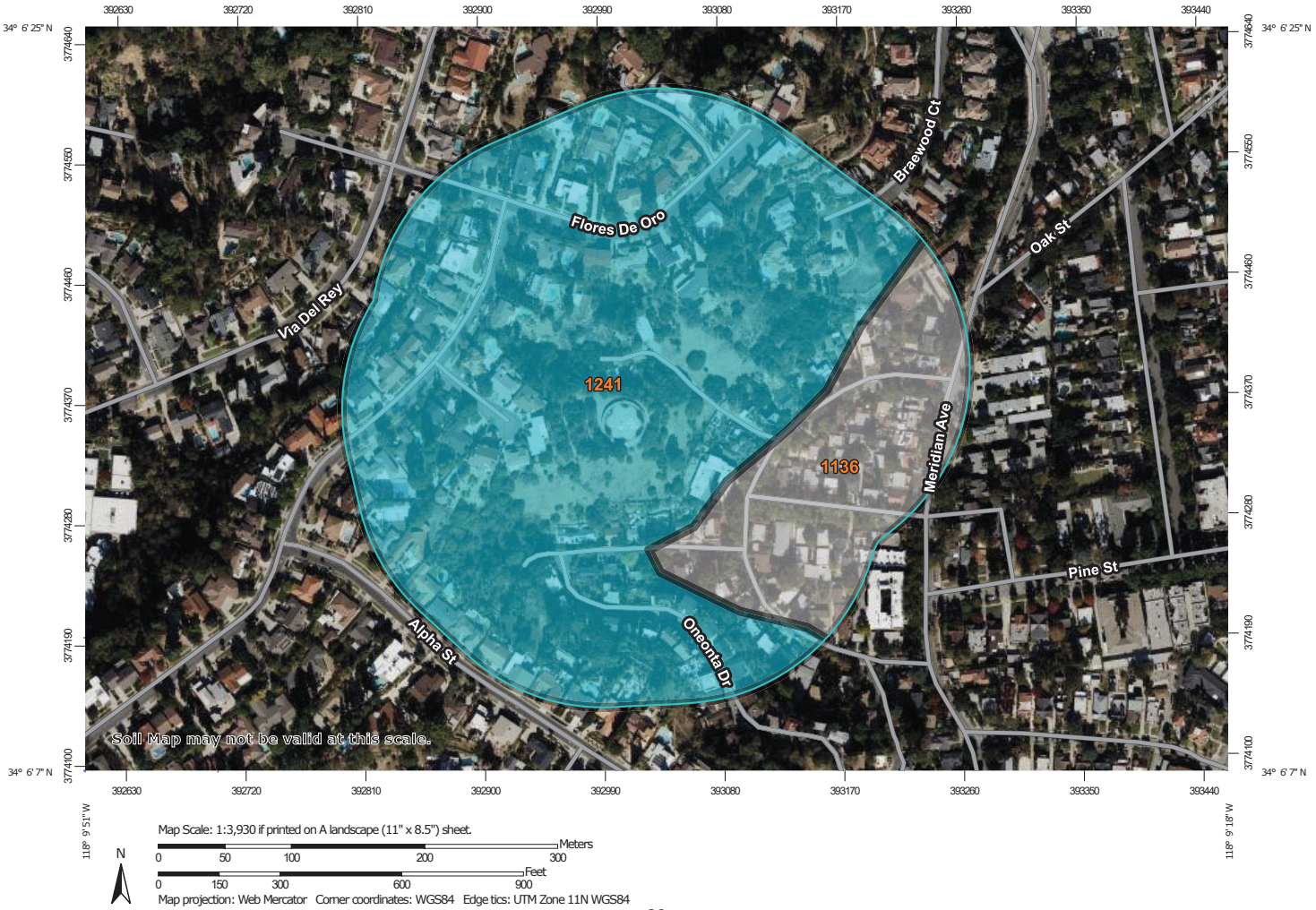
K Factor, Whole Soil (7330 So. Pasadena Westside Reservoir Improvement Project)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Map—K Factor, Whole Soil (7330 So. Pasadena Westside Reservoir Improvement Project)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Soil Rating Lines
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Soil Rating Points
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Los Angeles County, California, Southeastern Part
Survey Area Data: Version 11, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 20, 2022—Nov 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil (7330 So. Pasadena Westside Reservoir Improvement Project)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1136	Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes		7.8	18.9%
1241	Counterfeit-Nacimiento, warm-Urban land association, 20 to 55 percent slopes	.37	33.2	81.1%
Totals for Area of Interest			**41.0**	**100.0%**

Rating Options—K Factor, Whole Soil (7330 So. Pasadena Westside Reservoir Improvement Project)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be

considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Plasticity Index (7330 So. Pasadena Westside Reservoir Improvement Project)

Plasticity index (PI) is one of the standard Atterberg limits used to indicate the plasticity characteristics of a soil. It is defined as the numerical difference between the liquid limit and plastic limit of the soil. It is the range of water content in which a soil exhibits the characteristics of a plastic solid.

The plastic limit is the water content that corresponds to an arbitrary limit between the plastic and semisolid states of a soil. The liquid limit is the water content, on a percent by weight basis, of the soil (passing #40 sieve) at which the soil changes from a plastic to a liquid state.

Soils that have a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material. Highly and moderately plastic clays have large PI values. Plasticity index is used in classifying soils in the Unified and AASHTO classification systems.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Plasticity Index (7330 So. Pasadena Westside Reservoir Improvement Project)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- = 23.4
- Not rated or not available

Soil Rating Lines
- = 23.4
- Not rated or not available

Soil Rating Points
- = 23.4
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Los Angeles County, California, Southeastern Part
Survey Area Data: Version 11, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 20, 2022—Nov 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Plasticity Index (7330 So. Pasadena Westside Reservoir Improvement Project)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
1136	Urban land-Sorrento-Arbolado complex, 2 to 9 percent slopes		7.8	18.9%
1241	Counterfeit-Nacimiento, warm-Urban land association, 20 to 55 percent slopes	23.4	33.2	81.1%
Totals for Area of Interest			**41.0**	**100.0%**

Rating Options—Plasticity Index (7330 So. Pasadena Westside Reservoir Improvement Project)

Units of Measure: percent

Aggregation Method: Dominant Component

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Component" returns the attribute value associated with the component with the highest percent composition in the map unit. If more than one component shares the highest percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher attribute value should be returned in the case of a percent composition tie. The result returned by this aggregation method may or may not represent the dominant condition throughout the map unit.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Interpret Nulls as Zero: No

This option indicates if a null value for a component should be converted to zero before aggregation occurs. This will be done only if a map unit has at least one component where this value is not null.

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.

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APPENDIX D

Site Photos



PHOTO 1: View facing northwest, showing access road leading to storage building. Date: 8/21/2025.



PHOTO 2: View facing east-northeast, showing storage building. Date: 8/25/2025.



PHOTO 3: View facing west-southwest, showing pump station building and access road leading to reservoir. Date: 8/25/2025.



PHOTO 4: View facing east, shown part of the reservoir. Date: 8/21/2025.



PHOTO 5: View facing southeast, showing part of the reservoir. Date: 8/21/2025.



PHOTO 6: View facing north-northeast, showing disturbed toyon chaparral next to the reservoir. Date: 8/21/2025.

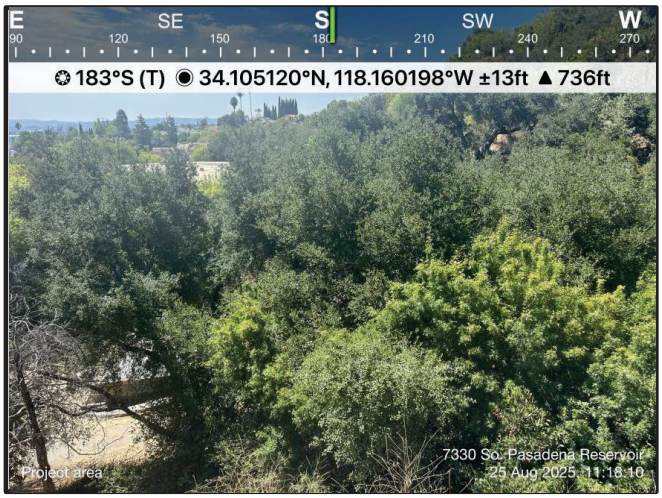


PHOTO 7: Representative photo of disturbed coast live oak woodland and forest. Date: 8/25/2025.

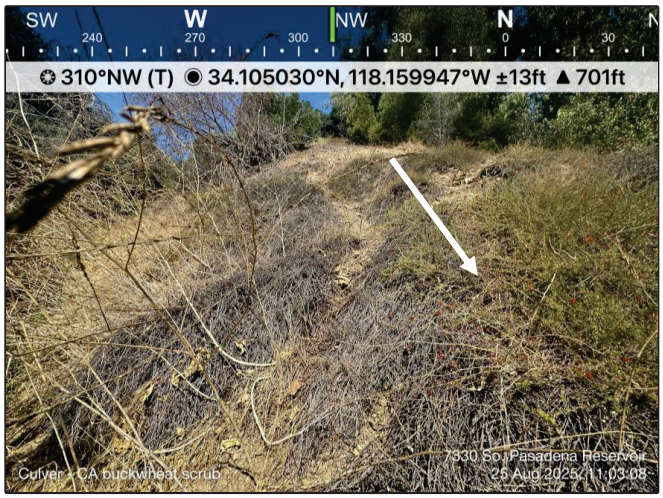


PHOTO 8: Representative photo of disturbed California buckwheat scrub. Date: 8/25/2025.



PHOTO 9: Representative photo of wild oat grassland. Date: 8/21/2025.

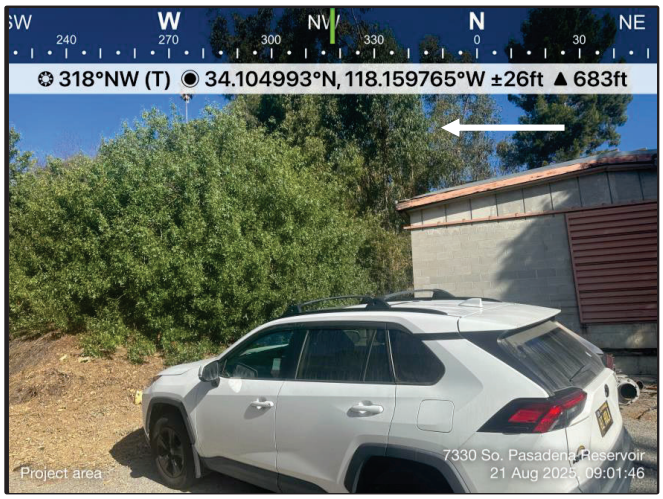


PHOTO 10: Representative photo of eucalyptus grove. Date: 8/21/2025.



PHOTO 11: Representative photo of upland mustards. Date: 8/25/2025.

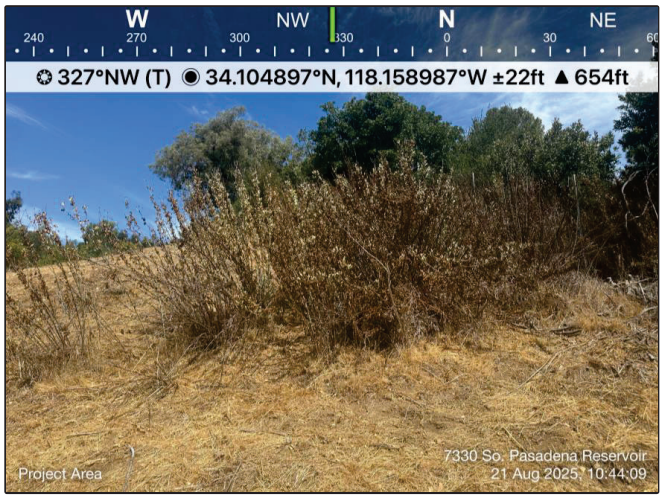


PHOTO 12: *Romney* sp. located near the project boundary, north of Glen Place. Date: 8/21/2025.

APPENDIX E

Species Observed

Table 1 contains the list of vascular plant taxa recorded during the biological field survey conducted within the BSA. Plant nomenclature and taxonomic order is based on the Jepson eFlora website (Jepson eFlora, 2025) and/or the Calflora website (Calflora, 2025).

Table 1
Plant Species Observed During Field Surveys

Scientific Name	Common Name	Cal-IPC Rating	Status
Gymnosperms			
Pinaceae	**Pine Family**		
Pinus sp.	Pine		
Dicots			
Adoxaceae	**Muskroot Family**		
Sambucus mexicana (=Sambucus nigra ssp. *caerulea, =Sambucus caerulea)*	blue elderberry		
Anacardiaceae	**Cashew Family**		
*Pistacia atlantica**	Mount atlas pistache (=pistachio)		
Rhus integrifolia	lemonade berry		
Toxicodendron diversilobum	western poison oak		
Apocynaceae	**Dogbane Family**		
*Nerium oleander**	common oleander		
Asteraceae (=Compositae)	**Sunflower Family**		
Artemisia californica	California sagebrush		
Brassicaceae	**Cabbage Family**		
Brassica nigra	black mustard	Moderate	
Chenopodiaceae	**Goosefoot Family**		
*Salsola tragus**	Russian thistle (=tumbleweed)	Limited	
Euphorbiaceae	**Spurge Family**		
Croton setigerus (=*Eremocarpus setigerus*)	turkey mullein (=doveweed)		
*Ricinus communis**	castor bean	Limited	
Fabaceae (=Leguminosae)	**Legume Family**		
*Acacia melanoxylon**	blackwood acacia	limited	
Acmispon glaber (=*Lotus scoparius*)	deerweed (=California broom)		
*Ceratonia siliqua**	carob (=St. John's bread)		
Fagaceae	**Oak Family**		
Quercus agrifolia	coast live oak		
Lamiaceae (=Labiatae)	**Mint Family**		
*Marrubium vulgare**	horehound	Limited	
Myrtaceae	**Myrtle Family**		
*Eucalyptus citriodora**	lemon-scented gum		
*Eucalyptus globulus**	blue gum eucalyptus	Limited	

Oleaceae	**Olive Family**		
Fraxinus pennsylvanica	green ash		
*Ligustrum japonicum**	Japanese privet		
Papaveraceae	**Poppy Family**		
Romneya sp.	Matilija poppy		
Passifloraceae	**Passion Flower Family**		
*Passiflora caerulea**	blue passion flower		
Plumbaginaceae	**Leadwort Family**		
*Plumbago auriculata**	cape leadwort		
Polygonaceae	**Buckwheat Family**		
Eriogonum fasciculatum	California buckwheat		
Rhamnaceae	**Buckthorn Family**		
Frangula californica (=*Rhamnus californica*)	California coffeeberry		
Rosaceae	**Rose Family**		
*Cotoneaster pannosus**	silverleaf cotoneaster (=woolly cotoneaster)	Moderate	
Heteromeles arbutifolia	toyon (=Christmas-berry, =California holly)		
Salicaceae	**Willow Family**		
Salix laevigata	red willow		
Simaroubaceae	**Quassia or Simarouba Family**		
*Ailanthus altissima**	tree-of-heaven	Moderate	
Urticaceae	**Nettle Family**		
*Urtica urens**	dwarf nettle (=orchard nettle)		
Verbenaceae	**Vervain Family**		
*Lantana montevidensis**	trailing lantana		
Monocots			
Arecaceae (=Palmae)	**Palm Family**		
Phoenix sp.	date palm		
*Washingtonia robusta**	Mexican fan palm	Moderate	
Asparagaceae	**Asparagus Family**		
*Yucca gigantea**	spinless yucca		
Poaceae	**Grass Family**		
*Avena fatua**	wild oat	Moderate	
*Bromus diandrus**	ripgut grass	Moderate	
Bromus madritensis ssp. *madritensis**	foxtail chess		

*non-native species

California Invasive Plant Council (Cal-IPC) Inventory Ratings: Cal-IPC is a nonprofit organization that is dedicated to protecting California's lands and waters from ecologically-damaging invasive plants. Cal-IPC maintains the Cal-IPC Inventory (Cal-IPC, 2024), a comprehensive list of invasive plants based on ecological impacts and assigns the designation of High, Moderate, Limited, or Watch to species based on the criteria listed below

Moderate: These species have substantial and apparent-but generally not severe-ecological impacts on physically processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Table 2

Wildlife Species Observed During Field Surveys

Table 2 contains the list of wildlife species observed and/or detected during the biological field surveys. Wildlife nomenclature and taxonomic order is based on the following treatments according to class of species:

Scientific Name	Common Name	Status
Mammals		
Geomyidae	**Pocket Gopher Family**	
Thomomys bottae	Botta's pocket gopher	
Sciuridae	**Squirrel Family**	
Otospermophilus beecheyi (=Spermophilus beecheyi)	California ground squirrel	
Leporidae	**Hares and Rabbits**	
Sylvilagus audubonii	desert cottontail	
Birds		
Accipitridae	**Hawk Family**	
Buteo jamaicensis	red-tailed hawk	
Aegithalidae	**Long-Tailed Tit Family**	
Psaltriparus minimus	bushtit	
Cardinalidae	**Cardinals and Allies**	
Pheucticus melanocephalus	black-headed grosbeak	
Cathartidae	**New World Vulture Family**	
Cathartes aura	turkey vulture	
Columbidae	**Pigeon Family**	
Zenaida macroura	mourning dove	
Corvidae	**Corvid Family**	
Aphelocoma californica	California scrub-jay	
Corvus corax	common raven	
Fringillidae	**True Finch Family**	
Haemorhous mexicanus	house finch	
Icteridae	**New World Blackbird Family**	
Icterus cucullatus	hooded oriole	
Mimidae	**Mimid Family**	
Mimus polyglottos	northern mockingbird	
Paridae	**Tit Family**	
Baeolophus inornatus	oak titmouse	BCC
Parulidae	**New World Warbler Family**	
Setophaga petechia	Yellow Warbler	SCC
Passerellidae	**New World Sparrow Family**	
Melozone crissalis	California towhee	

Pipilo maculatus	spotted towhee	
Picidae	**Woodpecker Family**	
Melanerpes formicivorus	acorn woodpecker	
Psittacidae	**New World and African Parrot Family**	
*Psittacara mitratus**	mitred parakeet	
Trochilidae	**Hummingbird Family**	
Calypte anna	Anna's hummingbird	
Tyrannidae	**Tyrant Flycatchers**	
Tyrannus vociferans	Cassin's kingbird	

*non-native species

United States Fish and Wildlife Service (USFWS) Designations:

BCC = bird of conservation concern: a bird of conservation concern is listed in the USFWS' 2021 Birds of Conservation Concern report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report is priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.