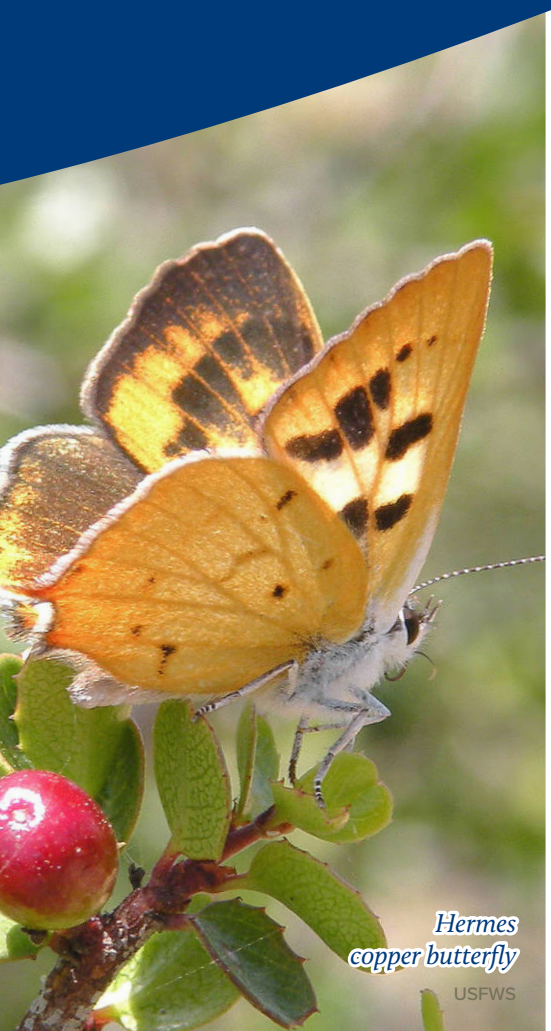
Santee MSCP Subarea Plan

A Multiple Species Conservation Plan for the City of Santee, California

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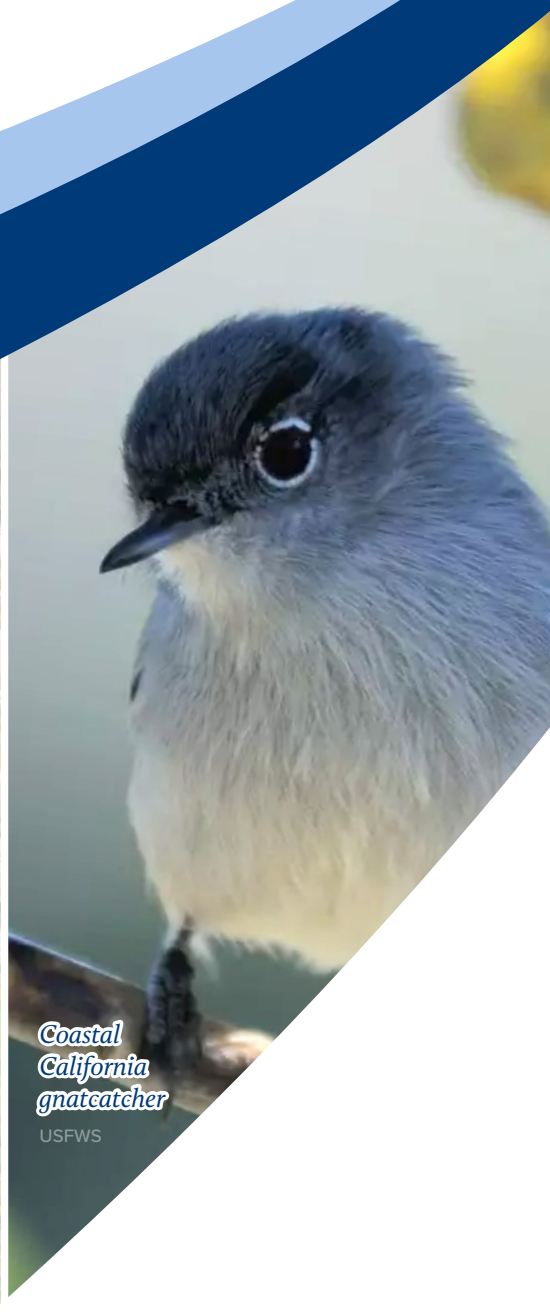
AUGUST 2025



Hermes copper butterfly
USFWS



Willowy monardella
USFWS



Coastal California gnatcatcher
USFWS

Santee
DO MORE ▸ DUE EAST

DRAFT
SANTEE MSCP SUBAREA PLAN

A MULTIPLE SPECIES CONSERVATION PLAN FOR THE CITY OF SANTEE, CALIFORNIA

AUGUST 2025

CITY OF SANTEE
10601 MAGNOLIA AVENUE
SANTEE, CALIFORNIA 92071
CONTACT: SANDI SAWA
(619) 258-4100 X167

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Appendix D Hardline Development Project Vernal Pool and Wetlands Mitigation Plan

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Appendix F Science Advisor Reports, contains the following sub-appendices:

- Appendix F.1 Revised Final Independent Scientific Advisory Report for the Conservation Strategy for Quino Checkerspot Butterfly in the City of Santee.
- Appendix F.2 Revised Final Independent Scientific Advisory Report for the Conservation Strategy for Hermes Copper Butterfly in the City of Santee.
- Appendix F.3 Draft Final Western Spadefoot (*Spea hammondii*): Independent Scientific Advisor Report for the City of Santee Multiple Species Conservation Plan (MSCP) Subarea Plan.

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List of Acronyms and Abbreviations

Acronym	Definition
BA	Biological Assessment
BGEPA	Bald Eagle and Golden Eagle Protection Act
BIOS	Biogeographic Information and Observation System
BMPs	best management practices
BO	biological opinion
Cal-IPC	California Invasive Plant Inventory
CBI	Conservation Biology Institute
CC&Rs	Covenants, Conditions and Restrictions
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act of 1970
CFD	Community Facilities District
City	City of Santee
CNDDB	California Natural Diversity Database
CNLM	Center for Natural Lands Management
CNPS	California Native Plant Society
CPI	Consumer Price Index
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DOD	U.S. Department of Defense
DPLU	Department of Planning and Land Use
DPS	Distinct Population Segment
EA	Environmental Assessment
ECOS	Environmental Conservation Online System
EHC	Endangered Habitats Conservancy
EIR	Environmental Impact Report
EO	Elemental Occurrence
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESLs	environmentally sensitive lands
°F	Fahrenheit
FEMA	Federal Emergency Management Agency
FMP	Fire Management Plan
FR	Federal Register
GIS	geographic information system
GIS	Geographic Information System
GSOB	goldspotted oak borer
HCA	Habitat Conservation Area
HCP	Habitat Conservation Plan

Acronym	Definition
HLIT	Habitat Loss and Incidental Take
HMMP	Habitat Mitigation and Monitoring Plan
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
KEPS	Klein-Edwards Professional Services
km	Kilometers
LDCA	Lakeside Downs Conservation Area
M	Meters
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MEP	maximum extent practicable
MHPA	Multi-Habitat Planning Area
mi	Miles
MOU	Memorandum of Understanding
MPU	Master Plan Update
MSCP	Multiple Species Conservation Program
MSCP Final EIR/EIS	Final EIR/EIS: Issuance of Take Authorizations for Threatened and Endangered Species due to Urban Growth within the Multiple Species Conservation Program Planning Area
MSP	Management Strategic Plan
MTDB	Metropolitan Transit Development Board
MTR	Mission Trails Regional Park
MTRP	Mission Trails Regional Park
MTS	Metropolitan Transit System
MWD	Municipal Water District
NAP	Not a Part
NCCPA	Natural Community Conservation Planning Act
NDVI	normalized difference vegetation index
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries
NPDES	National Pollutant Discharge Elimination System
NROC	Nature Reserve of Orange County
or Basin Plans	Regional Water Quality Plans
PAR	Property Analysis Record
PDMWD	Padre Dam Municipal Water District
Plan Area	City of Santee
PMPs	preserve management plans
POM	Property Owner Manager
Porter-Cologne	Porter-Cologne Water Quality Control Act
Preserve	Lakeside Linkage County Preserve

Acronym	Definition
RAACP	Railroad Avenue Ambrosia Conservation Preserve
REPI	Readiness and Environmental Protection Integration
RMA	Rate and Method of Apportionment
RMP	Resource Management Plan
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SAP	Subarea Plan
SAPC	Subarea Plan Coordinator
SB	Senate Bill
SCP	Scientific Collecting Permit
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
SDSU	San Diego State University
SHB	shot hole borer
SR	State Route
SR-2	Semi-Rural Residential
SSAR	Society for the Study of Amphibians and Reptiles
Subarea Plan	Santee Subarea Plan
SUSMP	Standard Urban Storm Water Mitigation Plan
TET	The Environmental Trust
TM	Tentative Map
TNC	The Nature Conservancy
TPI	Topographic Position Index
USACE	U.S. Army Corps of Engineers
USC	U.S. Government Code
USFWS	U.S. Fish and Wildlife Service
VPHCP	Vernal Pool Habitat Conservation Plan
VPMP	Vernal Pool Mitigation Plan
WCB	Wildlife Conservation Board
WDRs	Waste Discharge Requirements
WotUS	Waters of the United States
WUI	Wildlands Urban Interface

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Executive Summary

Overview

The Santee Subarea Plan (Subarea Plan) provides a framework for promoting the protection and enhancement of natural resources, including listed species and species that may become listed during the permit term and their habitats, while streamlining the permitting process for planned development, infrastructure development, and infrastructure and facilities operations and maintenance activities (Covered Activities). The Subarea Plan will enable the City of Santee (City) to receive take permits for identified activities and projects conducted by the City and those under its jurisdiction where the City has control over the activity. By setting forth policies and guidelines for how to protect, enhance, and restore natural resources in specific areas of the City, implementation of the Subarea Plan is anticipated to create a network of preserve lands that conserves core habitat areas, maintains habitat connectivity, and protects sensitive ecological resources. Rather than separately permitting and mitigating individual projects, the Subarea Plan evaluates natural resource impacts and minimization and mitigation requirements comprehensively in a way that is more efficient and effective for sensitive and listed species and their habitats.

The Subarea Plan was developed in coordination with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), collectively referred as the "Wildlife Agencies", pursuant to the permit requirements of section 10(a)(1)(B) of the Federal Endangered Species Act (ESA) of 1973, as amended, and State Natural Community Conservation Planning Act (NCCPA). The Subarea Plan has been developed under the framework of the Multiple Species Conservation Program (MSCP) Subregional Plan (adopted in 1998) that covers the southwestern portion of San Diego County. The MSCP Subregional Plan is implemented through local permitted Subarea Plans, and the City has prepared this Subarea Plan to address the implementation of the MSCP Subregional Plan within the City of Santee Subarea Plan Area and to apply for associated take permits from the Wildlife Agencies. Key elements of the Santee Subarea Plan are summarized below.

Plan and Permit Area

The 10,482.4-acre Plan Area includes lands within the jurisdiction of the City of Santee, plus offsite conservation areas associated with the Fanita Ranch "Hardline Development Project" (171.1 acres). Certain lands within the City of Santee that are not under the jurisdiction of the City (e.g., the Padre Dam Municipal Water District) or have been excluded from the Subarea Plan are considered Not a Part (NAP) of the Plan Area (398.7 acres) and are not covered by the take authorizations under this Subarea Plan. The Permit Area includes all areas where take could occur under the permits and the areas that will be conserved and managed through implementation of the Subarea Plan. Therefore, the Permit Area covers the same 10,482.4 acres as the Plan Area. The Plan and Permit Areas are further described in Chapter 1*, Introduction and Overview,* and Chapter 2, *Existing Conditions*.

Permit Term

The City is requesting permits from the Wildlife Agencies for a term of 35 years. The permit term is the time period in which Covered Activities can receive take authorization under the Subarea Plan,

consistent with the requirements of the Subarea Plan. The permit term is also the time in which the City must successfully complete all conservation actions to offset impacts of the Covered Activities and provide for the conservation of the species. The City is requesting a permit term of 35 years because it allows for the full and successful implementation of the Covered Activities, the conservation strategy, and the monitoring and adaptive management program. While the permit term is 35 years, the conservation and associated management and monitoring will be in perpetuity.

Covered Species

The Subarea Plan proposes to protect and enhance native biological diversity, habitat for native species, natural communities, and local ecosystems throughout the Subarea Plan Managed Preserve. This broad scope will conserve a wide range of natural resources, including native listed and sensitive species and their habitat. The permits issued by the Wildlife Agencies will address 20 Covered Species that are currently listed as threatened or endangered or may become listed during the permit term, that may be impacted by Covered Activities, and that will benefit from Plan-related conservation and management. This Subarea Plan covers the following listed and non-listed species:

- Plants (8): San Diego ambrosia, San Diego barrel cactus, San Diego button-celery, San Diego goldenstar, San Diego mesa mint, San Diego thornmint, variegated dudleya, willowy monardella
- Invertebrates (5): Crotch's bumble bee, Hermes copper butterfly, Quino checkerspot butterfly, Riverside fairy shrimp, San Diego fairy shrimp
- Reptiles and Amphibians (3): Belding's orange-throated whiptail, Blainville's horned lizard, western spadefoot
- Birds (4): cactus wren, coastal California gnatcatcher, least Bell's vireo, western burrowing owl

For each of the Covered Species, a map of the potentially suitable habitat and known occurrences within the Plan Area is included in Chapter 3, *Covered Species*.

Covered Activities and Impact Assessment

A primary goal of the Subarea Plan is to obtain authorization for take of Covered Species under the NCCPA and ESA for the implementation of land uses, including planned development, infrastructure development, and infrastructure and facilities operations and maintenance activities (Covered Activities). Covered Activities include:

- **Hardline Development Project (Planned Development).** A Hardline Development Project includes upcoming development projects expected to have impacts on Covered Species or their habitats, are subject to the City's discretion, and would obtain take coverage under an approved Subarea Plan. There is one proposed hardline project included in the Plan Area called Fanita Ranch located in the northwestern quadrant of the City. A more detailed description of the Hardline Development Project is included in Chapter 4, *Covered Activities and Impact Assessments*.
- **Future Development Activities.** In addition to the Hardline Development Project, the Subarea Plan defines the processes for review and approvals of future land development and public infrastructure development projects that will potentially impact Covered Species and natural habitats. In situations where the City has discretion, the City will require future development

activities to implement avoidance, minimization, and mitigation requirements outlined in the Conservation Strategy of the Subarea Plan (see Chapter 5, *Conservation Strategy*). When a future development activity or project is located within an Upland Standards Areas, the San Diego River Subunit, or Infill Development Area, the Subarea Plan identifies required implementation measures for project approvals to ensure the establishment of the Managed Preserve that provides for the conservation and management of Covered Species and their habitats in perpetuity.

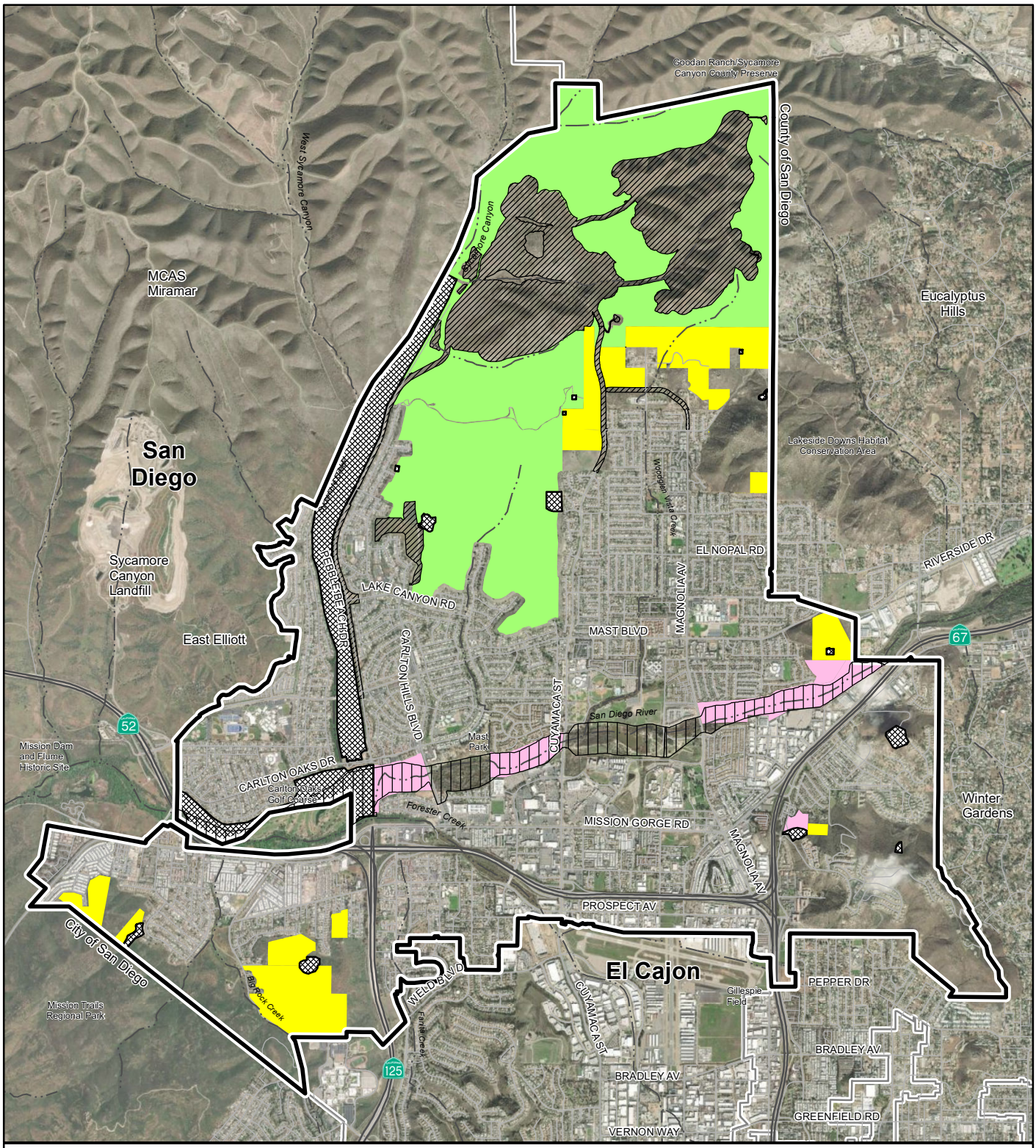
- **Operation and Maintenance Activities.** The City has completed a review and inventory of all ongoing and anticipated operations and maintenance activities. Operation and maintenance of existing and new trails, streets, drainage facilities, stormwater facilities and new and existing defensible space are Covered Activities under this Subarea Plan.
- **Preserve Management and Monitoring Activities.** Conservation activities in the Managed Preserve have the potential for minor temporary impacts to Covered Species, primarily through habitat management and monitoring activities. These activities are considered Covered Activities in the Subarea Plan and would include habitat management, restoration, and monitoring activities by Preserve Managers. Management and monitoring activities within the Managed Preserve will occur in perpetuity. These activities post permit term are not expected to result in take of listed species. Other activities within the Managed Preserve that also may be covered by the Subarea Plan include the creation of a limited amount of new trails, defensible space for wildfire, and potentially, future essential public projects that can demonstrate that avoidance of the Managed Preserve is not practicable.

The Covered Activities are described in detail in Chapter 4, *Covered Activities and Impact Assessment*, along with a detailed impact assessment quantifying the expected impacts on the Covered Species.

Conservation Strategy

The Subarea Plan conservation strategy provides for the conservation of Covered Species by protecting, enhancing, restoring, and managing their habitat and associated natural communities, including areas known to be occupied by Covered Species. The conservation strategy identifies portions of the City where future conservation and habitat enhancement will be directed (see Figure ES-1: Subarea Plan Managed Preserve). The Subarea Plan includes the following conservation strategy categories:

- **Hardline Project Preserves**. These are the portions of the Fanita Ranch Hardline Development Project areas that will be established as habitat preserves and integrated within the Managed Preserve. The Fanita Ranch project will include 1,593.8 acres of onsite preserve as well as 90.7 acres of acquisition of habitat for the Quino checkerspot butterfly in the East Elliott area west of the City and 80.4 acres of acquisition of occupied Hermes copper butterfly habitat in eastern San Diego County (near Alpine).
- **Upland Standards Areas**. The Santee Subarea Plan establishes policies in the 472.5 acres of Upland Standards Areas to ensure that the overall conservation within these portions of the City will remain at 70 percent, and that habitat connectivity will be protected.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure ES-1 SAP Managed Preserve.mxd Date: 2/11/2025 34153

Figure ES-1
Subarea Plan Managed Preserve
Santee MSCP Subarea Plan

- **City-Owned Preserve Lands.** As part of the Subarea Plan, the City will expand and provide an enhanced level of biological resources management and monitoring on 167.3 acres of City-owned Preserve Lands with important biological values. The management and monitoring for City-owned Preserve Lands will be consistent with guidelines and standards as set forth in Chapter 7, *Management and Monitoring*.

The Managed Preserve has been designed to integrate and connect with other properties that are currently protected as open space. The existing protected open space is part of the baseline conditions within the Plan Area. While any conservation and management in these existing protected open space areas is not regulated by the Subarea Plan (i.e., the Plan does not add additional management and monitoring requirements), the overall combination of the Managed Preserve and existing protected open space creates a connected open space network across the Plan Area (see Figure 5-1, *Santee Preserve and Open Space System*).

For Infill Development Areas, it is anticipated that there will be relatively few situations of future development that will result in direct biological impacts (estimated to be no more than 65 acres). When this situation does occur, the Subarea Plan defines requirements for avoidance, minimization, and mitigation. Mitigation of impacts in these areas will be directed into the Upland Standards Areas or San Diego River Subunit, or payment into the Subarea Plan Conservation Fund. The conservation strategy is described in detail in Chapter 5, *Conservation Strategy*.

Conservation Analysis

The conservation analysis demonstrates how implementation of the Conservation Strategy (Preserve assembly, restoration/management actions, and avoidance, minimization, and mitigation measures) results in achieving the Subarea Plan's biological goals and objectives. A quantitative summary of estimated allowable impacts and conservation based on the Subarea Plan conservation strategy is included in Table 6-6. Implementation of the Conservation Strategy will result in a Managed Preserve that offset impacts by permanently protecting and managing habitat preserves that are representative of natural landscapes and environmental gradients in the Plan Area. These habitat preserves will be interconnected with an open space network across the City designed to maintain regional wildlife movement and connectivity. The total amount of habitat conservation that will occur through implementation of the Subarea Plan exceeds the targets set for the Santee Subarea and evaluated as part of the MSCP Subregional Plan in 1998. The conservation analysis is described in detail in Chapter 6, *Conservation Analysis*.

Management and Monitoring

The Subarea Plan sets forth a Preserve Management and Monitoring Program that establishes practices to ensure the long-term conservation, health, and viability of species and ecological values within the habitat preserves. Guidelines are provided as a framework for the City and Preserve Managers to use when developing Preserve Complex Resource Management Plans and Preserve Resource Management Plans (RMPs). A template for the RMPs is included as Appendix H, *Preserve RMP Outline*. The Preserve management guidelines and requirements that are addressed include species and habitat management, property management, hydrology and erosion control, land uses

within Preserves, land uses adjacent to Preserves, recreation, enforcement of public access, fire management, and public outreach and education. Each Preserve Complex RMP or Preserve RMP will include adaptive management and monitoring approach to identify threats, stressors, and trends affecting Covered Species and their habitats. The Preserve Management and Monitoring Program is described in detail in Chapter 7, *Management and Monitoring*.

Plan Implementation

The City is responsible for the implementation of the Subarea Plan. The City will dedicate in-house staff and/or contract staff to fill the roles of the Subarea Plan Coordinator and Preserve Steward that will oversee Plan implementation. Elements of Plan Implementation include:

1. **Subarea Plan Coordinator.** The City will staff a Subarea Plan Coordinator that will be the primary point of contact for issues relating to the Subarea Plan. The role of this position will be to serve as a liaison between City departments, private landowners, Wildlife Agencies, other public agencies, and the general public on Subarea Plan implementation.

2. **Preserve Steward**. The City will dedicate in-house staff or contract with a qualified entity to fulfil the role of Preserve Steward. The Preserve Steward's role is to oversee management and monitoring on City-owned Preserve Lands and coordinate management and monitoring with other Preserve Managers who are responsible for the Managed Preserve and existing protected open space within the City.

3. **City Preserve Manager**. The City will contract with a preserve management entity to support the management and monitoring on City-owned Preserve Lands. In addition, at the election of project proponents, the City Preserve Manager may be contracted to serve as the Preserve Manager for future preserves that will be established following the Subarea Plan guidelines.

4. **Habitat Loss and Incidental Take (HLIT) Ordinance**. The City will adopt an HLIT Ordinance to accompany the Subarea Plan that will define a permitting structure for how Covered Activities will address biological impacts through minimization and mitigation.

5. **General Plan Amendment and Updates**. The City prepared a set of revisions to General Plan, zoning, and other land use regulations to incorporate the Subarea Plan by reference and adopt resource management goals and policies that are consistent with the Subarea Plan. These revisions will be adopted at the time that the Subarea Plan is approved.

6. **Funding**. The City will provide funding to fulfill the roles of Subarea Plan Coordinator, Preserve Steward, City Preserve Manager for the City-owned Preserve Lands, and management and monitoring of City-owned Preserve Lands. Funding for Preserve management and monitoring for hardline development and future development projects is the responsibility of the project proponents. A primary goal of the Subarea Plan is to make the project approval process streamlined and biological mitigation obligations clearly defined to provide more certainty in terms of project funding and schedule.

7. **Annual Reporting.** The Subarea Plan Coordinator and Preserve Steward will prepare annual reports summarizing all issuances of project approvals and HLIT permits, progress towards preserve assembly, status of individual preserves, tracking of the level of conservation within the Upland Standard Areas, and other conservation actions undertaken over the previous year. The

annual report will be submitted to the Wildlife Agencies for review and presented at a public meeting each year.

8. **Regulatory Assurances.** Provisions of the NCCPA and regulations promulgated under the ESA provide for regulatory assurances to parties covered by approved NCCPs or HCPs in the event of unforeseen circumstances. Regulatory assurances are described in Chapter 8, *Subarea Plan Implementation and Funding.*

The Plan Implementation is described in detail in Chapter 8, *Subarea Plan Implementation and Funding*.

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Chapter 1
Introduction and Overview

1.1 Background

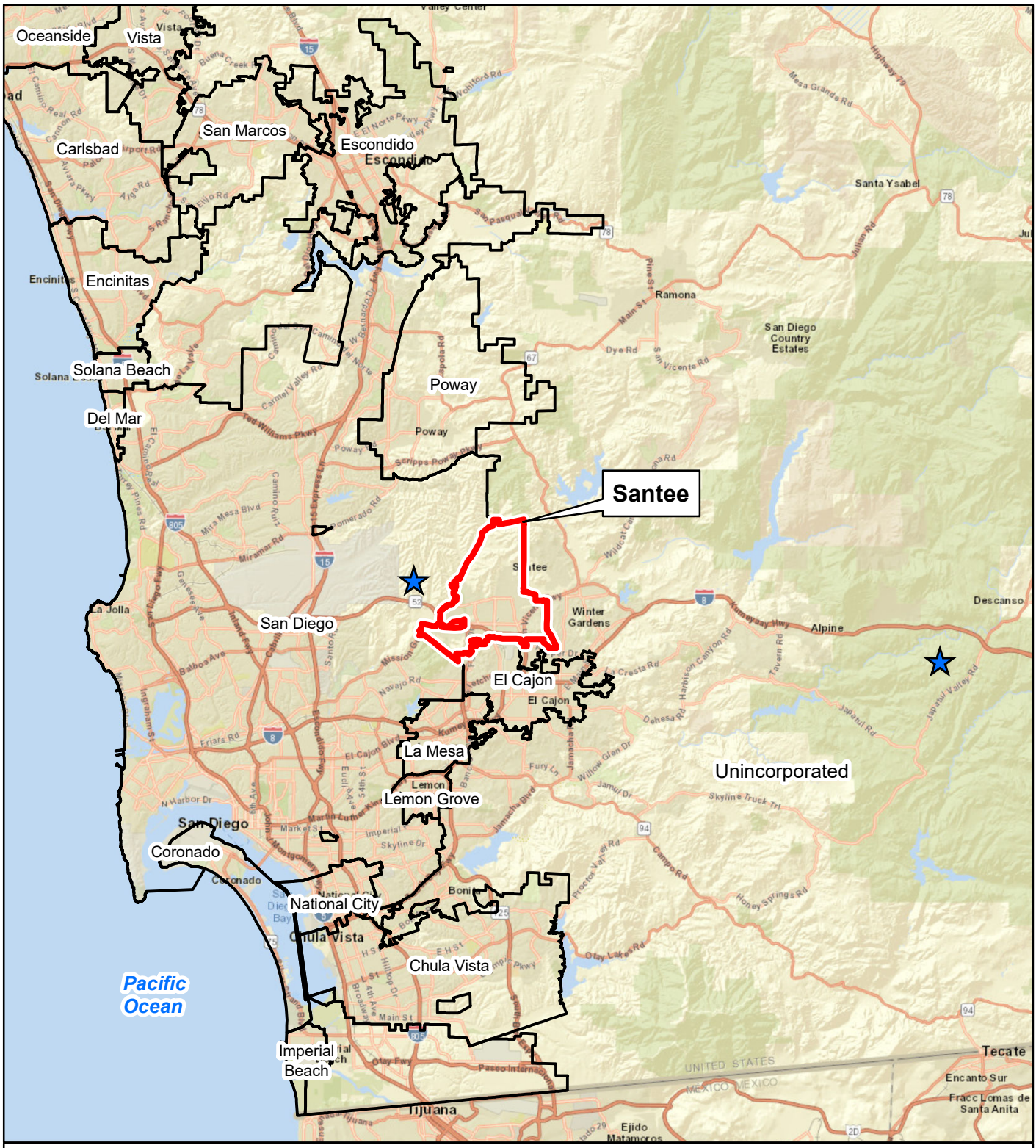
The Multiple Species Conservation Program (MSCP) Subregional Plan (San Diego 1998) area is located in the southwestern portion of San Diego County. The MSCP Plan area includes the City of Santee (City), portions of the unincorporated County of San Diego, and the cities of San Diego, Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, Lemon Grove, National City, and Poway. The MSCP is a comprehensive long-term program designed to create, manage, and monitor an ecosystem preserve that supports viable populations of native plant and animal species and their habitats in perpetuity. The MSCP also accommodates continued economic development and quality of life amenities such as open space and compatible passive recreational opportunities for residents within the appropriate areas.

The MSCP Subregional Plan is implemented through local Subarea Plans that are prepared pursuant to the requirements of the MSCP Subregional Plan, the California Natural Community Conservation Planning Act (NCCPA)[1], and section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended (ESA). The City prepared this Subarea Plan to address the implementation of the MSCP Subregional Plan largely within the jurisdictional boundary of the City of Santee (Plan Area), which is located east of the City of San Diego and north of El Cajon (Figure 1-1).

The MSCP Subregional planning effort was initiated in the early 1990s. *The Final EIR/EIS: Issuance of Take Authorizations for Threatened and Endangered Species due to Urban Growth within the Multiple Species Conservation Program (MSCP) (City of San Diego 1998) Planning Area* (MSCP Final EIR/EIS) analyzed several alternative MSCP Subregional Plan Preserve designs. The environmental impacts associated with the establishment of this Subarea Plan Preserve were studied within the range of alternatives analyzed in the MSCP Final EIR/EIS.

This Subarea Plan forms the basis for a Federal section 10(a)(1)(B) permit and California section 2835 permit. In addition, an Implementing Agreement (IA) has been prepared and included as Appendix A. The IA is an agreement between the City, United States Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW) memorializing the terms of the Subarea Plan. The Santee Subarea Plan and its associated IA establish the conditions under which the City, for the benefit of itself and public and private landowners within its Subarea Plan boundaries, requests take permits from the USFWS and CDFW (herein referred to as the Wildlife Agencies) for specific species to be covered (Covered Species). Take permits authorize the take of listed Covered Species incidental to lawful Covered Activities (see Chapter 4, *Covered Activities and Impact Assessment*) in the Plan Area. Take authorization through the issuance of federal and State take permits are being sought by the City from the Wildlife Agencies associated with the approval of this Subarea Plan and IA.

[1] This Subarea Plan is developed in accordance with the NCCPA in effect on December 31, 2001. See Section 1.3.1.2, *Natural Community Conservation Planning Act,* for further description.



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Figure 1-1
Regional Location
Santee MSCP Subarea Plan

This Subarea Plan proposes to implement all relevant sections of the MSCP Subregional Plan, including the habitat and species conservation goals and requirements found in the MSCP Table 3-5 (see Appendix B, *MSCP Subregional Plan Tables*). However, the provisions of this Subarea Plan and IA supersede those of the overall MSCP Subregional Plan in the event of conflicts between the two plans.

1.1.1 Subarea Plan Goals

The Santee Subarea Plan goals are:

- Ensure the City will conserve natural communities and Covered Species pursuant to the NCCPA and the ESA.
- Assemble a habitat preserve system that conserves Covered Species and their habitats and results in the conservation of biological core resource areas and habitat linkages/corridors that are complementary to existing conservation lands within and adjacent to the Subarea Plan Area.
- Provide a proactive and adaptive habitat management strategy for the Subarea Plan Managed Preserve.
- Provide regulatory certainty to landowners and the City in making land use decisions.
- Assist in the region's effort to sustain and enhance habitats for wetland-dependent species.
- Receive take permits under section 10(a)(1)(B) of the federal ESA from the USFWS for the Covered Species and section 2835 of the NCCPA from CDFW.
- Maintain functional wildlife corridors and habitat linkages between core biological resource areas within the MSCP Preserve System to support conservation of the region's biodiversity, while also enhancing the overall quality of life for the residents of Santee.
- Streamline the endangered species consultation process under section 7 of the ESA for Covered Activities that have a federal nexus.
- Institute requirements for Covered Activities that mitigate impacts on the City's biological resources and Covered Species and ensure that these impacts are avoided, minimized, and mitigated.to the maximum extent practicable.
- Ensure that Covered Activities will not reduce the likelihood of the survival and recovery of the Covered Species.
- Offset impacts from Covered Activities with the conservation and management of Covered Species and their habitats.
- Provide adequate assurances that the Subarea Plan will be funded and implemented.
- Balance the conservation of Covered Species and natural vegetation communities with housing, property rights, recreation, transportation, economic development, and other community and regional goals.

1.1.2 Purpose and Need

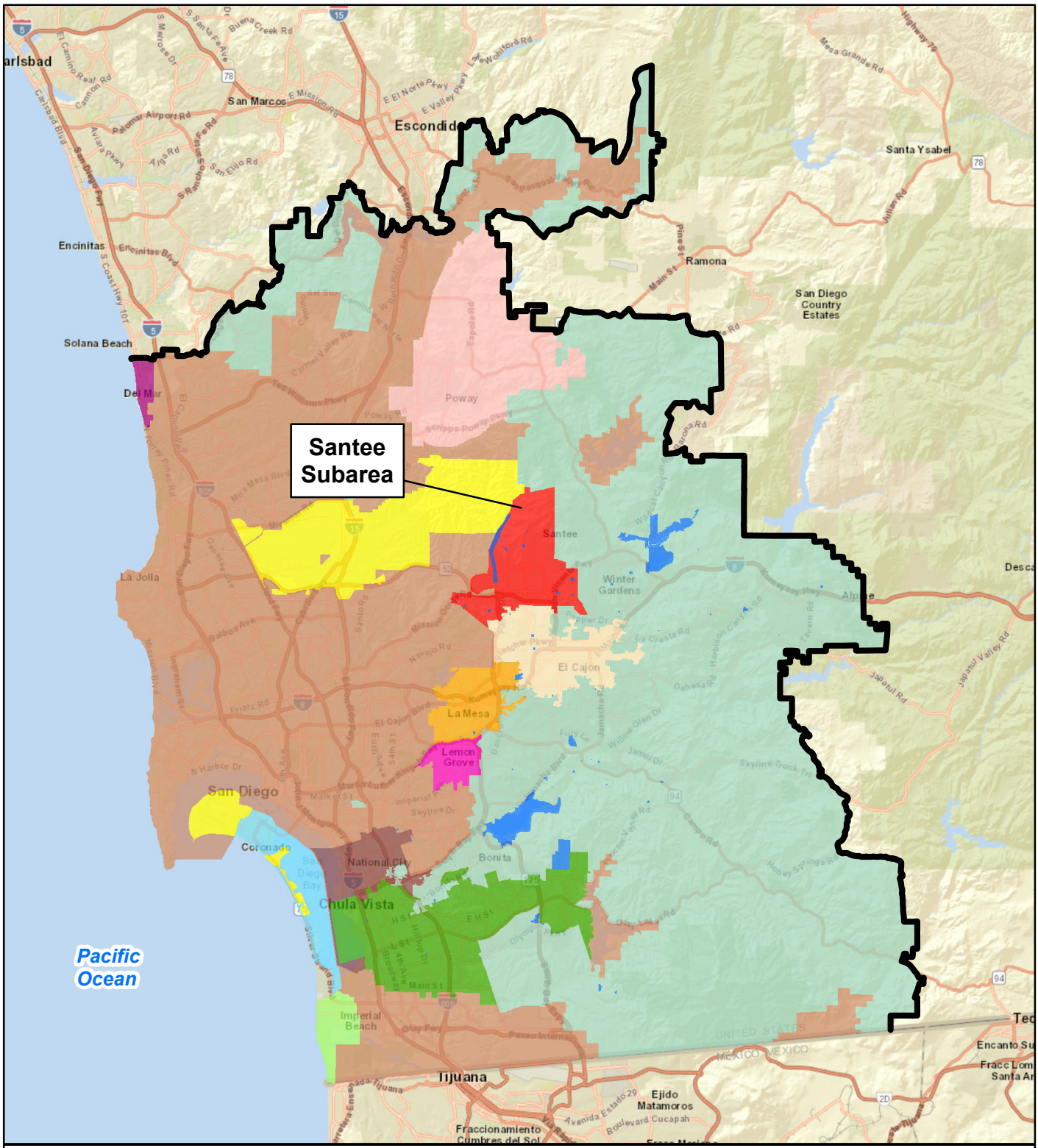
The Subarea Plan comprehensively addresses how the City will conserve natural biotic communities and Covered Species pursuant to the NCCPA of 1991 and the ESA. Amendments to the NCCPA enacted effective January 1, 2003, expressly provide that the Santee Subarea Plan will be solely governed in accordance with the NCCPA as it read on December 31, 2001. References to the NCCPA within this Subarea Plan thus refer to the NCCPA of 1991 since this is the applicable version of the NCCPA governing this Subarea Plan. This Subarea Plan is intended to function as both a NCCP Plan under the NCCPA and a Habitat Conservation Plan (HCP), pursuant to section 10(a)(1)(B) of the ESA. Thus, the City is submitting this Subarea Plan as part of the application for Federal and State take permits for certain listed rare, threatened, or endangered species for a permit term of 35 years.

Permits being sought pursuant to this Subarea Plan do not include U.S. Army Corps of Engineers (USACE) Clean Water Act section 404 and Regional Water Quality Control Board section 401 permits for impacts to wetlands or other jurisdictional waters. However, this Subarea Plan requires that the City comply with the wetlands protection measures stipulated in the Clean Water Act 404(b)(1) (40 CFR Part 230). For Covered Activities subject to section 7 of the ESA, the Subarea Plan provides information that will support the section 7 consultation process on Covered Species. Projects that are regulated by Federal agencies will continue to be subject to section 7 consultations under the ESA where federally listed species or Critical Habitat may be affected. Those projects that are subject to a section 7 consultation will be evaluated in accordance with the requirements of the ESA and to ensure that projects are consistent with this Subarea Plan. Thus, approval of this Subarea Plan will streamline the endangered species consultation process for wetland permits.

This Subarea Plan provides regulatory certainty to both landowners and the City and is intended to support the conservation of the region's biodiversity and enhance the overall quality of life for residents of Santee and the surrounding region. The Subarea Plan addresses the potential impacts to natural habitats and rare, threatened, or endangered species due to public and private activities within the City. The Subarea Plan also addresses the City's commitments to implement a conservation strategy to offset these impacts through the assembly of habitat preserves and habitat management policies designed to protect and enhance the population size and viability of the 20 Covered Species within the Plan Area. The Plan Area is defined as all areas under the jurisdiction of the City excluding areas designated as Not a Part (see Section 1.2.2, *Plan and Permit Area*, and Figure 1-3), but including conservation areas outside the City associated with the Fanita Ranch hardline development project. This comprehensive approach provides greater certainty for both economic development and conservation of biological resources than other approaches available under the ESA or CESA.

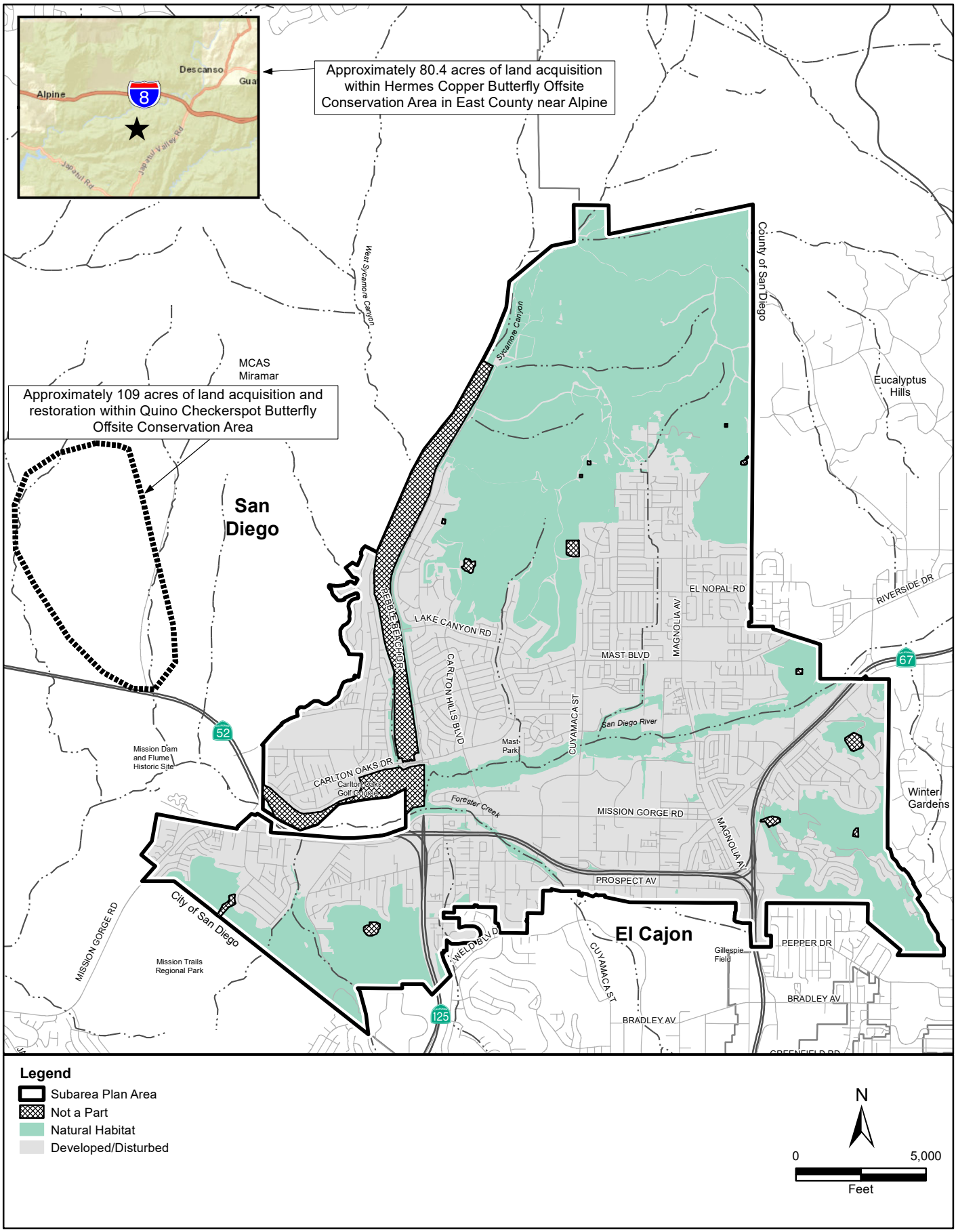
1.1.3 Consistency with the MSCP Subregional Plan

As stated above, the MSCP Subregional Plan covers approximately 900 square miles in southwestern San Diego County and includes the City of Santee, portions of the unincorporated County of San Diego, and the other cities. Subarea plans have been approved for the cities of Poway (1996), San Diego (1998), La Mesa (1998), and Chula Vista (2005), and the unincorporated County of San Diego (1998) (Figure 1-2).



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Figure 1-2
MSCP Subregional Plan and Subareas
Santee MSCP Subarea Plan



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Figure 1-3
Subarea Plan Area
Santee MSCP Subarea Plan

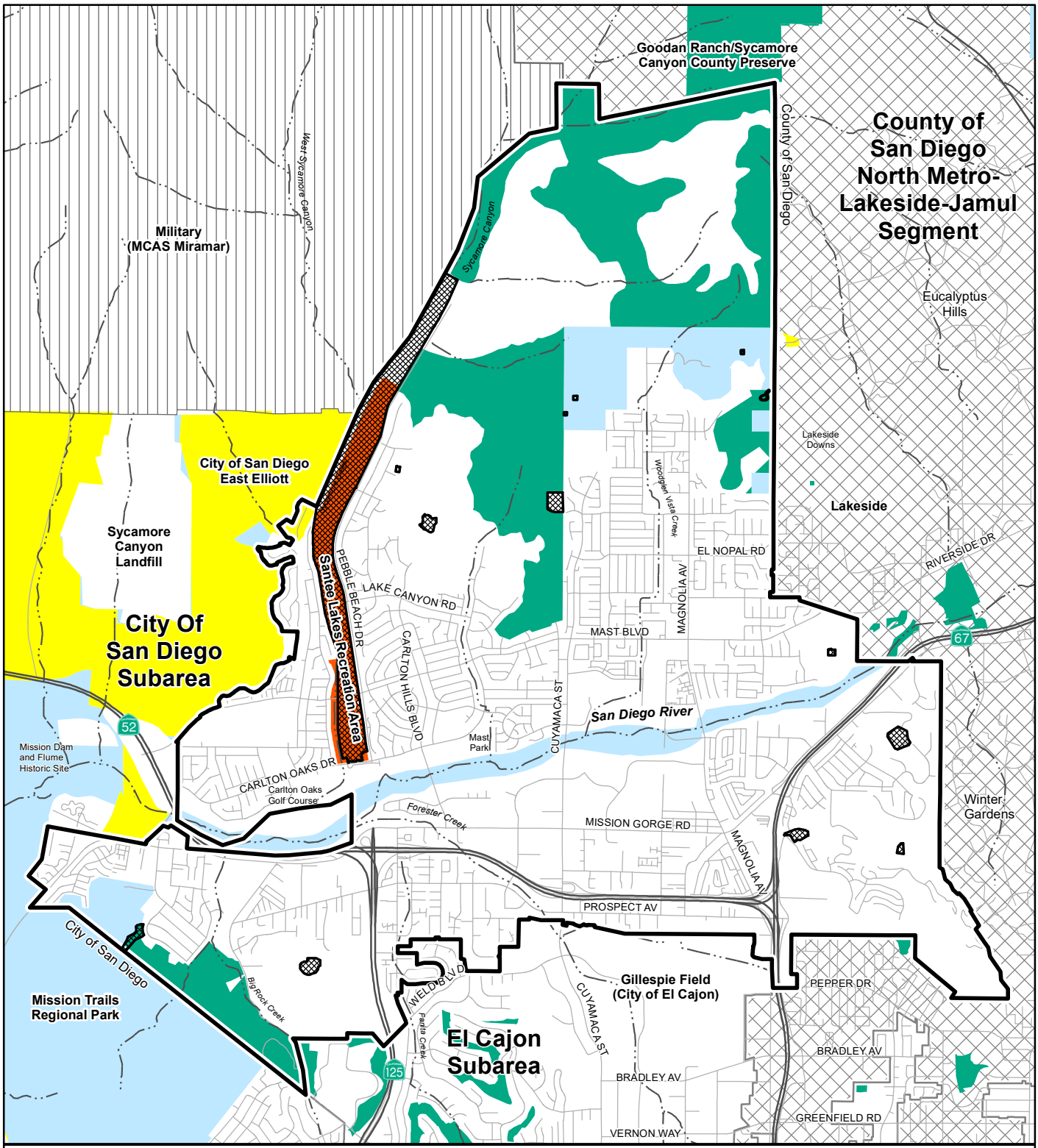
This Subarea Plan represents the City's contribution to the MSCP Subregional Plan and to regional NCCP conservation goals. The planning process for the Santee Subarea Plan was contemplated in the MSCP Subregional Plan and has been developed consistent with the MSCP. Preliminary biological analyses and attempts to define regional biological core areas (larger blocks of habitat with relatively high biological value) and landscape linkage areas for wildlife (areas of natural habitat that connect biological core areas so that species can disperse and move among biological cores) in the MSCP have set the stage for more refined planning within the City.

As part of the development of the MSCP Subregional Plan, the Multi-Habitat Planning Area (MHPA) delineated areas where habitat conservation and preserve assembly should occur. In general, the MHPA represents the most biologically important areas that were considered to support very high to high value habitats. Figure 1-4 identifies the original MHPA boundaries (as drawn in the 1990s) within the Santee Subarea Plan Area. The overall MSCP preserve system is expected to be assembled as each participating jurisdiction implements their portion of the MSCP. Therefore, any modifications to the preserve design within a subarea of the MSCP must result in an equal or better level of conservation of species and habitats in order to be consistent with the assumptions of the MSCP Subregional Plan's conservation goals.

The Santee Subarea Plan preserve boundaries are a result of the City's efforts to refine and expand the MHPA boundaries, to better define conservation priorities within the City and to develop a habitat conservation plan under the MSCP Subregional Plan. The resulting boundaries are shown in the Subarea Plan Managed Preserve (see Figure ES-1) and Santee Preserve System (see Figure 5-1 in Chapter 5, *Conservation Strategy*).

The MSCP Volume II included draft Subarea Plans for each of the participating jurisdictions. These draft subarea plans, including a draft City of Santee MSCP Subarea Plan, dated August 1996 ("1996 Draft Subarea Plan"), and their associated potential impacts on the environment, were analyzed in the MSCP Final EIR/EIS. The current Santee Subarea Plan includes changes that are consistent with the goals of the MSCP Subregional Plan and Final EIR/EIS and strengthen the conservation efforts detailed in the 1996 Draft Subarea Plan.

The MSCP Final EIR/EIS identifies "Vegetation Community Conservation Target Acres" for conservation by subarea (see Appendix B, *MSCP Subregional Plan Tables*). A total of 2,067 acres were expected to be conserved within the Santee Plan Area based on the MHPA. However, implementation of this Subarea Plan proposes to conserve approximately 2,263.0 acres of the existing unprotected natural habitats. (see Table 5-2, *Habitat Conserved within Subarea Plan Managed Preserve* and Table 6-1, *Total Acres Natural Habitat within Subarea Plan Managed Preserve*).



Note: The MHPA boundaries were delineated as part of the original MSCP Subregional Plan adopted in 1998. The MHPA serves as a benchmark to compare with the preserve boundaries included in this Subarea Plan (See Figure 5-1, *Santee Preserve and Open Space System*).

Source: City of San Diego 1998. MSCP Subregional Plan.

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Figure 1-4
MSCP Multiple Habitat Planning Areas (MHPA)
Santee MSCP Subarea Plan

1.2 Scope of the Subarea Plan

1.2.1 Permittee and Participating Entities

The City is seeking incidental take and NCCPA permits from the Wildlife Agencies. Take authorizations for natural habitats and/or associated Covered Species issued to the City can then be conveyed to public or private entities under the direct control of the City (i.e., actions subject to the City's discretion or covered under a Certificate of Inclusion)implementing Covered Activities in the Plan Area, if those Covered Activities are implemented consistent with the provisions of this Subarea Plan and any associated permit conditions.

1.2.2 Plan and Permit Area

The Plan Area includes most of the jurisdiction of the City of Santee (10,482.4 acres), plus offsite conservation areas associated with the Fanita Ranch "Hardline" Development Project (171.1 acres). Certain lands within the Santee city limits are excluded from the Plan Area and are considered Not a Part (NAP) of the Subarea Plan (398.7 acres). These NAP lands are not covered by the take permits under this Plan (Figure 1-3). The Permit Area includes all areas where take could occur under these permits and the areas that will be conserved and managed through implementation of the Plan. Therefore, the Permit Area covers the same 10,482.4 acres as the Plan Area.

1.2.3 Permit Term

The City of Santee will be the sole permittee under the Subarea Plan, which will have a term of 35 years. However, management and monitoring activities within the conserved and managed Preserve lands will occur in perpetuity, including after the permit term. These activities occurring after the end of the permit term are not expected to result in take of listed species. Prior to the permits' expiration, the City may apply to renew or amend the Subarea Plan and its associated permits and authorizations, including for management actions. The process to renew or amend the Subarea Plan is addressed in Chapter 8, *Subarea Plan Implementation and Funding*.

1.2.4 Covered Species

As required by the NCCPA, the Subarea Plan will protect native biological diversity, habitats for native species, natural communities, and the local ecosystems the Covered Species rely upon. This broad scope is intended to conserve a wide range of natural resources, including native species that are common or rare in the Plan Area. However, the City is seeking Wildlife Agencies' permits for listed and sensitive species identified for coverage ("Covered Species") under this Subarea Plan. Covered Species identified in the Subarea Plan are species currently listed as threatened or endangered, or that may reasonably be expected to become listed during the permit term, that may be adversely affected by Covered Activities and would benefit from conservation and management activities identified in the Subarea Plan.

This Subarea Plan addresses 20 Covered Species, including eight plants and 12 animals (Table 1-1). The species proposed for coverage were addressed by the MSCP Subregional Plan except for the

Crotch's bumble bee, Quino checkerspot butterfly, Hermes copper butterfly, and western spadefoot toad. Additional Covered Species information is provided in Chapter 3, *Covered Species*, of the Subarea Plan.

Table 1-1. Subarea Plan Covered Species

Type	Common Name	Scientific Name
Plants	San Diego ambrosia	*Ambrosia pumila*
	San Diego barrel cactus	*Ferocactus viridescens*
	San Diego button-celery	*Eryngium aristulatum* var. *parishii*
	San Diego goldenstar	*Bloomeria clevelandii*
	San Diego mesa mint	*Pogogyne abramsii*
	San Diego thornmint	*Acanthomintha ilicifolia*
	Variegated dudleya	*Dudleya variegata*
	Willowy monardella	*Monardella viminea*
Invertebrates	Crotch's bumble bee	*Bombus crotchii*
	Hermes copper butterfly	*Lycaena hermes*
	Quino checkerspot butterfly	*Euphydryas editha quino*
	Riverside fairy shrimp	*Streptocephalus woottoni*
	San Diego fairy shrimp	*Branchinecta sandiegonensis*
Reptiles and	Belding's orange-throated whiptail	*Aspidoscelis hyperythra beldingi*
Amphibians	Blainville's horned lizard	*Phrynosoma blainvillii*
	Western spadefoot	*Spea hammondii*
Birds	Coastal cactus wren	*Campylorhynchus brunneicapillus couesi*
	Coastal California gnatcatcher	*Polioptila californica californica*
	Least Bell's vireo	*Vireo bellii pusillus*
	Western burrowing owl	*Athene cunicularia hypugaea*

1.2.5 Covered Activities

A goal of the Santee Subarea Plan is to obtain permit authorization under the NCCPA and ESA for take of Covered Species[2] associated with the implementation of Covered Activities. Covered Activities are limited to the following:

- **Hardline Development Project (Planned Development).** A Hardline Development Project includes upcoming development projects expected to have impacts on Covered Species or their habitats, are subject to the City's discretion, and would obtain take coverage under an approved Subarea Plan. There is one proposed hardline project included in the Plan Area called Fanita Ranch located in the northwestern quadrant of the City. A more detailed description of the hardline development project is included in Chapter 4, *Covered Activities and Impact Assessment*.
- **Future Development Activities.** In addition to the Hardline Development Project, the Subarea Plan defines the processes for review and approvals of future land development and public infrastructure development projects that will potentially impact Covered Species and natural habitats. In situations where the City has direct control, the City will require the implementation of avoidance, minimization, and mitigation requirements outlined in the Conservation Strategy of the Subarea Plan (see Chapter 5, *Conservation Strategy*). Depending on whether a future development activity or project is located within an Upland Standards Area, the San Diego River Subunit, or Infill Development Area, the Subarea Plan requires implementation measures for project approvals to ensure the establishment of the Subarea Plan Managed Preserve that adequately protects and maintains Covered Species and their habitats in perpetuity.
- **Operation and Maintenance Activities.** The City has completed a review and inventory of all ongoing and anticipated operations and maintenance activities. Operation and maintenance of existing and new trails, streets, drainage facilities, stormwater facilities, and new and existing defensible space are Covered Activities under this Subarea Plan.
- **Preserve Management and Monitoring Activities**: Conservation activities in the Subarea Plan Managed Preserve have the potential for minor temporary impacts to Covered Species, primarily through habitat management and monitoring activities. These activities are considered Covered Activities in the Subarea Plan and would include habitat management, restoration, and monitoring activities by Preserve Managers. Management and monitoring activities within the Preserves will occur in perpetuity and post the permit term. Other activities within the Managed Preserve that are covered under the Subarea Plan include the creation of a limited amount of new trail, creation and maintenance of defensible space, and potentially, essential public projects that demonstrate that avoidance of the Managed Preserve is impracticable.

[2] "Take" under the Federal ESA does not apply to listed plant species; therefore, take of listed plant species is not prohibited under the ESA, and a Federal incidental take permit is not required for plant species covered by the Subarea Plan. As applied to plants, section 9 of the ESA does prohibit private parties from certain activities that impact listed plants located on lands that are under Federal jurisdiction or on other lands in violation of State laws (Section 9(a)(2)(B)). USFWS recommends that permit applicants include conservation measures for listed plants in habitat conservation plans and typically extends regulatory assurances for covered plant species in recognition of such plan conservation measures. Any reference to "take" of covered plant species in the Subarea Plan means, with regard to the Federal incidental take permit, impacts on covered plant species.

Chapter 4, *Covered Activities and Impact Assessment,* provides more specific details on the projects designated as Covered Activities under this Subarea Plan.

1.3 Regulatory Framework

The Subarea Plan is designed primarily to comply with the NCCPA and ESA; however, it is also consistent with other state and Federal laws including:

- California Endangered Species Act (Cal. Fish and Game Code, §§ 2050–2085)
- California Fish and Game Code Sections 3511, 4700, 5050, and 5515 (Fully Protected Species)
- California Fish and Game Code Section 3503 (Bird Nests)
- California Fish and Game Code Section 3503.5 (Birds of Prey)
- Migratory Bird Treaty Act (MBTA)
- Bald Eagle and Golden Eagle Protection Act (BGEPA)
- California Environmental Quality Act of 1970 (CEQA)
- National Environmental Policy Act of 1969 (NEPA)
- CWA Sections 401, 402, and 404
- Porter-Cologne Water Quality Control Act
- Fish and Game Code Sections 1601–1607 (Lake or Streambed Alteration Agreement)
- National Historic Preservation Act

1.3.1 State and Federal Endangered Species Laws

1.3.1.1 California Endangered Species Act

The CESA prohibits take of wildlife and plants listed as threatened or endangered or identified as candidates for listing by the California Fish and Game Commission. *Take* is defined under the California Fish and Game Code as any action or attempt to "hunt, pursue, catch, capture, or kill." Therefore, take under CESA does not include "the taking of habitat alone or the impacts of the taking."[3] Rather, the courts have affirmed that under CESA, "taking involves mortality."

CESA allows exceptions to the take prohibition for take that occurs during otherwise lawful activities. The requirements of an application for incidental take under CESA are described in Section 2081 of the California Fish and Game Code. Incidental take of state-listed species may be authorized if an applicant submits an approved plan that minimizes and "fully mitigates" the impacts of this take.

1.3.1.2 Natural Community Conservation Planning Act

In 1991, California's NCCPA (California Fish and Game Code, Section 2800 *et seq.*) was enacted to implement broad-based planning that balances appropriate development and growth with

[3] *Environmental Council of Sacramento v. City of Sacramento*, 142 Cal. App. 4th 1018 (2006).

conservation of wildlife and habitats. Pursuant to the NCCPA, local, state, and Federal agencies are encouraged to cooperate in preparing NCCPs to provide comprehensive management and conservation of multiple species and their habitats under a single plan, rather than through preparation of numerous individual plans on a project-by-project basis. The NCCPA is broader in its orientation and objectives than the CESA or ESA. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use. To be approved by CDFW, an NCCP must provide for the conservation of species and protection and management of their habitat and natural communities in the Plan Area in-perpetuity.

The 1991 NCCPA was repealed and replaced with a substantially revised and expanded NCCPA in 2002. While the revised NCCPA established new standards and guidance on many facets of the program, including scientific information, public participation, biological goals, interim project review, and approval criteria, amendments to the NCCPA enacted effective January 1, 2003 (Section 2830[b][2] expressly provide that Subarea Plans for the San Diego MSCP will be solely governed in accordance with the NCCPA as it read on December 31, 2001. Copies of the 1991 NCCPA and Section 2830 of the 2003 NCCPA are included in Appendix C. The City enrolled as an NCCP participant and entered into a Memorandum of Agreement for coordinated habitat planning on May 13, 1992 (City of Santee City Council Resolution No. 54-92).

1.3.1.3 Federal Endangered Species Act

USFWS, under the Department of the Interior, and the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), under the Department of Commerce, administer the ESA. The ESA requires USFWS and NOAA Fisheries to maintain lists of threatened and endangered species and affords substantial protection to listed species. NOAA Fisheries' jurisdiction under the ESA is limited to the protection of marine mammals (including polar bears and manatees), sea turtles at sea, marine fishes, and anadromous fishes[4]; all other species are subject to USFWS jurisdiction. Here, the Santee Subarea Plan covers species that are subject only to USFWS jurisdiction.

USFWS or NMFS may list species as either *endangered* or *threatened*. An endangered species is at risk of extinction throughout all or a significant portion of its range (ESA Section 3[6]). A threatened species is likely to become endangered in the foreseeable future (ESA Section 3[19]). Section 9 of the ESA prohibits the take of any fish or wildlife species listed under the ESA as endangered and most species listed as threatened.[5] *Take*, as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Section 9 prohibits the "removal or reduction to possession" or "malicious damage or destruction" of any listed plant species "under Federal jurisdiction" (i.e., on Federal land or "Federal property interests such as conservation easements, leasehold estates, and special management areas"[6]); it also prohibits activities that would "remove, cut, dig up, or damage or destroy" endangered plants "on any other

[4] *Anadromous fishes* are fish that spend part of their life cycle in the ocean and part in fresh water. NOAA Fisheries has jurisdiction over anadromous fish that spend the majority of their life cycle in the ocean.

[5] The protection of threatened species under section 9 is discretionary through a rule issued under section 4(d) of the ESA. By regulation, USFWS automatically affords section 9 protection to threatened species at the time of listing. These protections later can be modified by USFWS through a 4(d) rule.

[6] Northern California River Watch v. Wilcox, 633 F. 3d 766 - Court of Appeals, 9th Circuit 2011.

area" in violation of State law (Section 9(a)(2)(B)). Even though take under the ESA does not apply to plants and there is no prohibition of take of plants, the Subarea Plan covers three plants. These plants are covered in order to meet regulatory obligations under section 7 of the ESA and to comply with the CESA. Plants are also included as Covered Species to provide *no-surprises* assurances for these species.

The ESA includes mechanisms that provide exemptions and exceptions to the section 9 take prohibitions. These are addressed in the ESA under section 7 (Federal actions) and section 10 (non-Federal actions), respectively.

Section 7

Section 7 of the ESA requires all Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of federally designated Critical Habitat. To ensure that its actions do not result in jeopardy to listed species or in the adverse modification of Critical Habitat,[7] each Federal agency must consult with USFWS or NOAA Fisheries—or both—regarding discretionary Federal agency actions that may affect listed species or Critical Habitat. Consultation begins when the Federal agency submits a written request for initiation to USFWS or NOAA Fisheries, along with the agency's biological assessment (BA) of its proposed action (if necessary), and USFWS or NOAA Fisheries accepts that sufficient information has been provided to initiate consultation. If the action agency concludes that the action is not likely to adversely affect a listed species and USFWS or NOAA Fisheries concur with that conclusion, the action may be conducted without further review under the ESA. Otherwise, USFWS or NOAA Fisheries must prepare a written biological opinion (BO) describing how the agency's action will affect the listed species and/or its Critical Habitat. The issuance of a section 10 permit for this Subarea Plan is a Federal action that triggers a section 7 consultation. USFWS will consult internally to address this requirement.

If the BO concludes that the proposed action would jeopardize the continued existence of a listed species or adversely modify its Critical Habitat, the opinion must include "reasonable and prudent alternatives" that would avoid that result. If the BO concludes that the action as proposed would involve the take of a listed fish or wildlife species, but not to an extent that would jeopardize the species' continued existence, the BO must include an incidental take statement. *Incidental take* is take that is "incidental to, and not intended as part of, an otherwise lawful activity" (50 CFR 17.3). The incidental take statement specifies an amount or extent of take that may occur as a result of the action and may include reasonable and prudent measures to minimize the impact of the take. If the action complies with the BO and incidental take statement, it may be implemented without violation of the ESA, even if incidental take of the species addressed occurs.

Section 10

Until 1982, state, local, and private entities had no means to acquire incidental take authorization. Private landowners and local and state agencies risked being in direct violation of the ESA no matter

[7] *Critical Habitat* is generally defined under the ESA and its implementing regulations as specific geographic areas, whether occupied by listed species or not, that are determined to be essential for the conservation and management of listed species, and that have been formally described in the *Federal Register*.

how carefully their projects were implemented. This statutory dilemma led Congress to amend section 10 of the ESA in 1982 to authorize the issuance of an incidental take permit to non-Federal project proponents upon completion of an approved conservation plan. The term *conservation plan* has evolved into *habitat conservation plan* (HCP).

In cases where Federal land, funding, or authorization is not required for an action by a non-Federal entity, the take of listed species must be permitted by USFWS and/or NOAA Fisheries through the section 10 process prior to the activity being conducted. Private landowners, corporations, state agencies, local agencies, and other non-Federal entities must obtain a section 10(a)(1)(B) incidental take permit for take of federally listed fish or wildlife species "that is incidental to, but not the purpose of, otherwise lawful activities."

There is no incidental take prohibition for listed plants; however, certain actions are prohibited with regard to plants under the ESA. Under section 9(a)(2)(B) of the ESA, endangered plants are protected from "removal, reduction to possession" and malicious damage or destruction" in areas that are under Federal jurisdiction. Section 9(a)(2)(B) of the ESA also provides protection to plants from removal, cutting, digging up, damage, or destruction where the action takes place in violation of any state law or regulation or in violation of a state criminal trespass law. Similar protections have been extended to federally listed threatened plant species by regulation at 50 CFR 17.71. Thus, the ESA does not prohibit the take of federally listed plants but does prohibit certain actions on lands subject to Federal jurisdiction, and other types of actions on private or other non-Federal lands in violation of state law. Therefore, section 10 incidental take permits are necessary only for take of fish and wildlife species. The section 7(a)(2) requirement to ensure that an action does not jeopardize a species applies to plants, however, and USFWS may not issue a section 10(a)(1)(B) incidental take permit if the issuance of that permit would result in jeopardy to a listed plant species.

To receive a section 10(a)(1)(B) incidental take permit, the permit applicant is required to provide the following.

- A complete description of the activity sought to be authorized.
- The common and scientific names of the species sought to be covered by the permit, as well as the number, age, and sex of such species, if known.
- A Habitat Conservation Plan (HCP).

The HCP must specify the following mandatory elements.

- The impact that will likely result from the taking of covered species.
- The steps the applicant will take to monitor, minimize, and mitigate such impacts; the funding that will be available to implement such steps; and the procedures to be used to deal with unforeseen circumstances.[8]
- The alternative actions to taking of covered species the applicant considered and the reasons why such alternatives are not proposed to be utilized.

[8] *Unforeseen circumstances* are defined at 50 CFR 17.3 as changes in circumstances affecting a covered species or geographic area covered by the HCP that could not reasonably have been anticipated by the plan developers, and that result in a substantial and adverse change in the status of a covered species.

- Such other measures that the Secretaries of the Department of the Interior or Commerce may require as being necessary or appropriate for purposes of the plan (50 CFR 17.22[b]).

The Santee Subarea Plan must satisfy these requirements.

To receive an incidental take permit from the USFWS, section 10(a)(2)(B) of the ESA requires that the following criteria be met.

- The taking will be incidental to otherwise lawful activities.
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
- The applicant will ensure adequate funding for the HCP and procedures to deal with unforeseen circumstances.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will ensure that other measures that the USFWS may require as being necessary or appropriate will be provided.
- The USFWS has received such other assurances as may be required that the HCP will be implemented.

Prior to the issuance of section 10(a)(1)(B) permit, USFWS is required to undertake an *internal* section 7 consultation because issuance of an incidental take permit is a Federal action (see the discussion of ESA section 7, above.). Elements specific to the section 7 process (e.g., analysis of impacts on designated Critical Habitat, analysis of impacts on listed plant species, and analysis of indirect and cumulative impacts on listed species) are included in this Subarea Plan to assist USFWS in meeting the requirements of section 7.

1.3.2 Other State and Federal Wildlife Laws and Regulations

1.3.2.1 California Fully Protected Species

In the 1960s, before the CESA was enacted, the California Legislature identified species for specific protection under the California Fish and Game Code. These *fully protected* species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Fully protected species are described in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code. These protections state that "…no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected [bird], [mammal], [reptile or amphibian], [fish]." On October 8, 2011, Senate Bill (SB) 618 was signed into law. The bill revises the definition of "covered species" under the NCCPA to include fully protected species. As a result of SB 618, the "taking" of fully protected species can now be authorized in cases where the take is incidental and the fully protected species is being conserved and managed under an NCCP approved by CDFW. No fully protected species are covered by the Subarea Plan. Fully protected species that could potentially occur in the Subarea Plan Area include, but are not restricted to:

- Golden eagle (*Aquila chrysaetos*)
- Bald eagle (*Haliaeetus leucocephalus*)
- White-tailed kite (*Elanus leucurus*)

1.3.2.2 California Fish and Game Code 3503 (Bird Nests)

Section 3503 of the Fish and Game Code makes it "unlawful to take, possess or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Therefore, CDFW may issue permits authorizing take pursuant to the CESA or NCCPA. The Subarea Plan contains conservation measures to avoid such take to the maximum extent practicable in order to comply with Section 3503. Although not anticipated, some direct take of covered birds may occur; however, the NCCPA permit will serve as the authorization for take of nests or eggs of covered birds pursuant to Section 3503.

1.3.2.3 California Fish and Game Code 3503.5 (Birds of Prey)

Section 3503.5 of the Fish and Game Code prohibits the take, possession, or destruction of any birds of prey or their nests or eggs "except as otherwise provided by this code or any regulation adopted pursuant thereto." There are no birds of prey covered by the Subarea Plan. However, the Subarea Plan contains conservation measures to avoid such take to ensure compliance with Section 3503.5.

1.3.2.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful as is taking of any parts, nests, or eggs of such birds (U.S. Government Code [USC], Title 16, Section 703). The definition of *taking* is different under the MBTA than under the ESA and includes only the death or injury of individuals of a migratory bird species or its eggs. *Take* under the MBTA does not include the concepts of harm and harassment as defined by the ESA. The MBTA defines migratory birds broadly; all covered birds in this Subarea Plan are considered migratory birds under the MBTA.

1.3.2.5 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that significant environmental impacts of proposed projects be reduced to less-than-significant levels through adoption of feasible avoidance, minimization, or mitigation measures unless overriding considerations are identified and documented. CEQA applies to certain activities in California undertaken by either a public agency or a private entity that must receive some discretionary approval from a California government agency. In issuing the NCCP permit, CDFW must comply with CEQA. Similarly, the action of the Permittee (the City) in adopting the Subarea Plan is subject to CEQA compliance. The City is serving as the lead agency under CEQA. To comply with CEQA, the City will release a draft Environmental Impact Report (EIR) with a 45-day public comment period (SCH No. 2023030471). The Final EIR will accompany the Final Subarea Plan.

The EIR prepared for this Subarea Plan is intended to provide programmatic CEQA compliance for all Covered Activities addressed by the Subarea Plan associated with impacts to Covered Species and jurisdictional wetlands and waters (see Section 1.3.5 below for a definition and discussion of jurisdictional wetlands and waters as they relate to the Subarea Plan). In addition, all Covered Activities will need project-level CEQA analyses prepared to demonstrate conformance with the Subarea Plan conservation strategy. The conservation provided by the Subarea Plan will be sufficient to meet all CEQA mitigation standards for impacts on the Covered Species and natural communities that are addressed by the Subarea Plan. The Subarea Plan implements a conservation strategy designed to achieve a comprehensive set of biological goals and objectives. Furthermore, as a NCCP, the Subarea Plan is intended to provide for broad-based planning to conserve natural communities at the ecosystem scale.

1.3.2.6 National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires Federal agencies to include in their decision-making process appropriate and careful consideration of the environmental effects of a proposed action and full range of alternatives. Documentation of the significant environmental effects of a proposed Federal action and reasonable alternatives to the action which would avoid or minimize adverse impacts or enhance the quality of the human environment must be made available for public notice and review. This analysis is documented in an Environmental Assessment (EA). NEPA requires disclosure of environmental effects and associated mitigation possibilities.

The issuance by USFWS of an incidental take permit under section 10 of the ESA constitutes a Federal action. Therefore, USFWS must comply with NEPA prior to issuing a decision on the Section 10 permit application.

1.3.2.7 Federal and State Wetland Laws and Regulations

The Clean Water Act (CWA) is the primary Federal law that protects the physical, chemical, and biological integrity of the nation's waters, including lakes, rivers, wetlands, and coastal waters. Programs conducted under the CWA are directed at both point-source pollution (e.g., waste discharged from outfalls and filling of waters) and nonpoint-source pollution (e.g., runoff from roads, freeways, and bridges). Under Sections 401, 402, and 404 of the CWA, the U.S. Environmental Protection Agency (EPA), Federal agencies, and state agencies set effluent limitations and issue permits. These permits are the primary regulatory tools of the CWA. The EPA oversees all CWA permits.

Clean Water Act Section 404

Pursuant to Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates the discharge (temporary or permanent) of dredged or fill material into Waters of the United States (WotUS), including wetlands. WotUS is defined under 33 C.F.R. § 328.3 as follows:

(a) WotUS means:

(1) Waters which are:

(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(ii) The territorial seas; or

(iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

(b) The following are not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

A discharge of fill material includes activities such as grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WotUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, tree trimming, and excavating without stockpiling.

USACE issues two types of permits under Section 404: General Permits (either Nationwide Permits [NWPs] or Regional Permits) and standard permits (either Letters of Permission or Individual Permits). General permits are issued by USACE to streamline the Section 404 process for nationwide, statewide, or regional activities that have minimal direct or cumulative environmental impacts on the aquatic environment. Standard permits are issued for activities that do not qualify for a general permit (i.e., that may have more than a minimal adverse environmental impact). The USACE will review and consider issuing permits for projects in the Subarea Plan Area that propose to fill WotUS.

The Subarea Plan will not provide permits under Section 404 of the CWA for impacts on wetlands or other waters from Covered Activities. However, the Section 404 permitting process is expected to be streamlined substantially as a result of the Subarea Plan. Issuance of a Section 404 permit often requires the USACE to consult with USFWS to comply with section 7 of the ESA. This consultation would address any federally listed species and/or Critical Habitat potentially affected by the activity, including species covered by the Subarea Plan. Take permits issued pursuant to this Subarea Plan are not intended to satisfy mitigation requirements for any USACE 404 permit for impacts to wetlands. However, this Subarea Plan is largely intended to fulfill the requirements for listed species consultation relative to Section 404 permitting, as well as associated take of Covered Species. This Subarea Plan is intended to provide the basis for future ESA section 7 consultations for USACE Section 404 permits affecting Covered Species within the Subarea Plan Area. Thus, approval of this Subarea Plan is intended to streamline the listed species consultation and wetland permitting processes. The section 7 intra-Service BO issued for the Subarea Plan may also serve to inform future section 7 consultation for Covered Activities/Covered Species.

Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act

Under Clean Water Act (CWA) Section 401, states have the authority to certify Federal permits for discharges to waters under state jurisdiction. States may review proposed Federal permits (e.g., CWA Section 404 permits) for compliance with state water quality standards. A permit cannot be issued if the state denies certification. In California, the State Water Board and the Regional Water Quality Control Board (RWQCBs) are responsible for the issuance of CWA Section 401 certifications.

The Porter-Cologne Water Quality Control Act (Porter-Cologne) is the primary state law concerning water quality. It authorizes the State Water Board and RWQCBs to prepare management plans such as Regional Water Quality Plans (or Basin Plans) to address the quality of groundwater and surface water. Porter-Cologne also authorizes the RWQCBs to issue Waste Discharge Requirements (WDRs) defining limitations on allowable discharge to waters of the state. In addition to issuing CWA Section 401 certifications on CWA Section 404 applications to fill waters, the RWQCBs may issue WDRs for

such activities. Because the authority for WDRs is derived from Porter-Cologne and not the CWA, WDRs may apply to a somewhat different range of aquatic resources than do CWA Section 404 permits and CWA Section 401 Water Quality Certifications. Applicants that obtain a permit from the USACE under Section 404 also must obtain certification of that permit from the RWQCB.

The Subarea Plan does not include certifications under Section 401 or WDRs under Porter-Cologne. A Section 401 Water Quality Certification will be obtained separately for the Covered Activities, as necessary. However, project proponents implementing Covered Activities that comply with the terms of the Plan should find their permit process streamlined with the RWQCB or State Water Board because the Subarea Plan provides a comprehensive means to address the needs of threatened and endangered species in the Subarea Plan Area. In addition, the State Water Board's Wetland Definition and Procedures for Regulating Discharges of Dredged or Fill Material to Waters of the State provide for the preparation of Watershed Plans applicable to NCCP's and HCP's, that generally streamlines permit approval and reduces the amount of mitigation. Under California Water Code § 13050(e), waters of the State is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state."

Clean Water Act Section 402, National Pollutant Discharge Elimination System

CWA Section 402 controls direct discharges into navigable waters. Direct discharges or "point–source" discharges are from sources such as pipes and sewers. National Pollutant Discharge Elimination System (NPDES) permits are issued by the state with oversight by the EPA. A facility that intends to discharge into the nation's waters must obtain a permit before initiating a discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent. The 402 permit then will set forth the conditions and effluent limitations under which a facility may make a discharge. The Subarea Plan does not include certifications under Section 402 or NPDES permits under the CWA. These authorizations, if required, must be obtained separately.

Lake or Streambed Alteration Agreement

CDFW has jurisdictional authority over streams and lakes and wetland resources associated with these aquatic systems under California Fish and Game Code Section 1600 et seq., which was repealed and replaced in October 2003 with the new Section 1600–1616 that took effect on January 1, 2004 (Senate Bill 418 Sher). Project proponents are required to notify CDFW for projects that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

Activities of any person, state or local governmental agency, or public utility are regulated by CDFW under Sections 1602 and 1603 of the California Fish and Game Code. When there is a substantial adverse effect to fish or wildlife resources, CDFW enters into a lake or streambed alteration agreement with the project proponent and can impose conditions on the agreement to ensure protection of fish and wildlife resources.

The lake or streambed alteration agreement is not a permit, but rather a mutual agreement between CDFW and the project proponent. Because CDFW includes under its jurisdiction streamside habitats

that may not qualify as wetlands under the Federal CWA definition, as well as a broader definition of the lateral jurisdiction, CDFW jurisdiction may be broader than USACE jurisdiction.

A project proponent must submit a notification of streambed alteration to CDFW before construction. The notification requires an application fee for streambed alteration agreements, with a specific fee schedule to be determined by CDFW. CDFW may enter into streambed alteration agreements that cover recurring operation and maintenance activities and may enter into long-term agreements to cover development and other activities described in regional plans. Activities covered by the Subarea Plan that need a streambed alteration agreement are expected to partially or fully meet the standards of the streambed alteration agreement through compliance with the Subarea Plan.

1.3.2.8 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 *et seq.*), requires Federal agencies to take into account the effects of their proposed actions on properties eligible for inclusion in the National Register of Historic Places. *Properties* is defined as cultural resources, which includes prehistoric and historic sites, buildings, and structures that are listed on or eligible for listing on the National Register of Historic Places. An *undertaking* is defined as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a Federal agency. The issuance of an incidental take permit is an undertaking subject to Section 106 of the NHPA. The USFWS has determined that the area of potential effects for the present undertaking is that area where ground disturbance associated with Covered Activities is authorized (see Chapter 4 for Covered Activities impact analysis). The NHPA and the potential effects of the conservation strategy on resources subject to the NHPA are discussed in detail in the NEPA document.

1.4 Overview of the Subarea Plan Planning Process

The basic approach of the planning process has been to identify a Subarea Plan Preserve System that meets local and regional biological goals, while minimizing fiscal and economic impacts to the City and adverse effects on private property rights or property values. The following general steps were undertaken as part of the conservation planning process:

1. General biological resources data were updated throughout the City (2017) and detailed biological resources data were updated on Fanita Ranch (Spring and Summer 2004, 2005, and 2006, 2016, 2017), with particular focus on those areas considered to have regional conservation value or where existing biological data were considered inadequate for conservation planning (see Chapter 2, *Existing Conditions*).
2. A geographic information system (GIS) database was updated for the City. The database included updated biological resources information, as well as existing and planned land uses, land management and land ownership status, proposed projects, and other digital information pertinent to conservation planning and implementation (see Chapter 2, *Existing Conditions*).

3. Biological core areas and linkage areas were identified in the MSCP Subregional Plan for local and regional conservation goals established for the MSCP and refined in the Santee Subarea Plan (see Section 2.5, *Habitat Connectivity*, and Chapter 3.0, *Covered Species*).
4. Analyses were performed to identify biologically important areas where biological resources were insufficiently protected to meet current NCCP and MSCP conservation goals (see Chapter 6.0, *Conservation Analysis*).
5. Important biological resource areas were also evaluated relative to opportunities and constraints for increased conservation. The effects of existing City plans, zoning, codes and ordinances, policy guidelines, and existing constraints on development (such as steep slopes, wetlands, or utility easements) were considered in identifying opportunities and constraints for conservation. Existing conservation agreements (e.g., existing preserve areas in Mission Trails Regional Park) were reviewed to identify potential opportunities to link conservation areas with existing protected open space (see Chapter 5, *Conservation Strategy*).
6. The results of these planning studies—which were performed with input from property owners, the City, the Wildlife Agencies, and other interested parties—were used to establish a Subarea Plan Preserve System and preserve assembly mechanisms that would meet conservation goals while minimizing adverse effects of preserve implementation on property owners or the public. Certain properties were included as hardline development/preserve boundaries, incorporating these commitments into the Subarea Plan. (see Chapter 5, *Conservation Strategy*).
7. Preserve designation categories were used as part of the Subarea Plan Preserve Map to reflect their existing or intended conservation targets (see Chapter 5, *Conservation Strategy*).

1.5 Key Entities in the Preparation of Subarea Plan

1.5.1 City of Santee

The City of Santee Planning & Building Department is the lead in the development of the Subarea Plan. Other City departments, including fire, community services & recreation, engineering, and finance, assisted in the preparation of this Subarea Plan.

The Santee City Council has been briefed and updated on the progress and content of the Subarea Plan through multiple public workshops. The City Council will be responsible for the decision to adopt the Subarea Plan and execute the IA.

1.5.2 Science Advisors

USFWS "encourage[s] the use of scientific advisory committees during development and implementation of an HCP" (*Federal Register* [FR], volume 65, no. 106 35256, June 1, 2000). Independent scientific input is required by the NCCPA (former Section 2825, subd. (a)(3) for plans "grandfathered" pursuant to Section 2830(b)). Since the Santee Subarea Plan is part of the MSCP Subregional Plan (which included a Science Advisor review), the City facilitated an independent scientific review with a focus on those species proposed for coverage under the Subarea Plan and that are not covered by the MSCP Subregional Plan. Accordingly, the City obtained independent scientific

input and review for the Quino checkerspot butterfly, Hermes copper butterfly, and western spadefoot toad. The Science Advisors were chosen based on their knowledge of the key species, including their technical expertise as it relates to the species and habitats addressed in the Subarea Plan. Criteria for panel selection included:

- Expertise in the ecology or population biology of key Covered Species.
- Expertise in species biology and its application to conservation planning.
- No direct affiliation with the City or the Subarea Plan consultants.

The Science Advisor report for Quino checkerspot butterfly and Hermes copper butterfly were completed by AECOM (led by Michael Klein) in 2009. A Science Advisor report for the western spadefoot toad was completed by the USGS Western Ecological Research Center (led by Carlton Rochester and Robert Fisher) in 2017. Copies of the Science Advisors' final reports are included as Appendix F, *Science Advisor Reports*.

1.5.3 Consultant Team

The Subarea Plan was prepared by a consultant team under the guidance and direction of the City. The consultant team consisted of scientific, planning, legal, and other technical staff from ICF (formerly Jones & Stokes) and Ebbin Moser + Skaggs, LLP in San Diego.

1.5.4 Wildlife Agency Technical Coordination

Representatives of the City, consultants, and the Wildlife Agencies held many meetings to address project coordination and technical issues during the preparation of the Subarea Plan. Members of the Wildlife Agencies provided review and guidance on a number of key elements of the Plan.

1.6 Public Outreach and Involvement

Public outreach and involvement has been addressed through public workshops with the City Council during the preparation of the Subarea Plan and in conjunction with the public review of the EIR/EA. The following items were managed through the public forum for the City.

- Access to information by all interested and affected parties, groups, and agencies.
- Clear and understandable information about the Subarea Plan and its potential impacts on the physical, biological, economic, and social environment.
- Meaningful opportunities for the public and agencies to actively engage interested parties in the development and evaluation of proposed conservation measures and strategies.
- Identification of key issues that must be addressed in the CEQA/NEPA review process.

The City has developed the Subarea Plan in compliance with USFWS's public involvement guidelines (USFWS 2016) and the requirements of the NCCPA. Several public meetings on the Santee Subarea Plan or Subarea Plan EIR have been held since 1993. The most recent public meetings were held on March 22, 2023 (Santee City Council Workshop on Subarea Plan) and March 30, 2023 (Subarea Plan EIR scoping meeting).

1.7 Document Organization

The Subarea Plan are presented in the chapters listed below.

- Chapter 1, *Introduction and Overview*, discusses the background, Subarea Plan goals, purpose and need, consistency with the MSCP Subregional Plan, and scope of the Subarea Plan; reviews the regulatory setting; and summarizes the Subarea Plan planning process.
- Chapter 2, *Existing Conditions*, describes the existing physical setting, land use, and biological resource conditions of the Subarea Plan Area.
- Chapter 3, *Covered Species*, describes the Covered Species list and includes species profiles.
- Chapter 4, *Covered Activities and Impact Assessment*, provides an inventory of the Covered Activities and includes an analysis of estimated impacts.
- Chapter 5, *Conservation Strategy*, summarizes the Subarea Plan Biological Goals and Objectives and describes the Conservation Strategy that includes establishment of a Preserve System, management and enhancement of the Preserve System, and avoidance, minimization, and mitigation of impacts.
- Chapter 6, *Conservation Analysis*, analyzes whether the Conservation Strategy achieves the Subarea Plan goals and objectives.
- Chapter 7, *Management and Monitoring*, discusses the monitoring requirements and adaptive management procedures associated with implementing Preserve management.
- Chapter 8, *Subarea Plan Implementation and Funding*, details the roles and responsibilities of the entities responsible for Plan implementation, including descriptions of Plan funding, annual reporting requirements, steps for amending the Plan, and requirements for addressing changed and unforeseen circumstances.
- Chapter 9, *Alternatives to Take*, includes a description of project alternatives.
- Chapter 10, *List of Preparers*, identifies the individuals involved in the preparation of the Plan.
- Chapter 11, *References*, provides a comprehensive bibliography of references cited in the text.

Supporting information is provided, under separate cover, in the following set of appendices:

- Appendix A, *Implementing Agreement*, outlines the conditions, duties, and responsibilities of the City and Wildlife Agencies under this Subarea Plan.
- Appendix B, *MSCP Subregional Plan Tables*, includes copies of key tables that identify the targets for conservation in the Santee Subarea Plan Area.
- Appendix C, NCCP Act of 1991 and Relevant Sections of S.B. 107, includes copies of the NCCPA.
- Appendix D, *Hardline Development Project Vernal Pool and Mitigation Plan* provides the conservation strategy for aquatic resources on the Fanita Ranch Hardline Development Project.
- Appendix E, *Vegetation Communities Descriptions,* contains descriptions of the vegetation community types that occur within the Subarea Plan Area.

- Appendix F, *Science Advisor Reports*, contains the following sub-appendices:
  - Appendix F.1, Revised Final Independent Scientific Advisory Report for the Conservation Strategy for Quino Checkerspot Butterfly in the City of Santee.
  - Appendix F.2, Revised Final Independent Scientific Advisory Report for the Conservation Strategy for Hermes Copper Butterfly in the City of Santee.
  - Appendix F.3, Draft Final Western Spadefoot (*Spea hammondii*): Independent Scientific Advisor Report for the City of Santee Multiple Species Conservation Plan (MSCP) Subarea Plan.
- Appendix G, *Vernal Pool Conservation Standards*, includes details on the requirements for vernal pool avoidance, protection, enhancement, mitigation, management, and monitoring.
- Appendix H, *Preserve Resource Management Plan (RMP) Outline*, includes a sample table on contents that RMPs should follow.
- Appendix I, *Invasive Nonnative Plant Species List*, includes a table of zero tolerance invasive nonnative plant species for Preserve Managers to address.

Chapter 2
Existing Conditions

2.1 Regional Location

The Santee Subarea Plan Area is primarily located approximately 18 miles east of downtown San Diego (Figure 2-1a). The City of Santee (City) is bordered on the east by mostly residential development in the unincorporated San Diego County communities of Lakeside and Eucalyptus Hills and to the northeast by undeveloped land and active mining operations in Slaughterhouse Canyon. To the south, the Plan Area is bordered by the City of El Cajon, unincorporated areas of the County of San Diego, and the Gillespie Field Airport and further to the southwest by Mission Trails Regional Park (MTRP) property located in the City of San Diego. To the west is the East Elliott Expansion Area of the MTRP, Sycamore Canyon landfill, and undeveloped portions of the Marine Corps Air Station (MCAS) Miramar. North of the Plan Area is undeveloped and includes the Goodan Ranch/Sycamore Canyon County Preserve.

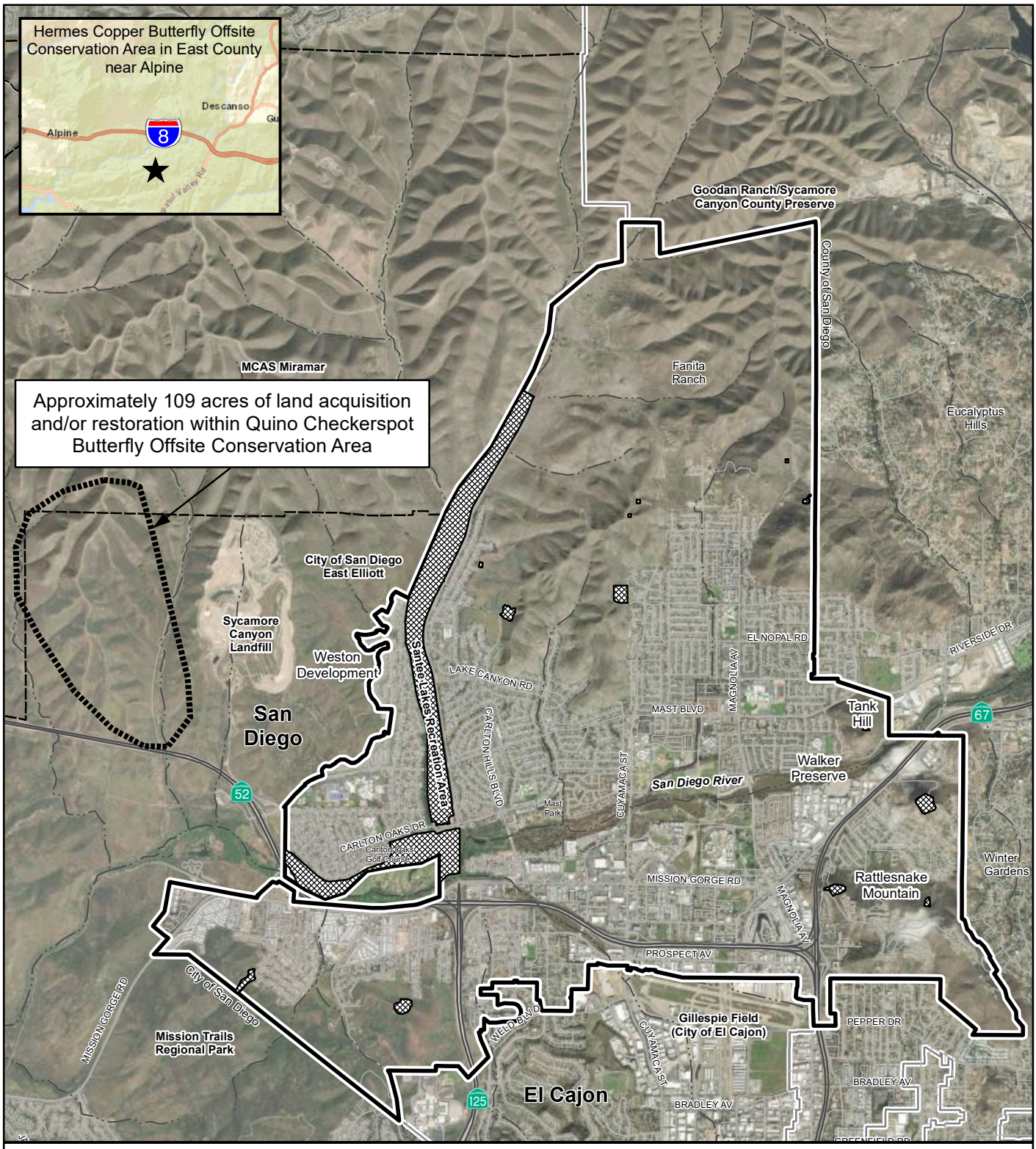
The Plan Area includes two locations outside of the City's jurisdictional boundaries that are conservation areas associated with the Hardline Development Project (Figure 2-1b,c). One of these locations is within the East Elliott Expansion Area of the MTRP that includes the Offsite Conservation Area for Quino checkerspot butterfly (Figure 2-1b). The second location is approximately 15 miles east of the City (near the unincorporated community of Alpine) that includes the offsite conservation site for Hermes copper butterfly (Figure 2-1c).

2.2 Physical Setting

This section describes the physical setting of the Subarea Plan Area, including physical geography, soils, hydrology, and climate.

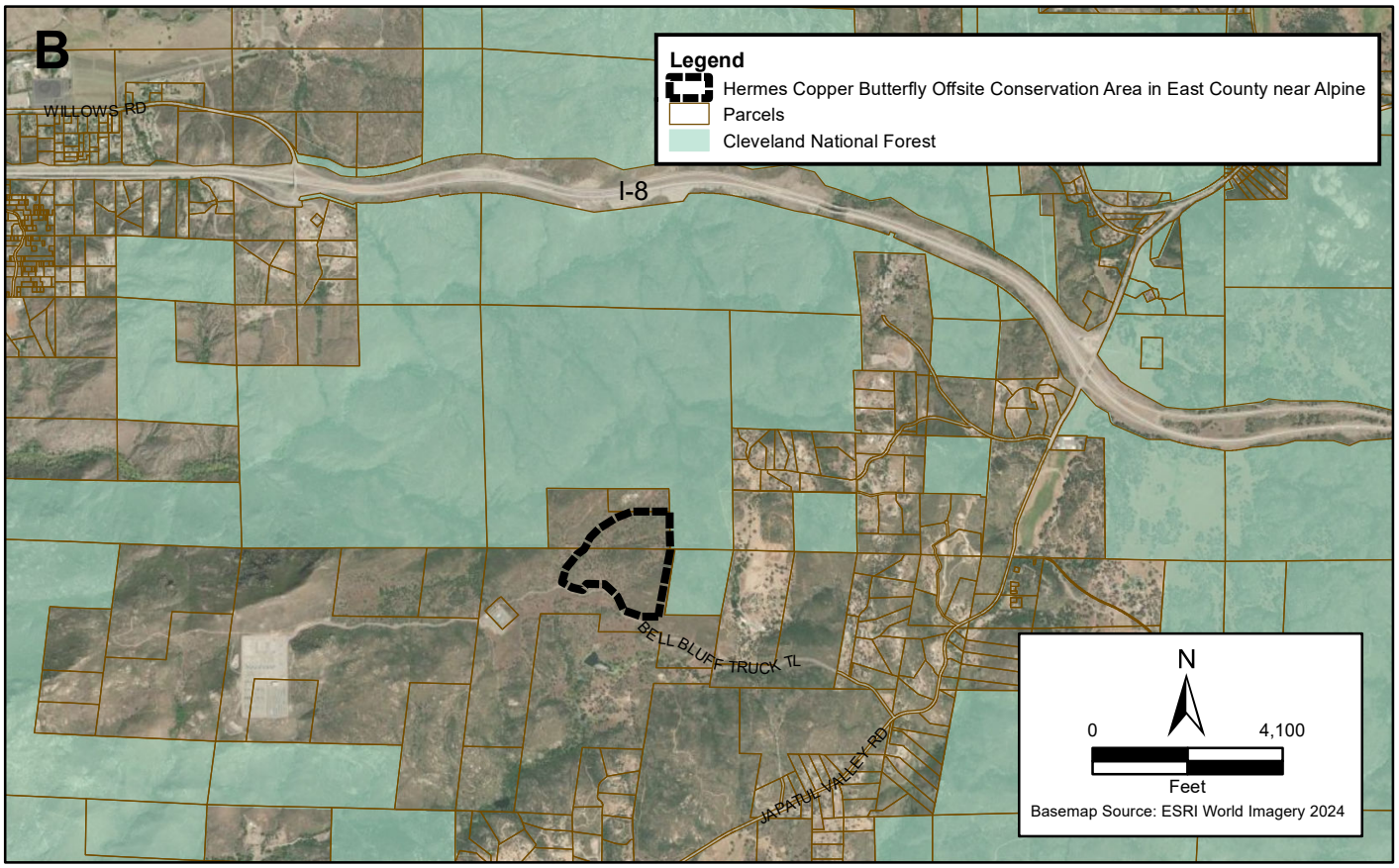
2.2.1 Geography and Topography

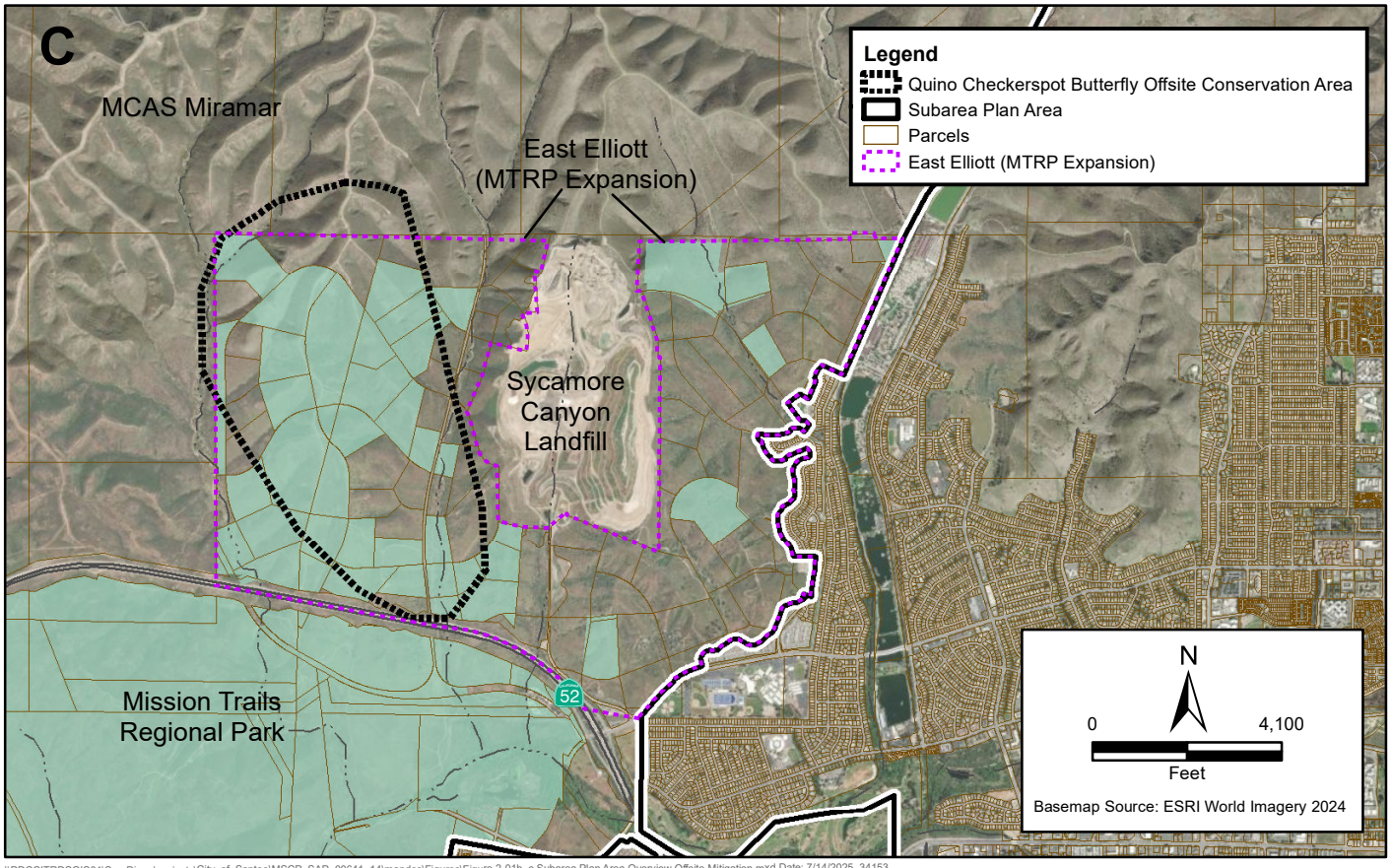
The Plan Area encompasses approximately 10,482.4 acres in eastern San Diego County. Two main topographic features exist within the City: the coastal plain of the Coastal Province, and the foothills of the Peninsular Range Province (Santee 2003). The narrow coastal plain, which is dominated by terraces or mesas and bisected by the San Diego River, occupies the majority of the City and Plan Area. This area, in the center of the City, is characterized by relatively flat topography. Within the north and southeastern portions of the Plan Area are the foothills of the Peninsular Range. Topography is generally steeper in the far northern areas of the Plan Area, including the Carlton Hills and Fanita Ranch areas, and in the south including the Rattlesnake Mountain, Mission Trails, and Grossmont Mesa areas. Topographic elevations range from approximately 300 to 1,200 feet within the Plan Area (Figure 2-2). The Quino checkerspot butterfly offsite conservation area is located west of the City in the East Elliot portion of Mission Trails Regional Park and has similar foothills and topography to the Plan Area. The Hermes copper butterfly offsite conservation site is located further east near Alpine at higher elevation of approximately 3,100 feet.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-01a Plan Area Overview.mxd Date: 7/14/2025 34153

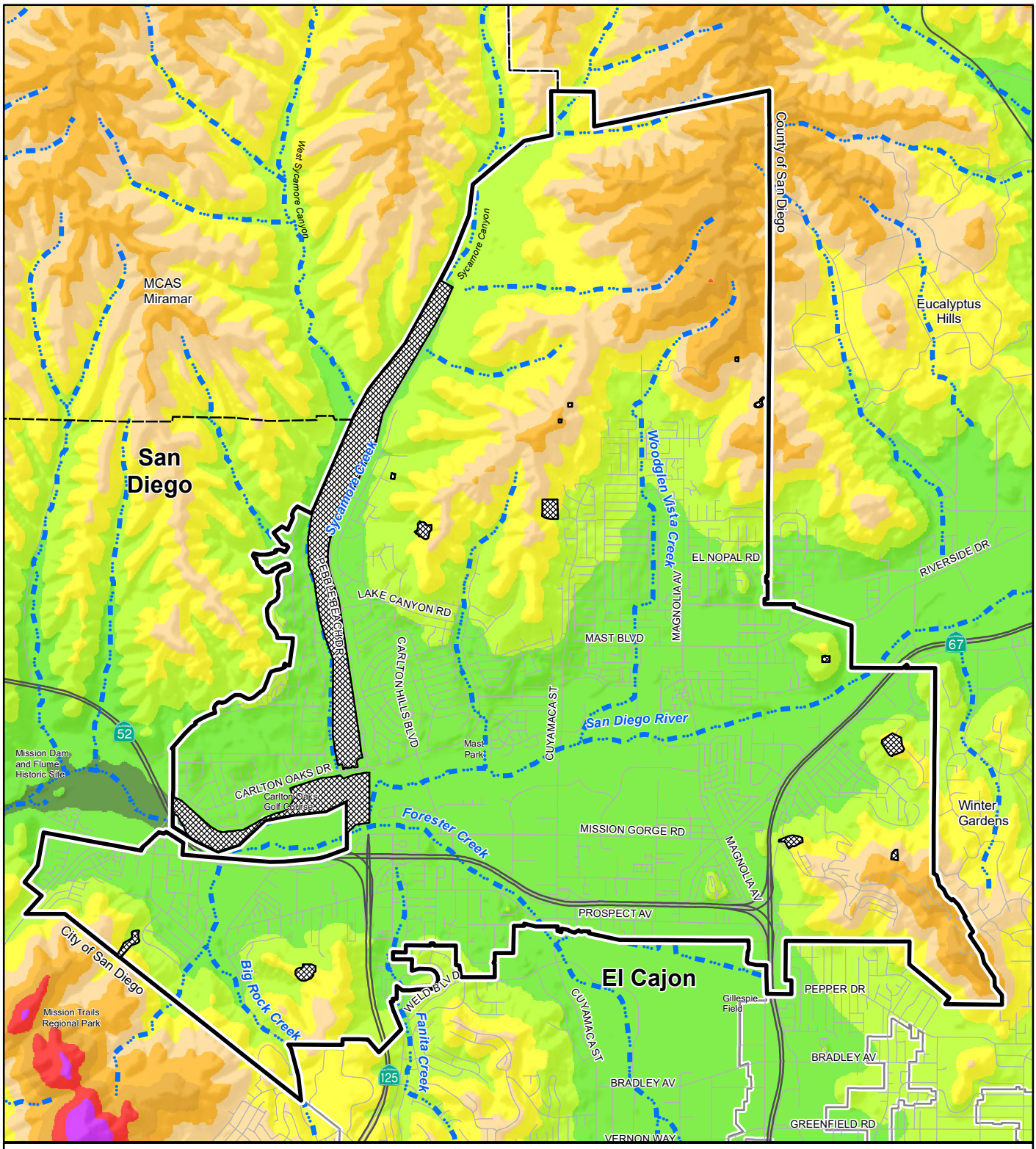
Figure 2-1a
Subarea Plan Area Overview
Santee MSCP Subarea Plan





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Figure 2-1b,c
Subarea Plan Area Overview - Offsite Conservation Areas
Santee MSCP Subarea Plan



Legend

- Subarea Plan Area
- Not a Part
- Drainages

Elevation Range (in feet)

- 150 - 300
- 300 - 450
- 450 - 600
- 600 - 750
- 750 - 900
- 900 - 1,050
- 1,050 - 1,200
- 1,200 - 1,350
- > 1,350

N

0 4,450

Feet

Basemap Source: ESRI Shaded Relief

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-02 Topography.mxd Date: 2/3/2025 34153

Figure 2-2
Topography
Santee MSCP Subarea Plan

Biological resources (plants and wildlife) are often distributed based on topographic characteristics. To further define and categorize the landforms within the Plan Area, a topographic position index approach (Weiss 2001, Jenness et al. 2013) was used to classify the landscape into broad topographic positions, namely mesas, ridges, slope-top, slope-middle, slope-bottom, and valley floor (Figure 2-3).

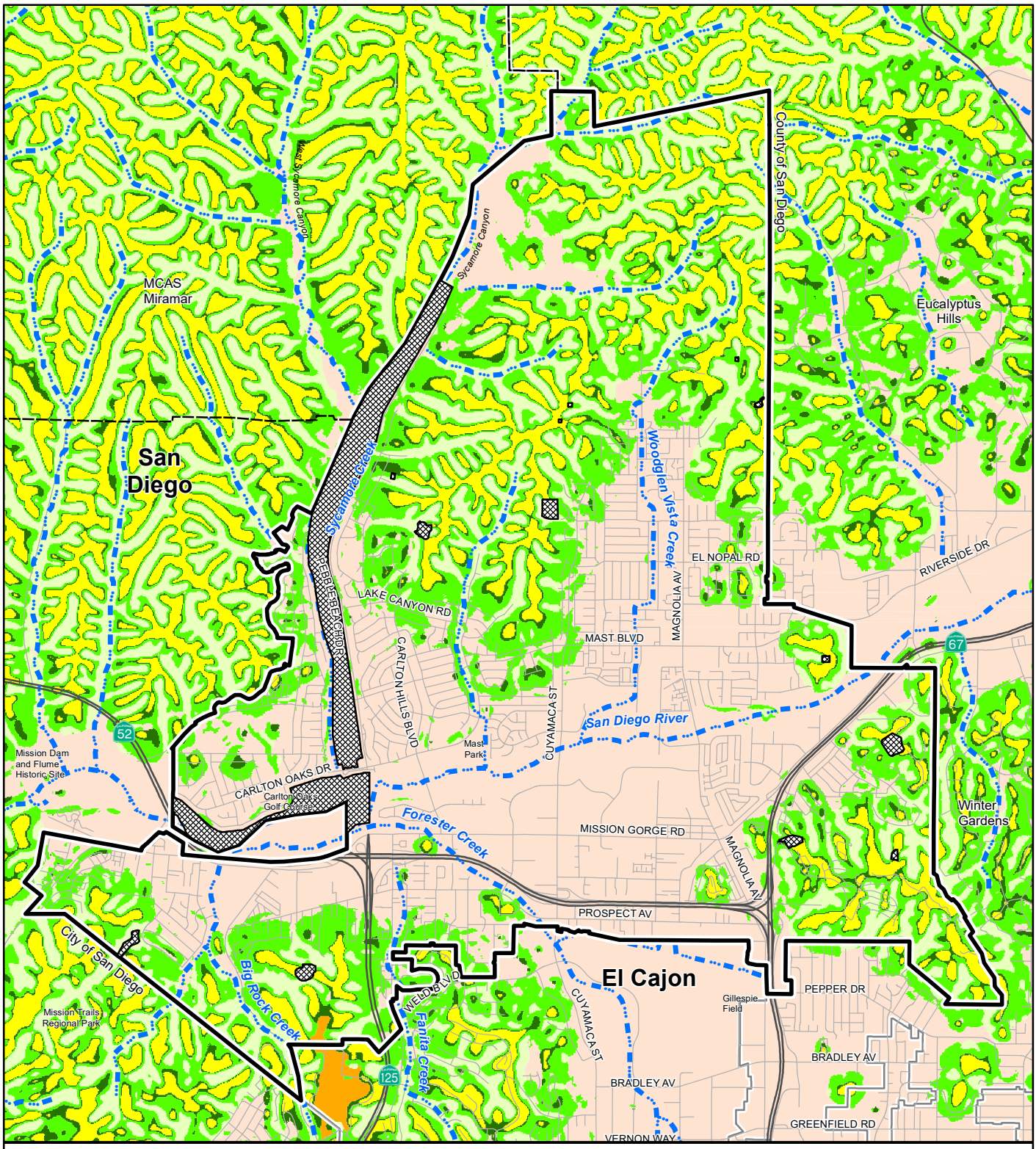
2.2.2 Hydrology and Drainages

Within the City, the Plan Area has six major drainage courses (Figure 2-4), including the San Diego River and its tributaries: Forester Creek, Sycamore Creek, Woodglen Vista Creek, Fanita Creek, and Big Rock Creek, which parallels Big Rock Road. All of the creeks have their own watersheds in addition to lying within the larger San Diego River watershed. Forester Creek drains the runoff from the north-facing slopes of hills within the City of El Cajon. Sycamore Creek drains the runoff from Sycamore Canyon, Quail Creek Canyon through the Weston development, and from Carlton Hills, and the creeks running parallel to Fanita Drive and Big Rock Road drain the runoff from Cowles Mountain and Fanita Hills located within the City of El Cajon. All of these watersheds empty into the San Diego River, which flows westward into the Pacific Ocean.

Although none of these waterways have been fully channelized, portions of the San Diego River and Forester Creek have been partially improved to reduce potential flood hazards or prevent localized erosion. Even with these flood risk management measures, developed floodplain portions of Santee would be inundated by a 100-year flood event (FEMA 2016) (Figure 2-4). The lower portions of Sycamore Creek have not been mapped by FEMA for 100-year floodplain boundaries but have experienced flooding events within developed areas.

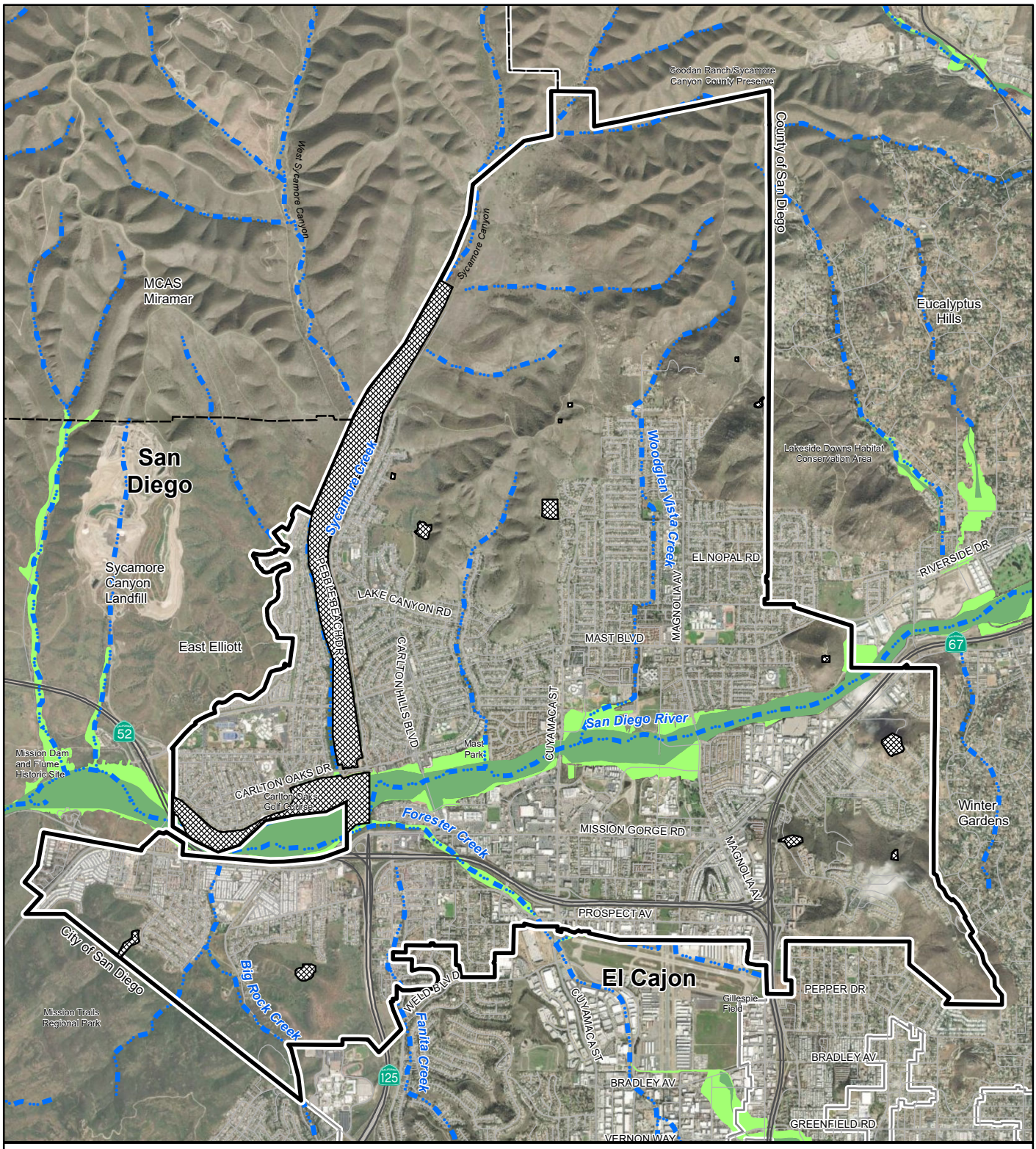
The Padre Dam Municipal Water District (PDMWD) has been operating the wastewater reclamation facility at the Santee Lakes Recreation Area since 1961. This facility includes a plant which processes and treats approximately two million gallons of sewage per day that is discharged into the seven recreational lakes at the Santee Recreational Lakes Regional Park. Of this treated wastewater, approximately one million gallons per day is also currently used for irrigation, in freeway rights-of-way, City medians and parks, schools, and other applications City-wide. Approximately one million gallons per day of treated wastewater is currently released into San Diego River from the PDMWD facility either directly or indirectly (through percolation into local groundwater from Santee Lakes and water indirectly released to the San Diego River); this water is very important to supporting the aquatic riverine systems and riparian ecosystem in the San Diego River downstream from Santee Lakes and the PDMWD facility and helps offset losses to upstream water diversions and groundwater pumping. The lands of PDMWD, including the Santee Lakes Recreation Area are designated as Not a Part of the Subarea Plan (Figure 2-1).

Within the Plan Area, the Quino checkerspot butterfly offsite conservation area is within the Oak Canyon and Spring Canyon areas that flow into the San Diego River near the Old Mission Dam. The Hermes copper butterfly offsite conservation site is near the Sweetwater River upstream of Loveland Reservoir.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-03 Landforms Based on Topographic Position Index.mxd Date: 2/3/2025 34153

Figure 2-3
Landforms Based on Topographic Position Index
Santee MSCP Subarea Plan



Legend

- Subarea Plan Area
- Not a Part
- 100-Year Floodway
- 100-Year Floodplain
- Drainages

N

0 4,450

Feet

Sources: Floodplain – FEMA 2017; Drainages - USGS NHD

Basemap Source: ESRI World Imagery 2024

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-04 Hydrology and Drainages.mxd Date: 2/3/2025 34153

Figure 2-4
Hydrology and Drainages
Santee MSCP Subarea Plan

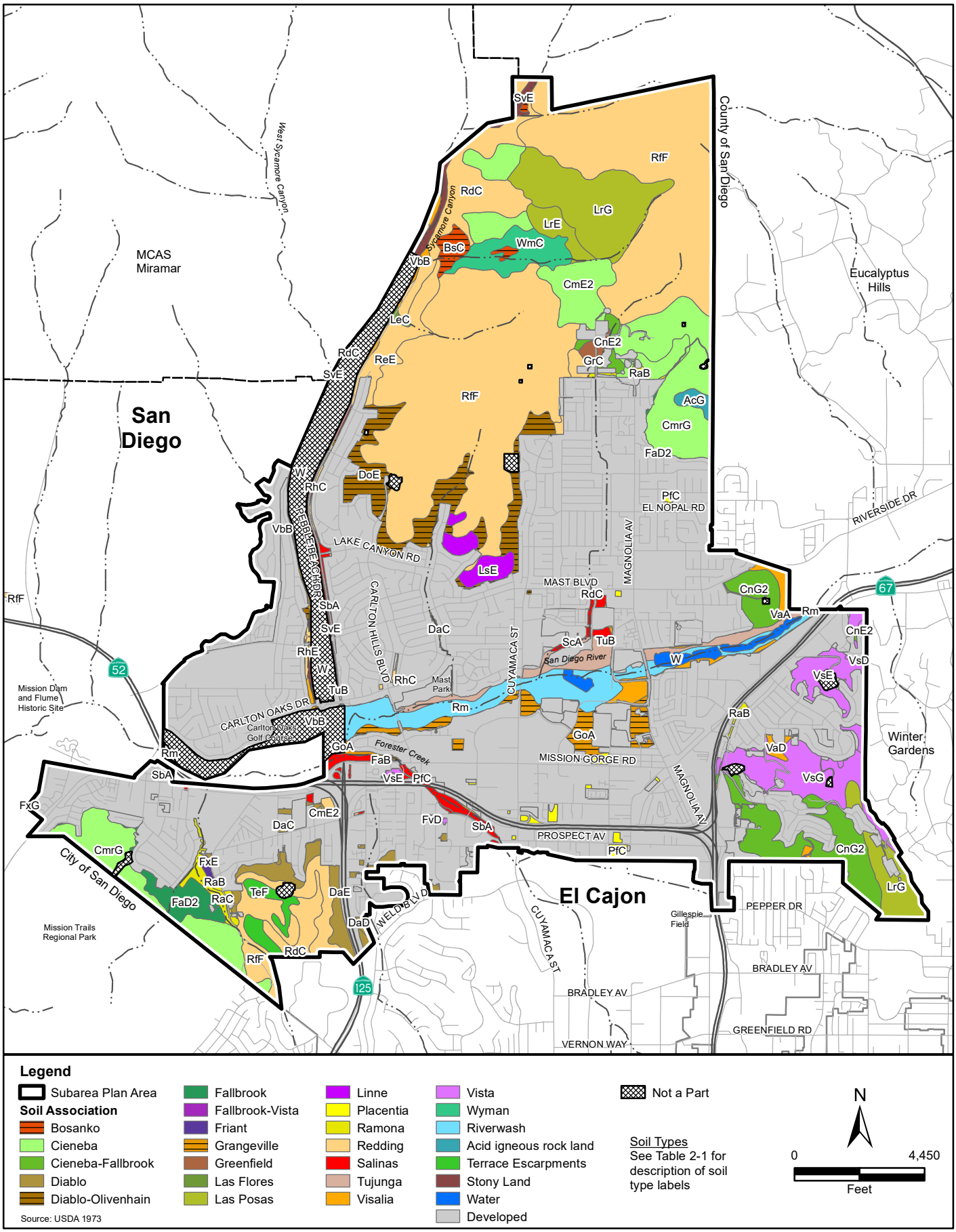
2.2.3 Geology and Soils

The geology and subsurface formations of the Plan Area include Eocene Age sediments of the Friars Formation and Stadium Conglomerate, which comprise the marine terraces of the coastal plain landform. These sediments are generally underlain by granitic rock, which comprises the primary subsurface formation of the Peninsular Range. The rock strata underlying the City were created as a result of the compaction of various rock sediments over thousands of years, thus its sedimentary designation. Alluvium and colluvium surficial deposits occur in the drainage bottoms and lower slopes within the Plan Area.

Soils vary across the Plan Area. Soil differences arise from a variety of factors, including physical and mineral composition of soil parent material, relief or slope of the land, climate, biological activity, and length of time the forces of formation have acted on the soil material (USDA 1973). As background information, a generalized map of the soils for undeveloped portions of the Plan Area is included as Figure 2-5, in which the information from the soil survey for San Diego County (USDA 1973) is aggregated into 20 soil associations; more detailed soil types for the Subarea Plan Area are listed in Table 2-1. Soil type and texture is often a factor in determining the distribution of the Covered Species. For instance, Covered Species that are vernal pool obligate species (San Diego button-celery, San Diego mesa mint, Riverside fairy shrimp, San Diego fairy shrimp) are more likely to occur on soils with restrictive soil layer of either clay or a cemented hardpan. Other covered plant species including San Diego thornmint and variegated dudleya are associated with clay soils and willowy monardella is dependent on alluvial soils. A description of the soil conditions associated with the Covered Species is included in the Covered Species Profiles in Chapter 3, *Covered Species*.

2.2.4 Climate

Southern California is known for its generally mild weather and Mediterranean climate, typically characterized by relatively small changes in seasonal temperature, a warm dry summer, and a cool rainy winter. The dry summer season is maintained by the semipermanent eastern Pacific high pressure area, triggering warm dry air from above to come in contact with the cool ocean air under an inversion below. This pattern creates a blanket of low, heavy clouds known as the marine layer, which is a dominant feature in the coastal areas and foothills of southern California, including San Diego County. The marine layer develops and extends inland most nights and dissipates by mid- to late morning, depending on variations in the Pacific high pressure that affect the thickness of the marine layer. While occasional Santa Ana winds from the east bring higher summer temperatures, the marine layer typically keeps temperatures from the 70°Fahrenheit (F) to 80°F in summer months (Table 2-2). The annual maximum temperatures in Santee average approximately 6°F higher than temperatures near the coast.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-05 Soils.mxd Date: 2/3/2025 34153

Figure 2-5
Soils
Santee MSCP Subarea Plan

Table 2-1. Soil Types within Plan Area (acres)

Soil Association	Soil Type Label	Soil Type Description	Offsite Conservation Areas	Santee Jurisdiction, exclude NAP	Plan Area Totals
Acid igneous rock land	AcG	Acid igneous rock land		17.8	17.8
Bosanko	BsC	Bosanko clay, 2 to 9 percent slopes		33.6	33.6
Cieneba	CmE2	Cieneba rocky coarse sandy loam, 9 to 30 percent slopes, eroded	9.2	196.1	197.5
Cieneba	CmrG	Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes		394.5	400.6
Cieneba-Fallbrook	CnE2	Cieneba-Fallbrook rocky sandy loams, 9 to 30 percent slopes, eroded		19.5	20.9
Cieneba-Fallbrook	CnG2	Cieneba-Fallbrook rocky sandy loams, 30 to 65 percent slopes, eroded	9.9	220.6	230.6
Diablo	DaC	Diablo clay, 2 to 9 percent slopes		12.0	12.0
Diablo	DaD	Diablo clay, 9 to 15 percent slopes		7.9	7.9
Diablo	DaE	Diablo clay, 15 to 30 percent slopes		79.6	79.6
Diablo-Olivenhain	DoE	Diablo-Olivenhain complex, 9 to 30 percent slopes		190.7	190.7
Fallbrook	FaB	Fallbrook sandy loam, 2 to 5 percent slopes		0.8	0.8
Fallbrook	FaD2	Fallbrook sandy loam, 9 to 15 percent slopes, eroded	60.5	61.0	121.5
Fallbrook-Vista	FvD	Fallbrook-Vista sandy loams, 9 to 15 percent slopes		0.8	0.8
Friant	FxE	Friant rocky fine sandy loam, 9 to 30 percent slopes		5.3	5.3
Friant	FxG	Friant rocky fine sandy loam, 30 to 70 percent slopes		0.5	0.5
Grangeville	GoA	Grangeville fine sandy loam, 0 to 2 percent slopes		80.2	80.2
Greenfield	GrC	Greenfield sandy loam, 5 to 9 percent slopes		11.8	11.8
Las Flores	LeC	Las Flores loamy fine sand, 2 to 9 percent slopes		5.2	5.2
Las Posas	LrE	Las Posas stony fine sandy loam, 9 to 30 percent slopes		40.2	40.2
Las Posas	LrG	Las Posas stony fine sandy loam, 30 to 65 percent slopes		313.6	313.6
Linne	LsE	Linne clay loam, 9 to 30 percent slopes		51.9	51.9
Placentia	PfC	Placentia sandy loam, thick surface, 2 to 9 percent slopes		26.3	26.3

Table 2-1. Soil Types within Plan Area (acres) (cont.)

Soil Association	Soil Type Label	Soil Type Description	Offsite Conservation Areas	Santee Jurisdiction, exclude NAP	Plan Area Totals
Ramona	RaB	Ramona sandy loam, 2 to 5 percent slopes		14.2	14.2
Ramona	RaC	Ramona sandy loam, 5 to 9 percent slopes		22.9	22.9
Redding	RdC	Redding gravelly loam, 2 to 9 percent slopes		220.6	220.6
Redding	ReE	Redding cobbly loam, 9 to 30 percent slopes		87.7	87.7
Redding	RfF	Redding cobbly loam, dissected, 15 to 50 percent slopes	91.4	1,813.0	1,904.4
Redding	RhC	Redding-Urban land complex, 2 to 9 percent slopes		7.5	7.5
Redding	RhE	Redding-Urban land complex, 9 to 30 percent slopes		6.0	6.0
Riverwash	Rm	Riverwash		195.6	195.6
Salinas	SbA	Salinas clay loam, 0 to 2 percent slopes		48.1	48.1
Salinas	ScA	Salinas clay, 0 to 2 percent slopes		15.1	15.1
Stony Land	SvE	Stony land	<0.1	51.9	51.9
Terrace Escarpments	TeF	Terrace escarpments		41.8	41.8
Tujunga	TuB	Tujunga sand, 0 to 5 percent slopes		79.8	79.8
Visalia	VaA	Visalia sandy loam, 0 to 2 percent slopes		44.9	44.9
Visalia	VaD	Visalia sandy loam, 9 to 15 percent slopes		12.3	12.3
Visalia	VbB	Visalia gravelly sandy loam, 2 to 5 percent slopes		20.6	20.6
Vista	VsD	Vista coarse sandy loam, 9 to 15 percent slopes		5.3	5.3
Vista	VsE	Vista coarse sandy loam, 15 to 30 percent slopes		72.0	72.0
Vista	VsG	Vista coarse sandy loam, 30 to 65 percent slopes		150.5	150.5
Water	W	Water		42.5	42.5
Wyman	WmC	Wyman loam, 5 to 9 percent slopes		89.7	89.7
Developed		Developed		5,499.3	5,499.3
		Plan Area Totals:	**171.1**	**10,311.3**	**10,482.4**

Significant precipitation is rare between May and October in the Plan Area, primarily because of the effect of the stable marine layer. When rain does occur during the summer season, it typically is associated with subtropical moisture and isolated thundershowers. During the rainy season (November through April), the northern hemisphere polar jet stream displaces the eastern Pacific high pressure ridge over San Diego County. The colder air brought by the jet stream prevents the marine layer from forming as often, and Pacific storms and cold fronts move across California from northwest to southeast, dropping the majority of the precipitation received in San Diego County. The average annual precipitation for the county is variable and terrain-dependent, ranging from approximately 10 inches at the ocean to about 15 to 20 inches in parts of the eastern foothills. At the Gillespie Field weather station near the Plan Area, the average seasonal rainfall is 12.09 inches, the annual average high temperature is 76.5°F, and the annual average low is 50.3°F (Table 2-2).

Table 2-2. Monthly Climate Summary for Gillespie Field Weather Station, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	69.3	69.2	71.3	74.5	76.2	80.8	86.1	88.6	84.3	81.0	75.2	68.5	77.3
Average Min. Temperature (°F)	42.5	44.4	48.0	50.7	55.9	59.4	63.3	64.7	62.1	55.6	47.1	41.7	53.0
Average Total Precipitation (in.)	2.32	2.61	1.92	0.75	0.30	0.06	0.16	0.02	0.11	0.54	1.01	1.83	11.63
Source: National Weather Service (NOAA). Period of Record: 1991-2020 Monthly Climate Summary for El Cajon, nearest weather station.													

The following summarizes projections of future climate within the Plan Area that have been developed for the City's Sustainability Action Plan (Santee 2018). Studies show that California will experience warmer temperatures, increased drought, and more extreme weather events (California Natural Resources Agency and California Energy Commission 2012). The impacts to the Plan Area, including the offsite conservation areas, will be similar.

- **Increased temperatures**—By the end of this century, the average United States temperatures are predicted to increase by 3°F to 12°F, depending upon the amount of future emissions and how the earth responds to those emissions (U.S. Global Change Research Program 2014). For California, the average annual temperature is expected to rise by 2.7°F by 2050 and 4.1°F to 8.6°F by the end of the century (California Natural Resources Agency and California Energy Commission 2012). For the Plan Area, average temperatures are expected to increase between about 5°F and 10°F by the end of the century, depending on the emission scenario (Scripps Institution of Oceanography 2017).
- **Variable precipitation**— Globally, future precipitation is highly variable, and California is no exception. Annual precipitation in California is expected to increase by more than 12 percent through the end of the 21st century. Most of this increase is expected in Northern and Central California; precipitation in Southern California is expected to decrease by about 3.3 percent. All regions of California are expected to experience wetter winters, with Southern California rain increasing by 11 percent during the rainy months of December, January, and February (Allen and Luptowitz 2017).

- **Increase in extreme weather events**—The historical number of extreme heat days (days over 99.9°F) has averaged approximately four days per year in Santee. By 2050, the number of extreme heat days in the Plan Area could increase to more than 12 days per year, and by the end of the century, the number of extreme heat days could exceed 40 per year (Scripps Institution of Oceanography 2017). In addition, the length of extremely hot days will increase. Historically, the maximum duration of heat waves in the City has been 4 days but may increase to 10 by mid-century and 20 to 45 by the end of the century.

The frequency and severity of drought is expected to increase due to climate change (Hayhoe et al. 2004; Cook et al. 2015; Diffenbaugh et al. 2015; Williams et al. 2015), as warming temperatures exacerbate dry conditions in years with low precipitation, causing more severe droughts than have previously been observed (Cook et al. 2015; Diffenbaugh et al. 2015). Regardless of changes in precipitation, warmer temperatures are expected to increase evapotranspiration and cause drier conditions in much of California (Cook et al. 2015). Recent studies have found that anthropogenic warming has substantially increased the overall likelihood of extreme California droughts, including decadal and multi-decadal events (Cook et al. 2015; Diffenbaugh et al. 2015; Williams et al. 2015). Riparian birds are primarily sensitive to drought because of the impact of reduced water availability on riparian vegetation and physical processes driven by flow regimes (Gasith and Resh. 1999; Stromberg et al. 2010; Perry et al. 2012). Riparian forests may be more vulnerable to widespread tree mortality from "hotter droughts" (Allen et al. 2015), and drought may exacerbate the impacts of other pressures (e.g., insects, pathogens, wildfire) and drive an increase in large-scale disturbance events (Millar & Stephenson 2015). Cumulative water deficit may also be the most important variable predicting shrub distribution in arid regions (Dilts et al. 2015). Drought has been associated with decreased nest survival and shorter breeding seasons in song sparrows (*Melospiza melodia*) (Chase et al. 2005; Ackerman et al. 2011), with sparrows ceasing to nest earlier in dry years (Chase et al. 2005). These impacts may be driven by reduced herbaceous cover and insect production (Chase et al. 2005). Precipitation has also been positively correlated with the number of successful broods per female, as well as lower predation rates, suggesting that dry periods may be associated with the reverse (Chase et al. 2005). Rainfall may account for up to 50 percent of the annual variation in population density for song sparrows, with decreased density during dry periods (Chase et al. 2005).

2.3 Land Use

This section describes the existing land uses, planned land uses (current General Plan), and protected open space within and surrounding the Plan Area.

2.3.1 Existing Land Use

Information on existing land use is based on mapping by the San Diego Association of Governments (SANDAG) (SANDAG 2022) with updates to reflect recent development and adjustments to make the mapping of Open Space/Preserves to be consistent with mapping of protected open space lands (see Section 2.3.4, *Protected Open Space*). Approximately 55 percent of the Plan Area is developed with residential, commercial, industrial, and transportation areas (Table 2-3, Figure 2-6).

Table 2-3. Existing Land Uses within Plan Area (acres)

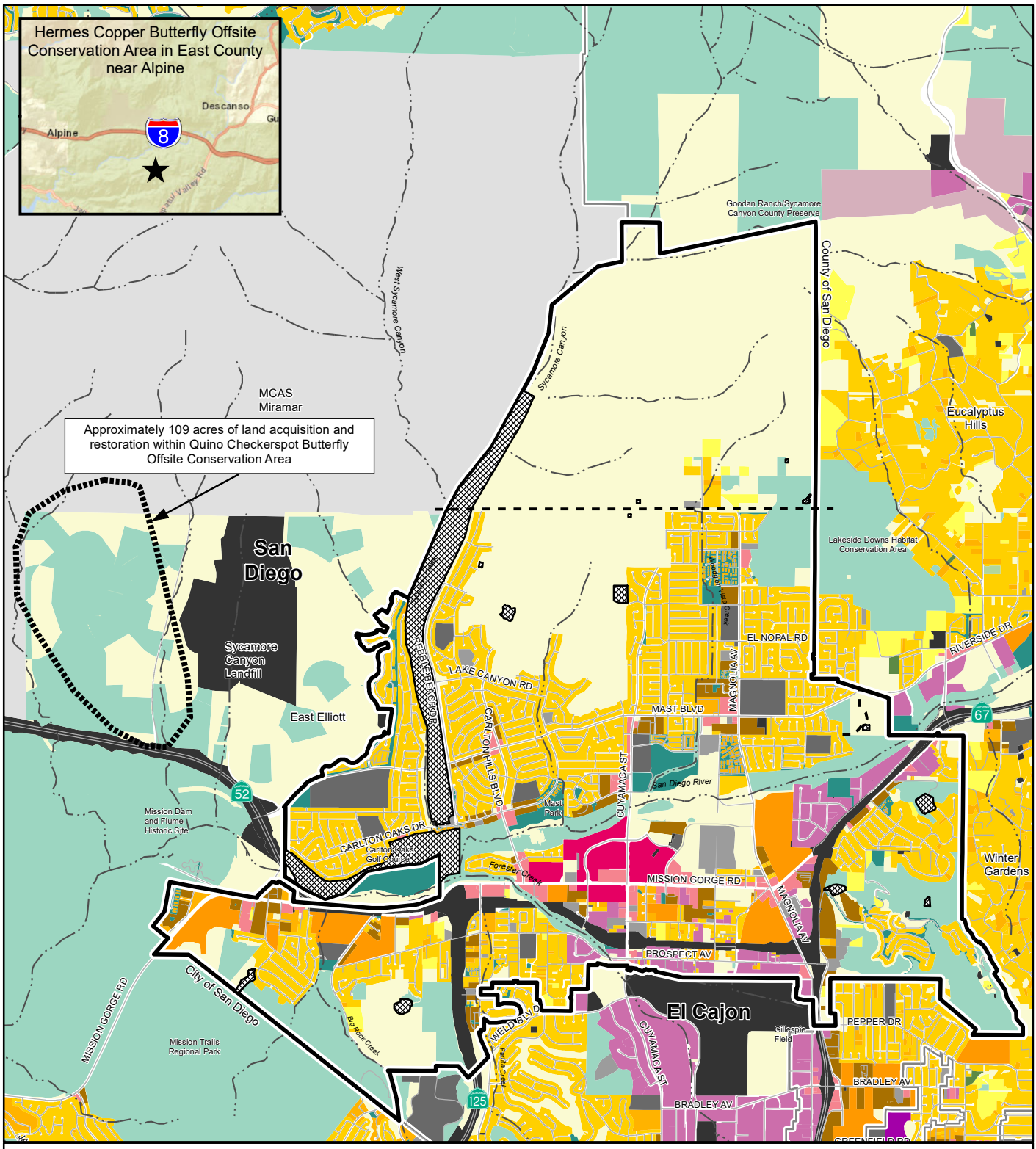
Existing Land Use Description [a]	Offsite Conservation Areas	Santee Jurisdiction, excluding NAP	Total Plan Area	Percent of Total
Residential				
Spaced Rural Residential		96.8	96.8	0.9%
Single Family Detached		2,245.3	2,245.3	21.4%
Single Family Attached		130.3	130.3	1.2%
Mobile Homes		297.8	297.8	2.8%
Multiple Family		292.4	292.4	2.8%
Commercial and Office				
Shopping Centers		146.7	146.7	1.4%
Commercial and Office		177.6	177.6	1.7%
Industrial				
Light Industry		272.6	272.6	2.6%
Public Facilities and Utilities				
Transportation/Communications/Utilities		1,322.8	1,322.8	12.6%
Education		234.8	234.8	2.2%
Institutions		131.7	131.7	1.3%
Parks and Recreation				
Recreation		236.5	236.5	2.3%
Open Space Parks/Preserve [b]	0.0	1,142.2	1,142.2	10.9%
Undeveloped	171.1	3,583.6	3,754.7	35.8%
Water		0.2	0.2	<0.1%
Totals:	**171.1**	**10,311.3**	**10,482.4**	**100.0%**

[a] Source: SANDAG 2022 Existing Land Use GIS data with updates made by ICF to reflect current development and consistency with existing protected open space mapping within and surrounding the Plan Area.

[b] The SANDAG mapping of the open space parks/preserve was not consistent with the mapping of existing protected open space completed for the Subarea Plan within and adjacent to the Plan Area. This information was updated by ICF to match the mapping shown in Figures 2-8 and 2-9.

2.3.2 Planned Land Use

The City of Santee General Plan (adopted by the City Council on August 27, 2003) serves as a long-term policy guide for physical, economic, and environmental growth. It is a statement of the community's vision for ultimate growth. State law requires that every city prepare and adopt a comprehensive long-range plan to serve as a guide for the development of the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements must be consistent with the General Plan or be covered by a General Plan amendment. The General Plan designates land use categories for the entire City. Each land use category is identified and defined within the General Plan and includes information on the general uses, development, intensity, siting, and compatibility uses.



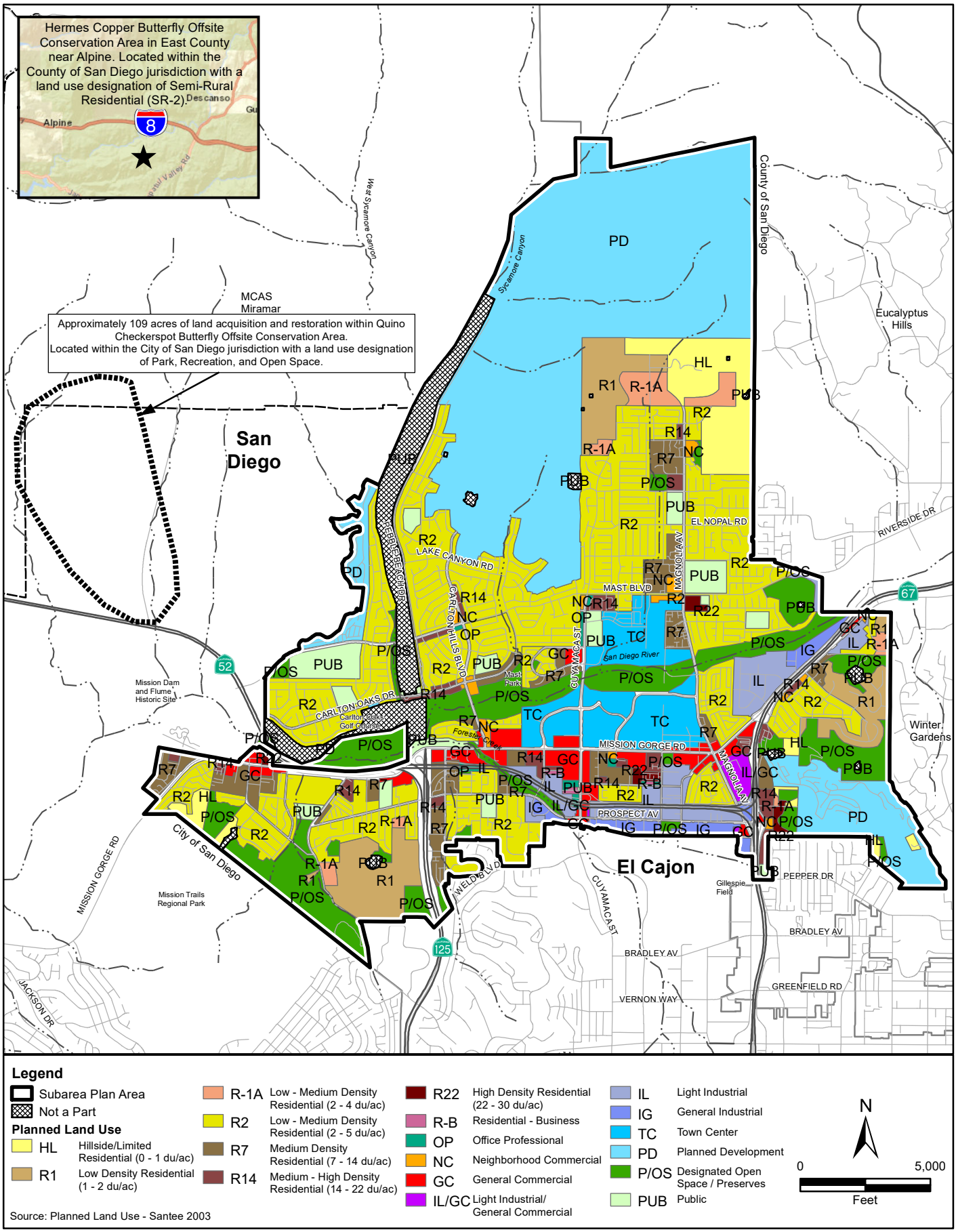
\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-06 Existing Land Use.mxd Date: 7/14/2025 34153

Figure 2-6
Existing Land Use
Santee MSCP Subarea Plan

The current General Plan Land Use Map is shown in Figure 2-7 and a summary of the acreage of each planned land use category in Santee is included in Table 2-4. With the adoption of the Subarea Plan, the Santee City Council will adopt General Plan amendments to reflect adoption of the Subarea Plan. General Plan text that refers to a "draft", "proposed" or "future" Subarea Plan will reflect the Subarea Plan's adoption. (see Section 8.3.2, *General Plan and Municipal Code Implementation Actions*).

Table 2-4. Planned Land Uses within Plan Area (acres)

Planned Land Use Description	Title	Offsite Conservation Areas	Santee Jurisdiction, excluding NAP	Total Plan Area	Percent of Total
Semi-Rural Residential (County of San Diego Designation)	SR-2	80.4		80.4	0.8%
Hillside/Limited Residential (0 - 1 du/ac)	HL		373.3	373.3	3.6%
Low Density Residential (1 - 2 du/ac)	R1		501.1	501.1	4.8%
Low - Medium Density Residential (2 - 4 du/ac)	R-1A		127.3	127.3	1.2%
Low - Medium Density Residential (2 - 5 du/ac)	R2		2,799.8	2,799.8	26.7%
Medium Density Residential (7 - 14 du/ac)	R7		393.2	393.2	3.8%
Medium - High Density Residential (14 - 22 du/ac)	R14		135.5	135.5	1.3%
High Density Residential (22 - 30 du/ac)	R22		38.3	38.3	0.4%
Residential – Business	R-B		6.5	6.5	0.1%
Office Professional	OP		23.5	23.5	0.2%
Neighborhood Commercial	NC		49.4	49.4	0.5%
General Commercial	GC		220.3	220.3	2.1%
Light Industrial/General Commercial	IL/GC		38.7	38.7	0.4%
Light Industrial	IL		305.1	305.1	2.9%
General Industrial	IG		113.3	113.3	1.1%
Town Center	TC		451.6	451.6	4.3%
Planned Development	PD		3,000.5	3,000.5	28.6%
Park/Open Space	P/OS		929.0	929.0	8.9%
Park, Recreation, and Open Space (City of San Diego designation)		90.7		90.7	1.0%
Public	PUB		275.6	275.6	2.6%
Road Right of Way			529.3	529.3	5.0%
Totals:		**171.1**	**10,311.3**	**10,482.4**	**100.0%**
Source: City of Santee General Plan (Santee 2003).					



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-07 Planned Land Use.mxd Date: 7/14/2025 34153

Figure 2-7
Planned Land Use
Santee MSCP Subarea Plan

The Quino checkerspot butterfly offsite conservation mitigation area is within the City of San Diego East Elliot Community Planning Region and is zone-designated as Park, Recreation, and Open Space by the City of San Diego's General Plan. The Hermes copper butterfly offsite conservation site is within the County of San Diego Alpine Community Planning Area and has a land use designation of Semi-Rural Residential (SR-2).

2.3.3 Transportation and Utilities

Major transportation corridors, roads, utility rights-of-way, and other utility facilities are relevant to conservation planning both within and in and out of the Plan Area, as a result of the way they bisect the landscape and can act as impediments to wildlife movement. Major transportation corridors and surface streets may create barriers to habitat connectivity. However, bridges over the San Diego River and smaller drainages (Mission Trails west of Santee) along the State Route 52 freeway provide some wildlife connectivity between each side of the freeway. In addition, utility rights-of-way may provide some connectivity between otherwise fragmented habitat patches. Several major arterial roadways within the City are key landscape features relevant to the Subarea Plan.

Freeways. State Route (SR) 52 crosses the San Diego River corridor at the western edge of the City and connects to SR 125. These freeways separate natural habitats located in the southwestern portions of the Plan Area adjacent to Mission Trails Regional Park from habitats in the northern and eastern portions of the City and Plan Area. SR 67 crosses the eastern portion of the Plan Area, separating Rattlesnake Mountain from other areas of natural habitat. The presence of these major roadways contributes to the fragmentation of potential north-south habitat linkages across the City.

Utility Right-of-Way. As shown in Figure 2-6, a major power line easement (SDG&E) runs east-west through the North Magnolia and Fanita Ranch areas of the Plan Area north of the intersection of Summit Avenue and Princess Joann Road. A second easement within the Plan Area is associated with the Santee Substation on Mast Boulevard. Transmission facilities are within a 20-foot wide easement located behind existing residences on Ramsgate Drive. At Ramsgate Way, the transmission line facility traverses hilly terrain and natural habitat on 'tank hill', which is located adjacent to the Walker Preserve.

2.3.4 Protected Open Space

The Santee Subarea Plan intends to build upon and connect with currently protected open space within and surrounding the City (see Chapter 1, *Introduction and Overview*, and Chapter 5, *Conservation Strategy*). The following sections provide a description of the currently protected open space with natural habitat. It does not include open space areas with active recreation (e.g. golf courses, ball fields, actives parks, landscaped areas, etc.).

2.3.4.1 Existing Protected Open Space within Santee

Existing protected open space is part of the baseline conditions within the Plan Area. A majority of the properties listed in this section form a baseline foundation that the Subarea Plan Managed Preserve has been designed to integrate and connect with. The properties that are connected with the Subarea Plan Managed Preserve are considered part of an Open Space Network. In a few

instances, if a property that is currently protected open space but isolated and not connected to other blocks of habitat, those properties are listed in this section but not included in the Open Space Network. It should be noted that, with the exception of 167.3 acres of existing City-owned protected open space described below, the Subarea Plan does not require additional management on existing protected open space lands as part of the conservation strategy associated with the Subarea Plan.

An inventory of the existing protected open space was completed (see Figure 2-8) and properties were categorized as follows:

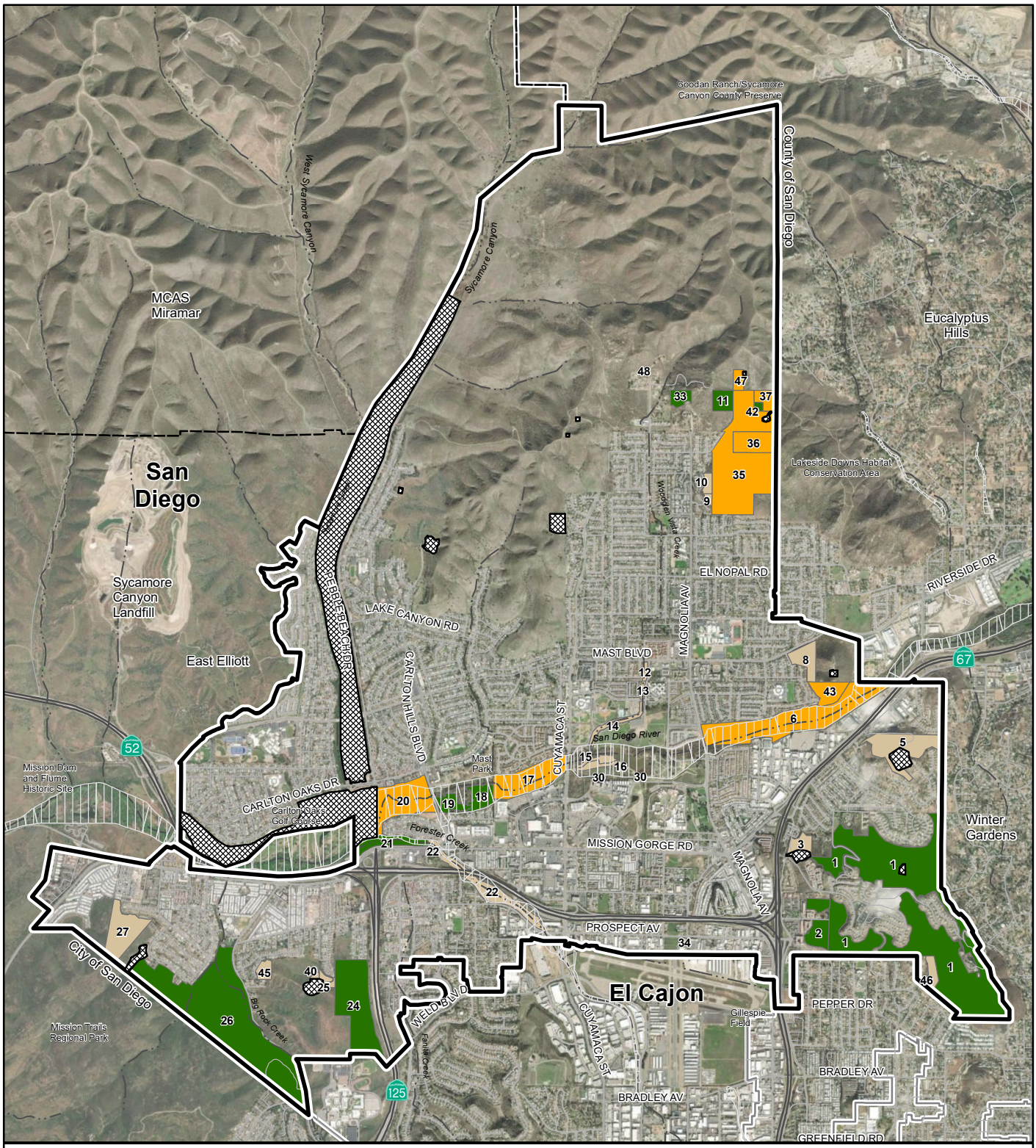
- **Fully Conserved Existing Conservation Lands** – These lands have been established as habitat preserves associated with mitigation for recent development projects or part of a managed preserve property. The lands are encumbered with a recorded perpetual legal site protection mechanism, have secure funding for long-term management and monitoring, and are actively managed by a designated Preserve Manager for biological resources protection.
- **Partially Conserved Existing Conservation Lands** – These lands have been acquired for conservation (not for project mitigation) purposes (usually through State or federal grants) and are required to be monitored and managed in perpetuity but do not have secure funding for long-term management and monitoring above and beyond basic stewardship.
- **Other Protected Open Space** – These properties have been designated as open space (e.g., open space easement), but there is no active biological management or monitoring for these properties.

A summary of the existing protected open space in the City of Santee is included in Table 2-5 and a description of each individual property included in Table 2-6.

Table 2-5. Summary of Existing Protected Open Space within Santee

Level of Management	Total Acres [a]
Fully Conserved Existing Conservation Lands	638.3
Partially Conserved Existing Conservation Lands	328.4
Other Protected Open Space	167.3
Totals:	**1,134.0**

[a] Table 2-5 and Table 2-6 provides the total acres of the existing protected open space properties. Portions of these properties include natural and developed/non-natural habitats. For the Subarea Plan conservation analysis (Chapters 5, *Conservation Strategy*, and 6, *Conservation Analysis*), only acres of natural habitat within these protected open space properties are reported.



Legend

- Subarea Plan Area
- Not a Part
- 100-year Floodway Overlay

Existing Protected Open Space

- Fully Conserved Existing Conservation Lands
- Partially Conserved Existing Conservation Lands
- Other Protected Open Space

N

0 4,450

Feet

Basemap Source: ESRI World Imagery 2024

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-08 Protected Open Space.mxd Date: 7/17/2025 34153

Figure 2-8
Existing Protected Open Space
Santee MSCP Subarea Plan

Table 2-6. Existing Open Space Properties within Santee

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
Fully Conserved Existing Conservation Lands	18	Mast Park Wetland Restoration Project / Mitigation Preserve	12.4	The Mast Park Wetland Restoration Project is being implemented for mitigation associated with impacts to jurisdictional habitat resulting from six development projects (Sky Ranch, Riverwalk, Grossmont Trolley Court Apartments, Riverview, SR 163/Friars, and Sycamore Canyon Landfill). Mitigation is being implemented in accordance with Wetland Mitigation Plan for Mast Park (Helix 2013) and Sycamore Canyon Landfill Wetland Habitat Restoration Plan (Helix 2014a). The Mast Park site was previously disturbed habitat and included abandoned ballfields. This restoration project included the creation, enhancement, and/or preservation of 12.7 acres of wetland habitat and grading to return the site as a functional floodplain for the San Diego River. Installation of the mitigation site was completed February 2016 and five-year monitoring of restoration success criteria was initiated in 2016/2017. The success criteria have been met. This property will be managed as a preserve by the San Diego Habitat Conservancy (in conjunction with the adjacent Lowes Preserve) in accordance with Mast Park Wetland Restoration Area Project Habitat Management Plan (Helix 2014b) once a Conservation Easement has been established. The project was approved under City Resolution No. 073-2007 granting a Conditional Use Permit (P07-02) for establishment of a biological habitat preserve.
Fully Conserved Existing Conservation Lands	19	Lowes Mitigation Preserve	9.4	A conservation easement was recorded August 23, 2004, to establish the Lowes Preserve as compensatory mitigation of streambed and riparian habitat as a result of the development of a Lowe's Home Improvement Store. This preserve is managed by the San Diego Habitat Conservancy. Annual reports are submitted to the City. The site includes southern riparian forest and southern willow scrub habitat that is connected to the San Diego River corridor.

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
Fully Conserved Existing Conservation Lands	21	Caltrans Forester Creek Mitigation Site	15.4	The Forester Creek Mitigation Site was established by Caltrans as mitigation for wetland impacts from projects including I-15 Managed Lanes Project, SR-52 Extension Project, San Diego Culvert Rehabilitation Project, and I-805 Culvert Replacement Project. The mitigation plan included riparian habitat establishment and enhancement, freshwater enhancement, coastal sage scrub/native grass establishment, and transplanting of San Diego ambrosia. Approval from the resource agencies was received in Winter 2010/2011 for the 5-year maintenance and monitoring requirements of restoration activities. Caltrans is currently the property owner and is seeking a long-term management entity. Caltrans will transfer fee title to a qualified Property Owner Manager (POM) to manage the property in perpetuity in accordance with the Long-Term Management Plan prepared by Caltrans in August 2013 (Caltrans 2013). The primary goals of this LTMP are to (1) preserve and maintain the existing riparian habitat; (2) maintain suitable habitat for the least Bell's vireo; (3) control invasive exotic plant and animal species; and (4) maintain and protect translocated populations of the federally listed San Diego ambrosia.
Fully Conserved Existing Conservation Lands	26	Mission Trails Regional Park	198.1	A portion of the Mission Trails Regional Park (MTR) (north side of the Cowles Mountain area) extends into the City of Santee and is within the Plan Area. The City of San Diego Planning Department, Park Planning Section, initiated a formal Master Plan Update (MPU) process for MTRP. As part of the MPU process, a Natural Resource Management Plan (NRMP) has also been prepared (San Diego 2017a) that covers these parcels. The NRMP, a requirement of the City of San Diego MSCP Subarea Plan, has been developed concurrently with the MPU to ensure that protection and management concerns for both environmental and cultural resources have been fully assessed and integrated into the MPU. Approximately half of this area is owned solely by the County of San Diego and the other half owned jointly between the County of San Diego and City of San Diego. Existing hiking and biking trails initiate from trailheads in the Plan Area in Santee (Big Rock, Mesa) and extend towards Cowles

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				Mountain. This area includes primarily chaparral habitat with smaller patches of grassland and coastal sage scrub.
Fully Conserved Existing Conservation Lands	1	Center for Natural Lands Management (CNLM) Rattlesnake Mountain (Blackhorse Estates and Sky Ranch) Mitigation Habitat Conservation Area (HCA)	296.0	A preserve on Rattlesnake Mountain was dedicated in fee to CNLM and conservation easements were recorded as mitigation for the Blackhorse Estates development (in 2007) and Sky Ranch Development (in 2011). Because of their similar habitat types and conservation values and their proximity to one another, the management and annual reports for these two conservation areas have been combined. An endowment has been established to provide funding for CNLM to implement long-term management and monitoring. The property includes coastal sage scrub that supports coastal California gnatcatchers, Blainville's horned lizards, and Belding's orange-throat whiptails.
Fully Conserved Existing Conservation Lands	2	Lantern Crest Preserve Mitigation Area	18.8	An onsite preserve was established in 2013 as mitigation for the Lantern Crest development. Ongoing management has been occurring in accordance with a Habitat Management Plan (Helix 2010). An endowment was established for the long-term management and monitoring of the preserve. The property is managed by Urban Corps of San Diego County. The property supports coastal sage scrub that is occupied by coastal California gnatcatchers, Blainville's horned lizards, and Belding's orange-throat whiptails. Annual reports are submitted to the City.
Fully Conserved Existing Conservation Lands	11	CNLM Santee Hills (Boys and Girls Club Parcel) Mitigation HCA	9.9	A 9.9-acre offsite preserve was established as mitigation of the Sky Ranch development in 2011. The property was dedicated in fee to CNLM and a conservation easement was recorded. An endowment has been established for CNLM to provide long-term management and monitoring of this property. This property includes coastal sage scrub and is adjacent to the Cheyenne Preserve (see Map ID #35 described below).
Fully Conserved Existing Conservation Lands	24	CNLM East Mesa (Hagenmaier and Gross Parcels) Mitigation HCA	68.1	An offsite preserve was established as mitigation of the Sky Ranch development in 2011. The property was dedicated in fee to CNLM and a conservation easement was recorded. An endowment has been established for CNLM to provide long-term management and monitoring of this property. This

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				property includes coastal sage scrub that supports coastal California gnatcatchers. Other proposed Covered Species noted on this preserve include San Diego goldenstar, Blainville's horned lizard, and Belding's orange-throated whiptail. A restoration project to restore and enhance 6.7 acres of coastal sage scrub has been implemented at this preserve.
Fully Conserved Existing Conservation Lands	30	Ryan Company Smooth Tarplant Mitigation Preserve	1.4	The Ryan Company Smooth Tarplant Preserve consists of 2 individual mitigation sites located along the San Diego River corridor. A conservation easement has been recorded for the preserve. San Diego Habitat Conservancy commenced active management of the sites in 2019 after a 5-year restoration program is completed by Helix Environmental. The preserve protects occurrences of smooth tarplant as well as other native plant species such as shooting star, dove weed, slender buckwheat, and blue-eyed grass.
Fully Conserved Existing Conservation Lands	33	Cutri Onsite Mitigation Preserve	7.0	For the Cutri single-family residential project, a low-effect Habitat Conservation Plan was prepared in 2015 that included a mitigation measure for the in-perpetuity conservation, management, and monitoring of 7.0 acres of coastal California gnatcatcher habitat to offset 2.92 acres of impact to occupied habitat. A Section 10 permit was issued and a conservation easement for the preserve area was recorded in November 2016. The Endangered Habitats Conservancy (EHC) is the land management entity and will conduct long-term management and monitoring based on the Resource Management Plan (RMP) included in the HCP. The RMP was prepared to detail the tasks and goals of the long-term management of the onsite preserve for the benefit of the coastal California gnatcatcher and its habitat. Other covered species noted at this location include Belding's orange-throat whiptail.
Fully Conserved Existing Conservation Lands	42	Calvary Chapel Offsite Mitigation Site	1.8	A 1.8-acre portion of the Brown property (See Map ID #37 described below) acquired by EHC has been set aside as offsite mitigation for the Calvary Chapel project within the City. The mitigation site is preserved and managed in perpetuity by EHC according to the Calvary Chapel Santee Habitat Conservation Plan and RMP dated October 2017. The initial financial means for management

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				will be provided through a three-year management fund provided to the EHC by Calvary Chapel Santee. By the end of three years, the 1.76 acres will have been incorporated into the larger EHC Lakeside Downs Conservation Area (LDCA) management strategy and will be managed in perpetuity in association with other adjacent EHC properties. A conservation easement was recorded on November 15, 2017. The site contains coastal sage scrub habitat and provides high quality habitat for coastal California gnatcatcher.
Partially Conserved Existing Conservation Land	35	Cheyenne EHC Preserve	118.5	The Cheyenne properties, which had been planned for development, were acquired by the EHC in 2016 using funding through USFWS' Section 6 Cooperative Endangered Species Conservation Fund and California Wildlife Conservation Board (WCB) grant programs. The grant/subgrant agreements stipulate the property be maintained in perpetuity for the benefit of the species identified in the grant. The grant/subgrant agreements essentially function as a conservation easement. The Cheyenne preserve area is located between the protected open space behind the Santee City Hall and the Bella Vida HOA and the Lakeside Downs Conservation Area (LDCA) in the County of San Diego. The site is being managed/monitored by EHC. The development of an RMP is pending and/or long-term funding for management and monitoring has not been secured. It is anticipated that this preserve will be managed by the EHC in conjunction with management of the adjacent LDCA. The Cheyenne preserve area has been documented to have occupied coastal California gnatcatcher habitat and potentially suitable habitat for Quino checkerspot butterfly and Hermes copper butterfly.
Partially Conserved Existing Conservation Land	36	Capralis EHC Preserve	20.5	The Capralis properties were acquired by the EHC in 2016 using funding through USFWS' Section 6 Cooperative Endangered Species Conservation Fund and California WCB grant programs. The grant/subgrant agreements stipulate the property be maintained in perpetuity for the benefit of the species identified in the grant. The grant/subgrant agreements essentially function as a conservation easement. The Capralis properties are located between the Cheyenne and the LDCA. The site is being managed/monitored by EHC. The

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				development of an RMP is pending and/or long-term funding for management and monitoring has not been secured. It is anticipated that this preserve will be managed by the EHC in conjunction with other adjacent preserves. The Capralis preserve area has coastal sage scrub and potentially suitable coastal California gnatcatcher habitat.
Partially Conserved Existing Conservation Land	37	Brown	8.9	The Brown property was acquired by EHC using funding through USFWS' Section 6 Cooperative Endangered Species Conservation Fund and California WCB grant programs. A portion of the original property acquisition has been set aside as the Calvary Church Offsite Mitigation Site (#42). The grant/subgrant agreements stipulate the property be maintained in perpetuity for the benefit of the species identified in the grant. The site is being managed/monitored by EHC. The grant/subgrant agreements essentially function as a conservation easement. The development of an RMP is pending and/or long-term funding for management and monitoring has not been secured. It is anticipated this property will be managed in conjunction with the other adjacent properties owned by EHC.
Partially Conserved Existing Conservation Land	47	Gallagher	4.9	The Gallagher parcels (37817029, 37817030) were acquired with state funding, and it is held in conservation by EHC.
Partially Conserved Existing Conservation Land	17	Mast Park East (Mission Creek) Mitigation Site	39.2	Mast Park East includes a segment of the San Diego River corridor with riparian habitat west of Cuyamaca Street bridge. It was deeded to the City in 1989. The City conducts general stewardship of the property. There is no legal land protection mechanism currently recorded for this site. It is within the existing 100-year floodway and is protected from future land development based on City ordinance. There are existing hiking/biking trails following the northern and southern borders of the property.
Partially Conserved Existing Conservation Land	20	Mast Park West	38.9	Mast Park West includes a segment of the San Diego River corridor between Carlton Oaks Golf Course and Carlton Hills Boulevard. This property was previously owned by The Environmental Trust (TET) and transferred to the City

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				through bankruptcy proceedings in coordination with the State of California Natural Resources Agency. This property is protected through a Conservation Easement Deed recorded in 2009 (Doc # 2009-0694057) and Memorandum of Unrecorded Grant Agreement recorded (Doc # 2011-0221985) recorded in 2011. There is currently no habitat management plan or active management for this property. An existing hiking/biking trail extends through the property that is currently planned to be improved (see Chapter 4, *Covered Activities and Impact Assessment*).
Partially Conserved Existing Conservation Land	6	Walker Preserve	85.0	The City acquired the Walker Preserve in 2011 through a grant provided by the California Coastal Conservancy using Proposition 84 funding. The Walker Preserve, with over 1.3 miles of riparian frontage along the San Diego River, provides an opportunity to complete a segment of the San Diego River Trail, restore the river's natural hydrology and habitat, and support continued recovery of riparian habitat important for least Bell's vireo and southwestern willow flycatcher. The property is protected through Restrictive Covenants/Grant Agreement recorded December 17, 2012. The City currently manages the property. A Habitat Management Plan was prepared in 2014 (April) (Dokken Engineering 2014). Management actions include control of public access, trail maintenance, trash pickup, and invasive species control. No monitoring of listed or sensitive species is currently included as part of the ongoing management.
Partially Conserved Existing Conservation Land	43	City Property near Walker Preserve	12.5	As part of the acquisition of the Walker Preserve (#6), the City acquired an adjoining parcel of upland habitat that is adjacent to San Diego River. This parcel is to be protected as open space. It is managed by the City separately from the Walker Preserve. There is currently no habitat management plan for this property. It includes coastal sage scrub and is part of block of habitat known to support coastal California gnatcatcher.

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
Other Protected Open Space	10	City Hall Open Space	3.9	The hillside behind the Santee City Hall was set aside as open space. It includes coastal sage scrub. There is no active management of the property and no legal land protection mechanism.
Other Protected Open Space	12	Woodglen Vista Creek North Mitigation	1.8	As part of the Town Center Community Park development in 2001, the tributary creek through the middle of the site was restored with riparian scrub habitat and set aside as open space associated with the project. A restoration plan was developed and fully implemented in accordance with the permits from the U.S. Army Corps of Engineers (USACE). The creek is managed by the City. There is no legal land protection mechanism.
Other Protected Open Space	14	Woodglen Vista Creek South Mitigation	7.4	As part of the Town Center Community Park development in 2001, the tributary creek through the middle of the site was restored with riparian scrub habitat and set aside as open space associated with the project. A restoration plan was developed and fully implemented in accordance with the permits from the USACE. The creek is managed by the City. There is no legal land protection mechanism.
Other Protected Open Space	22	Forester Creek Restoration	28.6	The City, in collaboration with Caltrans, completed an extensive restoration for Forester Creek from the confluence with the San Diego River and into the City of El Cajon in 2009. This project involved the removal of concrete-lined channel to a more natural soft bottom channel and stream ecology. The restored area is maintained by the City. A restrictive covenant is pending approval by USACE and recordation.
Other Protected Open Space	15	MTS Mitigation Restoration Site	4.5	This restoration project site is located in the San Diego River and is owned by the San Diego Metropolitan Transit System (MTS), formerly Metropolitan Transit Development Board (MTDB). The habitat restoration was completed as mitigation for impacts resulting from project(s) implemented by MTS. Long-term management of the property is unknown.
Other Protected Open Space	16	MTS Mitigation Restoration Site	4.5	This restoration project site within the San Diego River is owned by MTS. The habitat restoration was completed as mitigation for impacts resulting from

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				project(s) implemented by MTS. Long-term management of the property is unknown.
Other Protected Open Space	40	PDMWD Mesa Reservoir Mitigation Conservation Easement	0.9	As part of the PDMWD Mesa Road Reservoir Project, PDMWD has acquired a coastal sage scrub mitigation easement on properties adjoining their proposed location of the tank site.
Other Protected Open Space	34	Railroad Avenue Ambrosia Mitigation Conservation Easement	0.5	A habitat preserve was established near the intersection of Railroad and Prospect Avenues near Gillespie Field. This preserve has been designed to support thousands of transplanted specimens of San Diego ambrosia within a matrix of native grassland vegetation in perpetuity. The translocation was mitigation for the Grant-Renzulli Multifamily Project. A long-term management plan was prepared and conservation easement recorded for the property. The Habitat Manager is Vince Schiedt Mitigation Management Company.
Other Protected Open Space	5	Santee Environmental Inc. Mitigation	34.9	As part of mitigation associated with a previous residential development, this area was set aside as open space. There is no active management and no land protection mechanism recorded for this location.
Other Protected Open Space	8	Deerpark Santee Unit #3 Mitigation	14.6	As part of Deerpark Santee Unit #3 residential development in 1976, an open space easement was recorded. The open space easement covers an entire lot (lot 231) aside from the existing easements for Padre Dam Municipal Water District (PDMWD) and San Diego Gas & Electric (SDG&E) for access roads to nearby facilities. The property is currently privately owned and there is no active habitat management.
Other Protected Open Space	9	Bella Vida Mitigation HOA	5.5	As part of previous residential development, this area was set aside as open space. There is no active management and no land protection mechanism recorded for this location.
Other Protected Open Space	13	Woodglen Vista Creek Mitigation (Center)	1.6	As part of the Town Center Community Park development in 2001, the tributary creek through the middle of the site was restored with riparian scrub habitat and set aside as open space. A restoration plan was developed and fully implemented in accordance with permits from the USACE. A middle portion of

Table 2-6. Existing Open Space Properties within Santee (cont.)

Category	Map ID [b]	Property Name	Total Acres [a]	Summary Description
				the creek remains in private ownership and maintenance is the responsibility of the property owners. There is no legal land protection mechanism.
Other Protected Open Space	25	Prospect Hills Open Space	4.2	As part of the Prospect Hills development in 1996 (City resolution No. 82-97), an onsite open space easement was granted over a portion of the property to protect coastal sage scrub vegetation and to prohibit the construction of residential development. The open space easement does not prohibit PDMWD to construct and use an access road to a future tank site on an adjoining parcel.
Other Protected Open Space	27	Mission View Estates by Concordia	31.9	As part of previous residential development, this area was set aside as open space. There is no active management and no land protection mechanism recorded for this location.
Other Protected Open Space	45	TM 88-08 near Mission Trails	6.0	As part of a previous residential development under Tentative Map (TM) 88-08 an open space lot was recorded as not a buildable lot. There is no active management or other land protection mechanism recorded for this location.
Other Protected Open Space	46	O'Connell Road Parcels	8.0	As part of the approval for the development of homes along O'Connell Road at the base of Rattlesnake Mountain under TM 89-02, an open space easement was recorded on the hillside portion of the parcels.
Other Protected Open Space	48	Moein Parcel	0.7	As part of an individual home development under Tentative Parcel Map TPM05-03 in the North Magnolia area, a portion of the property onsite protected through an open space easement.
Other Protected Open Space	3	Altair Mitigation	7.8	As part of mitigation associated with a previous residential development, this area was deeded to the City as an open space lot. There is no active management and no land protection mechanism recorded for this location.

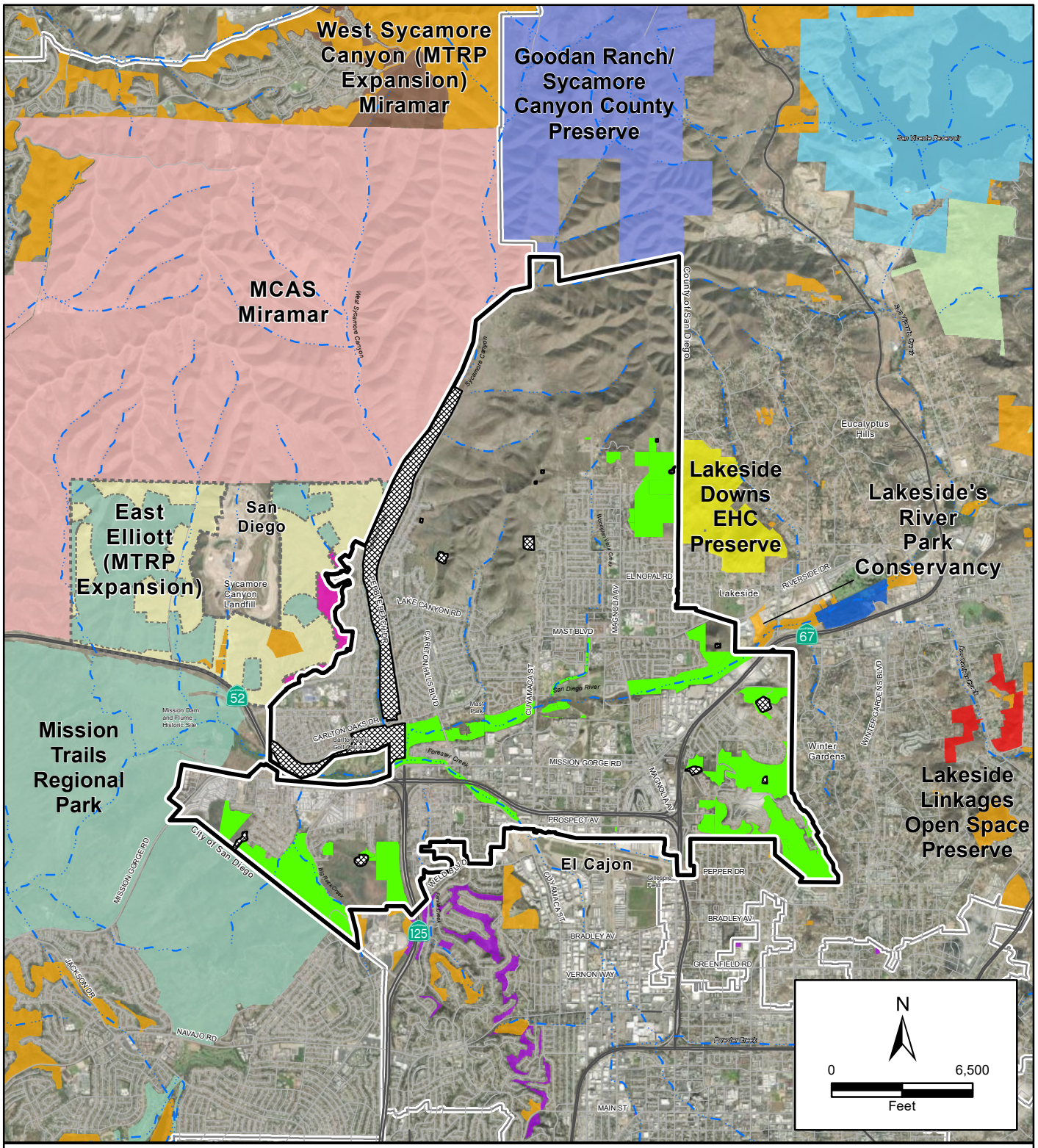
[a] Acreage is based on current GIS mapping of property boundary. Acreage may be slightly different from amounts recorded in other management documents.

[b] MapIDs are not sequential and there are gaps in the numbering as a result of the inventory data collection process.

2.3.4.2 Protected Open Space Surrounding Santee

The City is connected to open space areas outside of its jurisdictional boundaries, including areas along the San Diego River and surrounding hillsides. These connections are important for the habitat connectivity with open space areas within the Subarea Plan Area. Figure 2-9 identifies major blocks of protected open space surrounding the City. These include:

- **Mission Trails Regional Park** - The Mission Trails Regional Park (MTRP) is adjacent to the south and southwestern portion of the City. Originally approximately 5,830 acres, MTRP is one of the largest urban parks of its kind in the west (San Diego 2016). The park is expanding to 9,780 acres with the additional acquisition in the East Elliot area and the inclusion of the West Sycamore area. The park is subdivided into separate areas based on significant features of each:
    - *Original Park Boundary (including Cowles Mountain, Mission Gorge, Fortuna Mountain, and Lake Murray Areas)*—Although largely surrounded by residential development, the original MTRP area contains mountains, valleys, two lakes, a major river and scenic gorge, historical landmarks, wildlife habitats, and cultural resources. This "close-in" park provides varied wilderness, interpretive, and passive and active recreational opportunities. The Cowles Mountain, Mission Gorge, and Fortuna Mountain areas encompass a large area of protected open space immediately adjacent to the southwestern boundary of Santee. Portions of the Cowles Mountain area extend into the Santee jurisdiction. The original park boundaries support a variety of habitats including upland habitats (chaparral, coastal sage scrub, grasslands) and riparian vegetation along the San Diego River. It supports populations of coastal California gnatcatcher, least Bell's vireo, and San Diego ambrosia.
    - *East Elliot Expansion Area*—The City of San Diego East Elliot Community Plan Area is located adjacent to the western boundary of Santee. The vast majority of the East Elliott Community Plan Area is designated open space as part of the City of San Diego MSCP Subarea Plan. All public and privately owned land is targeted for at least 75 percent preservation except for the parcels zoned for the Sycamore Landfill. The City of San Diego, along with other federal, state, local, private, and non-profit land conservation partners, is actively pursuing the acquisition of land in this area. Whether directly acquired or dedicated as part of the permitting process for land development, at least 75 percent of this area will be managed for habitat conservation purposes. As land is acquired or dedicated in fee or by easement, it will become part of MTRP. East Elliott is dominated by coastal sage scrub, chaparral, and grasslands. There are also a few areas of oak woodland and willow riparian. It supports populations of coastal California gnatcatcher, Quino Checkerspot butterfly, San Diego barrel cactus, willowy monardella, and San Diego goldenstar.



Legend

- Subarea Plan Area
- Existing Protected Open Space
- Not a Part

Protected Open Space Surrounding Santee

- Mission Trails Regional Park (MTRP)
- West Sycamore Canyon (MTRP Expansion)
- Goodan Ranch/Sycamore Canyon County Preserve
- Lakeside Downs EHC Preserve
- Lakeside Linkages Open Space Preserve
- San Vicente Reservoir Cornerstone Lands
- Lakeside Ranch EHC Preserve
- East Elliott CPA
- MCAS Miramar
- Castle Rock Open Space
- Hillsides Designated as Open Space in El Cajon General Plan
- Planned and Protected Open Space along San Diego River
- Other Protected Open Space

Sources: Protected Open Space – SanGIS Protected Lands GIS 2017; Planned Open Space – SANDAG Generalized Planned Land Use 2016; Basemap Source: ESRI World Imagery 2024.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-09 Protected Open Space Surrounding Santee.mxd Date: 2/3/2025 34153

Figure 2-9
Planned and Protected Open Space Surrounding Santee
Santee MSCP Subarea Plan

- *West Sycamore Expansion Area*—West Sycamore area is approximately 1,360 acres immediately north of MCAS Miramar and west of Goodan Ranch/Sycamore Canyon County Preserve. The West Sycamore area was acquired through an agreement in 2001 between the City of San Diego and the developer for the Rancho Encantada Precise Plan. This obligated the developer to convey land for the purposes of habitat conservation to the City of San Diego. While not immediately adjacent to the City, it is part of a block of protected open space north of Santee and connects to City of Poway open space. West Sycamore is dominated by chaparral and coastal sage scrub with additional areas of oak woodland and grassland. It supports populations of coastal California gnatcatcher, cactus wren, Blainville's horned lizard, Belding's orange-throated whiptail, San Diego barrel cactus, and willowy monardella.

- **Marine Corps Air Station (MCAS) Miramar**—The military base MCAS Miramar is located adjacent to the western edge of Santee. An Integrated Natural Resources Management Plan (INRMP) has been prepared that provides guidance for the implementation of the natural resources program on MCAS Miramar (MCAS Miramar INRMP 2011; MCAS Miramar Natural Resource Division 2018). The INRMP integrates current and future land-use activities at MCAS Miramar with natural resources management and conservation. The eastern portion of MCAS Miramar has been designated mostly as Level II (non-vernal pool threatened/endangered species) and Level III (habitat linkages/riparian vegetation) Management Areas. It is anticipated that the eastern portion of MCAS Miramar will largely remain as a block of natural habitat and is known to currently support important populations of coastal California gnatcatchers and willowy monardella.
- **Goodan Ranch/Sycamore Canyon County Preserve**—The 2,572-acre Goodan Ranch/Sycamore Canyon County Preserve is located adjacent and north of Santee. Sycamore Canyon Preserve was acquired by the County during the time period 1964–2004. Goodan Ranch was acquired jointly by the CDFW, County of San Diego Department of Parks and Recreation, and the cities of Poway and Santee in 1991. An additional 140 acres were acquired in 2015. The County preserve is included in the South County MSCP preserve system. The preserve consists of very high to medium quality native habitats, as well as areas that have been marginally impacted by human activities including two staging areas, ranger station, and trail system.
- **Lakeside Downs Conservation Area (LDCA)**—Collaboration between the EHC, SANDAG, and the U.S. Department of Defense resulted in the preservation of the 410-acre Lakeside Downs property along the eastern edge of Santee (SANDAG 2015). Previously proposed for a 140-home development, Lakeside Downs contains high-value coastal sage scrub habitat and extensive stands of spiny redberry, host plant for the rare Hermes copper butterfly. The property is strategically located, helping to close gaps between lands that are conserved or proposed for conservation. SANDAG, through its TransNet Environmental Mitigation Program (EMP), contributed half of the funds for acquisition and the U.S. Department of Defense (DOD), under its Readiness and Environmental Protection Integration (REPI) Program, contributed the other half. EHC is the owner and manager of the land. SANDAG and the Department of the Navy, on behalf of the U.S. Marine Corps, hold a conservation easement deed and a grant deed of conservation easement (restrictive use easement), respectively, on the property, ensuring perpetual conservation (SANDAG 2015).

- **Lakeside's River Park Conservancy**—Immediately adjacent to the eastern border of Santee along the San Diego River, Lakeside's River Park Conservancy has acquired properties with the goal to create a river park through Lakeside. Formed in 2001 as a nonprofit entity, Lakeside's River Park Conservancy has acquired previously sand mined properties and implemented ambitious restoration programs to restore natural floodplain hydrology, remove constrictions, and enhance natural riparian habitat.
- **Lakeside Linkage County Open Space Preserve**—Lakeside Linkage County Preserve (Preserve) consists of approximately 134 acres located in the hills just north of the City of El Cajon and west of Lake Jennings Reservoir, in southwestern San Diego County. The Preserve is comprised of three non-contiguous properties, located approximately 2 miles from the Sky Ranch open space and LDCA. This preserve supports significant stands of coastal sage scrub, southern mixed chaparral, and oak woodland habitat and represents a regionally important habitat linkage between the Crestridge Conservation Bank south of I-8 to the protected open space to the north along the San Diego River. The Preserve is essential to the South County MSCP because it functions as a 'stepping-stone' corridor linkage for coastal California gnatcatcher from conserved lands to the south of I-8 to conserved lands to the north, including protected lands in Santee.

2.4 Biological Resources

Information on existing biological resources in the Subarea Plan Area have been compiled through biological inventories, vegetation mapping, monitoring reports, archive research, and general scientific research. The results of the biological resources data compilation are described in the following sections.

2.4.1 Vegetation Communities

Vegetation community composition directly and indirectly influences habitat quality for the proposed Covered Species within the Subarea Plan Area. Vegetation mapping is a primary input factor for species habitat suitability models.

A comprehensive vegetation database has been developed for the Subarea Plan Area and surrounding areas using multiple data sources. The Holland (1986) vegetation classification system, as updated by Oberbauer et al. (2008), was used consistently across the entire study area. In areas that were also mapped using the Vegetation Classification Manual for Western San Diego County (SANDAG 2011), that information was also retained. Though both systems provide methods to classify vegetation, Holland communities are described at a landscape scale and are used by the MSCP Subregional Plan and this Subarea Plan to account for conservation and mitigation. A description of the vegetation communities categories used in this Subarea Plan is included in Appendix E, *Vegetation Community Descriptions*. The SANDAG system provides a high-resolution view into the specific vegetative components of communities and changes within communities over time. Because SANDAG 2011 provides more detail on floral species dominance and change over time, it is being used to monitor designated preserves across San Diego County.

The data sources for vegetation mapping included, in order of preference, the following:

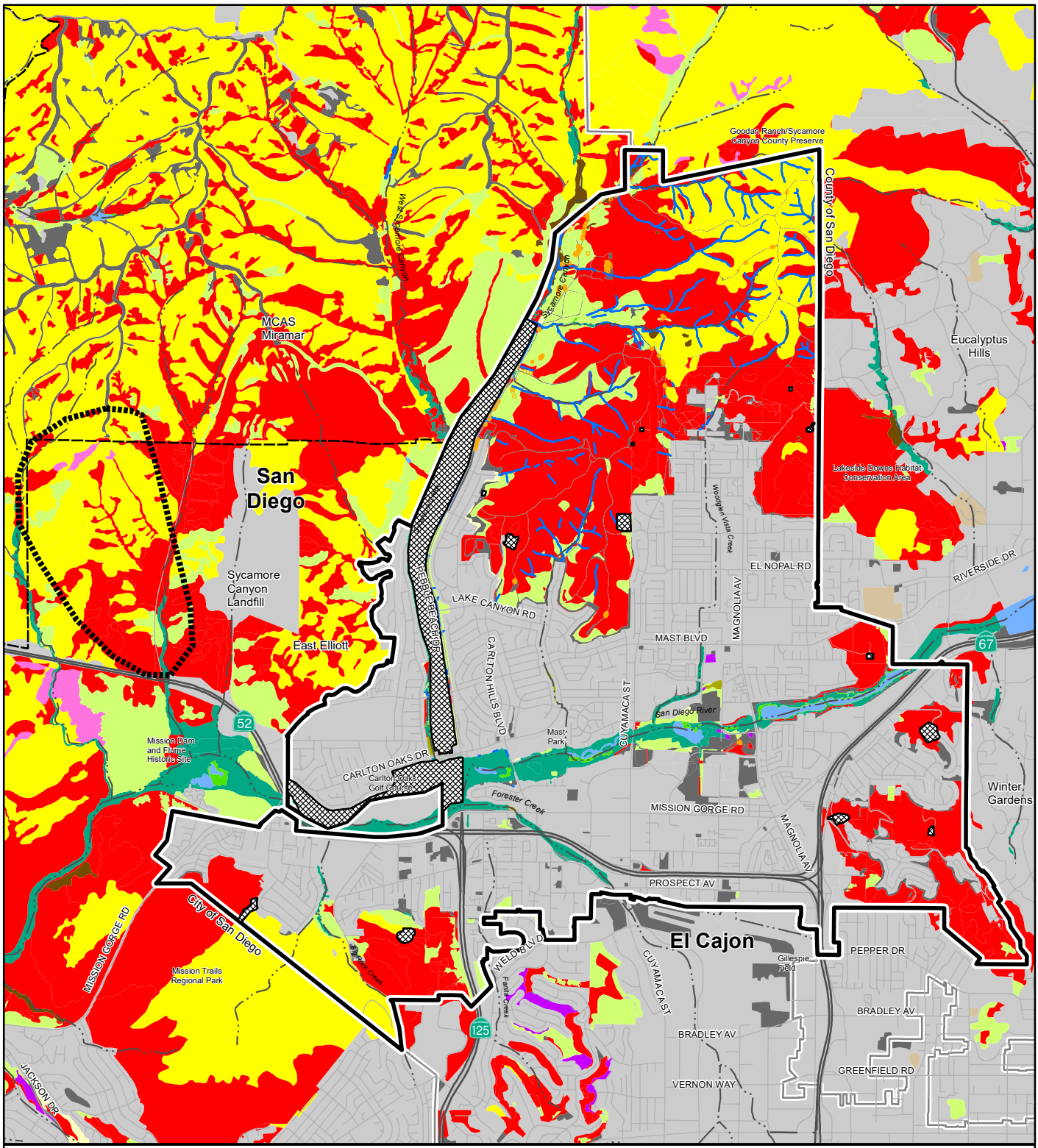
1. **Field Mapping for Proposed Projects**—Vegetation mapping information for pending or past development projects was collected either in hard copy or GIS format.
    - **Fanita Ranch**—A Biological Resources Technical Report for Fanita Ranch was prepared in 2020 that includes a summary of vegetation mapping methods and results (Dudek 2020). Initial mapping for the project was conducted by Dudek in 1996, with some modifications in 1997. Approximately 60 percent of this mapping was field checked in May 2003 and conditions were found to be generally consistent. Modifications consisted primarily of updating previous vegetation classifications to reflect onsite succession since the initial mapping. The site was assessed again in the spring of 2004 to address potential changes in vegetation resulting from the October 2003 Cedar Fire which burned just about 77 percent of the Fanita Ranch site. The exact status of the vegetation communities could not be accurately determined, due to the early successional stage of the recently burned vegetation. Consequently, no updates to the resource mapping were completed during the 2004 field check, with the exception of modifications to jurisdictional waters and wetlands. Dudek revisited the site in 2014 to update the vegetation mapping, and additional vegetation mapping was completed in 2017 to cover offsite road improvement areas associated with the Fanita Ranch project. The vegetation mapping information was provided in GIS format.
    - **Other Development Projects**—Vegetation mapping included in biological resources technical reports for other proposed development projects within the City were reviewed and updates made to the vegetation database as appropriate. These projects included the Tyler Street Residential Development (Blue Consulting Group 2016), Weston (formerly Castlerock) (Natural Resource Consultants 2014), Cheyenne (RECON 2015), Woodside Terraces (PSBS 2004), San Diego River Trail Carlton Oaks Golf Course Segment Project (Helix 2017), and Parkside Development (formerly known as Hillside Meadows) (Scheidt Biological Consultant 2013).
2. **Field Mapping on Habitat Preserves**—Baseline biological surveys have been completed at some existing habitat preserves within the City. Vegetation mapping information was collected either in hard copy or GIS format for the following:
    - **CNLM Rattlesnake Mountain, East Mesa, and Santee Hills HCAs**—Vegetation on the CNLM Rattlesnake Mountain, East Mesa, and Santee Hills HCAs was mapped in 2011 using the Holland and SANDAG vegetation classifications. The data was provided in GIS format.
    - Lantern Crest Preserve (Helix 2010).
    - **Walker Preserve** (Dokken Engineering 2014).
    - Mission Trails Regional Park (San Diego 2017a).
3. **SANDAG Regional Vegetation Mapping of Western San Diego County**—For areas not covered by field mapping for projects and habitat preserves, the SANDAG regional vegetation of western San Diego County completed in 2012 was utilized, if available. This dataset was mapped using the Vegetation Classification Manual for Western San Diego County (SANDAG 2011) and cross-walked to the Holland classification.

4. **MSCP Vegetation Data**—For areas not covered by field mapping or the SANDAG vegetation mapping, the vegetation data from the MSCP Subregional Plan was used to fill in any remaining areas.
5. **Aerial Photo Interpretation Updates**—A reconnaissance-level review of current aerial imagery was completed to update the vegetation and land cover information to reflect current development.

The results of the vegetation database compilation are shown in Figure 2-10, and a summary of the acres of vegetation communities within Santee is included in Table 2-7. Approximately 43.8 percent of the Plan Area remains as natural habitat.

Table 2-7. Vegetation Communities within Plan Area

Vegetation Communities	Santee Jurisdiction, excluding NAP	Offsite Conservation Areas	Total Plan Area	Percent of Remaining Natural Habitat	Percent of Santee Subarea Plan Area
Natural Habitats					
Maritime Succulent Scrub	-	7.3	7.3	0.2%	0.1%
Coastal Sage Scrub	2,647.2	16.9	2,664.1	58.1%	25.4%
Chaparral	802.7	82.0	884.7	19.3%	8.4%
Grassland	569.4	7.7	577.1	12.6%	5.5%
Coast Live Oak Woodland	30.0	-	30.0	0.7%	0.3%
Englemann Oak Woodland	-	57.2	57.2	1.2%	0.5%
Riparian	258.1	-	258.1	5.6%	2.5%
Freshwater Marsh	17.3	-	17.3	0.4%	0.2%
Vernal Pool/basins	19.3	-	19.3	0.4%	0.2%
Disturbed Wetland	8.3	-	8.3	0.2%	0.1%
Freshwater (Open Water)	48.8	-	48.8	1.1%	0.5%
Non-Vegetated Channel or Floodway	10.1	-	10.1	0.2%	0.1%
Natural Habitat Subtotals	**4,411.2**	**171.1**	**4,582.3**	**100.0%**	**43.8%**
Developed / Non-Native					
Eucalyptus Woodland	5.0	-	5.0	-	<0.1%
Non-Native Vegetation	11.9	-	11.9	-	0.1%
Disturbed Habitat	388.8	-	388.8	-	3.7%
Urban/Developed	5,494.4	-	5,494.4	-	52.3%
Developed/Non-Native Subtotals:	**5,900.1**	**-**	**5,900.1**	**-**	**56.2%**
Totals:	**10,311.3**	**171.1**	**10,482.4**	**-**	**100.0%**



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Figure 2-10
Vegetation Communities
Santee MSCP Subarea Plan

2.4.2 Vernal Pools

Vernal pools are seasonal, depression-type wetlands that result from a unique set of physical parameters and support a specific biological assemblage of plant and animal species. Functional vernal pool ecosystems form under specific physical conditions when small, shallow depressions collect precipitation to create a seasonally perched water table (San Diego 2017b). The features occur most often on level ground and are often associated with hillocks known as mima mounds; however, sometimes these wetlands can occur on former landslide areas and are then referred to as "slump" pools. Vernal pools are primarily associated with clay soil series, and the basins are sealed either by subsurface layers of impervious hardpan, or clay that expands to seal the basin when saturated (Greenwood and Abbot 1980).

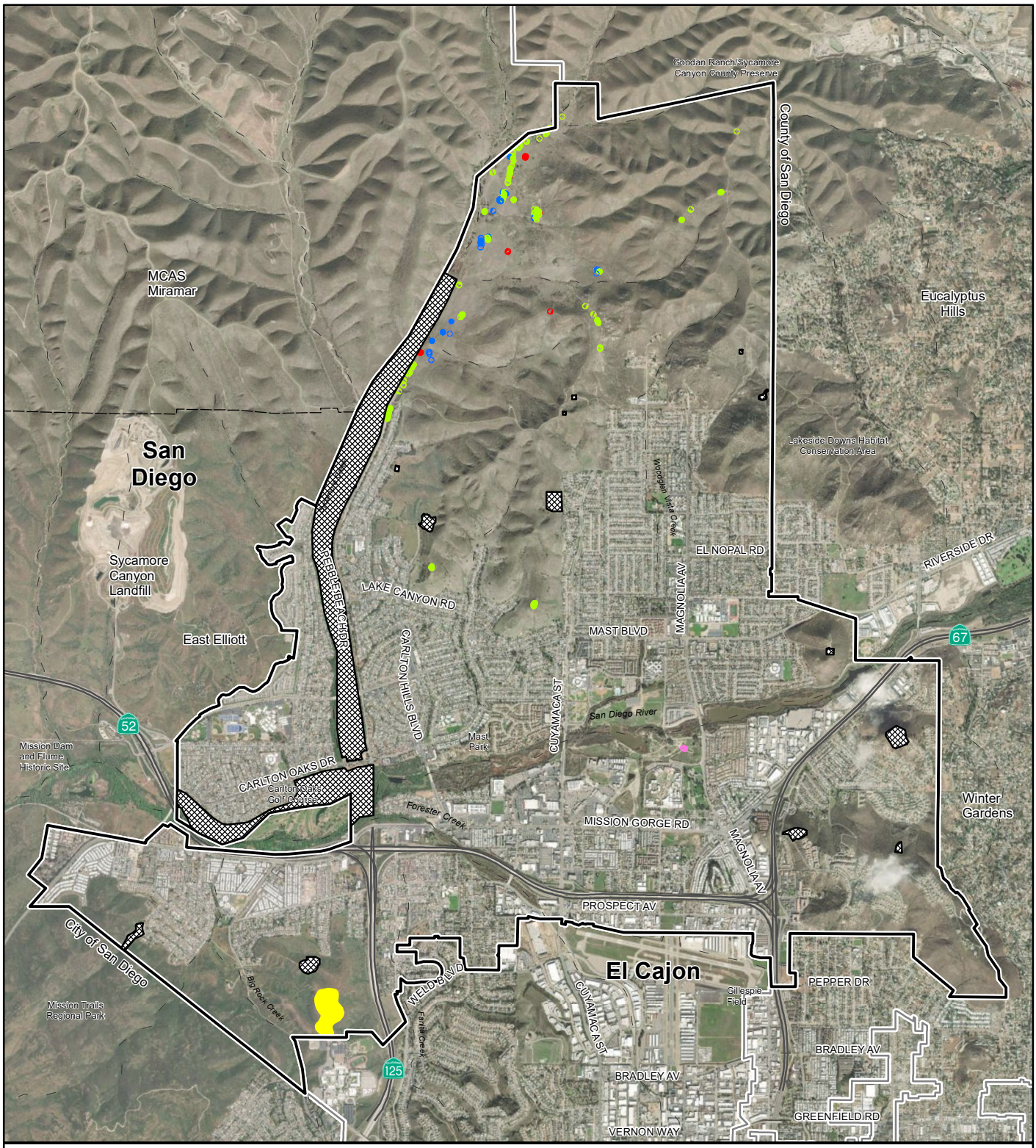
These ecosystems are defined by seasonal hydrologic extremes: desiccated pool basins during the dry months followed by variable lengths of saturation and inundation during the rainy season. In southern California, the interannual variation in precipitation augments the inconsistent moisture conditions. This drastic change between vegetated wetland and dry basin defines a vernal pool and separates them from other wetland ecosystems (Zedler 1987).

The Subarea Plan considers a seasonally flooded depression to be a vernal pool if it includes one or more of the vernal pool indicator species, based on the species identified by the U.S. Army Corps of Engineers (USACE 1997). Depressions which are man-made, such as tire tracks or road ruts, may still be considered vernal pools if they contain at least one indicator plant species. Road ruts and other seasonal depressions which are not vernal pools may contain wildlife associated with vernal pools, such as San Diego fairy shrimp or western spadefoot, but will not contain vernal pool plant indicator species. The Subarea Plan also applies vernal pool policies to these man-made road ruts and other seasonal depressions if they contain one or more of the covered wildlife species.

For convenience of reference, groups of vernal pools are sometimes referred to as vernal pool complexes that may include two to several hundred individual vernal pools (Keeler-Wolf et al. 1998). Vernal pool complexes are defined as a series of similarly situated pools that have a similar influence on the physical, chemical, and biological integrity of downstream waters and are similarly situated on the landscape (USACE/EPA 2015). They may have hydrologic (surface or subsurface) or ecological connection between pools, from processes including overflow, animal vectors, or wind dispersal. They often have soils, topography, and landscape positions that are similar. The uses of complexes are a helpful tool for planning and management, but it is recognized that a complex can be subjective.

While vernal pools have not been comprehensively mapped across the City, known vernal pools and potential vernal pool complexes within the City are shown in Figure 2-11 and summarized in Table 2-8, including:

- *Fanita Ranch*—Focused surveys within the Fanita Ranch property were completed during the 2003/2004, 2004/2005, and 2015/2016 wet survey seasons to identify vernal pools and sensitive species associated with vernal pools (Dudek 2020).
- *County Animal Shelter Project Site*—A 0.02-acre vernal pool was mapped on the County Animal Shelter Project site located on the west side of North Magnolia Ave and just north of the Las Colinas Detention and Reentry Facility.



Legend

- Subarea Plan Area
- Not a Part
- Vernal Pool Complex-Grossmont College
- Vernal Pool-County Animal Shelter Site

Fanita Ranch Pools

- Natural Vernal Pools
- Man-made Vernal Pools with Indicator Plant Species
- Man-made Pools with Covered Wildlife Species

N

0 4,450

Feet

Sources: Dudek 2017, Natural Resources Consultants 2014

Basemap Source: ESRI World Imagery 2024

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Figure 2-11
Known Vernal Pools and Complexes within Santee
Santee MSCP Subarea Plan

- *Potential Complex near Grossmont College*—A potential vernal pool complex is known to exist on private land on the plateau north of Grossmont College based on aerial photo interpretation. Focused surveys to determine the number and type of vernal pools have not been completed at this location.

Additional vernal pool and vernal pool complexes may be identified within the City as part of field surveys completed for future development projects.

Table 2-8. Vernal Pool Features within the Plan Area

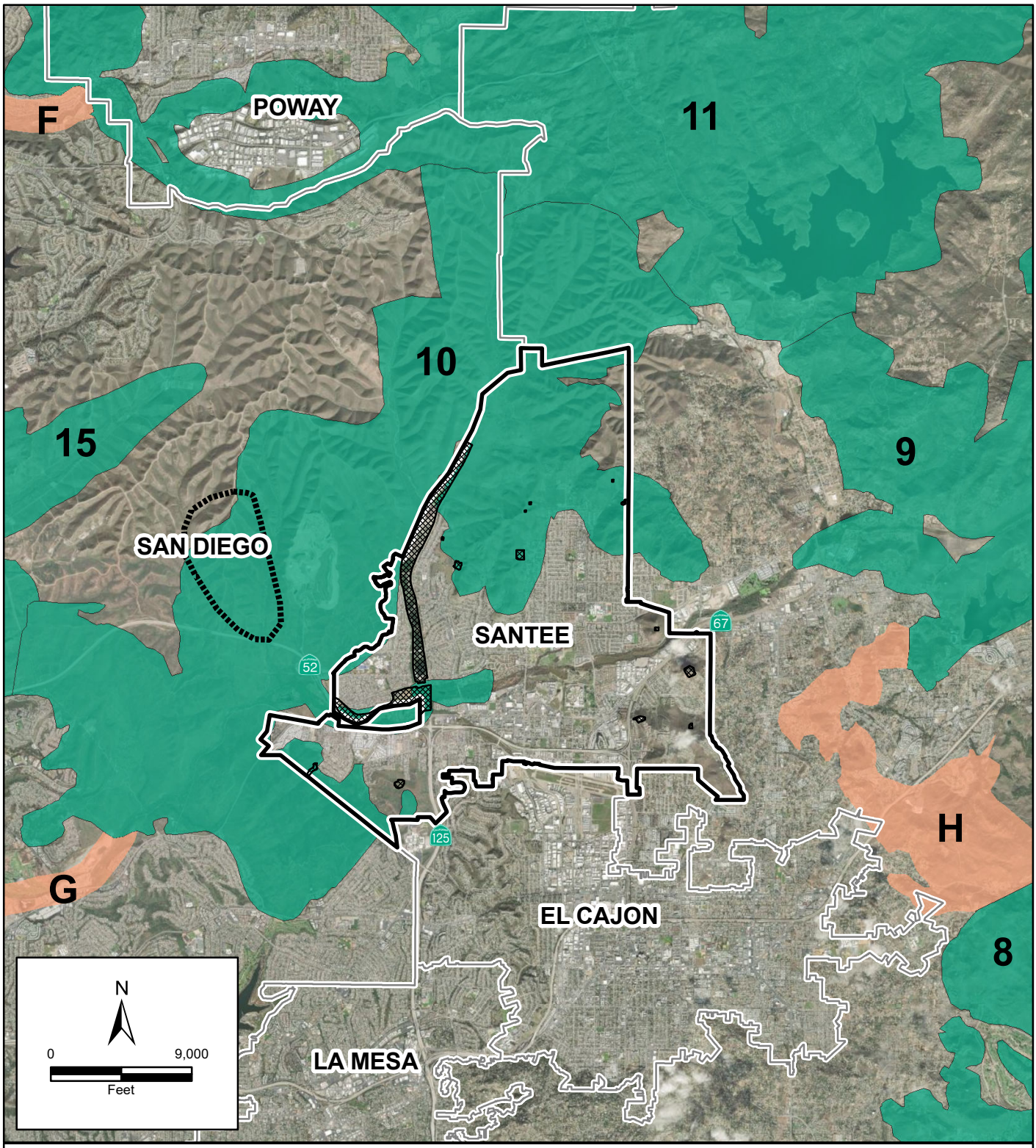
Known and Potential Vernal Pool Features	Number of Pools	Total Square Feet	Total Acres
Fanita Ranch	102	36,566.5	0.840
County Animal Shelter Project Site	1	871.2	0.020
Potential Complex near Grossmont College	Unknown	-	17.7

2.5 Habitat Connectivity

Connectivity refers to the degree to which the landscape facilitates or impedes movement of genes, individuals, propagules, or populations among resource patches (SDMMP 2017). Maintaining connectivity between natural areas is widely regarded as essential to maintaining functional landscapes and evolutionary processes. Connectivity is also viewed as essential to promoting dispersal among habitat patches; maintaining gene flow; facilitating local adaptation; and promoting resilience to many threats, including fire, floods, disease, and climate change.

The following summarizes habitat connectivity studies and mapping in the vicinity of the Subarea Plan Area:

- *MSCP Subregional Plan Core Biological Resource Areas and Linkages (San Diego 1998)*. As part of the development of the MSCP Subregional Plan, biological analyses were completed to define regional core biological resource areas (larger blocks of habitat with relatively high biological value), and linkages for wildlife (areas of natural habitat that connect biological core areas so that species can disperse and move among biological cores). The habitat core and linkage maps were prepared as analytical tools to assist with assessing preserve design criteria and levels of species conservation as part of the MSCP Plan. Figure 2-12 shows the MSCP core biological resource areas and linkages within the Subarea Plan Area and vicinity.
- *SDMMP Management Strategic Plan (MSP), Loss of Connectivity Chapter (SDMMP 2017)*. In 2011, SDMMP completed an updated delineation of core and linkage areas for the San Diego region as part of the Connectivity Monitoring Strategic Plan (SDMMP 2011). Figure 2-13 shows the core and linkages as delineated by SDMMP within the Subarea Plan Area and vicinity. Santee is part of the larger Gooden Ranch/Sycamore Canyon core area (Core ID 'N'). This core area includes the Gooden Ranch/Sycamore Canyon County Preserve to the north, the eastern half of MCAS Miramar, and links with the Mission Trails core area (Core ID 'R'). This core area is a relatively solid block of habitat that is only four percent urbanized.



Legend

- Subarea Plan Area
- Quino Checkerspot Butterfly Offsite Conservation Area
- Not a Part
- Biological Core Areas
- Biological Linkages

Core Resource Areas

8 McGinty Mountain/Sequan Peak - Dehesa
9 Lake Jennings/Wildcat Canyon-El Cajon Mountain
10 Mission Trails/Kearny Mesa/East Elliott/Santee
11 Central Poway/SanVicente Reservoir/North Poway
15 Vernal Pools, Kearny Mesa

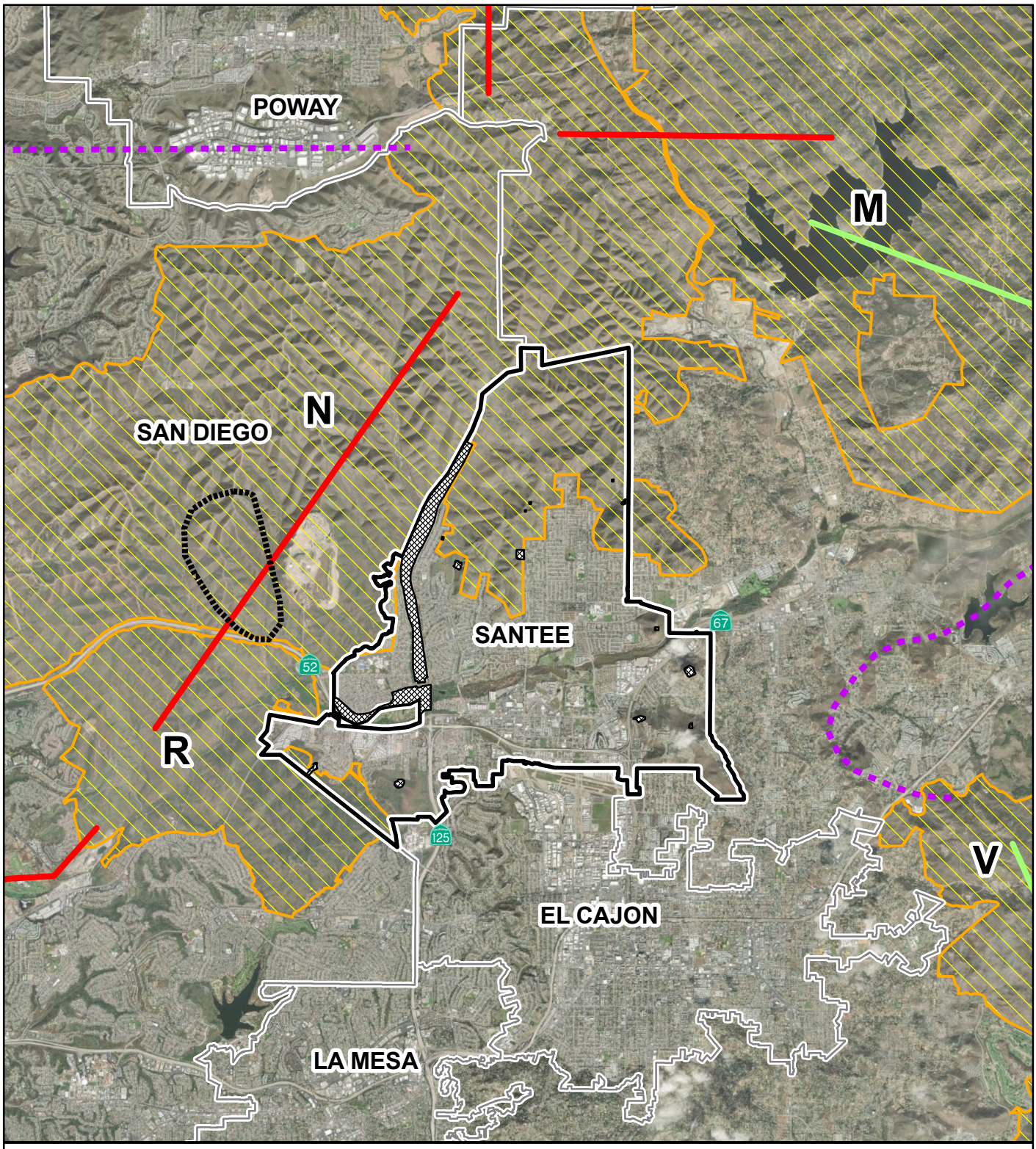
Linkages between Core Resource Areas

F Los Penasquitos Creek west of Poway
G San Diego River west of Mission Trails
H Interstate 8 at Lakeside

Source: City of San Diego 1998
Basemap Source: ESRI World Imagery 2024

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-12 MSCP BCLA.mxd Date: 7/14/2025 34153

Figure 2-12
MSCP Core Biological Resource Areas and Linkages
Santee MSCP Subarea Plan



Legend

- Subarea Plan Area
- Quino Checkerspot Butterfly Offsite Conservation Area
- Not a Part
- Cores

Link Type

- Between Cores
- Within Cores
- Avian Linkages

MSP Core Habitat Areas
R = Mission Trails
N = Goodan Ranch / Sycamore Canyon
M = San Vicente / Iron Mountain
V = Crestridge – Hollenbeck - McGinty

N

0 9,000
Feet

Source: SDMMP 2017. Management Strategic Plan (MSP)

Basemap Source: ESRI World Imagery 2024

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-13 SDMMP MSP Cores and Linkages.mxd Date: 7/14/2025 34153

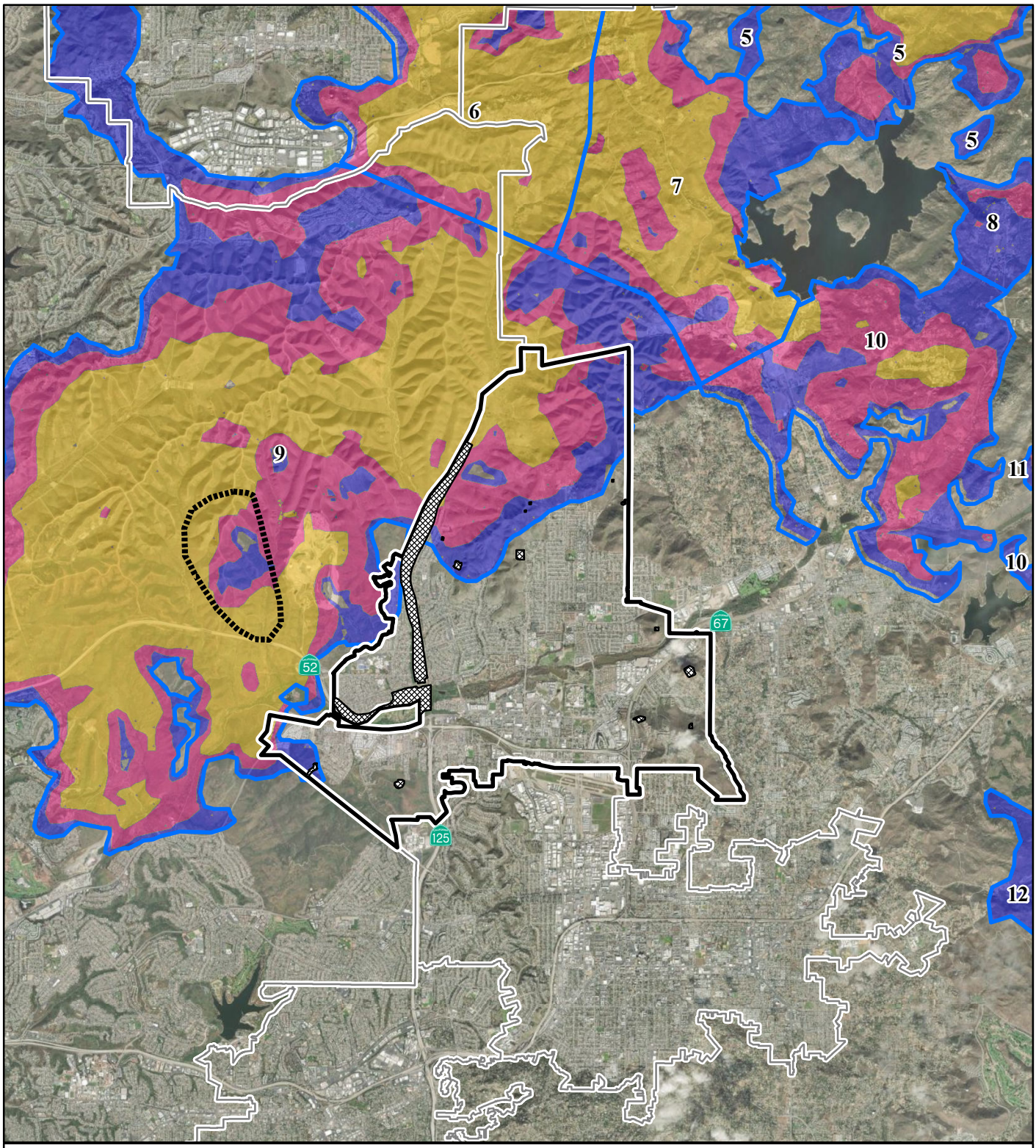
Figure 2-13
SDMMP MSP Cores and Linkages
Santee MSCP Subarea Plan

- Comprehensive Multi-species Connectivity Assessment and Planning for the Highway 67 Region of San Diego County, California (Jennings and Zeller 2017). The Institute for Ecological Monitoring and Management at San Diego State University (SDSU) conducted a multifaceted research project to examine connectivity across SR-67 that included a multi-species comprehensive connectivity assessment of a broader study area around the SR-67 corridor. Figure 2-14 shows the results of the multi-species connectivity movement surface (which was organized into connectivity value ranges (isopleths) from high to low) and boundaries of corridor segments that subdivided the study area of this regional analysis into blocks of similar connectivity conditions. Santee is part of the larger Corridor Segment 9 that is described in the report as:

  > … the largest corridor and connects Sycamore Canyon and Goodan Ranch Preserves in the north with Mission Trails Regional Park in the south. Marine Corps Air Station Miramar is a major land owner in this corridor. Corridor 9 contains diffuse flow in the north, but transitions to highly channelized flow in the south. It is mostly comprised of the top two corridor isopleths (top 1-20 percent of connectivity values). Corridor 9 has one important wildlife road crossing location on Poway Road, one on Scripps-Poway Parkway, and two on SR-52. Land cover types with good connectivity across this corridor include chaparral, coastal sage scrub, and grassland.

- *San Diego River*. The San Diego River extends east to west through the City and provides a corridor for wildlife movement and connectivity through the urbanized portion of the City of Santee (Figure 2-15). A number of conservation and planning entities are working to protect, enhance, and manage the San Diego River and adjoining habitat for wildlife protection and recreational use (hiking and biking trails). These groups include the San Diego River Conservancy, San Diego River Park Foundation, San Diego River Coalition, San Diego River Watershed Workgroup, and Lakeside River Park Conservancy. Additionally, the City of Santee has adopted ordinances and protection mechanisms (e.g., San Diego River floodplain ordinance, floodways ordinance) with the objective of protecting the river habitat.

- *California Gnatcatcher Stepping Stone Connectivity.* Coastal California gnatcatchers likely prefer to disperse through coastal sage scrub, but will use riparian scrub, riparian woodland, and chaparral as well (SDMMP 2011, Appendix 2). Disjunct patches of sage scrub (stepping-stone corridors) do appear to be used (Bailey and Mock 1998) if within short dispersal distances (1-2 miles). Figure 2-15 highlights areas of remaining patches of coastal sage scrub that are assumed to function as a stepping stone corridor connecting Rattlesnake Mountain to coastal California gnatcatcher habitat north of Magnolia Avenue and on the Fanita Ranch property. Coastal California gnatcatcher habitat on the Lakeside Linkage County Preserve is within two miles of Rattlesnake Mountain and could provide dispersal opportunities to the southeast of the Subarea Plan Area.



Legend

- Subarea Plan Area
- Quino Checkerspot Butterfly Offsite Conservation Area
- Not a Part
- Corridor Segment Boundaries (segments labeled)

Corridor isopleths

- Top 10%
- Top 10-20%
- Top 20-30%
- Land Facet

N

0 9,000

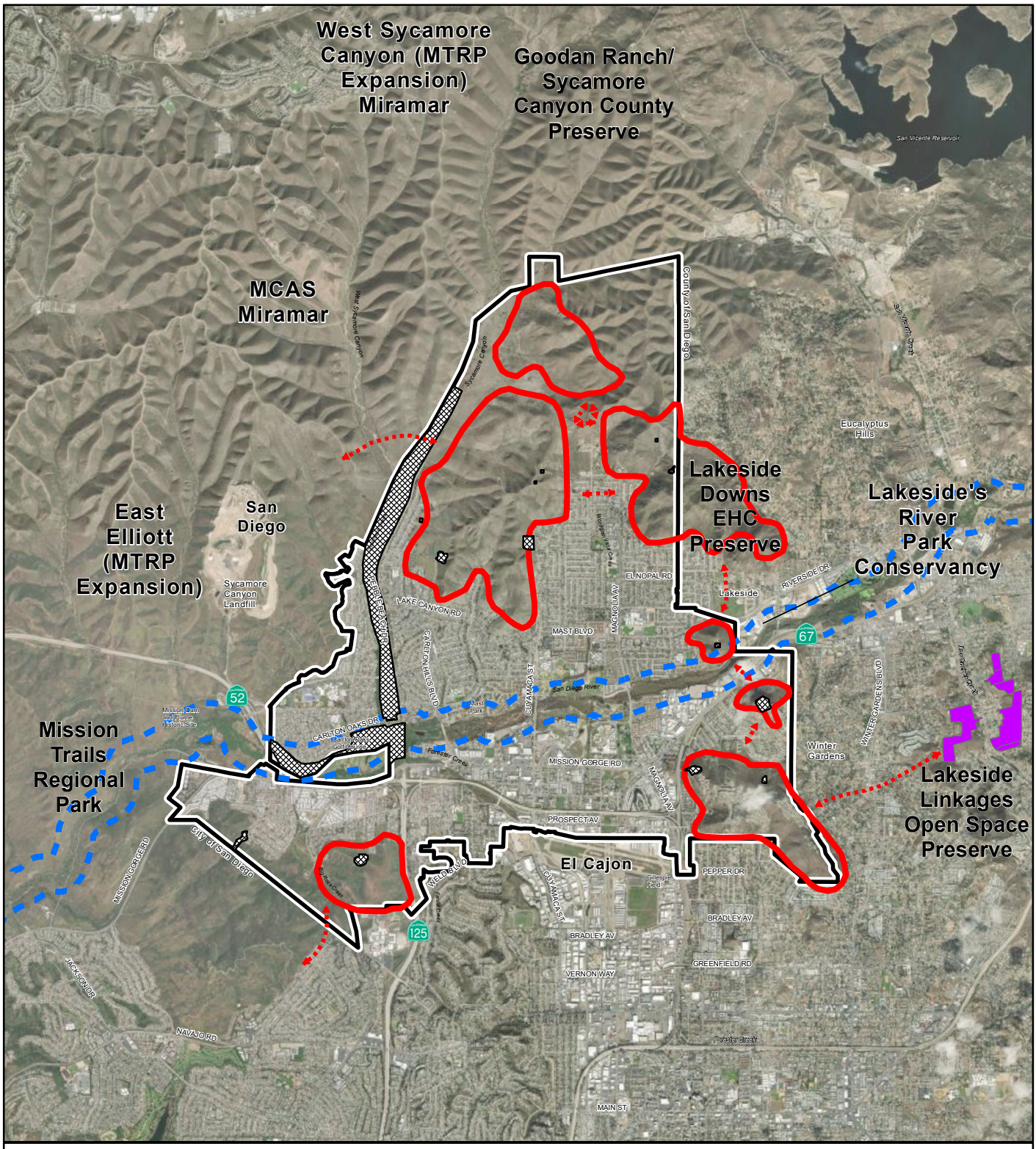
Feet

Source: Jennings and Zeller 2017

Basemap Source: ESRI World Imagery 2024

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-14 Multi-Species Connectivity Analysis.mxd Date: 7/14/2025 34153

Figure 2-14
Multi-Species Connectivity Analysis: Corridor Isopleths and Segments
Santee MSCP Subarea Plan



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-15 SD River and CAGN Stepping Stones.mxd Date: 2/3/2025 34153

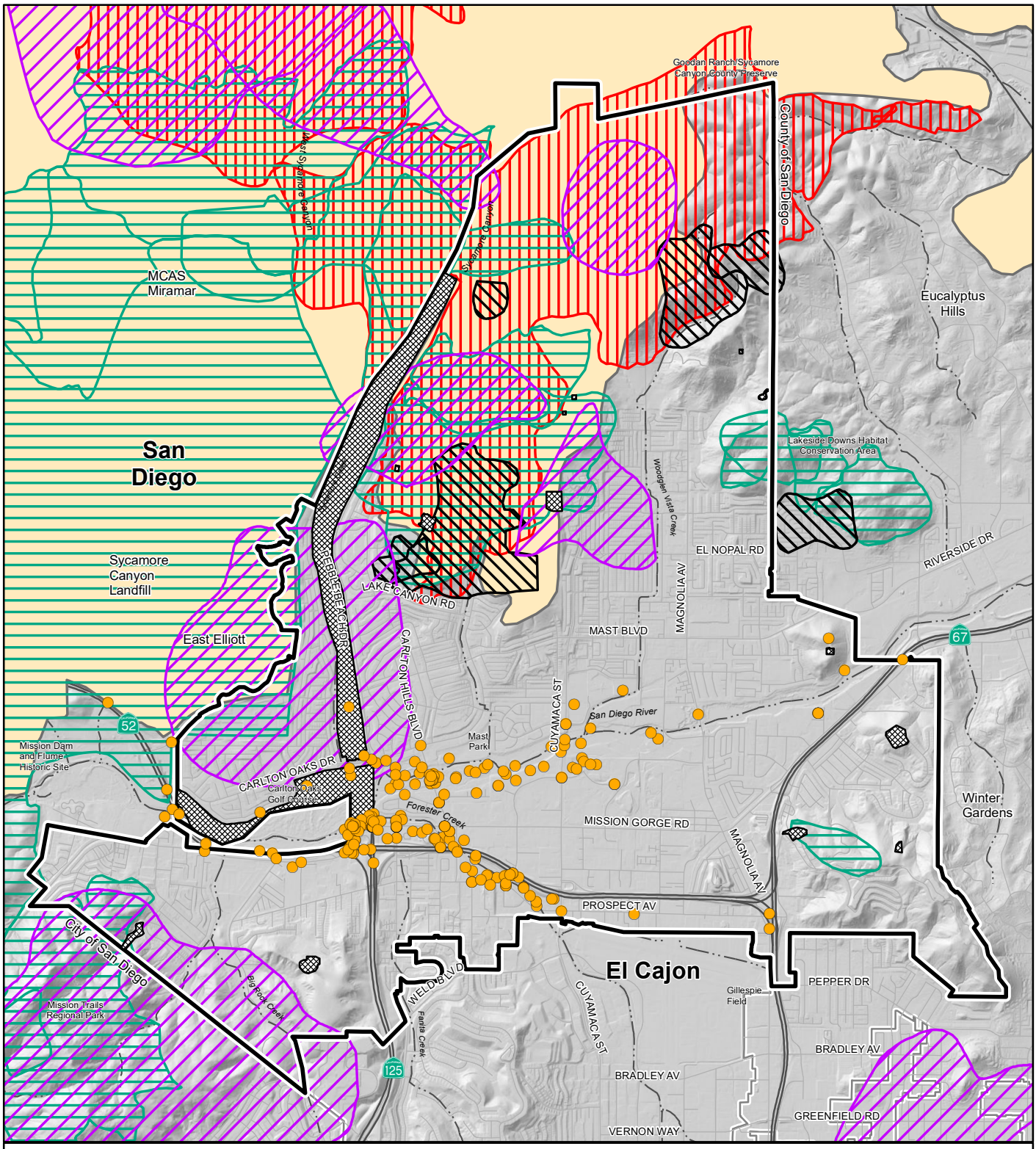
Figure 2-15
San Diego River and Coastal California Gnatcatcher Stepping Stone Corridors
Santee MSCP Subarea Plan

2.6 Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources, amongst others. The fire history represented herein utilizes the information from the CAL FIRE fire perimeters GIS database (CAL FIRE 2022). CAL FIRE (including contract counties), USDA Forest Service Region 5, USDI Bureau of Land Management and National Park Service, and other agencies jointly maintain a comprehensive fire perimeter GIS layer for public and private lands throughout California. The data covers fires back to 1878 and 10 acres and greater. Within three miles of the City of Santee, there have been 64 fires recorded by CAL FIRE since 1910. A total of 22 fires, ranging from 25 acres (un-named 1974 fire) to 280,278 acres (Cedar Fire) are noted to have burned within the City dating back to 1910. Recorded fires within the City are listed in Table 2-9. The most notable fire (Cedar fire) occurred during October and November 2003, and burned large areas of central San Diego County, including large portions of the northern areas of the City. The fire's rapid growth was driven by the Santa Ana winds, causing the fire to spread at a rate of 3,600 acres per hour. In addition to the CAL FIRE mapping of larger fires, the City has maintained a database of more recent, smaller fires from 2020 to March 2023. These more recent fires have been concentrated within the river corridors. Figure 2-16 presents a graphical view of the City recorded fire history.

Based on the City vicinity fire history data, fire return intervals range between one and 25 years. This indicates that there is significant wildfire potential in the region, which includes the potential for the City to be subject to occasional wildfires coming from the large expanses of natural vegetation to the north and east. Figure 2-17 presents a graphical representation of the fire frequency in the City and surrounding areas.

Because California is expected to experience increased temperatures and variable precipitation, there will likely be more frequent and intense wildfires and longer fire seasons (Santee 2018).

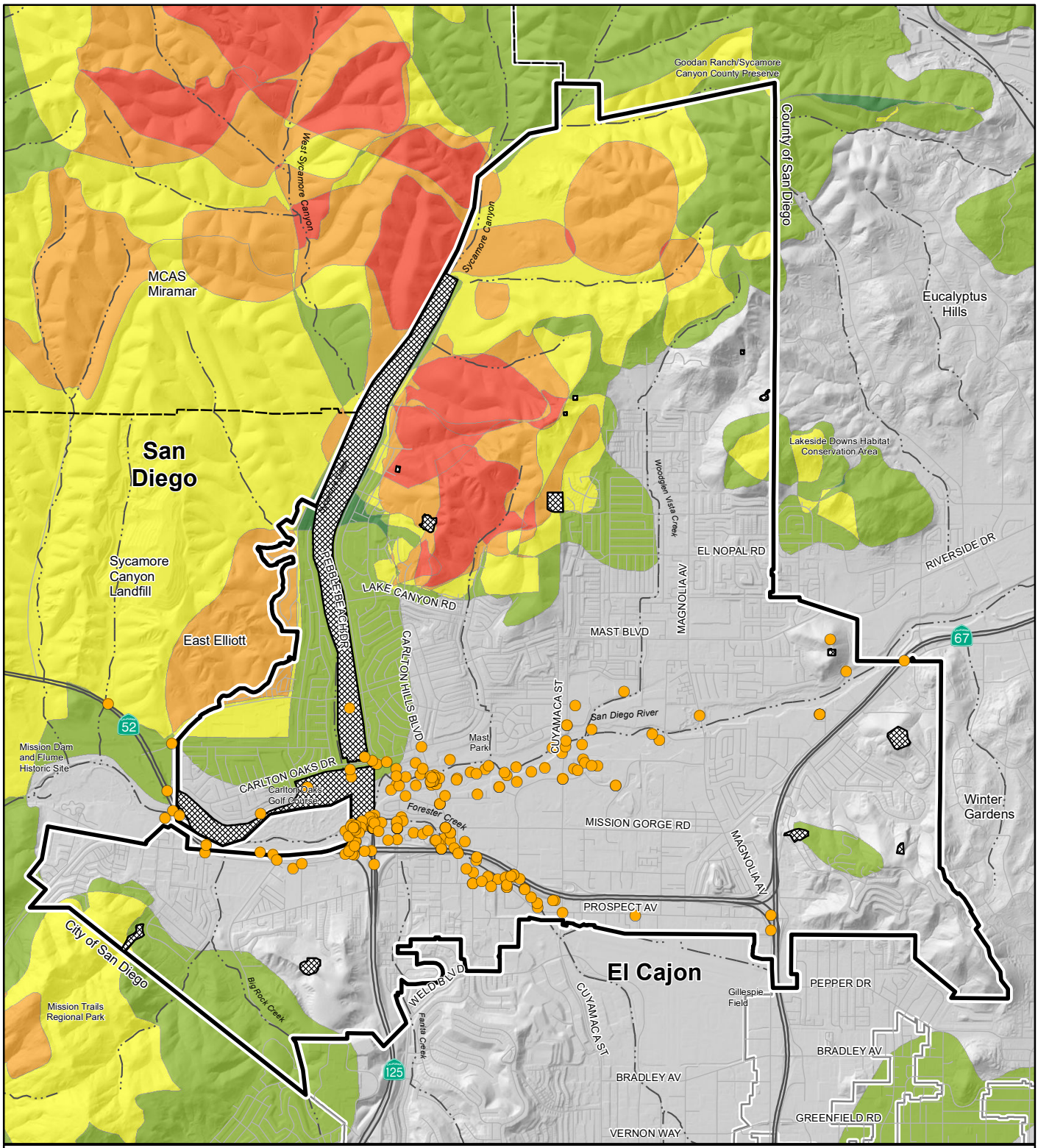


Source: Historical Fires - CalFire 2022, Recent Fires - City of Santee 2023

Basemap Source: SANDAG Shaded Relief 2017

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-16 Fire History.mxd Date: 2/3/2025 34153

Figure 2-16
Fire History
Santee MSCP Subarea Plan



Source: Historical Fires - CalFire 2022, Recent Fires - City of Santee 2023

Basemap Source: SANDAG Shaded Relief 2017

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 2-17 Fire Frequency.mxd Date: 2/3/2025 34153

Figure 2-17
Fire Frequency
Santee MSCP Subarea Plan

Table 2-9. Fire History within City of Santee

Year of Fire	Fire Name	Total Area Burned (acres)	Total Area Burned within Santee (acres)
1910	Un-named	1,315	18
1941	Un-named	406	374
1942	Un-named	1,221	896
1943	Un-named	292	292
1944	Un-named	6,174	366
1950	Quarry	281	281
1966	Carlton Hills	329	329
1974	Un-named	155	25
1974	Un-named	68	60
1974	Un-named	25	155
1975	Un-named	25	25
1980	Assist #69	745	11
1981	Assist #59	7,310	168
1981	Assist #72	696	696
1981	Outside Origin #4	56	54
1984	Assist #21	62	62
1984	Outside Origin #1	122	62
1987	Assist #38	380	119
1988	Assist #78	935	78
1989	Assist #59/Magnolia	310	310
1994	Rocoso	3,218	2,222
2003	Cedar	75,637	2,244
Source: CALFIRE 2022			

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Chapter 3
Covered Species

This chapter describes the process used to develop the list of Covered Species for the Santee Subarea Plan and the associated take permits and includes profiles of the 20 species included as Covered Species for the Subarea Plan. These profiles summarize the key elements of each Covered Species' life history (e.g., known occurrences, suitable habitat and critical habitat) that are important for habitat conservation planning, monitoring, and adaptive management of these species in the Plan Area.

3.1 Determination of Covered Species List

The following criteria were used to develop the list of Covered Species for the Subarea Plan:

3.1.1 Occurrence and/or Suitable Habitat

This criterion specifies that the species is known to occur or has considerable potential to occur in the Plan Area (Plan Area is most of the City of Santee jurisdiction and two Offsite Conservation Areas). Occurrence data are based on credible evidence, or the species may not be currently known in the Plan Area but is expected to occur in the Plan Area during the permit term (e.g., through lack of detection of occupation in the Plan Area in the past, range expansion, recolonization, or reintroduction to historic range). Sources used for identifying occurrence data include the California Natural Diversity Database (CNDDB), the USFWS Carlsbad office species database, and project specific field surveys. If a species has predicted habitat and/or is known to occur within the Plan Area based on professional biological knowledge, then it also meets this criterion.

3.1.1.1 Species Status

This criterion is intended to identify any species that are federally or state-listed or have a high potential to become listed during the permit term. Potential for listing during the permit term was based on current listing status, consultation with species experts and Wildlife Agency staff, consideration of population trends and threats, and best professional judgment of the biologists working on the Subarea Plan. For non-listed plant species, the California Rare Plant Rank (CRPR) and threat rank were also used to assist in determining status and potential for being listed.

3.1.1.2 Impacts of Covered Activities

This criterion is based on the expectation that implementation of proposed Covered Activities will likely result in take of the species, including take of individuals or modification of habitats (including designated Critical Habitat). Impacts would result from direct removal of habitats associated with a Covered Activity, or from indirect effects such as edge effects, fragmentation, exotic species introduction, noise, and lighting.

3.1.1.3 Data Sufficiency

Species coverage determinations are based on the best available data. There must be sufficient data on the species' life history, habitat requirements, and potential for occurrence in the Plan Area to adequately evaluate impacts on the Covered Species and to develop conservation actions to fully avoid, minimize, and mitigate these impacts. Under this criterion, the amount, type, and quality of species data was evaluated to determine if there was sufficient information to adequately evaluate impacts and conservation.

3.1.1.4 MSCP Covered Species

Because this is a Subarea Plan to the MSCP Subregional Plan, the conservation and management of the Covered Species in Santee will be implemented in coordination with the conservation and management for the same Covered Species in other subareas of the MSCP subregion. The Santee Subarea Plan is adjacent to both the City of San Diego MSCP Subarea Plan and the County of San Diego South County MSCP Subarea Plan. Species covered by these and other MSCP Subarea Plans would benefit from management of land conserved associated with the Santee Subarea Plan implementation. Therefore, under this criterion, the conservation goals and objectives for these species are intended to contribute to the overall conservation achieved across the MSCP Subregion. For species that are not covered by the MSCP Subregional Plans, the goals and objectives are focused on achieving conservation independent of the other MSCP Subarea Plans.

3.2 Covered Species List

Using the criteria discussed in Section 3.1, *Determination of Covered Species List*, the Subarea Plan list of Covered Species is provided in Table 3-1.

3.3 Species Profile Data Sources and Methods

Sections 3.4 through 3.7 consist of species profiles for each of the 20 Covered Species listed in Table 3-1. These profiles summarize the key elements of each Covered Species' life history that are important for habitat conservation planning and protection, management/monitoring, and adaptive management. These relevant details include a summary of what is understood about their known occurrences, suitable habitats, important ecological relationships, and USFWS-designated Critical Habitat in the Plan Area. The following sections describe the data sources and methods used to collect and/or derive information for known occurrences, species habitat suitability models and maps, and Critical Habitat. The occurrence information was used in combination with predicted species models to evaluate and refine the Covered Species list, characterize potential impacts and take, and evaluate the Conservation Strategy to determine if the Subarea Plan conservation actions will result in protection of known occupied areas, provide effective conservation measures for the Covered Species, and meet take issuance criteria.

Table 3-1. Subarea Plan Covered Species

Common Name [a]	Scientific Name [a]	Status [b] Federal/State/CRPR
Plants		
San Diego ambrosia	*Ambrosia pumila*	FE/-/1B.1
San Diego barrel cactus	*Ferocactus viridescens*	-/-/2B.1
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	FE/SE/1B.1
San Diego goldenstar	*Bloomeria clevelandii*	-/-/1B.1
San Diego mesa mint	*Pogogyne abramsii*	FE/SE/1B.1
San Diego thornmint	*Acanthomintha ilicifolia*	FT/SE/1B.1
Variegated dudleya	*Dudleya variegata*	-/-/1B.2
Willowy monardella	*Monardella viminea*	FE/SE/1B.1
Invertebrates		
Crotch's bumble bee	*Bombus crotchii*	-/CSE
Hermes copper butterfly	*Lycaena hermes*	FT/-
Quino checkerspot butterfly	*Euphydryas editha quino*	FE/-
Riverside fairy shrimp	*Streptocephalus woottoni*	FE/-
San Diego fairy shrimp	*Branchinecta sandiegonensis*	FE/-
Reptiles and Amphibians		
Belding's orange-throated whiptail	*Aspidoscelis hyperythra beldingi*	-/WL
Blainville's horned lizard	*Phrynosoma blainvillii*	-/SSC
Western spadefoot	*Spea hammondii*	-/SSC
Birds		
Coastal cactus wren	*Campylorhynchus brunneicapillus couesi*	-/SSC
Coastal California gnatcatcher	*Polioptila californica californica*	FT/SSC
Least Bell's vireo	*Vireo bellii pusillus*	FE/SE
Western burrowing owl	*Athene cunicularia hypugaea*	-/CSE

[a] Species taxonomy and common names are based on the following sources:
Plants: *The Jepson Manual, 2nd edition* (Baldwin et al. 2012).
Invertebrates: California Department of Fish and Wildlife (CDFW) *Special Animals List* July 2017.
Amphibian and reptiles: *Society for the Study of Amphibians and Reptiles (SSAR) North American Species Names Database* (accessed September 1, 2017).
Birds: *USFWS Environmental Conservation Online System* (ECOS) (Accessed September 1, 2017). Cactus wren nomenclature follows Checklist of North American Birds (Chesser et al. 2023).

[b] Status Explanation:
Federal – FE: Federally Endangered, FT: Federally Threatened.
State – SE: State Endangered, CSE: Candidate for State Endangered, SSC: CDFW Species Special of Concern, WL: CDFW Watch List.
California Rare Plant Ranking (CRPR) – 1B.1: CRPR for Plants Rare, Threatened, or Endangered in California and Elsewhere, and Seriously threatened in California, 1B.2: CRPR for Plants Rare, Threatened, or Endangered in California and Elsewhere, and moderately threatened in California 2B.1: CRPR for Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere, seriously threatened in California. Applicable status as reported in CDFW Special Animals List July 2017 and CDFW Special Vascular Plants, Bryophytes, and Lichens List July 2017.

3.3.1 Known Occurrences

Various occurrence data sources were used to provide documentation of known locations for individual Covered Species. The City determined it was infeasible to conduct comprehensive surveys over the entire Plan Area, including within the Covered Activity footprints and protected lands. However, the occurrence information utilized herein does provide the locations of confirmed sightings of a Covered species in specific areas where surveys were possible. Occurrence data sources were as follows.

- **California Natural Diversity Database (CNDDB):** A database maintained by CDFW that contains confirmed locations for both plant and wildlife species. Data was accessed from the CNDDB as of March 2023.
- **U.S. Fish and Wildlife Service (USFWS):** A USFWS Carlsbad Fish and Wildlife Office database containing confirmed species points for federally listed plant and wildlife species. Data was obtained from USFWS as of March 2023.
- **Dudek Field Surveys for Fanita Ranch and Hermes Offsite Conservation Area**—Dudek completed comprehensively field surveys as part of the Fanita Ranch project development environmental review and has been summarized in the Biological Technical Report (Dudek 2020). Since the field surveys for this project area are the most recent, this information was used exclusively for current records of known occurrences on Fanita Ranch. Dudek also completed field surveys of the Hermes copper butterfly offsite conservation site in 2022 to confirm the presence of the species.
- **Other Project or Preserve Specific Data.** Additional occurrence information pertinent to the Santee Subarea Plan was collected from other proposed development projects and/or information collected through monitoring activities on existing Preserves. This information was input to the GIS database and the different sources are listed below.
    - Center for Natural Lands Management (CNLM) Annual Reports—As part of CNLM's ongoing management of the Rattlesnake Mountain, Santee Hills, and East Mesa HCAs, CNLM conducts sensitive species surveys of these properties and maintains a GIS database of species occurrence information. Covered Species added to the Subarea Plan occurrence database from this source included San Diego barrel cactus, San Diego goldenstar, Belding's orange-throated whiptail, Blainville's horned lizard, coastal California gnatcatcher, and least Bell's vireo.
    - Tyler Street Biological Resources Report—Field surveys for the proposed Tyler Street Residential project were completed in 2013 and 2016 (Blue Consulting Group 2016). Covered Species added to the Subarea Plan occurrence database from this source included coastal California gnatcatcher and coastal cactus wren.
    - Cutri Development Biological Resources Technical Report—Field surveys for the Cutri Residential project were completed in 2014 (Cummings and Associates 2015). Species added to the Subarea Plan occurrence database from this source included coastal California gnatcatcher and Belding's orange-throated whiptail.

- Woodside Terraces Biological Resources Technical Report—Field surveys for the Woodside Terraces Residential project were completed in 2014 (PSBS 2014). Covered Species added to the Subarea Plan occurrence database from this source included coastal California gnatcatcher.
- Cheyenne Property Biological Resources Technical Reports—Multiple field surveys were completed on the Cheyenne property from 2004 to 2015 in association with a proposed development of this property. The results were summarized in an updated biological report and impact analysis (RECON 2015). Species added to the occurrence database include coastal California gnatcatcher and San Diego barrel cactus.
- Lantern Crest Senior Housing Phases I and II Biological Assessment—Field surveys for the Lantern Crest project were completed in 2008 (PSBS 2008). Covered Species added to the Subarea Plan occurrence database from this source included coastal California gnatcatcher.
- Lantern Crest II Biological Resources Technical Report—Field surveys for the proposed Lantern Crest II project were completed in 2017 (Scheidt Biological Consultant 2017). Covered Species added to the Subarea Plan occurrence database from this source included coastal California gnatcatcher.
- Parkside (formerly Hillside Meadows) Biological Resources Survey Report—Field surveys for the proposed Parkside residential developed project were completed in 2013 (Scheidt Biological Consultant 2013). Covered Species added to the Subarea Plan occurrence database from this source included coastal California gnatcatcher, Belding's orange-throated whiptail, and San Diego barrel cactus.
- Railroad Avenue Ambrosia Translocation Plan—Translocation of San Diego ambrosia in 2016 to the Railroad Avenue Ambrosia Conservation Preserve (Scheidt Biological Consultant 2016). Covered Species added to the Subarea Plan occurrence database from this source included San Diego ambrosia with an occupied area of 3,222 square feet and roughly estimated having 10,000 stems.
- Riverview Parkway Project Biological Resources Update Report—Field surveys for the proposed project were completed in 2021 (REC Consultants 2021). Covered Species added to the Subarea Plan occurrence database from this source included western burrowing owl (observed on one visit and not observed in subsequent field visits) and Belding's orange-throated whiptail.

An occurrence is represented as a polygon with information regarding the number of individuals (or count) recorded at that location. If the number of individuals was not recorded, the occurrence was assumed to represent a single individual. In several instances, there was duplication, overlap, and redundancy of occurrence information between the different data sources. To complete the assessment of the Santee Subarea Plan impacts and conservation analysis, the occurrence information was filtered to remove overlap. A systematic approach was taken to use the most current and detailed occurrences. If there was overlap, the occurrences that were older and/or more general were ignored until no overlap existed. Table 3-2 summarizes known occurrences records by data source collected within the Plan Area. A more detailed breakdown and description of known occurrences for each species is included in Chapter 6, *Conservation Analysis*.

Table 3-2. Known Occurrences of Covered Species in Plan Area

	Sources:	CNDDB		USFWS		Dudek [c]		Other		Totals	
		Occ.[a]	Count [a]	Occ. [a]	Count [a]	Occ. [a]	Count [a]	Occ. [a]	Count [a]	Occ. [a]	Count [a]
Plants	San Diego ambrosia	3	10,315	-	-	-	-	1	10,000	4	20,315
	San Diego barrel cactus	52	277	-	-	380	4,866	91	193	523	5,336
	San Diego button-celery	-	-	-	-	-	-	-	-	-	-
	San Diego goldenstar	11	2,032	-	-	29	18,314	1	1,000	41	21,346
	San Diego mesa mint	-	-	-	-	-	-	-	-	-	-
	San Diego thornmint	-	-	-	-	-	-	-	-	-	-
	Variegated dudleya	11	357	-	-	82	8,942	-	-	93	9,299
	Willowy monardella	7	3,690	-	-	68	1,622	-	-	75	5,312
Invertebrates	Crotch's bumble bee	1	1	-	-	-	-			1	1
	Hermes copper butterfly	-	-	-	-	25	25			25	25
	Quino checkerspot butterfly	-	-	5	5	1	1	-	-	6	6
	Riverside fairy shrimp	-	-	-	-	-	-	-	-	-	-
	San Diego fairy shrimp	-	-	-	-	72[b]	72[b]	-	-	72b	72b
Reptiles Amphibians	Belding's orange-throated whiptail	1	3	-	-	55	55	41	41	97	99
	Blainville's horned lizard	-	-	-	-	27	27	36	36	63	63
	Western spadefoot	-	-	-	-	38[b]	38[b]	-	-	38b	38b
Birds	Coastal California gnatcatcher	10	27	155	261	81	120	70	71	316	479
	Least Bell's vireo	3	33	30	36	1	1	1	1	35	101
	Coastal cactus wren	3	18	-	-	5	5	1	1	9	24
	Western burrowing owl	-	-	-	-	-	-	1	1	1	1

[a] Occ. = Occurrence, Count = Count includes both historic and current extant or presumed extant.

[b] Based on occupied features rather than occurrences/count.

[c] Dudek completed surveys for the Fanita Ranch property and Hermes copper butterfly Offsite Conservation Area.

3.3.2 Species Habitat Suitability Models and Mapping

The modeling and mapping of species habitat suitability are important tools to utilize to evaluate species effects at a landscape scale, especially because it is not feasible to conduct comprehensive species surveys across the entire Plan Area. The models tend to be conservative (i.e., over predict), and the results generally overstate the actual effects on species. Not all the predicted suitable habitats are expected to be occupied by the subject species at any one time due to the population, seasonal, and ecological dynamics of species that result in variation of their local distribution over space and time. In addition, there are small-scale habitat features that are not mapped in the GIS database that can affect the suitability of habitats.

The predicted suitable habitat distribution models are one of many tools used in development of the Subarea Plan. The models are helpful in developing the initial estimate of take so that the amount of take can be quantified for the issuance of take permits from the Wildlife Agencies. Surveys are required to be conducted by the project applicant/proponent associated with proposed Covered Activities to document habitats and species presence prior to initiation of any activities associated with the Covered Activity. Appropriate avoidance, minimization, and mitigation measures will be required to be implemented by the project applicant/proponent prior to initiation of any aspect of the Covered Activities consistent with the Subarea Plan. The properties within the Subarea Plan Managed Preserve will be surveyed during baseline surveys and ongoing monitoring as part of Subarea Plan implementation by the Preserve Managers, and specific management and monitoring decisions will be made based on the survey data and on the ground habitat evaluation consistent with the Reserve Management Plan developed for the specific area (see Chapter 7, *Management and Monitoring*).

The methods and assumptions used to develop the habitat suitability models and maps are described for each Covered Species in Sections 3.4 through 3.7. The species models are based on biological and physical factors that have been mapped in GIS at a regional scale. Therefore, the most important factor driving the species models is generally the vegetation communities/land cover mapping. For some species, the best available information on habitat suitability were models developed by other entities (e.g., SDMMP) and these models were used for this Subarea Plan. In addition, for some species (e.g., vernal pool obligate species) the mapping of suitable habitat is based on known areas of suitable habitat because modeling of predicted suitable habitat is problematic for species with habitats requirements involving microhabitat features. Table 3-3 provides a summary of the acreage of the modeled habitat for each covered species in the Plan Area.

Table 3-3. Habitat Suitability and Critical Habitat of Covered Species in Plan Area

Covered Species	Data Source	Habitat Type	Acres within Plan Area
Plants			
San Diego ambrosia	Habitat model for Subarea Plan	Suitable habitat	974.8
	USFWS 2010	Critical Habitat	0.3
San Diego barrel cactus	Habitat model for Subarea Plan	Suitable habitat	3,186.3
San Diego button-celery	Known vernal pools/seasonal basins (Section 2.4.2)	Vernal pools and seasonal basins (potential features in Fanita Ranch)	1.6
		Vernal pool complex (potential features near Grossmont College)	17.7
San Diego goldenstar	Habitat model for Subarea Plan	Suitable Habitat	3,251.4
San Diego mesa mint	Known vernal pools/seasonal basins (Section 2.4.2)	Vernal pools and seasonal basins (potential features in Fanita Ranch)	1.6
		Vernal pool complex (potential features near Grossmont College)	17.7
San Diego thornmint	Statistical model developed by SDMMP (CBI 2014)	Higher value (0.75 – 1)	661.4
		Moderately high value (0.5 – 0.75)	1,169.6
		Moderate value (0.25 – 0.5)	1,961.7
		Lower value (0.0 – 0.25)	126.8
		Total:	3,883.6
Variegated dudleya	Habitat model for Subarea Plan	Suitable habitat	3,379.7
Willowy monardella	Habitat model for Subarea Plan USFWS 2014	Suitable habitat	336.5
		Critical Habitat	117.6
Invertebrates			
Crotch's bumble bee	Habitat model for Subarea Plan	Suitable habitat	4,287.3
Hermes copper butterfly	Habitat model for Subarea Plan	Potentially suitable vegetation communities in Plan Area	3,504.8
	Potentially suitable habitat based on field surveys [a]	Potentially suitable based on field surveys	230.5
	USFWS 2021	Critical Habitat	3,004.7
Quino checkerspot butterfly	Habitat model for Subarea Plan	Potentially suitable vegetation communities in Plan Area	3,713.7

Table 3-3. Habitat Suitability and Critical Habitat of Covered Species in Plan Area (cont.)

Covered Species	Data Source	Habitat Type	Acres within Plan Area
Riverside fairy shrimp	Known vernal pools/seasonal basins (Section 2.4.2)	Vernal pools and seasonal basins (potential features in Fanita Ranch)	1.6
		Vernal pool complex (potential features near Grossmont College)	17.7
San Diego fairy shrimp	Known vernal pools/seasonal basins (Section 2.4.2)	Vernal pools and seasonal basins (potential features in Fanita Ranch)	1.6
		Vernal pool complex (potential features near Grossmont College)	17.7
Reptiles and Amphibians			
Belding's orange-throated whiptail	Habitat model for Subarea Plan	Suitable habitat	4,204.7
Blainville's horned lizard	Habitat model for Subarea Plan	Suitable habitat	4,241.6
Western spadefoot	Habitat model for Subarea Plan	Known breeding habitat	0.294
		Other potentially suitable breeding areas	19.9
		Suitable upland habitat adjacent to areas of known breeding habitat	813.8
		Other suitable upland habitat	2,837.0
		Total:	3,671.0
Birds			
Coastal cactus wren	Statistical model developed by SDMMP (TNC 2015)	Higher value (0.75 – 1)	1,879.3
		Moderate value (0.5 – 0.75)	630.8
		Total:	2,510.1
Coastal California Gnatcatcher	MSCP Subregional Plan (San Diego 1998), updated for Subarea Plan	Very high	2,021.4
		High	611.9
		Moderate	35.3
		Total:	2,668.6
	USFWS 2007	Critical Habitat	3,806.8
Least Bell's vireo	Habitat model for Subarea Plan	Suitable habitat	362.5
	USFWS 2007	Critical Habitat	175.6
Western burrowing owl	Habitat model for Subarea Plan	Suitable habitat	1,837.4

[a] Habitat suitability based on field surveys completed for Fanita Ranch (Quino checkerspot butterfly and Hermes copper butterfly) and Cheyenne (Hermes copper butterfly) project areas.

3.3.3 Critical Habitat

Critical Habitat is designated through rulemaking issued by USFWS and National Marine Fisheries Service (NMFS) for specific areas that have the physical and biological features essential to the conservation of federally listed species. Section 7 of ESA prohibits Federal agencies from taking actions that are likely to result in the destruction or adverse modification of designated Critical Habitat.

The Covered Species with designated critical Habitat within or near the Plan Area are as follows:

- **Coastal California Gnatcatcher**. Approximately 3,806.8 acres of designated coastal California gnatcatcher Critical Habitat in unit 1 are within the Plan Area (covering the Fanita Ranch property, Rattlesnake Mountain area, and the southwest portion of Santee near Mission Trails Regional Park) (USFWS 2007).
- **Least Bell's Vireo.** Approximately 175.6 acres of designated least Bell's vireo Critical Habitat are within the Plan Area along the San Diego River (USFWS 1994).
- **San Diego Ambrosia**. Less than an acre of designated San Diego ambrosia Critical Habitat extends into the Plan Area (USFWS 2010).
- **San Diego Thornmint.** No designated San Diego thornmint Critical Habitat was delineated within the Plan Area but there is Critical Habitat within the vicinity of the Plan Area to the north and east (USFWS 2008).
- **Willowy Monardella.** A portion of Unit 1 (117.6 acres) of Critical Habitat for willowy monardella is located within the Plan Area and Unit 2 is located on property owned by Padre Dam Municipal Water District (Not a Part of the Plan Area) (USFWS 2012).
- **Hermes Copper Butterfly.** In the final Critical Habitat designation for Hermes copper butterfly, 35,027 acres were designated in San Diego County in three units: 1) Lopez Canyon; 2) Miramar/Santee; and 3) Southeast San Diego (USFWS 2021). A portion of Unit 2 (2,926.5 acres) is within the City and the Quino Offsite Conservation Area outside of the City and 78.2 acres in Unit 3 is on the Hermes Offsite Conservation Area in San Diego County.

For the species with Critical Habitat designated within or near the Plan Area, mapping of Critical Habitat is included on the figures for each of these species and summarized in Table 3-3. No Critical Habitat has been designated within the Plan Area for any other federally listed species.

3.4 Plant Species Profiles

3.4.1 San Diego Ambrosia



Federal: Endangered—2002.

State: None.

California Rare Plant Ranking (CRPR): 1B.1.

Critical Habitat: Critical Habitat was designated in 2010 by USFWS for this species (USFWS 2010a) and 0.3 acre occur within the Plan Area.

Recovery Planning: A recovery plan has not been prepared for this species.

3.4.1.1 Species Biology

San Diego ambrosia is a clonal herbaceous perennial plant. It is a wind-pollinated perennial herb (Jepson 2017) but can also reproduce asexually by rhizomes. San Diego ambrosia presumably relies on animal vectors, in part, for seed dispersal. This species is possibly tolerant of some soil surface disturbance.

Habitat Requirements

San Diego ambrosia is typically associated with upper terraces of rivers and drainages, where it is associated with open coastal sage scrub, grassland, or disturbed habitats. This species typically occupies low-lying areas where winter and spring soil saturation levels are high, although it generally is not associated with perennial wetlands (CalFlora 2023).

Key Seasonal Periods

Key seasonal periods for San Diego ambrosia are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flowering				✓	✓	✓	✓	✓	✓	✓		
Source: CNPS 2023.												

3.4.1.2 Species Distribution and Population Trends

Current Distribution

San Diego ambrosia is primarily restricted to western Riverside County, southwestern San Diego County, and northern Baja California, Mexico (CNPS 2023; Wiggins 1980; USFWS 2010b), and additional occurrence recorded in Los Angeles County (CalFlora 2023). USFWS, in its notice of 90-day petition finding and initiation of status review for this species, provides the following account of

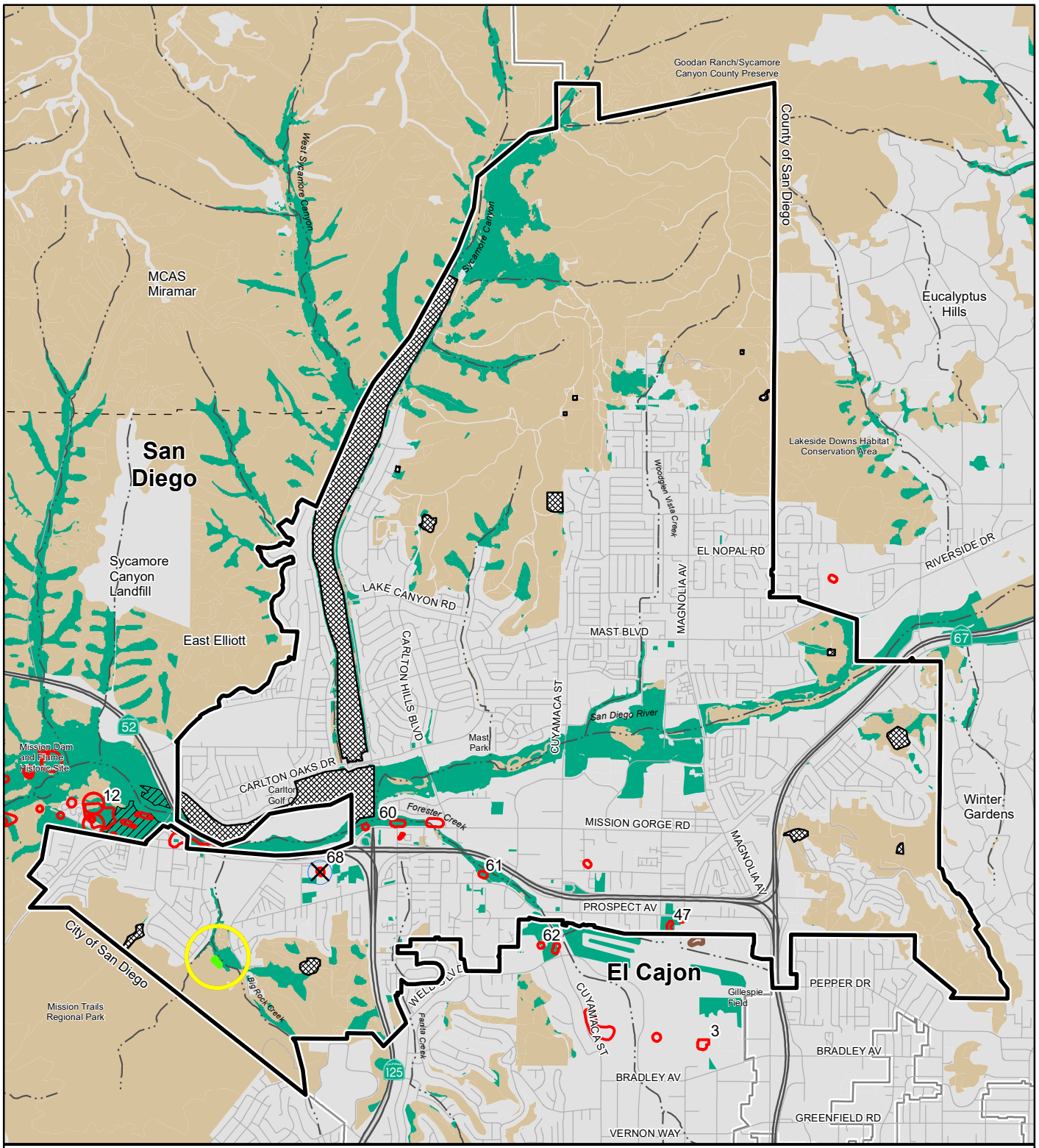
historic and current distribution for San Diego ambrosia (USFWS 2010b). Approximately 53 historic and extant populations of San Diego ambrosia have been documented throughout the species' range. Of this total, 48 populations have been reported from San Diego County, 2 populations occur in Riverside County, and 3 populations are known from Baja California. Of the 48 San Diego County populations, 23 are extirpated, 11 have been recently determined to be misidentifications, and 14 are extant. Two of the extant populations, however, were transplanted from donor sites, and their long-term viability is considered questionable. Of the remaining 12 populations, 11 have been verified recently as extant, and the other is considered (but not verified) as extant. The long-term viability of 5 of the 11 verified extant populations is considered questionable due to one or more factors, including small population size; habitat loss, degradation, or fragmentation; current land use practices; and land ownership. (USFWS 2010b.)

In San Diego County, the species has been reported from scattered locations along or adjacent to the San Luis Rey, San Diego, and Sweetwater Rivers. Several localities have been documented in close proximity to Santee, including the Mission Trails Regional Park river areas (San Diego 2017).

Known Occurrences in Plan Area

There are four known extant occurrences of San Diego ambrosia in the Plan Area (Figure 3-1).

- A translocated population of San Diego ambrosia has been re-established at the Railroad Avenue Ambrosia Conservation Preserve (RAACP). An occurrence of San Diego ambrosia covering 3,222 square feet (CNDDB EO# 68) was translocated from the Prospect Estates project site (Figure 3-1) and moved in 2016 (Scheidt Biological Consultant 2017) to the RAACP. Based on the extent of the original occurrence and using the number of stems reported for other occurrences of similar extent, 10,000 stems has have been roughly estimated for the translocated occurrence.
- An existing occurrence of San Diego ambrosia is extant in an open, grassy field north of Gillespie Field Airport Runway, beginning approximately 250 feet to the west of the RAACP within the boundaries of Gillespie Field. This occurrence is also known as CNDDB Elemental Occurrence (EO) #47. EO #47 was established in 1993 as a receiver site for the salvage and translocation of San Diego ambrosia from EO #3 and EO #31 (also on Gillespie Field Airport) between 1993 and 2001. A Conditional Use Permit for EO #47 was approved by the Santee City Council in 2001, designating it as a 0.92-acre Biological Habitat Open Space Preserve (APN 348-240-16). Although it is unmanaged, EO #47 appears to be viable and functional San Diego ambrosia habitat (Scheidt Biological Consultant 2017).
- Within the Caltrans Forester Creek Mitigation Site, populations of San Diego ambrosia (CNDDB EO# 60) have been translocated to this location from impacts resulting from freeway and local development projects. Approximately 10,000 stems were observed in 2010, and this population was noted as "doing very well" in 2012 (CNDDB 2023).
- A translocation receiver site within the Forester Creek Restoration Project (CNDDB EO# 61) was established in 2009 on City-owned property that is zoned as Park/Open Space.



* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-01 San Diego Ambrosia-Unique.mxd Date: 2/5/2025 34153

Figure 3-1
San Diego Ambrosia - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

In addition to these extant occurrences, a historically occupied area (CNDDB EO#36) is located within the Cowles Mountain area of the Mission Trails Regional Park in the southwestern portion of the City of Santee. Originally reported in the 1980s, no plants have been found during surveys conducted in 1996, 1997, 1998, 2006, and 2010 (CNDDB 2023). This area has been identified as a potential receptor site for San Diego ambrosia transplantation as part of the Natural Resources Management Plan for Mission Trails Regional Park (San Diego 2017).

There is a limited amount of potential habitat for San Diego ambrosia in the Fanita Ranch property. Rare plant surveys conducted within the Fanita Ranch property were negative for San Diego ambrosia (Dudek 2020).

Habitat Suitability Model

A model of potentially suitable habitat for San Diego ambrosia has been developed for the Subarea Plan and a total of 974.8 acres of suitable habitat is mapped in the Plan Area (Figure 3-1). The model was based on the following four factors:

- Vegetative cover, which consists of areas of coastal sage scrub, grassland, riparian, or disturbed habitat;
- Topography, which consists of areas of flat topography (less than 10 percent slope);
- Proximity to rivers and drainages that is within 1,000 feet of 'blue-line' streams; and
- Elevations below 600 feet.

3.4.1.3 Threats and Other Management Considerations

Threats to this species are primarily due to habitat fragmentation; direct loss and degradation of habitat from development; and negative impacts from non-native plants, fuel modification, and recreation. San Diego ambrosia may be adversely affected by fire and competition from other plants and appears vulnerable to random environmental or demographic events (USFWS 2010b).

Transplantation/reintroduction of rhizomes may be an effective method of protecting and enhancing populations.

3.4.1.4 References Cited for San Diego Ambrosia

California Native Plant Society, Rare Plant Program. 2023. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed March 2023].

California Natural Diversity Data Base (CNDDB). 2023. Element Occurrence Reports for *Ambrosia pumila.* Based on data obtained March 2023.

City of San Diego. 2017. Natural Resources Management Plan for the Mission Trail Regional Park, San Diego, California. Prepared by RECON Environmental Inc. January 17.

Calflora: Information on California plants for education, research and conservation. [web application]. 2023. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: November 2023).

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City Of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Jepson Flora Project (eds.). 2017. Jepson eFlora, http://ucjeps.berkeley.edu/eflora/ [accessed on Oct 24, 2017].

Scheidt Biological Consultant. 2017. First Annual Monitoring Report for Railroad Avenue Ambrosia Conservation Preserve. Prepared for Grant Companies. August.

USFWS. 2010a. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the *Ambrosia pumila* (San Diego ambrosia); Final Rule. *Federal Register* 75 (229): 74546-74604. Washington, D.C.: USFWS. November.

USFWS. 2010b. *Ambrosia pumila* (San Diego Ambrosia) 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. July.

Wiggins, I.L. 1980. *Flora of Baja California*. Stanford Press. 1,025 pp.

3.4.2 San Diego Barrel Cactus

Federal: None.

State: None.

California Rare Plant Ranking (CRPR): 2B.1.

Critical Habitat: None.

Recovery Planning: A recovery plan has not been prepared for this species.



3.4.2.1 Species Biology

San Diego barrel cactus is a small, stout barrel cactus. The species has stout red, pink, or yellow spines. Flowers yellow to red, occasionally with red-brown mid-stripes. They can reproduce vegetatively by producing clonal stems (Parfitt 2017).

Habitat Requirements

Optimal habitat for this species appears to be hillsides in the coastal slope dominated by Diegan coastal sage scrub (Reiser 2001). San Diego barrel cactus often grows along slopes, within cobbles, and in the periphery of mima mound complexes. It is known from 3–450 meters in elevation (CNPS 2023).

Key Seasonal Periods

Key seasonal periods for San Diego barrel cactus are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flowering					✓	✓						
Source: CNPS 2023.												

3.4.2.2 Species Distribution and Population Trends

Current Distribution

San Diego barrel cactus ranges from Camp Pendleton, near Oceanside, CA, south through the San Diego County coastal slope and into northern Baja California, Mexico (CNPS 2023). This species is locally common in appropriate habitat, but large amounts of potential habitat have been lost to urban expansion (Reiser 2001). Many populations of San Diego barrel cactus have been observed in nearby open space areas of MCAS Miramar and the Fortuna Mountain, East Elliott, and West Sycamore areas of Mission Trails Regional Park (San Diego 2016) (Figure 3-2).

Known Occurrences in Plan Area

This species has been recorded throughout the Plan Area (Figure 3-2). A total of 4,866 San Diego barrel cactus individuals were observed on the Fanita Ranch property and within rights-of-way of the extensions of Magnolia Avenue and Cuyamaca Street (Dudek 2020). Occurrences have also been recorded within the Cheyenne property, CNLM Rattlesnake Mountain HCA, and CNLM East Mesa HCA.

Habitat Suitability Model

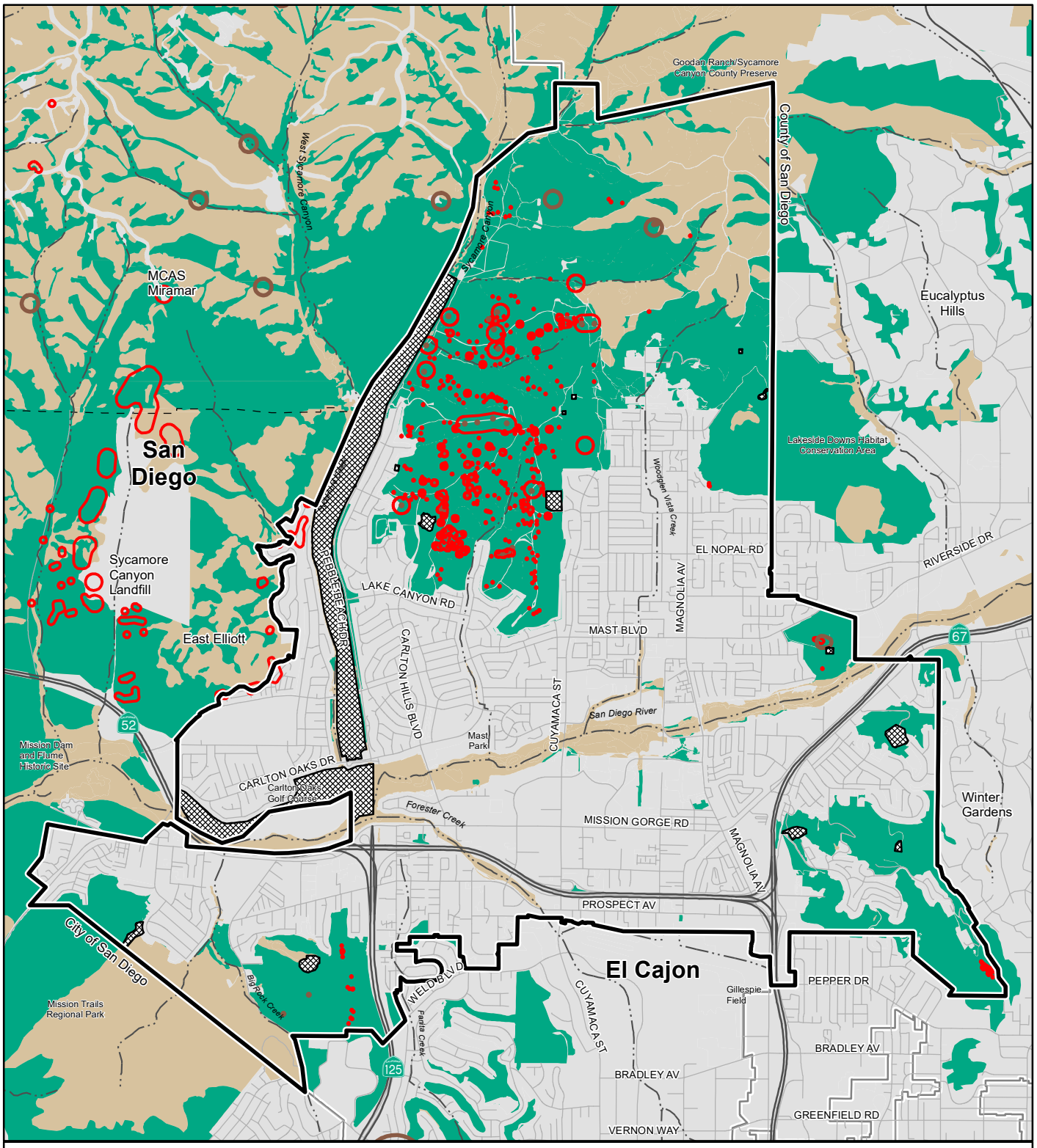
A model of potentially suitable habitat for San Diego barrel cactus has been developed for the Subarea Plan and a total of 3,186.3 acres of suitable habitat occurs within the Plan Area (Figure 3-2). The model was based on the following three factors:

- Vegetative cover, which consists of areas of coastal sage scrub, grassland, or vernal pool habitat;
- Soils that are not classified as Riverwash or Tujunga sands soil types; and
- Elevation below 1,500 feet.

3.4.2.3 Threats and Other Management Considerations

Threats to San Diego barrel cactus include habitat loss and fragmentation, damage by vehicles, horticultural collection, collection, recreation activities, and nonnative plants (CNPS 2023). Frequent or intense fires can also damage this species.

As this species is a stem succulent that can be reliability translocated, it is recommended that populations within development areas be collected and transplanted into suitable receptor sites within preserve lands. When species are collected, the north side of each salvaged cactus will be marked, so it can be planted with the same aspect orientation (San Diego 2010).



Legend

- Subarea Plan Area
- Habitat Model
- **Species Occurrence Locations ***
  - Current (post-1999)
  - Historic (pre-2000)
- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

N

0 4,450

Feet

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-02 San Diego Barrel Cactus-Unique.mxd Date: 2/5/2025 34153

Figure 3-2
San Diego Barrel Cactus - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.4.2.4 References Cited for San Diego Barrel Cactus

California Native Plant Society (CNPS), Rare Plant Program. 2023. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed March 2023].

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County of San Diego. 2010. Appendix C. Guidelines for Cactus Salvage. In County of San Diego Report Format and Content Requirements Biological Resources. Fourth Revision. September 15.

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City Of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Reiser, C. 2001. *Rare Plants of San Diego County*. Aquafir Press. San Diego, CA.

Parfitt, B.D. 2017. *Ferocactus viridescens*, in Jepson Flora Project (eds.) Jepson eFlora, http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=25772, accessed on October 24, 2017.

3.4.3 San Diego Button-Celery



Federal: Endangered—1993.

State: Endangered—1979.

California Rare Plant Ranking (CRPR): 1B.1.

Critical Habitat: None.

Recovery Planning: San Diego button-celery is included in the Recovery Plan for Vernal Pools of Southern California (USFWS 1998).

3.4.3.1 Species Biology

San Diego button-celery is a biennial or longer-lived or perennial herb in the carrot family (Apiacea) (USFWS 2010). It has long, light-green leaves that often protrude from pools, which develop into highly toothed gray-green mature leaves. The distinctive spiny inflorescences form on short stalks with few to many-flowered heads (USFWS 1998). It is presumably insect pollinated (USFWS 2010). It is specifically adapted to surviving in seasonally ponded conditions due to the presence of aerenchyma tissue (air channels in the roots) that facilitates necessary gas exchange in submerged plants (USFWS 2010).

Habitat Requirements

This species occurs nearly exclusively in or adjacent to vernal pool wetlands; it was listed by the USACE as an indicator of vernal pools (USACE 1997) and is considered a vernal pool obligate (USFWS 2010). This species is more tolerant of peripheral mesic vernal pool habitat than most vernal pool species

with which it grows (Reiser 2001). It can tolerate the seasonal inundation of vernal pools and blooms after pools have dried.

Key Seasonal Periods

Key seasonal periods for San Diego button-celery are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flowering				✓	✓	✓						
Typical Pool Inundation	✓	✓	✓	✓								✓
Source: CNPS 2023.												

3.4.3.2 Species Distribution and Population Trends

Current Distribution

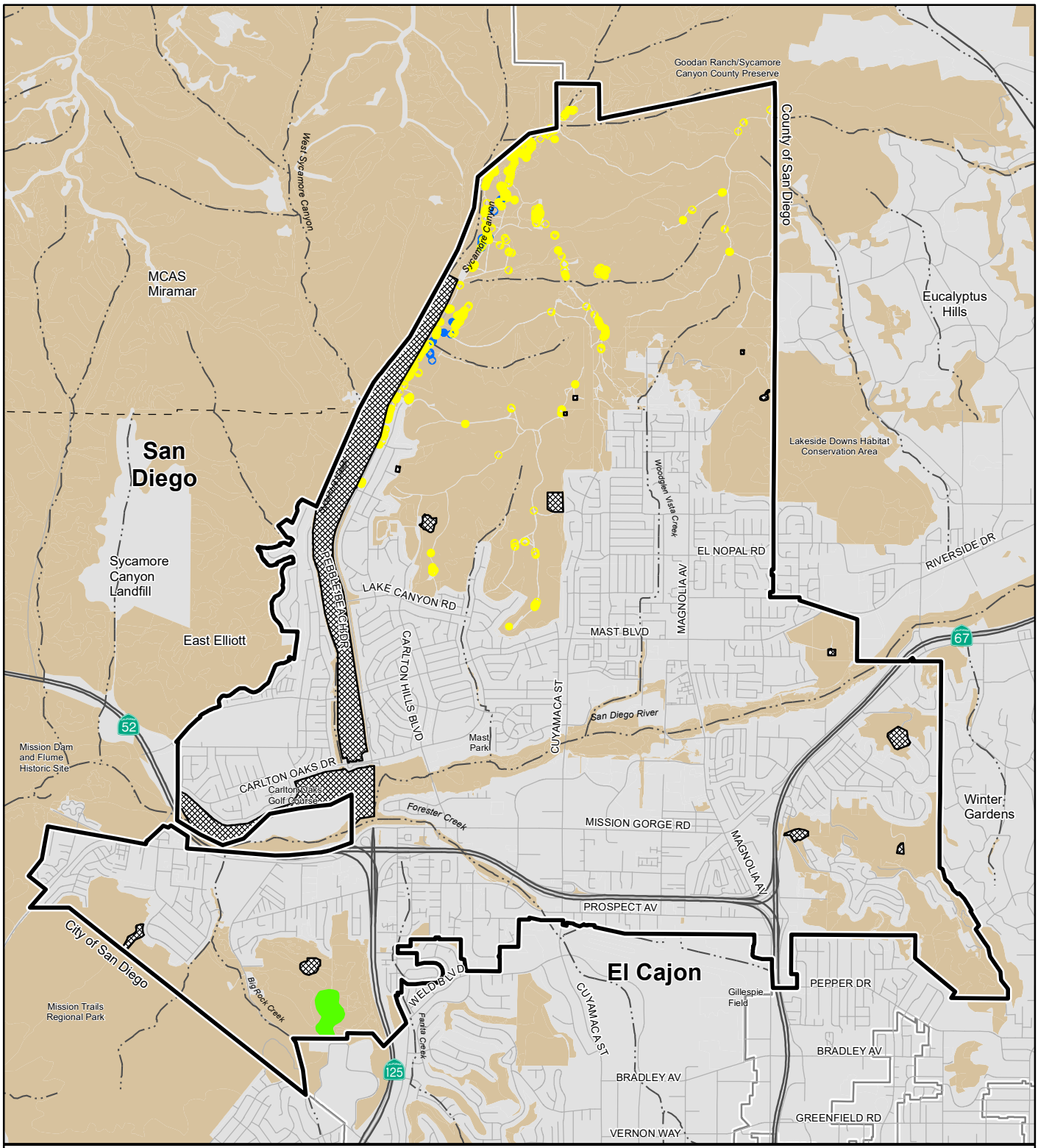
San Diego button-celery ranges from Camp Pendleton, near Oceanside, California, south through the San Diego County coastal slope and into northern Baja California, Mexico (CNPS 2023). Additionally, two northern populations exist in inland vernal pool complexes on the Santa Rosa Plateau in Western Riverside County. San Diego button celery has been recorded as occurring at 14 geographic areas in Riverside and San Diego counties (USFWS 2010). The majority of the occupied range of the taxon in the United States occurs in ten regional locations in San Diego County including Camp Pendleton, Carlsbad, San Marcos, Ramona, Del Mar Mesa, Carmel Mountain, Mira Mesa, MCAS Miramar, Otay Lakes, and Otay Mesa. San Diego button-celery can be locally common in vernal pool complexes, but the vast majority of this habitat type has been lost in San Diego County (USFWS 2010). The nearest known occurrences in the CalFlora database are within the La Mesa and Poway quadrangles (CalFlora 2023).

Known Occurrences in Plan Area

This species is not currently known from the Plan Area but has considerable potential to occur within seasonally inundated depressions within the Plan Area (Figure 3-3). Rare plant surveys conducted within the Fanita Ranch property were negative for San Diego button-celery (Dudek 2020).

Habitat Suitability Mapping

Areas of suitable habitat for San Diego button celery are closely associated with vernal pools and seasonal basins. A total of 19.3 acres of known vernal pool complexes, vernal pools, and seasonal basins occur within the Plan Area, as shown in Figure 3-3.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-03 San Diego Button Celery.mxd Date: 2/1/2025 34153

Figure 3-3
San Diego Button-Celery - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.4.3.3 Threats and Other Management Considerations

Threats to San Diego button-celery throughout its range include habitat loss, fragmentation and degradation due to urban and agricultural development, livestock grazing, off-road vehicle use, trampling, invasion from weedy nonnative plants, altered vernal pool/inundated depression watershed hydrology, and other factors (USFWS 1998). Within the Plan Area, the primary threat is habitat loss due to urban development.

Climate change and the resulting increases in drought and temperatures may affect vernal pools through excessive drying, shorter pool/depression inundation periods, and crowding of pool species by exotic upland species. Suitable pool habitat within preserved lands will have a goal of maintaining a diversity of pool depths and watersheds to be able to provide differing habitat conditions given variable and changing precipitation and climate. Pools and watersheds may be maintained free of weeds and recontoured to provide proper hydrologic function.

This species would benefit from introduction into suitable habitat within preserved lands in the Plan Area. Vernal pools and other seasonally inundated depressions within the Plan Area could serve as receptors for seed or translocated plants. The Plan Area is entirely within the range of this species and long-term establishment of San Diego button celery within the Plan Area would help to provide connectivity between populations to the northwest, northeast, south and west.

3.4.3.4 References Cited for San Diego Button-Celery

California Native Plant Society (CNPS), Rare Plant Program. 2023. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed March 2023].

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Reiser, C. 2001. *Rare Plants of San Diego County.* Aquafir Press. San Diego, CA.

U.S. Army Corps of Engineers (USACE). 1997. Indicator Species for Vernal Pool. Los Angeles District, Regulatory Branch. November.

USFWS. 1998. Vernal Pools of Southern California Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

USFWS. 2010. *Eryngium aristulatum* var. *parishii* San Diego button celery 5-year: Summary Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. September 1.

3.4.4 San Diego Goldenstar



Federal: None.

State: None.

California Rare Plant Ranking (CRPR): 1B.1.

Critical Habitat: None.

Recovery Planning: A recovery plan has not been prepared for this species.

3.4.4.1 Species Biology

San Diego goldenstar is a perennial monocot in the brodiaea family (Themidaceae). This species spends most of the year obscured as an underground corm, is only readily observable when in bloom and may exhibit few flowers in drought years. This species typically flowers in April and May and has yellow umbel of flowers on a scape, 15–70 centimeters in height. This species has a resemblance to the more widespread common goldenstar (*Bloomeria crocea*) but generally has smaller flowers and has filaments that lean away from the style, not forming a cup around the ovary as in common goldenstar (Pires 2012).

Habitat Requirements

This species typically occurs in grasslands, sparse coastal sage scrub, and in drier areas associated with vernal pools or that support mima mound topography. It has also been observed in openings in southern mixed chaparral (Dudek 2020). Clay soils with good shrink/swell potential are preferred by this species and it has been found associated with stockpen gravelly clay loam and Redding cobbly loams (Reiser 2001).

Key Seasonal Periods

Key seasonal periods for San Diego goldenstar are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flowering				✓	✓							
Source: CNPS 2023.												

3.4.4.2 Species Distribution and Population Trends

Current Distribution

San Diego goldenstar occurs from Camp Pendleton, south along the San Diego coastal slope and foothills to northern Baja California Mexico (CNPS 2023). It is common near the Plan Area on the eastern portions of MCAS Miramar and as a large meta-population within the East Elliot area (San Diego 2017). Impacts to populations of San Diego goldenstar located within the Weston development

(located along the western edge of the City of Santee) were mitigated through a translocation into the habitat preserve areas within the East Elliot area (Natural Resource Consultants 2014).

Known Occurrences in Plan Area

A substantial number of San Diego goldenstar observations have been recorded within the Plan Area (Figure 3-4). Approximately 18,314 San Diego goldenstar plants were observed during field surveys on the Fanita Ranch property, primarily in the central portion of the Fanita Ranch property within Diegan coastal sage scrub, grassland, southern mixed chaparral, and disturbed habitats (Dudek 2020). Within the CNLM East Mesa (Hagenmaier and Gross parcels) HCA, "many thousands" of San Diego goldenstar have been observed (CNLM 2017). In 2016, CNLM established four index plots on a subset of the population to assess population trends and habitat conditions (CNLM 2017). Another population (CNDDB EO#97) has been recorded near the vernal pool complex (Bauder "Q" pools) in the vicinity of Grossmont College (CNDDB 2023).

Habitat Suitability Model

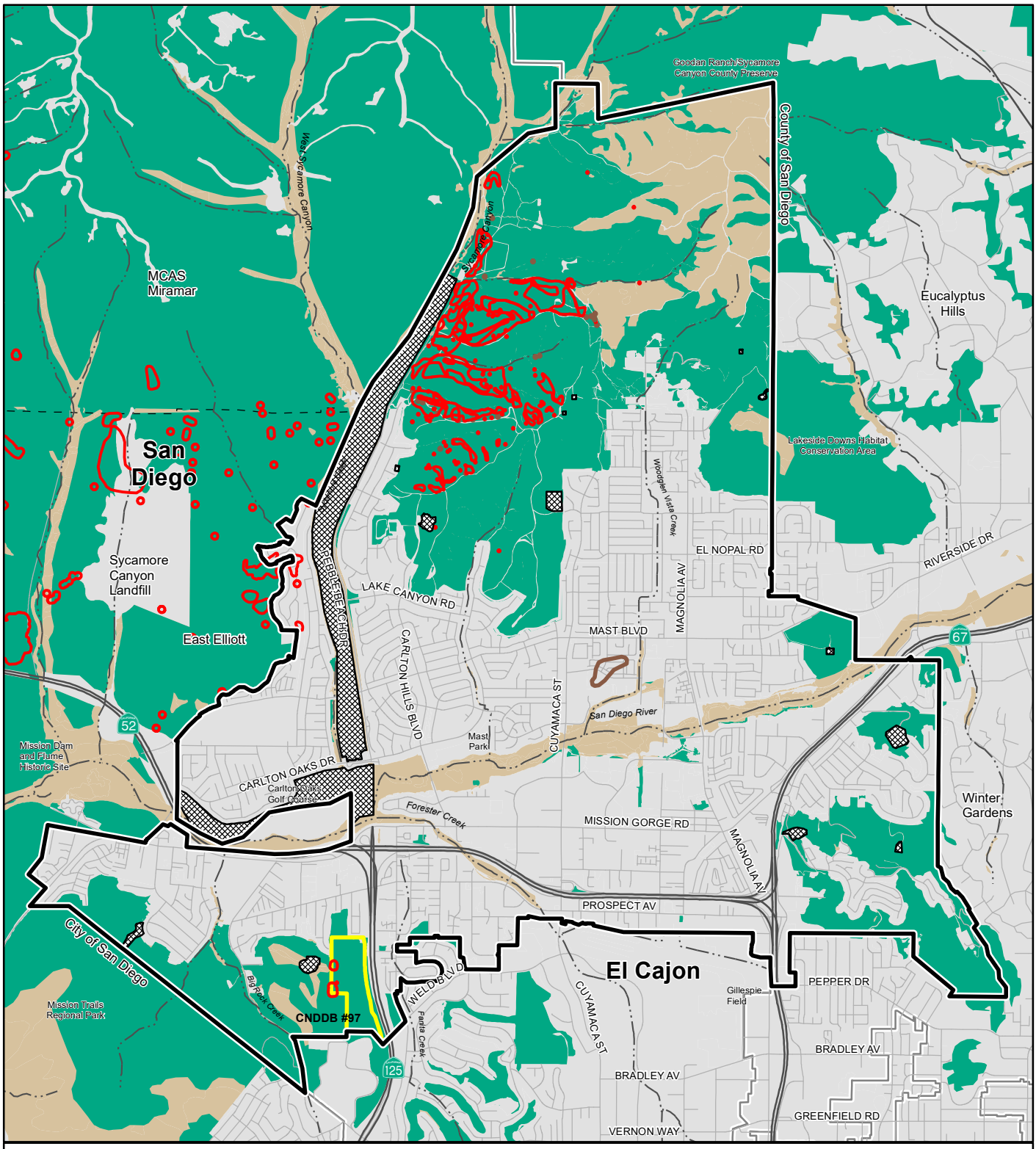
A model of potentially suitable habitat for San Diego goldenstar has been developed for the Subarea Plan and approximately 3,251.4 acres of suitable habitat occur in the Plan Area (Figure 3-4). The model was based on the following three factors:

- Vegetative cover, which consists of coastal sage scrub, grassland, vernal pool, chamise chaparral, and southern mixed chaparral;
- Soil that consists of soils with clays and loams; and
- Elevations below 1,500 feet.

3.4.4.3 Threats and Other Management Considerations

San Diego goldenstar is threatened by urbanization, road construction, vehicle use in occupied habitat, nonnative plants, and illegal dumping (CNPS 2023). Other threats include recreational uses and altered fire regime (more frequent fires) promoting nonnative plants, which compete with San Diego goldenstar for resources such as space and soil moisture/nutrients. Populations in areas with high levels of pocket gopher activity may exhibit high levels of predation.

As a perennial species with corms, impacted San Diego goldenstar populations can be salvaged and placed at receptor sites (i.e. translocated) including upland or vernal pool restoration areas within the Plan Area. Successful translocation (i.e. creating self-sustaining populations) of rare plant species can be enhanced by combining long-term monitoring with adaptive management strategies (Bellis et. Al. 2024). Therefore, translocation plans, outlining management techniques and ensuring similar ecological conditions between salvage and receptor sites, can be developed for any impacted populations as part of a project's mitigation program. Long-term management of these translocated populations would be included as part of preserve resource management plans.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-04 San Diego Goldenstar-Unique.mxd Date: 2/5/2025 34153

Figure 3-4
San Diego Goldenstar - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.4.4.4 References Cited for San Diego Goldenstar

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3.4.5 San Diego Mesa Mint



Federal: Endangered—1978.

State: Endangered—1979.

California Rare Plant Ranking (CRPR): 1B.1.

Critical Habitat: None.

Recovery Planning: San Diego mesa-mint is included in the Recovery Plan for Vernal Pools of Southern California (USFWS 1998).

3.4.5.1 Species Biology

San Diego mesa mint is an annual herb in the mint family (*Lamiaceae*). It has highly aromatic, opposite leaves on spreading to erect square stems that are up to 20 centimeters tall. The purple flower corolla is 10–12 millimeters and bell shaped, with a distinctly hairy stigma (Silveira 2012). The plants germinate and grow during pool inundation, flower after pools have dried and then senesce. It appears to require insect pollination and may be self-incompatible (USFWS 1998). Up to four seeds are produced per flower and seeds can float on the water, which offers some limited dispersal opportunities in interconnected pool complexes (USFWS 2010). Rabbits also spread San Diego mesa mint seeds (USFWS 2010).

Habitat Requirements

This species occurs exclusively in vernal pool wetlands; it was listed by the USACE as an indicator of vernal pools (USACE 1997) and is considered a vernal pool obligate (USFWS 2010). Vernal pools supporting San Diego mesa mint typically occur in mima-mound complexes on soils with a restrictive subsoil layer of either clay or a cemented hardpan.

Key Seasonal Periods

Key seasonal periods for San Diego mesa mint are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Annual Growth Period	✓	✓	✓	✓	✓	✓						
Flowering			✓	✓	✓	✓	✓					
Typical Pool Inundation	✓	✓	✓	✓								✓
Sources: CNPS 2023; USFWS 2010.												

3.4.5.2 Species Distribution and Population Trends

Current Distribution

San Diego mesa mint is currently known from central coastal San Diego County, north of Interstate-8 to Del Mar Mesa near Highway 56 (CNPS 2023). Remaining occupied habitat for this species is concentrated on west MCAS Miramar (USFWS 2010), in the vicinity of the Miramar Mounds National Natural Landmark.

Known Occurrences in Plan Area

This species is not currently known from the Plan Area but has considerable potential to occur within seasonally inundated depressions within the Plan Area. Rare plant surveys conducted within the Fanita Ranch property in 2018 were negative for San Diego mesa mint (Dudek 2020).

Habitat Suitability Mapping

Areas of suitable habitat for San Diego mesa mint are closely associated with vernal pools and seasonal basins. A total of 19.3 acres of known vernal pool complexes, vernal pools, and seasonal basins occur within the Plan Area, as shown in Figure 3-5.

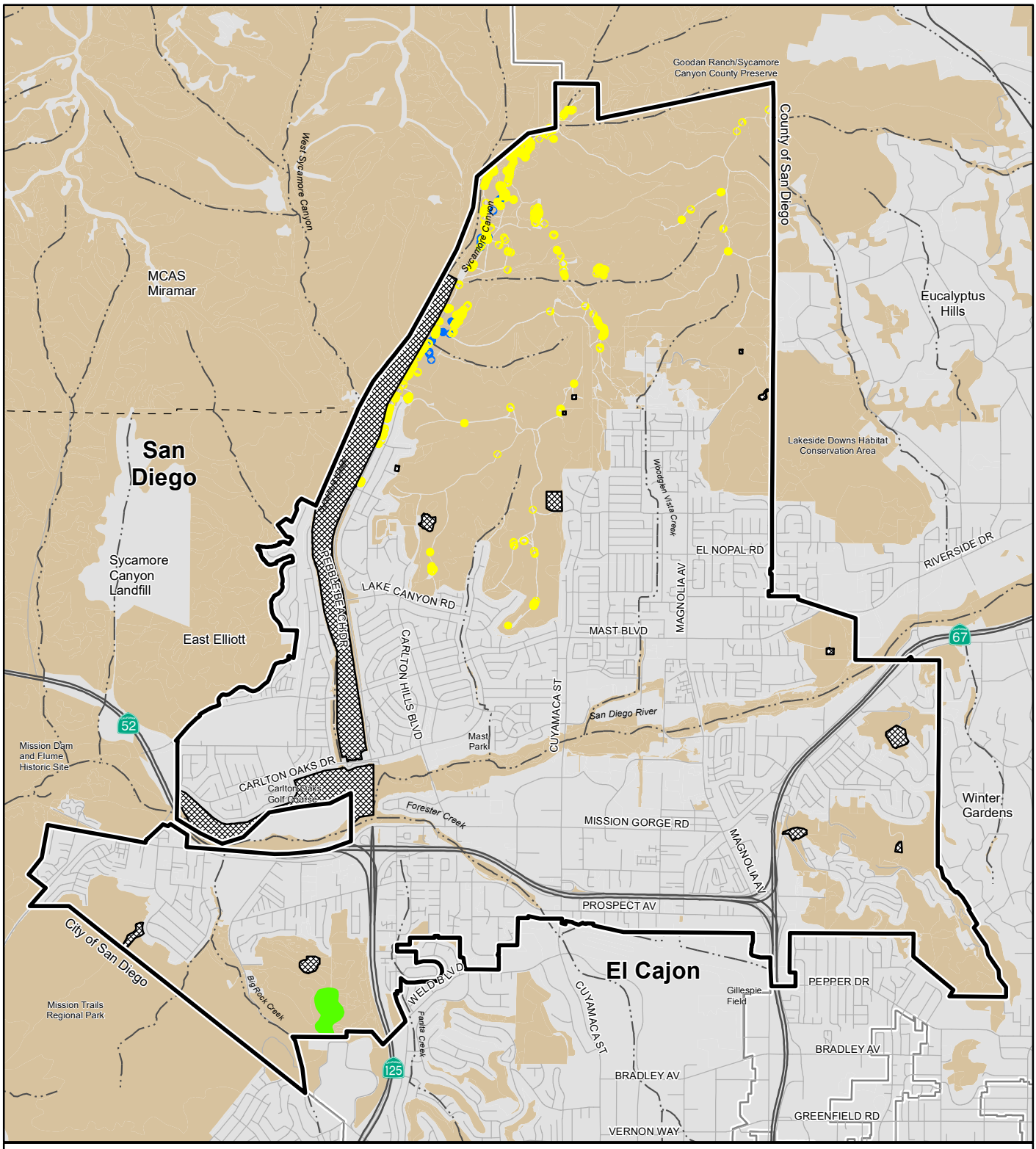
3.4.5.3 Threats and Other Management Considerations

The majority of potential habitat for this species has been lost to agricultural and urban development, with remaining pools threatened by a variety of sources (USFWS 2010). Threats to San Diego mesa mint include direct and indirect effects of urban development, altered hydrology, nonnative plants, off-road vehicles, illegal dumping, and military activities (USFWS 2010).

Resource management plans for preserved lands that support vernal pools within the Plan Area will need to include measures to prevent and exclude direct and indirect impacts to vernal pools (e.g., proper trail alignment, fencing, signage and buffers), as this habitat has potential to support several Covered Species and is easily disturbed by recreation including bikes and pedestrians. In addition, resource management plans will identify appropriate management actions to benefit vernal pool habitat/species and the funding needed for that management, including maintenance of fencing and signage.

Efforts shall be made to address vernal pool functions and values, to enhance pools and their associated watersheds, for the benefit of covered vernal pool species (USFWS 1998). Any compensatory mitigation for impacts to vernal pools will be in accordance with Chapter 5, *Conservation Strategy*, of the Subarea Plan.

San Diego mesa mint would potentially benefit from long-term establishment into suitable habitat within preserved lands in the Plan Area. Vernal pools and other seasonally inundated depressions within the Plan Area could serve as receptors for seed. The establishment of the species within the Plan Area would represent an eastward expansion of the current known range. This species has lost range to urban development (USFWS 2010) outside the Plan Area and establishing new population(s) would likely help provide resilience for the species.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-05 San Diego Mesa Mint.mxd Date: 2/1/2025 34153

Figure 3-5
San Diego Mesa Mint - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.4.5.4 References Cited for San Diego Mesa Mint

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3.4.6 San Diego Thornmint



Federal: Threatened—1998.

State: Endangered—1982.

California Rare Plant Ranking (CRPR): 1B.1.

Critical Habitat: Final Critical Habitat was designated by USFWS in August 2008 (USFWS 2008). There is no Critical Habitat within the Plan Area.

Recovery Planning: A recovery plan has not been prepared for this species.

3.4.6.1 Species Biology

San Diego thornmint is a small, annual herb in the mint family (Lamiaceae). Inflorescences have a white two-lipped flower of 12 millimeters, with bottom lip much larger than the upper, rose markings on the lower lip, and bracts with spines of 7–10 millimeters (Miller and Jokerst 2017). Flowering occurs in April to June and numbers of individuals in a given year appear to be highly related to rainfall (USFWS 2009). Dominant visitors/effective pollinators appear to be generalist bees in the Apidae and Halictidae families, including honeybees (*Apis melifera*), carpenter bee (*Ceratina* sp.), and others, with most effective pollinators being 6 mm or smaller (Klein 2009).

Habitat Requirements

This species primarily occurs in grassy openings in chaparral or sage scrub with friable or broken clay soils. These clay lenses provide an open, distinctive microhabitat because of the general lack of many widespread annuals and weeds (Reiser 2001).

Key Seasonal Periods

Key seasonal periods for San Diego thornmint are as follows.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Annual Growth Period	✓	✓	✓	✓								
Flowering				✓	✓	✓						
Source: Reiser 2001.												

3.4.6.2 Species Distribution and Population Trends

Current Distribution

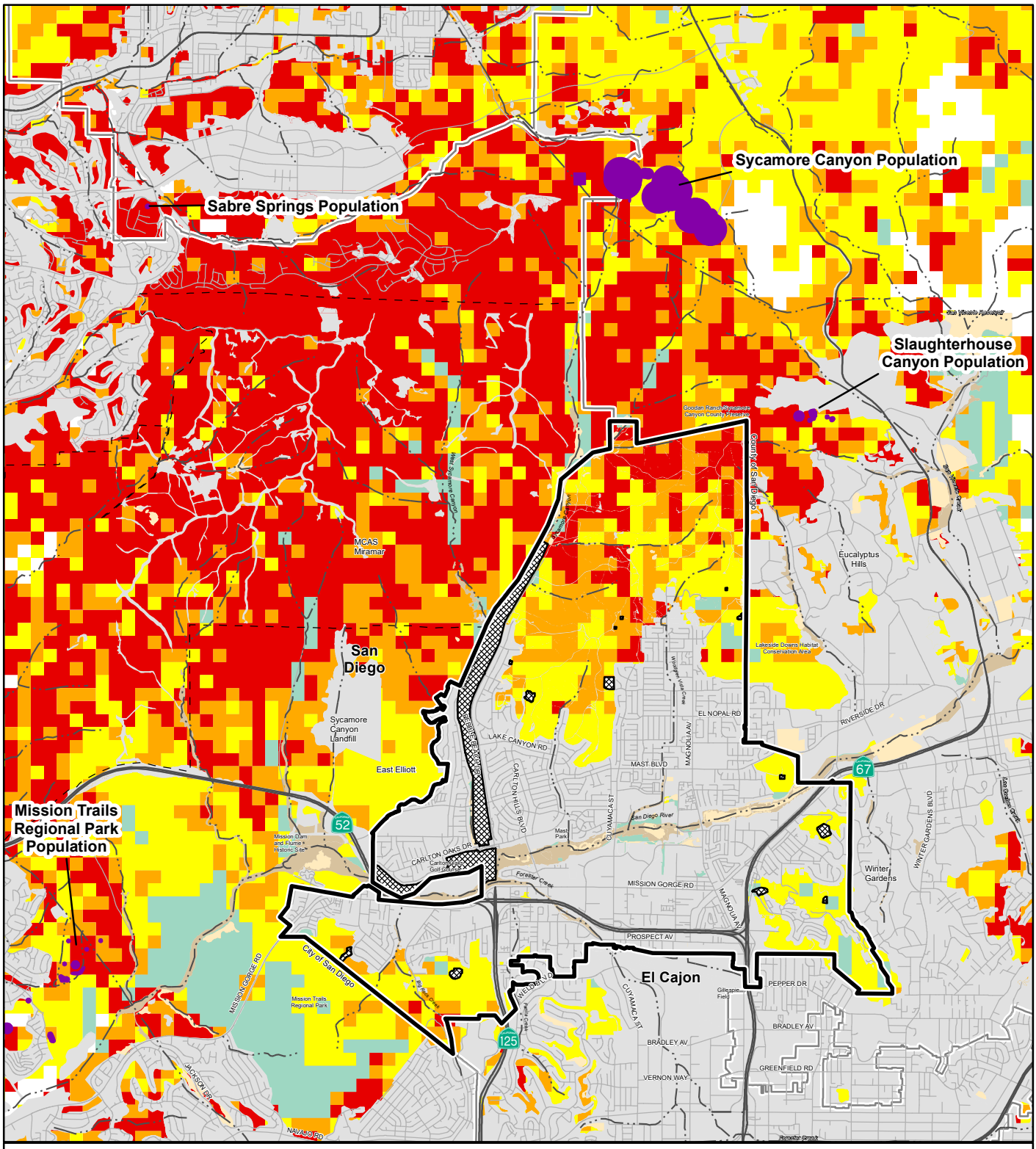
San Diego thornmint is endemic to San Diego County, California and northwestern Baja California, Mexico. According to the USFWS thornmint 5-year review, 55 of 80 historical occurrences were considered to be extant (USFWS 2009). The known range currently extends north to Oceanside, east to Ramona, and southeast to Jamul. The nearest CNDDB occurrences to the Plan Area are to the northeast in Slaughterhouse Canyon, to the north on the county Sycamore Canyon/Goodan Ranch Preserve, and to the west in Mission Trails Regional Park (Figure 3-6).

Known Occurrences in Plan Area

No occurrences are known within the Plan Area. Rare plant surveys on the Fanita Ranch property were negative for San Diego thornmint (Dudek 2020).

Habitat Suitability Model

SDMMP developed a habitat suitability model for San Diego thornmint in San Diego County that was based on statistical analysis of the following: environmental factors, elevation, topographic ruggedness, slope, aspect, precipitation, temperature, soil type, soil water capacity, and rock depth (CBI 2014). The best performing model included average April minimum/maximum temperatures, April precipitation, percent sand, and median elevation, slope, and topographical heterogeneity within a 200-meter radius. While this San Diego thornmint habitat model is preliminary and will likely to be improved as further surveys are conducted in potential habitat, it represents the best available scientific information for estimating the distribution of suitable habitat for this species. An identified limitation of this model is that San Diego thornmint is associated with small clay lenses that are often within a matrix of other soil types, but the USDA digital soil layer is coarse in scale and does not delineate many small areas with clay lenses (CBI 2014). Accurate evaluation of species potential will depend on site-specific habitat evaluation and focused surveys.



Sources: Habitat Suitability Model: CBI 2014; Species Occurrences: CNDDB 2023

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Figure 3-6
San Diego Thornmint - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

The SDMMP model was further refined for the Subarea Plan to include results only within areas of suitable vegetation types. Areas of developed, disturbed habitat, and riparian habitat are not shown as suitable habitat. For purposes of the Subarea Plan analysis, the SDMMP model results were grouped into the four categories (low to high). The acreage within the Plan Area includes (Figure 3-6):

Category	SDMMP Model Value	Acres within Plan Area
Highest	0.75 – 1	661.4
Moderately High	0.5 – 0.75	1,169.6
Moderate	0.25 – 0.5	1,961.7
Lowest	0 – 0.25	126.8
Total:		**3,883.6**

3.4.6.3 Threats and Other Management Considerations

Threats to San Diego thornmint include invasive species, and habitat loss and fragmentation (CBI 2014). Other threats include trampling and grazing, competition from native plants, motorized and non-motorized recreation, and altered hydrology (USFWS 2009). Altered fire regime and increased anthropogenic nitrogen soil deposition may also impact the species, but the effects are not currently well understood (USFWS 2009).

Suitable habitat for San Diego thornmint exists within the Plan Area, and occurrences of San Diego thornmint are known approximately 2,000 feet of the Plan Area boundary. There may be opportunities to establish population(s) of San Diego thornmint within preserved areas within the Subarea Plan Area where suitable microhabitat characteristics can be identified. This species is an annual that reproduces by seed, so seed can likely be collected from donor populations and be used to establish new occurrences. Establishment of occurrences within the Plan Area would potentially promote connectivity between surrounding populations and support regional conservation efforts for this species (CBI 2014). Seed will be sourced from large donor populations in close proximity (Milano and Vandergast 2018) and could then be out-planted on identified receptor sites or raised within a nursery facility to increase numbers of seed (bulking) prior to planting.

San Diego thornmint populations have historically been isolated with little contemporary gene flow, producing populations with low diversity within sites and high divergence of genetics between sites. Ploidy and outbreeding impacts should be further understood before moving seed between occurrences (Milano and Vandergast 2018). As there are no known occurrences in the Plan Area which could be compromised by restoration, populations can likely safely be established within the Plan Area to expand the range of nearby occurrences and provide a stepping-stone for connectivity (Milano and Vandergast 2018). Any restoration efforts will track seed collections and distribution and conduct long-term monitoring to track success.

3.4.6.4 References Cited for San Diego Thornmint

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Milano, E.R., and Vandergast, A.G., 2018, Population genomic surveys for six rare plant species in San Diego County, California: U.S. Geological Survey Open-File Report 2018–1175, 60 p., https://doi.org/10.3133/ofr20181175.

Miller, J.M and J.D. Jokerst 2017. *Acanthomintha ilicifolia*, in Jepson Flora Project (eds.) Jepson eFlora, http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=11725, accessed on October 24, 2017.

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USFWS. 2009. *Acanthomintha ilicifolia* (San Diego thornmint) 5-Year Review. Summary and Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. August 12.

3.4.7 Variegated Dudleya

Federal: None.

State: None.

California Rare Plant Ranking (CRPR): 1B.2.

Critical Habitat: None.

Recovery Planning: A recovery plan has not been prepared for this species.



3.4.7.1 Species Biology

Variegated dudleya is a small, corm-like sprouting perennial with succulent leaves (Reiser 2001). It has thin, spoon-shaped leaves which drop in summer. The inflorescence grows on stalks up to 20 centimeters tall and supports 3 to 11 flowers with spreading yellow petals (McCabe 2012).

Habitat Requirements

Variegated dudleya is found in clay and rocky openings in upland vegetation communities including coastal sage scrub, chaparral, and grasslands (Reiser 2001; CNPS 2023). It usually grows in areas devoid of shrub cover.

Key Seasonal Periods

Key seasonal periods for variegated dudleya are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flowering				✓	✓	✓						
Source: CNPS 2023.												

3.4.7.2 Species Distribution and Population Trends

Current Distribution

Variegated dudleya occurs in San Diego County and northern Baja California, Mexico. In San Diego County, it is known along the coastal slope and foothills south of Escondido to the international border. Near the Plan Area, occurrences of variegated dudleya have been recorded within the East Elliot, Fortuna Mountain, and Lake Murray areas of MTRP. The MTRP population is one of the 11 major MSCP populations (>500 individuals) for variegated dudleya.

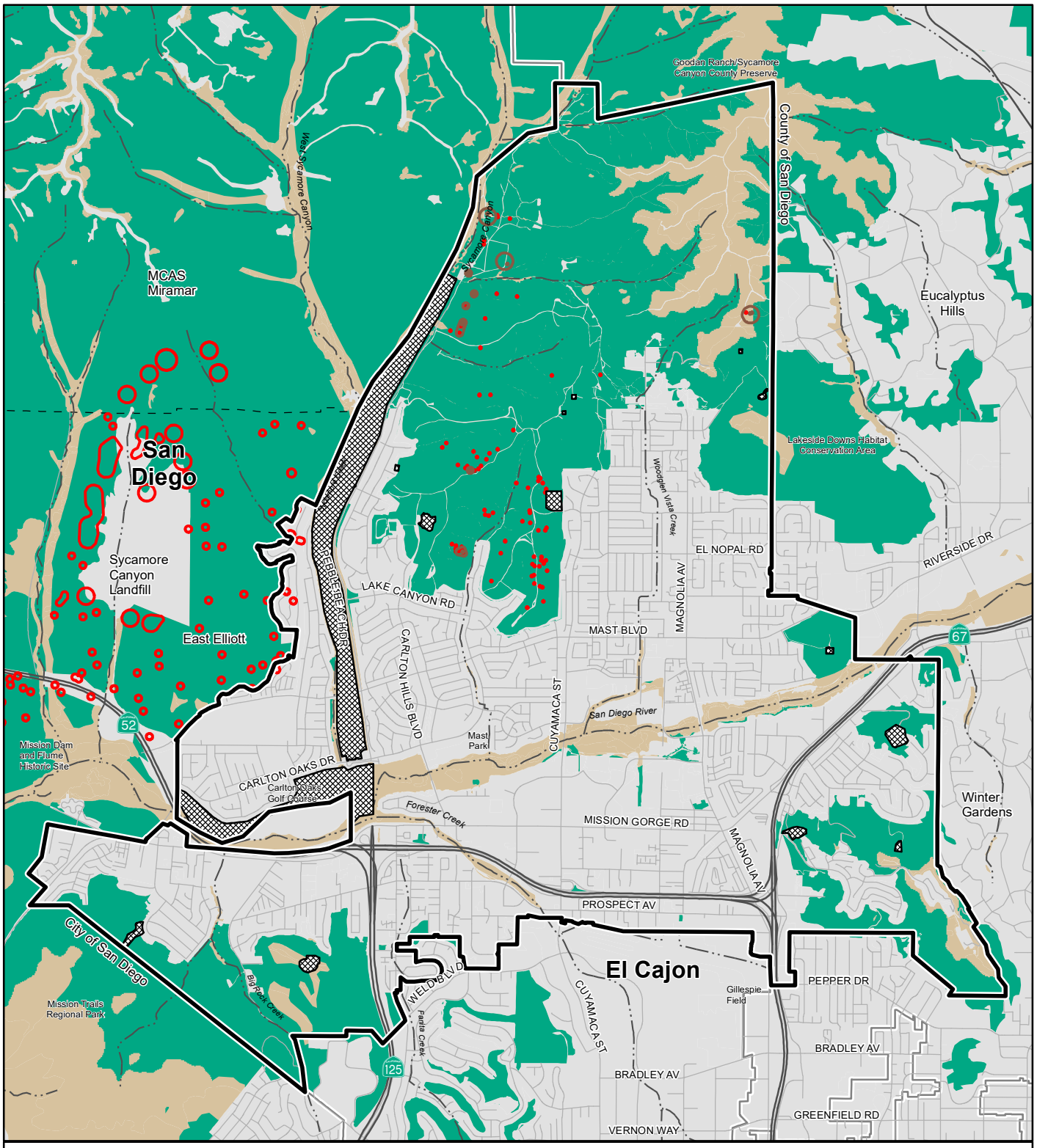
Known Occurrences in Plan Area

Variegated dudleya has been observed within the Fanita Ranch property (Figure 3-7). A total of 8,942 individuals of variegated dudleya were recorded throughout the central and southern portion of the project site within coastal sage scrub, grassland, and disturbed habitat. (Dudek 2020).

Habitat Suitability Model

A model of potentially suitable habitat for variegated dudleya has been developed for the Subarea Plan and approximately 3,379.7 acres of suitable habitat is within the Plan Area (Figure 3-7). The model is based on the following three factors:

- Vegetative cover including coastal sage scrub, grassland, chaparral, or vernal pool habitats;
- Soils that include clay or loam components; and
- Elevations below 1,000 feet.



* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

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Figure 3-7
Variegated Dudleya - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.4.7.3 Threats and Other Management Considerations

Large amounts of occupied habitat have been lost to urban and agricultural expansion. This species remains threatened by development, grazing, and nonnative plants (CNPS 2023).

The cryptic nature of this species makes it only observable in spring and early summer. Any surveys for the species will be conducted at the height of the blooming period, which would be determined by observing known populations.

As a perennial species with corms, impacted variegated dudleya populations can be salvaged and placed at receptor sites (i.e. translocated) including upland or vernal pool restoration areas within the Plan Area. Successful translocation (i.e. creating self-sustaining populations) of rare plant species can be enhanced by combining long-term monitoring with adaptive management strategies (Bellis et. Al. 2024). Therefore, translocation plans, outlining management techniques and ensuring similar ecological conditions between salvage and receptor sites, can be developed for any impacted populations as part of a project's mitigation program. Long-term management of these translocated populations would be included as part of preserve resource management plans.

3.4.7.4 References Cited for Variegated Dudleya

Bellis, J., Osazuwa-Peters, O., Maschinski, J., Keir, M. J., Parsons, E. W., Kaye, T. N., Kunz, M., Possley, J., Menges, E., Smith, S. A., Roth, D., Brewer, D., Brumback, W., Lange, J. J., Niederer, C., Turner-Skoff, J. B., Bontrager, M., Braham, R., Coppoletta, M., Holl, K.D., Williamson, P., Bell T., Jonas, J.L., McEachern, K., Robertson, K.L., Birnbaum, S.J., Dattilo, A., Dollard, J. J., Fant J., Kishida, W., Lesica, P., Link, S.O., Pavlovic, N.B., Poole, J., Reemts, C.M., Stiling, P., Taylor, D.D., Titus, J.H., Titus, P.J., Adkins, E.D., Chambers, T., Paschke, M.W., Heineman, K.D., Albrecht, M. A.. 2024. Identifying predictors of translocation success in rare plant species. Conservation Biology, volume 38, Issue 2, 2024. https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/cobi.14190.

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Reiser, C. 2001. *Rare Plants of San Diego County*. Aquafir Press. San Diego, CA.

3.4.8 Willowy Monardella



Federal: Endangered—1981.

State: Endangered—1979.

California Rare Plant Ranking (CRPR): 1B.1.

Critical Habitat: Critical Habitat was designated by USFWS in November 2006 and revised in March 2012 (USFWS 2012a). There are 117.6 acres within the Plan Area.

Recovery Planning: A recovery plan has not been prepared for this species.

3.4.8.1 Species Biology

Willowy monardella is a perennial herb or subshrub in the mint family (Lamiacea). It has smooth, aromatic leaves with showy pink flowers in single clusters on stems of 25–50 centimeters (Sanders, et al. 2017). It occurs on rocky washes and floodplain terraces in lower-velocity stream systems but rarely occurs in narrow first-order streams.

Habitat Requirements

Willowy monardella occurs on rocky washes and floodplain terraces in lower-velocity stream systems. Soils are typically sandy alluvium with large cobbles. It occurs below 400 meters and is endemic and restricted to central San Diego County.

Key Seasonal Periods

Key seasonal periods for willowy monardella are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flowering						✓	✓	✓				
Source: CNPS 2023.												

3.4.8.2 Species Distribution and Population Trends

Current Distribution

Willowy monardella only occurs in the central coastal plain of San Diego County. It is restricted to three watersheds north of Kearny Mesa (USFWS 2012b). It was previously listed as *Monardella linoides* subsp. *Viminea* but has been taxonomically reclassified as *Monardella viminea* and separated from the similar species Jennifer's monardella (*Monardella stoneana*) endemic to Otay Mountain and northern Baja California (CNPS 2023).

Known Occurrences in Plan Area

Willowy monardella is known from the Sycamore Canyon drainages along the northern boundary of the Plan Area (Figure 3-8). A total of 1,588 willowy monardella were mapped on the Fanita Ranch property in the early 2000's, and an additional population of 34 willowy monardella were mapped during the 2016 willowy monardella focused survey and incidentally observed during 2017 surveys (Dudek 2020). The observations were in the northwestern portion of the Fanita Ranch"project ar"a within coast live oak woodland, Diegan coastal sage scrub (including disturbed), disturbed valley needlegrass grassland, mulefat scrub, non-native grassland, non-vegetated channel, southern sycamore-alder riparian woodland, and southern arroyo willow riparian forest.

Habitat Suitability Model

A model of potentially suitable habitat (Figure 3-8) for willowy monardella has been developed for the Subarea Plan and approximately 336.5 acres of suitable habitat occurs with the Plan Area. The model is based on the following four factors:

- Natural vegetation cover;
- Topographic Position Index (TPI) representing flat and slope bottom areas;
- Within 100-foot buffer blue line streams; and
- Elevations below 1,000-feet

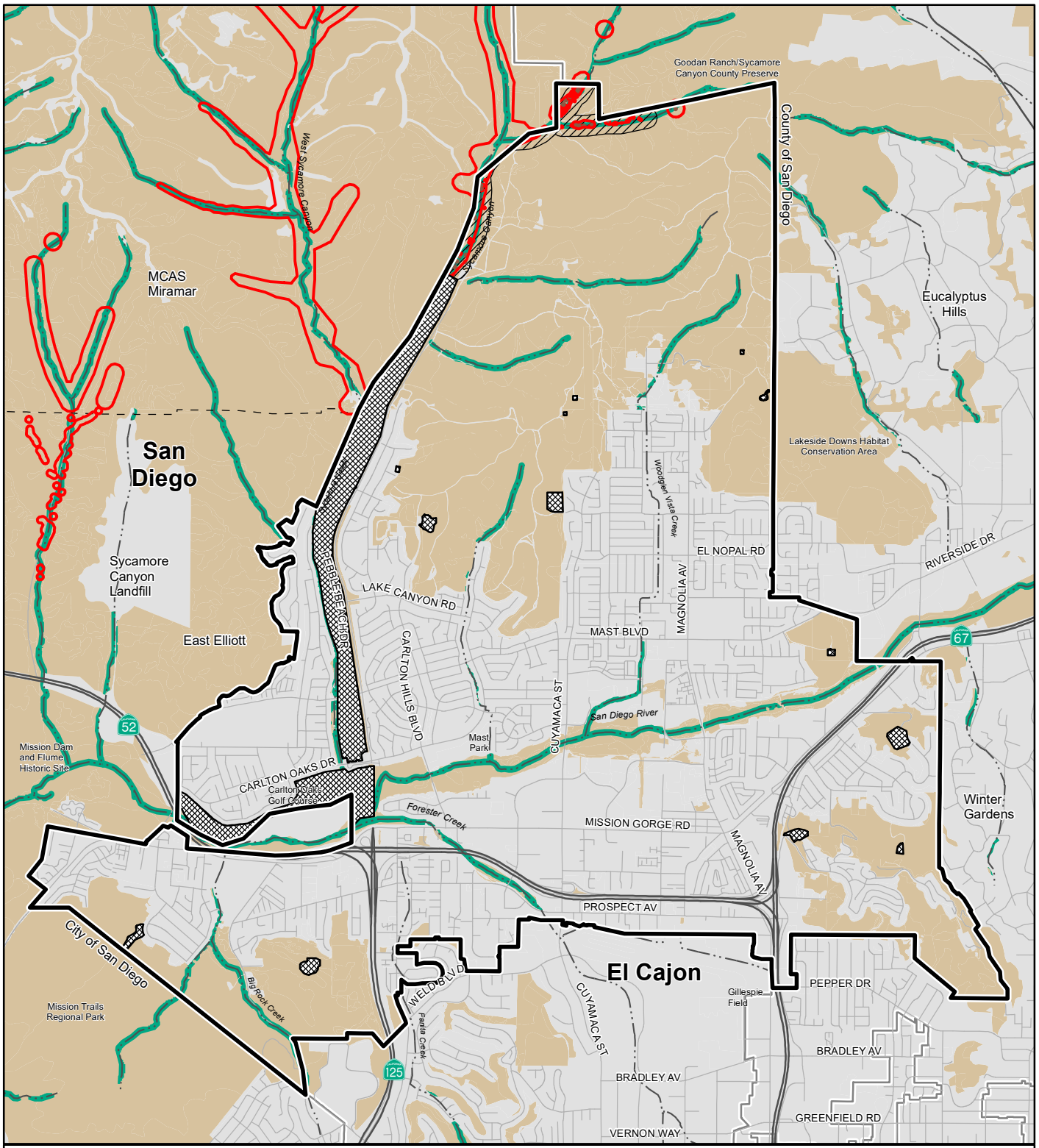
While willowy monardella generally occurs on cobbly, alluvial soils, the soil survey data do not include enough detail to correlate well with occurrences within the Plan Area.

3.4.8.3 Threats and Other Management Considerations

Threats to willowy monardella include: 1) Urbanization and development, 2) altered hydrology, 3) fire and type conversion, (4) disease and predation, (5) nonnative plant species, (6) small population size and restricted range, (7) climate change, and (8) altered fire regime (USFWS 2012).

Many of the watersheds supporting willowy monardella have experienced increased urbanization and the related increase in impervious surfaces, which increase stream discharge and velocity (Greer and Cheong 2006). These alterations in hydrology have resulted in increased scouring of streambeds resulting in undercutting of the associated alluvial terraces. As the subwatersheds of the Plan Area are developed, streams will need to be managed and enhanced to reduce downcutting and to attempt to maintain connectivity of the stream channel to the floodplain wash.

In many areas, willowy monardella and its habitat have been physically smothered by exotic annual grasses (Rebman and Dossey 2006). This grass thatch reduces or prevents recruitment of native herbs including willowy monardella. Nonnative grass thatch within preserve areas containing suitable habitat will be managed to provide viable recruitment sites for willowy monardella and be monitored.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-08 Willowy Monardella-Unique.mxd Date: 1/31/2025 34153

Figure 3-8
Willowy Monardella - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

This species has been grown from seed and cuttings effectively and out-planted at receptor sites but suffered from increased herbivory compared to natural populations. Several transplantation sites have had low survival (Milano and Vandergast 2018). Should such techniques be incorporated into management for the species, herbivory-prevention cages would be appropriate to assist with the establishment of plantings of the species. Plants will be tagged to allow surveys to monitor success through time.

Historically, populations were distributed such that gene flow was maintained among them. Translocation is a viable option to boost population sizes and provide for gene flow (Milano and Vandergast 2018). Ideally, any plant sourcing would be done from the closest occurrences.

3.4.8.4 References Cited for Willowy Monardella

California Native Plant Society, Rare Plant Program. 2023. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed March 2023].

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3.5 Invertebrate Species Profiles

3.5.1 Crotch's Bumble Bee



Federal: None.

State: Candidate for Endangered Status (2022).

Critical Habitat: None.

Recovery Planning: A recovery plan has not been prepared for this species.

3.5.1.1 Species Biology

Crotch's bumble bee (*Bombus crotchii*) is one of 40 species of bumble bees found in North America (Koch et al. 2012). Coloration is mostly yellow and black with red on the back of the abdomen. Queens, workers, and males are 0.87-0.98 inches (22-25 mm), 0.47-0.79 inches (12-20 mm) and 0.55-0.75 inches (14-19 mm), respectively. Queens and workers have identical color patterns but vary from males by the amount of yellow, red, and yellow on each segment of the bumble bee (The Xerces Society et al. 2018).

Colonies are comprised of a queen, worker females, and males. Queens initiate colonies and lay eggs. Workers collect food, defend colonies, and feed young. The male's sole function is to mate with queens. Colonies are established annually, initiated by solitary queens, to the production of workers and finally queens and males, with only new, mated queens overwintering (Thorp et al. 1983, The Xerces Society et al. 2018). Queens emerge from hibernation in late February and initially do all the foraging and colony care until the first workers emerge (Hatfield et al. 2018). Colonies typically consist of between 50 and 500 workers at their peak size (Plath 1927, Thorp et al. 1983, Macfarlane et al. 1994). Egg production of the queen depends on sufficient access to pollen. As such, pollen availability directly affects the number of new queens that can be produced each year and ultimately, population levels (Burns 2004, Hatfield et al. 2018).

Crotch's bumble bee, like other bumble bees, depend on floral resources for nutrition. By collecting nectar and pollen, bumble bees pollinate those plants they visit. Such pollination services are critical for many plant species to produce fertile seeds and fruit, including tomatoes, blueberries, and other important food crop plants important to our agricultural economy. Bumble bees, including Crotch's bumble bee, are generalist foragers, gathering pollen and nectar from a diversity of plant species; however, some species differ in their length of their tongue which may indicate some specialization for certain preferred flower types. Crotch's bumble bees have a short tongue, and forage at open flowers with short corollas (Hatfield et al. 2018). Nectar plants of Crotch's bumble bee primarily include those in the genus' *Asclepias*, *Chaenactis*, *Medicago*, and *Salvia* as well as those in the genera of *Amsinikia, Astragulus, Eriodictyon, Eriogonum, Helianthus, Lotus, Penstemon, Wisteria* and others (Thorp et al. 1983, Wall 2020, Williams et al. 2014, The Xerces Society et al. 2018).

Habitat Requirements and Ecology

Bumble bees, including Crotch's bumble bee, have three basic habitat requirements: colony nest sites, available floral resources for the duration of the colony period, and overwintering sites for the queens. Crotch's bumble bee nests are typically located underground in abandoned rodent nests but have also been documented above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees (Williams et al. 2014). Crotch's bumble bee are found in a variety of habitats including sage scrub, desert scrub, chaparral, oak woodland, and grassland. Crotch's bumble bees inhabit open grassland and scrub habitats and are better adapted to a hotter and drier environment than most bumble bee species (Hatfield et. Al. 2015, NatureServe 2021). They depend on habitats with an abundance and diversity of floral resources that bloom continuously throughout the entirety of a colony's life. Little is known about Crotch's bumble bee overwintering sites, but if sites are similar to most other bumble bees, then Crotch's bumble bee likely also overwinter in soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014).

Key Seasonal Periods

The flight season for Crotch's bumble bee queens is from late February to March (CDFW 2023). The flight season for workers and males occurs from April through August; worker and male abundance peak in early July (Thorp et al. 1983). New queens are produced at the end of the colony cycle and mate before entering diapause (a form of hibernation) (Hatfield et al. 2018). The gyne flight season is typically September through October. Key seasonal periods for Crotch's bumble bee are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Queen flight season		✓	✓									
Colony Active Period				✓	✓	✓	✓	✓				
Gyne[1] flight season									✓	✓		
Source: CDFW 2023. [1]The primary female caste of social insects, those that are destined to become queens.												

3.5.1.2 Species Distribution and Population Trends

Current Distribution

Crotch's bumble bee is nearly endemic to California, historically ranging from southern to central California, with occasional records in the northern portion of the state. This species occurs from the coast and coastal ranges, through the Central Valley, and to the adjacent foothills. Outside of California, Crotch's bumble bees range extends into Baja California, Mexico and southwest Nevada near the California border (Williams et al. 2014, Hatfield et. Al. 2018). The historic range of the species is estimated to have decreased by approximately 25 percent (Hatfield et al. 2015).

Crotch's bumble bee likely occurred in suitable habitat throughout San Diego County prior to urbanization. Historic records include observations in Anza-Borrego State Park, Banner, Carlsbad,

Cuyamaca, Encinitas, La Mesa, Lake Henshaw, Mission Gorge, Otay Mesa, Otay Mountain, Ramona, Santa Ysabel, Spring Valley, Torrey Pines Park, and Warner Springs (Thorp et al. 1983; SDNHM 2022).

Known Occurrences in Plan Area

There is one known occurrences of Crotch's bumble bee within the Plan Area within the CNDDB (EO #386) observed on March 15, 2020 (CNDDB 2023) (Figure 3-9).

Habitat Suitability Model and Mapping

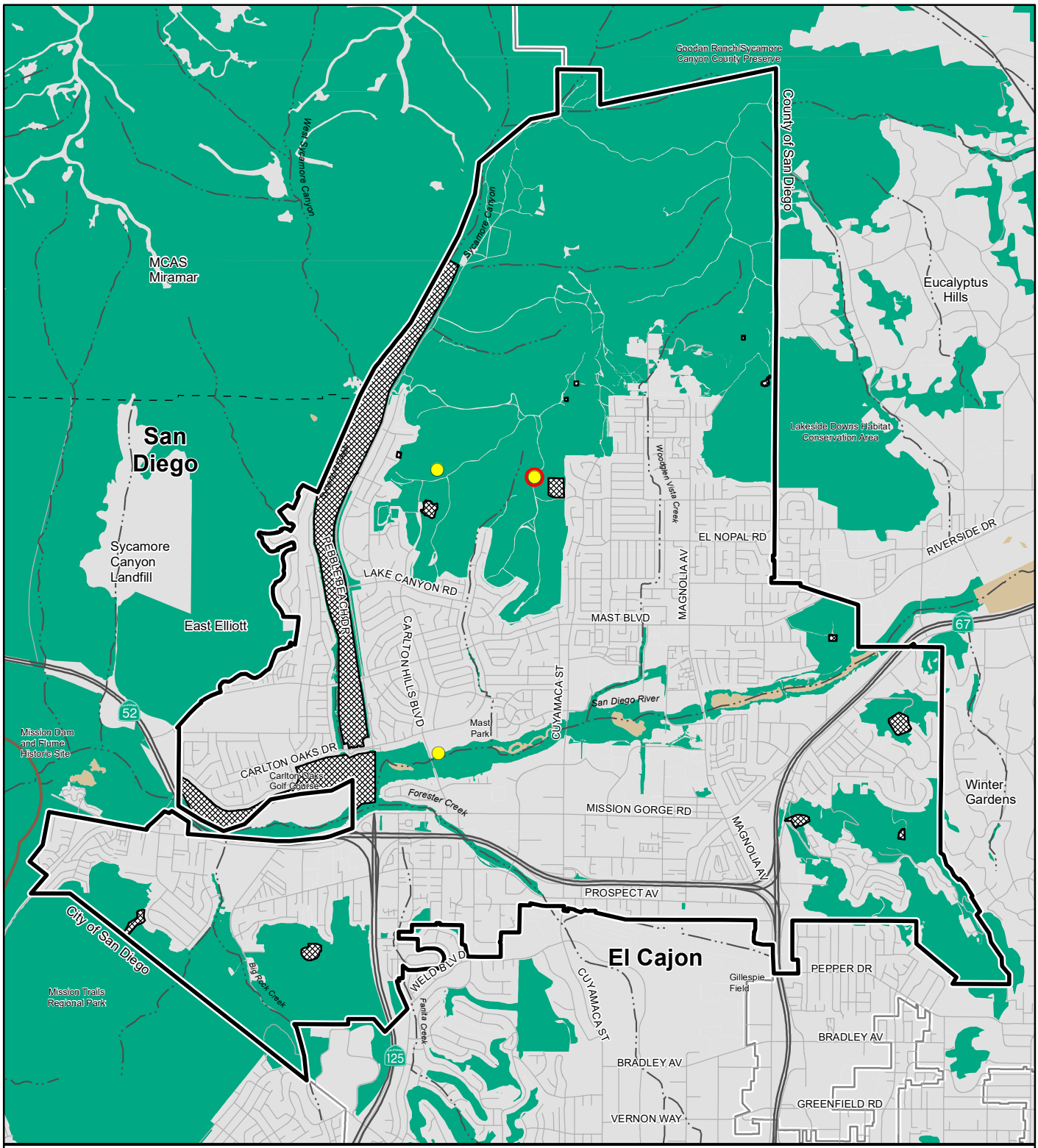
A model of potentially suitable habitat for Crotch's bumble bee has been developed for the Subarea Plan and approximately 4,287.3 acres of suitable habitat occurs within the Plan Area (Figure 3-9). The model was based on the following factor:

- All natural habitat types, excluding open water.

3.5.1.3 Threats and Other Management Considerations

The Crotch's bumble bee's abundance has declined significantly in recent decades. Habitat loss and degradation, toxins, disease, competition, and climate change are apparent threats to this species across its range and within the Plan Area (The Xerces Society et al. 2018). Habitat alteration and fragmentation, including that from agriculture and urban development, result in the loss of suitable grasslands and prairie/flower field habitat, can reduce sufficient food sources (nectar and pollen from flowers), and nesting and overwintering sites. Small and/or isolated patches of habitat may not be sufficient to support bumble bee populations (Hatfield and LeBuhn 2007, Öckinger and Smith 2007). Habitat fragmentation has been shown to reduce bumble bee foraging rates and alter their foraging patterns (Rusterholz and Baur 2010). Decreased source populations for recolonization may also result from habitat fragmentation (National Research Council 2007). Plowing, right-of-way vegetation management, or other ground disturbance activities can destroy nesting and overwintering sites (Hatfield et al. 2012, 2018). Crotch's bumble bees' nest in rodent burrows; loss of rodent populations from rodent control pest management programs can reduce nest site availability (Hatfield et al. 2018). Urbanization and agricultural intensification in the Central Valley may have contributed to the decline of Crotch's bumble bee populations (Hatfield et al. 2015).

Fire, and altered fire regimes, may also pose a threat to Crotch's bumble bee. Fire regimes are an important natural occurrence for many ecosystems and maintain open habitat required by Crotch's bumble bee (Hatfield et al. 2018). Fire suppression can lead to changes in vegetation structure of Crotch's bumble bee habitat, including degradation and loss of grasslands and herbaceous species (Schultz and Crone 1998, Panzer 2002). Fire suppression also causes an increase in combustible fuel loads, tree density, and fire intolerant species leaving habitats susceptible to large scale, highly intensive fire events and subsequent habitat degradation (Huntzinger 2003). Conversely, the increased fire return interval found in San Diego due to repeated anthropogenic ignitions could be either beneficial or detrimental to Crotch's bumble bee. Repeated fires may provide the preferred open habitat but may also lead to habitat degradation in the form of increased cover of invasive non-native plant species and a decline in habitat structure.



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Figure 3-9
Crotch's Bumble Bee - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Although there are no known management efforts specifically designed to conserve or recovery of this species (Hatfield et al. 2014, 2018; CDFW 2019), general conservation practices will include habitat protection, promoting pollinator-friendly farming practices, restricting pesticide and herbicide use on or near species' habitat, minimizing exposure to disease transfer from managed bees and avoiding introduction of honeybees into high-quality native bee habitat (The Xerces Society et al. 2018).

3.5.1.4 References Cited for Crotch's Bumble Bee

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Huntzinger, M. 2003. Effects of fire management practices on butterfly diversity in the forested western United States. Biological Conservation 113:1-12.

Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. U.S. Forest Service and the Pollinator Partnership.

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Öckinger, E. and H. Smith. 2007. Semi-natural grasslands as population sources for pollinating insects in agricultural landscapes. Journal of Applied Ecology 44: 50-59.

Panzer, R. 2002. Compatibility of prescribed burning with the conservation of insects in small, isolated prairie reserves. Conservation Biology 16: 1296-1307.

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Rusterholz, H. and B. Baur. 2010. Delayed response in a plant-pollinator system to experimental grassland fragmentation. Oecologia 163: 141-152.

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3.5.2 Hermes Copper Butterfly

Federal: Threatened.

State: None.

Critical Habitat: Critical Habitat was designated by USFWS in 2021 (USFWS 2021a). There is a total of 3,004.7 acres of Critical Habitat in the Plan Area.

Recovery Planning: A recovery plan has not been prepared for this species. A recovery outline was prepared (USFWS 2022).



3.5.2.1 Species Biology

Hermes copper butterfly is a small, brightly colored butterfly in the Lycaenidae family. Hermes copper larvae only use spiny redberry (*Rhamnus crocea*) as a host plant. Females lay eggs singularly at the base of a leaf. Larvae emerge in late spring after overwintering as eggs. Larvae mature through five instars over approximately 14 days (San Diego 2023). Adult butterfly emergence generally begins in mid- to late-May, with the single flight period extending into late June or early July (Marschalek and Deutschman 2015).

Habitat Requirements and Ecology

Hermes copper is closely associated with its only host plant, spiny redberry (*Rhamnus crocea*. The spiny redberry is found within the coastal sage scrub or mixed chaparral vegetation communities (EDAW AECOM 2009). This species has also been observed nectaring on other short-corolla flowers including chamise (*Adenostama fasciculatum*), California sunflower (*Encelia californica*), slender sunflower (*Helianthus gracilentus*), poison oak (*Toxicondendron diversilobum*), and short-pod mustard (*Hirshfeldia incana*) (Dudek 2020). Hermes copper larvae feed on new growth on mature shrubs. It is not known why Hermes copper does not occur further north from San Diego County, when spiny redberry is distributed hundreds of miles to the north (Marschalek and Deutschman 2015). Hermes copper males exhibit strong territoriality and rarely move more than 50 meters. Females do not exhibit this territoriality (Marschalek and Deutschman 2015).

Key Seasonal Periods

Key seasonal periods for Hermes copper are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Larval Development and Flight season					✓	✓	✓					
Overwintering as eggs	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
Source: USFWS 2011.												

3.5.2.2 Species Distribution and Population Trends

Current Distribution

Hermes copper is endemic to San Diego County and northern Baja California Mexico. This species occurs west of the Cuyamaca Mountains, generally in the San Diego County foothills, and has been found as far north as Fallbrook. This species has never been identified immediately along the coast and has not been observed above 1,300 meters in elevation. The species has not been found to the east of Pine Valley and Potrero, as spiny redberry does not extend further inland (KEPS 2010). Surveys conducted in 2010-2012 showed very few individuals at most of the known occupied sites. Wildfires are known to greatly influence the distribution of Hermes copper, as only two recolonizations have

been documented following the large wildfires of 2003 and 2007 (Marschalek and Deutschman 2015). The USFWS Recovery Outline (2022) summarizes the current conditions as:

> Of the 98 known historical occurrences in southern California, there are currently 26 occurrences that are believed to be extant or presumed extant; therefore, there is limited population resiliency to withstand stochastic events. Based on the USFWS viability index, Hermes copper butterfly has lost significant viability over the past 50 years (USFWS 2021b, 4.2 Species Viability Index). There are presumed extant occurrences across a continuum of elevations and varying habitat diversity. This helps ensure the species has sufficient representation to provide the adaptive capacity necessary to maintain species viability. This number of populations presumed and considered to be extant also provides redundancy to protect the species against catastrophic events. While we know fire, drought, and climate change are ongoing stressors that continue to severely affect species viability, under current conditions, there is a sufficient number of extant or presumed extant populations to ensure that the species is not currently in danger of extinction.

Hermes copper butterfly have previously been observed in the vicinity of the Plan Area but have not been seen in subsequent surveys. This includes locations at (1) Mission Trails Regional Park (one individual was observed at Cowles Mountain in 2010, but was not seen in subsequent surveys in 2011 (San Diego 2017)), (2) Lakeside Downs Habitat Conservation Areas (this area had known occurrences in 1975-76 and 2004, but not seen in subsequent surveys in 2017 and 2019 (CBI 2019)) and (3) Sycamore Canyon/Goodan Ranch Preserve (Hermes copper butterfly was recorded within the Sycamore Canyon/Goodan Ranch Preserve before the 2003 Cedar fire but was not observed during 2008 and 2012 surveys (San Diego 2013)).

Known Occurrences in Plan Area

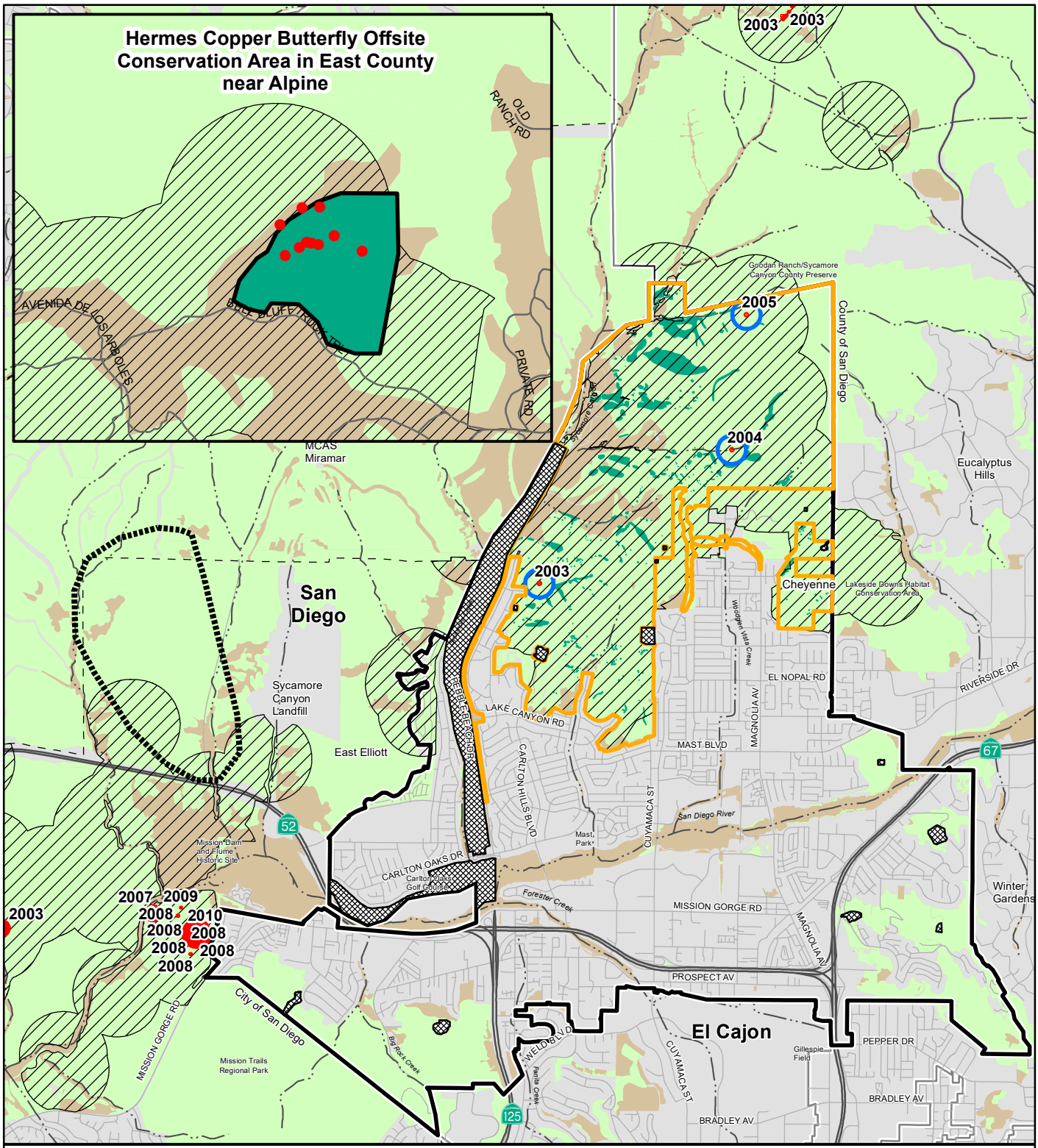
Surveys conducted by Dudek in 2003, 2004, and 2005 (after the Cedar Fire) identified a total of three individuals within Fanita Ranch (Figure 3-10a). Focused surveys conducted in 2014 and 2016 did not detect this species again (Dudek 2020). Within the 117-acre conserved Cheyenne property, suitable habitat was mapped and surveys completed by Klein-Edwards Professional Services in 2010 (KEPS 2010). No observations of Hermes copper butterfly were noted on the Cheyenne property.

The Plan Area includes an offsite conservation area located in the east county near Alpine. This 80.4-acre offsite conservation area was confirmed to have at least 22 occurrences of Hermes copper butterfly based on field surveys completed in 2022 (Dudek 2022) (Figure 3-10b).

Habitat Suitability Model and Mapping

The mapping of suitable habitat within the Plan Area has been completed at two different levels of detail.

- **Potentially suitable vegetation communities** which typically include the Hermes copper butterfly host plant, spiny redberry (*Rhamnus crocea*), and nectar source California buckwheat (*Eriogonum fasciculatum*) within chaparral and coastal sage scrub communities. This vegetation assemblage is much more common throughout San Diego County than is the Hermes copper butterfly. Approximately 4,287.3 acres of potentially suitable vegetation communities for Hermes copper butterfly occur in the Plan Area.



Legend

- Subarea Plan Area
- Potentially Suitable Vegetation Communities (coastal sage scrub and chaparral)

Mapping of Habitat Model Based on Field Surveys

- Habitat Model
- Final Critical Habitat (USFWS 2021)
- Project Boundaries of Focused Surveys Completed for Hermes Copper Butterfly
- Hermes Copper Butterfly Occurrences (with occurrence year)
- 500-Foot Buffer Around Occurrences
- Quino Checkerspot Butterfly Offsite Conservation Area
- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

Note: Focused surveys for hermes copper butterfly completed on the Fanita Ranch property in 2014 and 2016 and on the Cheyenne property in 2010 were negative.

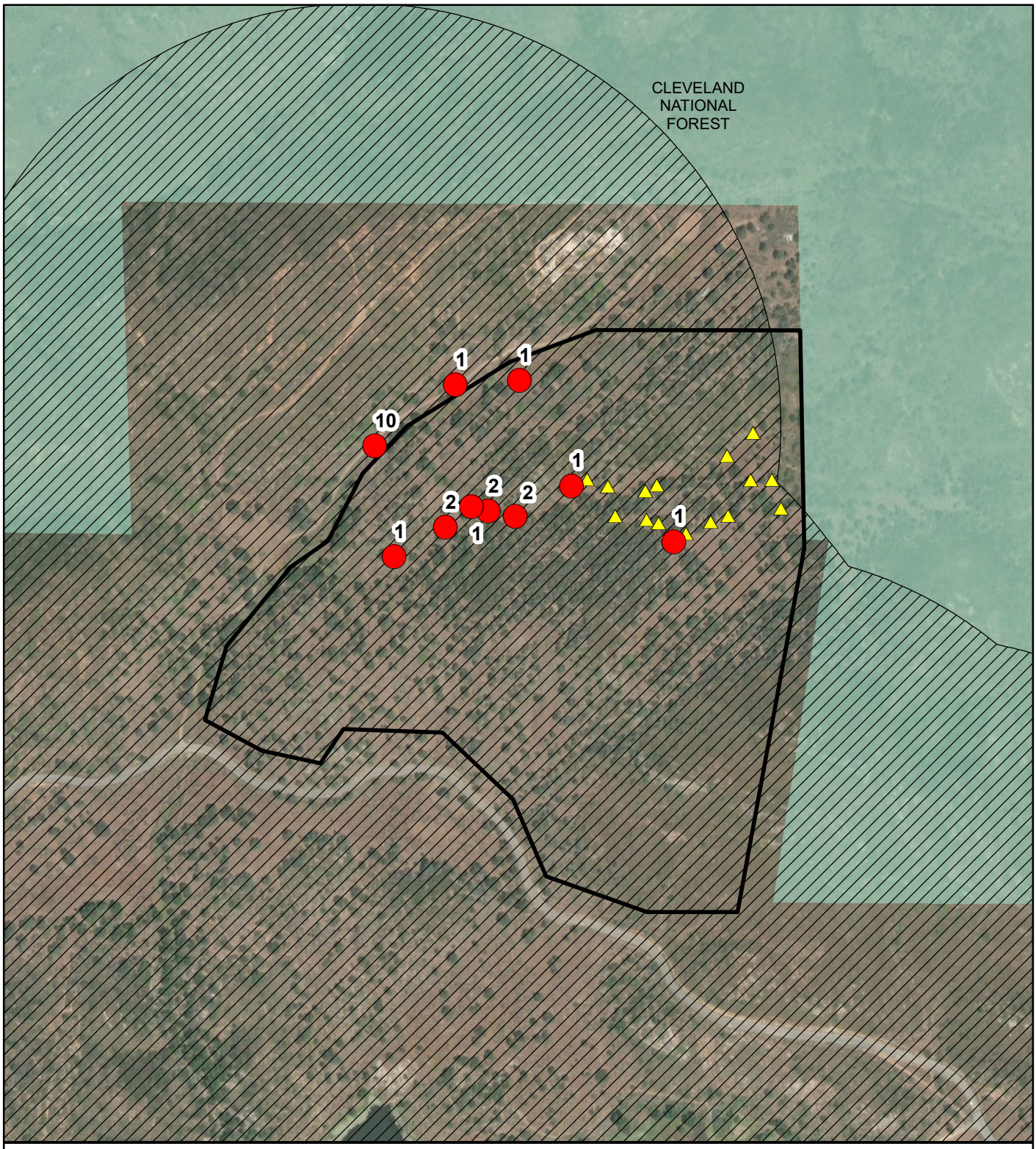
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Figure 3-10a
Hermes Copper Butterfly: Known Occurrences and Habitat Model
Santee MSCP Subarea Plan



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-10b Hermes Copper Butterfly Offsite.mxd Date: 7/16/2025 34153

Figure 3-10b
Hermes Copper Butterfly: Known Occurrences at Offsite Conservation Area
Santee MSCP Subarea Plan

- **Mapping of suitable habitat based on field surveys.** In situations where field surveys have been completed within the Plan Area, a total of 230.5 acres of suitable habitat were mapped using the guidelines for habitat assessments that were current at the time of the field surveys[9]. The Fanita Ranch property included 148.4 acres, and the Cheyenne property included 1.7 acres of suitable habitat (Figure 3-10a). The entire Hermes Offsite Conservation Area (80.4 acres) was determined to be suitable habitat based on field surveys completed in 2022 (Dudek 2022).

3.5.2.3 Threats and Other Management Considerations

Primary threats to Hermes copper include wildfire, habitat loss and fragmentation, and their effects on small and isolated populations (Marschalek and Deutschman 2015; USFWS 2011). The latest trends indicate that drought is a major threat to the species. A majority of historical populations are presumed to be extirpated, with many of these directly lost to urban development. Many of the occupied areas are isolated and fragmented from other suitable habitat (USFWS 2011). In addition, occupied habitat patches that are protected by regulatory mechanisms may be further fragmented and degraded by adjacent development.

Wildfires have been identified as a major threat to the species, and recolonization is critical to the existence of Hermes copper (Marschalek and Deutschman 2015). Hermes copper deposits its eggs on a chaparral species, which may be burned during large fire events. These events could potentially extirpate Hermes copper occurrences. While spiny redberry is an obligate stump resprouting species, it takes many years for spiny redberry to mature and be suitable habitat for Hermes copper. California buckwheat densities are reduced after fires and are more susceptible to competition from invasive plants than stump-resprouting chaparral species such as spiny redberry (USFWS 2011). Hermes copper populations have generally low numbers and limited distribution potential, and few extirpated populations are known to have had recent recolonization events after fires (Marschalek and Deutschman 2015). Although there have been some recolonizations of the species after fire, it remains a significant threat to recovery of Hermes. USFWS analysis of current fire danger and fire history illustrates the potential for permanent loss of the majority, if not all, remaining Hermes copper butterfly populations should another large fire occur prior to recolonization of burned habitats (USFWS 2011). The small population sizes make Hermes copper vulnerable to stochastic extirpation throughout its range.

Regional efforts should continue to support captive rearing Hermes copper, as initial attempts to date have been unsuccessful. Management conducted under the Subarea Plan may consider tools such as translocation of gravid females or egg-hosting shrubs to promote recolonization of previously occupied areas and expansion into suitable areas as the success of these techniques improves. Translocation would require coordination with the Wildlife Agencies along with the preparation of an approved translocation plan.

Other options to enhance the function and services of potential habitat include augmenting recovering post-fire habitat, expanding redberry and nectaring plants within unoccupied areas, and limiting or removing invasive exotic plant species that would compete with native vegetation.

[9] Previous guidelines for Hermes copper habitat assessments required the identification of suitable habitat in areas that contain any woody (mature) spiny redberry shrubs with California buckwheat within 15 feet.

3.5.2.4 References Cited for Hermes Copper

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EDAW AECOM. 2009. Independent Scientific Advisory Report for the Conservation Strategy for Hermes Copper Butterfly in the City of Santee. October.

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USFWS. 2022. Recovery Outline for Hermes Copper Butterfly. U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office. January 20.

3.5.3 Quino Checkerspot Butterfly



Federal: Endangered—1997.

State: None.

Critical Habitat: Critical Habitat was designated in April 2002 and revised Critical Habitat designated in June 2009 (USFWS 2009a). There is no Critical Habitat for Quino checkerspot butterfly designated within the Plan Area.

Recovery Planning: Recovery plan was published in August 2003.

3.5.3.1 Species Biology

Quino checkerspot butterfly is the most southwesterly distributed subspecies of *Euphydryas editha.* The appearance of Quino checkerspot butterfly is distinguishable from other subspecies by relative cover of red, orange, black, and white scaling (Mattoni et al. 1997). This species has one flight season which usually occurs from late February into April. Occasionally, there may be a second flight period in the fall, but that is rare. Females lay egg masses on primary host plants (USFWS 2009b). Larvae emerge and feed on host plants, before entering into diapause as either third or fourth instar larvae (Mattoni et al. 1997). Surviving larvae break diapause after winter rains of the next season sufficient to germinate and establish food plant. Post-diapause larvae go through several more instars before pupating. Pupae mature and eclose in approximately 10 days. Larvae may also reenter diapause if environmental conditions are not suitable. Significant pre-diapause mortality can occur because of variable spring weather conditions (Mattoni et al. 1997).

Habitat Requirements and Ecology

Quino checkerspot butterfly habitat is characterized as patchy scrub or chaparral with openings of several meters between large plants (Mattoni et al. 1997). Adult Quino will only oviposit on select host plants, including dot-seed plantain (*Plantago erecta*), desert plantain (*Plantago patagonica*), white snapdragon (*Anterrhinum coulterianum*), and Chinese houses (*Collinsia concolor*) (USFWS 2009b; Parmesan et al. 2014). Pre-diapause larvae cannot move more than a few centimeters and are usually restricted to the host plant they were deposited on, but captive rearing studies also show that larger larvae prefer to diapause in or near the base of native shrubs (USFWS 2009b). Larvae are also known to shift to feeding on other host plants including purple owl's clover (*Castilleja exserta*) and bird's beak (*Cordylanthus rigidus*), as primary host plants become unsuitable (USFWS 2009). Adult Quino butterflies generally bask directly on bare dirt or rocks. They feed on short-corolla flowers including California buckwheat (*Eriogonum fasciculatum*), goldfields (*Lasthenia gracilis*), and ground pink (*Linanthus dianthiflorus*). Males are territorial and rarely venture beyond 200 meters from adult nectar sources (USFWS 2009b). Wildfire is a component of coastal sage scrub and chaparral communities. Host plants and larvae may be able to survive in unburned patches within fire perimeters, but exotic invasive may become more prevalent post fire, increasing competition for host plants and increasing fuels and likelihood of burning in future fires.

Key Seasonal Periods

Key seasonal periods for Quino checkerspot butterfly are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Larval development (active period)	✓	✓	✓									
Flight Season		✓	✓	✓	✓							
Overwintering as larvae (inactive period)	✓				✓	✓	✓	✓	✓	✓	✓	✓
Source: USFWS 2009b.												

3.5.3.2 Species Distribution and Population Trends

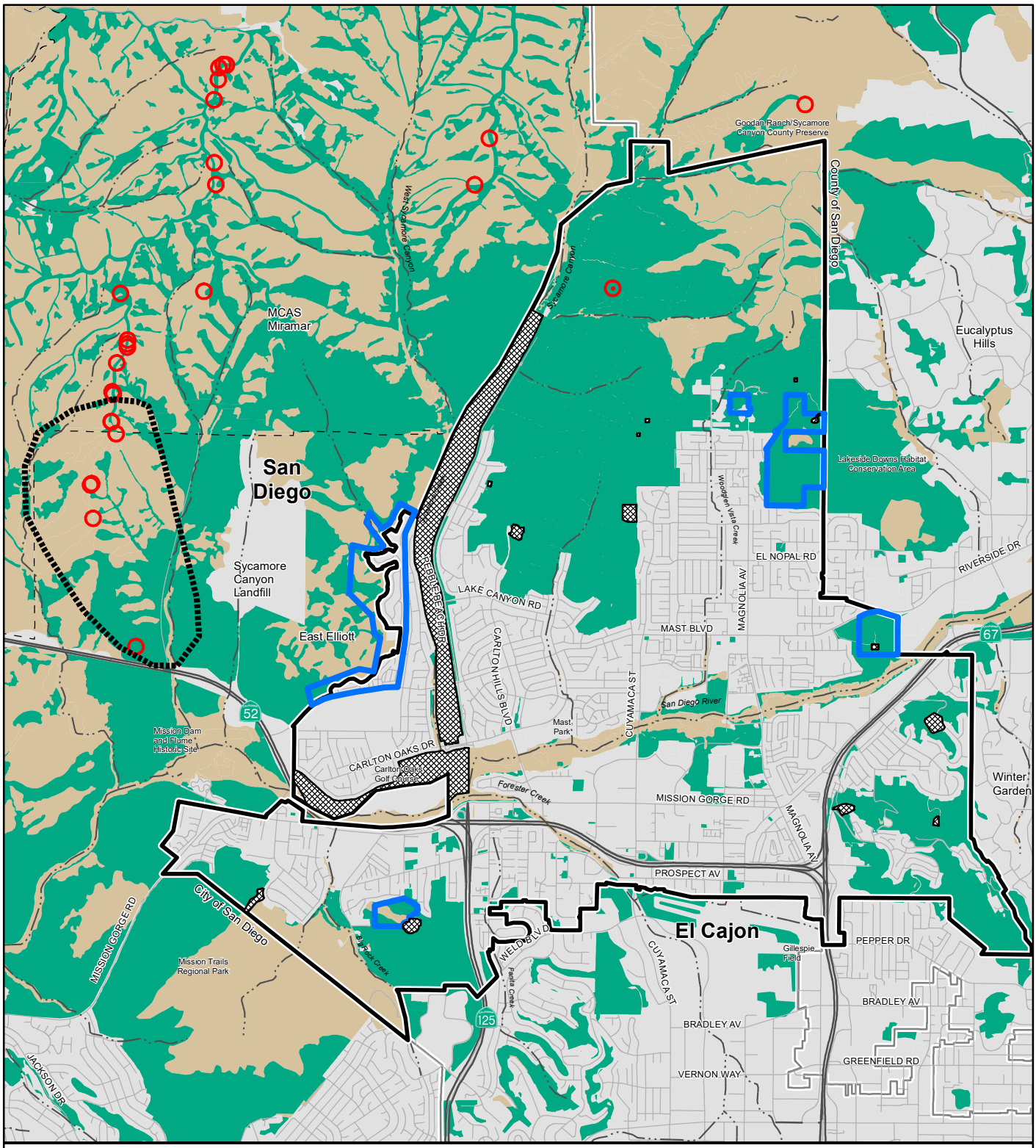
Current Distribution

This species occurs in San Diego and Riverside Counties, and northwestern Baja California Mexico. Quino checkerspot butterflies historical range included much of cismontane southern California: San Diego, western Riverside, Orange, southwestern Ventura; southwestern San Bernardino; and Los Angeles counties (USFWS 2009b; Mattoni et al. 1997). More than 75 percent of the species' historical range has been lost including more than 90 percent of its coastal mesa and bluff distribution (USFWS 2009b).

Recent observations within the vicinity of the Plan Area have been recorded at Sycamore Canyon/Goodan Ranch Preserve in 2019 and east MCAS Miramar in 2018, 2019, and 2023 (USFWS 2024). One adult Quino checkerspot butterfly was observed in MTRP in 2005, and historically, two observations were recorded in 1953 and 1960; however, no sustainable populations are known to occur within MTRP. In June 2012, Quino surveys within available habitat at MTRP were negative (San Diego 2017).

Known Occurrences in Plan Area

One observation of Quino checkerspot butterfly has been recorded within the Plan Area during surveys of the Fanita Ranch property in 2005 (Figure 3-11). Subsequent surveys of Fanita Ranch did not detect the Quino checkerspot butterfly (Dudek 2020).



* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-11 Quino Checkerspot Butterfly.mxd Date: 7/14/2025 34153

Figure 3-11
Quino Checkerspot Butterfly - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Habitat Suitability Model and Mapping

Suitable habitat within the Plan Area was mapped based on the following:

- **Potentially suitable vegetation communities** that include host plants that support Quino checkerspot and can occur in most vegetation communities but are most prevalent in areas of coastal sage scrub, grassland, and disturbed habitat. These vegetation communities have been highlighted City-wide and include the areas where Quino checkerspot butterfly surveys will likely be warranted. Approximately 3,713.7 acres of potentially suitable vegetation communities are within the Plan Area (Figure 3-11).

3.5.3.3 Threats and Other Management Considerations

Basis for listing was habitat loss and degradation, and fragmentation. Additional threats and stressors include invasive exotic plants, climate change and increasing frequency of drought, altered host plant phenology, anthropogenic nitrogen deposition favoring exotic plants, and grazing (USFWS 2009b). In areas where habitat is protected, urbanization of nearby land may result in fragmentation and increased degradation from edge effects.

The primary host plant is most frequent in Diegan coastal sage scrub, which has experienced extreme conversion to urban and agricultural uses. Remaining areas of sage scrub have been rendered less suitable because of the proliferation of exotic annual weeds, which physically outcompete and displace native host and nectar plants, and which create higher vegetative biomass, allowing wildfire to spread and burn more intensely in openings which would otherwise have low biomass in the dry season.

While several host plants for Quino are widely distributed and common, habitat suitability with regards to environmental conditions and temporal variability have not been well studied (USFWS 2009b). Quino require larval food plants to be growing at a time of year and for a period of time sufficient for their development. Any habitat restoration efforts within the Plan Area will include a variety of host plants, nectar resources, shrubs for shelter, and a variety of slope aspects, to attempt to provide more variability for potential habitat to respond to environmental changes. Weed control efforts will maintain openings between shrubs and low biomass openings with available rock perches.

3.5.3.4 References Cited for Quino Checkerspot Butterfly

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Mattoni, R., G.F. Pratt, T.R. Longcore, J.F. Emmel, and J.N. George. 1997. The endangered Quino checkerspot, *Euphydryas editha quino* (Lepidoptera: Nymphalidae). Journal of Research on the Lepidoptera 34: 99-118.

Parmesan, C., A. Williams-Anderson, M. Moshwik, A.S. Mikheyev, M.C. Singer. 2014. Endangered Quino checkerspot butterfly and climate change: Short-term success but long-term vulnerability? Journal of Insect Conservation.

San Diego, City of. 2017. Natural Resources Management Plan for the Mission Trail Regional Park, San Diego, California. Prepared by RECON Environmental Inc. January.

U.S. Fish and Wildlife Service (USFWS). 2009a. Endangered and Threatened Wildlife and Plants; Revised Endangered Status, Revised Designation of Critical Habitat for Quino Checkerspot Butterfly (*Euphydryas editha quino*); Final Rule. *Federal Register* 74 (115): 28776-28862. Washington, D.C.: USFWS. June.

USFWS. 2009b. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. August 13.

USFWS. 2024. Quino Checkerspot Butterfly (*Euphydryas editha quino*) Occurrence Data. Updated January 2024. https://www.fws.gov/media/gis-species-occurrence-data-updated-january-2024

3.5.4 Riverside Fairy Shrimp

Federal: Endangered—1993.

State: None.

Critical Habitat: Final Critical Habitat was designated in May 2001, revised in April 2005, and revised again in December 2012 (USFWS 2012). There are no areas of Critical Habitat for Riverside fairy shrimp located within or near the Plan Area.

Recovery Planning: Riverside fairy shrimp is included in the Recovery Plan for Vernal Pools of Southern California (USFWS 1998).



3.5.4.1 Species Biology

Riverside fairy shrimp is a small aquatic crustacean in the order Anostraca. Riverside fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. It is approximately 2–3 centimeters long at maturity. Male Riverside fairy shrimp are distinguished from similar species by characteristics of the second antenna. Females have cigar shaped brood pouches that contain resting eggs called cysts. These cysts consist of a shell which protects the larval embryo, called naupili. These cysts can persist and survive for many years in their diapause until the right ponding and environmental conditions trigger emergence. The cysts from successful reproduction are retained in the pool and develop into a cysts bank comprised of cysts from several seasons of breeding. After emergence, Riverside fairy shrimp requires 7–8 weeks of pool inundation to reach maturity and reproduce.

Habitat Requirements and Ecology

Riverside fairy shrimp are generally restricted to vernal pools and other non-vegetated ephemeral basins. These pools are generally greater than 12 inches in average ponding depth, as the pools need to be large enough to have a continuous inundation period to accommodate the development period of Riverside fairy shrimp. Riverside fairy shrimp cannot persist in a perennial water system because the re-wetting of cysts is necessary to trigger hatching, and ephemeral systems lack aquatic predators

compared to perennial aquatic habitats (USFWS 2008). Riverside fairy shrimp are restricted to vernal pools with dilute water, including low sodium concentrations, low alkalinity, and neutral pH (USFWS 2008).

Key Seasonal Periods

Key seasonal periods for Riverside fairy shrimp are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Adult phase	✓	✓	✓	✓								✓
Dormancy as cysts					✓	✓	✓	✓	✓	✓	✓	
Source: USFWS 2008.												

3.5.4.2 Species Distribution and Population Trends

Current Distribution

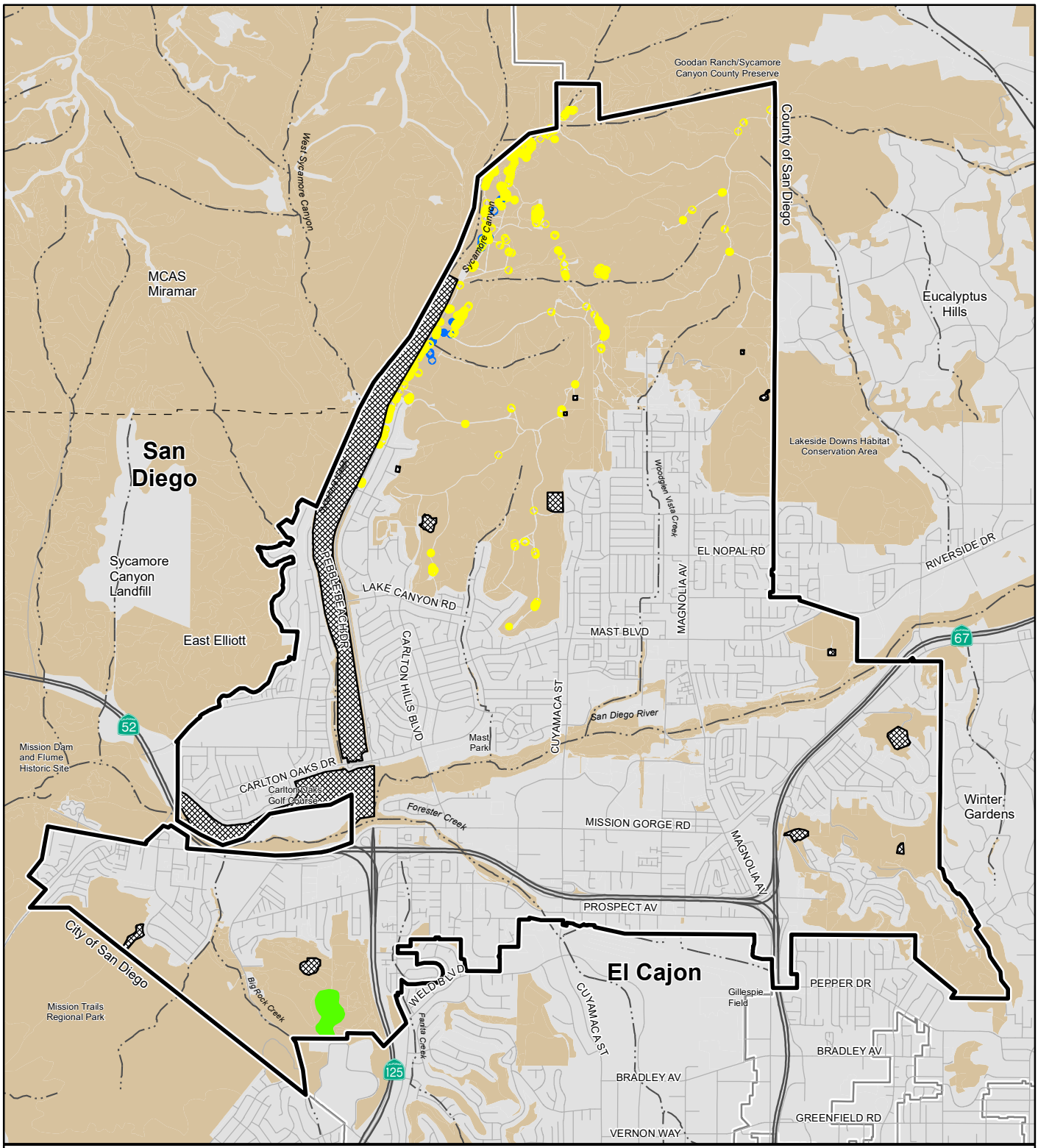
This species is restricted to inland areas of San Diego, Orange, and western Riverside counties, and coastal areas of San Diego County and northwestern Baja California, Mexico. As of the 5-year review in 2008, there were 45 known complexes. This species has a disjunct distribution within San Diego County, with many occurrences on Camp Pendleton and Otay Mesa, with few in the remainder of the County. The nearest known occurrences of Riverside fairy shrimp to the Plan Area are in west Miramar (CNDDB EO#1) and Ramona (CNDDB EO#44). The west Miramar occurrence (CNDDB EO#1) is located approximately 6 miles northwest of the Plan Area and Riverside fairy shrimp was first observed during a survey in conducted in 1990 (locality Miramar #2 Kearny Mesa pool AA2 as identified in Bauder 1986), and since then cysts from dry season samples were collected in 2009 for use in a genetic study. The Ramona occurrence (CNDDB EO#44) is located approximately 9 miles north of the Plan Area and occurs along the border of the Ramona Airport and the Ramona Grassland Preserve. Riverside fairy shrimp cysts were detected in this pool complex during dry season surveys conducted in December 2006.

Known Occurrences in Plan Area

Riverside fairy shrimp is not currently known to occur in the Plan Area. While the Plan Area is not part of the primary distribution for this species, there is the potential for this species to be found with the Plan Area based on the proximity of other occurrences.

Habitat Suitability Mapping

Areas of suitable habitat for Riverside fairy shrimp are closely associated with vernal pools and seasonal basins. A total of 19.3 acres of known vernal pool complexes, vernal pools, and seasonal basins occur within the Plan Area, as shown in Figure 3-12.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-12 Riverside Fairy Shrimp.mxd Date: 2/1/2025 34153

Figure 3-12
Riverside Fairy Shrimp - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.5.4.3 Threats and Other Management Considerations

Threats to Riverside fairy shrimp include habitat loss, habitat fragmentation, altered hydrology, and nonnative plants (USFWS 2008). Climate change is also considered a threat to the species, as increasing drought or temperatures could decrease the frequency or hydroperiod of inundation.

3.5.4.4 References Cited for Riverside Fairy Shrimp

U.S. Fish and Wildlife Service (USFWS). 1998. Vernal Pools of Southern California Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

USFWS. 2008. *Streptocephalus woottoni*. Riverside fairy shrimp. 5-year: Summary Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. September 29.

USFWS. 2012. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Riverside Fairy Shrimp; Final Rule. *Federal Register* 77 (223): 72069-72140. Washington, D.C.: USFWS. December.

3.5.5 San Diego Fairy Shrimp

Federal: Endangered—1997.

State: None.

Critical Habitat: Final Critical Habitat was designated by USFWS in December 2007 (USFWS 2007). No designated Critical Habitat for San Diego fairy shrimp exists within or near the Plan Area.

Recovery Planning: San Diego fairy shrimp is included in the Recovery Plan for Vernal Pools of Southern California (USFWS 1998).



3.5.5.1 Species Biology

San Diego fairy shrimp is a small aquatic crustacean in the order Anostraca. Male San Diego fairy shrimp are distinguished from other *Branchinecta* species by differences in the distal tips of the second antenna. Females have elongated brood pouches that contain resting eggs called cysts. These cysts consist of a shell which protects the larval embryo, called naupili. Cysts are capable of withstanding temperature extremes and prolonged drying in this diapause state. The cysts from successful reproduction are retained in the pool and develop into a cysts bank comprised of cysts from several seasons of breeding. Individuals hatch and mature within 7 to 14 days of rainfall filling a pool, depending on water temperature. San Diego fairy shrimp feed on algae, diatoms, and other particulate organic matter.

Habitat Requirements and Ecology

San Diego fairy shrimp are generally restricted to vernal pools and other non-vegetated ephemeral basins. They typically occur in basins that have between 2 to 12 inches of maximum ponding depth.

Key Seasonal Periods

Key seasonal periods for San Diego fairy shrimp are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Likelihood for adult shrimp	✓	✓	✓	✓								✓
Dormancy as cysts					✓	✓	✓	✓	✓	✓	✓	
Source: USFWS 2008.												

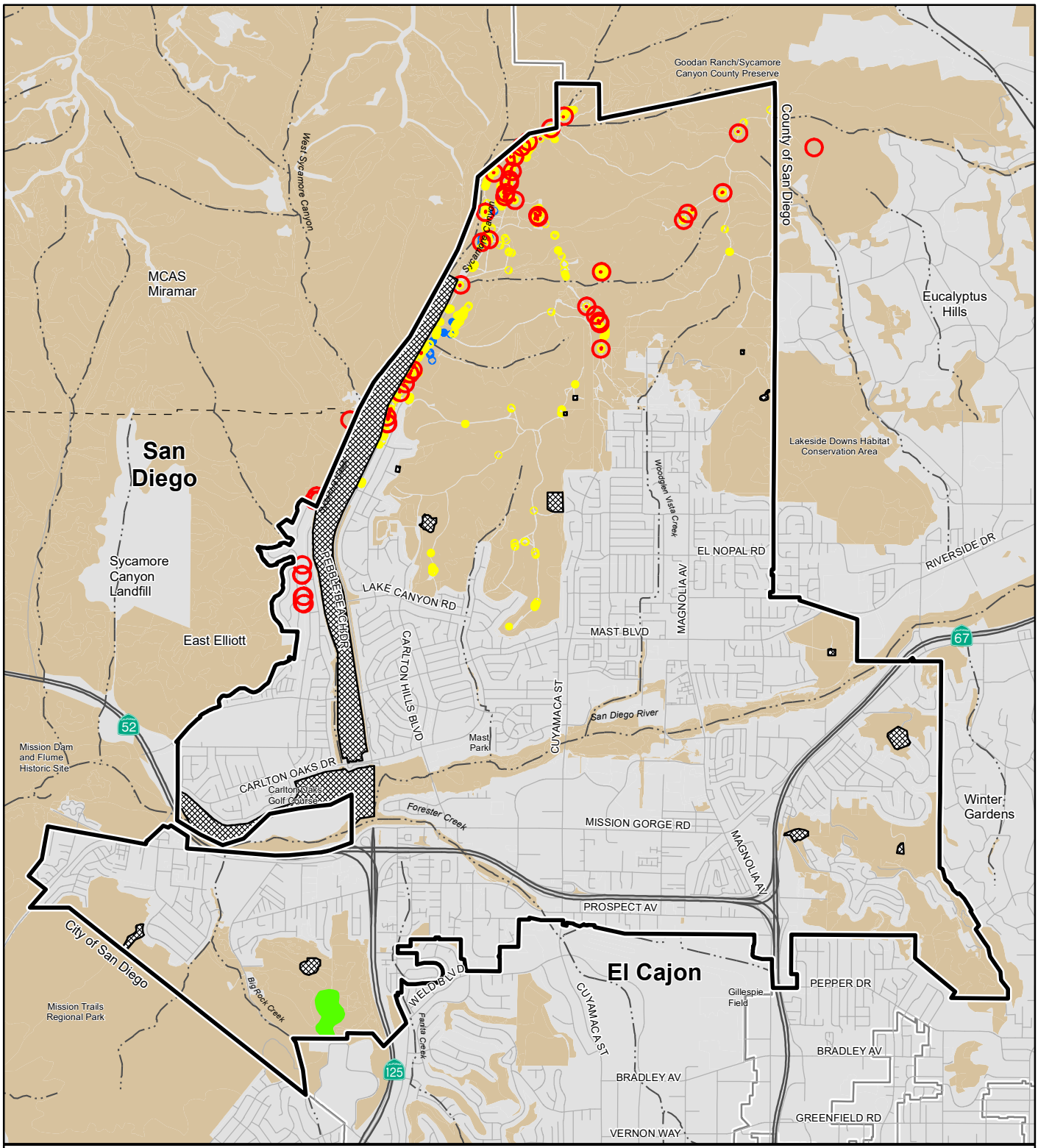
3.5.5.2 Species Distribution and Population Trends

Current Distribution

San Diego fairy shrimp are known from coastal San Diego and Orange counties, and northern Baja California Mexico. As of the 2008 USFWS 5-year review for the species, there were 137 complexes occupied by San Diego fairy shrimp identified within the U.S. Since the last status review was conducted in 2008, the distribution of San Diego fairy shrimp has expanded to include one location in Riverside County, where the species was not known to occur previously. This is the first detection of San Diego fairy shrimp east of the coastal range in southern California. In 2017, the species was detected at the Clayton Ranch mitigation site (also known as the Schleuniger pool) [California Natural Diversity Database (CNDDB) 2023, Element Occurrence (EO) 117] in Riverside County. Prior to the Clayton Ranch development project, soil was collected from the development site and placed at the Clayton Ranch mitigation site in 2012, inoculating the mitigation pools. San Diego fairy shrimp was subsequently documented at the mitigation site in 2017 (CNDDB 2023) and again confirmed in 2020. San Diego fairy shrimp was not known to occur at the development site or the mitigation site prior to either development project or restoration work, so it's unclear exactly how the species came to occupy the mitigation site, but the species appears to be surviving onsite. Otherwise, the distribution of San Diego fairy shrimp at the county level in the United States has not changed since 2008. The species continues to occur throughout its historic range in San Diego County and Orange County, California (USFWS 2021).

Known Occurrences in Plan Area

San Diego fairy shrimp is known within the Plan Area (Figure 3-13). On the Fanita Ranch, San Diego fairy shrimp occupy a total of 72 out of 229 features (Dudek 2020). It is the only identified branchiopod within Fanita Ranch except for unidentifiable brachiopods found in two features during the 2015/2016 surveys.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-13 San Diego Fairy Shrimp.mxd Date: 2/1/2025 34153

Figure 3-13
San Diego Fairy Shrimp - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Habitat Suitability Mapping

Areas of suitable habitat for San Diego fairy shrimp are closely associated with vernal pools and seasonal basins. A total of 19.3 acres of known vernal pool complexes, vernal pools, and seasonal basins occur within the Plan Area, as shown in Figure 3-13.

3.5.5.3 Threats and Other Management Considerations

Threats to San Diego fairy shrimp include development, direct habitat loss to development and agriculture, habitat fragmentation, altered hydrology of vernal pool watersheds, hybridization, recreation, and nonnative plants. Vernal pool watersheds are essential as they provide nutrients and water to the vernal pool system, though human activities within these watersheds may also introduce contaminants including excess sediments, pesticides and fertilizer.

Nonnative plants may cause a decline in habitat conditions through alteration of hydrology. This includes decreasing the duration of ponding such that San Diego fairy shrimp cannot complete their reproductive cycle. Two nonnative wetland grasses that are of particular concern are Pacific bent grass (*Agrostic avenacea*) and annual rabbit's foot grass (*Polypogon monspeliensis*). These species are able to persist in ephemeral wetlands such as vernal pools and can dominate areas that typically have little vegetative cover. Any habitat restoration or long-term resource management will consider control and management activities for these species.

Versatile fairy shrimp (*Branchinecta lindahli*) is a widespread fairy shrimp that is closely related to San Diego fairy shrimp; however, it is not known to occur in the Plan Area. This species has been shown to hybridize with San Diego fairy shrimp which threatens the genetic integrity of the species. The presence of versatile fairy shrimp on Miramar has been correlated with disturbed pools and road rut pools (Bohonek and Simovich 2017). Therefore, measures will be included to ensure that intact pools in the Plan Area are protected from disturbance and that resource managers and restoration personnel have equipment thoroughly cleaned before accessing restoration sites within the Plan Area.

3.5.5.4 References for San Diego Fairy Shrimp

Bohonek, A. and M. Simovich. 2017. Landscape Genetics and Hybridization in the San Diego Fairy Shrimp: Connectivity, Land Use, and Management Recommendations. Final Report prepared for the California Department of Fish and Wildlife. 50 pp.

California Natural Diversity Data Base (CNDDB). 2023. Element Occurrence Reports for San Diego Fairy Shrimp. Based on data obtained March 2023.

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

U.S. Fish and Wildlife Service (USFWS). 1998. Vernal Pools of Southern California Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

USFWS. 2007. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the San Diego Fairy Shrimp (*Branchinecta sandiegonensis*); Final Rule. *Federal Register* 72 (238): 70648-70714. Washington, D.C.: USFWS. December.

USFWS. 2008. *Branchinecta sandiegonensis*. San Diego fairy shrimp. 5-year: Summary Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. September 30.

USFWS. 2021. 5-Year Review for San Diego Fairy Shrimp. Carlsbad Fish and Wildlife Office. Carlsbad, CA. Page 2.

3.6 Reptile and Amphibian Species Profiles

3.6.1 Belding's Orange-throated Whiptail



Federal: None.

State: CDFW Watch List.

Critical Habitat: None.

Recovery Planning: None.

3.6.1.1 Species Description and Life History

Belding's orange-throated whiptail is a slender, alert and active lizard in the Whiptail family (Teiidae). Adults have a snout-to-vent length in the range of 5.0–9.4 centimeters. Coloration ranges include gray, reddish brown, dark brown and black, with five to seven pale yellow to tan stripes (Jennings and Hayes 1994). Young of the species have a bright blue tail, and adult males (and some females) have an orange throat (California Herps 2017, Stebbins et al. 2012).

Orange-throated whiptails emerge from hibernation in February or March, though some may remain active all year if conditions are suitably warm. Females deposit two to three leathery-shelled eggs in June or July. Juveniles emerge in August or September. They can become sexually mature in one year, though most individuals will take two years. Adults generally enter into hibernation in July through September, while juveniles begin hibernation in December (Jennings and Hayes 1994).

Habitat Requirements and Ecology

Belding's orange-throated whiptail is thought to eat primarily small arthropods with spiders, scorpions, centipedes, and termites making up the majority of the prey (California Herps 2017). Belding's orange-throated whiptail are currently found in semi-arid brushy areas with loose soil including washes, streamsides, rocky hillsides, and coastal chaparral (California Herps 2017). They are frequently associated with chaparral and sage scrub shrubs including chamise (*Adenostoma fasciculatum*), California buckwheat (*Eriogonum fasciculatum*), and black sage (*Saliva mellifera*). Sage scrub and chaparral have been largely displaced by development within the preferred floodplain habitat.

Key Seasonal Periods

Key seasonal periods for Belding's orange-throat whiptail are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Egg laying					✓	✓	✓					
Egg hatching								✓	✓			
Adult hibernation	✓	✓					✓	✓	✓	✓	✓	✓
Source: Jennings and Hayes 1994.												

3.6.1.2 Species Distribution and Population Trends

Current Distribution

This species ranges from the southern edges of Orange and San Bernardino counties south through western riverside and cismontane San Diego County into Baja California Sur, Mexico (California Herps 2017). In California, it is known for elevation ranges from near sea level to 3,400 feet.

Known Occurrences in Plan Area

Belding's orange-throated whiptail has been observed within natural habitats throughout the Plan Area (Figure 3-14). Belding's orange-throated whiptail was observed within the northern and southern portion of Fanita Ranch (Dudek 2020). Belding's orange-throated whiptail was observed within Diegan coastal sage scrub, granitic southern mixed chaparral, and coast live oak woodland.

Habitat Suitability Model

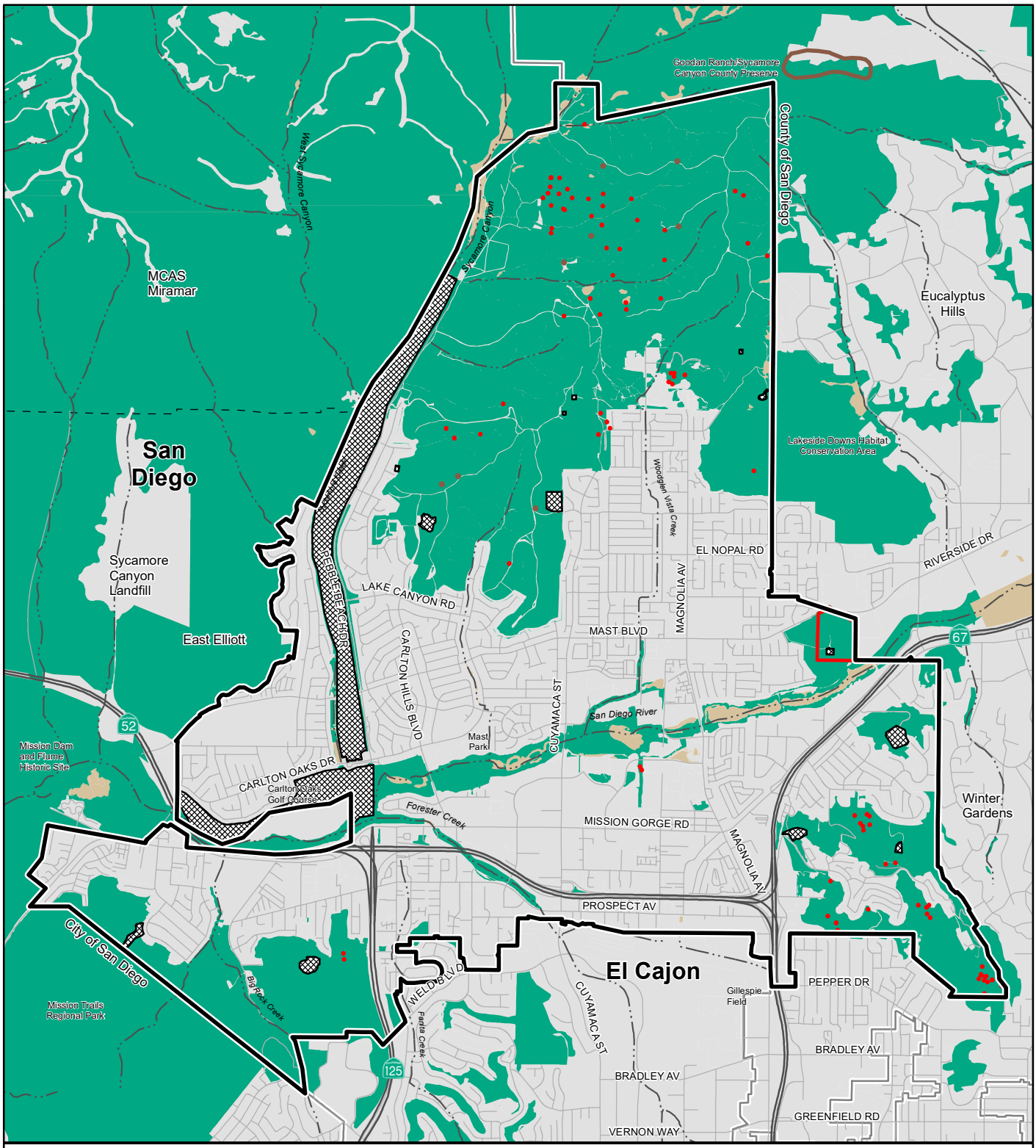
Belding's orange-throated whiptail is a habitat generalist. It is commonly found in sage scrub and chaparral habitats but is also present in open grassland/shrubland ecotones and some riparian habitats. A model of potentially suitable habitat for Belding's orange-throated whiptail has been developed for the Subarea Plan and approximately 4,204.7 acres of suitable habitat is within the Plan Area (Figure 3-14). The model is based on the following factor:

- **Vegetative cover** that includes areas of coastal sage scrub, grasslands, chaparral, woodlands, and riparian.

3.6.1.3 Threats and Other Management Considerations

Threats for Belding's orange-throated whiptail include habitat loss to development, recreation, habitat fragmentation, alteration of hydrology, and climate change and drought. More frequent drought and high temperatures reduce the availability of insect food base, which affects whiptail survivorship and reproduction.

Argentine ants are common in mesic areas including floodplains and have potential to affect the prey of Belding's orange-throated whiptail. Any restoration efforts within the Plan Area, and any landscaped areas that interface with open space, must ensure that all container stock plantings are free of Argentine ants and that artificial irrigation is limited in extent and duration, to discourage the spread of this invasive species.



Legend

- Subarea Plan Area
- Habitat Model
- **Species Occurrence Locations ***
  - Current (post-1999)
  - Historic (pre-2000)
- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

N

0 4,450

Feet

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-14 Beldings Orange-throated Whiptail-Unique.mxd Date: 2/5/2025 34153

Figure 3-14
Belding's Orange-throated Whiptail - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

The effects of nonnative fauna on Belding's orange-throated whiptail are not well understood. To reduce any potential predation by nonnative species, measures will be implemented to reduce the prevalence of free-ranging domestic cats or dogs. Any development adjacent to preserves will include homeowner education, and preserve long-term management will include periodic public outreach, to inform the public on the threats and dangers of allowing pets to range into open space. If public access is allowed in any preserve areas, pets shall not be allowed off leash in open space.

Specific limitations on movement ecology and of characteristics of nest sites are not well understood for this species. The Subarea Plan has a goal of conserving interconnected areas of large blocks of habitat, which will provide flexibility for this species. Floodplain and terrace habitat, particularly those areas with scrub or chaparral communities, will be targeted for conservation.

3.6.1.4 References Cited for Belding's Orange-throated Whiptail

California Herps. 2017. A Guide to the Amphibians and Reptiles of California. Available at: http://www.californiaherps.com/.

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game.

Stebbins, Robert C. and Samuel M. McGinnis. 2012. Field Guide to Amphibians and Reptiles of California. Berkeley: University of California Press.

3.6.2 Blainville's Horned Lizard



Federal: None.

State: Species of Special Concern.

Critical Habitat: None.

Recovery Planning: None.

3.6.2.1 Species Biology

Blainville's horned lizard is a large horned lizard with adult body lengths of 2.8 to 4 inches, and a strong crown of horns at the back of the skull, and double rows of fringe scales on the sides (Sherbrooke 2003). They have very cryptic coloration with a body of various earth tones from tan, reddish, brown, yellow or gray, with dark color bands crossing the back (California Herps 2017; Sherbrooke 2003). Males do not defend territories and are typically smaller than females. Females excavate nests and deposit 6 to 21 eggs. Eggs hatch between August and September (California Herps 2017). Horned lizards enter hibernation during the winter, emerging in later winter or spring. Average lifespan is 5 to 8 years.

Habitat Requirements and Ecology

Native ants form the majority of the diet of all horned lizards. In addition to ants, Blainville's horned lizard will eat beetles, flies, spiders, grasshoppers, moth larvae, and honeybees (Sherbrooke 2003). Horned lizards will not eat invasive nonnative ant species, including the Argentine ant (*Linepithema humile*).

This species is found in a variety of vegetation communities including coastal sage scrub, grasslands chaparral, oak woodlands and coniferous forests (Sherbrooke 2003), but usually avoids dense vegetation, preferring 20 to 40 percent bare ground in its habitat. This species is strongly associated with areas of native ant populations.

Key Seasonal Periods

Key seasonal periods for Blainville's horned lizard are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Egg laying					✓	✓						
Egg hatching								✓	✓			
Source: California Herps 2017.												

3.6.2.2 Species Distribution and Population Trends

Current Distribution

Blainville's horned lizard occurs along the Pacific coast of California, west of the Sierra Nevada mountains and west of the deserts, southward into northern Baja California Mexico (California Herps 2017).

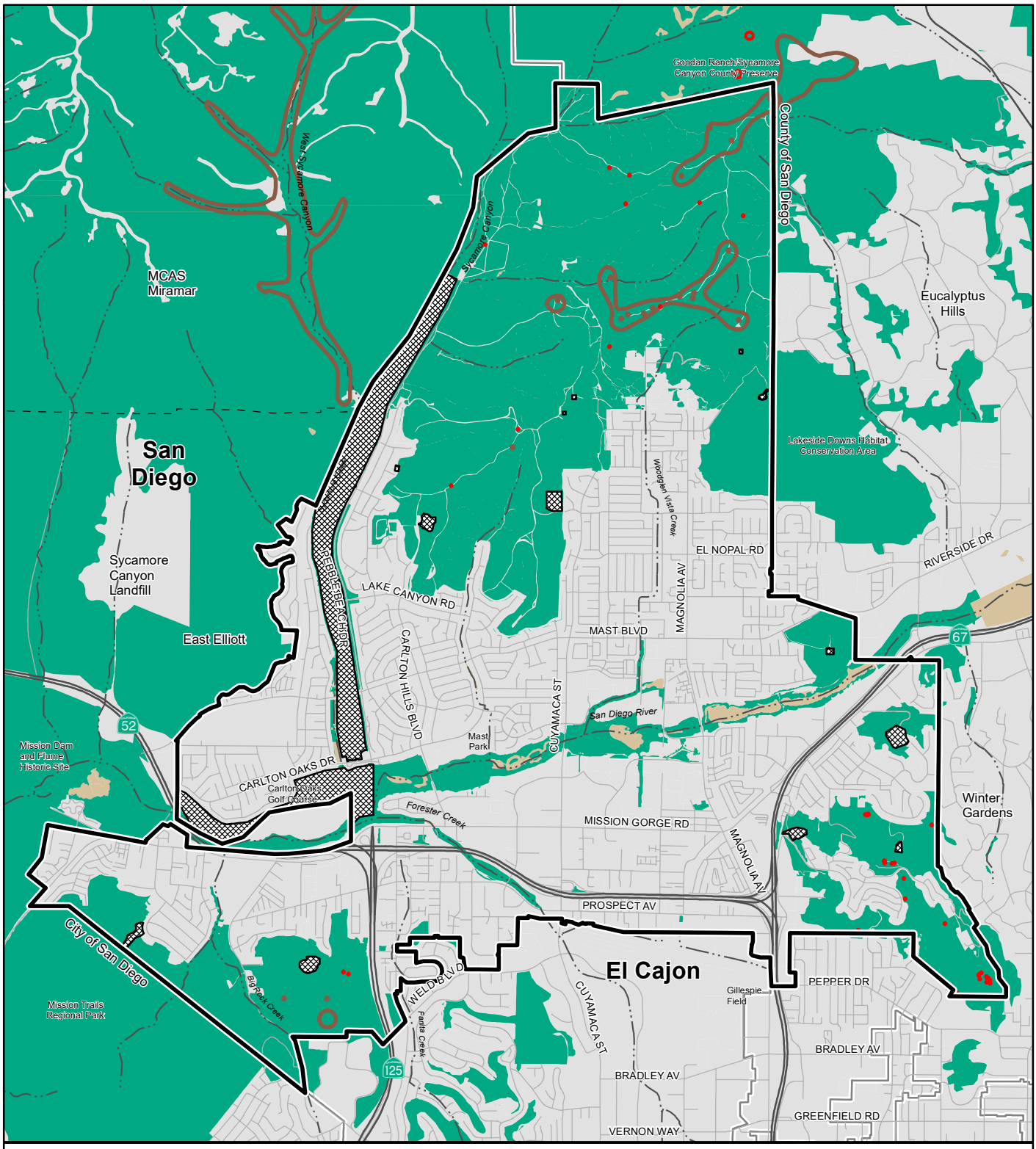
Known Occurrences in Plan Area

Blainville's horned lizard have been observed in the northern and central portions of the Fanita Ranch property (Dudek 2020; Figure 3-15), as well Rattlesnake Mountain in the southeast corner of the Plan Area, and the mesa in the southwest area of the Plan Area.

Habitat Suitability Model

Blainville's horned lizard is somewhat of a habitat generalist. It is commonly found in areas of natural habitats including coastal sage scrub, grasslands, chaparral, woodlands, and riparian. A model of potentially suitable habitat for Blainville's horned lizard has been developed for the Subarea Plan and approximately 4,241.6 acres of suitable habitat is within the Plan Area (Figure 3-15). The model is based on the following factor:

- **Vegetative cover** that includes areas of coastal sage scrub, grasslands, chaparral, woodlands, and riparian vegetation.



Legend

- Subarea Plan Area
- Habitat Model
- **Species Occurrence Locations ***
  - Current (post-1999)
  - Historic (pre-2000)
- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

N

0 4,450

Feet

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-15 Blainvilles Horned Lizard-Unique.mxd Date: 2/5/2025 34153

Figure 3-15
Blainville's Horned Lizard - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

3.6.2.3 Threats and Other Management Considerations

Argentine ant has become the dominant ant in much of southern California, leading to a decline in the native ants on which Blainville's horned lizard feeds (Sherbrooke 2003). Blainville's horned lizard has been threatened and eliminated from many areas due to habitat destruction from human development and agriculture.

Any restoration efforts within the Plan Area, and any landscaped areas that interface with open space, must ensure that all container stock plantings are free of Argentine ants, to discourage the spread of this invasive species. Long-term landscaping artificial irrigation adjacent to existing and proposed conservation areas will be discouraged. Argentine ants within active restoration sites will be treated with targeted pesticide by a qualified applicator to reduce the spread of this species. Argentine ants are drawn to moist areas, so dry season water flows originating from developed areas will be controlled.

3.6.2.4 References Cited for Blainville's Horned Lizard

California Herps. 2017. A Guide to the Amphibians and Reptiles of California. Available at: http://www.californiaherps.com/.

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Sherbrooke, W.C. 2003. Introduction to Horned Lizards of North America. University of California Press. Berkeley and Los Angeles, CA.

3.6.3 Western Spadefoot



Federal: Proposed threatened

State: Species of Special Concern.

Critical Habitat: None.

Recovery Planning: None.

3.6.3.1 Species Biology

The western spadefoot is a small, nocturnal, semi-fossorial amphibian species native to California and northern Baja California.

Habitat Requirements

In order to escape temperature extremes and dryness during the summer and fall months, the adults use wedge-shaped spades located on their hind feet to excavate burrows in loose upland soils somewhat near breeding pools (Baumberger et al. 2019). Early in the rainy season, they emerge on humid evenings to forage and reproduce, making use of temporary pools to lay their eggs. Western spadefoot typically breed in standing water that collects in shallow depressions rather than in flowing streams or creeks. In addition to using naturally forming pools within the landscape, western

spadefoot will occasionally breed in the pools forming along dirt roads within their habitat. Western spadefoot tadpoles can develop quickly as the pools begin to dry, but they do have limits on the minimum length of time that the breeding pool must persist (Rochester et al. 2017).

Key Seasonal Periods

Key seasonal periods for western spadefoot are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Breeding (rainy season)	✓	✓	✓	✓							✓	✓
Aestivation					✓	✓	✓	✓	✓	✓		
Source: Rochester et al. 2017.												

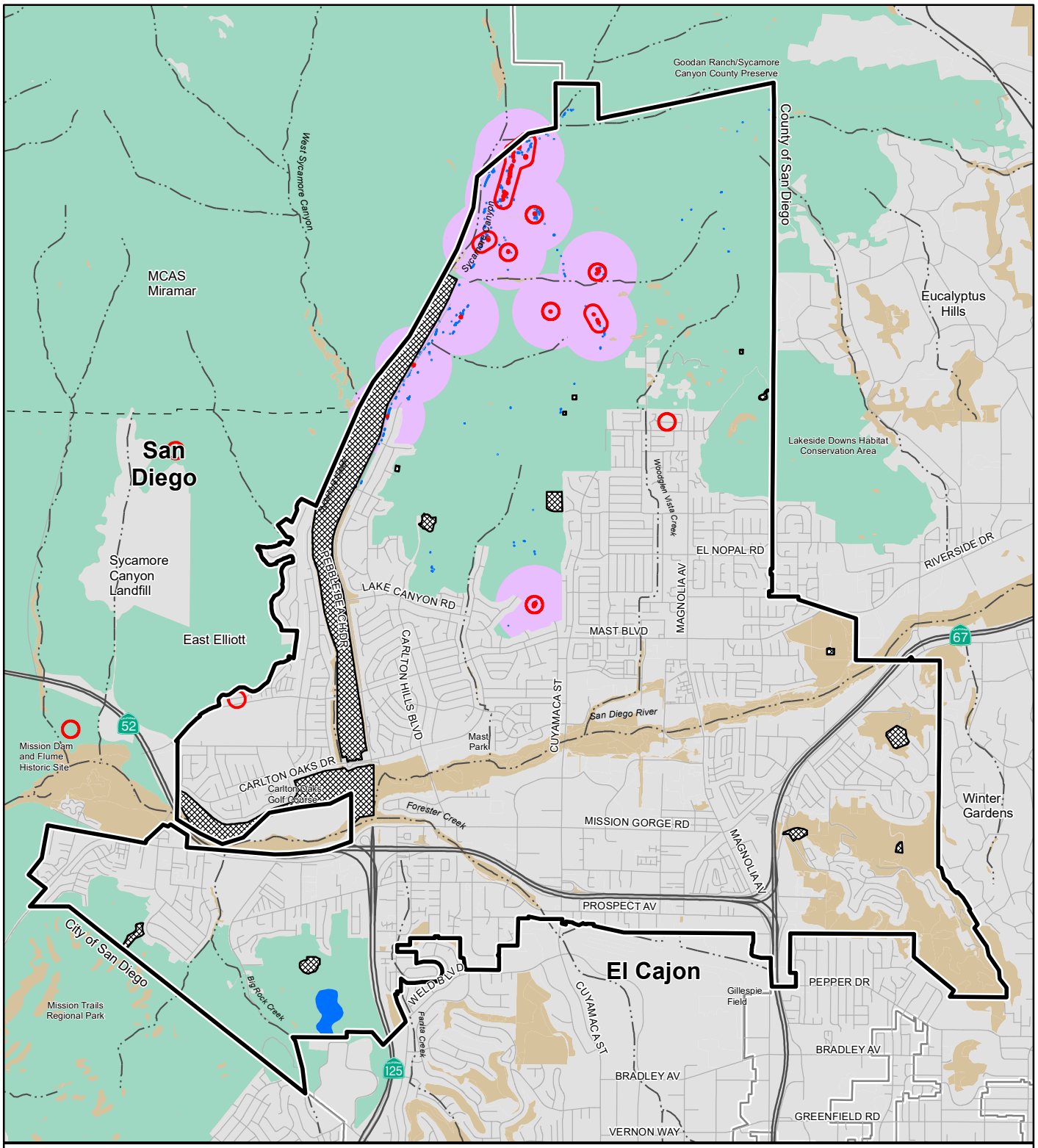
3.6.3.2 Species Distribution

Current Distribution

Western spadefoot is endemic to California and northern Baja California. It ranges from near Redding south throughout the Central Valley and its associated foothills, through the South Coast Ranges into coastal southern California south of the Transverse mountains and west of the Peninsular mountains, into northwest Baja California (California Herps 2017). The range of the Southern Distinct Population Segment (DPS) of the western spadefoot includes areas in southern California and northwestern Baja California, Mexico. In the United States, this includes valleys and low-lying areas of portions of the Coast Range from extreme southeastern Santa Barbara County south to Ventura, Los Angeles, San Bernardino, Orange, Riverside, and San Diego Counties (USFWS 2023). According to County of San Diego Parks Department staff, western spadefoot reported in the vicinity of the Plan Area at the Goodan Ranch property north of the Santee border and west of Sycamore Creek.

Known Occurrences in Plan Area

Western spadefoot are known to live and breed at multiple sites in the Fanita Ranch property (Figure 3-16). In 2005, Dudek (2018) documented the presence of western spadefoot across the grassland and lower foothills of the Fanita Ranch property and mapped many additional potential breeding sites. Based on observations in 2004, 2005, 2016, and 2017 by Dudek (2020) and confirmed with surveys by USGS in 2017 (Rochester et al. 2017), the Fanita Ranch property has a self-sustaining population with hundreds of metamorphic western spadefoot dispersing from the breeding pools in 2017.



Legend

- Subarea Plan Area

Habitat Model

- Known Breeding Habitat
- Potentially Suitable Breeding Habitat
- Suitable Upland Habitat Adjacent to Areas of Known Breeding Habitat
- Other Suitable Upland Habitat
- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

Species Occurrence Locations *

- Current (post-1999)
- Historic (pre-2000)

N

0 4,450 Feet

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-16 Western Spadefoot Toad-Unique.mxd Date: 2/5/2025 34153

Figure 3-16
Western Spadefoot Toad - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Habitat Suitability Model

Based on input from the Independent Scientific Advisory Report (Rochester et al. 2017), a habitat suitability model (Figure 3-16) has been developed using the following factors:

Breeding Habitat

- **Known Breeding Habitat:** Vernal pool and seasonal basins identified as having western spadefoot during field surveys within portions of the Plan Area. Comprehensive surveys have not been completed across the Plan Area but were completed for the Fanita Ranch property.
- **Potentially Suitable Breeding Habitat:** Other vernal pool, seasonal basins, and vernal complexes within Plan Area.

Upland Habitat

- **Suitable Upland Habitat:** Based on the following three factors:
  - **Vegetation Types**, including scrub, chaparral, grassland, woodland, riparian scrub, freshwater marsh, and vernal pools types. The denser riparian forest, open water, and developed lands were excluded;
  - **Slopes** greater than 30 degrees were excluded; and
  - **Patches** of natural habitat less than 500 acres were excluded.
- **Suitable Upland Habitat Adjacent to Areas of Known Breeding Habitat:** Suitable upland habitat within 1,000 feet of known breeding habitat.

The acreage of modeled suitable habitat for western spadefoat within the Plan Area includes:

Category	Acreage within Plan Area
Known breeding habitat	0.294
Other potentially suitable breeding areas	19.9
Suitable upland habitat adjacent to areas of known breeding habitat	813.8
Other suitable upland habitat	2,837.0
Total:	**3,671.0**

3.6.3.3 Threats and Other Management Considerations

Threats include habitat loss and fragmentation, nonnative species/predation, invasive plant species, human disturbance, drought, and hydrologic modifications. The following are other key management considerations as described in the Independent Scientific Advisory Report prepared for the City of Santee (Rochester et al. 2017).

- **Roads and Trails:** Western spadefoot has a complicated relationship with roads and trails, benefiting from these features in some cases and being negatively impacted by them at other times. Pools forming along dirt roads often provide breeding habitat but can also result in mortality from off-road vehicle activity or through a faster drying period. Many of the sites in the Fanita Ranch Subunit where western spadefoot successfully bred were road ruts. The soil

compaction and depressions created along the dirt roads often result in pools suitable for reproduction. However, continued vehicle traffic through the pools while egg masses, tadpoles, and metamorphs are present results in direct mortality or may lead to increased siltation of the egg masses and faster drying. There are few data on the impacts of paved roads directly related to western spadefoot, but looking at other reptile and amphibian studies, paved roads tend to act as barriers and result in direct mortality.

- **Home Range and Patch Size:** The minimum area of habitat or patch size required by the western spadefoot to maintain a long term, viable population is not precisely understood but likely is dependent on having both seasonal pool habitat for breeding purposes and upland, terrestrial habitats for foraging and aestivating during the hot, dry summers. Although there are no direct estimates of a minimum patch requirement for western spadefoot, it is possible to make some estimates based on existing research. Baumberger's radio telemetry efforts (2013) of 15 individuals documented that western spadefoot moved as far as 262 meters (860 feet) from the breeding pool site with an average distance from the pool of 40 meters (131 feet). Other research on amphibian conservation suggests that average habitat utilization falls within approximately 1,200 feet of aquatic habitats (Semlitsch and Bodie 2003). In addition, a review of existing literature and USGS pitfall trapping records suggests western spadefoot need a relatively large patch size (500 acres) of natural habitat to maintain sustainability. Western spadefoot tend to be found in areas with low levels of urban development within a 5,000-meter radius, but results within Southern California appear to indicate that they can persist at intermediate levels as well.
- **Corridor width and habitat connectivity:** The exact level of connectivity and the specifics of those connections are unknown for western spadefoot sustainability, but it is likely that functional connectivity corridors and linkages between populations are essential for the conservation and sustainability of western spadefoot metapopulations. In any given western spadefoot metapopulation, it is expected that some subpopulations will periodically disappear, but the habitat they occupied will eventually be recolonized if it remains suitable and connected. To enable natural recolonization of unoccupied habitat, and to allow for gene flow that is vital for preventing inbreeding, effective opportunities for dispersal and interbreeding among subpopulations need to be maintained. Maintaining connectivity between the known breeding sites could increase the likelihood of western spadefoot persistence. Actions that could be taken include providing access and viable (low mortality) connectivity to between upland habitats and breeding pools, minimizing barriers to movement between breeding sites, allowing for redundant routes (limiting movement to one route runs the risk of complete failure if that route becomes compromised or is somehow unsuitable), and incorporating the widest corridors possible (the wider the corridor the better, with 150 feet recommended for other amphibian species). Culverts under paved roads may be adequate to maintain connectivity, but they will need to be large enough not to exclude the western spadefoot. Paved roadway edges between western spadefoot undercrossings may need barriers to direct spadefoots to such undercrossings to reduce roadkill. Further study is needed to determine the minimum culvert dimensions and substrate conditions necessary to maintain connectivity for the local western spadefoot.
- **Habitat creation and translocation:** Suitable breeding sites can be created or enhanced. Translocation efforts may help to establish additional occurrences or move subpopulations out of

harm's way. Limiting potential breeding sites to just a few or one pool could be detrimental to the species. Redundant pools provide options and a failsafe for the potential that some may fail while others succeed.

3.6.3.4 References Cited for Western Spadefoot

Baumberger, K. 2013. Uncovering a fossorial species: home range and habitat preference of the western spadefoot, *Spea hammondii* (Anura: Pelobatidae), in Orange County protected areas. Thesis: California State University, Fullerton.

Baumberger KL, Eitzel MV, Kirby ME, Horn MH (2019) Movement and habitat selection of the western spadefoot (*Spea hammondii*) in southern California. PloS ONE 14(10): e0222532.California Herps. 2017. A Guide to the Amphibians and Reptiles of California. Available at: http://www.californiaherps.com/.

California Herps. 2017. A Guide to the Amphibians and Reptiles of California. Available at: http://www.californiaherps.com/.

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Rochester, C.J., K.L. Baumberger, and R.N. Fisher. 2017. Draft Final Western Spadefoot (*Spea hammondii*): Independent Scientific Advisor Report for the City of Santee Multiple Species Conservation Plan (MSCP) Subarea Plan. 53 pp.

Semlitsch, R.D. and Bodie J.R. 2003. Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles. *Conservation Biology* 17:1219-1228.

United States Fish and Wildlife (USFWS). 2023. Endangered and Threatened Wildlife and Plants: Threatened Status with Section 4(d) Rule for the North and Southern Distinct Population Segments for the Western Spadefoot. December 5.

3.7 Bird Species Profiles

3.7.1 Coastal Cactus Wren [10]



Federal: None (USFWS Bird of Conservation Concern).

State: Species of Special Concern (San Diego cactus wren).

Critical Habitat: None.

Recovery Planning: None.

3.7.1.1 Species Biology

Coastal cactus wrens are a year-round resident songbird in the wren family (Troglodytidae). Nesting typically occurs in mid-March to early June in coastal San Diego County (Unitt 2004). They maintain nests year-round for shelter. They generally have relatively limited dispersal compared to other passerines.

Habitat Requirements and Ecology

Coastal cactus wren is generally restricted to large or dense stands of cholla or prickly pear cactus. They are restricted to cactus thickets within open sage scrub on south and west facing slopes at elevations below 1,500 feet.

Key Seasonal Periods

Key seasonal periods for coastal cactus wren are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Breeding season			✓	✓	✓	✓						
Non-breeding residents	✓	✓					✓	✓	✓	✓	✓	✓
Source: Unitt 2004.												

[10]A portion of the coastal population of the coastal cactus wren, inhabiting southern Orange County, coastal San Diego County, and extreme northwestern Baja California, was proposed for subspecies status in 1986, and described as the San Diego cactus wren, *C. b. sandiegensis* (Rea 1986). The range for the San Diego cactus wren is substantially smaller than that of the coastal cactus wren. Nevertheless, the designation of the San Diego cactus wren was not accepted by the American Ornithologists' Union Committee (AOUC) on Classification and Nomenclature; which instead maintains it to be intermediate between *C. b. couesi* and *C. b. bryanti*, and classifies it as the former (Solek and Szijj 2004). The designation *C. b. sandiegensis* is also not currently accepted by the U.S. Fish and Wildlife Service (USFWS) (USFWS 1994). However, *C. b. sandiegensis* is accepted by the International Ornithologists Union (Gill and Donsker 2019). Kroodsma and Brewster (2005) found that the head of *C. b. sandiegensis* lacks or has less of a red tinge compared to the nominate subspecies, and its eggs are darker than those of other subspecies. Additionally, genetic studies (Eggert 1996; Vandergast et al. 2022) have found evidence of population isolation additional to that suggested by the proposed taxon San Diego cactus wren's external characteristics. The California Department of Fish and Wildlife retains a listing of the San Diego cactus wren as a Species of Special Concern (CDFG 1992; Proudfoot et al. 2000). Nonetheless, because the designation of the San Diego cactus wren has not been accepted by the AOUC or USFWS, herein the cactus wrens occurring in coastal San Diego County will be referred to as the coastal cactus wren, *C.b. couesi.*

3.7.1.2 Species Distribution and Population Trends

Current Distribution

The coastal cactus wren is localized to areas within the coastal lowlands of San Diego and Orange counties, and within extreme northwestern Baja California Mexico. Coastal cactus wrens have been observed north of the Plan Area in the West Sycamore area of MTRP and historic occurrences south of the Plan Area in El Cajon.

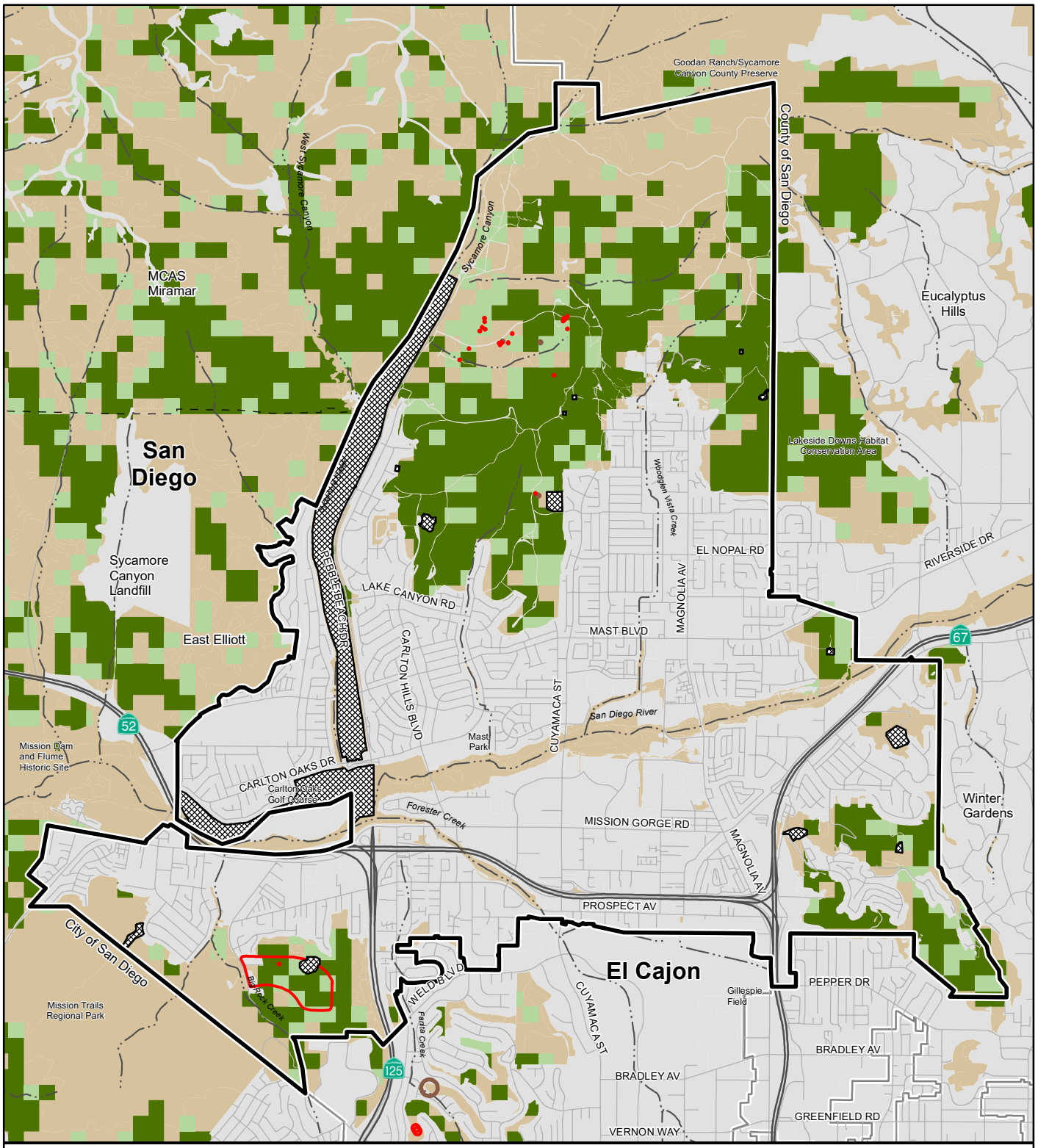
The coastal cactus wrens that occupy the Plan Area in Santee are important members of a larger occurrence of coastal cactus wrens near Lake Jennings to the east. The Lake Jennings occurrence of coastal cactus wrens is the largest of this subpopulation, and is a comparatively more robust subpopulation about 10 kilometers (km) (6 miles (mi)) southeast of Fanita Ranch that supports substantially more pairs of coastal cactus wrens than currently found on Fanita Ranch or near Tyler Street in Plan Area; the coastal cactus wrens on Fanita Ranch are a co-supporting part of the Lake Jennings "genetic cluster."

Known Occurrences in Plan Area

Coastal cactus wrens have been observed within the Plan Area in the southwestern portion of the Plan Area near Tyler Street and Mission Trails), as well as within Fanita Ranch (Figure 3-17). Coastal cactus wrens were observed within Fanita Ranch during surveys conducted in 1997, 2004, 2016, and 2017 (Dudek 2020) and during additional surveys conducted by Dudek in 2020 and 2021. During the 2017 focused surveys, eight individuals and two active nests were observed at three locations in the central portion of the site. In addition, coastal cactus wrens were heard singing/calling from three additional cactus patches within Fanita Ranch in 2017. At the time, it was estimated that at least 11 individuals were detected within Fanita Ranch in 2017. During the 2021 surveys approximately 10 family groups of two to four individuals were observed within the Fanita Ranch Onsite Preserve.

Habitat Suitability Model

SDMMP developed a statistically based habitat suitability model for coastal cactus wrens in southern California that evaluated environmental factors of elevation, topographic heterogeneity, slope, aspect, precipitation, temperature, vegetation, normalized difference vegetation index (NDVI), and habitat suitability of cactus scrub (TNC 2015). The best performing model included minimum January and maximum January temperatures; annual precipitation; elevation; northness; eastness; topographic heterogeneity; percent of coastal sage scrub, chaparral, and urban development within a 150-meter grid cell; and modeled habitat suitability for prickly pear and California sagebrush. Environmental variables that made the greatest contributions to the model included maximum July temperature, elevation, northness and eastness, percent coastal sage scrub, and prickly pear and California sagebrush habitat suitability predictions. It is noted that the coastal cactus wren are obligates of cactus scrub habitat but there is a lack of comprehensive mapping of the cactus scrub vegetation community. SDMMP was able to characterize suitable conditions for cactus scrub habitat, but the model results include large areas of potentially suitable habitat.



Legend

- Subarea Plan Area

Habitat Model

- Higher Suitability (values 0.75 - 1)
- Moderate Suitability (values 0.5 - 0.75)

Species Occurrence Locations *

- Current (post-1999)
- Historic (pre-2000)

- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

N

0 4,450

Feet

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-17 Coastal Cactus Wren-SDMMP.mxd Date: 7/14/2025 34153

Figure 3-17
Coastal Cactus Wren - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

This model tends to over-represent suitable habitat but is the best available scientific information for the estimating distribution of suitable habitat for this species. Accurate evaluation of species potential will depend on site-specific habitat evaluation and focused surveys.

The SDMMP model was restricted to include results only within areas of suitable vegetation types. Areas of developed, disturbed habitat, and riparian habitat are not shown as suitable habitat. For purposes of the Subarea Plan analysis, the SDMMP model results were grouped into two categories with higher and moderate suitability ranking (Figure 3-17). The acreage within the Plan Area includes:

Category	SDMMP Model Value	Acres in Plan Area
Higher	0.75 – 1	1,879.3
Moderate	0.5 – 0.75	630.8
Total:		**2,510.1**

3.7.1.3 Threats and Other Management Considerations

Coastal cactus wren is threatened by urban and agricultural development, habitat fragmentation, and increased size, intensity, and frequency of wildfires.

Urban and agricultural expansion eliminates, degrades, and fragments scrub habitats, reducing cactus wren numbers (Emlen 1974; Hamilton et al. 2020) and population connectivity. On the coastal slope of southern California, coastal sage scrub has decreased significantly from historical coverage as a result of urban development and agricultural expansion (Klopatek et al. 1979; Westman 1981; Minnich and Dezzani 1998). Fragmentation of the remaining coastal sage scrub adversely affects populations of various native species, including coastal cactus wrens (Soulé et al. 1988; Rea and Weaver 1990; Crooks and Soulé 1999; Bolger 2002; Delaney et al. 2010; Hamilton et al. 2020). Coastal cactus wren populations in coastal southern California are now far more isolated than historically, separated by large areas of unsuitable urban and residential development. Reduction or interruption of gene flow among coastal cactus wren populations on the coastal slope of southern California has been inferred from genetic study (Eggert 1996). Excessive inbreeding and loss of genetic diversity could lead to reduced fitness and decreased capacity of cactus wren populations to adapt to environmental change (Reed and Frankham 2003; Reed 2004; Kleinhans and Willows-Munro 2019; Hamilton et al. 2020).

The evidence for cactus wren persistence in fragmented habitat is mixed. In Los Angeles County, small numbers of coastal cactus wrens persisted in the Baldwin Hills (a large “island” of natural habitat degraded by oilfield operations and surrounded by urbanization) through 1996, but by 2001, the species was regarded as likely extirpated from the area (Garrett 2001). Surveys in 2009 revealed that a formerly large population of coastal cactus wrens in the San Fernando Valley had been reduced by urbanization to six territories along Big Tujunga Wash, an area without protection from degradation associated with wildfires, off-road vehicle use, and human encampments (Hamilton et al. 2020). Elsewhere in the Los Angeles metropolitan area, coastal cactus wrens typically persist in small fragments of scrub, few of which are formally protected as open space (Hamilton et al. 2020).

The October 1993 Laguna Fire in coastal Orange Co., CA, bu“ned 5,260 hectares (”a) (13,00“ ”cres (ac)), including approximately 2,720 ha (6720 ac) of coastal sage scrub, within what is now the 6,960-ha (17,200 ac) Coastal Reserve of the Nature Reserve of Orange County (NROC) (Bontrager et al. 1995). The fire's perimeter included roughly 75 percent of locations where approximately 282 coastal cactus wren pairs had been mapped in 1992. Surveys of unburned refugia around the fire's periphery in the weeks after the fire indicated substantial post-fire dispersal of California gnatcatchers (*Polioptila californica*) but "almost no sign of fire-dispersed cactus wrens." Within the overall burn area, coastal cactus wrens persisted in small patches of unburned or lightly burned scrub containing tall (>1 m) cactus. In spring 1994, 79 pairs remained within the fire's perimeter, a 72 percent decrease from pre-fire levels. Annual monitoring of the burn area continued through 2001, at which time the population in this area had declined to 21 pairs (Hamilton et al. 2020). By 2006, the wren population within the entire Coastal Reserve (including unburned areas) had further declined; by that time, only 76 ha (187 ac) were occupied by cactus wrens compared with an estimated 596 ha (1,473 ac) occupied in 1992, an 87 percent decline (Mitrovich and Hamilton 2007). Following the exceptionally dry winter of 2006/2007, focused surveys across the Coastal Reserve in spring/summer 2007 documented further decline to approximately 25 pairs, with very few juveniles detected (Hamilton 2012). More than 25 years post-fire, most of these former territories remain largely unoccupied because nesting habitat is not available. Major losses in cactus wren territories have been documented after other recent fires, including San Pasqual (Hamilton 2008) and Palos Verdes (Cooper 2010).

An altered wildfire regime coupled with other effects of urbanization may be acting together to amplify loss of genetic diversity and connectivity for coastal cactus wrens in some sites (Barr et al. 2015). Wildfires are natural disturbances, but their frequency, size, and intensity have been altered over the last several decades as a result of urbanization and human activities (Syphard et al. 2007). Recent wildfires have become a major threat to cactus wrens in coastal southern California and can be particularly harmful for small and isolated populations (Barr et al. 2015). Genetic bottleneck[11] signatures in coastal cactus wrens have been detected in areas with higher fire frequencies. Although other factors can contribute to these bottleneck signals, such as reductions in population sizes related to extended drought, increased predation, and/or restrictions to gene flow (England et al. 2010), Barr et al. (2015) suggest that fires are contributing to losses in genetic diversity in cactus wren populations. As documented in Orange County following the Laguna Fire, fire can have long-term effects on cactus wren populations because post-fire recovery of cactus is extremely slow. Isolated aggregations of coastal cactus wrens affected by fire may be particularly threatened with local extirpation in the absence of habitat and connectivity restoration.

Installation or enhancement of cactus patches for coastal cactus wrens will ensure that exotic plants are kept back to reduce chance of ignition during a wildfire; native shrubs are not intermixed within cactus, to prevent ladders for predators to access nests; both cholla and prickly pear are planted together, to give both the quick protection of cholla and the better nesting structure of prickly pear. In addition, maintenance for creation of bare ground within and surrounding a cactus patch is important for foraging.

[11] A genetic bottleneck occurs when a population is greatly reduced in size (such as from stochastic events), limiting the genetic diversity of the species and resulting in founding populations that can lead to genetic drift.

Coastal cactus wrens likely rely exclusively on water obtained from their food during periods of high heat or drought stress (Ricklefs and Hainsworth 1968; Solek and Szijj 2004). During drought years, cactus wrens in territories with poor function (e.g., considerable exotic plants species cover) habitat may be even more food limited (Preston and Kamada 2012; USGS 2020). Importantly, larger areas of productive habitat are usually needed per coastal cactus wren pair during drought periods, compared to cactus wren territory sizes during years of average or above average rainfall (USGS 2020). Improving habitat function through habitat management would likely increase food availability and enhance cactus wren productivity and survival, including during droughts (USGS 2020). Implementing management strategies to increase the stability of cactus wren populations in years with low rainfall is of enhanced importance as droughts are likely to become more frequent, intense, and prolonged in the future, as predicted by climate change models. The paleoclimate record from tree-ring data provides unequivocal evidence of previous epochs of decade and longer severe "megadroughts", particularly in western North America (Woodhouse and Overpeck 1998; Cook et al. 2007; Stahle et al. 2007; Cook et al. 2010; Woodhouse et al. 2010; Griffin and Anchukaitis 2014). In California, the paleoclimate records point to transient but important low-frequency hydroclimate variability, with clear evidence of sustained multi-decadal megadroughts (Stine 1994; Griffin and Anchukaitis 2014). The 14th, 15th, 16th, and 20th centuries in southern California each had droughts of 14 years or longer (Stahle et al. 2007), and about 16 droughts lasting from 4 to 9 years over the last 1200 years (Griffin and Anchukaitis 2014). Intergovernmental Panel on Climate Change model projections also indicate the considerable likelihood of the southern California becoming increasingly dry in the future as warming increases due to greenhouse gas forces (Meehl et al. 2007; Seager et al. 2007).

As much of the cactus thickets within the Plan Area have been subject to recent wildfire, preserve management will include cactus transplantation from areas to be disturbed and cutting and planting of cactus pads, to promote regeneration of cactus and future suitability for coastal cactus wren. In addition, it will be important to provide wildfire fuel management surrounding large patches of suitable cactus scrub, to reduce the heat from wildfire flame fronts reaching cactus scrub plants. Such areas will be appropriate for creation/maintenance of bare-ground wren foraging areas and non-woody native plantings such as San Diego barrel cactus.

Large scale habitat enhancement is important for cactus wren conservation in the long term because it concentrates on: a) augmenting degraded habitat (burned/recovering cactus) in areas that would benefit existing cactus wrens most; b) minimizes risk of cactus patch destruction/extreme degradation during future wildfires by enhancing and managing larger potential cactus scrub patches; c) builds on pre-existing degraded cactus scrub to accelerate its recovery and targets areas with existing wren pairs nearby.

3.7.1.4 References Cited for Coastal Cactus Wren

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3.7.2 Coastal California Gnatcatcher



Federal: Threatened—1993.

State: Species of Special Concern.

Critical Habitat: Final Critical Habitat was designated by USFWS in October 2000 and revised December 2007 (USFWS 2007). There are 3,806.8 acres that occur within the Plan Area.

Recovery Planning: None**.** A recovery plan has not been prepared for this species.

3.7.2.1 Species Biology

Coastal California gnatcatcher is small non-migratory songbird in the gnatcatcher family (Polioptilidae). Pairs defend breeding territories with sizes from 2 to 14 acres, with winter home ranges larger than breeding season ranges. The breeding season generally extends from late-February

to July. Females average four eggs in a clutch and will occasionally have more than one brood in a year. Both sexes participate in all stages of nesting. Juveniles will remain with their parents for several months before dispersing. Dispersal generally requires a corridor of native vegetation between appropriate sage scrub vegetation.

Habitat Requirements and Ecology

Coastal California gnatcatchers breed in coastal sage scrub habitat, with California sagebrush (*Artemisia californica*) being a dominant nesting plant (USFWS 2010). Coastal California gnatcatchers will also nest in other sage scrub species and will occasionally nest in shrubs more typical of chaparral communities. Coastal California gnatcatchers will expand their range in summer and fall, as prey is less available, into other vegetation communities including chaparral and riparian habitat. Population abundance may be higher in higher-quality sage scrub communities.

Key Seasonal Periods

Key seasonal periods for coastal California gnatcatcher are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Breeding season		✓	✓	✓	✓	✓	✓					
Non-breeding residents	✓	✓						✓	✓	✓	✓	✓
Source: USFWS 2010.												

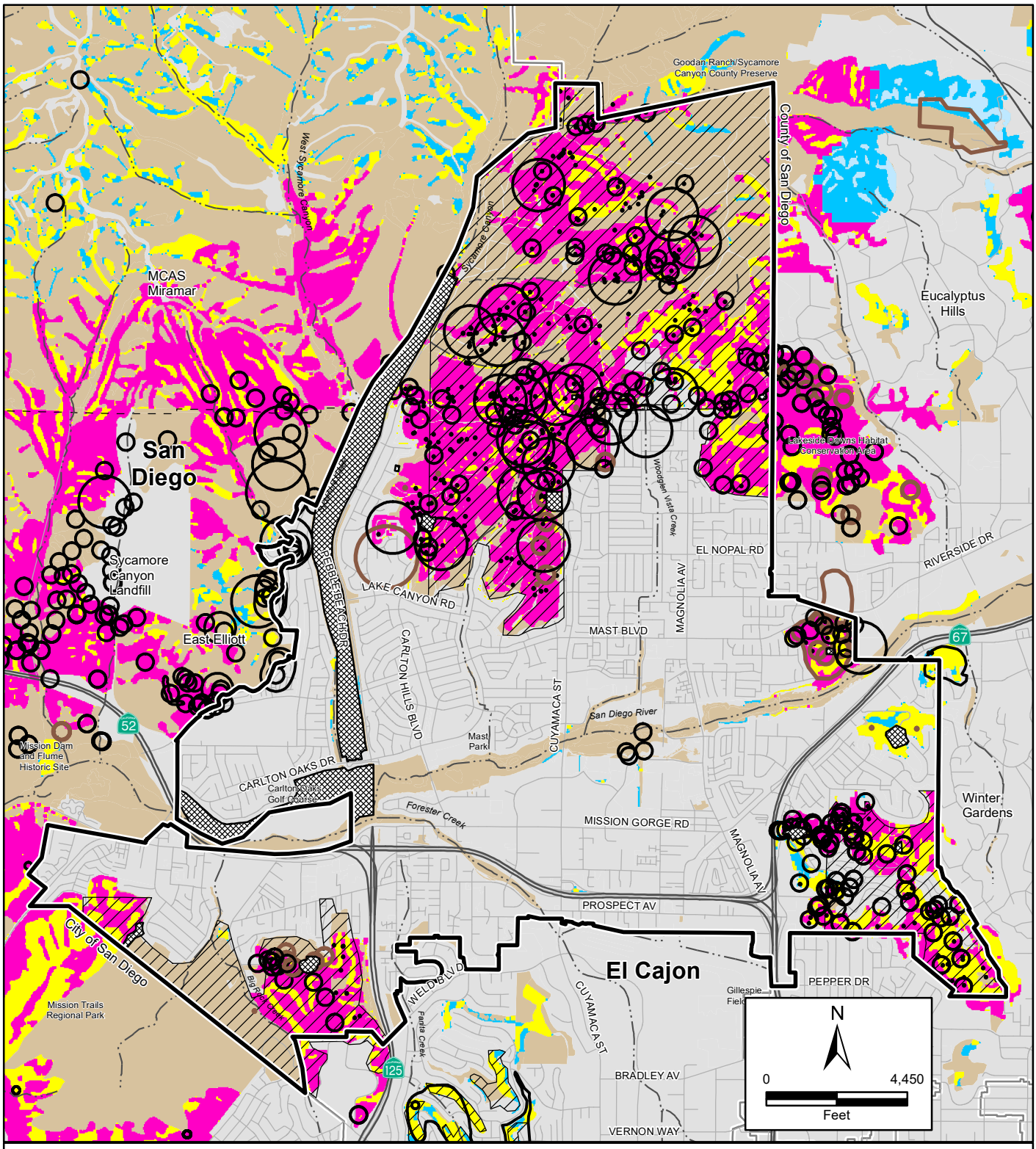
3.7.2.2 Species Distribution and Population Trends

Current Distribution

Coastal California gnatcatcher is known from the U.S. from Ventura, Los Angeles, southwestern San Bernardino, western Riverside, Orange, and San Diego counties, and south into Baja California Norte, Mexico (USFWS 2010). The distribution is highly correlated to the presence of Venturan sage scrub, Riversidean sage scrub, Diegan coastal sage scrub, and coastal succulent scrubs.

Known Occurrences in Plan Area

Coastal California gnatcatcher is known throughout the Plan Area (Figure 3-18). Within the Fanita Ranch property, suitable coastal California gnatcatcher habitat was significantly impacted by previous fires (e.g. October 2003 fires) that reduced the number and distribution of the coastal California gnatcatchers. More recently surveys in 2016 have demonstrated that habitat has recovered, and the numbers of occurrences have rebounded (Dudek 2020). Coastal California gnatcatchers have consistently been observed on the Rattlesnake Mountain portion of the Plan Area (CNLM 2023) indicating that stepping-stone blocks of habitat in the eastern portion of the Plan Area function as a dispersal mechanism. Coastal California gnatcatchers have been observed as part of surveys of development projects across the Plan Area that include suitable habitat, including the Tyler Street, Cutri, Woodside Avenue, Cheyenne, Lantern Crest, and Parkside projects.



Legend

- Subarea Plan Area

Habitat Model

- Very High Habitat Value
- High Habitat Value
- Moderate Habitat Value
- Low Habitat Value
- Final Critical Habitat (USFWS 2007)

Species Occurrence Locations *

- Current (post-1999)
- Historic (pre-2000)

- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-18 Coastal California Gnatcatcher-CHSR.mxd Date: 2/5/2025 34153

Figure 3-18
Coastal California Gnatcatcher - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Habitat Suitability Model

A habitat suitability model was prepared for the MSCP Subregional Plan and this model was updated using information collected for the Subarea Plan (Figure 3-18). The model ranks habitat value using parameters of vegetation cover, climate, patch area, and slope. The modeling parameters and habitat value ranking criteria are described below.

- *Land Cover*: Coastal California gnatcatchers typically use coastal sage scrub habitat and similar scrub habitats throughout its range. The model selects coastal scrub.
- *Climate*: Precipitation and temperature have been documented as correlated with the distribution and frequency of habitat used by coastal California gnatcatchers. Climate data consisted of average minimum January temperature and average annual rainfall. The precipitation data was reclassified into dry versus wet (using > 13.25 inches threshold) and cold versus warm (using < 5 C threshold).
- *Patch Area*: The spatial configuration of suitable scrub habitat was analyzed using a core-satellite algorithm with minimum core sizes of 25 acres for coastal/warm areas and 50 acres for inland/colder areas along with maximum inter-patch distances of 1,600 feet between the core and satellites that sum to the total patch area.
- *Slope*: Detailed studies and observations suggest coastal California gnatcatchers avoid nesting on very steep slopes (>40 percent), although habitat on slopes greater than 40 percent may be suitable for foraging and dispersal.

The model parameter scoring regime is as follows.

- Climate: warm/dry = 2, warm/wet or cold/dry = 1, cold/wet = 0
- Greater than minimum patch area: yes = 1, no = 0
- Slope: <40% = 1, >40% = 0

The suitable habitat value is categorized into four categories from very high to low (Figure 3-18). The acreage within the Plan Area includes.

Score	Ranking	Acres in Plan Area
4	Very High Value Suitable Habitat	2,021.4
3	High Value Suitable Habitat	611.9
2	Moderate Value Suitable Habitat	35.3
1	Low Value Suitable Habitat	0.0
	Total:	**2,668.6**

3.7.2.3 Threats and Other Management Considerations

Threats to coastal California gnatcatcher include habitat loss, degradation and fragmentation, invasive fauna, and climate change, including drought and increased frequency of wildfire.

While coastal California gnatcatchers are known to occur in habitat subject to edge effects from urban development, populations are known to be more persistent in higher function habitat (USFWS 2010).

Restoration or enhancement activities that increase the native plant cover and distribution of sage scrub habitat will generally provide better potential habitat for coastal California gnatcatcher.

The remaining coastal sage scrub in southern California has been subject to increased frequency of large wind-driven wildfire. These high-speed, intense fires can cause direct mortality of populations of resident birds unable to escape the fires. The fires also burn large areas of habitat; while coastal sage scrub is fire adapted and may recover (provided nonnative plant species are managed), the habitat may be unsuitable for coastal California gnatcatcher nesting for at least several years. As the majority of wildfires during Santa Ana events are ignited by humans, preserve managers will take steps to reduce chances of ignition with preserves. No maintenance activities will occur during fire weather events, to prevent sparking by tools or machinery. If public access is allowed within preserved land, temporary closures of the preserves will take place during fire weather events.

Nonnative Argentine ants are known to be nest predators. Any restoration efforts within the Plan Area, and any landscaped areas that interface with open space, must ensure that all container stock plantings are free of Argentine ants. Long-term artificially irrigated landscape areas will be minimized adjacent to existing and new preserve areas with gnatcatchers to reduce support of Argentine ants. Argentine ants within active restoration sites will be treated with targeted pesticide to reduce the spread of this species. Argentine ants are drawn to moist areas, so dry season water flows originating from developed areas will be controlled.

3.7.2.4 References Cited for Coastal California Gnatcatcher

Center for Natural Lands Management (CNLM). 2023. Rattlesnake Mountain Habitat Conservation Area Annual Report 2022-2023. December 15.

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

U.S. Fish and Wildlife Service (USFWS). 2007. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (*Polioptila californica californica*); Final Rule. *Federal Register* 72(243): 72009–72213. Washington, D.C.: USFWS. December.

USFWS. 2010. Coastal California Gnatcatcher (*Polioptila californica californica*) 5-year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. September 29.

3.7.3 Least Bell's Vireo



Federal: Endangered—1986.

State: Endangered—1980.

Critical Habitat: Final Critical Habitat was designated by USFWS in February 1994 (USFWS 1994) and 175.6 acres occur within the Plan Area.

Recovery Planning: Draft recovery plan (USFWS 1998).

3.7.3.1 Species Biology

Least Bell's vireo is a small, insect-eating, migratory songbird in the vireo family Vireonidae. This species typically appears in southern California in mid- to late-March. Nesting season generally lasts from April to late June, rarely mid-July, with fledging occurring in late April through August (Unitt 2004). Least Bell's vireos generally remain on the breeding grounds until late September, although some post-breeding migration may begin as early as late July (Kus 2002).

Habitat Requirements and Ecology

This species typically occurs in riparian woodland or riparian scrub. Nesting occurs in the dense understory and foraging occurs within the riparian canopy (Unitt 2004). Nests are typically placed in openings of dense vegetation approximately 1 meter above ground level. Within San Diego County, mulefat (*Baccharis salicifolia*) and willows (*Salix* spp.) are the most common nesting substrates. While this species is strongly associated with riparian areas for breeding, it may forage up to 200 feet away from riparian vegetation in upland sage scrub communities (Unitt 2004).

Key Seasonal Periods

Key seasonal periods for least Bell's vireo are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Breeding season			✓	✓	✓	✓	✓	✓	✓			
Wintering outside U.S.	✓	✓								✓	✓	✓
Source: Unitt 2004.												

3.7.3.2 Species Distribution and Population Trends

Current Distribution

Least Bell's vireo breeding range is almost exclusively restricted to southern California (USFWS 2006). The species is known to breed in San Diego, Riverside, Ventura, and Orange counties. It has not meaningfully re-colonized sites within its former range in central California. Coastal San Diego County is recognized as a core habitat for the subspecies (USFWS 2006). In San Diego County, major

population centers occur along the Santa Margarita River on Camp Pendleton, San Luis Rey River, San Dieguito River above Lake Hodges, lower San Diego River from Santee downstream to Mission Valley, and Sweetwater River above Sweetwater Reservoir (Unitt 2004). The species also nests to a very limited extent in riparian thickets in the San Diego County desert canyons and washes.

Known Occurrences in Plan Area

Known occurrences of least Bell's vireo occur in suitable habitat along the San Diego River and within Sycamore Canyon Plan Area (Figure 3-19). Recent surveys along the San Diego River to determine abundance and distribution of vireos to facilitate population trend analyses included 38 occurrences in the Plan Area out of a total of 98 along the San Diego River (Kus 2022). One least Bell's vireo nesting pair was observed during focused surveys on Fanita Ranch in 2016 within mixed chaparral and coastal sage scrub; this pair did not produce a successful clutch (Dudek 2020). Least Bell's vireos have also occasionally been observed in other portions of San Diego County using drier habitats, including areas dominated by upland vegetation (USGS 2007).

No least Bell's vireos were observed within traditionally suitable habitat during focused surveys for this species on Fanita Ranch in 2016 (Dudek 2020).

Habitat Suitability Model

A model of potentially suitable habitat for least Bell's vireo was developed for the Subarea Plan and approximately 362.5 acres of suitable habitat is within the Plan Area (Figure 3-19). The model is based on the location of the following factor:

- **Vegetative cover** consisting of riparian scrub, riparian woodland, and riparian forest, and open water[12] within Plan Area, which occurs primarily along the San Diego River and Sycamore Canyon.

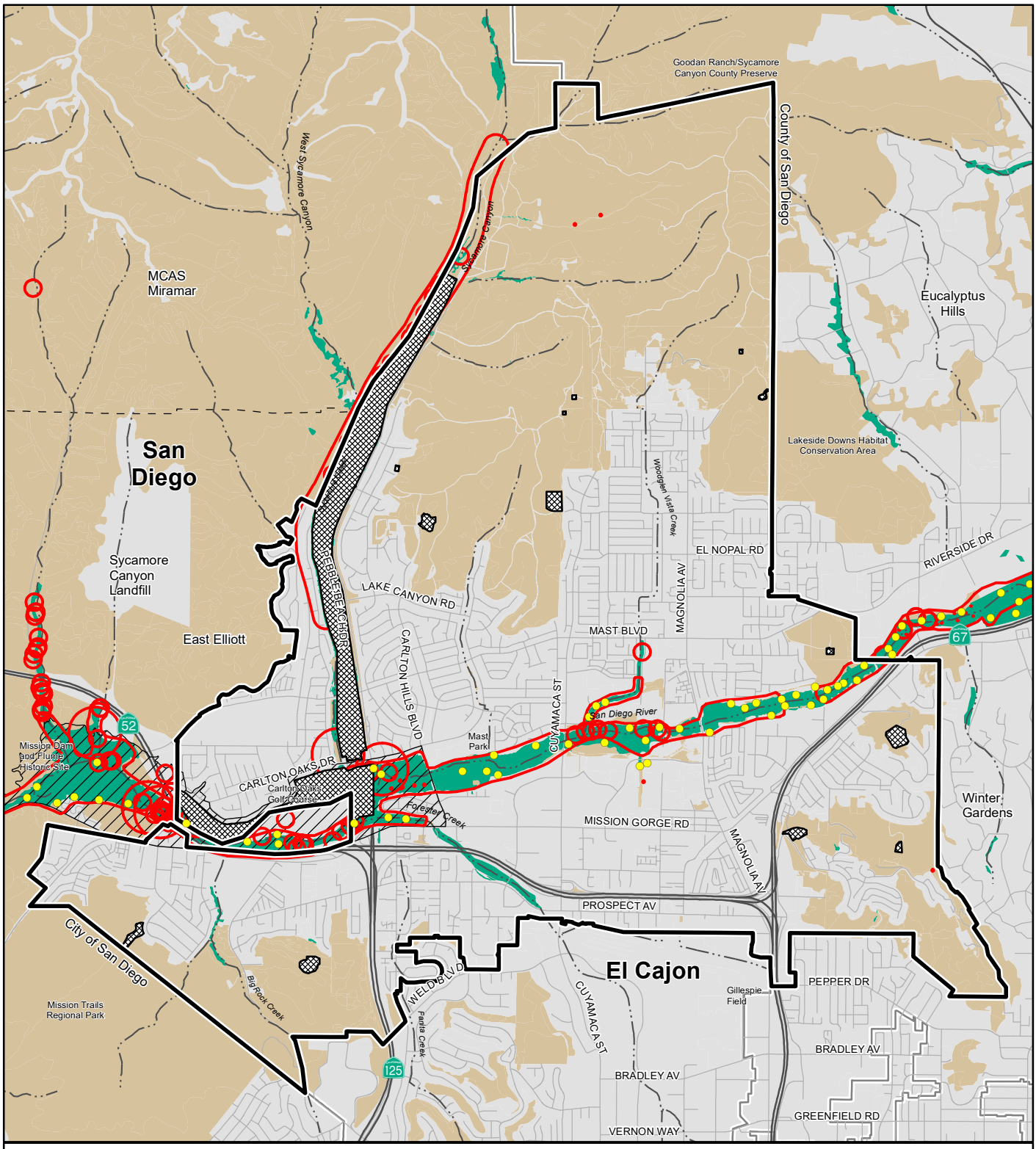
3.7.3.3 Threats and Other Management Considerations

Threats to least Bell's vireo include habitat loss to urban and agricultural development, habitat degradation by invasive plant species, and nest parasitism by brown-headed cowbirds.

Riparian areas within preserved lands should be monitored and managed for presence of exotic plants with potential to degrade riparian habitat, including giant reed (*Arundo donax*), salt cedar (*Tamarix* spp.), or perennial peppergrass (*Lepidium latifolium*). Efforts should be made to control these species.

Cowbirds have been a major cause in the decline of least Bell's vireo. High vegetative cover and density around vireo nests can reduce the rate of cowbird parasitism on vireo nests. Enhancement of riparian systems can result in both more and better potential habitat for vireo. Cowbird management is another tool that may be used with the Subarea Plan, if needed in combination of habitat management.

[12] Open water is included as a vegetative cover as part of the habitat model to identify a connected habitat areas along the San Diego River.



Legend

- Subarea Plan Area
- Habitat Model
- Final Critical Habitat (USFWS 1994)

Species Occurrence Locations *

- Recent Least Bell's Vireo Population Survey (Kus 2022)
- Current (post-1999)
- Historic (pre-2000)

- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat

N

0 4,450

Feet

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-19 Least Bells Vireo-Unique.mxd Date: 2/5/2025 34153

Figure 3-19
Least Bell's Vireo - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Vireo lose nests to predation, including losses to nonnative species including Argentine ants and Virginia opossum. Nests are also lost to California scrub jay (*Aphelocoma californica*), so nests will not be approached (e.g., during preserve management and monitoring activities) as this could lead predators to the nests. Management efforts will take measures to prevent introduction of invasive species into preserved lands.

3.7.3.4 References Cited for Least Bell's Vireo

Dudek. 2020. Biological Technical Report for the Fanita Ranch Project, City of Santee, San Diego County, California. Prepared for HomeFed Corporation.

Kus, Barbara. 2022. Distribution and Breeding Status of Least Bell's Vireo Along the San Diego and Tijuana Rivers in San Diego County, California (2020). Data release.

Unitt, P. 2004. San Diego County Bird Atlas. San Diego Natural History Museum.

U.S. Fish and Wildlife Service (USFWS). 1994. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo (*Vireo bellii pusillus*); Final Rule. *Federal Register* 59 (22): 4845-4867. Washington, D.C.: USFWS. February.

USFWS. 1998. Draft Recovery Plan for the Least Bell's Vireo (*Vireo bellii pusillus*)

USFWS. 2006. Least Bell's Vireo (*Vireo bellii pusillus*) 5-year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, CA. September.

U.S. Geological Survey. 2007. Distribution, Abundance, and Breeding Activities of the Least Bell's Vireo at Marine Corps Base Camp Pendleton, California.

3.7.4 Western Burrowing Owl

Federal: None (USFWS Bird of Conservation Concern).

State: Candidate for Endangered Status (2024).

Critical Habitat: None.

Recovery Planning: None.



3.7.4.1 Species Biology

The western burrowing owl is a small, long-legged, ground-dwelling owl in the family Strigidae. They require burrows for nesting and roosting and typically use burrows constructed by fossorial mammals including California ground squirrels (*Otospermophilus beecheyi*). During nesting, burrowing owls will frequently use several burrows in close proximity to each other. Breeding typically occurs in February through August, with the peak in April through July (CDFG 2012). Diet includes arthropods, amphibians, reptiles, small rodents, and carrion. Foraging is concentrated within 600 meters of their burrows (CDFG 2012).

Habitat Requirements and Ecology

Preferred habitat for western burrowing owl in California includes open, relatively flat expanses including grasslands, desert, pasture, and edges of row crops. High function habitat includes well-drained soils with multiple suitable burrows and relatively flat topography that provides good visibility to watch for potential predators including coyotes, ravens, and Cooper's hawks. Burrowing owls consume a variety of prey items including small birds, small mammals, and many types of invertebrates (e et al. 2014).

Key Seasonal Periods

Key seasonal periods for western burrowing owl are indicated below.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Breeding season		✓	✓	✓	✓	✓	✓	✓				
Wintering and resident populations	✓								✓	✓	✓	✓
Source: CDFG 2012												

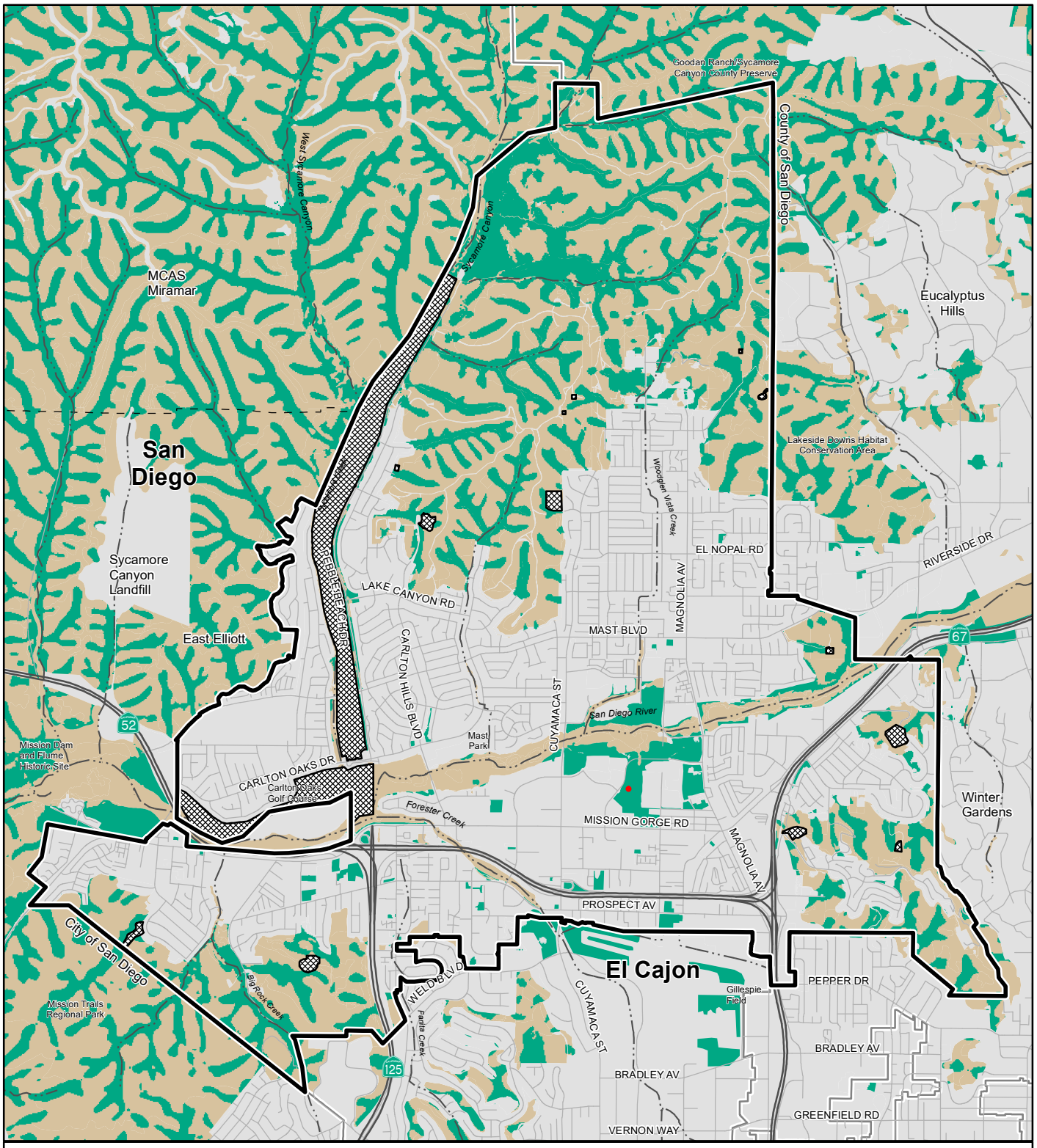
3.7.4.2 Species Distribution and Population Trends

Current Distribution

Western burrowing owls are found scattered throughout the western United States including California. Birds in California can include year-round residents and winter visitors. In San Diego County, few breeding colonies of burrowing owls currently remain with small breeding groups only known from five locations: East Otay Mesa (Brown Field, along the international boundary fence), Warner Springs, Borrego Springs, Naval Air Station North Island, and Naval Outlying Landing Field Imperial Beach.

Known Occurrences in Plan Area

Burrowing owls are not known to nest in the Plan Area. One burrowing owl was observed on the Riverview Parkway Project site (near the Santee Towncenter) in January 2021 (REC Consultants 2021). It was occupying a burrow in the side of a soil stockpile and hunting over the central disturbed area and temporary detention basin. The burrowing owl was not observed during the May or June site visits, and the burrow no longer showed sign of recent use in June (Figure 3-20). There was one anecdotal observation of burrowing owl recorded on Fanita Ranch in 2016 during Quino checkerspot butterfly surveys (it flushed from a boulder cluster and was not observed again). However, no burrowing owl were observed on Fanita Ranch during focused burrowing owl surveys in 2016 (Dudek 2020).



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Figure 3-20
Western Burrowing Owl - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Habitat Suitability Model

A model of potentially suitable habitat for western burrowing owl has been developed for the Subarea Plan and approximately 1,837.4 acres of suitable habitat is within the Plan Area (Figure 3-20). The model is based on the following two factors:

- Vegetative cover, which consists of sparse coastal sage scrub, grasslands, and disturbed habitat; and
- Flat topography having a Topographic Position Index (TPI) of flat and slope bottom.

3.7.4.3 Threats and Other Management Considerations

Habitat loss and degradation from conversion of agriculture and rangeland to urban development is a major threat for this species (CDFG 2012). The burrowing owl is on the decline over most of its range and has suffered a considerable contraction of its range. Control of California ground squirrels is a significant threat in San Diego County, as it removes the species that constructs most burrows used by owls for nesting and roosting. Burrowing owls suffer direct mortality from vehicle collisions, ditch and culvert maintenance, and disking of fallow fields. The burrowing owl is threatened by direct loss of habitat, high sensitivity to habitat fragmentation, proliferation of terrestrial predators, and high mortality from collisions (Unitt 2004).

Management for burrowing owls will include management of exotic plants to ensure visibility and high-function foraging habitat for burrowing owls.

Artificial burrows may be used to provide suitable nesting habitat, but they require maintenance and are labor intensive in the long-term (Swaisgood et al. 2014).

Management for burrowing owls may also include promotion or re-introduction of California ground squirrels into habitat that is otherwise open and suitable for burrowing owls (Swaisgood et al. 2014). Reintroduction of ground squirrels would include evaluation of soils, as friable soils are preferred over clays and alluvium, and mowing of nonnative grasses to make a site more suitable for ground squirrels. Reintroduction of burrowing owls may be prudent to re-establish the species on suitable conserved parcels where threats are controlled.

3.7.4.4 References Cited for Western Burrowing Owl

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Chapter 4
Covered Activities and Impact Assessment

4.1 Introduction

This chapter describes the Covered Activities within the Subarea Plan Area for which take permits are being sought. The associated avoidance, minimization, and mitigation measures that are required by the Subarea Plan are addressed in Chapter 5, *Conservation Strategy*. This chapter also includes a quantification of estimated permanent direct effects and a description of indirect effects resulting from the Covered Activities on natural communities and Covered Species (Section 4.4, *Impact Assessment and Level of Take*).

4.2 Types of Covered Activities Resulting in Effect

This section addresses the types of Covered Activities that will result in effects to Covered Species and habitat. The City has provided an inventory of the location and likely dimensions of anticipated Covered Activities at a conceptual level. As Covered Activities are proposed in detail through the permit term, the project proponents (public and private entities) will be required to obtain a Habitat Loss Incidental Take permit that will quantify impacts related to the Covered Activity and define the project-specific avoidance, minimization, and mitigation measures required under the Subarea Plan. For the purposes of this Subarea Plan analysis, the estimated impacts from Covered Activities are included in the planned development and future development estimates described in this section and further described in Section 4.4, *Impacts Assessment and Level of Take*.

4.2.1 Land Development

The Subarea Plan provides coverage to support the implementation of planned residential, industrial, commercial, mixed-use, active recreational parks, and public/quasi-public land uses, including associated infrastructure, consistent with the Santee General Plan, including the following:

- Residential uses (single-family homes, multi-family homes [e.g., duplexes, triplexes, apartment buildings, condominiums]).
- Commercial uses (retail centers, grocery stores, restaurants, stores and shops, offices).
- Industrial uses (warehouse and distribution centers).
- Public and quasi-public buildings and facilities, including governmental offices, schools, urban farms, places of worship, and
- Active recreational facilities such as neighborhood parks, dog parks, soccer fields, golf courses, and indoor and outdoor sports centers.

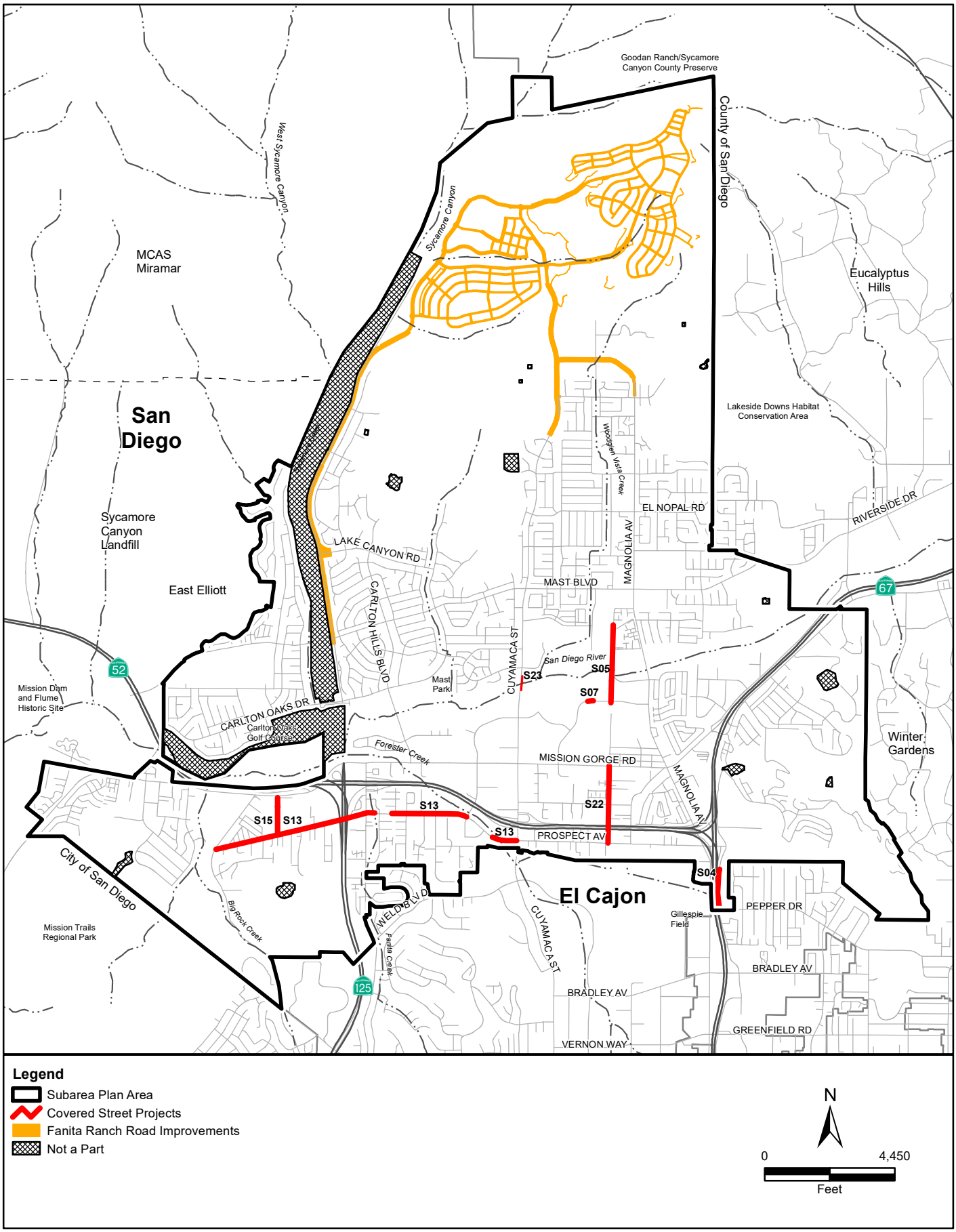
The estimated acreage of permanent impacts for land development is the major component of the Planned Development and Future Development impacts described and quantified below.

4.2.2 New Defensible Space

For future developments and subdivisions, defensible space compliant with the City fire code is to be mapped and accounted for as part of the project impact area. The City code requires a minimum of 100 horizontal feet of defensible space between structures and wildland areas to be incorporated in the project design. Depending on the percentage of slope and other wildland area characteristics, the defensible space may be increased beyond 100 feet, if conditions warrant, at the direction of the City's fire chief. In all areas except the San Diego River Subunit, the defensible space will not occur within the boundaries of the Managed Preserve. An increase in defensible space beyond the minimum 100 feet will influence the location of structures within a project proponent's ownership. The establishment and maintenance of defensible space zones are a component of Future Development Activities and are described below.

4.2.3 Street Projects

The City has identified a set of likely future street improvement projects based on a review of the City Mobility Element (updated 2017) (Santee 2017) and other ongoing capital improvement planning (Table 4-1 and Figure 4-1). These street projects have been identified because of the potential for direct and/or indirect effects on Covered Species and/or their habitats. Construction of a new street and/or improvement of an existing street may also be part of a proposed development project and is not specifically listed in Table 4-1. Detailed engineering and impact limits have not yet been developed for the street projects; however, estimated dimensions for road length and width are described in Table 4-1. Impacts associated with the street projects are a component of the estimated acreage of impacts for the Future Development Activities.



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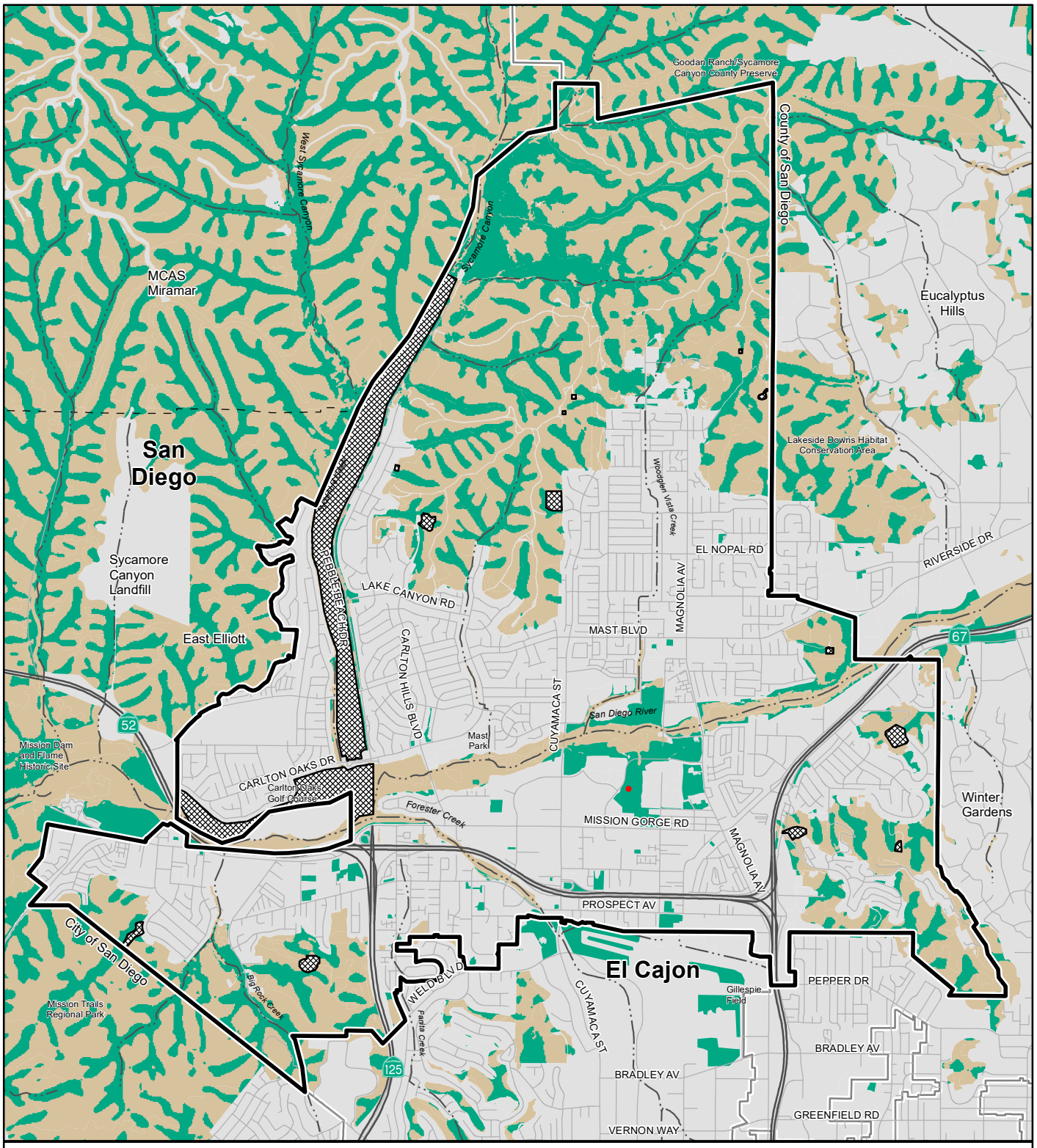
Figure 4-1
Covered Activities - Streets
Santee MSCP Subarea Plan

Table 4-1. Street Projects

Map ID	Project Name	Description
S4	Graves Avenue Extension	This project extends Graves Avenue south from the Lantern Crest development. [1,760’ x 50’]. (CIP Project #2015-08).
S5	Cottonwood Avenue Extension	This project extends Cottonwood Avenue between Riverview Parkway and the existing Cottonwood Avenue. It is expected that any extension of Cottonwood Avenue would cross the river at the existing Cottonwood Avenue/Chubb Lane crossing with a bridge. The design and precise alignment of the street and river crossing are unknown at this time. [2,280’ x 100’; bridge = 380’ x 60’].
S7	Riverview Parkway Extension over Drainage Channel	This project constructs a two-lane bridge or road segment over the existing north-south trending drainage channel (D11) in the Riverview master planned office park site. [192’ x 102’].
S13	Prospect Avenue widening from Cuyamaca Street to Mesa Road	This project widens three segments of Prospect Avenue to a two-lane Collector Street. [9,000’ x 110’] (CIP Project #2011-50 & 2015-04).
S15	Marrokal Lane	This project extends and widens Marrokal Lane from Mission Gorge Road to Prospect Avenue to a two-lane residential collector. [1,280’ x 60’].
S22	Cottonwood Avenue widening between Mission Gorge Road and Prospect Avenue	This project widens the road, as needed, and installs missing sections of curb, gutter, and sidewalk; provides street lighting; and relocates drainage inlets. [2,635’ x 60’] (CIP Project #2015-02).
S23	Cuyamaca Bridge	This project widens the Cuyamaca Bridge to City’s Mobility Element standards allowing for bike lanes and sidewalks. The widening area would be the length of the bridge by 12 feet wide.

4.2.4 Drainage Projects

The City has identified a set of likely drainage improvement projects based on a review of ongoing capital improvement and maintenance planning (Figure 4-2). Detailed engineering and impact limits have not been developed for the drainage projects; however, estimated width dimensions of the drainage channels are listed in Table 4-2. Other types of drainage projects that would be covered include storm drain replacement programs and actions under an alternative storm water compliance program. Impacts associated with the drainage projects are a component of the estimated acreage of impacts for the Future Development Activities.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter3\Figure 3-20 Western Burrowing Owl-Unique.mxd Date: 1/31/2025 34153

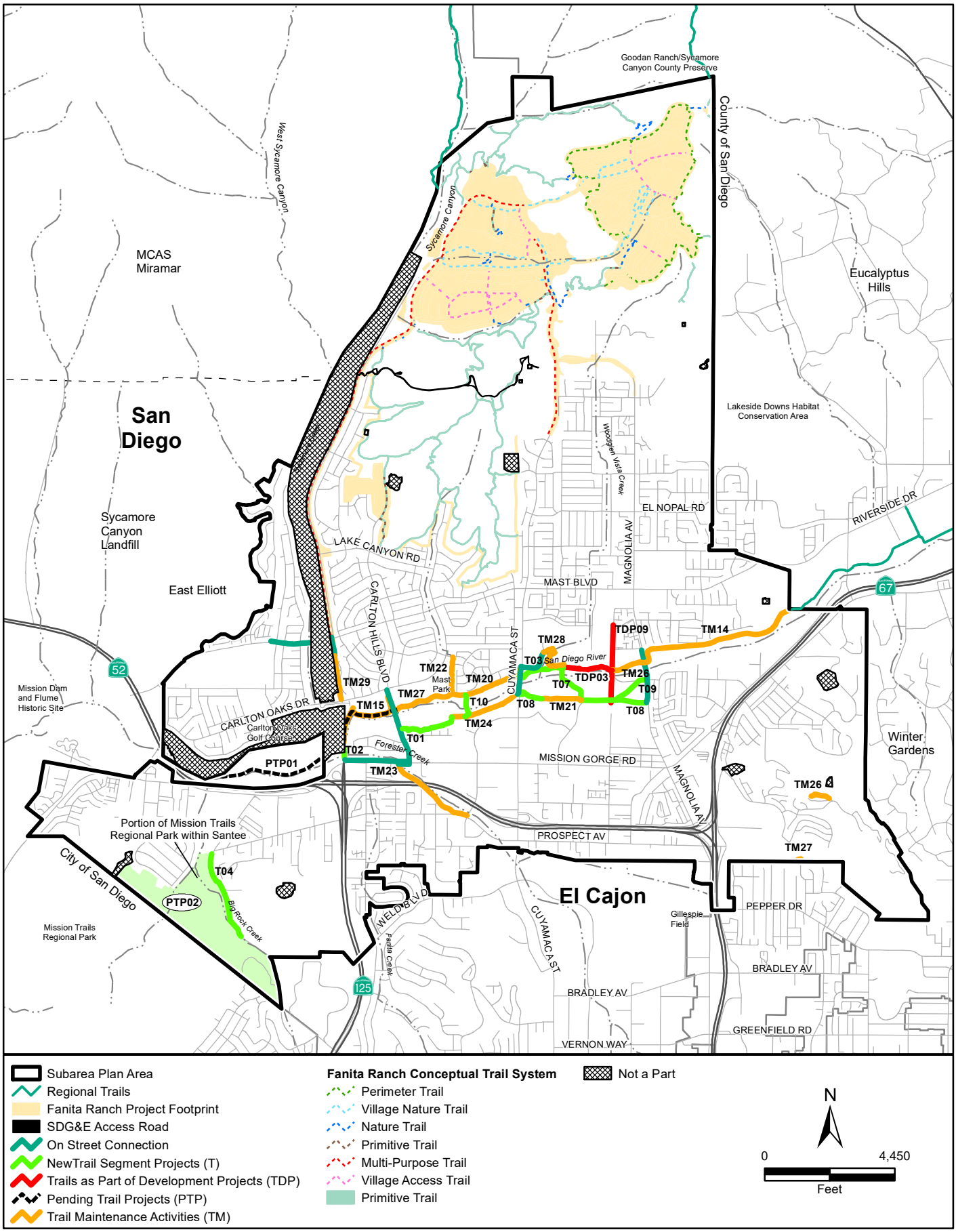
Figure 3-20
Western Burrowing Owl - Known Occurrences and Habitat Model
Santee MSCP Subarea Plan

Table 4-2. Drainage Projects

Map ID	Project Name	Description
D5	East of Atlas View Drive from south of Pryor Drive to Forester Creek	This project involves constructing storm drain facilities to correct minor flooding and localized drainage problems. [1,890' x 15'].
D6	Placid View from Prospect Avenue to Mission Gorge Road	This project would install storm drain facilities to carry the 100-year flood flows. The storm drain would be placed in existing developed areas. [950' x 15'].
D10	Woodglen Vista Park Channel Stabilization	This project involves improving the existing channel within Woodglen Vista Park, which includes adding irrigation, planting, slope protection and fencing. [510' x 30'].
D12	Sycamore Creek Multi-Jurisdictional Drainage Project	This project regrades the low-flow vegetated channel and routinely maintains the channel to improve drainage and control flooding. [9,430' x 35'].
D13	Halberns Channel Vegetated Segment	This project regrades the low-flow vegetated channel to improve drainage and control flooding. The channel south of Mast Boulevard to the Halberns/Stoyer inlet is earthen, but privately owned, and needs to be maintained. [1,517' x 20'].
D14	Carlton Hills Boulevard	This project regrades the low-flow vegetated channel to improve drainage and control flooding. [1,285' x 20'].
D15	Fanita Drive Channel South	This project regrades the low-flow vegetated channel to improve drainage and control flooding. [290' x 32'].
D16	Big Rock Creek	This project regrades the low-flow vegetated channel to improve drainage and control flooding. [750' x 40'].

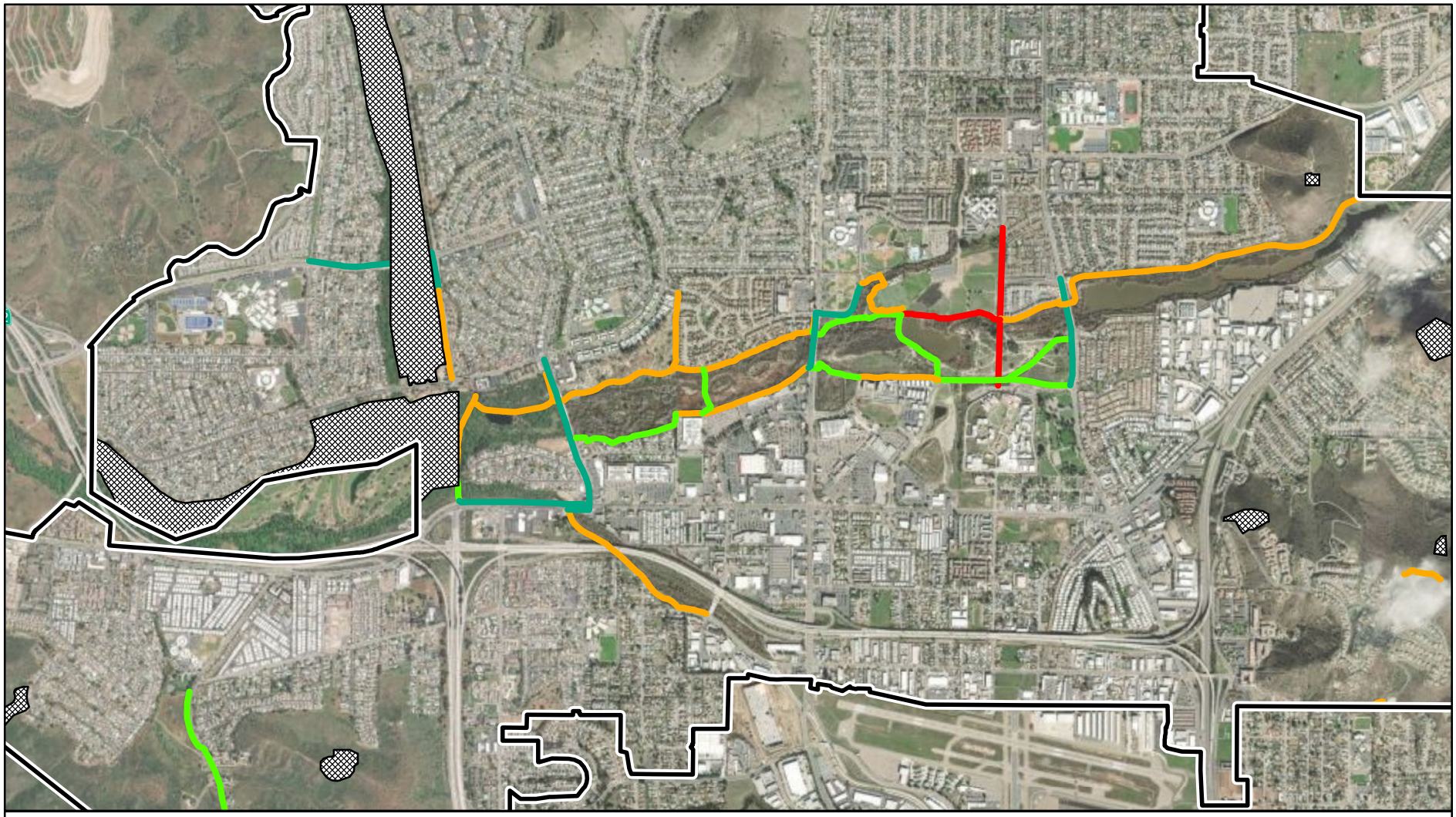
4.2.5 Trail Projects

The City has identified future trail projects based on a review of the Santee General Plan Mobility Element, ongoing capital improvement planning, and other regional trail planning (Table 4-3 and Figures 4-3 and Figure 4-4). Trails proposed by the City should be consistent with the City's public works standards, be connected to the mobility network and should facilitate multi-modal movement. Detailed engineering and impact limits for future trails have not been developed; however, the anticipated segment length and width are estimated and included in Table 4-3. Two future trails (Map ID TDP 3 and TDP 9) will be developed as part of an associated land development or street project. The estimated impacts are included as part of the effects assessment for Future Development Activities. In the San Diego River Subunit, there would be a total of 4.45 acres of new trail proposed, 4.3 acres of which would be outside of the Managed Preserve and 0.15 acre would be inside the Managed Preserve. All new trails will be sited and constructed consistent with the trail siting criteria in Chapter 5, *Conservation Strategy*, (for trails outside the Managed Preserve) and Chapter 7, *Management and Monitoring*, (for trails in the Managed Preserve) and the site-specific Resource Management Plan (RMP) developed in coordination with the Wildlife Agencies.



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Figure 4-3
Covered Activities - Trails
Santee MSCP Subarea Plan



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Figure 4-4
Trail Network – San Diego River Subunit
Santee MSCP Subarea Plan

Table 4-3. Trail Projects

Map ID	Project Name	Description
T1	San Diego River Trail—South (Fanita Parkway to Magnolia Street)	The City of Santee Mobility Element and Bicycle Master Plan identify a riding/hiking trail that extends from Fanita Parkway on the west to Magnolia Avenue on the east, south of the San Diego River. Much of this trail is constructed and is being maintained (TM21, TM24). T1 is a new riding/hiking trail segment through the Mast Park West and Lowes Preserve protected open space on the south side of the San Diego River. This trail segment will extend from the Carlton Oaks golf course, under the Carlton Hills Boulevard bridge, and connect with the existing trail constructed along the southern border of the Mast Park Wetland Restoration Project.
T2	San Diego River Trail—South (Mission Gorge to Fanita Drive)	The City of Santee Mobility Element and Bicycle Master Plan identify a new riding/hiking trail segment that connects Mission Gorge Road and Fanita Drive to the trail following the San Diego River. This trail is proposed to extend across the Caltrans Forester Creek Mitigation Site.
T3	San Diego River Trail — North (Cuyamaca Street to City Ventures Planned Development	The City of Santee Mobility Element and Bicycle Master Plan identify a new riding/hiking trail segment that connects the San Diego River Trail (north side of river) from Cuyamaca Street, across the tributary of Woodglen Vista Creek, and connects to future County Project 2 development area (DP2). This trail will extend across the currently protected open space of the Woodglen Vista Creek.
T4	Mesa Road	The City of Santee Mobility Element and Bicycle Master Plan identifies a new trail segment along Mesa Road from Big Rock Park to the end of the existing paved road. This trail will be along the boundary of the Mission Trails Regional Park (MTRP). If the trail extends in the MTRP, improvements will be coordinated with the City of San Diego and addressed as part of the trail improvements within MTRP (see PTP2).
T5	San Diego River North between Carlton Oaks Drive and Trail Within Mast West	The City of Santee Mobility Element and Bicycle Master Plan identify an improvement to an existing trail segment that connects Carlton Oak Drive to the existing trail within Mast Park West. This project will include a crosswalk at Carlton Oaks Drive. Peeler log fencing is proposed along both sides of the trail as the initial approach for discouraging encroachment into adjacent riparian areas. (CIP #2015-32).
T7	Town Center Iconic Pedestrian Bridge	There are conceptual plans to construct a suspension-type pedestrian bridge over the San Diego River west of Cottonwood Avenue. [950’ x 14’]. This trail segment is not in the City of Santee Mobility Element or Bicycle Master Plan but would be a project carried out by the City.
TDP3	San Diego River Trail—North	A new trail will be constructed on the north side of the San Diego River between Cuyamaca Street and Magnolia associated with future development projects. The trail will be constructed between urban development and the edge of riparian habitat. This trail segment is identified in the City of Santee Mobility Element and Bicycle Master Plan.

Table 4-3. Trail Projects (cont.)

Map ID	Project Name	Description
TDP9	Cottonwood Avenue Extension Trail	A trail will be incorporated into the project design of the Cottonwood Avenue extension across the San Diego River. Impacts estimated for Cottonwood Avenue include the trail impacts. In addition, trails associated with roads are exempt from trail siting criteria in Chapters 5, *Conservation Strategy*, and 7, *Management and Monitoring*.

4.2.6 Agriculture Expansion

The City requires new agricultural operations or expansion of an existing agricultural operation to obtain a grading permit or Conditional Use Permit, depending upon the zoning. This discretionary action would trigger a review by the City and biological mitigation if natural habitat occurs on the proposed agricultural site. There are currently no commercial agricultural operations within the City, and agriculture expansion is not expected in the future. However, depending on the zoning, agriculture is an allowed use. The estimated acreage of impacts for agriculture expansion is a component of and included within the Hardline Development Project and Future Development areas acreage estimates.

4.2.7 Essential Public Projects

The Subarea Plan provides coverage for infrastructure projects that meet the definition of "Essential Public Project" under the Habitat Loss and Incidental Take Permit and meet the requirements for a deviation that would allow impacts in the Managed Preserve, primarily by demonstrating avoidance is impracticable. Total allowable loss of habitat in the Managed Preserve from Essential Public Projects is capped at 3.5 acres. Under the HLIT deviation process, Essential Public Projects would be required to minimize impacts to the maximum extent practicable and provide replacement habitat for the Managed Preserve.

4.2.8 Operations and Maintenance Activities

The City has completed a review and inventory of all ongoing and anticipated operations and maintenance activities. Operation and Maintenance Activities for defensible space, drainage facilities, streets, and trails, as well as vector control, are Covered Activities under this Subarea Plan.

4.2.8.1 Defensible Space Activities

This City is responsible for completing and overseeing vegetation management within defensible space zones surrounding habitable structures and roadways (see Section 5.5.4, *Fire Defensible Space Standards*). Vegetation management within existing defensible space zones is a Covered Activity. The City has completed an inventory of existing defensible space within the Subarea Plan Area, as depicted in Figure 4-5. These areas (totaling 189 acres) are cleared by the City or property owners annually in accordance with the City's ordinance. If a structure is located within 50 feet of a property line, then

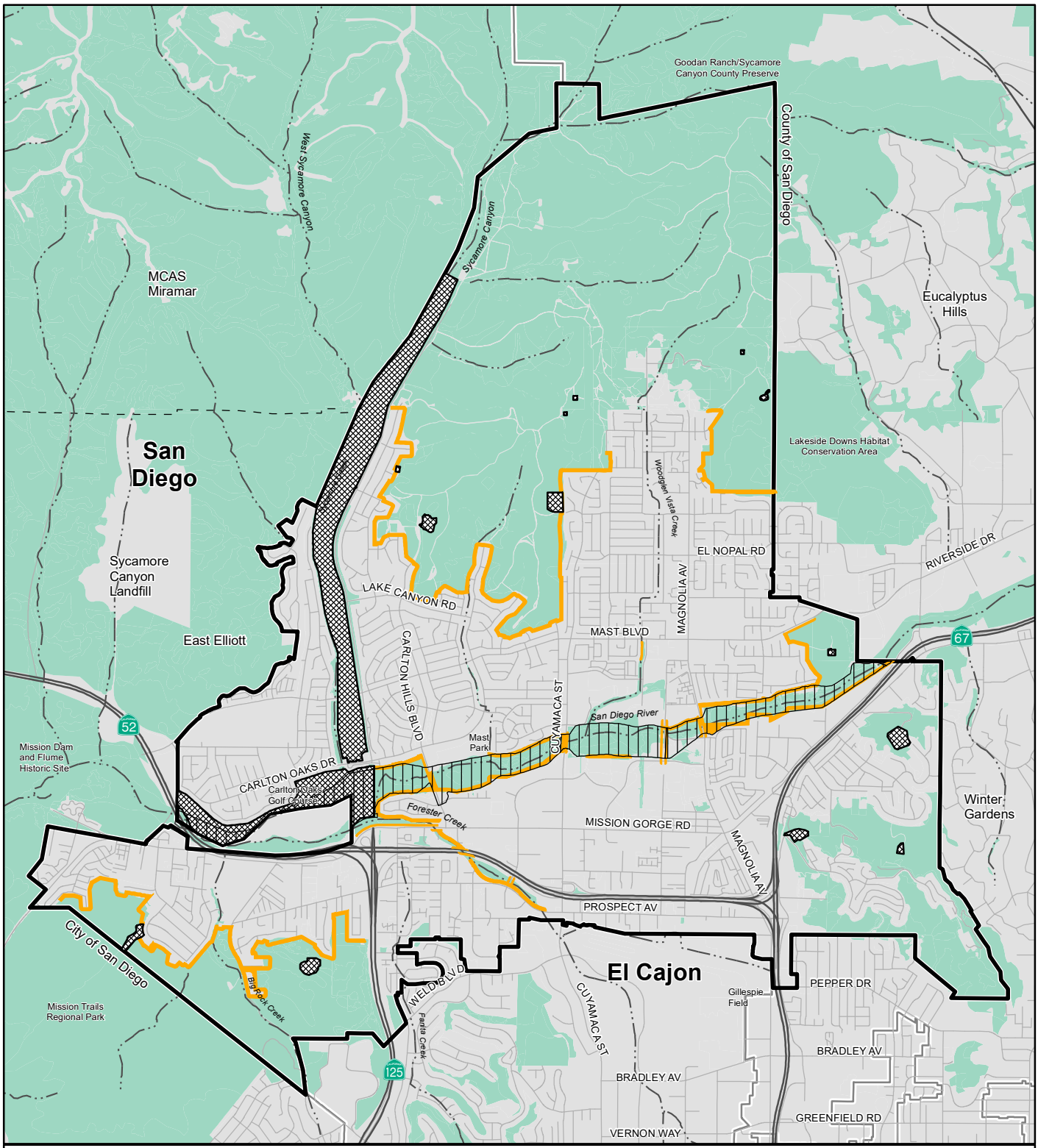
the target width of these buffer areas is 30 or 50 feet from the back edge of the parcel ownership boundary, as specified by the ordinance; however, actual widths on the ground may be wider in some areas. Existing defensible space is generally mapped as disturbed habitat and to the extent that it may overlap with future preserve areas that become part of the Managed Preserve, it does not count toward the total conservation acreage. In the San Diego River Subunit, 43.4 acres of new defensible space will be established in natural vegetation communities, 8.93 acres of which will be included in the Managed Preserve on City-Owned Preserve Lands. Although not counted as conservation acreage, these areas were included in the Managed Preserve so that they could be managed to provide some habitat value and to serve as a buffer against edge effects. In addition, depending on funding, the City will implement a fuel hazard reduction project in the San Diego River Subunit that will target removal of invasive species. No permanent impacts to habitat are expected as a result of this Covered Activity.

4.2.8.2 Drainage Maintenance Activities

Occasionally, it is necessary for City maintenance crews to remove sediment, trash, or debris at drainage inlets, outfalls, and catch basins. Removal of vegetation is also sometimes necessary in these areas to allow for equipment access. All maintenance activities will be performed consistent with maintenance guidelines that include the following:

- Any action in a streambed and/or jurisdictional water of the United States will likely require notification and approval from the ACOE and a CDFW lake or streambed alteration agreement, as applicable.
- Any temporary impacts on vegetation would be remedied through restoration of the affected area in accordance with Section 5.5.1.1.
- Maintenance activities will be conducted outside of the bird breeding season consistent with the Plan's Nesting Birds Conservation Standards, as outlined in Section 5.5.1.2.

Existing drainage facilities that require ongoing maintenance are listed in Table 4-4 and depicted in Figure 4-2. As new drainage improvement facilities are built, these will be added to this list over time and included in the Annual Report.



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Figure 4-5
Covered Activities - Defensible Space Areas
Santee MSCP Subarea Plan

Table 4-4. Drainage Maintenance Activities

Map ID	Project Name	Description
DM1	Sycamore Creek/Carlton Oaks Bridge	Maintenance activities include ongoing and consistent maintenance of nine outfalls within the Sycamore Creek channel and silt removal around the Carlton Oaks Bridge City right-of-way. [260’ x 72’].
DM2	Fanita Parkway Channel	Maintenance activities involve periodic clearing/maintenance activities of the concrete and natural channel and inlets and outlets between the Fanita Ranch development project and Mast Boulevard to maintain unobstructed flows and to prevent flooding. [6,644’ x 30’].
DM3	Carita Road/Lake Canyon Drive Drainage Channel	Maintenance activities involve periodic clearing/maintenance activities of the easement and outfall to maintain unobstructed flows to prevent flooding. The channel is generally located between Carita Road and Lake Canyon Drive, serving a single-family residential area. The channel is earthen, and some of the channel is on private property. The City maintains two outfalls from the Fanita outfall to a second outfall. [1,990’ x 20’].
DM4	Carlton Hills Boulevard/Carlton Oaks Drive Inlets	Maintenance activities involve periodic clearing/maintenance activities of three inlets to maintain unobstructed flows to prevent flooding. [27’ x 20’].
DM5	Halberns Channel	Maintenance activities involve periodic clearing/maintenance activities of the concrete portion of the Halberns Channel and inlet/outlet north of Mast Boulevard to maintain unobstructed flows and prevent flooding. [2,650’ x 20’].
DM6	Woodglen Vista Creek channel	Maintenance activities involve periodic clearing/maintenance activities to maintain a clear channel and prevent flooding. It also includes periodic vegetation pruning to maintain access for maintenance vehicles. The channel is predominantly concrete north of Mast Boulevard. Maintenance involves removal of all vegetation (weeds, grasses, tree branches that are hanging over from backyards) growing onto the access road and scraping out all the vegetation, silt and debris from the channel itself. The project does not entail widening or grading. This maintenance would take place once a year in late summer. The concrete channel from Princess Joanne Road south to a park where the channel becomes earthen; through the park and south of the park the channel is concrete to Mast Boulevard. [6,515’ x 30’].
DM7	San Diego River at Magnolia Avenue Bridge, Cuyamaca Street and Carlton Hills	Maintenance activities involve selective pruning to keep the sidewalks along bridges clear; periodic clearing/maintenance activities to maintain open drainage and protect bridge structures; and trash pick-up and graffiti removal. (Three bridges: Magnolia Street [910’x80’]; Cuyamaca Street [530’ x 80’]; Carlton Hills Boulevard [985’ x 80’]).

Table 4-4. Drainage Maintenance Activities (cont.)

Map ID	Project Name	Description
DM9	Buena Vista Channel/Las Colinas	Maintenance activities entail maintaining a linear park and storm drain system south of Mission Gorge Road to the San Diego River. The Riverview Master Plan Concept Plan delineates this park as 2,400' x 85' right-of-way, with a 25' channel width (see also D11). [maintenance area = 1,230' x 12'].
DM10	Fanita Drive Channel South	Maintenance activities involve periodic clearing/maintenance activities in three segments of the open channel to maintain unobstructed flows and prevent flooding. [2,060' x 32'].
DM11	Forester Creek from south of Prospect Avenue to approximately Mission Gorge Road	Maintenance activities involve periodic clearing/maintenance activities in a natural and concrete channel, such as removal of trash and dead vegetation and sediment removal to maintain unobstructed flows and prevent flooding.
DM12	San Diego River Channel	Consists of ongoing maintenance activities within the San Diego River channel from approximately 1,800 feet west of Carlton Hills Boulevard to Cuyamaca Street. Activities include exotic species removal and control, vector control, flood channel maintenance to maintain unobstructed flood flows, and general maintenance of existing improvements and landscaping. Maintenance includes under the bridge. DM12 area overlaps with the location of Trail Maintenance 20 (Table 4-5) but maintenance of the channel includes different activities than trail maintenance.
DM13	Big Rock Creek	Maintenance activities involve periodic clearing/maintenance activities within the natural channel west of Chet Harrit Elementary School and Big Rock Park to maintain unobstructed flows and prevent flooding. [620' x 40'].
DM14	Walker Preserve/Trail/San Diego River-North	Maintenance activities involve periodic clearing/maintenance activities in the Walker Preserve channel/ponds to maintain unobstructed flows and prevent flooding. [5,840' x 30'].
DM16	Detention Basins	Maintenance activities involve periodic clearing/maintenance activities in five detention basins: (A) Shoredale Drive, (B) A1 Stor-It [below Woodside Terrace], (C) Diamondback Drive [Blackhorse Estates], (D) Calico Street [Sky Ranch], and I Brockway Street [Sky Ranch].
DM17	Mission del Magnolia	Maintenance activities involve periodic clearing/maintenance activities in the concrete channel. [1,055' x 10'].
DM25	Shadowhill Park	Maintenance activities involve periodic clearing/maintenance activities of the existing drainage channel located along the west side of the park [570' x 20'].
DM26	San Diego River Storm Drain Outfalls	The City has mapped up to 50 outfalls that drain storm water into the San Diego River. Maintenance activities involved periodic clearing of vegetation and sediment removal as required at these outfalls.

4.2.8.3 Trail Maintenance Activities

The City has identified existing trails that require ongoing maintenance such as native vegetation control, erosion control, and repairs to signage and fencing (Table 4-5 and Figure 4-3). Trail maintenance activities will result in minimal temporary direct impacts, and maintenance activities will be completed in a manner to minimize indirect impacts on Covered Species and their habitats. As new trails are developed (Future Development Activities), they will be added to the list of trails requiring trails maintenance. No permanent impacts to habitat are anticipated from trail maintenance activities.

Table 4-5. Trail Maintenance

Map ID	Project Name	Description
TM14	Walker Preserve Trail	The City conducts maintenance of the existing trail within the Walker Preserve. Activities include periodic trimming/clearing of adjacent vegetation, erosion control, and maintenance of signage and fencing. The existing trail extends from Magnolia Avenue on the west to the City limits on the east.
TM15	Mast West Trail	The City conducts maintenance of the existing trail that extends from Mast Park, through the Mast West open space, and stops at the Carlton Oaks golf course. The City provides periodic trimming/clearing of adjacent vegetation, erosion control, and maintenance of signage and fencing.
TM20	San Diego River Trail —North	The City conducts periodic clearing/maintenance activities of the existing trail between Cuyamaca Street and Carlton Hills Boulevard, including trimming of shrubs, clearing of trash, and removal of miscellaneous branches and leaves.
TM21	San Diego River Trail —South	The City conducts periodic clearing/maintenance activities of the existing concrete hiking and biking trail segment from north of Willow Grove Court to Magnolia Avenue, including trimming of shrubs, clearing of trash, and removal of miscellaneous branches and leaves. Portions of the existing trails along this route will be replaced and enhanced with formal trails and fencing with the developments of the Town Center Specific Plan Area (DP14).
TM22	Trail along Eastern Edge of Mast Park	The City conducts periodic clearing/maintenance activities of the existing concrete trail segment that follows the eastern edge of Mast Park from existing San Diego River Trail to Willow Pond Road. Activities include trimming of shrubs, clearing of trash, and removal of miscellaneous branches and leaves.
TM23	Forester Creek Trail	The City conducts periodic clearing/maintenance activities of the existing riding/hiking trail segment adjacent to Forester Creek from Mission Gorge Road to Prospect Avenue. Activities include trimming of shrubs, clearing of trash, and removal of miscellaneous branches and leaves.
TM25	Mast East San Diego River Crossing Trail	An existing dirt hiking and biking trail (with a small wooden bridge over the main San Diego River channel) extend through the Mast East conservation area and connect the Mission Creek neighborhood and Town Center (Walmart). The City conducts periodic maintenance that includes trimming/clearing of adjacent vegetation, erosion control, and maintenance of signage and fencing.

4.2.8.4 Vector Control Activities

The San Diego County Vector Control Program is a countywide program that monitors vectors and diseases that they carry. To better protect the community, the Vector Control Program needs access to open water environments to apply treatments for mosquitoes. Gaining access to open waters may involve temporarily clearing of a pathway through riparian and shoreline aquatic habitats. In situations where the Vector Control Program needs access to open water on City-owned Preserve Lands, the City will identify an appropriate access point requiring the minimum amount of habitat disturbance. Habitat will be trimmed back to create access and then be allowed to passively restore back to original conditions. The City will conduct these activities outside of the bird breeding season in accordance with the avoidance and minimization measures included in Chapter 5, *Conservation Strategy*, including Conformance with Nesting Birds Conservation Standards.

In situations where access to open water for the Vector Control Program can be achieved with minimal and temporary disturbance, these actions are considered an operations and maintenance activity that does not require compensatory mitigation or active habitat restoration. If there are vector control actions that involve permanent removal of habitat, those actions would be considered a project with direct impacts (see Section 4.2, *Types of Covered Activities Resulting in Effect*) that require mitigation as provided in Chapter 5, *Conservation Strategy*.

4.2.9 Preserve Management and Monitoring Activities

Certain Preserve management activities may directly or indirectly affect the Covered Species and/or their habitats. Preserve management effects are expected to be mostly temporary and of limited severity. All Preserve management activities within the Managed Preserve will be implemented to avoid or minimize take of Covered Species and in accordance with the Avoidance and Minimization Measures, as outlined in Section 5.5. The permits will cover Preserve Managers of the Managed Preserve (and their contractors) for completion of activities consistent with the Subarea Plan. Covered Preserve Management and Monitoring activities are described below and in more detail in Section 7.2, *Preserve Management and Monitoring*. Preserve Management and Monitoring activities will extend beyond the permit term since the Managed Preserve conservation, management and monitoring is perpetual.

4.2.9.1 Preserve Management Activities

This category includes all management actions required by the Subarea Plan or other actions that might be necessary to achieve the Subarea Plan biological goals and objectives, as described in the Preserve Complex RMPs or individual Preserve RMP addenda. These actions might include the activities listed below:

- **Vegetation Management.** Hand methods for vegetation control are allowed. Pesticide/herbicide use is allowed under the Subarea Plan only to achieve biological goals and objectives (e.g., exotic plant control) in accordance with label instructions and in compliance with state and local laws. Grazing is not anticipated to be used for large-scale vegetation management but may be used selectively (in coordination with the Wildlife Agencies) to target specific locations or vegetation management issues within the Preserves, provided they are consistent with the Subarea Plan

biological goals and objectives. These management measures will be developed with the Preserve Managers and coordinated with the Wildlife Agencies.

- **Onsite Vehicle Use**. Preserve management staff members may travel through the Preserves on foot or by mountain bicycle, truck, ATV, or other off-road vehicle on designated pathways to inspect or maintain facilities, conduct monitoring, and patrol trails.
- **Translocation of Covered Species**. Translocation may be undertaken within Preserves where impacts are unavoidable and it has a high likelihood of success (e.g., translocation of San Diego barrel cactus). Translocation should only be in close coordination with the Wildlife Agencies. Any translocation of Covered Species will be coordinated in advance with the Wildlife Agencies, including the development of a translocation plan that will be reviewed and approved by the Wildlife Agencies prior start of translocation activities.
- **Covered Species Reintroduction.** Species such as Quino checkerspot butterfly have been successfully reintroduced to areas of previous extirpation. Landowners would need to grant permission for any reintroduction efforts and a reintroduction plan would need to be prepared and approved by the Wildlife Agencies.
- **Demolition or Removal of Structures or Roads.** Demolition or removal of structures or roads may be used to increase public safety or to restore habitat.
- **Trail Closures**. Installation of barriers and fencing to control and direct public access.
- **Trail Decommissioning**. Any trails decommissioned would be restored to provide Covered Species habitat.
- **Control of Introduced Species** such as Argentine ants and African clawed frog and nest parasites such as brown-headed cowbird**.**
- **Control of Rodents.** Rodenticides are not authorized without prior written consent from the Wildlife Agencies and *brodifacoum*, *bromodiaolone*, *diphacinone*, and *difethialone* chemical products will not be authorized under any circumstances.

4.2.9.2 Habitat Enhancement, Restoration, and Creation

The Subarea Plan conservation strategy, as outlined in Chapter 5, identifies that habitat enhancement, restoration, and creation may be necessary within the Managed Preserve associated with an adaptive management approach (Chapter 7, *Management and Monitoring*). Habitat enhancement, restoration, and creation could generally be disruptive only in the short term; these activities would involve soil disturbance, removal of undesirable plants, and limited grading. All habitat enhancement, restoration, and creation activities are expected to result in net long-term benefits for Covered Species and vegetation communities. However, these activities could result in temporary adverse effects and limited take of Covered Species. Therefore, all habitat enhancement, restoration, and creation activities conducted within the Managed Preserve will be consistent with Chapters 5, *Conservation Strategy*, and 7, *Management and Monitoring*, of the Subarea Plan.

4.2.9.3 Species Surveys, Monitoring, and Research

Preserve Managers and/or their contractors will conduct surveys for Covered Species, vegetation communities, and other resources within the Preserves for monitoring, management, and adaptive management purposes. Surveys for all Covered Species will be conducted by qualified biologists and adhere to accept ed protocols. These surveys may include methods that qualify as take under ESA; however, if they are conducted by qualified biologist in a manner consistent with the Wildlife Agencies approved protocols and requirements per the Subarea Plan, then these surveys are to be considered a Covered Activity.

Research conducted by Preserve Managers and/or their contractors within the Managed Preserve may be considered a Covered Activity if the research project has a negligible effect on the Covered Species or are deemed necessary to address a specific management issue within the Preserve In such cases, the City and applicable Preserve Manager will seek input from and the approval of the City and Wildlife Agencies prior to authorizing or undertaking such activities. Research resulting in take of Covered Species that is conducted by other individuals (e.g., academic scientists) will not be considered a Covered Activity because the type and extent of the impacts of these future research projects cannot be predicted at this time, and these researchers are not bound by the terms of the Subarea Plan.

4.3 Covered Activities by Location

Table 4-6 depicts how the Subarea Plan includes coverage for categories of Covered Activities by location.

Table 4-6. Covered Activities by Location

Covered Activity	Location				
	Hardline Development Project	Upland Standards Areas	Infill Development Areas	San Diego River Subunit	Managed Preserve
Land Development	X	X	X		
Future Defensible Space Zones	X	X	X	X	X
Street Projects	X	X	X	X	
Drainage Projects	X	X	X	X	
Trail Projects	X	X	X	X	X
Trail Maintenance Activities	X			X	X
Agricultural Expansion	X	X			
Recreational Facilities and Maintenance	X	X	X	X	
Operations and Maintenance Activities	X	X	X	X	
Defensible Space Maintenance Activities	X	X	X	X	X
Preserve Management and Monitoring					X
Essential Public Projects					X

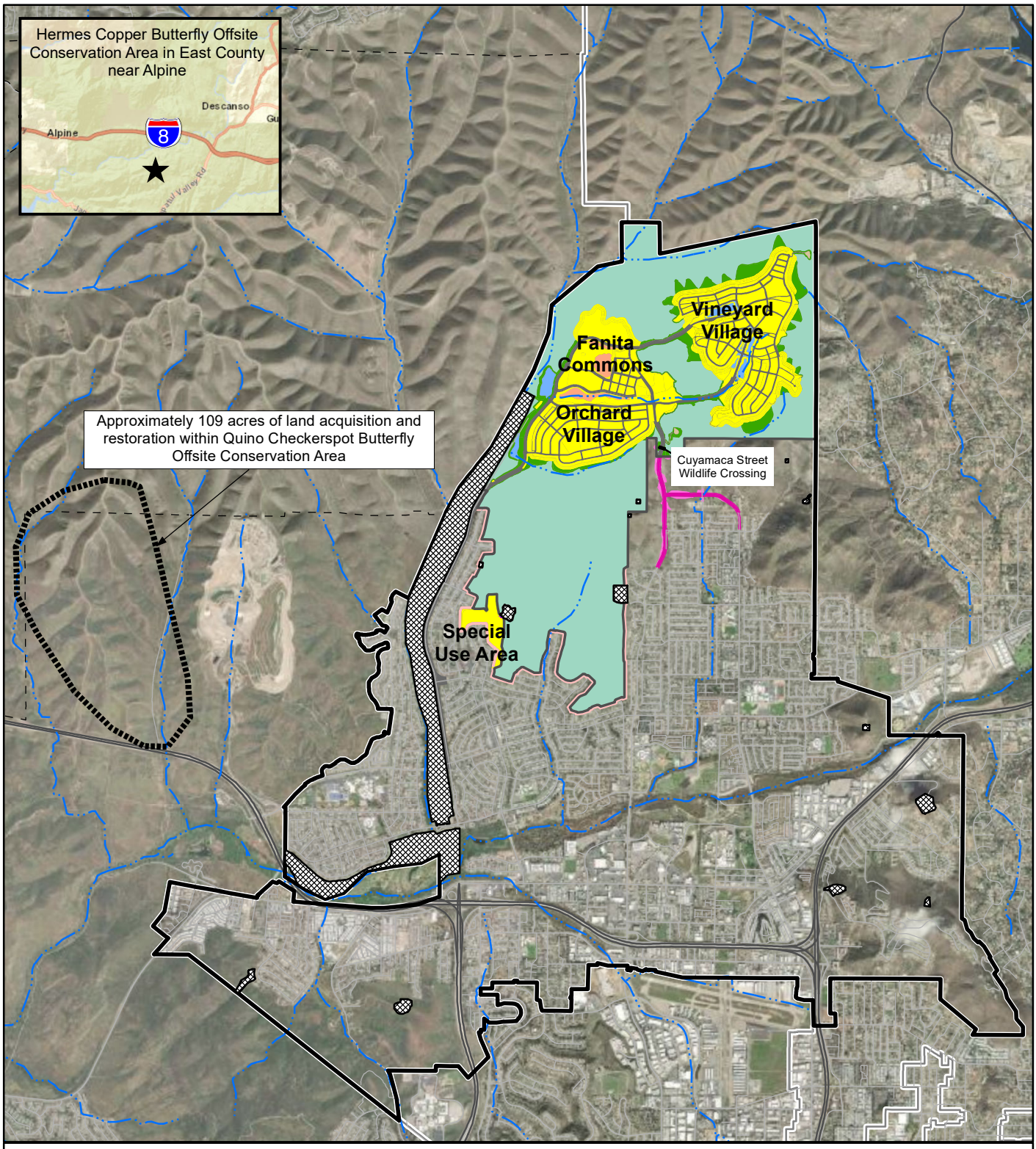
4.3.1 Planned Development

Planned Development (hardline projects) includes projects that are expected to have impacts on Covered Species or their habitats and will obtain take coverage under the Subarea Plan. There is one Hardline Development Project included in the Plan Area called Fanita Ranch located in the northwestern quadrant of the City (see Figure 4-6).

4.3.1.1 Fanita Ranch Hardline Development Project

Based on a Tentative Map submitted in June 2018 (Hunsaker 2018) and Biological Resource Technical Report for the Fanita Ranch EIR (Dudek 2020), the Fanita Ranch project area totals approximately 2,638 acres, not including the offsite road impacts that total approximately 32.60 acres. One offsite road would extend Cuyamaca Street north into the project site, adding a secondary access route. There would also be an extension of Magnolia Avenue included in the offsite road impacts. The project development area includes village development, basins, defensible space, community farm, grading buffers, roads, water tanks, manufactured slopes, roads, and a special-use area (total of 877.1 acres of natural habitat). The remainder of the site would be open space or Managed Preserve. The Fanita Ranch Onsite Preserve would include 1,650.4 acres, including 1,593.8 acres of natural vegetation communities. Approximately 10.52 acres of proposed trails, 6.88 acres of San Diego Gas & Electric access road and 39.0 acres of utility easements also occur within the Fanita Ranch Onsite Preserve.

In addition to the Fanita Ranch Onsite Preserve, the Hardline Development Project will include conservation of 90.7 acres of habitat for the Quino checkerspot butterfly in the East Elliott area west of the City or the equivalent from other nearby locations depending on the availability of willing sellers, and conservation of 80.4 acres of occupied Hermes copper butterfly habitat in eastern San Diego County (near Alpine). The Fanita Ranch Onsite Preserve and offsite Conservation areas will be managed and monitored for wildlife benefits and will be incorporated into the Managed Preserve. The Fanita Ranch Onsite Preserve areas would be selectively accessible through a managed and maintained trail system. There will be ongoing maintenance of trails, streets, and drainage and stormwater facilities as part of the Hardline Development Project.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 4-06 Fanita Generalized Site Plan.mxd Date: 7/9/2025 34153

Figure 4-6
Fanita Ranch Hardline Development Project
Santee MSCP Subarea Plan

4.3.2 Future Development Activities

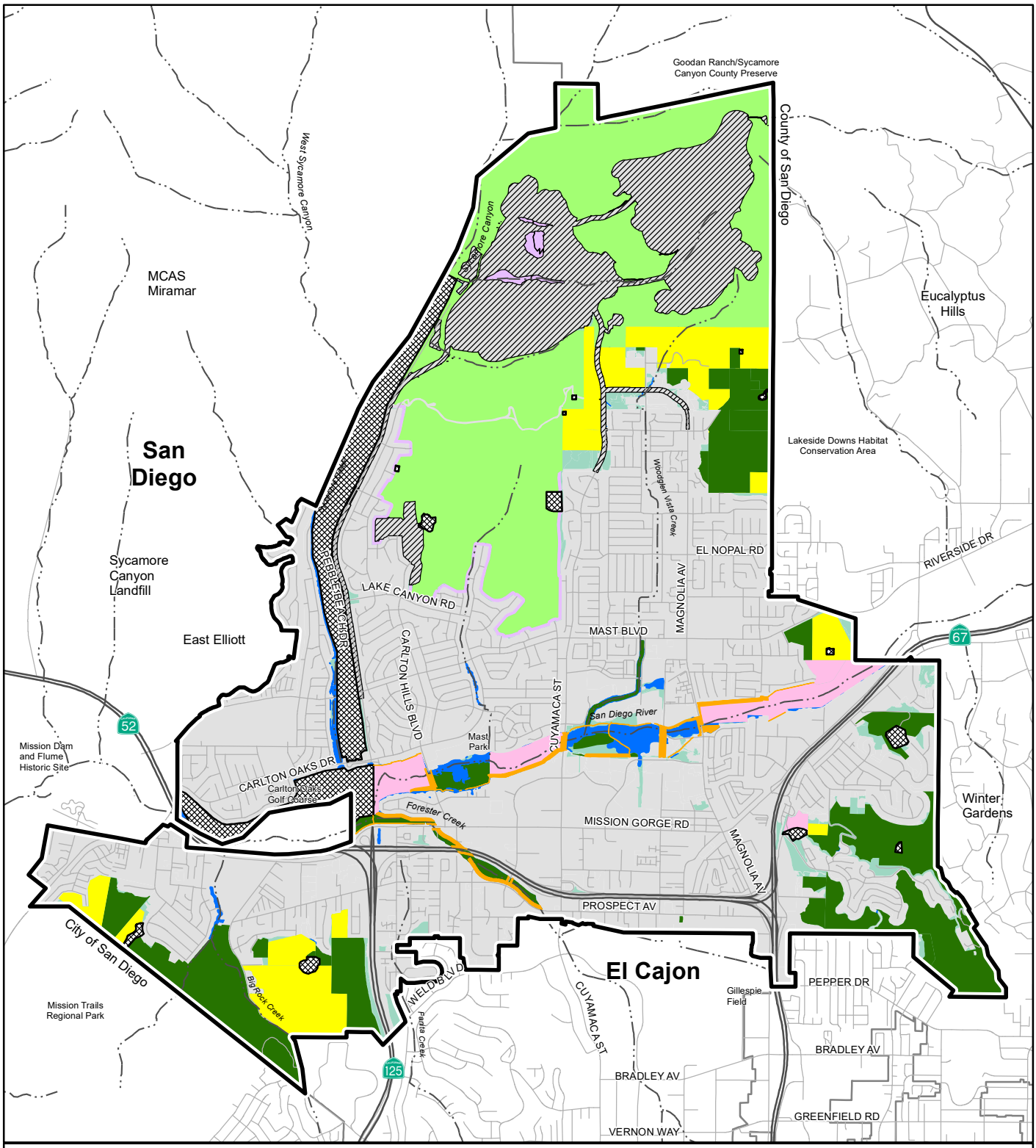
In addition to Planned Development, the Subarea Plan defines the process by which future development activities are reviewed and permitted. See Chapter 5, *Conservation Strategy*, and Chapter 8, *Subarea Plan Implementation and Funding*, for a description of the development review and approval process. The Subarea Plan defines the process for the review and approval of future land development and public infrastructure development activities that will potentially impact Covered Species and natural habitats. Future development activities, subject to the City's discretion, are required to implement avoidance, minimization, and mitigation requirements in accordance with where the projects are located in the Plan Area (i.e., Upland Standards Areas, Infill Development Areas and San Diego River Subunit) (see Figure 4-7).

4.3.2.1 Upland Standards Areas

Future land and infrastructure development will be allowed within the Upland Standards Areas up to a maximum of 30 percent of each of the individual Standards Areas. The Subarea Plan establishes policies to ensure the overall conservation will remain at least 70 percent and the most biologically sensitive areas of habitat will be conserved while ensuring that habitat connectivity will be protected. Development will not be sited on the sensitive areas of the parcel(s). Future land development within the Upland Standards Areas will be reviewed by the City following a set procedure and checklist as described in Section 5.3.1.2, *Upland Standards Areas*.

4.3.2.2 Infill Development Areas

Portions of the City designated as Infill Development Areas are areas where the remaining natural habitat is generally fragmented, isolated, and/or contains edge affect due to existing development areas. These areas are where future habitat conservation is not anticipated. There will be relatively few situations of future development that will result in direct biological impacts in the Infill Development Areas. The City has estimated a maximum of no more than 65 acres in the Infill Development Areas. As future Covered Activities occur with the Infill Development Areas, the Subarea Plan does require that projects address avoidance and minimization measures pursuant to the Subarea Plan (see Section 5.5, Avoidance, Minimization, and Mitigation Measures). However, compensatory mitigation will be required based on the Uniform Mitigation Ratios and mitigation will be directed into the Upland Standards Areas or San Diego River Subunit or for smaller projects (less than 5 acres), the impacts can be offset with payment of a mitigation fee into the Subarea Plan Conservation Fund.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 4-07 Future Development Areas.mxd Date: 7/9/2025 34153

Figure 4-7
Future Development Areas
Santee MSCP Subarea Plan

4.3.2.3 San Diego River Subunit

The San Diego River Subunit of the Subarea Plan is unique and a focal area of the Plan Area for conservation. Future development would be constrained because this Subunit is in the 100-year floodway, and the riparian and aquatic habitat along the river is also affected by other regulatory protections. The Subarea Plan recognizes that future Covered Activities within the floodway would be limited to trails, pedestrian bridges, road crossings, vector control, and defensible space. Impacts associated with these Covered Activities are estimated to total 37.6 acres and would be mitigated through habitat protection, enhancement, and creation within the San Diego River Subunit. The Subarea Plan establishes goals, objectives, and policies including avoidance, minimization, and mitigation measures (see Section 5.5) to address Covered Activities within this area.

4.3.3 Compatible Uses within Subarea Plan Managed Preserve

Compatible passive recreational uses may include hiking, wildlife observation, equestrian use, and non-motorized/electric bicycling, are allowed in the Managed Preserve on a case-by-case basis under the Subarea Plan guidelines (Chapter 7, *Management and Monitoring*). The Subarea Plan guidelines and preserve-specific Resource Management Plans will be developed to avoid and minimize disturbance to Covered Species from allowable compatible recreational activities. Take of Covered Species due to recreational uses is not allowed under the Subarea Plan and indirect effects will be avoided and minimized. Recreation may be compatible if it is conducted in accordance with the guidelines and the applicable Preserve Management Plan required by the Subarea Plan. Compatible recreational activities will be specified in the Resource Management Plan that will be reviewed and approved by the City and the Wildlife Agencies and will be limited to the areas identified therein.

4.3.4 Activities Not Covered Under the Subarea Plan

The following activities within the Subarea Plan Area are not covered under the Subarea Plan or authorized under the Take Permits:

- **Emergency Response Activities:** USFWS defines an *emergency* as a situation involving disasters, casualties, national defense, or security and includes response activities that must be taken to prevent imminent loss of human life or property (USFWS 2016). The Wildlife Agencies will not obstruct an emergency response decision made by the Permittee where human life is at stake. Emergency activities are inherently not covered under the Subarea Plan, but many of the actions taken after an emergency, such as habitat restoration following fires or floods, are Covered Activities under the Subarea Plan (e.g., responses to Changed Circumstances; see Section 8.7.2, *Changed Circumstances*).
- **Activities not Under City Control:** Activities not subject to regulatory control by the City are not covered unless the proponent of the activity signs a Certificate of Inclusion.
- **Activities in "Not A Part" Areas:** Activities conducted in areas that are "Not A Part" of the Subarea Plan are not covered under the Subarea Plan. Although not subject to the Subarea Plan, these areas remain subject to the Municipal Code.

- **Activities in Existing Open Space:** With the exception of new trails proposed by the City, activities conducted in locations that are currently designated as open space are not covered under the Subarea Plan.

4.4 Impact Assessment and Level of Take

This section addresses the effects of the Covered Activities described above on natural communities and Covered Species within the Plan Area.

4.4.1 Definitions

The terms below are defined for the purposes of this Subarea Plan.

Effects result from actions that affect biological resources, specifically undeveloped land cover types and Covered Species, in the Subarea Plan Area. Effects can be direct or indirect and permanent or temporary; they can also be cumulative. As used in the Subarea Plan, the term *impacts* is synonymous with effects.

Direct effects are defined as the results of activities or projects that remove or alter land cover types or Covered Species habitat, populations, or occurrences (or portions thereof). Direct effects (e.g., ground disturbance, inundation) are caused by the project and occur at the time and place of project implementation. Direct effects can be either permanent or temporary (see definitions of permanent and temporary effects immediately below).

Permanent effects are effects from project activities or facilities that permanently remove or alter natural vegetation communities and Covered Species habitat or otherwise affect natural vegetation communities and Covered Species habitat for more than one year.

Temporary effects are effects from activities (e.g., construction staging areas, re-contouring of slopes) that alter natural vegetation communities and Covered Species habitat for less than one year and restore the disturbed area to pre-project or ecologically improved[13] conditions typically within one year of completing construction. If habitat is unable to be restored onsite in accordance with a restoration plan, the impacts are considered permanent and will be mitigated in accordance with Chapter 5, *Conservation Strategy*.

Indirect effects are caused by or are a result of a project action or component. Indirect effects can occur later in time and possibly at some distance, or they may occur at the time of the proposed action but beyond the footprint of a project or activity (i.e., the effects are beyond the area of land cover disturbance but still reasonably foreseeable). Although more difficult to detect and track, indirect effects can undermine species viability or habitat quality, especially if multiple indirect or direct effects work cumulatively to impair the species or degrade the habitat.

Cumulative effects result from the proposed action's incremental impact when viewed together with past, present, and reasonably foreseeable future actions. Cumulative effects are defined under both

[13] *Ecologically improved* means that the site's ecological functions are better than those present on the site prior to ground disturbance.

ESA and NEPA. HCPs do not require a discussion of cumulative effects as analyzed under NEPA. However, as stated in the HCP handbook, "the applicant should help ensure that those considerations required of the Services by section 7 have been addressed in the HCP" (USFWS 1996).

4.4.2 Direct Effects

Permanent Effects. Permanent effects resulting from Covered Activities were estimated for the Subarea Plan by completing a GIS overlay analysis of the project impact footprints with biological resources information. A summary of the estimated permanent direct effects on biological resources for Planned and Future Development Activities is included in Table 4-8. No permanent direct effects are anticipated for Operations and Maintenance and Preserve Management and Monitoring Activities.

Temporary Effects. Temporary effects are those impacts associated with a proposed project that are intended and designed to be fully mitigated in place after the project is completed. These types of impacts are often associated with development of public utility projects such as pipelines or facility maintenance, although private projects often have impacts that qualify as temporary. Temporary impacts are mitigated through restoration of the affected area with the habitat type that was impacted by the project subject to a restoration plan which will include success criteria in accordance with Chapter 5, *Conservation Strategy*, of the Subarea Plan and prepared by a qualified biologist and approved by the City. If habitat cannot be restored in place, or meet the success criteria, then the impact would be considered permanent and mitigated in accordance with Chapter 5. Note that in some cases where impacts are temporary but repeated with regularity (such as regular maintenance grading of dirt roads or firebreaks where sensitive habitats may have reestablished during the period between repeated impacts), the impacts will be counted once as permanent and then not considered as impacts (permanent or temporary) following additional repeated impact disturbances (assuming future repeated impacts do not affect previously unimpacted habitat areas or mitigation sites).

Table 4-7. Estimated Acres of Permanent Impacts Resulting from Covered Activities—Biological Resources

Biological Resources Factor	Total Acres in Subarea Plan Area	Planned and Future Development				Total Impact
		Hardline Development Project	Upland Standards Areas	Infill Development Areas	San Diego River Subunit	
Natural Vegetation Communities						
Maritime Succulent Scrub	7.3	-	-	-	-	-
Coastal Sage Scrub	2,664.1	378.3	127.1	37.3	1.0	543.7
Chaparral	884.7	308.3	4.9	2.5	-	315.7
Grassland	577.1	183.2	9.7	18.5	5.0	216.4
Coast Live Oak Woodland	30.0	2.3	-	1.7	-	4.0
Engelmann Oak Woodland	57.2	-	-	-	-	-
Riparian	258.1	1.6	0.1	4.0	30.1	35.8
Freshwater Marsh	17.3	0.1	-	0.3	1.0	1.4
Vernal Pool	19.3	0.4	-	-	-	0.4
Disturbed Wetland	8.3	-	-	0.7	0.3	1.0
Freshwater (Open Water)	48.8	-	-	-	0.1	0.1
Non-Vegetated Channel or Floodway	10.1	2.9	-	-	0.1	3.0
Natural Communities Subtotals	**4,582.3**	**877.1**	**141.8** [a]	**65.0**	**37.6**	**1,121.5** [b]
Plants						
San Diego ambrosia						
Suitable habitat	974.8	133.8	16.4	17.4	36.9	204.5
Critical habitat (natural habitat within)	0.3	-	-	0.1	-	0.1
San Diego barrel cactus						
Suitable habitat	3,186.3	561.9	136.8	53.1	1.6	753.4
San Diego button-celery						
Vernal pools and seasonal basins (Fanita Ranch)	1.6	0.4	-	-	-	0.4

Table 4-7. Estimated Acres of Permanent Impacts Resulting from Covered Activities—Biological Resources (cont.)

Biological Resources Factor	Total Acres in Subarea Plan Area	Planned and Future Development				Total Impact
Vernal pools complex (Grossmont College)	17.7	-	[c]	-	-	-
San Diego goldenstar						
Suitable habitat	3,251.4	549.1	127.4	51.7	1.1	729.3
San Diego mesa mint						
Vernal pools and seasonal basins (Fanita Ranch)	1.6	0.4	-	-	-	0.4
Vernal pools complex (Grossmont College)	17.7	-	[c]	-	-	-
San Diego thornmint						
Suitable habitat						
Higher value (0.75 – 1)	661.4	323.9	10.8	5.6	0.0	340.3
Moderately high value (0.5 – 0.75)	1,169.6	292.8	33.2	8.1	0.0	334.1
Moderate value (0.25 – 0.5)	1,961.7	247.9	88.8	32.9	0.0	369.6
Lower value (0.0 – 0.25)	126.8	5.2	7.3	8.4	2.6	23.5
Suitable habitat subtotal:	3,883.6	869.8	140.2	55.0	2.6	1,067.5
Variegated dudleya						
Suitable habitat	3,379.7	563.9	120.1	50.5	1.1	735.6
Willowy monardella						
Suitable habitat	336.5	28.8	3.4	6.9	11.1	50.2
Critical habitat	117.6	3.6	-	0.4	-	4.0
Invertebrates						
Crotch's bumble bee						
Suitable habitat	4,287.3	877.2	141.8	65.0	37.2	1,116.2
Hermes copper butterfly						
Potentially suitable vegetation communities	3,504.8	686.6	132.0	39.9	2.3	860.8

Table 4-7. Estimated Acres of Permanent Impacts Resulting from Covered Activities—Biological Resources (cont.)

Biological Resources Factor	Total Acres in Subarea Plan Area	Planned and Future Development				Total Impact
Quino checkerspot butterfly						
Potentially suitable vegetation communities	3,713.7	605.5	140.0	55.8	13.2	814.5
Riverside fairy shrimp						
Vernal pools and seasonal basins (Fanita Ranch)	1.6	0.4	-	-	-	0.4
Vernal pools complex (Grossmont College)	17.7	-	[c]	-	-	-
San Diego fairy shrimp						
Vernal pools and seasonal basins (Fanita Ranch)	1.6	0.4	-	-	-	0.4
Vernal pools complex (Grossmont College)	17.7	-	[c]	-	-	-
Reptiles and Amphibians						
Belding's orange-throated whiptail						
Suitable habitat	4,204.7	871.8	141.8	62.4	29.3	1,105.3
Blainville's horned lizard						
Suitable habitat	4,241.6	874.1	141.8	64.1	31.8	1,111.8
Western spadefoot toad						
Suitable habitat						
Known breeding habitat	0.3	0.3	-	-	-	0.3
Other potentially suitable breeding areas	19.9	1.0	5.1	0.4	-	6.5
Suitable upland habitat adjacent to known breeding habitat	813.8	384.0	5.4	7.3	-	396.7
Other suitable upland habitat	2,837.0	520.0	120.6	34.0	-	674.6
Suitable habitat subtotal:	3,671.0	905.3	131.1	41.7	-	1,078.2
Birds						
Coastal cactus wren						
Suitable habitat						

Table 4-7. Estimated Acres of Permanent Impacts Resulting from Covered Activities—Biological Resources (cont.)

Biological Resources Factor	Total Acres in Subarea Plan Area	Planned and Future Development				Total Impact
Higher value (0.75 – 1)	1,879.3	290.9	85.4	15.5	-	391.8
Moderate value (0.5 – 0.75)	630.8	147.8	25.8	5.7	<0.1	179.4
Suitable habitat subtotal:	2,510.1	438.7	111.2	21.1	<0.1	571.2
Coastal California gnatcatcher						
Suitable habitat						
Very high	2,021.4	340.6	92.3	18.9	<0.1	451.9
High	611.9	34.8	35.0	12.3	0.1	82.2
Moderate	35.3	2.4	0.0	3.2	1.1	6.7
Suitable habitat subtotal:	2,668.6	377.8	127.3	34.3	1.3	540.8
Critical habitat	3,806.8	855.1	125.4	21.4	-	1,001.9
Least Bell's vireo						
Suitable habitat	362.5	1.7	0.1	4.3	26.7	32.8
Critical habitat	175.6	-	-	1.4	8.3	9.7
Western burrowing owl						
Suitable habitat	1,837.4	380.1	48.1	22.3	11.2	461.7

[a] Acreage estimates for Upland Standards Areas based on the assumption that 30 percent of each habitat type present would be impacted.

[b] Based on the possibility that Essential Public Projects in the future could meet the requirements in the Habitat Loss and Incidental Take ordinance for a deviation from the general prohibition on impacts in the Managed Preserve, the City is assuming the potential for 3.5 acres of impact in the Managed Preserve as a result of Essential Public Projects, for a total estimated impact in the Plan Area of 1,125 acres.

[c] It is assumed that avoidance of vernal pools in the Upland Standards Areas is practicable, and no impacts are estimated.

4.4.2.1 San Diego Ambrosia Effects Summary

Approximately 209.5 acres of suitable habitat for San Diego ambrosia is estimated to be directly affected by the Covered Activities (see Figure 4-8 and Table 4-8). No known occurrences of San Diego ambrosia are anticipated to be impacted by the Covered Activities. It is unlikely that San Diego ambrosia occurs in the Plan Area outside of the mapped suitable habitat for the species. A substantial portion of this mapped suitable habitat has not been subject to directed surveys for the species. Because substantial natural areas within the Plan Area have not been directly surveyed for the species, the potential exists for currently unknown occurrences of San Diego ambrosia to occur within the 209.5 acres of suitable habitat expected to be disturbed or removed from Covered Activities. However, any Covered Activities with the potential to impact San Diego ambrosia will conform to the Narrow Endemic Species Standards (Section 5.5.6), which limit allowable impacts to no more than 20 percent of a subpopulation/occurrence.

4.4.2.2 San Diego Barrel Cactus Effects Summary

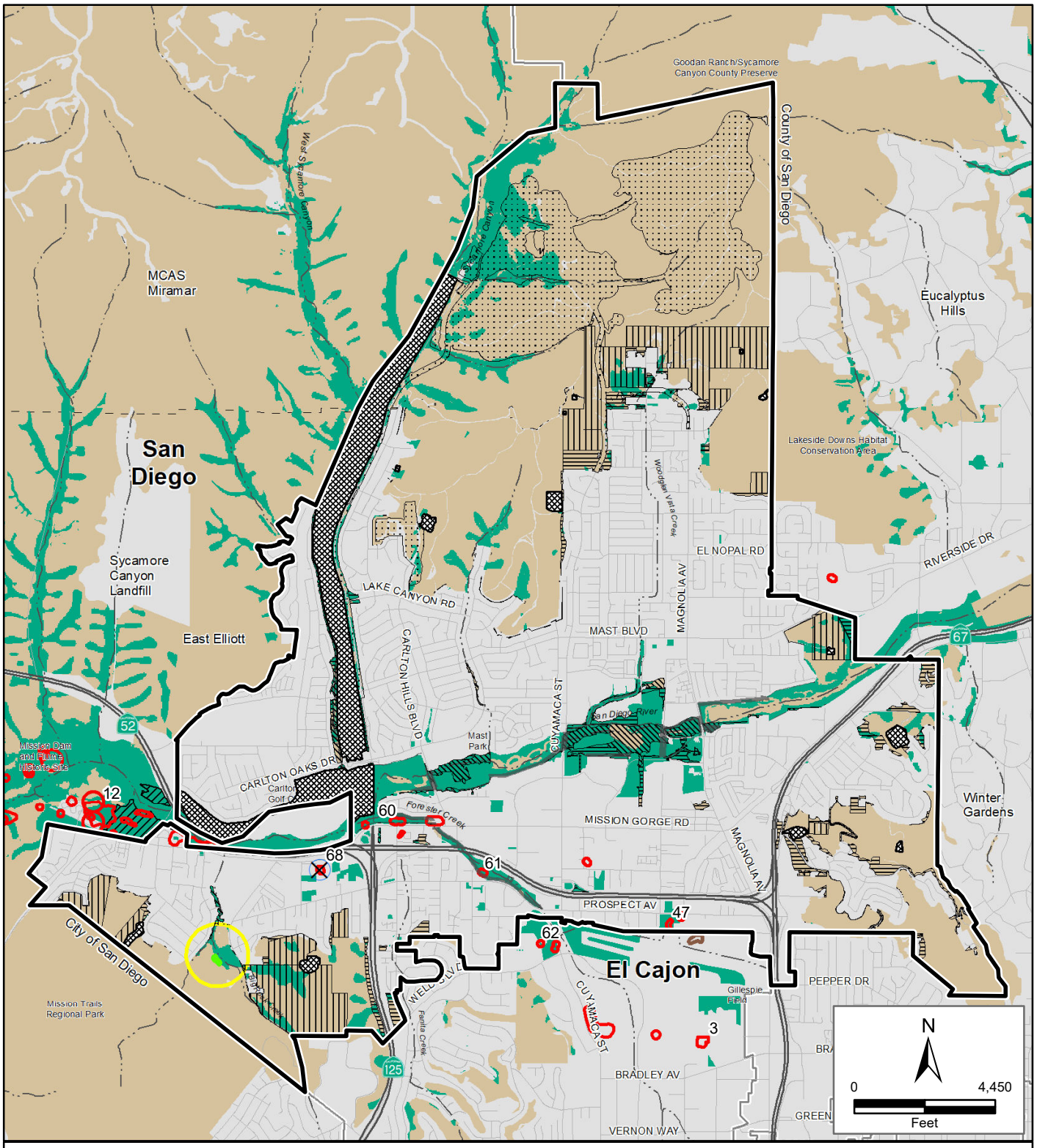
A total of 753.4 acres of suitable habitat for San Diego barrel cactus is expected to be directly affected by the Covered Activities within the Plan Area (see Figure 4-9 and Table 4-8). Direct impacts to known occurrences (598 individuals) are anticipated from the Hardline Development Project and Covered Activities in the Upland Standards Area.

4.4.2.3 San Diego Button-celery Effects Summary

No impacts to occurrences of San Diego button-celery are expected because there are no extant occurrences of the species in the Plan Area. Covered Activities may result in direct and unavoidable impacts to 0.4 acres of suitable vernal pool/seasonal basin habitat. These impacts are located in the Hardline Development Project area of the Subarea Plan (see Figure 4-10 and Table 4-8). The Hardline Development Project will implement the Vernal Pool and Wetland Mitigation Plan, Appendix D, and other project proponents will implement avoidance, minimization, and mitigation measures, including the Vernal Pool Conservation Standards identified in Section 5.5.7 and Appendix G, of the Subarea Plan for Covered Activities within vernal pools/seasonal basin habitat.

4.4.2.4 San Diego Goldenstar Effects Summary

It is estimated that a total of 729.3 acres of suitable habitat for San Diego goldenstar would be directly affected by the Covered Activities (549.1 acres would be affected in the Hardline Development Project, 127.4 acres would be affected in the Uplands Standards Areas, 51.7 acres would be affected in the Infill Development Areas, and 1.1 acre would be affected in the San Diego River Subunit) (see Figure 4-11 and Table 4-8). The Hardline Development Project would result in impacts to 7,964 occurrences. Most of the suitable habitat outside of the Hardline Development Project has not been subject to directed surveys for the species. As such, the potential exists for currently unknown occurrences of San Diego goldenstar to occur in those areas and be disturbed or removed by Covered Activities.



Subarea Plan Area
Habitat Model
Final Critical Habitat (USFWS 2010)
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Species Occurrence Locations * #
Current (post-1999)
Historic (pre-2000)
CNDDB 2010 #36
Proposed Transplantation Area
Translocated

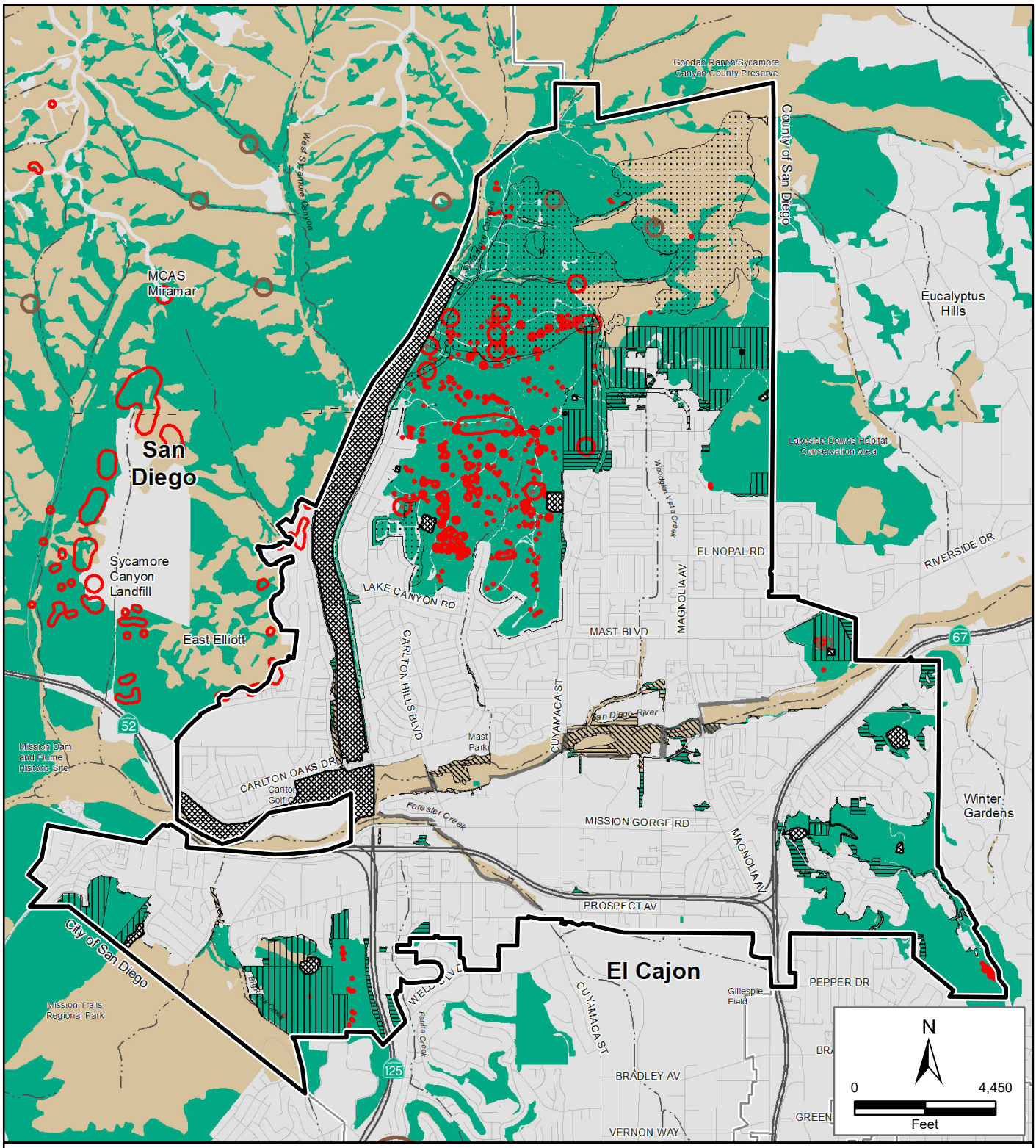
Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

CNDDB occurrence number

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-08 San Diego Ambrosia Impacts.mxd Date: 2/20/2025 34153

Figure 4-8
San Diego Ambrosia - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

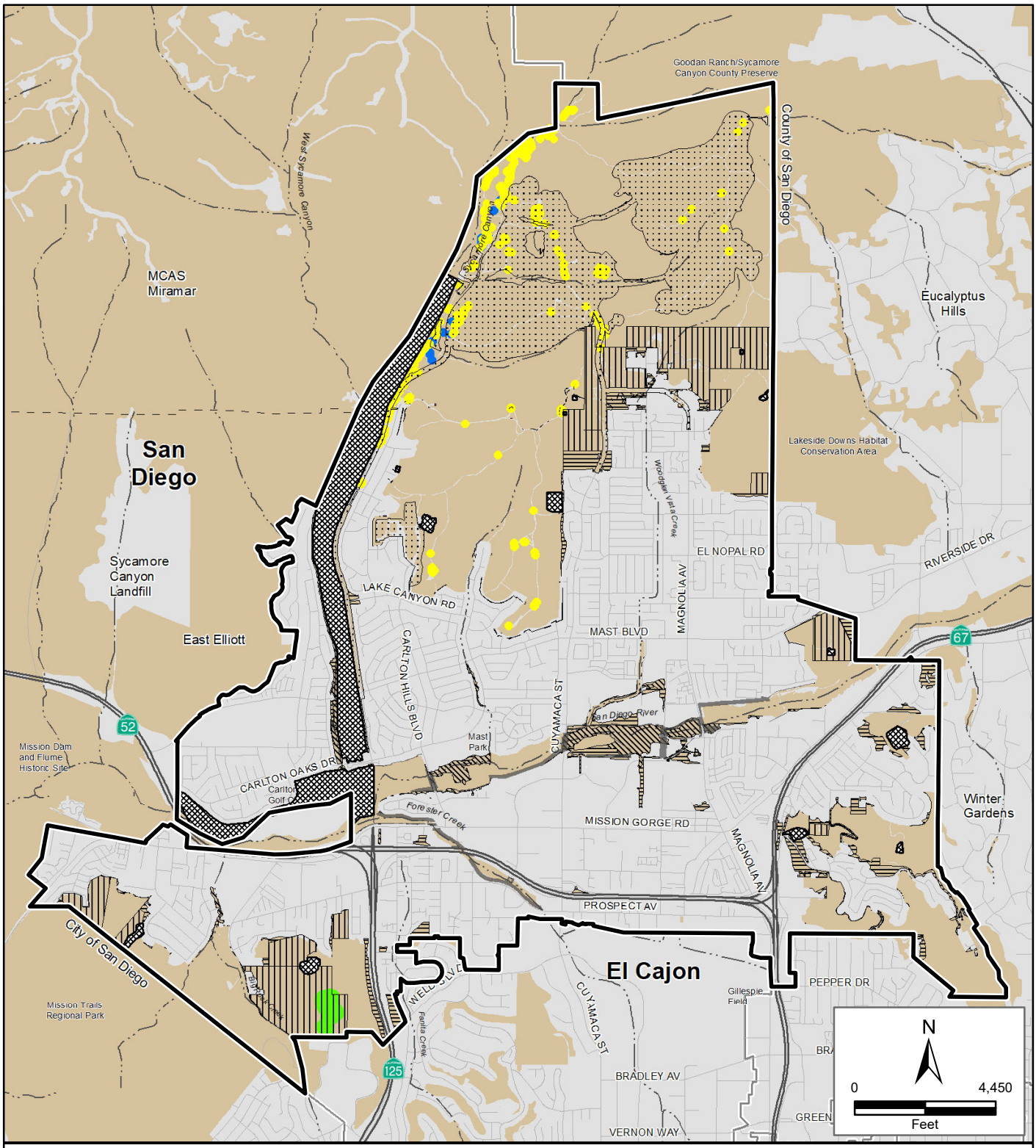
Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

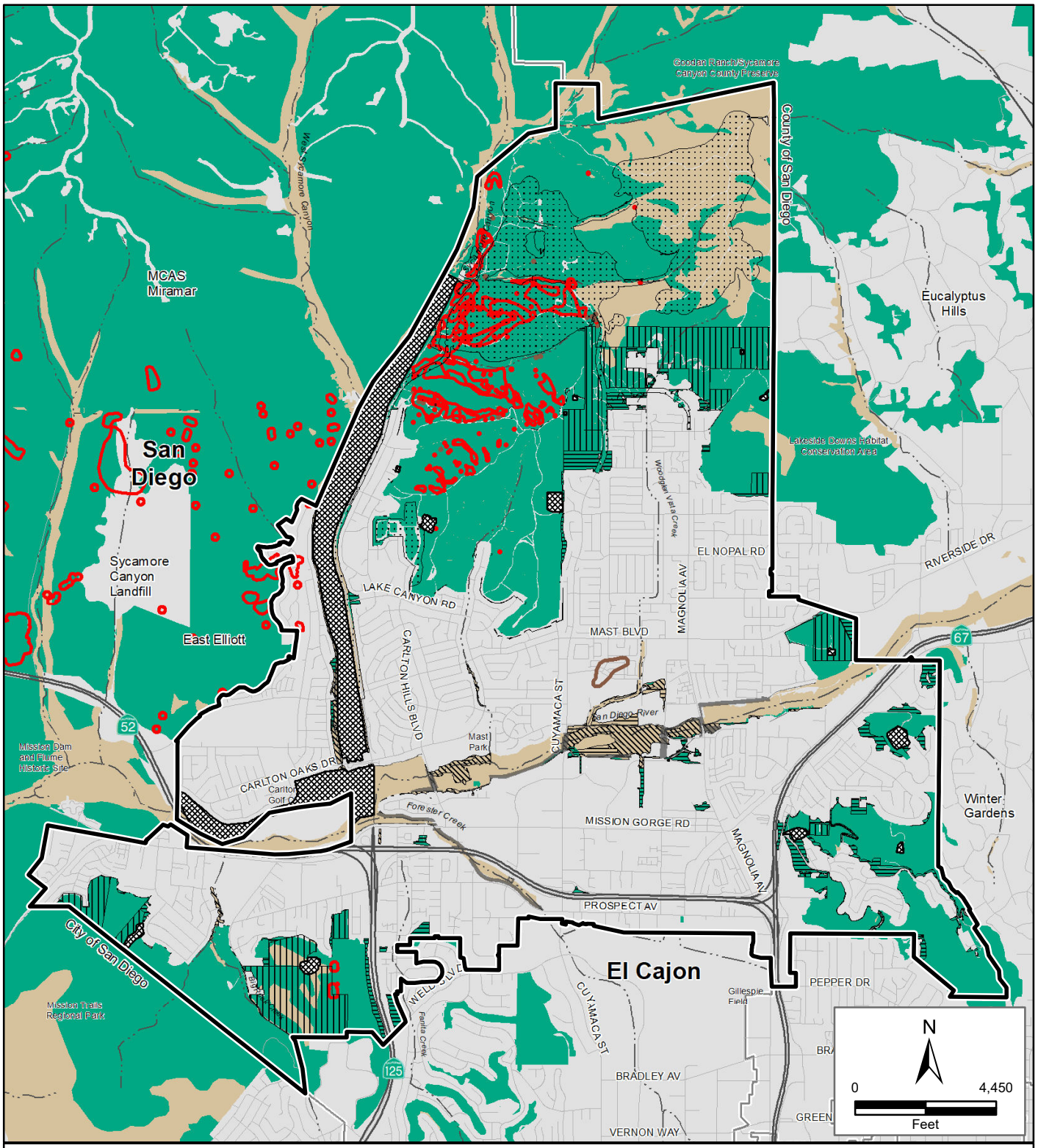
\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-09 San Diego Barrel Cactus-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-9
San Diego Barrel Cactus - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-10 San Diego Button Celery Impacts.mxd Date: 2/21/2025 34153

Figure 4-10
San Diego Button-Celery - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-11 San Diego Goldenstar-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-11
San Diego Goldenstar - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan

4.4.2.5 San Diego Mesa Mint Effects Summary

Covered Activities will result in direct and unavoidable impacts to 0.4 acre of vernal pool/seasonal basin habitat. Potential impacts to vernal pools/season basins will be addressed based on the avoidance, minimization, and mitigation measures required by the Subarea Plan, including implementation of the Hardline Development Project Vernal Pool and Wetland Mitigation Plan (Appendix D) and Vernal Pool Conservation Standards, Appendix G, for other Covered Activities. No occurrences of San Diego mesa mint are known from the Plan Area (see Figure 4-12 and Table 4-8); therefore, no impacts to currently known occurrences from Covered Activities are anticipated. Nevertheless, Covered Activity impacts to vernal pools/seasonal basins and suitable habitat for the species are anticipated in the Plan Area, and if such pools are occupied by the species at the time of the Covered Activity, loss of San Diego mesa mint plants could occur.

4.4.2.6 San Diego Thornmint Effects Summary

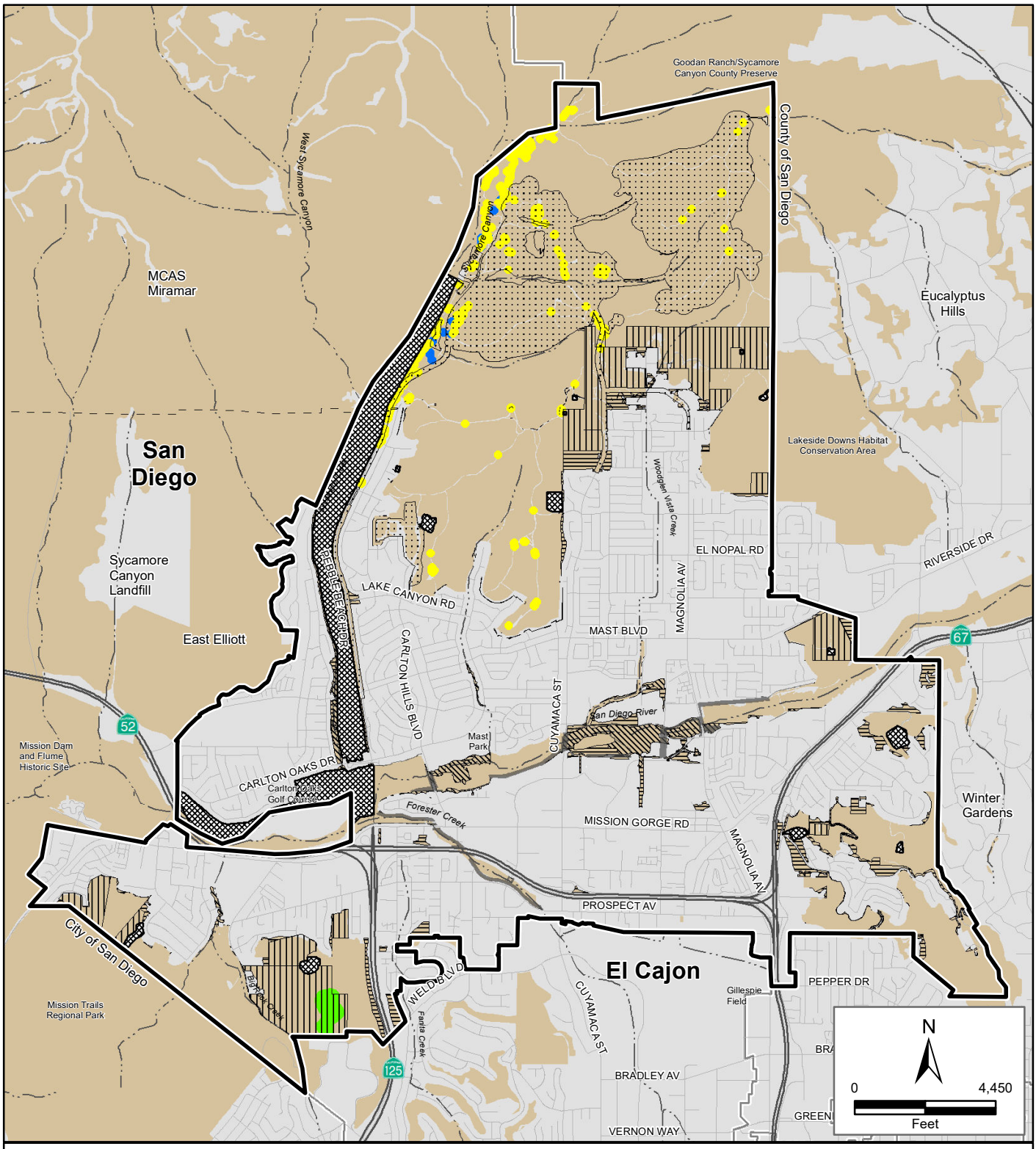
Approximately 1,067.5 acres of potentially suitable habitat for San Diego thornmint will likely be directly affected by the Covered Activities. No known occurrences currently exist within the Subarea Plan Area. As such, no impacts to currently known occupied habitat are anticipated (see Figure 4-13 and Table 4-8). Nevertheless, Covered Activity impacts to suitable habitat (e.g., some openings within coastal sage scrub, chaparral, and grassland areas on gabbro and calcareous clay soils) for the species are anticipated in the Plan Area. Covered Activities with the potential to impact newly discovered occurrences of San Diego thornmint will conform to the Narrow Endemic Species Standards (Section 5.5.6), which limit allowable impacts to no more than 20 percent of a subpopulation/occurrence.

4.4.2.7 Variegated Dudleya Effects Summary

Approximately 735.6 acres of suitable habitat for variegated dudleya is likely to be directly affected by the Covered Activities (see Figure 4-14 and Table 4-8). These impacts will amount to a loss of approximately 21.8 percent of the total mapped suitable habitat for the species in the Plan Area.

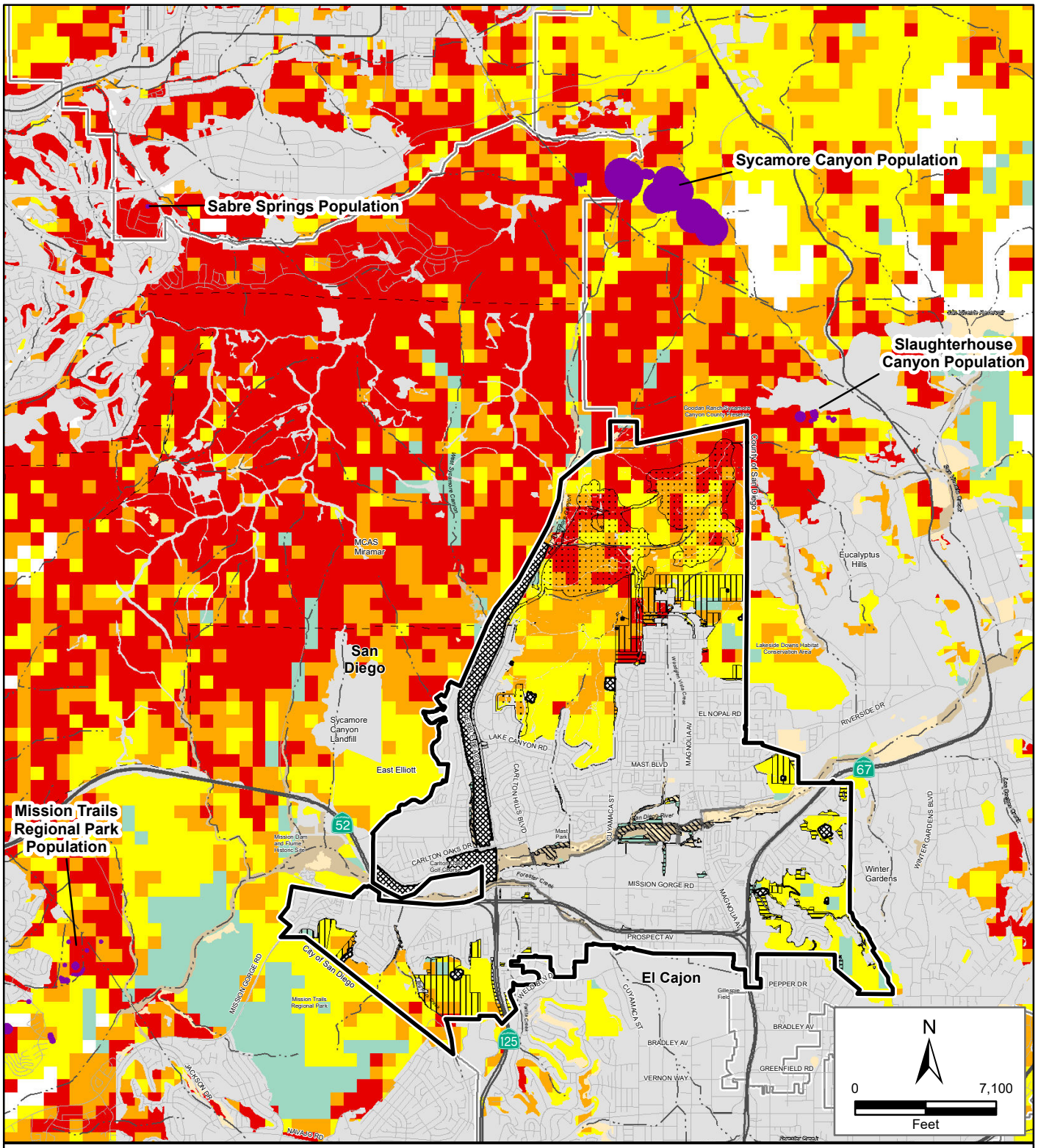
Impacts to 786 individuals are anticipated from the Hardline Development Project. These impacts will be offset through conservation of 8,156 individuals (91.2 percent of the individuals within these known occurrences) within the Fanita Ranch Onsite Preserve.

A substantial portion of the suitable habitat outside of the Fanita Ranch property has not been subject to directed surveys for the species. As such, the potential exists for currently unknown occurrences of variegated dudleya to occur within this acreage. Approximately 171.7 acres of suitable habitat (5 percent of the total suitable habitat for the species in the Plan Area) is likely to be lost from Covered Activities outside of the Hardline Development Project. Covered Activities with the potential to impact variegated dudleya will conform to the Narrow Endemic Species Standards (Section 5.5.6), which limit allowable impacts to no more than 20 percent of a subpopulation/occurrence.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-12 San Diego Mesa Mint Impacts.mxd Date: 2/21/2025 34153

Figure 4-12
San Diego Mesa Mint - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Species Occurrences

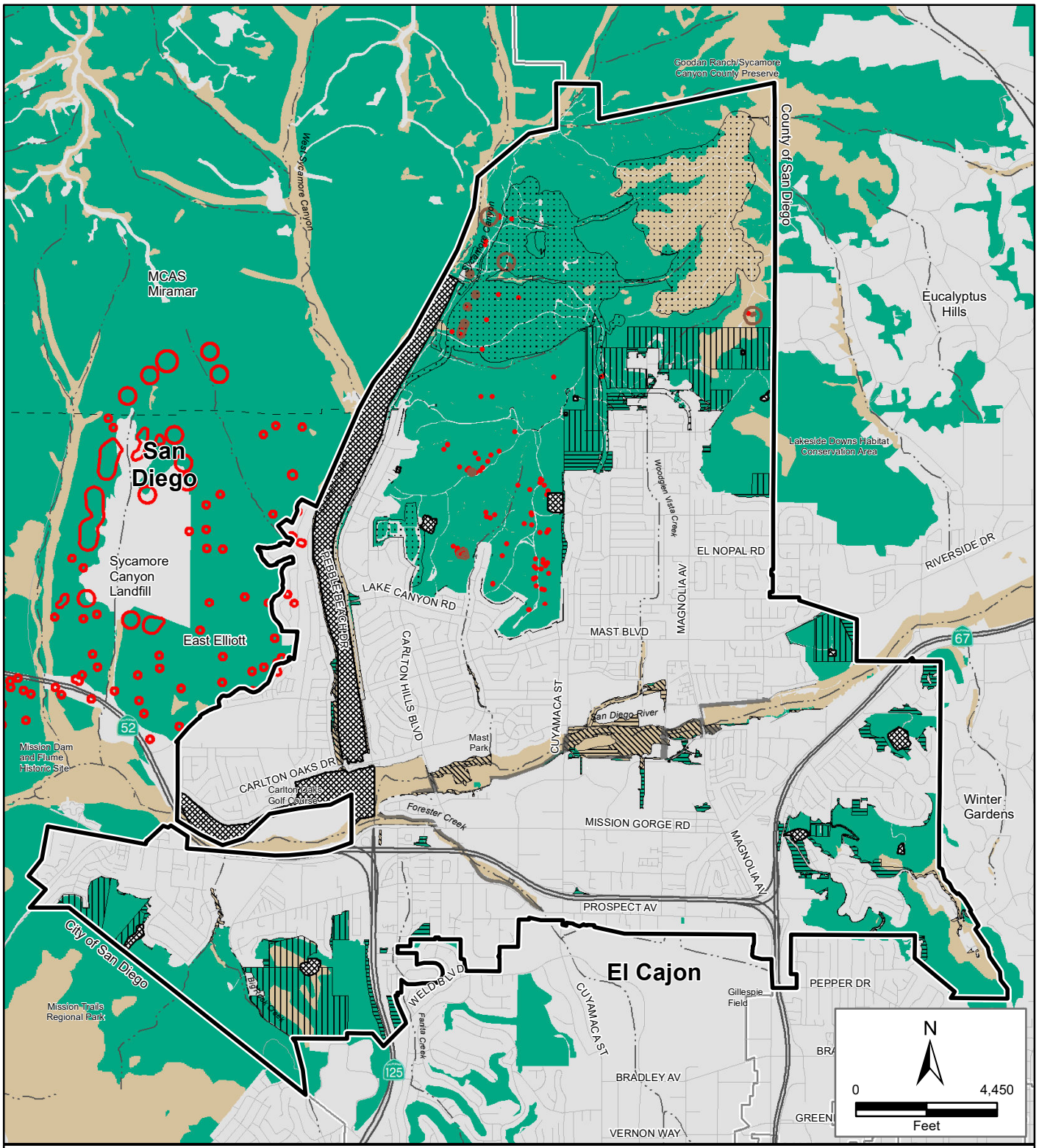
Habitat Model
0.75 - 1
0.5 - 0.75
0.25 - 0.5
0 - 0.25
Not Suitable
No Data

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

Sources: Habitat Suitability Model: CBI 2014; Species Occurrences: CNDDB 2023

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-13 San Diego Thornmint-USGS Impacts.mxd Date: 2/21/2025 34153

Figure 4-13
San Diego Thornmint - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-14 Variegated Dudleya-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-14
Variegated Dudleya - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan

4.4.2.8 Willowy Monardella Effects Summary

Approximately 52.1 acres of potentially suitable habitat for willowy monardella will likely be directly lost due to the Covered Activities. These impacts will amount to a loss of approximately 15.4 percent of the total mapped suitable habitat for the species in the Plan Area. (see Figure 4-15 and Table 4-8).

Impacts to one known occurrence (1 individual) are anticipated from the Hardline Development Project. These impacts will be offset through conservation of 1,621 individuals (99.0 percent) within the Fanita Ranch Onsite Preserve.

A substantial portion of the 227.6 acres of suitable habitat outside of the Fanita Ranch property has not been subject to directed surveys for the species. As such, some undetermined potential exists for currently unknown occurrences of willowy monardella to occur within this acreage. Approximately 15.2 acres of suitable habitat (about 6.7 percent of the total suitable habitat for the species outside of Fanita Ranch in the Plan Area) is likely to be lost from Covered Activities outside of the Hardline Development Project. Any currently unknown occurrence of willowy monardella within the footprint of Covered Activities would likely be lost.

4.4.2.9 Crotch's Bumblebee Effects Summary

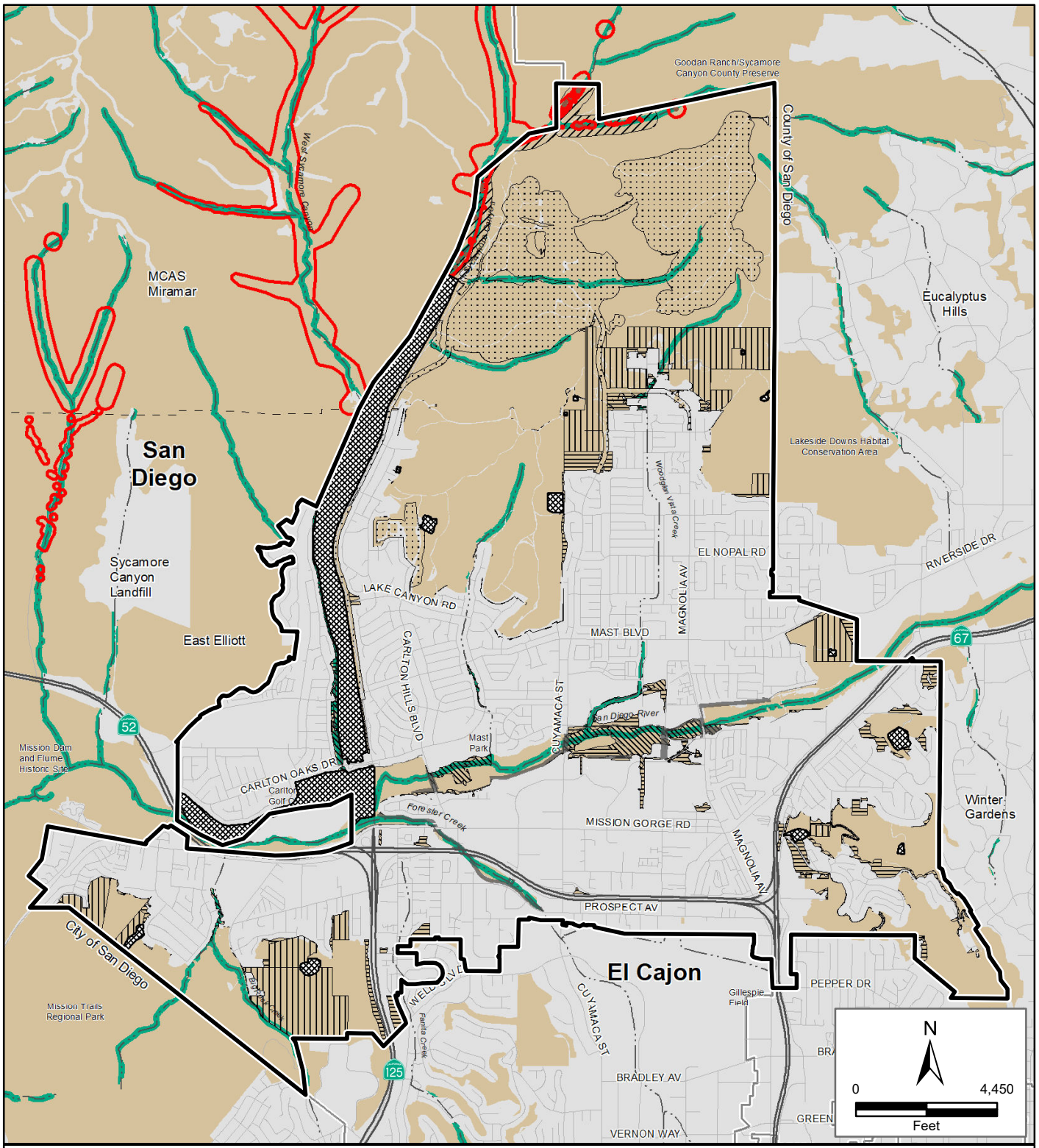
Approximately 1,121.2 acres of potentially suitable habitat for Crotch's bumble bee will likely be directly lost due to Covered Activities. Impacts to 877.2 acres of suitable habitat for the species (20.4 percent of the total within the Plan Area) are anticipated from the Hardline Development Project (see Figure 4-16 and Table 4-8).

Impacts to 218.0 acres of suitable habitat for the species (4.9 percent of the total within the Plan Area) are anticipated outside of the Hardline Development Project, with 141.8 acres occurring within the Upland Standards Areas, 65.0 acres occurring within Infill Development Areas, and 37.2 acres occurring in the San Diego River Subunit. Losses to an undetermined number of currently unknown occurrences of the species could occur in those areas. Project specific impacts on the species will be addressed through the avoidance, minimization, and mitigation measures of the Subarea Plan (see Section 5.5, *Conservation Measure 3 – Avoidance, Minimization, and Mitigation*), including the species-specific conservation standards for Crotch's bumble bee included in Section 5.5.9.6, *Crotch's Bumble Bee Conservation Standards*.

4.4.2.10 Hermes Copper Butterfly Effects Summary

Approximately 860.8 acres (24.1 percent) of potentially suitable habitat for Hermes copper butterfly is estimated to be directly affected by the Covered Activities (686.6 acres in the Hardline Development Project, 132.0 acres in the Upland Standards Areas, 39.1 acres in the Infill Development Areas, and 2.3 acres in the San Diego River Subunit) (see Figure 4-17 and Table 4-7).

Covered Activity impacts to the species will be addressed through the avoidance, minimization, and mitigation measures of the Subarea Plan (see Section 5.5, *Conservation Measure 3 – Avoidance, Minimization, and Mitigation*) that include species-specific conservation standards for Hermes copper butterfly found in Section 5.5.9.3, *Hermes Copper Butterfly Conservation Standards*.



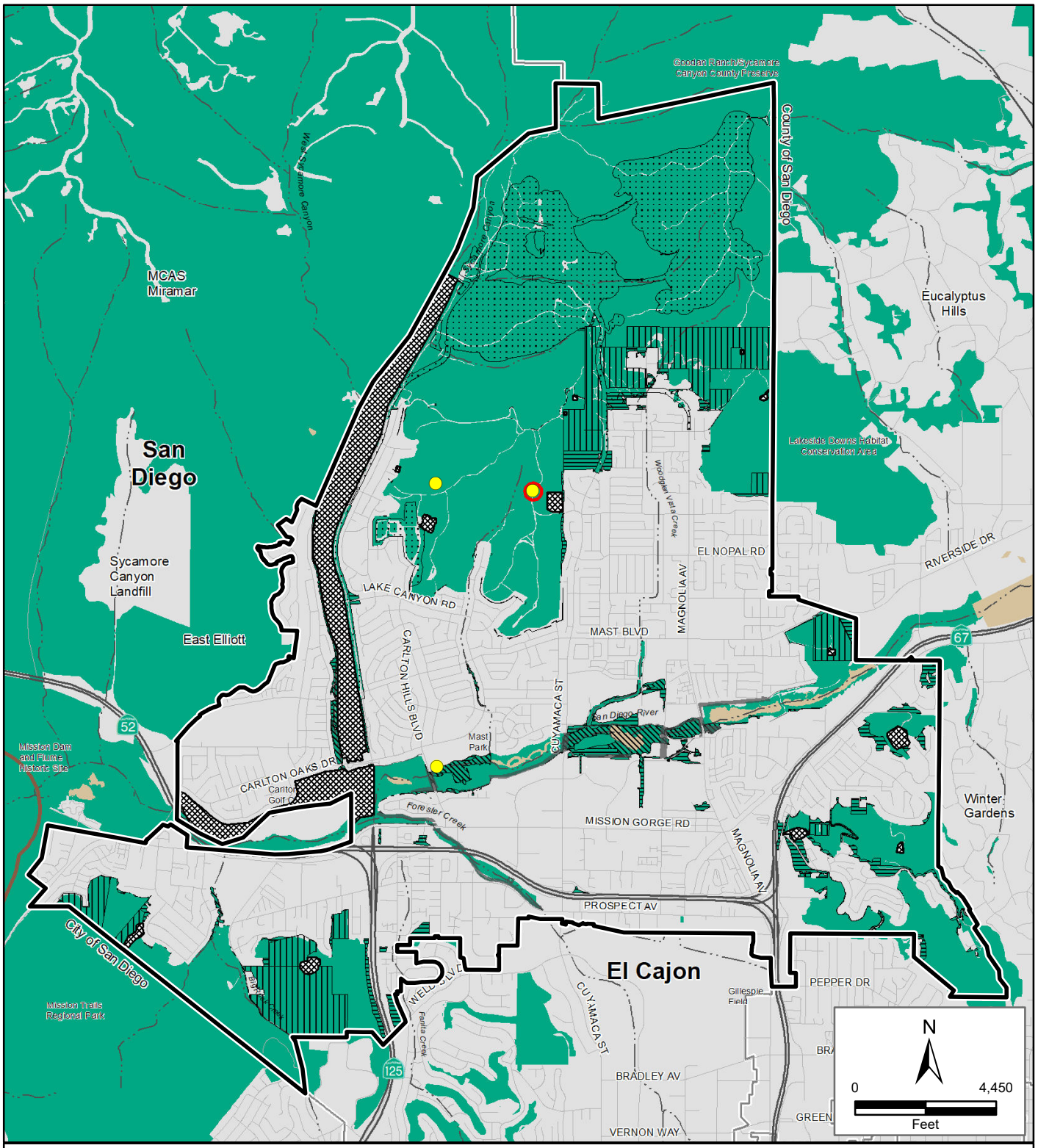
Subarea Plan Area
Habitat Model
Final Critical Habitat (USFWS 2012)
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Species Occurrence Locations
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

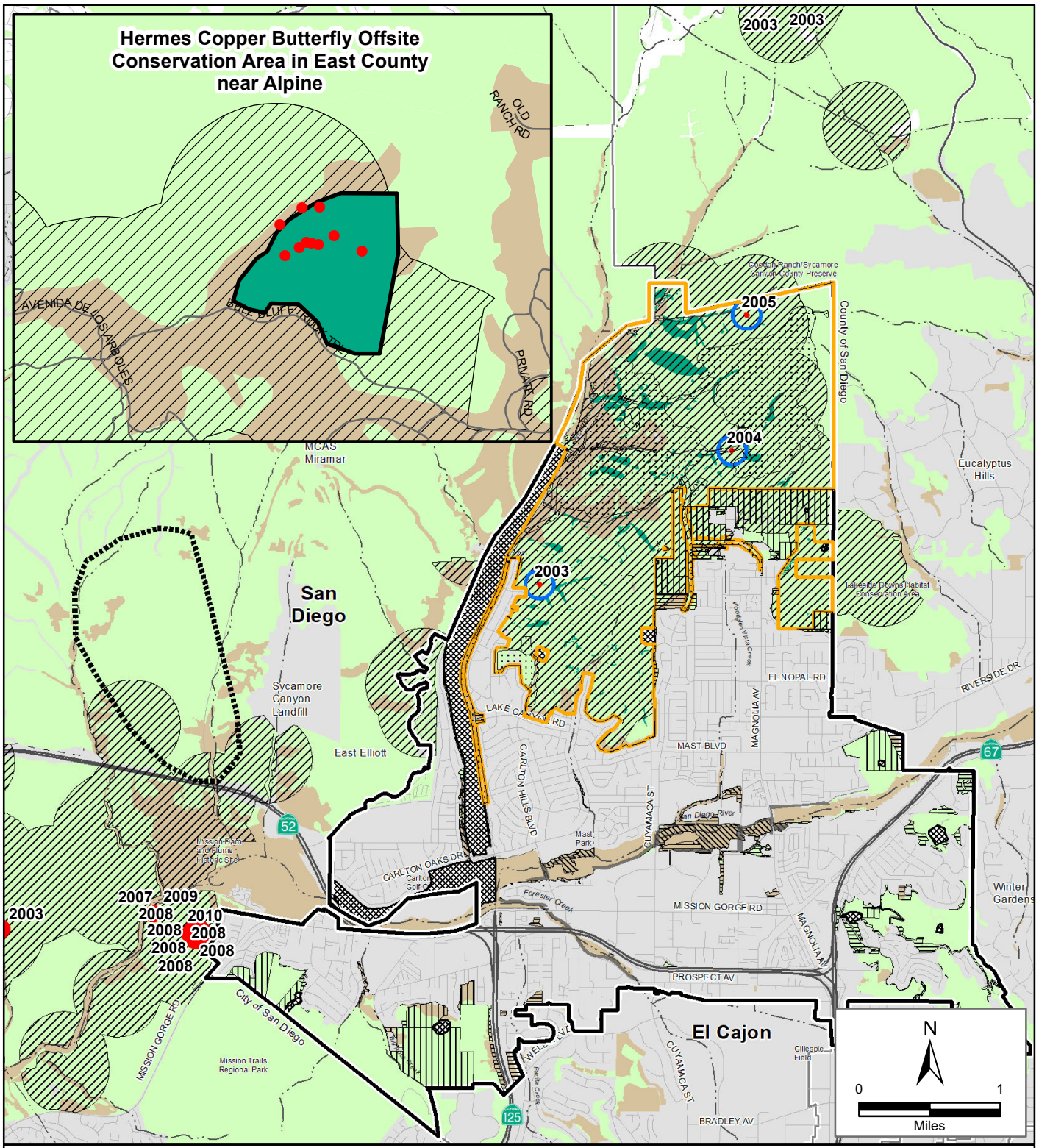
\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-15 Willowy Monardella-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-15
Willowy Monardella - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-16 Crotchs Bumble Bee Impacts.mxd Date: 7/16/2025 34153

Figure 4-16
Crotch's Bumble Bee - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Note: Focused surveys for hermes copper butterfly completed on the Fanita Ranch property in 2014 and 2016 and on the Cheyenne property in 2010 were negative.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-17 Hermes Copper Butterfly-Unique Impacts.mxd Date: 7/16/2025 34153

Figure 4-17
Hermes Copper Butterfly - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan

4.4.2.11 Quino Checkerspot Butterfly Effects Summary

Approximately 814.5 acres of potentially suitable habitat for Quino checkerspot butterfly is estimated to be directly affected by the Covered Activities. This amounts to 21.9 percent of the total suitable habitat in the Plan Area. Covered Activities will affect 605.5 acres on the Hardline Development Project, 140.0 acres in the Upland Standards Areas, 55.8 acres in the Infill Development Areas, and 13.2 acres in the San Diego River Subunit (see Figure 4-18 and Table 4-7).

4.4.2.12 Riverside Fairy Shrimp Effects Summary

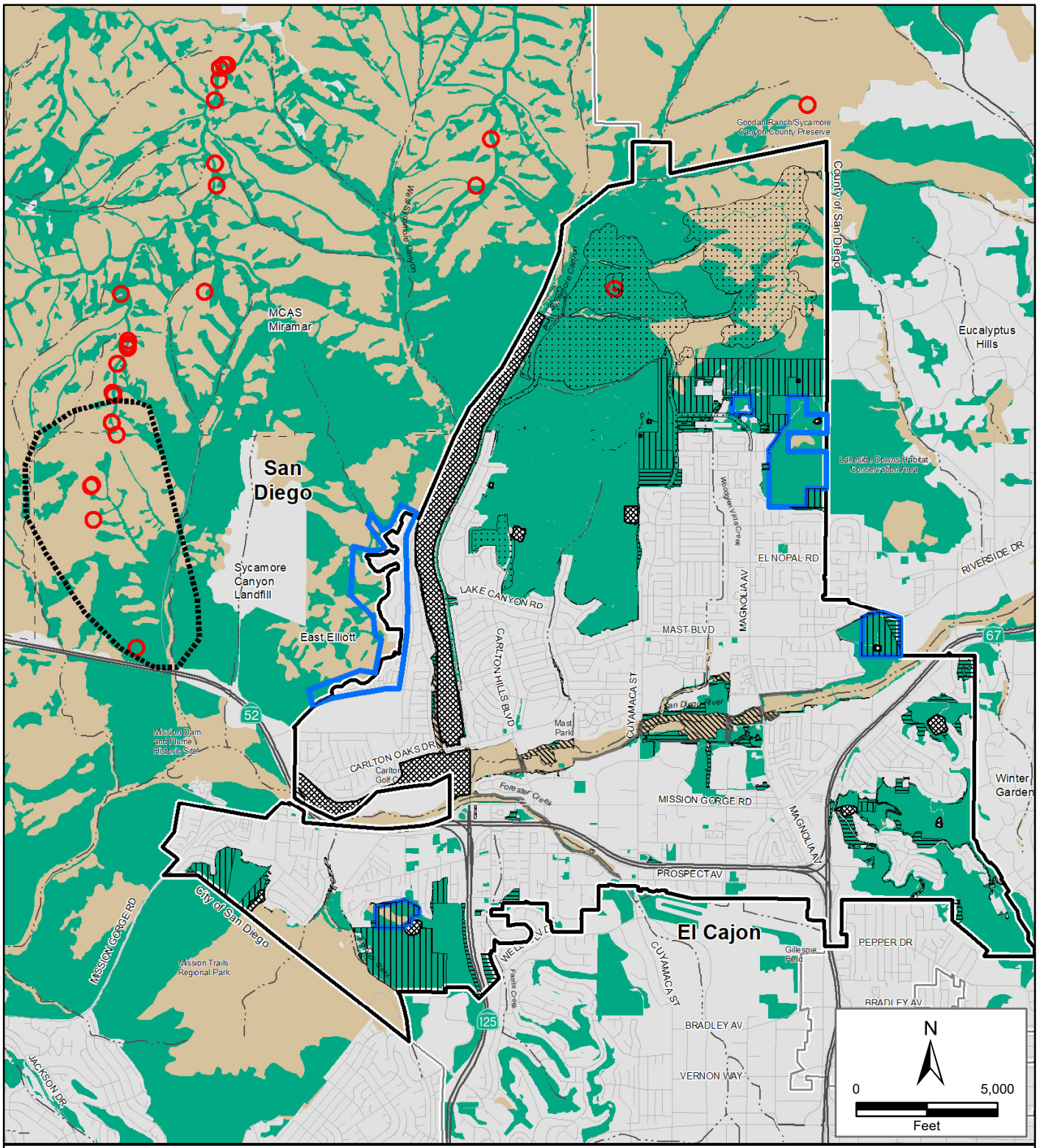
Covered Activities will result in direct impacts to vernal pool/seasonal basin habitat; these impacts to vernal pools/season basins will be addressed based on the avoidance, minimization, and mitigation measures required by the Subarea Plan, including implementation of the Vernal Pool and Wetland Mitigation Plan for the Hardline Project, and the Vernal Pool Conservation Standards for all other Covered Activities. No occurrences of Riverside fairy shrimp are known from the Plan Area, therefore no impacts to currently known occurrences from Covered Activities are anticipated (see Figure 4-19 and Table 4-7). Nevertheless, Covered Activity impacts to 0.41 acre of vernal pools/seasonal basins that is suitable habitat for the species are anticipated in the Plan Area. If such pools are occupied by the species at the time of the Covered Activity, impacts would include the loss of any Riverside fairy shrimp present.

4.4.2.13 San Diego Fairy Shrimp Effects Summary

Covered Activities will result in direct impacts to vernal pool/seasonal basin habitat; these impacts to vernal pools/season basins will be addressed based on the avoidance, minimization, and mitigation measures required by the Subarea Plan, including implementation of the Vernal Pool and Wetland Mitigation Plan for the Hardline Project, and the Vernal Pool Conservation Standards for all other Covered Activities. Occurrences of San Diego fairy shrimp are known from the Plan Area, therefore impacts to currently known occurrences from Covered Activities are anticipated (see Figure 4-20 and Table 4-7). Covered Activity impacts to 0.41 acre of occupied vernal pools/seasonal basins are anticipated in the Hardline Development Project and would impact any San Diego fairy shrimp present.

4.4.2.14 Belding's Orange-throated Whiptail Effects Summary

Approximately 1,110.3 (26.4 percent of the suitable habitat in the Plan Area) acres of suitable habitat for Belding's orange-throated whiptail will likely be directly lost due to Covered Activities. Impacts to several known occurrences (23 individuals) are anticipated from the Hardline Development Project. Approximately 871.8 acres of suitable habitat (19.9 percent of the total suitable habitat within the Plan Area) would be lost from the Hardline Development Project. These impacts will be offset through conservation of 1,559.1 acres within the Fanita Ranch Onsite Preserve (64.1 percent of the suitable habitat on Fanita Ranch and 35.6 percent of the suitable habitat in the Plan Area).



Subarea Plan Area
Habitat Model
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part
Projects Surveyed for Quino with Negative Results
Quino Checkerspot Butterfly Offsite Conservation Area

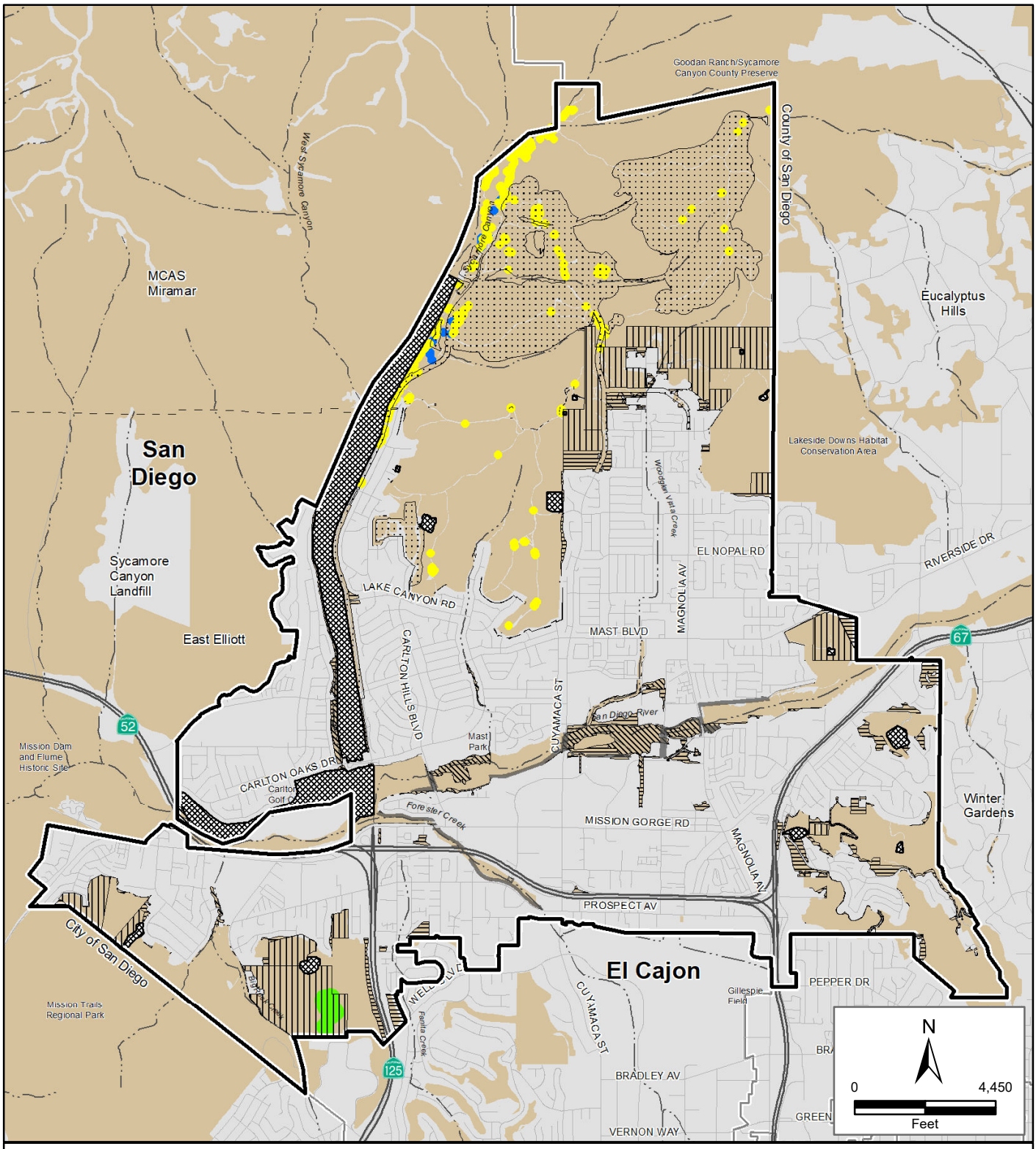
Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

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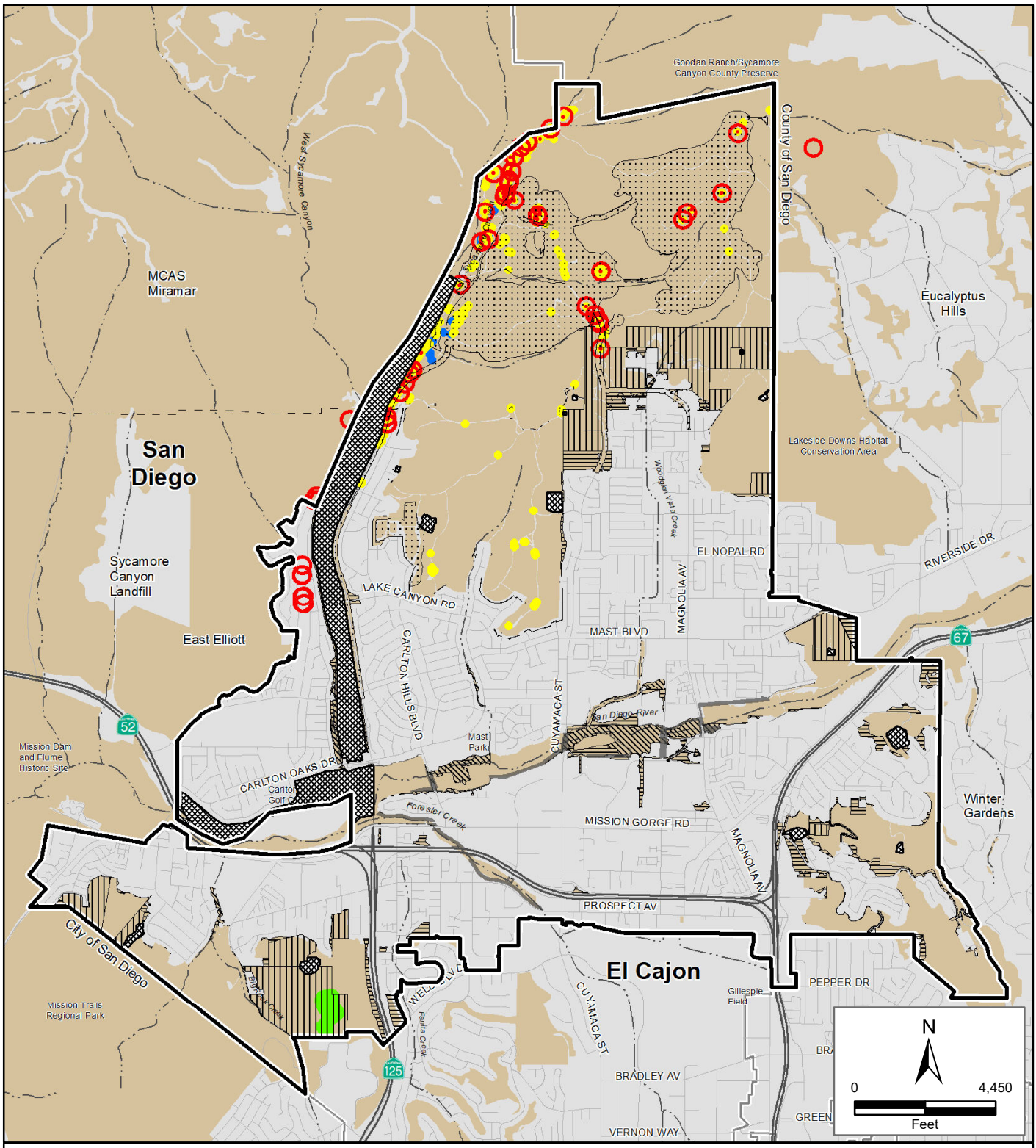
\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-18 Quino Checkerspot Butterfly-Dudek Impacts.mxd Date: 7/14/2025 34153

Figure 4-18
Quino Checkerspot Butterfly - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-19 Riverside Fairy Shrimp Impacts.mxd Date: 2/21/2025 34153

Figure 4-19
Riverside Fairy Shrimp - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-20 San Diego Fairy Shrimp Impacts.mxd Date: 2/21/2025 34153

Figure 4-20
San Diego Fairy Shrimp - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan

Suitable habitat occurs in the Upland Standards Areas, Infill Development Areas, and the San Diego Subunit (see Figure 4-21 and Table 4-7). Approximately 141.8 acres of suitable habitat would likely be lost from Covered Activities in the Upland Standards Areas, 62.4 acres in the Infill development Areas, and 34.3 acres in the San Diego River Subunit, with losses of an undetermined number of occurrences of the species expected in areas where directed surveys have not occurred to date.

4.4.2.15 Blainville's Horned Lizard Effects Summary

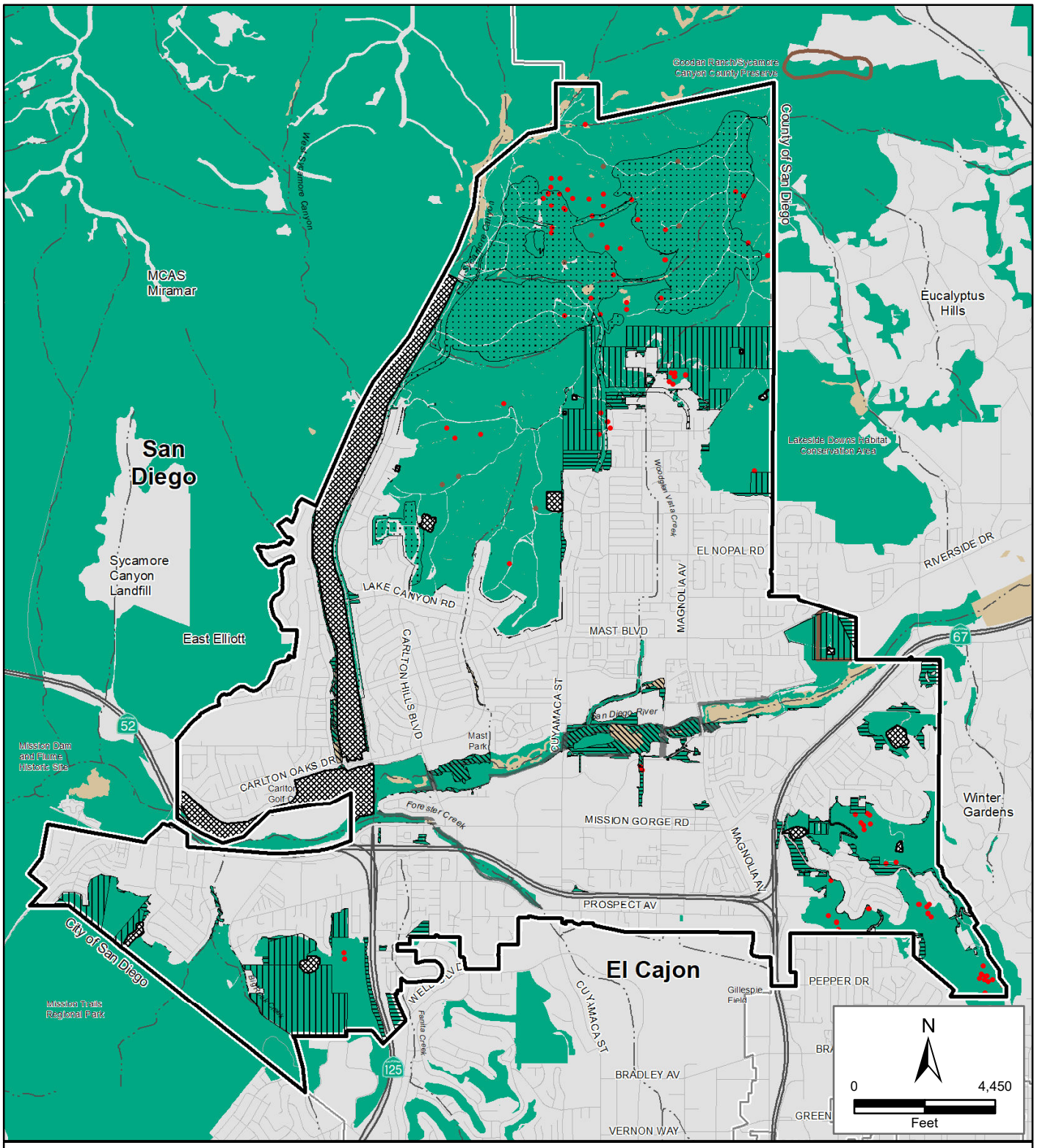
Approximately 1,090.5 acres of potentially suitable habitat for Blainville's horned lizard is estimated to be directly affected by the Covered Activities. This will result in the loss of about 25.7 percent of the 4,241.6 acres of suitable habitat in the Plan Area (see Figure 4-22 and Table 4-7).

Impacts to known occurrences (17 individuals) are anticipated from the Hardline Development Project. These impacts will be offset through conservation of occupied habitat within the Fanita Ranch Onsite Preserve. The Hardline Development Project would result in the loss of 874.1 acres and 63 percent of the known occurrences on the Fanita Ranch property.

Impacts to suitable habitat would also occur in the Upland Standards Areas (141.8 acres), Infill Development Areas (64.1 acres), and the San Diego River Subunit (36.8 acres) Currently unknown occurrences likely occur within some of these lands where directed surveys have not occurred to date, and an undetermined number could be lost from Covered Activities in these areas.

4.4.2.16 Western Spadefoot Effects Summary

Approximately 6.8 acres of known and suitable breeding habitat for the species is likely to be lost to Covered Activities in the Plan Area (1.29 acres on the Hardline Development Project, 5.1 acres in the Upland Standards Areas, 0.4 acres in the Infill Development Areas). A total of 396.7 acres of suitable adjacent upland habitat (connected and within 2,000 feet of breeding habitat) for the western spadefoot is likely to be directly lost to Covered Activities in the Plan Area (384.0 acres on the Hardline Development Project, 5.4 acres in the Uplands Standards Areas, and 7.3 acres in the Infill Development Areas). This amounts to 48.7 percent of the total suitable adjacent upland habitat in the Plan Area (see Figure 4-23 and Table 4-7). Of the known occurrences on the Hardline Development Project (38 vernal pools or seasonal basins), approximately 37 percent (14 of 38 vernal pools or seasonal basins) will likely be lost to development. Covered Activity impacts to the species will be addressed through the avoidance, minimization, and mitigation measures of the Subarea Plan (see Section 5.5, *Conservation Measure 3 – Avoidance, Minimization, and Mitigation*) that include species-specific conservation standards for western spadefoot found in Section 5.5.9.2, *Western Spadefoot Conservation Standards*.



Subarea Plan Area
Habitat Model
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

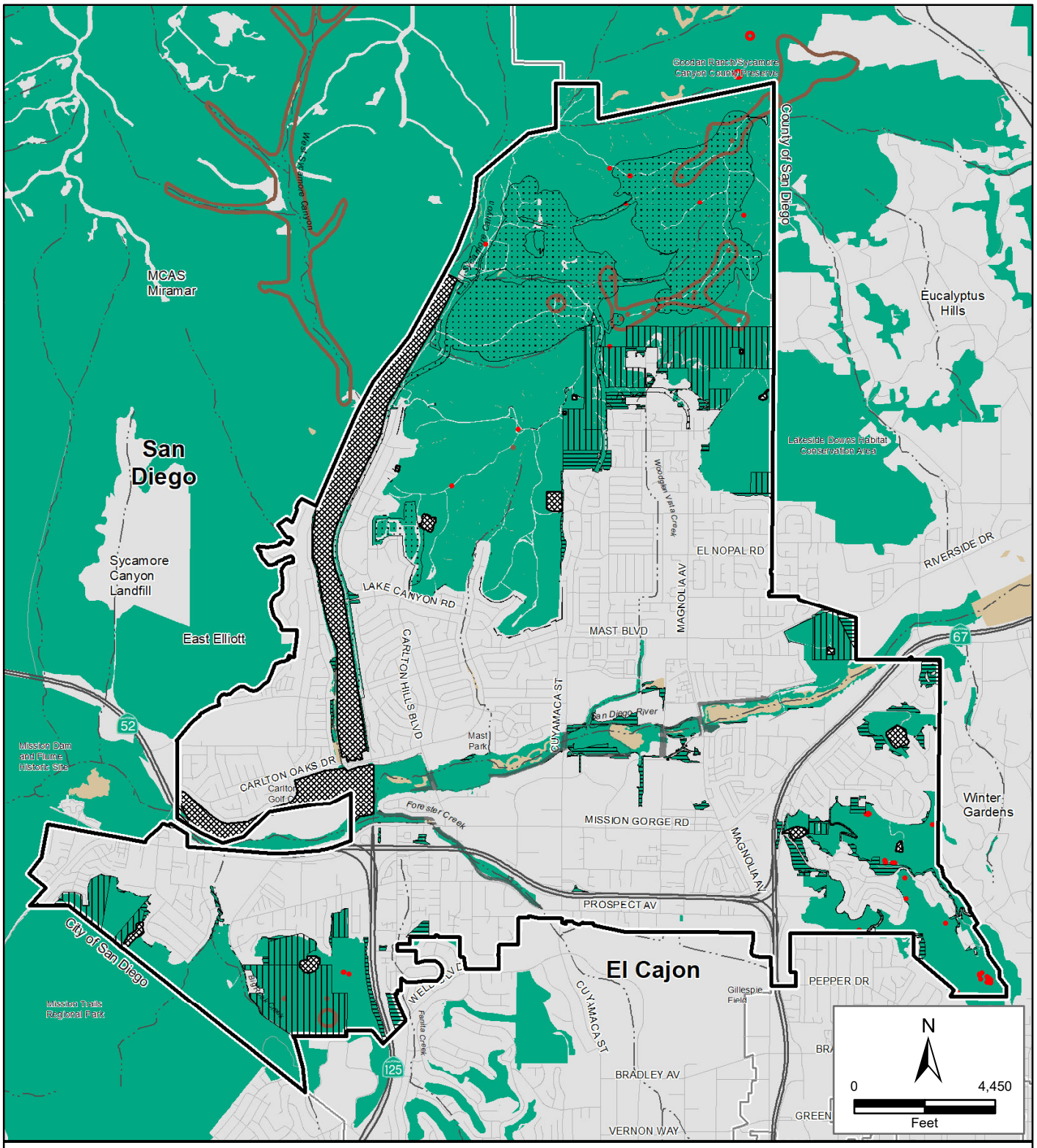
Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-21 Beldings Orange-throated Whiptail-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-21
Belding's Orange-throated Whiptail - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

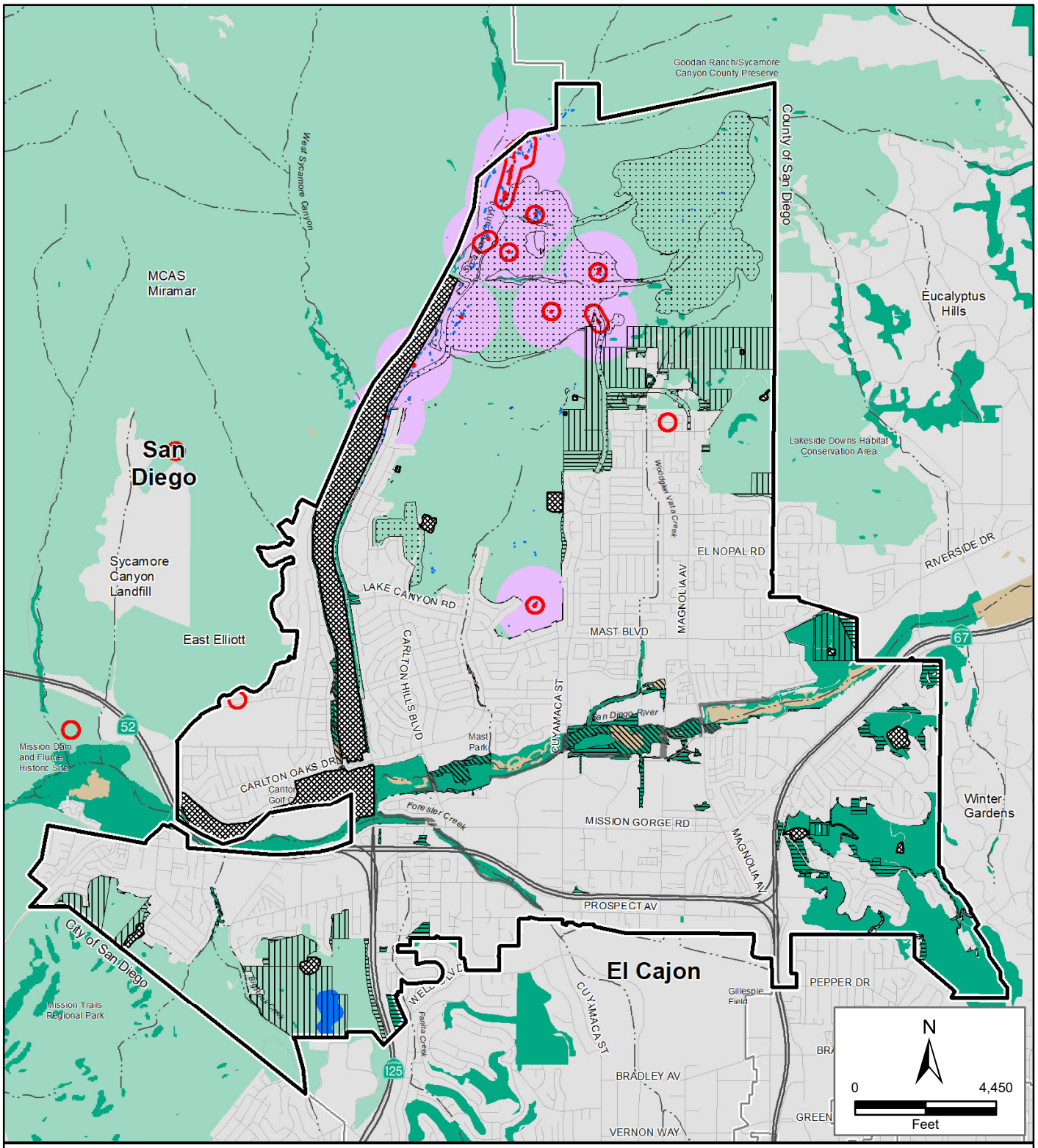
Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

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\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-22 Blainvilles Horned Lizard-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-22
Blainville's Horned Lizard - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Habitat Model
Known Breeding Habitat
Potentially Suitable Breeding Habitat
Suitable Upland Habitat Adjacent to Areas of Known Breeding Habitat
Other Suitable Upland Habitat

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-23 Western Spadefoot Toad-Unique Impacts.mxd Date: 2/21/2025 34153

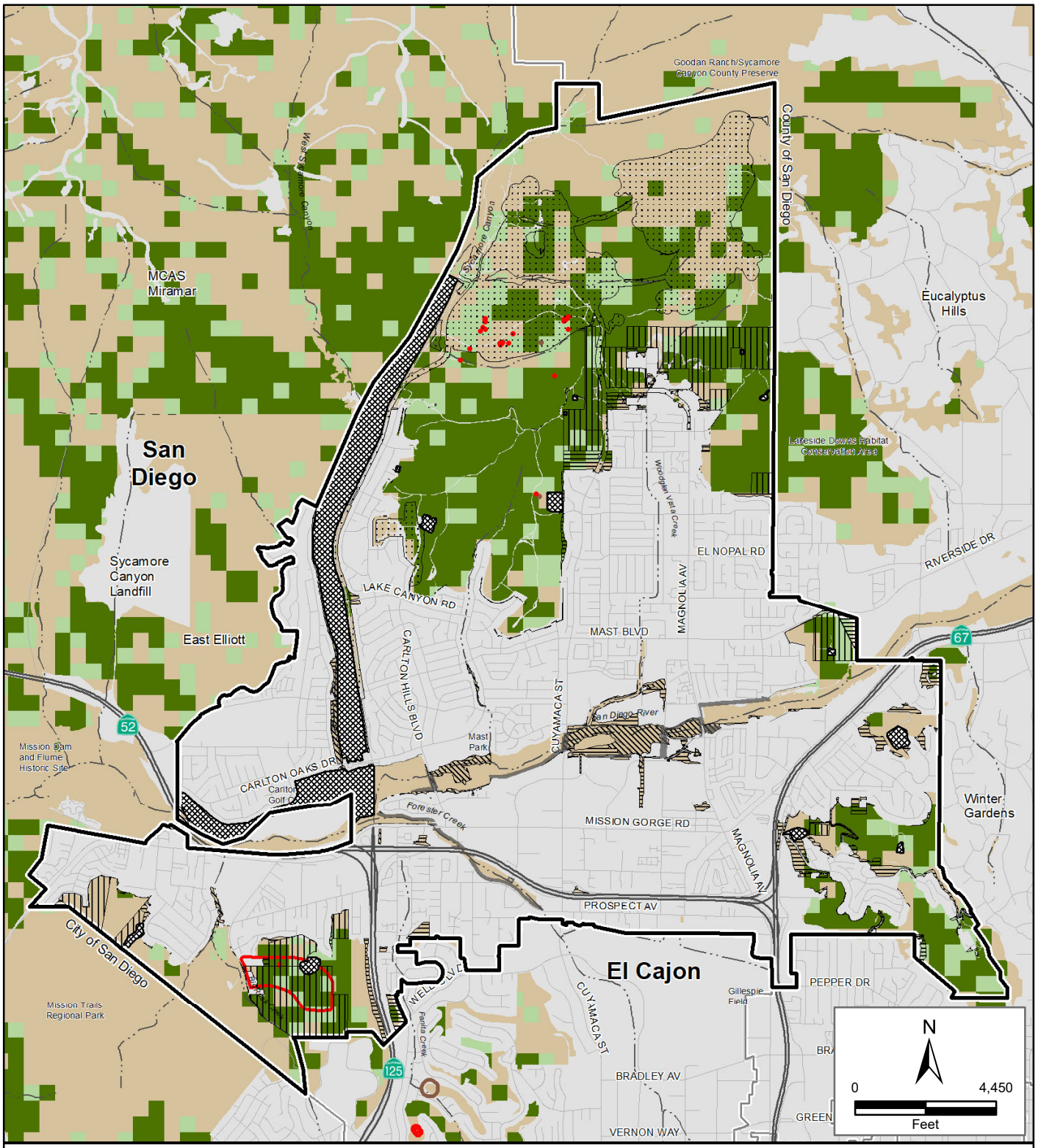
Figure 4-23
Western Spadefoot Toad - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan

The Hardline Development Project will impact known breeding habitat (14 vernal pool or seasonal basin features known to be occupied will be affected) and associated suitable upland habitat. All of the vernal pool or seasonal basin features (breeding habitat) known to be occupied by western spadefoot in the Plan Area are located within the Hardline Development Project area and many of those are located along Sycamore Creek. Western spadefoot spend most of the year within upland habitat areas. While suitable adjacent upland habitat for the Sycamore Creek pools will be lost through the Hardline Development Project, connectivity between suitable breeding pools along Sycamore Creek and suitable upland habitat will be maintained in surrounding, currently protected, open space on MCAS Miramar and County preserves outside of the Subarea Plan Area adjacent to the Fanita Ranch Onsite Preserve. In addition, culverts beneath the planned Fanita Ranch Parkway extension will be designed and constructed/maintained to facilitate effective movement of western spadefoot to, under, and past the road. The Fanita Ranch Parkway extension will include substantial measures to facilitate effective wildlife movement, including specific avoidance and minimization of spillover nighttime lighting along and near corridors (including the noted culvert undercrossings) and linkages, appropriate wildlife fencing and other features near undercrossing to direct target wildlife to undercrossings (and off of roadways), and appropriate native vegetation cover along the roadway. The implementation of the Vernal Pool and Wetland Mitigation Plan for the Hardline Development Project will include mitigation for occupied western spadefoot breeding habitat as required by the Subarea Plan to ensure no net loss in functions and values. See description in Section 6.3.2, *Riparian, Wetland and Vernal Pool Habitats*, that outlines the mitigation approach and actions.

In addition to habitat mitigation measures, a western spadefoot relocation program will be implemented for the Hardline Development Project to minimize the direct loss of western spadefoot that are known to occupy certain pools in the Covered Activity footprint.

4.4.2.17 Coastal Cactus Wren Effects Summary

Approximately 571.3 acres of suitable habitat for coastal cactus wren (22.8 percent of the suitable habitat in the Plan Area) will likely be directly lost due to Covered Activities in the Plan Area. Approximately 438.7 acres of suitable habitat will likely be lost due to the Hardline Development Project. About three clusters of coastal cactus wren occurring on O.57 acres of habitat will likely be directly lost due to the Hardline Development Project. Approximately 111.2 acres will be lost due to Covered Activities within the Upland Standards Areas. This area has only been partially surveyed for the species and no reported occurrences of the species exist in this area (see Figure 4-24 and Table 4-7).



* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-24 Coastal Cactus Wren-SDMMP Impacts.mxd Date: 7/14/2025 34153

Figure 4-24
Coastal Cactus Wren - Known Occurrences and Habitat Model Relative to Future Development Area
Santee MSCP Subarea Plan

4.4.2.18 Coastal California Gnatcatcher Effects Summary

Approximately 540.8 acres of suitable habitat for coastal California gnatcatchers (20.3 percent of the total suitable habitat in the Plan Area) will likely be directly lost due to Covered Activities. Approximately 377.8 acres of suitable habitat and 14 use areas for coastal California gnatcatchers will likely be directly lost due to the Hardline Development Project. Approximately 162.2 acres of suitable habitat for the species will likely be directly lost due to Covered Activities outside of the Hardline Development Project occurring primarily in the Upland Standards Area and Infill Development Areas. An undetermined number of pairs of coastal California gnatcatchers would be directly affected by Covered Activities within the Plan Area outside of the Hardline Development Project footprint (see Figure 4-25 and Table 4-7).

4.4.2.19 Least Bell's Vireo Effects Summary

Approximately 36.6 acres of suitable habitat for least Bell's vireo (10.1 percent of the suitable habitat in the Plan Area) will be directly lost due to Covered Activities in the Plan Area (see Figure 4-26 and Table 4-7). Covered Activity impacts to the species will be addressed through the avoidance, minimization, and mitigation measures of the Subarea Plan (see Section 5.3.3.5, *Fanita Ranch Subunit* and Section 5.5, *Conservation Measure 3 – Avoidance, Minimization, and Mitigation*) that include species-specific conservation standards for least Bell's vireo found in Section 5.5.9.4, *Least Bell's Vireo Conservation Standards*.

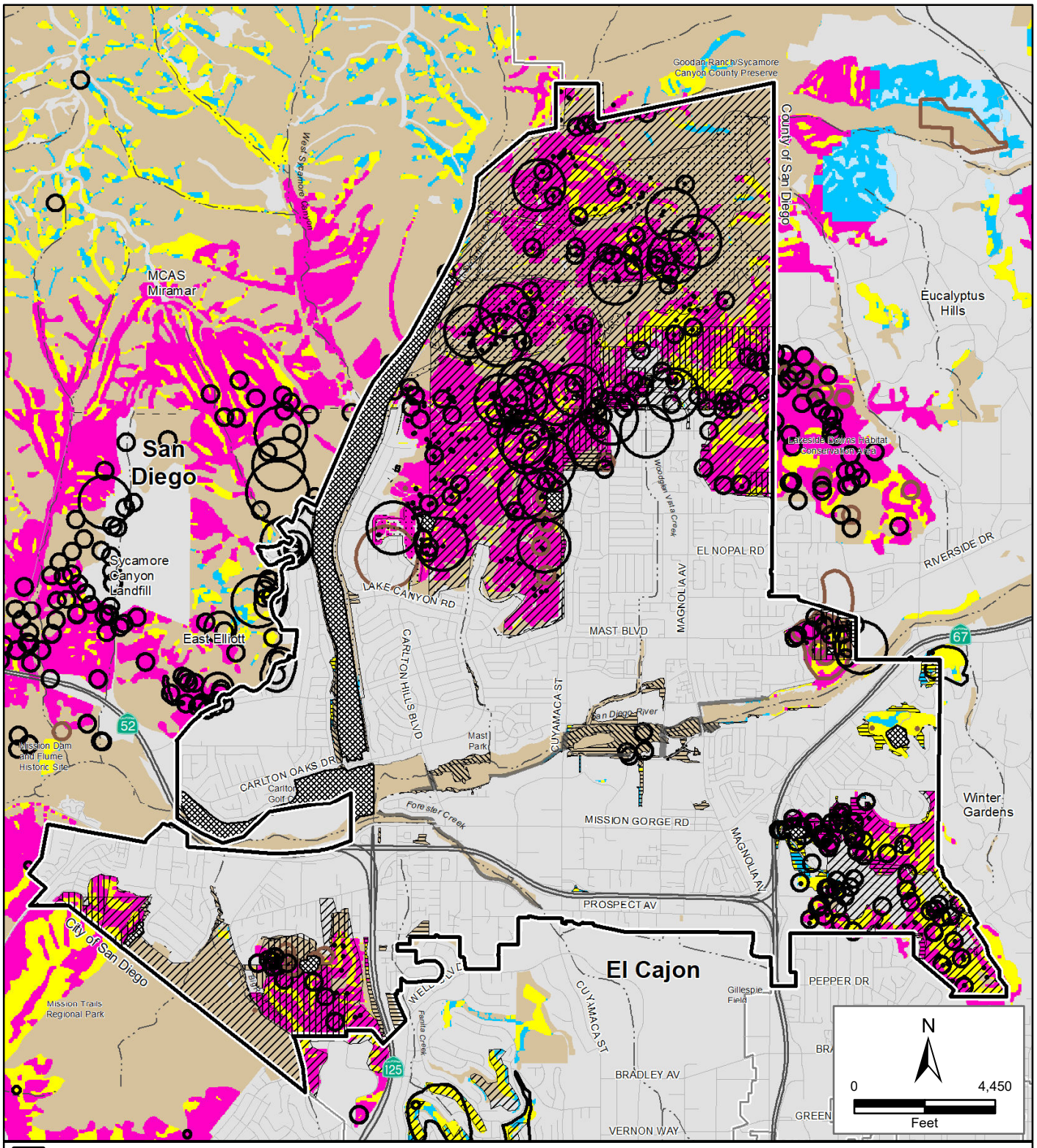
4.4.2.20 Western Burrowing Owl Effects Summary

Approximately 461.7 acres of suitable habitat for western burrowing owl (25.1 percent of the suitable habitat in the Plan Area) will likely be directly lost due to Covered Activities, 380.1 acres of which occurs in the Hardline Development Project (see Figure 4-27 and Table 4-7). Covered Activity impacts to the species will be addressed through the avoidance, minimization, and mitigation measures of the Subarea Plan (see Section 5.3.3.5, *Fanita Ranch Subunit* and Section 5.5, *Conservation Measure 3 – Avoidance, Minimization, and Mitigation*) that include species-specific conservation standards for western burrowing owl found in Section 5.5.9.5, *Western Burrowing Owl Conservation Standards*.

4.4.3 Indirect Effects

Indirect effects from the Subarea Plan may include habitat fragmentation, blockage of movement corridors, edge effects, noise effects, disruption of the natural fire regime, changes in hydrology from adjacent development, increased lighting, and the proliferation of exotic species.

Habitat Fragmentation. Habitat fragments generally have less conservation value than large habitat blocks because smaller habitat areas usually contain fewer species, have proportionally larger perimeters (making them more vulnerable to edge effects), are more likely to be biologically isolated from other habitat areas, and tend to be more vulnerable to adverse stochastic events.



Subarea Plan Area
Final Critical Habitat (USFWS 2007)
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Habitat Model
Very High Habitat Value
High Habitat Value
Moderate Habitat Value
Low Habitat Value

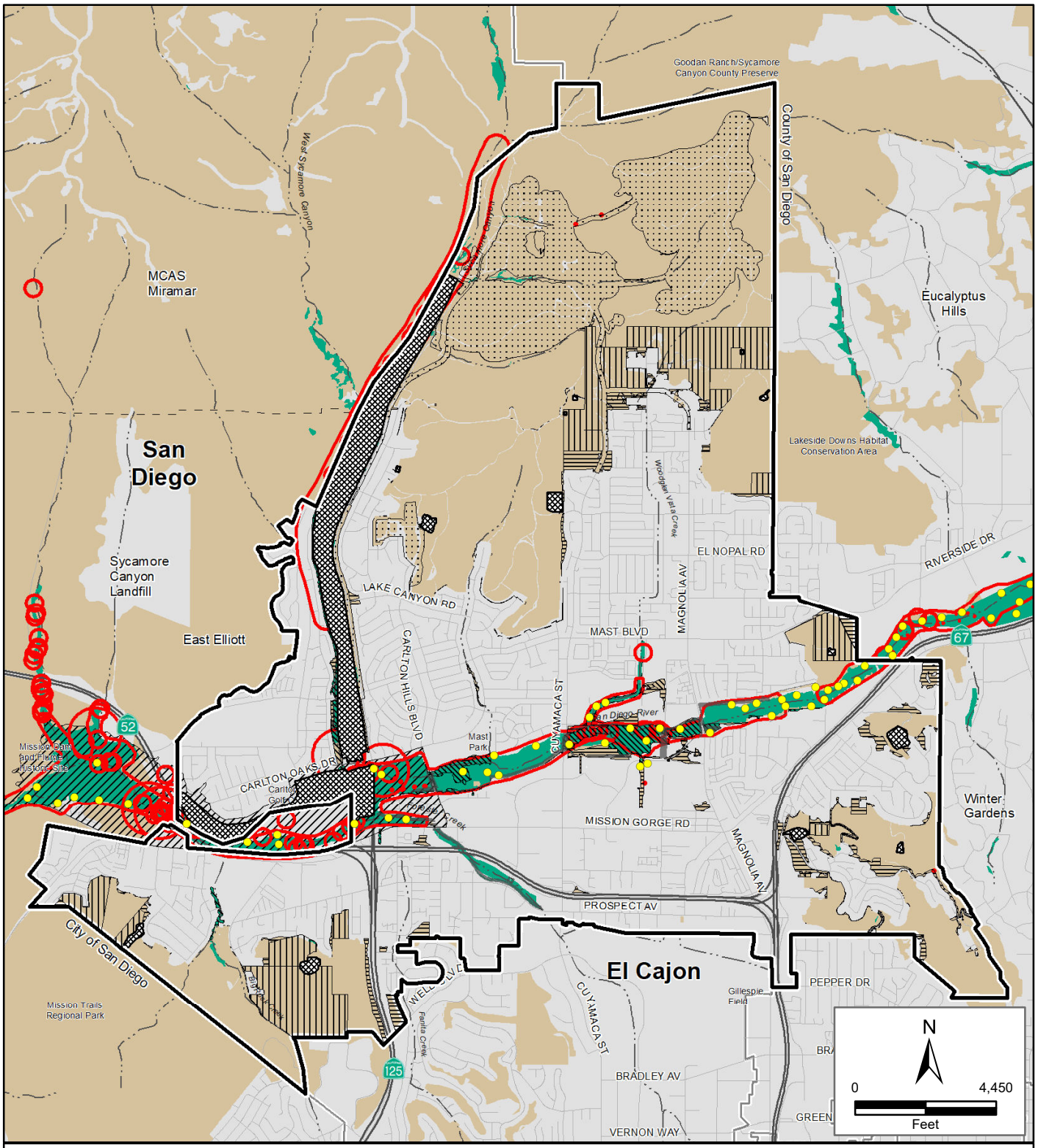
Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-25 Coastal California Gnatcatcher-CHSR Impacts.mxd Date: 2/21/2025 34153

Figure 4-25
Coastal California Gnatcatcher - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model
Final Critical Habitat (USFWS 1994)
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

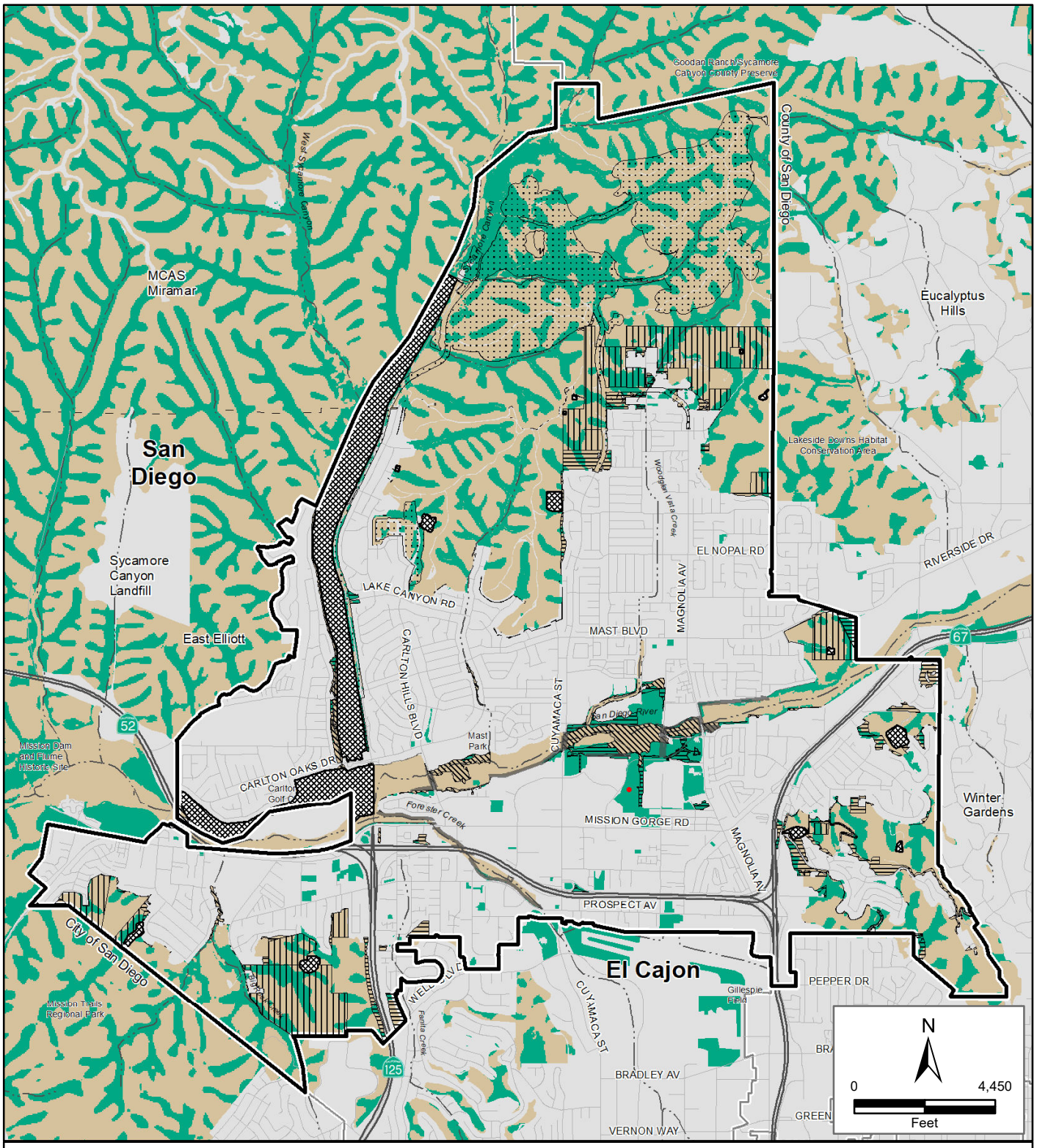
Species Occurrence Locations *
Recent Least Bell's Vireo Population Survey (Kus 2022)
Current (post-1999)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-26 Least Bells Vireo-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-26
Least Bell's Vireo - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Species Occurrence Locations
Current (post-1999)

Future Development Areas
Hardline Development Areas
Upland Standards Areas
Upland Habitats within Infill Development Areas
Riparian/Aquatic Habitat
Estimated Covered Activity Impacts within the San Diego River Subunit

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter4\Figure 4-27 Western Burrowing Owl-Unique Impacts.mxd Date: 2/21/2025 34153

Figure 4-27
Western Burrowing Owl - Known Occurrences and Habitat Model Relative to Future Development Areas
Santee MSCP Subarea Plan

Blockage of Natural Wildlife Movement Corridors. Roads and development restrict movements within home range, define boundaries of home ranges, or form complete barriers to movement. Large mammals may continue to use a low-traffic road or trails as a convenient way of travel or to feed on roadkill or small mammals in grassy road shoulders. Nevertheless, they are unable to maintain populations where road densities are high, because of the mortality rates with high vehicle speeds, legal or illegal hunting, or roadkill.

Edge Effects. A negative effect of fragmentation is exposure to incompatible land uses along the habitat edge (edge effects). The biological integrity of habitats adjoining development can be diminished by adverse effects of noise, lighting, exotic plant and animal invasion (i.e., Argentine ants), dust/air pollution, predators, parasites, disturbance from human activities, pesticides, fuel modification, and other factors. Numerous predators, such as snakes, opossums, raccoons, skunks, ground squirrels, and various corvids, thrive on edges by making use of the additional food and water sources provided by residential development adjacent to preserves. Dog and cat (both domestic and feral) predation are also associated with urban edges.

Noise. Development in the Subarea Plan Area is likely to result in increasing ambient noise to a level which is likely to adversely affect some Covered Species within the Subarea Plan Area. The impact of noise on wildlife is likely to differ from species to species and is not only dependent on the source of the noise (e.g., aircraft versus blasting), but also on the duration and schedule. Organisms that rely on sound to communicate (e.g., birds) may be indirectly impacted by noise through disruption of interspecific communication (such as during the breeding season). Construction activity (for example) that is outside of the Preserve may also generate noise that impacts species within the Preserve.

Alteration of Fire Regimes. Natural fire is generally not compatible with highly urbanized areas and therefore is suppressed. Alteration of the natural fire regime could lead to an elimination of fire in small habitat fragments adjacent to development, to an increase in fire frequency from anthropogenic ignition, or the intensity of fires due to build-up of materials. These changes disrupt natural successional processes.

Changes in Hydrology. Increased urbanization in the Subarea Plan Area resulting by implementation of the Subarea Plan may indirectly result in changes in hydrology, run-off, and sedimentation that could impact surface water dependent Covered Species both in and outside of the Managed Preserve. Increased urban run-off into the Managed Preserve and channelization for flood control could result in increased erosion and increased rates of scouring, which could result in downstream habitat loss for some species. Because urbanization has the potential to increase the magnitude and frequency of high flows, causing bank erosion and channel widening, species could be adversely affected if they rely on natural flow regimes for their persistence. Additionally, urban run-off increases the temperature of adjacent streams due to higher water temperatures from streets, roof tops, and parking lots, and increases the variety and amount of pollutants carried into streams, rivers, and lakes.

Lighting. Artificial night lighting adversely impacts the habitat value for some species, particularly for nocturnal species through potential modification of predation rates, obscuring of lunar cycles, and/or causing direct habitat avoidance. Illumination of foraging habitat by artificial light during surface activity periods of prey likely makes detection by predators easier, potentially increasing the predation rate by owls, coyotes, foxes, house cats, etc. Artificially lit habitat areas may also be directly

avoided by certain species, with the effect of reducing the amount of suitable habitat in the vicinity of artificial lighting.

Illumination of bird habitat by increased night lighting of the Subarea Plan Area has the potential to adversely affect bird species. Physiological, developmental, and behavioral effects of light intensity, wavelength, and photoperiod on domestic bird species are well-documented. Placement of nests away from lighted areas implies that part of the home range is rendered less suitable for nesting by artificial light. If potential nest sites are limited within the bird's home range, reduction in available sites associated with artificial night lighting may cause the bird to use a suboptimal nest site that is more vulnerable to predation, cowbird parasitism, or extremes of weather or to avoid nesting at all.

Exotic Species. Native species are often at a disadvantage after exotic species or non-native predators are introduced. Non-native plant and animal species have few natural predators or other ecological controls on their population sizes, and they often thrive in disturbed habitats. These species may aggressively out-compete native species or otherwise harm sensitive species. When top predators are absent, intermediate predators multiply and increase predation on native bird species and destruction of their nests. Domestic holding areas (e.g., stables and backyards) and golf courses provide resources for increased populations of parasitic cowbirds and European starlings, which adversely affect native songbird populations. European honeybees, though now naturalized in the landscape, nonetheless serve as competitors to native solitary bees and bumble bees such as Crotch's bumble bee. Litter and food waste from picnickers can contribute to an increase in Argentine ant populations, which out-compete native ants. Irrigation of landscapes may also provide resources for invasive Argentine ants. Invasive plant species, such as salt cedar and giant reed, can alter water flow and quantities, outcompete native plant species, and provide less suitable habitat for native animals.

Potential indirect effects on the Managed Preserve will be minimized by the City requiring all proposed Covered Activities to adhere to the Preserve Adjacency Guidelines, as a condition of approval (see Section 7.2.3.6 *Land Uses Adjacent to Preserves*).

4.4.4 Allowable Loss of Habitat

Based on the project impact footprint for the Planned Development, assumptions for Future Development Activities and new street projects, drainage projects, trails, and defensible space, it is estimated that the amount of allowable impacts to natural habitat under the Subarea Plan would total 1,125 acres. The City will track the loss of habitat from Covered Activities over the permit term and report this information in the Annual Report. Figure 4-2 shows the areas of planned and future development areas and Table 4-8 summarizes the total areas of natural habitat estimated to be impacted within the different areas. Other Covered Activities under the Subarea Plan, including ongoing maintenance activities and Preserve Management and Monitoring Activities, are not anticipated to result in permanent, direct impacts to habitat.

Table 4-8. Allowable Loss of Habitat for Covered Activities (acres)

	Hardline Development Project	Upland Standards Areas	Infill Development Areas	San Diego River Subunit
Existing Conditions				
Developed/Disturbed	140.5	15.1	5,685.5	44.4
Natural Habitat	2,793.4	472.3	229.1	321.2
Totals:	**2,933.9**	**487.4**	**5,914.6**	**365.6**
Allowable Loss of Total Acres of Natural Habitat under Subarea Plan [e]	877.1 [a]	141.7 [b]	65.0 [c]	37.6 [d]

[a] Based on project footprint and impact calculations included in the Fanita Ranch Final Revised EIR and Biological Resources Technical Report (Dudek 2020)

[b] Calculated using 30 percent of the natural habitat within the Upland Standards Areas. It is likely due to steep slopes that impacts in the Upland Standards Areas will be less than the 30 percent allowed.

[c] The City did a parcel-by-parcel review of the areas of natural habitat within the Infill Development Areas. Many areas are not developable for various reasons. The City determined that 65.0 acres is a reasonable estimate of future development within this area.

[d] Based on a review of the Covered Activities that are planned within the San Diego River Subunit, a preliminary impact footprint was utilized to determine a 'rough-cut' analysis of the amount of impact that is likely to occur within the San Diego River Subunit.

[e] In addition to the 1,121.5 acres, coverage for 3.5 acres of permanent impact associated with potential Essential Public Projects is included, for a total allowable loss of 1,125 acres of habitat.

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Chapter 5
Conservation Strategy

5.1 Introduction

This chapter presents the conservation strategy for the Subarea Plan, which is designed to meet the regulatory requirements of the Natural Community Conservation Planning Act (NCCPA) and Federal Endangered Species Act (ESA) by ensuring impacts of Covered Activities are avoided, minimized, and mitigated to the maximum extent practicable and by providing conservation and management of Covered Species and natural communities within the Plan Area. The conservation strategy also will build on existing Protected Open Space in the Subarea Plan Area, including the portions of Mission Trails Regional Park within the southwestern portion of the City of Santee, the established Preserves on Rattlesnake Mountain and north of Magnolia Avenue.

To meet the NCCPA and Federal ESA permit standards, the conservation strategy provides avoidance, minimization, and conservation measures for the Covered Species through preservation, enhancement, restoration, and management of natural communities, Covered Species habitats, and occurrences of Covered Species in the Plan Area that occur within the future Managed Preserve Areas.

The conservation strategy is designed to achieve the following outcomes:

- Conserve, restore, and provide for the management and monitoring of representative natural vegetation communities and core habitat areas in the Plan Area.
- Avoid or minimize impacts to the Plan Area's biological resource core areas and to important plant and animal populations within those areas and ensure remaining impacts from Covered Activities are fully mitigated.
- Protect the Plan Area's biological resources and prevent their degradation and loss by guiding development outside of biological resource core areas, and by establishing mitigation standards that will be applied to Covered Activities.
- Promote the preservation of biological resources by directing preservation toward land which can be combined into contiguous areas of habitats or linkages and give greater value to the preservation of relatively large contiguous biological resource core area or to linkages when formulating avoidance and mitigation requirements for Covered Activities. Establish a Managed Preserve System that provides conservation measures for Covered Species within important currently unprotected portions of the Plan Area, is contiguous with existing conservation lands within the Plan Area and protects linkages or wildlife corridors adjacent to habitats within and outside the Plan Area.
- Direct Covered Activities mitigation to areas that will lead to ultimate assembly of a preserve system consisting of core habitat areas and the linkages that connect them. Perpetually protect, maintain, and monitor habitat areas within Managed Preserve areas that, in combination with existing conserved lands within the Plan Area and adjacent contiguous conservation lands outside the Plan Area, are large enough to support sustainable subpopulations of Covered Species.

- Provide specific avoidance, minimization and mitigation requirements for impacts to certain sensitive animal and plant species, including rare, narrow endemic, and other particularly sensitive species. Where complete avoidance of impacts to these species is infeasible, City staff will work with the project proponent to design the project to minimize impacts to the occurrence/subpopulation to the maximum extent practicable. Incorporate into the Managed Preserve a range of environmental gradients such as varying elevations of the same habitat types and high habitat diversity to provide for shifting species distributions in response to changing circumstances, including climate change.
- Protect and enhance the effective movement, linkage, and genetic interchange of native organisms between habitat areas in a manner that maintains the ecological integrity of the Subarea Plan Preserve System.

The conservation strategy identifies the intended biological outcomes of Subarea Plan implementation and describes the means by which the City will achieve these outcomes. The conservation strategy also includes specific and measurable biological goals, objectives, and comprehensive conservation measures and a monitoring and management strategy, including adaptive management. The biological goals and objectives (Section 5.2) articulate *what* the conservation strategy intends to achieve, and the conservation measures (Sections 5.3 through 5.5) describe *how* the City will meet the biological goals and objectives (i.e., the actions to be implemented).

The Subarea Plan will implement three broad categories of conservation measures:

- Section 5.3, *Conservation Measure 1, Establish the Subarea Plan Managed Preserve*, describes the City's commitments to establish the Subarea Plan Managed Preserve. It includes acreage commitments for natural communities and Covered Species habitat, describes legal land protection mechanisms, and provides guidelines and commitments for identifying lands to add to the Managed Preserve.
- Section 5.4, *Conservation Measure 2, Manage and Monitor the Subarea Plan Managed Preserve*, describes the City's commitments for perpetual natural communities and Covered Species habitat management and monitoring. It describes the requirements for preparing Resource Management Plan (RMPs), and describes protection and management responsibilities of the City, individual Preserve Managers, and individuals who receive take authorizations from the City who will implement these measures.
- Section 5.5, *Conservation Measure 3, Avoidance, Minimization, and Mitigation*, describes the City's commitments to review, approve, and monitor future development and other Covered Activities within the Subarea Plan Area following the avoidance, minimization, and mitigation measures established in the conservation strategy. Standards and guidelines provided in this section include uniform mitigation ratios, wildlife corridor/ecological linkage criteria, narrow and endemic Covered Species standards, aquatic resources standards, and Covered Species-specific protection requirements.

5.2 Biological Goals and Objectives

The biological goals and objectives reflect the intended outcomes of the Subarea Plan. Biological goals are the broad conservation achievements that are anticipated to come through plan implementation. Biological objectives are expressed as specific outcomes that the Subarea Plan is expected to achieve for ecosystems, natural communities, and Covered Species habitat. The biological objectives are designed to be SMART (i.e., specific, measurable, achievable, results-oriented, and time-fixed).

The biological goals and objectives are organized based on the following ecological levels of organization.

- **Landscape**. The landscape-level biological goals and objectives focus on the extent, distribution, and connectivity among natural communities and protection to the overall condition of hydrological, physical, chemical, and biological processes in the Subarea Plan Area.
- **Natural Communities**. Natural communities' biological goals and objectives focus on maintaining or enhancing ecological functions and values of specific natural communities; and
- **Covered Species**. Covered Species biological goals and objectives address stressors; occurrence/population conservation, and habitat conservation/restoration needs specific to individual Covered Species.

Table 5-1 summarizes the biological goals and objectives at the landscape, natural communities, and Covered Species levels. The acreage objectives for natural communities and suitable habitat for Covered Species is based on the size and configuration of the proposed Subarea Plan Managed Preserve. Each biological objective will be met through implementation of one or more of the conservation measures described in Sections 5.3, 5.4, and 5.5 of the Subarea Plan. Chapter 6, *Conservation Analysis*, of the Subarea Plan further identifies the expected outcomes from the implementation of the conservation strategy relative to the Subarea Plan biological goals and objectives for natural communities and Covered Species, described below.

Table 5-1. Biological Goals and Objectives

Biological Resource	Goals	Objectives [a]
Landscape Level Goals and Objectives		
Large, connected blocks of habitat	**Landscape Goal 1 (L-1):** Conserve natural vegetation communities of sufficient size and configuration to support ecological integrity and sustainable subpopulations of Covered Species and that are connected to each other and/or other areas of protected habitat in and adjacent to the Managed Preserve.	**Landscape Objective 1.1 (L-1.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 1,070.05acres of newly conserved natural vegetation communities and Covered Species habitat, consisting of both upland and riparian/aquatic vegetation communities, including: • 882.4 acres within Hardline Conservation Areas • 165.4 acres within Upland Standards Areas In addition, restore 18.4 acres of natural vegetation community at the Quino checkerspot butterfly Offsite Conservation Area and enhance management of 82.6 acres within existing City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure permanent protection, management, and monitoring of a total of 2,140.1 acres of conserved natural vegetation communities and Covered Species habitat consisting of both upland vegetation communities and riparian/aquatic habitats, as follows: • 1,764.8 acres within Hardline Conservation Areas • 330.8 acres within Upland Standards Areas By the end of Year 30, there will be a total of 18.4 acres of restoration of natural vegetation community at the Quino checkerspot butterfly Offsite Conservation Area and the enhanced management of a total of 167.3 acres within existing City-Owned Preserve Lands.
		Landscape Objective 1.2 (L-1.2): Upon buildout of the Managed Preserve it will be integrated with and connected to 939.2 acres of natural habitats located on Existing Protected Open Space within the Plan Area and connected to open space areas adjacent to the Plan Area as shown on Figure 5-3.
		Landscape Objective 1.3 (L-1.3): The Managed Preserve will include and permanently protect large contiguous areas of open space in ecologically functional configurations based on preserve design parameters (e.g., low edge to area ratios).
		Landscape Objective 1.4 (L-1.4): Within all approved Covered Activity areas that are adjacent to the Managed Preserve, the land use adjacency guidelines will be applied to protect the Managed Preserve from encroachment and/or edge effects (e.g., spillover nighttime lighting or noise, outdoor pets, irrigation overspray or runoff).

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
Representative diversity of natural vegetation communities	**Landscape Goal 2 (L-2):** Conserve representative portions of the natural landscapes and natural vegetation communities contiguous to other protected areas to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.	**Landscape Objective 2.1 (L-2.1):** Permanently protect, manage, and monitor the Managed Preserve that conserves a representative percent (i.e. between 42 and 100 percent for each vegetation community with an overall conservation of 5 percent of natural habitat within the Plan Area) of extant diversity of vegetation communities (i.e. scrub, chaparral, woodland, grassland, and aquatic habitats) with a focus on vegetation communities considered sensitive, rare, or declining. • **Maritime succulent scrub:** 100 percent conserved within Plan Area • **Coastal sage scrub:** 53 percent conserved within Plan Area • **Chaparral:** 44 percent conserved within Plan Area • **Grassland:** 42 percent conserved within Plan Area • **Coast live oak woodland:** 88 percent conserved within Plan Area • **Englemann oak woodland:** 100 percent conserved within Plan Area • **Riparian:** 46 percent conserved within Plan Area • **Freshwater marsh[14]:** 88 percent conserved within Plan Area • **Vernal pool:** 105 percent conserved within Plan Area • **Disturbed wetland:** 42 percent conserved within Plan Area • **Freshwater (open water)**: 82 percent conserved within Plan Area • **Non-vegetated channel:** 76 percent conserved within Plan Area
Ecological linkages and wildlife movement corridors	**Landscape Goal 3 (L-3):** Sustain and conserve ecological linkages and effective wildlife movement corridors, including interchange between core habitat areas to maintain ecological integrity and connectivity within and beyond the Plan Area.	**Landscape Objective 3.1 (L-3.1):** Permanently protect, manage, and monitor the Managed Preserve such that it will conserve and secure important ecological linkages, wildlife movement corridors, and landscape connectivity between core ecological areas within and adjacent to the Plan Area as shown on Figure 5-3.
		Landscape Objective 3.2 (L-3.2): Permanently protect, manage, and monitor the Managed Preserve such that biological core areas, wildlife corridors, and ecological linkages are protected and conserved consistent with targets of the MSCP Subregional Plan.

[14] The Subarea Plan will ensure no net loss in functions or values of wetland and vernal pool communities. A substantial portion of riparian and aquatic habitats not being included in the Managed Preserve are already protected in existing open space or are under the control of the County of San Diego.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
Range of environmental gradients	**Landscape Goal 4 (L-4):** Conserve natural vegetation communities within a range of environmental gradients and contiguous to other protected areas to allow for shifting species distributions in response to catastrophic events (e.g., fire, prolonged drought) or climate change.	**Landscape Objective 4.1 (L-4.1):** Permanently protect, manage, and monitor the Managed Preserve that conserves natural vegetation communities representative of the current distribution of natural vegetation communities within various elevation ranges (i.e. less than 450 feet in elevation to more than 1,050 feet in elevation) (see Table 6-4. *Representative Percentages of Natural Habitat across Elevation Ranges in Subarea Plan Managed Preserve*).
Natural Communities Level Goals and Objectives		
Upland vegetation communities	**Natural Community Goal 1 (N-1):** Conserve natural upland vegetation communities to promote native biodiversity.	**Natural Community Objective 1.1 (N-1.1) (Chaparral):** Permanently protect, manage, and monitor at least 192.5 acres of biologically functional chaparral within the Managed Preserve by Year 15 of the permit term to promote wildlife biodiversity and habitat connectivity that benefit Covered Species of the chaparral natural community. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of at least 385.0 acres of biologically functional chaparral within the Managed Preserve to promote wildlife biodiversity and habitat connectivity that benefit Covered Species of the chaparral natural community.
		Natural Community Objective 1.2 (N-1.2) (Grassland): Permanently protect, manage, and monitor at least 118.5 acres of biologically functional grassland within the Managed Preserve by Year 15 of the permit term to promote wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of the grassland natural community. Prioritize protection, enhancement, and conservation of native grassland areas (as compared to non-native grassland and ruderal areas). Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 237.1 acres of biologically functional grassland within the Managed Preserve to promote wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of the grassland natural community. Prioritize protection, enhancement, and conservation of native grassland areas (as compared to non-native grassland and ruderal areas).
		Natural Community Objective 1.3 (N-1.3) (Scrub): Permanently protect, manage, and monitor at least 703.1 acres of biologically functional coastal sage scrub and 3.7 acres of

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		biologically functional maritime succulent scrub within the Managed Preserve by Year 15 of the permit term to promote wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of these scrub natural communities. Prioritize protection, enhancement, and conservation of extant and potential cactus scrub that potentially supports coastal cactus wren to the extent practicable. Prioritize protection and conservation of coastal sage scrub that supports Covered Species (e.g., Blainville's horned lizard, coastal California gnatcatcher). Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of at least 1,406.2 acres biologically functional coastal sage scrub and 7.3 acres of biologically functional maritime succulent scrub within the Managed Preserve to promote wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of these scrub natural communities. Prioritize protection, enhancement, and conservation of extant and potential cactus scrub that potentially supports coastal cactus wren to the extent practicable. Prioritize protection and conservation of coastal sage scrub that supports Covered Species (e.g., Blainville's horned lizard, coastal California gnatcatcher).
		Natural Community Objective 1.4 (N-1.4) (Woodland): Permanently Protect, manage, and monitor at least 13.2 acres of biologically functional coast live oak woodland and 28.6 acres of biologically functional Engelmann oak woodland within the Managed Preserve by Year 15 of the permit term to promote wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of the woodland natural communities. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of at least 26.4 acres of biologically functional coast live oak woodland and 57.2 acres of biologically functional Engelmann oak woodland within the Managed Preserve to promote wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of the woodland natural communities.
		Natural Community Objective 1.5 (N-1.5): Within all approved Covered Activity areas that are adjacent to the Managed Preserve, the land use adjacency guidelines will be applied to protect the Managed Preserve from encroachment and/or edge effects (e.g., spillover nighttime lighting or noise, outdoor pets, irrigation overspray or runoff).

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
Aquatic, riparian, wetland, and vernal pool habitats	**Natural Community Goal 2 (N-2):** Conserve aquatic, riparian, wetland, and vernal pool habitats to benefit Covered Species, promote native habitat biodiversity and ensure no net loss of ecological functions and values of wetland and vernal pool communities.	**Natural Community Objective 2.1 (N-2.1) (Riparian/Aquatic):** By Year 15 of the permit term, permanently protect, manage, and monitor at least 92.3 acres of biologically functional riparian and aquatic communities and promote conservation of native vegetation and wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of the riparian and aquatic natural communities. Prioritize protection, enhancement, and conservation of natural vernal pools and riparian vegetation areas (as compared to open water areas within former mining pits) that support Covered Species (e.g., least Bell's vireo, San Diego fairy shrimp). By Year 30 of the permit term, permanently protect, manage, and monitor at least 152.8 acres of biologically functional riparian and aquatic communities and promote conservation of native vegetation and wildlife biodiversity and habitat connectivity and linkage that benefit Covered Species of the riparian and aquatic natural communities. Prioritize protection, enhancement, and conservation of natural vernal pools and riparian vegetation areas (as compared to open water areas within former mining pits) that support Covered Species (e.g., least Bell's vireo, San Diego fairy shrimp).
		Natural Community Objective 2.2 (N-2.2): Permanently protect, manage, and monitor areas within the Managed Preserve with aquatic, riparian, or stream-associated wetland resources. Implement these conservation actions to protect aquatic, riparian, and wetlands functions and values by improving the condition and integrity of the physical streambed, banks, terraces, aquatic, and riparian communities, and stream hydrology.
		Natural Community Objective 2.3 (N-2.3): Ensure Covered Activities result in no net loss of wetland and vernal pool ecological function and values in the Plan Area through implementation of the Aquatic, Wetlands, and Riparian Protection Standards (Section 5.5.5.).
		Natural Community Objective 2.4 (N-2.4): Implement the Vernal Pool Conservation Standards (Section5.5.7) to ensure the following: • Covered Activities result in no net loss of vernal pool/seasonal basin ecological functions, values and acreage in the Plan Area. • Avoidance of impacts to vernal pools and their watersheds in naturally occurring complexes in the Plan Area to the extent practicable.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		• Covered Activities result in functional/sustainable fluvial and hydrological protection and conservation of vernal pool/seasonal basin watersheds in the Plan Area.
Species Level Goals and Objectives		
Plants		
San Diego ambrosia	**Species Goal 1 (S-1):** Conserve and maintain suitable habitat to provide opportunities for expansion of San Diego ambrosia in the Plan Area.	**Species Objective 1.1 (S-1.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 126.2 acres of newly conserved suitable habitat as well as potentially newly identified occurrences for San Diego ambrosia within the Managed Preserve, including: • 90.2 acres within the Fanita Ranch Onsite Preserve • 19.1 acres within the Upland Standards Areas And enhance management of 52.87 acres within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 252.4 acres of suitable habitat as well as potentially newly identified occurrences for San Diego ambrosia within the Managed Preserve, including: • 180.4 acres within the Fanita Ranch Onsite Preserve • 38.2 acres within the Upland Standards Areas And enhance management of 116.0 acres within City-Owned Preserve Lands, for a total of 324.4 acres in the Managed Preserve.
		Species Objective 1.2 (S-1.2): Avoid and minimize potential impacts to San Diego ambrosia from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Narrow Endemic Species Standards (Section 5.5.6). • All Covered Activities with potential to impact San Diego ambrosia will be required to implement standards that require avoidance and minimization of impacts and species-specific mitigation measures for any remaining unavoidable impacts that will not exceed 20 percent loss of any individual subpopulation/occurrence outside of the Managed Preserve.
		Species Objective 1.4 (S-1.3): Protect San Diego ambrosia and its suitable habitat within the Preserve from disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for San Diego Ambrosia.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
San Diego barrel cactus	**Species Goal 2 (S-2):** Maintain viability, protect, and increase the size and number of San Diego barrel cactus populations and conserve and maintain suitable habitat for San Diego barrel cactus within the Plan Area.	**Species Objective 2.1 (S-2.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 803.5 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for San Diego barrel cactus within the Managed Preserve, including: • 631.7 acres within the Fanita Ranch Onsite Preserve • 159.6 acres within the Upland Standards Areas, And enhance management of 11.8 acres within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,607.0 acres of suitable habitat as well as known and potentially newly identified occurrences for San Diego barrel cactus within the Managed Preserve, including: • 1,263.4 acres within the Fanita Ranch Onsite Preserve • 319.3 acres within the Upland Standards Areas, And enhance management of 24.3 acres within City-Owned Preserve Lands for a total of 1,631.3 acres in the Managed Preserve.
		Species Objective 2.2 (S-2.2): Permanently protect, manage, and monitor San Diego barrel cactus occurrences within the Managed Preserve or translocate within habitat preserve lands, including: • A total of 4,270 occurrences within Fanita Ranch (88 percent of all Fanita Ranch occurrences) • A minimum of 80 percent preservation and/or translocation (refer to Species Objective S-2.3) of all known locations within the Covered Activity project footprints (i.e. Upland Standards Areas). • A minimum of 80 percent preservation and/or translocation (refer to Species Objective S-2.3) of all newly identified locations within Covered Activity project footprints.
		Species Objective 2.3 (S-2.3): Translocate barrel cactus from within Covered Activities project footprints to appropriate potential habitat areas within the Plan Area that are protected, as required by the Covered Plant Species Translocation and Restoration Conservation Standards (Section 5.5.8). • Any proposed Covered Activity with occurrences/populations within the Covered Activity project footprints, the project proponent will be required to demonstrate that a

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		minimum of 80 percent of the occurrences/populations will be protected in perpetuity through protection and/or translocation/restoration within habitat preserve lands.
		Species Objective 2.4 (S-2.4): Avoid and minimize potential impacts to San Diego barrel cactus from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1).
		Species Objective 2.5 (S-2.5): Protect San Diego barrel cactus and its suitable habitat within the Managed Preserve from disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for San Diego Barrel Cactus.
San Diego button-celery	**Species Goal 3 (S-3):** Conserve and maintain suitable habitat for San Diego button-celery within the Plan Area.	**Species Objective 3.1 (S-3.1):** By Year 15 of the permit term, or prior to impacts to newly discovered occurrences, permanently protect, manage, and monitor 14.9 acres of newly conserved suitable vernal pool/seasonal basin habitat (and associated watersheds) within the Managed Preserve and initiate an introduction program for San Diego button-celery. Habitat conserved will include: • 14.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve, including: ○ 1.46 acres of vernal pool restoration, consisting of: ○ 0.13 acres of existing vernal pool preservation ○ 0.41 acres existing vernal pool reestablishment ○ 0.93 acres of new vernal pool creation ○ 13.48 acres of associated watershed Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 29.9 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) within the Managed Preserve that has the potential to support newly identified San Diego button-celery occurrences, including: • 29.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve, including: ○ 2.92 acres of vernal pool restoration, including: ○ 0.25 acres of existing vernal pool preservation ○ 0.82 acres existing vernal pool reestablishment

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		○ 1.85 acres of new vernal pool creation ○ 26.95 acres of associated watershed
		Species Objective 3.2 (S-3.2): Avoid, minimize, and mitigate impacts to San Diego button-celery within the Plan Area through implementation of General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Vernal Pool Conservation Standards (Section 5.5.7). • Implementation of the Plan by the City will ensure that potential Covered Activity footprints and the Managed Preserve are appropriately surveyed for San Diego button-celery in advance of City project approvals, and will ensure that potential impacts from Covered Activities to suitable habitat for San Diego button-celery in the Plan Area is avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated as directed by the Vernal Pool Conservation Standard.
		Species Objective 3.4 (S-3.3): Protect San Diego button-celery and its suitable habitat within the Managed Preserve through implementation of Management Actions and Adaptive Management Strategies for San Diego Button-Celery.
San Diego goldenstar	**Species Goal 4 (S-4):** Maintain viability, protect, and increase the size and number of San Diego goldenstar populations and conserve and maintain suitable habitat for San Diego goldenstar within the Plan Area.	**Species Objective 4.1 (S-4.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 774.75 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for San Diego goldenstar within the Managed Preserve, including: • 625.6 acres within the Fanita Ranch Onsite Preserve • 148.65 acres within the Upland Standards Areas, And enhance management of 11.07 acres within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,549.50 acres of suitable habitat as well as known and potentially newly identified occurrences for San Diego goldenstar within the Managed Preserve, including: • 1,251.2 acres within the Fanita Ranch Onsite Preserve • 297.3 acres within the Upland Standards Areas, And enhance management of 22.9 acres within City-Owned Preserve Lands for a total of 1,571.4 acres in the Managed Preserve.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		Species Objective 4.2 (S-4.2): Permanently protect, manage, and monitor San Diego goldenstar occurrences within the Managed Preserve or translocate within habitat preserve lands, including: • A minimum of 4 locations within Fanita Ranch. • A minimum of 80 percent preservation and/or translocation (refer to Species Objective S-4.3) of all known locations within the Covered Activity project footprints (i.e. Fanita Ranch) • A minimum of 80 percent preservation and/or translocation (refer to Species Objective S-4.3) of all newly identified locations within Covered Activity project footprints.
		Species Objective 4.3 (S-4.3): Translocate San Diego goldenstar from within Covered Activities project footprints to appropriate potential habitat areas within the Plan Area that are protected as required by the Covered Plant Species Translocation and Restoration Conservation Standards (Section 5.5.8). • Any proposed Covered Activity with occurrences/populations within the Covered Activity project footprints, the project proponent will be required to demonstrate that a minimum of 80 percent of the occurrences/populations will be protected in perpetuity through protection and/or translocation and restoration within the Managed Preserve.
		Species Objective 4.3 (S-4.3): Avoid and minimize potential impacts to San Diego goldenstar from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards.
		Species Objective 4.4 (S-4.4): Protect San Diego goldenstar and its suitable habitat within the Managed Preserve from disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for San Diego goldenstar.
San Diego mesa mint	**Species Goal 5 (S-5):** Conserve and maintain suitable habitat for San Diego mesa mint within the Plan Area.	**Species Objective 5.1 (S-5.1):** By Year 15 of the permit term, or prior to impacts to newly discovered occurrences, permanently protect, manage, and monitor 14.9 acres of newly conserved suitable vernal pool/seasonal basin habitat (and associated watersheds) within the Managed Preserve and initiate an introduction program for San Diego mesa mint. Habitat conserved will include: • 14.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve, consisting of:

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		○ 1.46 acres of vernal pool restoration, including: • 0.13 acres of existing vernal pool preservation • 0.41 acres existing vernal pool reestablishment • 0.93 acres of new vernal pool creation ○ 13.48 acres of associated watershed Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 29.9 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) within the Managed Preserve that has the potential to support newly identified San Diego mesa mint occurrences, including: • 29.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve, including: ○ 2.9 acres of vernal pool restoration, including: • 0.25 acres of existing vernal pool preservation • 0.82 acres existing vernal pool reestablishment • 1.85 acres of new vernal pool creation ○ 26.9 acres of associated watershed
		Species Objective 5.2 (S-5.2): Avoid, minimize, and mitigate impacts to San Diego mesa mint within the Plan Area through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Vernal Pool Conservation Standards (Section 5.5.7). • Implementation of the Plan by the City will ensure that potential Covered Activity footprints and the Managed Preserve are appropriately surveyed for San Diego mesa mint in advance of City project approvals and will ensure that potential impacts from Covered Activities to suitable habitat for San Diego mesa mint in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated as directed by the Vernal Pool Conservation Standards (Section 5.5.7).
		Species Objective 5.4 (S-4.3): Protect San Diego mesa mint and its suitable habitat within the Preserve through implementation of Management Actions and Adaptive Management Strategies for San Diego Mesa Mint.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
San Diego thornmint	**Species Goal 6 (S-6):** Conserve and maintain suitable habitat for San Diego thornmint within the Plan Area.	**Species Objective 6.1 (S-6.1):** By Year 15 permanently protect, manage, and monitor 942.15 acres of modeled suitable habitat as well as potentially newly identified occurrences for San Diego thornmint within the Managed Preserve, including: • 777.3 acres within the Fanita Ranch Onsite Preserve • 163.55 acres within Upland Standards Areas And enhance management of 15.07 acres within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,884.20 acres of modeled suitable habitat as well as potentially newly identified occurrences for San Diego thornmint within the Managed Preserve, including: • 1,554.50 acres within the Fanita Ranch Onsite Preserve • 327.1 acres within Upland Standards Areas And enhance management of 30.9 acres within City-Owned Preserve Lands for a total of 1,912.5 acres in the Managed Preserve.
		Species Objective 6.2 (S-6.2): Avoid and minimize potential impacts to San Diego thornmint from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Narrow Endemic Species Standards (Section 5.5.6). • All Covered Activities with potential to impact San Diego thornmint will be required to implement standards that require avoidance and minimization of impacts and species-specific mitigation measures for any remaining unavoidable impacts that will not exceed 20 percent loss of any individual subpopulation/occurrence outside of the Managed Preserve.
		Species Objective 6.4 (S-6.3): Protect San Diego thornmint and its suitable habitat within the Managed Preserve from disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for San Diego thornmint.
Variegated dudleya	**Species Goal 7 (S-7):** Maintain viability, protect, and increase the size and number of variegated dudleya populations and conserve and maintain	**Species Objective 7.1 (S-7.1):** By Year 15 permanently protect, manage, and monitor 860.6 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for variegated dudleya within the Managed Preserve, including: • 720.5 acres located within the Fanita Ranch Onsite Preserve

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
	suitable habitat for variegated dudleya within the Plan Area.	• 140.05 acres located within Upland Standards Areas And enhance management of 11.02 acres located within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,721.2 acres of suitable habitat as well as known and potentially newly identified occurrences for variegated dudleya within the Managed Preserve, including: • 1,440.1 acres located within the Fanita Ranch Onsite Preserve • 280.1 acres located within Upland Standards Areas And enhance management of 22.9 acres located within City-Owned Preserve Lands for a total of 1,743.1 acres within the Managed Preserve.
		Species Objective 7.2 (S-7.2): Permanently protect, manage, and monitor variegated dudleya occurrences within the Managed Preserve or translocate within habitat preserve lands, including: • A minimum of 80 percent preservation of all known locations within the Covered Activity project footprint for the Hardline Development Project. • Any proposed future Covered Activity with occurrences/populations within the Covered Activity project footprints, the project proponent will be required to demonstrate that a minimum of 80 percent of the occurrences/populations will be protected in perpetuity through protection and/or translocation/restoration within habitat preserve lands.
		Species Objective 7.3 (S-7.3): Avoid and minimize potential impacts to variegated dudleya from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Narrow Endemic Species Standards (Section 5.5.6). • All Covered Activities with potential to impact variegated dudleya will be required to implement standards that require avoidance and minimization of impacts and species-specific mitigation measures for any remaining unavoidable impacts that will not exceed 20 percent loss of any individual subpopulation/occurrence outside of the Managed Preserve.
		Species Objective 7.4 (S-7.4): Protect variegated dudleya and its suitable habitat within the Managed Preserve from disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for Variegated Dudleya.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
Willowy monardella	**Species Goal 8 (S-8):** Maintain viability, protect, and increase the size and number of willowy monardella populations and conserve and maintain suitable habitat for willowy monardella within the Plan Area.	**Species Objective 8.1 (S-8.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 55.95 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for willowy monardella within the Managed Preserve, including: • 44.6 acres located within the Fanita Ranch Onsite Preserve • 3.95 acres located within Upland Standards Areas And enhance management of 24.23 acres located within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 111.9 acres of suitable habitat as well as known and potentially newly identified occurrences for willowy monardella within the Managed Plan Preserve, including: • 89.2 acres located within the Fanita Ranch Onsite Preserve • 7.9 acres located within Upland Standards Areas And enhance management of 49.0 acres located within City-Owned Preserve Lands for a total of 146.1 acres in the Managed Preserve.
		Species Objective 8.2 (S-8.2): Preserve a minimum of 1,621 willowy monardella individuals within the Managed Preserve by Year 30 of the Permit Term.
		Species Objective 8.3 (S-8.3): Permanently Protect, manage, and monitor occurrences for willowy monardella within the Managed Preserve or translocate within habitat preserve lands, including: • A minimum of 80 percent preservation (refer to Species Objective S-8.3) of all known locations within the Covered Activity project footprints (i.e. Fanita Ranch) • Any proposed future Covered Activity with occurrences/populations within the Covered Activity project footprints, the project proponent will be required to demonstrate that a minimum of 80 percent of the occurrences/populations will be protected in perpetuity through protection and/or translocation/restoration within habitat preserve lands.
		Species Objective 8.4 (S-8.4): Avoid and minimize potential impacts to willowy monardella from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1).

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		Species Objective 8.5 (S-8.5): Protect willowy monardella and its suitable habitat within the Preserve from disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for willowy monardella.
Invertebrates		
Crotch's bumble bee	**Species Goal 9 (S-9):** Conserve suitable habitat for Crotch's bumble bee within the Plan Area to ensure long-term persistence of the species in the Plan Area.	**Species Objective 9.1 (S-9.1):** By Year 15 permanently protect, manage, and monitor 978.15 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for Crotch's bumble bee within the Managed Preserve, including: • 796.1 acres within the Fanita Ranch Onsite Preserve • 165.5 acres within the Upland Standards Areas And enhance management of 61.6 acres within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,956.3 acres of suitable habitat as well as known and potentially newly identified occurrences for Crotch's bumble bee within the Managed Preserve, including: • 1,592.2 acres within the Fanita Ranch Onsite Preserve • 331.0 acres within the Upland Standards Areas And enhance management of 132.2 acres within City-Owned Preserve Lands for a total of 2,055.4 acres within the Managed Preserve.
		Species Objective 9.2 (S-9.2): Avoid and minimize potential impacts to Crotch's bumble bee from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Crotch's bumble bee species-specific standards (Section 5.6.9.6).
Hermes copper butterfly	**Species Goal 10 (S-10):** Conserve viable suitable habitat for Hermes copper butterfly to ensure long-term persistence of the species in the Plan Area.	**Species Objective 10.1 (S-10.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 869.1 acres of suitable habitat as well as known and potentially newly identified occurrences for Hermes copper butterfly within the Managed Preserve, including: • 714.2 acres within the Hardline Conservation Areas (674.0 acres within the Fanita Ranch Onsite Preserve and 40.2 acres within the Hermes Copper Butterfly Offsite Conservation Area) • 154.0 acres within the Upland Standards Areas

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		And enhance management of 14.1 acres within City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,743.1 acres of suitable habitat as well as known and potentially newly identified occurrences for Hermes copper butterfly within the Managed Preserve, including: • 1,428.40 acres within the Hardline Conservation Areas (1,348.0 acres within the Fanita Ranch Onsite Preserve and 80.4 acres within the Hermes Copper Butterfly Offsite Conservation Area) • 308.0 acres within the Upland Standards Areas And enhance management of 28.2 acres within City-Owned Preserve Lands.
		Species Objective 10.2 (S-10.2): Avoid and minimize potential impacts to Hermes copper butterfly from Covered Activities through implementation of Hermes copper butterfly species-specific standards.
		Species Objective 10.3 (S-10.3): Protect Hermes copper butterfly and its suitable habitat within Preserves from invasive non-native plant species, unauthorized human access, and edge effects through implementation of Management Actions and Adaptive Management Strategies for Hermes copper butterfly.
Quino checkerspot butterfly	**Species Goal 11 (S-11):** Conserve and restore suitable habitat to ensure the long-term persistence of Quino checkerspot butterfly within the Plan Area.	**Species Objective 11.1 (S-11.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 862.75 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for Quino checkerspot butterfly within the Managed Preserve, including: • 695.65 acres within the Hardline Conservation Areas (641.05 acres within the Fanita Ranch Onsite Preserve and 54.6 acres within the Quino Checkerspot Butterfly Offsite Conservation Area) • 163.35 acres within the Upland Standards Areas In addition, restore 18.4 acres of natural vegetation community at the Quino checkerspot butterfly Offsite Conservation Area and enhance management of 21.48 acres within existing City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,725.5 acres of suitable habitat as

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		well as known and potentially newly identified occurrences for Quino checkerspot butterfly within the Managed Preserve, including: • 1,391.3 acres within the Hardline Conservation Areas (1,282.2 acres within the Fanita Ranch Onsite Preserve and 109.1 acres within the Quino Checkerspot Butterfly Offsite Conservation Area or other suitable location if there are insufficient willing sellers) • 326.7 acres within the Upland Standards Areas By the end of Year 30, there will be a total of 18.4 acres of restoration of natural vegetation community at the Quino checkerspot butterfly Offsite Conservation Area and the enhanced management of a total of 47.2 acres within existing City-Owned Preserve Lands for a total of 1,783.6 acres in the Managed Preserve.
		Species Objective 11.2 (S-11.2): Avoid and minimize potential impacts to Quino checkerspot butterfly from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1).
		Species Objective 11.3 (S-11.3): Protect Quino checkerspot butterfly and its suitable habitat within the Managed Preserve from invasive non-native plant species, unauthorized human access, and edge effects through implementation of Management Actions and Adaptive Management Strategies for Quino checkerspot butterfly.

Riverside fairy shrimp	**Species Goal 12 (S-12):** Conserve and restore suitable habitat for Riverside fairy shrimp within the Plan Area.	**Species Objective 12.1 (S-12.1):** By Year 15 of the permit term, or prior to impacts to newly discovered occurrences, permanently protect, manage, and monitor 14.9 acres of newly conserved suitable vernal pool/seasonal basin habitat (and associated watersheds) and initiate an introduction program for Riverside fairy shrimp occurrences within the Managed Preserve. Habitat conserved will include:
		• 14.9 acres of vernal pools and associated watershed within the Hardline Conservation Areas (Fanita Ranch Onsite Preserve), including:
		  ○ 1.46 acres of vernal pool restoration, consisting of:
		• 0.13 acres of existing vernal pool preservation
		• 0.41 acres existing vernal pool reestablishment
		• 0.93 acres of new vernal pool creation
		  ○ 13.48 acres of associated watershed

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]

		Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 29.9 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) as well as known and potentially newly identified Riverside fairy shrimp occurrences within the Managed Preserve, including:
		• 29.9 acres of vernal pools and associated watershed within the Hardline Conservation Areas (Fanita Ranch Onsite Preserve), including:
		  ○ 2.9 acres of vernal pool restoration, including:
		• 0.25 acres of existing vernal pool preservation
		• 0.82 acres existing vernal pool reestablishment
		• 1.85 acres of new vernal pool creation
		  ○ 26.9 acres of associated watershed

		Species Objective 12.2 (S-12.2): Avoid, minimize, and mitigate impacts to Riverside fairy shrimp within the Plan Area through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Vernal Pool Conservation Standards (Section 5.5.7). • Implementation of the Plan by the City will ensure that potential Covered Activity footprints and the Managed Preserve are appropriately surveyed for Riverside fairy shrimp in advance of City project approvals and will ensure that potential impacts from Covered Activities to suitable habitat for Riverside fairy shrimp in the Plan Area is avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated as directed by the Vernal Pool Conservation Standards (Section 5.5.7).
		Species Objective 12.4 (S-12.3): Protect Riverside fairy shrimp and its suitable habitat within the Preserve through implementation of Management Actions and Adaptive Management Strategies for Riverside fairy shrimp.
San Diego fairy shrimp	**Species Goal 13 (S-13):** Conserve and restore suitable habitat to expand the distribution of San Diego fairy shrimp within the Plan Area.	**Species Objective 13.1 (S-13.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 14.9 acres of newly conserved suitable vernal pool/seasonal basin habitat (and associated watersheds) as well as known and potentially newly identified San Diego fairy shrimp occurrences within Managed Preserve, including: • 14.9 acres of vernal pools and associated watershed within the Hardline Conservation Areas (Fanita Ranch Onsite Preserve), including:

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		○ 1.46 acres of vernal pool restoration, including: • 0.13 acres of existing vernal pool preservation • 0.41 acres existing vernal pool reestablishment • 0.93 acres of new vernal pool creation ○ 13.48 acres of associated watershed Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 29.9 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) as well as known and potentially newly identified San Diego fairy shrimp occurrences within the Managed Preserve, including: • 29.9 acres of vernal pools and associated watershed within the Hardline Conservation Areas (Fanita Ranch Onsite Preserve), including: ○ 2.9 acres of vernal pool restoration, including: • 0.25 acres of existing vernal pool preservation • 0.82 acres existing vernal pool reestablishment • 1.85 acres of new vernal pool creation ○ 26.9 acres of associated watershed
		Species Objective 13.2 (S-13.2): Maintain a minimum of 38 San Diego fairy shrimp occupied vernal pools within the Managed Preserve by Year 30 of the permit term.
		Species Objective 13.3 (S-13.3): Avoid, minimize, and mitigate impacts to San Diego fairy shrimp within the Plan Area through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1) and the Vernal Pool Conservation Standards (Section 5.5.7). • Implementation of the Plan by the City will ensure that potential Covered Activity footprints and the Managed Preserve are appropriately surveyed for San Diego fairy shrimp in advance of City project approvals and will ensure that potential impacts from Covered Activities to suitable habitat for San Diego fairy shrimp in the Plan Area is avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated as directed by the Vernal Pool Conservation Standards (Section 5.5.7).

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		Species Objective 13.4 (S-13.4): Protect San Diego fairy shrimp and its suitable habitat within the Preserve through implementation of Management Actions and Adaptive Management Strategies for San Diego fairy shrimp.
Reptiles and Amphibians		
Belding's orange-throated whiptail	**Species Goal 14 (S-14):** Conserve suitable habitat to ensure the long-term persistence of Belding's orange-throated whiptail within the Plan Area.	**Species Objective 14.1 (S-14.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 1,046.15acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for Belding's orange-throated whiptail within the Managed Preserve, including: • 779.6 acres within the Fanita Ranch Onsite Preserve • 165.45 acres within the Upland Standards Areas And enhance management of 58.34 acres within the City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 2,015.6 acres of suitable habitat as well as known and potentially newly identified occurrences for Belding's orange-throated whiptail within the Managed Preserve, including: • 1,559.1 acres within the Fanita Ranch Onsite Preserve • 330.9 acres within the Upland Standards Areas And enhance management of 125.6 acres within the City-Owned Preserve Lands.
		Species Objective 14.2 (S-14.2): Avoid and minimize potential impacts to Belding's orange-throated whiptail from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1).
		Species Objective 14.3 (S-14.3): Protect Belding's orange-throated whiptail and its suitable habitat within Preserves from Argentine ant infestations, unauthorized anthropogenic uses, and edge effects through implementation of Management Actions and Adaptive Management Strategies for Belding's orange-throated whiptail.
Blainville's horned lizard	**Species Goal 15 (S-15):** Conserve suitable habitat to ensure the long-term persistence of Blainville's horned lizard within the Plan Area.	**Species Objective 15.1 (S-15.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 973.8 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for Blainville's horned lizard within the Managed Preserve, including: • 792.75 acres within the onsite Fanita Ranch Preserve

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		• 165.45 acres within the Upland Standards Areas And enhance management of 58.34 acres within the City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,947.60 acres of suitable habitat as well as known and potentially newly identified occurrences for Blainville's horned lizard within the Managed Preserve, including: • 1,585.5 acres within the onsite Fanita Ranch Preserve • 330.9 acres within the Upland Standards Areas And enhance management of 125.6 acres within the City-Owned Preserve Lands for a total of 2,042.0acres in the Managed Preserve.
		Species Objective 15.3 (S-15.3): Avoid and minimize potential impacts to Blainville's horned lizard from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1). In addition, in order to avoid and minimize effects to Blainville's horned lizard, translocate species from Covered Activity footprints to suitable habitat in the Managed Preserve unless notified in advance by the Wildlife Agencies that translocation is not necessary.
		Species Objective 15.4 (S-15.4): Protect Blainville's horned lizard and its suitable habitat within Preserves from Argentine ant infestations, unauthorized anthropogenic uses, and edge effects through implementation of Management Actions and Adaptive Management Strategies for Blainville's horned lizard.
Western spadefoot	**Species Goal 16 (S-16):** Conserve existing populations, conserve and maintain suitable habitat to ensure the long-term persistence of western spadefoot within the Plan Area.	**Species Objective 16.1 (S-16.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 20.9 acres of a combination of newly conserved suitable breeding and adjacent upland habitats, 810.5 acres of suitable habitat as well as known and potentially newly identified western spadefoot toad occurrences within the Managed Preserve, including: • 14.9 acres of vernal pools and associated watershed within the Hardline Conservation Areas (Fanita Ranch Preserve), including: ○ 1.46 acres of vernal pool restoration, including: • 0.13 acres of existing vernal pool preservation • 0.41 acres existing vernal pool reestablishment

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]

		• 0.93 acres of new vernal pool creation
		  ○ 13.48 acres of associated watershed
		• 810.5 acres of suitable upland habitat within the Fanita Ranch onsite Preserve
		• 6.0 acres of suitable breeding areas within the Upland Standards Areas
		• 147.0 acres of suitable upland habitat within the Upland Standards Areas
		Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 41.8 acres of a combination of suitable breeding and adjacent upland habitats, 1,914 acres of suitable upland habitat as well as known and potentially newly identified occurrences for western spadefoot within the Managed Preserve, including:
		• 29.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve), including:
		  ○ 2.92 acres of vernal pool restoration, including:
		• 0.25 acres of existing vernal pool preservation
		• 0.82 acres existing vernal pool reestablishment
		• 1.85 acres of new vernal pool creation
		  ○ 26.9 acres of associated watershed
		• 1,620.0 acres of suitable upland habitat within the Fanita Ranch Onsite Preserve
		• 11.9 acres of suitable breeding areas within the Upland Standards Areas
		• 294.0 acres of suitable upland habitat within the Uplands Standards Areas.

		Species Objective 16.2 (S-16.2): Maintain a minimum of 5 distinct (i.e. separated by at least 40 meters) and occupied western spadefoot breeding areas (i.e. pool complexes) within the Managed Preserve by Year 30 of the permit term.
		Species Objective 16.3 (S-16.3): Maintain suitability of potential breeding habitat for the western spadefoot in the Plan Area, including protection of vernal pools and their associated watersheds for potential breeding habitat. Maintain suitability for effective and viable (unimpeded) movement by western spadefoot toads between potential breeding and upland habitats. Provide no net loss of occupied breeding and upland habitats for western spadefoot. Condition approval of Covered Activities nearby to western spadefoot

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		habitat to minimize/avoid spillover noise and nighttime lighting into habitat areas, to the extent practicable.
		Species Objective 16.4 (S-16.4): Avoid and minimize potential impacts to western spadefoot from Covered Activities through implementation of western spadefoot species-specific standards and the Vernal Pool Conservation Standard. Implementation of the Plan by the City will ensure that potential Covered Activity footprints and the Managed Preserve are appropriately surveyed for western spadefoot in advance of City project approvals and will ensure that potential impacts from Covered Activities to suitable habitat for western spadefoot in the Plan Area is avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated as directed by the Vernal Pool Conservation Standard.
		Species Objective 16.5 (S-16.5): Protect western spadefoot and its suitable habitat within Preserves from habitat fragmentation and disturbance, invasive non-native plant species, unauthorized human access, and edge effects through implementation of Management Actions and Adaptive Management Strategies for western spadefoot.
Birds		
Coastal cactus wren	**Species Goal 17 (S-17):** Conserve existing populations, conserve and maintain suitable habitat with landscape-level connections to ensure the persistence of coastal cactus wren within the Plan Area and support the regional population.	**Species Objective 17.1 (S-17.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 675.45acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for coastal cactus wren within the Managed Preserve, including: • 545.4 acres within the Fanita Ranch Onsite Preserve • 129.75 acres within the Upland Standards Areas And enhance management of 6.6 acres within the City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,350.9 acres of suitable habitat as well as known and potentially newly identified occurrences for coastal cactus wren within the Managed Preserve, including: • 1,090.8 acres within the Fanita Ranch Onsite Preserve • 259.5 acres within the Upland Standards Areas

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		And enhance management of 13.2 acres within the City-Owned Preserve Lands for a total of 1,363.4 acres within the Managed Preserve.
		Species Objective 17.2 (S-17.2): Maintain a sustainable population of at least 10 coastal cactus wren pairs within the Managed Preserve by Year 30 of the permit term.
		Species Objective 17.3 (S-17.3): Avoid and minimize potential impacts to coastal cactus wren from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1).
		Species Objective 17.4 (S-17.4): Protect coastal cactus wren and its suitable habitat within the Managed Preserve from invasive non-native plant and animal species, unauthorized anthropogenic uses, and edge effects through implementation of Management Actions and Adaptive Management Strategies for coastal cactus wren.
		Species Objective 17.5 (S-17.5): Transplant native prickly pear and cholla cactus species typical of cactus wren habitat that would be affected within unavoidable Covered Activities project footprints to appropriate potential cactus wren habitat areas in the Plan Area that are protected, to the extent practicable and these receptor areas are available. Condition approval of Covered Activities nearby to coastal cactus wren habitat to minimize/avoid spillover noise and nighttime lighting into habitat areas, to the extent practicable.
Coastal California gnatcatcher	**Species Goal 18 (S-18):** Conserve existing populations, conserve and maintain suitable habitat with landscape-level connections to ensure the regional persistence of coastal California gnatcatcher within the Plan Area.	**Species Objective 18.1 (S-18.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 676.75 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for coastal California gnatcatcher within the Managed Preserve, including: • 527.45 acres within the Fanita Ranch Onsite Preserve • 148.5 acres within the Upland Standards Areas And enhance management of 13.14 acres within the City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 1,353.50 acres of suitable habitat as well as known and potentially newly identified occurrences for coastal California gnatcatcher within the Managed Preserve, including: • 1,054.90 acres within the onsite Fanita Ranch Preserve • 297.0 acres within the Upland Standards Areas

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		And enhance management of 26.29 acres within the City-Owned Preserve Lands for a total of 1,379.5 acres within the Managed Preserve.
		Species Objective 18.2 (S-18.2): Maintain a sustainable population of 36 coastal California gnatcatcher pairs within the Managed Preserve by Year 30 of the permit term.
		Species Objective 18.3 (S-18.3): Preserve a minimum of 5 stepping-stone areas containing suitable occupied coastal California gnatcatcher habitat that connect into areas outside the Plan Area by Year 30 of the permit term.
		Species Objective 18.4 (S-18.4): Avoid and minimize potential impacts to coastal California gnatcatcher from Covered Activities through implementation of the General Conditions for Covered Species Conservation Standards (Section 5.5.9.1).
		Species Objective 18.5 (S-18.5): Protect coastal California gnatcatcher and its suitable habitat within Preserves from invasive non-native plant species, unauthorized public access, and edge effects through implementation of Management Actions and Adaptive Management Strategies for coastal California gnatcatcher.
Least Bell's vireo	**Species Goal 19 (S-19):** Conserve existing populations, conserve and maintain suitable habitat, and increase reproductive success of least Bell's vireo within the Plan Area.	**Species Objective 19.1 (S-19.1):** By Year 15, permanently protect, manage, and monitor 19.65 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for least Bell's vireo within the Managed Preserve, including: • 2.1 acres within the onsite Fanita Ranch Preserve • 0.1 acre within the Upland Standards Areas And enhance management of 54.14 acres within the City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 39.3 acres of suitable habitat as well as known and potentially newly identified occurrences for least Bell's vireo within the Managed Preserve, including: • 4.2 acres within the Fanita Ranch Onsite Preserve • 0.2 acre within the Upland Standards Areas And enhance management of 116.1 acres within the City-Owned Preserve Lands for a total of 120.5 acres in the Managed Preserve.

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		Species Objective 19.2 (S-19.2): Maintain a sustainable population of at least 38 pairs/territorial males of least Bell's vireo occurrences within the Managed Preserve by Year 30 of the permit term.
		Species Objective 19.3 (S-19.3): Avoid and minimize potential impacts to least Bell's vireo from Covered Activities through implementation of least Bell's vireo species-specific standards (Section 5.5.9.4).
		Species Objective 19.4 (S-19.4): Protect least Bell's vireo and its suitable habitat within the Managed Preserve from habitat fragmentation and disturbance, cowbird parasitism, unauthorized human access, and edge effects through implementation of Management Actions and Adaptive Management Strategies for least Bell's vireo.
		Species Objective 19.5 (S-19.5): Monitor and control the subpopulation of brown-headed cowbirds within the Plan Area, as necessary per monitored least Bell's vireo parasitism rates within the Plan Area. Condition approval of Covered Activities nearby to least Bell's vireo habitat to minimize/avoid spillover noise and nighttime lighting into habitat areas, to the extent practicable. Provide no net loss of suitable least Bell's vireo habitat within the Plan Area.
Western burrowing owl	**Species Goal 20 (S-20):** Conserve and maintain suitable habitat for western burrow owl within the Plan Area and protect western burrowing owl when they occur in the Plan Area.	**Species Objective 20.1 (S-20.1):** By Year 15 of the permit term, permanently protect, manage, and monitor 369.35 acres of newly conserved suitable habitat as well as known and potentially newly identified occurrences for western burrowing owl within the Managed Preserve, including: • 309.7 acres within the Fanita Ranch Onsite Preserve • 56.1 acres within the Upland Standards Areas And enhance management of 12.59 acres within the City-Owned Preserve Lands. Complete assembly of the Managed Preserve by Year 30 to ensure the permanent protection, management, and monitoring of a total of 738.7 acres of suitable habitat as well as known and potentially newly identified occurrences for western burrowing owl within the Managed Preserve, including: • 619.4 acres within the Fanita Ranch Onsite Preserve • 112.2 acres within the Upland Standards Areas

Table 5-1. Biological Goals and Objectives (cont.)

Biological Resource	Goals	Objectives [a]
		And enhance management of 28.1 acres within the City-Owned Preserve Lands for a total of 759.7 acres within the Managed Preserve.
		Species Objective 20.2 (S-20.2): Avoid and minimize potential impacts to western burrowing owl from Covered Activities through implementation of western burrowing owl Species-specific Standards (Section 5.5.9.5).
		Species Objective 20.3 (S-20.3): Protect burrowing owl and its suitable habitat within Preserves from habitat disturbance and edge effects through implementation of Management Actions and Adaptive Management Strategies for western burrowing owl.

[a] Numbers may not sum exactly due to rounding

5.3 Conservation Measure 1—Establish Subarea Plan Managed Preserve

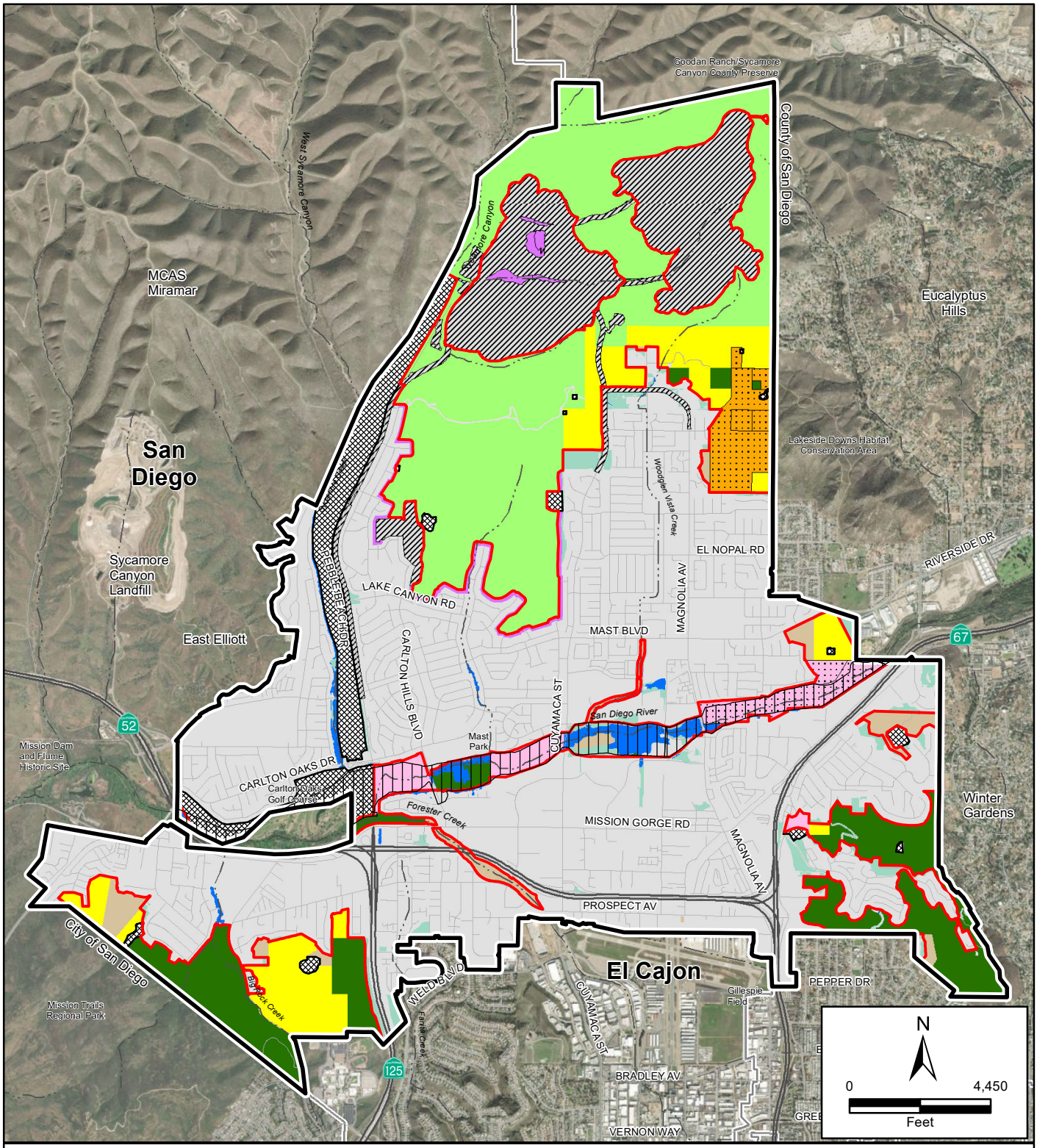
This conservation measure describes how the Subarea Plan Managed Preserve will be established to benefit the Covered Species, natural communities, and ecosystems within the Subarea Plan boundary (See Figure 5-1). The ecosystems of the Subarea and the vegetation communities and sensitive species they support are fragile, irreplaceable resources that are vital to the general welfare of all residents. The Subarea Plan is designed to promote conservation of native biodiversity and ecosystem function, while allowing for identified economic development and land use in the City. Consequently, designing the Preserve involves balancing two sets of goals.

- Protect and conserve natural vegetation communities and Covered Species habitat to meet the goals and objectives addressed in Section 5.2 of the Subarea Plan.
- Provide for housing, recreation, transportation, economic development, and other community and regional goals.

The approach taken in designing the Subarea Plan Managed Preserve involved identifying those properties where conservation will best achieve biological goals with the least detrimental effects on other land use, property rights, or economic goals. This approach involved carefully examining the opportunities and constraints of incorporating biologically valuable lands into the Subarea Plan Managed Preserve, using the following strategy:

- Connect with existing preserves and currently protected open space within and adjacent to the Plan Area.
- Incorporate new preserve boundaries associated with the Fanita Ranch hardline project.
- Ensure conservation of the full range of extant vegetation types within the Plan Area.
- Ensure that new development is located such that new preserves are conserved in area and configuration that are consistent with ecological functioning important to Covered Species, considering the surrounding development.
- Maintain viable occurrences/subpopulations of Covered Species and their habitats.
- Maintain functional wildlife corridors and ecological linkages between important biological resource areas.

Figure 5-3 depicts the Managed Preserve and Open Space Preserve System. This Figure shows the Subarea Plan Managed Preserve and connection with the Existing Protected Open Space and Other Open Space. Table 5-2 summarizes the acreage of natural habitats within the Managed Preserve. The following sections describe in more detail the components of the Managed Preserve and steps associated with the assembly of the Preserve.



Subarea Plan Managed Preserve

Subarea Plan Mitigation Lands

- Hardline Conservation Lands
- Upland Standards Areas

Subarea Plan Protected Open Space

- City-Owned Preserve Lands

Existing Protected Open Space

- Fully Conserved Existing Conservation Lands
- Partially Conserved Existing Conservation Lands
- Other Protected Open Space

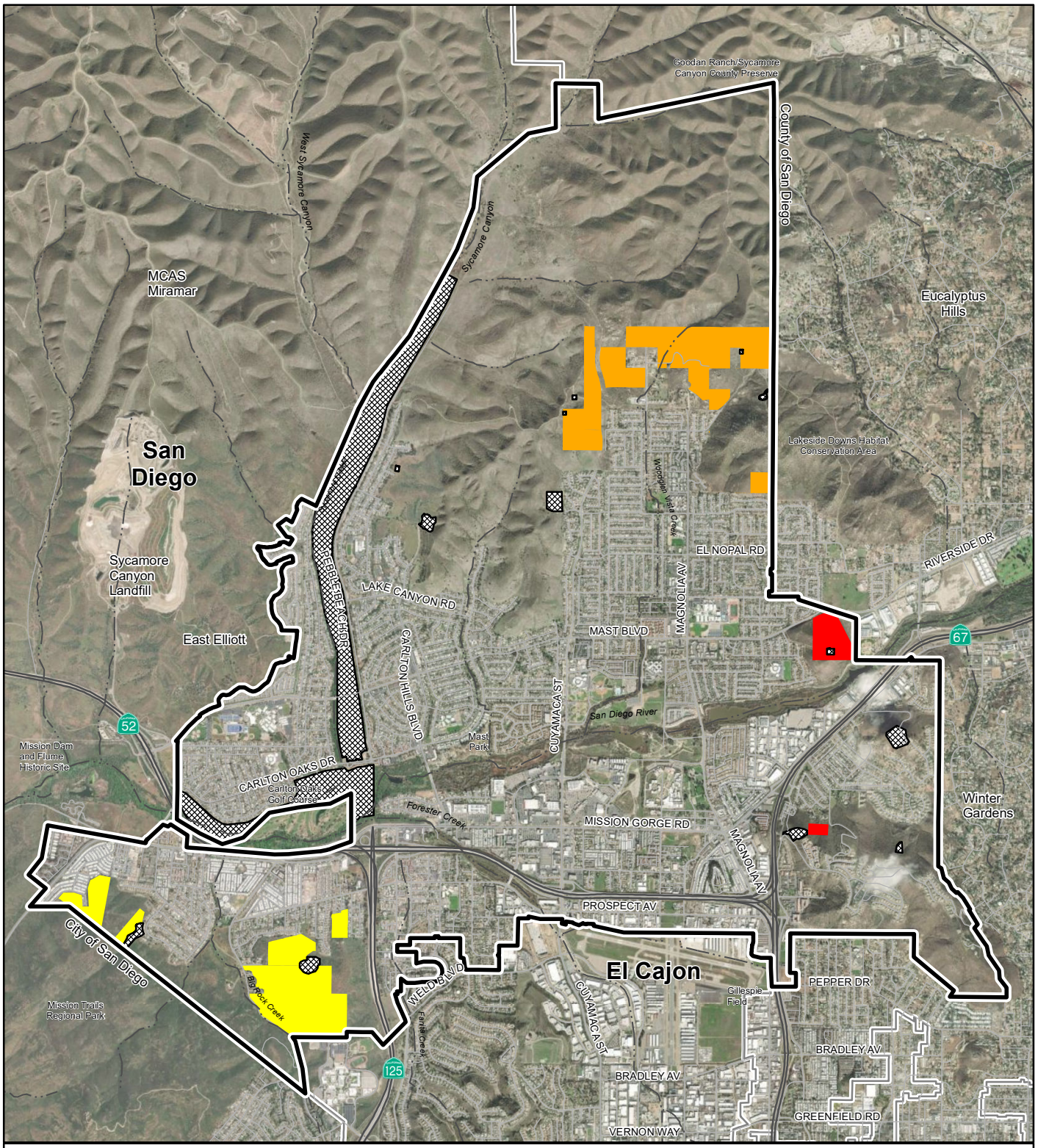
Habitats Outside Managed Preserve and Outside Existing Protected Open Space

- Riparian/Aquatic Habitats
- Upland Habitats within Infill Development Areas

- City Boundary
- Open Space Network
- Acquired Through State/Federal Funding
- Hardline Development Areas
- Hardline Neutral Areas
- Not a Part
- 100-Year FEMA Floodway
- Developed/Disturbed

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Figure 5-1
Santee Managed Preserve and Open Space System
Santee MSCP Subarea Plan



City Boundary
Not a Part

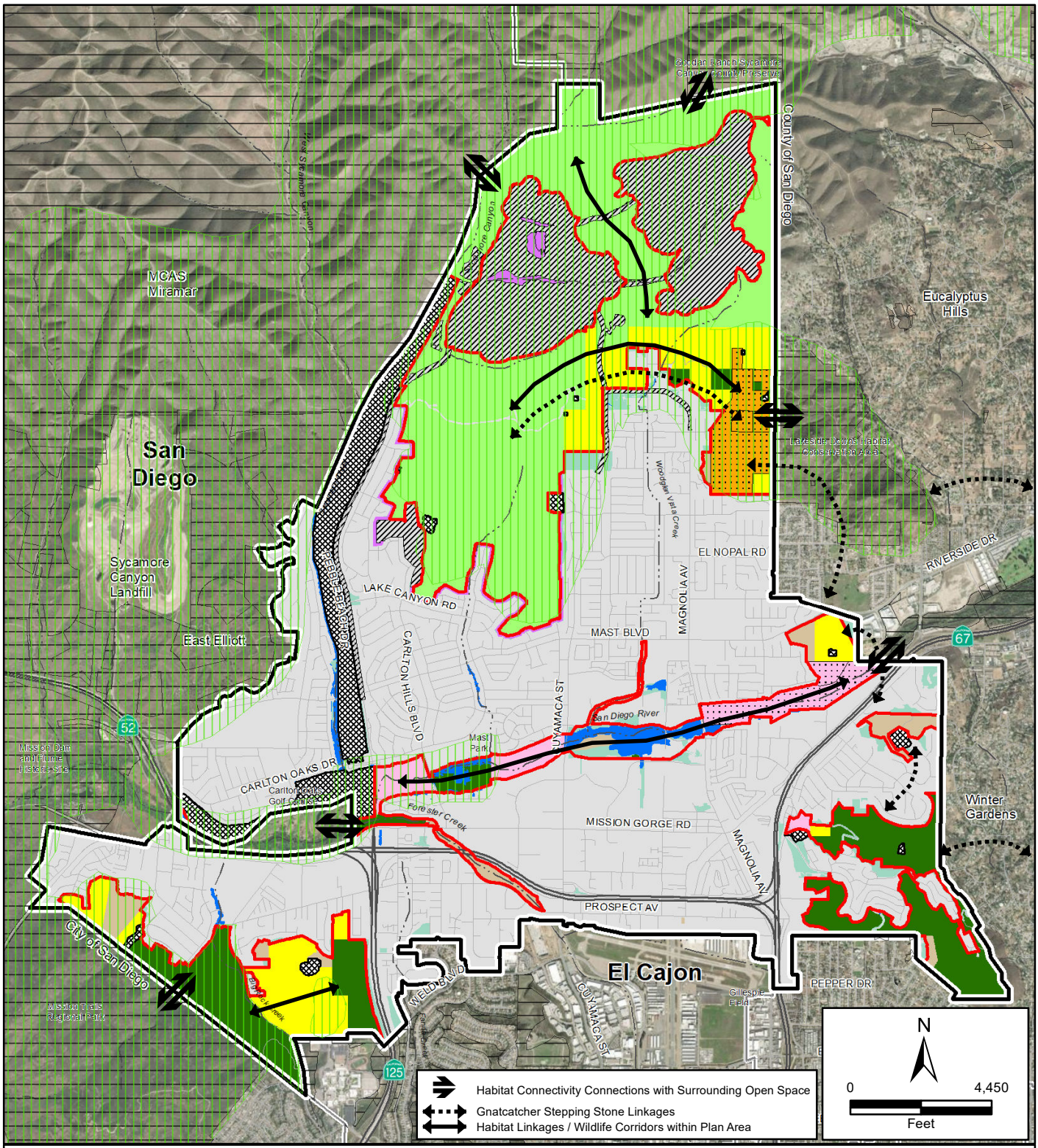
Subarea Plan Upland Standards Areas
Mission Trails
North Magnolia
East Santee Uplands

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Figure 5-2
Upland Standards Areas
Santee MSCP Subarea Plan



Subarea Plan Managed Preserve

Subarea Plan Mitigation Lands

- Hardline Conservation Lands
- Upland Standards

Subarea Plan Protected Open Space

- City-Owned Preserve Lands

Existing Protected Open Space

- Fully Conserved Existing Conservation Lands
- Partially Conserved Existing Conservation Lands
- Other Protected Open Space

Habitats Outside Managed Preserve and Outside Existing Protected Open Space

- Riparian/Aquatic Habitats
- Upland Habitats within Infill Development

- City Boundary
- Open Space Network
- MSCP Biological Core
- Acquired Through State/Federal Funding
- Hardline Development
- Hardline Neutral
- Not a Part
- Protected Lands Surrounding the City of Santee
- Developed/Disturbed

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 5-3 Preserve Habitat Connectivity and Connections.mxd Date: 7/16/2025 34153

Figure 5-3
Preserve Habitat Connectivity and Linkages
Santee MSCP Subarea Plan

Table 5-2. Habitat Conserved within Subarea Plan Managed Preserve

Subarea Plan Managed Preserve – Components	Acres of Habitat Conserved within Managed Preserve
Hardline Conservation Areas:	
Onsite	1,593.8
Offsite	171.1
Future Preserves in Upland Standard Areas	330.8 [b]
Existing City-Owned Preserve Lands	167.3
Totals Within the Subarea Plan Managed Preserve [a]	**2,263.0 [c]**

[a] Numbers may not sum exactly due to rounding.

[b] Acreage estimates for Standards Areas based on the assumption that 70 percent of each habitat type present would be conserved.

[c] The Managed Preserve is slightly larger than the acres of natural habitat due to the presence of trails, roads, utility easements, and in the case of the San Diego River Subunit, also defensible space.

5.3.1 Subarea Plan Managed Preserve Components

The Managed Preserve will be assembled from a variety of components. This section describes these components and their contributions to the Preserve System.

5.3.1.1 Hardline Conservation Areas

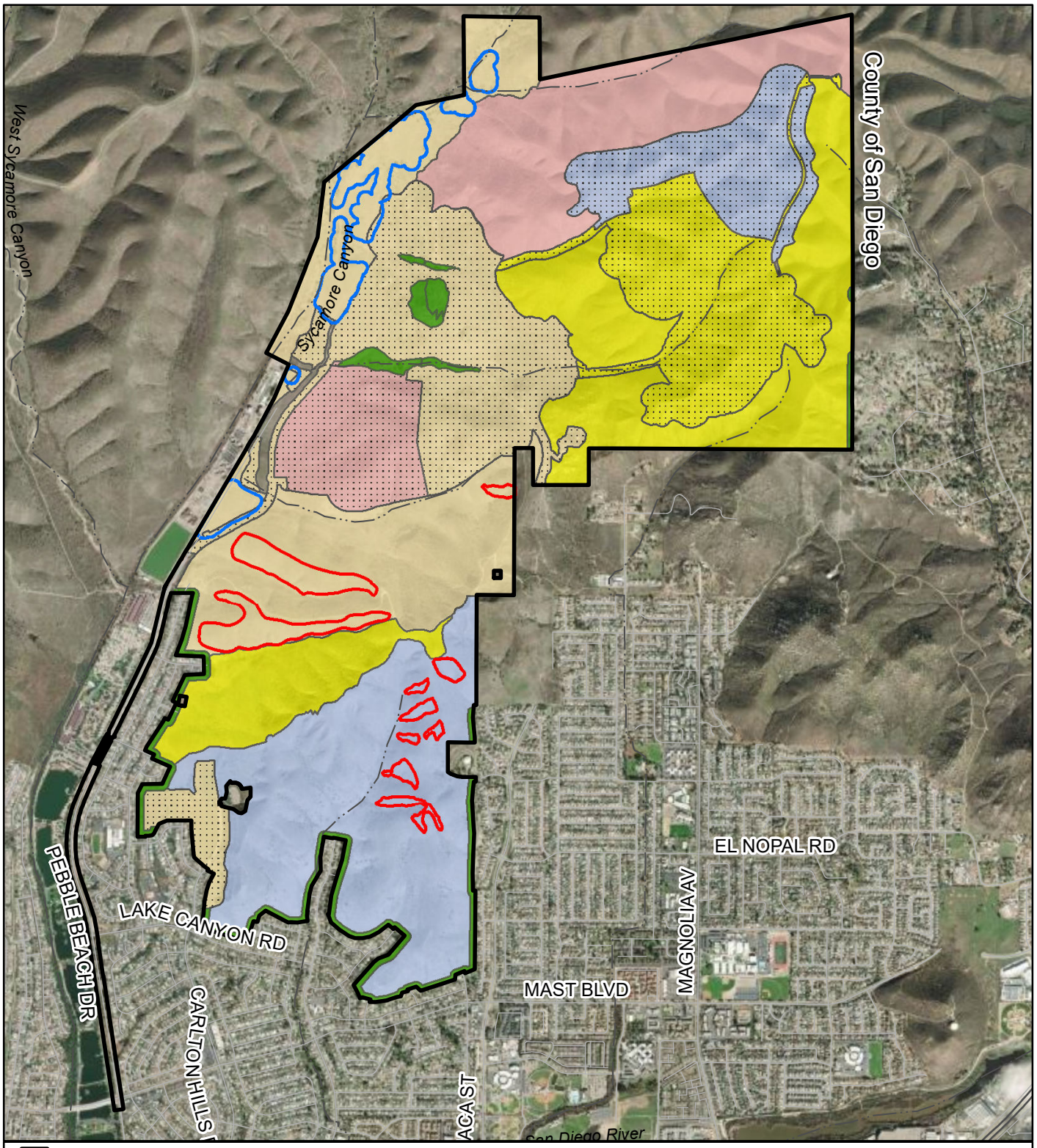
The conservation strategy for the Hardline Development Project includes the establishment of Fanita Ranch Onsite Preserve as well as two Offsite Conservation Areas outside of the jurisdiction of Santee:

- Onsite Preserve – Within the Fanita Ranch property, an Onsite Preserve consisting of approximately 1,650.4 acres will be established by the project applicant to preserve, manage and monitor in perpetuity. The Onsite Preserve will include a total of 1,593.8 acres of natural vegetation communities, approximately 10.52 acres of proposed trails, 6.88 acres of San Diego Gas & Electric access road and 39.0 acres of utility easements. Approximately 114.47 acres of onsite temporary impacts will be restored and included in the Habitat Preserve. Perpetual preservation of the Onsite Preserve requires recordation of a Wildlife Agency approved conservation easement and in-perpetuity management and monitoring by the Preserve Manager in accordance with a Resource Management Plan (RMP) reviewed and approved by the City and Wildlife Agencies. The RMP includes a combination of active and passive restoration programs to gradually increase biological resources within preserve areas through periodic treatments, mainly involving seed application on a landscape level combined with exotic plant control activities. Habitat restoration activities within the Onsite Preserve will include creation and enhancement of vernal pool habitats; creation, enhancement, and translocation of coastal cactus wren habitat; translocation and planting of San Diego goldenstar; western spadefoot relocation from development footprint areas to preserve areas; restoration of habitat for Quino checkerspot butterfly; and other habitat enhancement actions. Onsite restoration and enhancement for species (generally outside a 200-meter buffer along development areas) will be conducted in accordance with the RMP approved by the Wildlife Agencies. The cost for these activities, along

with monitoring and management costs, will be determined by the Property Analysis Record or similar program.

- Quino Checkerspot Butterfly Offsite Conservation Area – The project proponent will address mitigation for impacts to Quino checkerspot butterfly habitat through protection and restoration of properties in the East Elliott portion of Mission Trails Regional Park which total 90.73 acres of acquisition (17.85 acres of which is to be restored) and funding for perpetual management and monitoring. An additional 18.44 acres of Quino host plant restoration and management on property already owned by the City of San Diego will be funded by the project proponent. The newly acquired properties will be deeded to the City of San Diego and legally protected and the City of San Diego will be responsible for the long-term management and monitoring for the newly acquired properties and Quino host plant restoration areas in accordance with the Restoration Management Plan for the Offsite Conservation Area that will be subsumed into the City's Mission Trails Regional Park (MTRP) Natural Resources Management Plan after the successful restoration of the site is achieved. The project proponent will fund an endowment for the City of San Diego for the perpetual management and monitoring of the newly acquired sites and the restoration sites in addition to providing the funding for restoring the acreage described above.
- Hermes Copper Butterfly Offsite Conservation Area – The project proponent will acquire a conservation easement on 80.4 acres in the eastern part of San Diego County near Alpine that has been documented to support Hermes copper butterfly. This offsite conservation site is legally encumbered for its perpetual conservation and will be funded in accordance with a Property Analysis Record (PAR) or PAR-like analysis to ensure perpetual management and monitoring consistent with a Resource Management Plan that will be prepared and reviewed and approved by the City and Wildlife Agencies prior to issuance of the grading permit for the Hardline Development Project.

As depicted in Figure 5-4, the Onsite Preserve and Offsite Conservation Areas will be assembled in four phases, in conjunction with the development phases. In phase 1, there will be approximately 356 acres of impact in the Covered Activity footprint and 541 acres protected in the Onsite Preserve. In phase 2, there will be 122 acres of impact in the Covered Activity footprint and 304 acres protected in the Onsite Preserve and Hermes copper butterfly Offsite Conservation Area. In phase 3, there will be 251 acres of impact in the Covered Activity footprint and 463 acres protected in the Onsite Preserve and Quino checkerspot butterfly and Hermes copper butterfly Offsite Conservation Areas. In phase 4, there will be 146 acres of impact in the Covered Activity footprint and 455 acres protected in the Onsite Preserve. Table 5-3 summarizes the acres of natural habitat conserved and managed by the Hardline Development Project.



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Figure 5-4
Fanita Ranch Proposed Phasing Plan
Santee MSCP Subarea Plan

Table 5-3. Acres of Habitat Conserved in Hardline Conservation Areas

Fanita Ranch Conservation Lands	Land Management Entity	Acres of Natural Habitat
Onsite Preserve	TBD	1,593.8
Quino Checkerspot Butterfly Offsite Conservation Area (new habitat acquisition in MTRP East Elliott)	City of San Diego	90.7
Hermes Copper Butterfly Offsite Conservation Area	TBD	80.4
Total Acres of Conservation:		**1,764.9**

5.3.1.2 Upland Standards Areas

The Subarea Plan conservation strategy includes designating portions of the Plan Area as Upland Standards Areas (Figure 5-2). These areas include the following:

- Undeveloped privately owned lands that contain natural habitat.
- Undeveloped land that does not have an approved planned project but is subject to future development consistent with the General Plan.
- Undeveloped land located in areas between and/or adjacent to blocks of protected open space where conservation will benefit wildlife movement, ecological linkage, and/or Covered Species.

The Upland Standards Areas designation serves two functions: (1) identifies areas where offsite mitigation may occur associated with Covered Activity project impacts elsewhere in the City's Plan Area boundaries and/or land acquisitions will be directed within the Plan Area solely for conservation purposes ; and (2) identifies the conservation (70 percent) of the land to be set aside for preservation associated with any future development project within the Upland Standard Areas. These lands to be preserved will be perpetually conserved and managed and incorporated into the Subarea Plan Managed Preserve as development within the Upland Standards Areas occurs or as lands are acquired for mitigation and/or conservation purposes.

The City delineated three subunits of the Upland Standards areas – North Magnolia, Mission Trails, and East Santee Uplands. Figure 5-2 shows the locations of each unit of the Upland Standards Areas.

Covered Activities within the Upland Standards Areas will be reviewed in accordance with the Habitat Loss and Incidental Take (HLIT)Ordinance and subject to approval by the City in coordination with the Wildlife Agencies based on the following procedures and checklist:

- Project Area
    - Project is located within one of the following Upland Standards Areas:
        - North Magnolia
        - Mission Trails
        - East Santee Uplands

- The Upland Standards Areas conservation and development footprint requirements shall be applied by the City on a parcel-by-parcel or aggregate of parcels basis. If there are multiple parcels as part of a single proposed development project, the parcels do not have to be contiguous, but all parcels must be located within the same individual Upland Standards Area.
- The City will ensure that the development project planning is coordinated appropriately when there are multiple owners working together on development of adjacent parcels within the Upland Standards Areas so that the biological and preserve design goals and Covered Species conservation needs are met.

- Allowable Percentage of Development Area
  - For each individual project within Upland Standards Areas, the project proponent will determine for the City the percentage of the subject parcel(s) that will be affected by the project footprint (including defensible space zones and all associated infrastructure and utilities) and areas that will be included in the onsite Habitat Preserve.
  - An individual project within the Upland Standards Areas will be allowed by the City to impact no more than 30 percent of the parcel(s) and shall be required include at least 70 percent of the parcel(s) within a Habitat Preserve to be perpetually conserved and managed/monitored. Exiting designated open space on a parcel(s) will not count towards this 70 percent conservation target. Similarly, the onsite Habitat Preserve set aside for a project cannot be later used as mitigation for other projects.
  - A project proponent may request an exemption to allow up to 35 percent of the subject parcel(s) to be affected by the proposed development footprint if the project proponent can demonstrate to the City that it is not practicable to construct the project within 70 percent of the property. The requirements for demonstrating impracticability are set out in the HLIT. The City may only approve such an exemption up to 35 percent if the City determine that the overall conservation percentage within the individual Upland Standards Area is and will remain at or above 70 percent even with the proposed project as designed, due to other projects providing more than the required conservation of 70 percent or preserve land acquisitions by the City or third parties has previously occurred (see Section 8.5.1, *Habitat tracking and reporting*, of the Subarea Plan for further description of the Upland Standards Areas tracking requirements and guidelines that the City will follow).

- Project Design Requirements
  - As detailed in the HLIT ordinance, the project proponent will need to demonstrate to the City that the project development: (1) would be located in the least biologically sensitive portion of the site parcel(s), with Tier 1 (native grasslands) being the most sensitive habitat type, Tier 2 (coastal sage scrub and coastal sage scrub/chaparral) being the next most sensitive, followed by Tier 3 (chaparral) and Tier 4 (disturbed lands and eucalyptus woodland); (2) would maintain appropriate onsite conservation for the affected Covered Species, (3) would contribute to the function and contiguity of the remaining habitats onsite, and to the contiguity of the remaining habitat and build-out of the Subarea Plan Preserve, based on the configuration and surrounding context (e.g., nearby development and conservation) of the preservation and development areas of the project as proposed, and (4) would avoid

fragmentation of the Standards Area. The City will fully evaluate and potentially modify the proposed project based on the following questions to the applicant, as part of the City's project development review process:

- Does the project design cluster development adjacent and close by to existing developed areas?
- Does the project design effectively minimize edge effects to adject preserve areas, including minimizing the area-to-edge ratio between development and open space?
- Are the proposed conservation areas sited to functionally maintain connectivity and linkage with adjacent preserve areas?
- Does the project avoid sensitive biological resources and areas occupied by or suitable for Covered Species to the extent feasible?
- Does the proposed project avoid fragmentation of the subject Standards Area?

- Specific goals for the North Magnolia Standards Area:
  - Protect connectivity between habitat preserve lands on Fanita Ranch Hardline Conservation Areas to the north and east and habitat preserves to the south and east (Endangered Habitats Conservancy (EHC) Cheyenne, Capralis, Brown, and Lakeside Downs Habitat Conservation Area).
  - Cluster development adjacent and close by to existing development at the ends of Cuyamaca Street, Magnolia Avenue, and Summit Avenue.
  - Maintain and protect an open space linkage that will provide ecological connectivity east to west across and surrounding the future Cuyamaca Street extension that will bisect the North Magnolia Standards Area.
  - Minimize widely spaced development across multiple parcels with long driveways that are likely to reduce ecological connectivity.
- Specific goals for the Mission Trails Standards Area:
  - Protect ecological connectivity east to west between the habitat preserve lands managed by the Center for Natural Lands Management (CNLM) to the east and Mission Trails Regional Park to the west.
  - Cluster development adjacent to and close by to existing developed areas at the end of Mesa Road.
  - Control OHV use and trespassing originating off of Mesa Road and Dove Hill Road on to nearby undeveloped lands.
  - Conserve and protect cactus scrub and potential coastal cactus wren habitat.
- Specific goals for the East Santee Uplands Standards Area:
  - Ensure any future development is clustered in a manner that is adjacent and close by to the existing development areas.

- Conserve and protect the coastal sage scrub/cactus scrub habitat blocks that function as a stepping-stone corridor for the coastal California gnatcatcher and other species.

- Mitigation
  - The City will require that Covered Activities within the Upland Standards Areas will mitigate project impacts by implementing and requiring the following as part of project development approvals:
    - Onsite Habitat Preserve – an onsite Habitat Preserve will be established on the 70 percent in coordination with the City and City Preserve Manager. This will include:
      - Legal site protection mechanism (Conservation Easement for private landowner, Restrictive Covenant for City ownership);
      - A non-wasting endowment or equivalent mechanism to ensure a secure funding source for long-term management and monitoring in perpetuity;
      - Individual Preserve Resource Management Plan addendum, a streamlined management plan prepared by the approved Preserve Manager that tiers off and is incorporated into the Preserve Complex RMP (see Section 7.2.2, Preparation of Preserve Complex Resources Management Plans (RMPs) that will be prepared prior to any disturbance of the site including grubbing) The RMP will be approved by the City and Wildlife Agencies;
      - Dedicated Preserve Manager (mostly likely the City Preserve Manager unless a project proponent identifies a separate Preserve Manager for approval by the City and Wildlife Agencies).
  - Conservation Measures
    - A Covered Activity within an Upland Standards Areas will also be required by the City to implement Conservation Measures where applicable, including:
      - Avoidance and Minimization Measures (Section 5.5.1)
      - Linkages, Wildlife Corridors and Wildlife Crossing Structure Criteria (Section 5.5.3)
      - Fire Defensible Space Standards (Section 5.5.4)
      - Aquatic, Wetlands, and Riparian Protection Standards (Section 5.5.5)
      - Narrow Endemic Species Standards (Section 5.5.6)
      - Vernal Pool Conservation Standards (Section 5.5.7)
      - Covered Plant Species Translocation and Restoration Conservation Standards (Section 5.5.8)
      - Species-Specific Conservation Standards (Section 5.5.9)
      - Note: projects within the Upland Standards Areas do not apply the Uniform Mitigation Ratios since the mitigation requirements are based on the total project conservation percentage (70 percent requirement).

Table 5-4 provides a summary of the acres of natural habitat to be conserved within the Upland Standards Areas.

Table 5-4. Acres of Habitat in Upland Standards Areas

Upland Standards Areas Units	Total Acres Natural Habitat	Acres to be Conserved (70%) [b]
North Magnolia	232.2	162.6
Mission Trails	199.5	139.7
East Santee Uplands	40.7	28.5
Totals: [a]	**472.5**	**330.8**

[a] Numbers may not sum exactly due to rounding.
[b] Acreage estimates for Standards Areas based on the assumption that 70 percent of each habitat type present would be conserved.

5.3.1.3 San Diego River Subunit

Any future proposed development in the riparian, wetland, and aquatic habitats along the river is limited where these habitats occur within the National Flood Insurance Program/Federal Emergency Management Agency Regulatory Floodway;[15] this Floodway is also affected by other regulatory protections. The Subarea Plan recognizes that there may be limited future City Covered Activities within the Floodway (e.g., trails, pedestrian bridges, road crossings, drainage maintenance activities, and defensible space). The estimated impacts of 37.6 acres associated with these Covered Activities would be mitigated through the inclusion of 145.0 acres of habitat on City-owned Preserve Lands in the San Diego River subunit and the enhancement of the habitat through heightened management and monitoring.

To the extent there are impacts in the San Diego River Subunit in excess of the 37.6 acres, Covered Activities will mitigate in accordance with Table 5-13, *Uniform Mitigation Ratios*, and address the Aquatic, Wetlands, and Riparian Protection Standards (see Section 5.5.5). Aquatic, riparian, and wetland areas will be conserved by the Subarea Plan and for wetlands and vernal pools will achieve no-net-loss of acreage, functions (e.g., ecosystem services, Covered Species habitat capacity, water quality protection, floodplain protection), and values (e.g., support or provision of wildlife corridors, ecological linkages, biodiversity, ecosystem services, and aesthetics) within the Plan Area.

5.3.1.4 City-Owned Preserve Lands

As part of the Subarea Plan, the City will expand and provide an enhanced level of biological resources management and monitoring on approximately 167.3 acres of City-owned properties with natural habitat containing important biological resources and value. The City will contract with a preserve management entity (City Preserve Manager) to support the biological management and monitoring of City-owned Preserve Lands.

[15] The Regulatory Floodway is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to pass the base flood discharge without cumulatively increasing flood elevations. Please see the following for more complete definitions: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Flood-Management/Community-Resources/National-Flood-Insurance-Program/Files/CA-NFIP-Quick-Guide-ay11.pdf

Figure 5-1 shows the locations of City-owned Preserve Lands within the Subarea Plan Managed Preserve, and Table 5-5 summarizes acreage and general habitat types for each property.

Table 5-5. City-Owned Preserve Lands

City-Owned Preserve Lands within Subarea Plan Managed Preserve	Biological Management and Monitoring By	Primary Habitat Type	Acres of Natural Habitat
Walker Preserve	City Preserve Manager	Riparian	73.8
Mast Park East (Mission Creek)	City Preserve Manager	Riparian	30.9
Mast Park West	City Preserve Manager	Riparian	40.5
City Property near Walker Preserve	City Preserve Manager	Upland	14.4
Altair Open Space	City Preserve Manager	Upland	7.7
		Total: [a]	**167.3**
[a] Numbers may not sum exactly due to rounding.			

5.3.1.5 Infill Development Areas

As future Covered Activities occur with the Infill Development Areas, the Subarea Plan does require that projects address avoidance, minimization, and mitigation measures per the Subara Plan (see Section 5.5, Avoidance, Minimization, and Mitigation Measures). If compensatory mitigation is required based on the Uniform Mitigation Ratios, mitigation will be directed into the Upland Standards Areas or San Diego River Subunit, or for smaller projects, the impacts can be offset with payment of a development fee into the Subarea Plan Conservation Fund.

5.3.2 Ecological Linkage and Wildlife Corridor Connectivity

An essential consideration in the configuration and functionality of the Subarea Plan Managed Preserve is to maintain ecological linkages and wildlife movement corridors between core biological resources areas. Much of the natural habitats in the Plan Area are fragmented due to historic agricultural use and more recent urban development, thus limiting the potential for north–south wildlife movement and ecological linkage. However, significant blocks of unprotected natural areas remain that are adjacent or nearby that connect to areas of core conserved wildlife habitats. A large habitat block in southwest Santee is contiguous with MTRP, and the Fanita Ranch Hardline Development Project site contains a large, undeveloped habitat block in northwest Santee adjacent to Marine Corps Air Station (MCAS) Miramar lands, and City of San Diego and County preserve areas just outside the Plan Area. The riparian areas and floodway/floodplain associated with the San Diego River serve as an important east–west wildlife movement corridor and ecological linkage through the Plan Area. The remaining habitat areas in southeastern Santee, on Rattlesnake Mountain, are relatively isolated and surrounded by residential development but continues to function as blocks of habitat for the coastal California gnatcatcher and some other coastal sage scrub species.

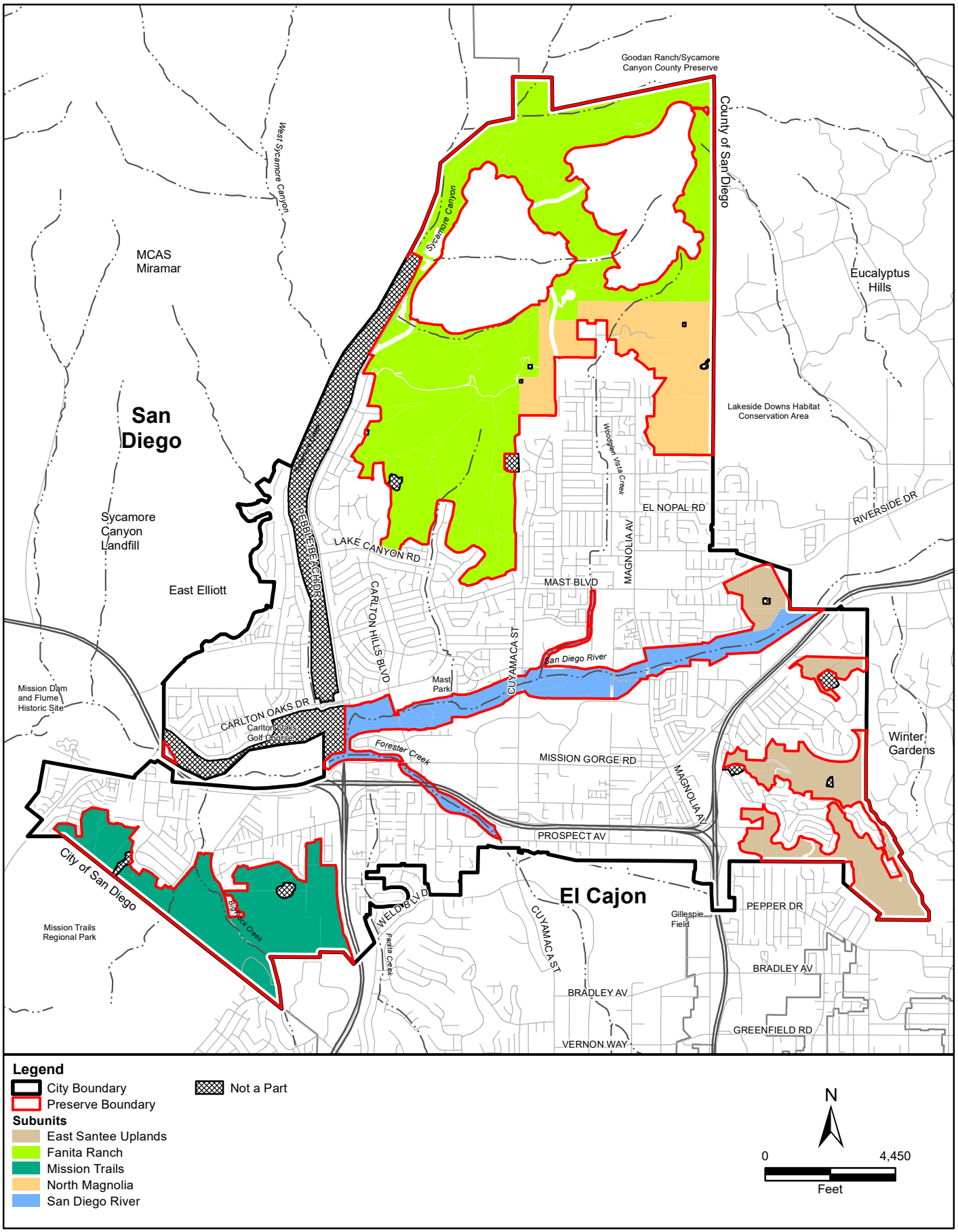
- Habitat connectivity and wildlife corridor goals for ensuring the Managed Preserve connects with adjacent open space within the Plan Area include the following (Figure 5-3):
    - Maintain ecological linkages and wildlife movement corridors to open space on MCAS Miramar and Goodan Ranch/Sycamore Canyon County Preserve to the north of the Santee.

- Maintain ecological linkages and wildlife movement corridors to the Lakeside Downs Habitat Conservation Area (HCA) along the eastern border of Santee.
- Maintain ecological linkages and wildlife movement corridors with MTRP along southwestern border of Santee.
- Maintain ecological linkages and wildlife movement corridors along the San Diego River on the western and eastern edges of Santee.
- Protect and maintain blocks of coastal sage scrub on the eastern portion of the Plan Area that function as a stepping-stone linkage for coastal California gnatcatchers to nearby blocks of coastal sage scrub (e.g., Lakeside Downs) within a few miles east of Santee.

- Ecological linkage and wildlife movement corridors goals for ensuring the Managed Preserve connects with existing protected open space within the Subarea Plan Area include:
  - Maintain ecological linkages and wildlife movement corridors through the Hardline Development Project/Fanita Ranch site to maintain north–south connectivity, including requiring wildlife under crossings and directional fencing, etc.
  - Establish and maintain wildlife movement corridor functionality with east–west connectivity between open space in the southern portion of Fanita Ranch and the open space properties on the southeastern portion of the Plan Area currently managed by CNLM and EHC.
  - Maintain and enhance the ecological linkage and wildlife movement corridor along the San Diego River. Ensure the movement corridor is not exposed to nighttime lighting.
  - Maintain ecological linkage and wildlife movement corridors from Mission Trail Regional Park and CNLM East Mesa HCA.
  - Protect and maintain blocks of coastal sage scrub on the eastern side of the Plan Area that function as a stepping-stone linkage for coastal California gnatcatchers within the Subarea Plan Area from Rattlesnake Mountain to the EHC Cheyenne, Carpalis, and Brown open space properties.
  - Ecological linkages and wildlife movement corridors with appropriate features and conditions including vegetation and/or topographic cover that connect to Biological Resource Core Areas (BRCA) identified by the MSCP Subregional Plan will be protected.

5.3.3 Managed Preserve Subunits

The Subarea Plan Managed Preserve has been segmented into five subunits based on region, ownership, and habitat types to better highlight the goals and objectives for the Subarea Plan (Figure 5-5 and Table 5-6).



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Figure 5-5
Preserve Subunits
Santee MSCP Subarea Plan

Table 5-6. Natural Habitat to be Conserved within Subarea Plan Managed Preserve Subunits

Preserve Components	Mission Trails	East Santee Uplands	North Magnolia	San Diego River	Fanita Ranch	Natural Habitat in Subarea Plan Managed Preserve
Hardline Development Project Onsite Preserves	-	-	-	-	1,593.8	1,593.8
Offsite Butterfly Conservation Areas	-	-	-	-	171.1	171.1
Upland Standards Areas	139.8	28.5	162.6	-	-	330.8 [c]
City-owned Preserve Lands	-	22.2	-	145.0	-	167.3
Totals: [a]	**139.8**	**50.7**	**162.6**	**145.0**	**1,764.9** [b]	**2,263.0** [d]

[a] Numbers may not sum exactly due to rounding.

[b] Includes Onsite Preserve and Offsite Conservation Areas.

[c] Acreage estimates for Standards Areas based on the assumption that 70 percent of each habitat type present would be conserved (100 percent for the vernal pool complex).

[d] The Managed Preserve is slightly larger than the natural habitat reported due to the presence of trails, roads, utility easements, and in the case of the San Diego River Subunit, defensible space.

5.3.3.1 Mission Trails Subunit

The Mission Trails Subunit (Figure 5-6) includes Upland Standards Areas located in the southwestern portion of the Plan Area, adjacent to the MTRP (in the City of San Diego). It includes relatively steep terrain that is connected with the Cowles Mountain area of MTRP. The natural vegetation within this subunit includes mostly coastal sage scrub with some smaller patches of chaparral and grasslands, important areas of cactus scrub (mapped within coastal sage scrub) and grassland, in addition to a vernal pool complex just north of Grossmont College (see Figure 2-11). Table 5-7 summarizes the acreage of vegetation communities estimated to be conserved based on the assumption that 70 percent of each vegetation community will be avoided by Covered Activities, consistent with the Upland Standards Areas conservation of 70 percent in the Managed Preserve within the Mission Trails subunit. This subunit supports many Covered Species, including San Diego barrel cactus, Crotch's bumble bee, Belding's orange-throated whiptail, Blainville's horned lizard, coastal cactus wren, and coastal California gnatcatcher.

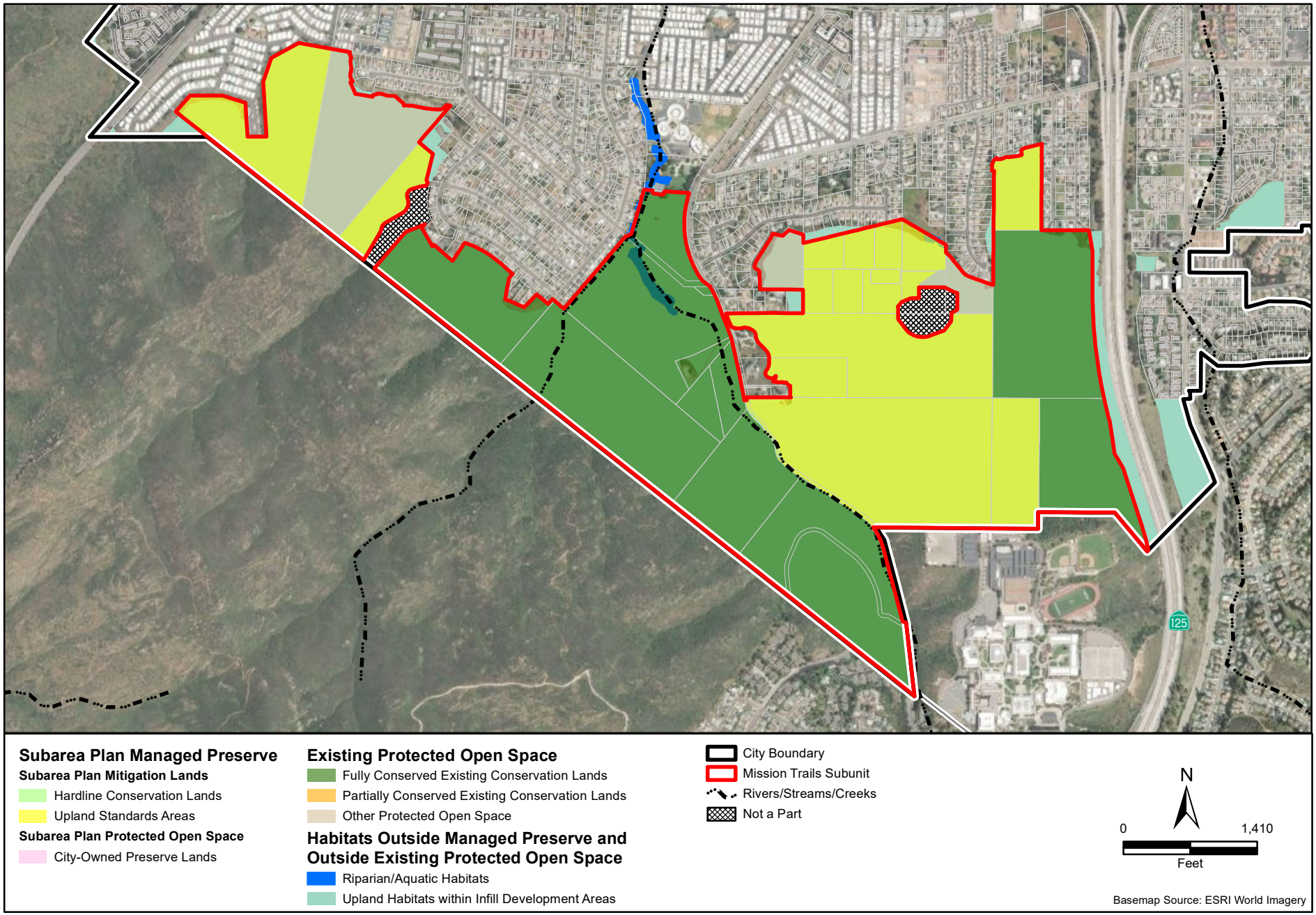


Figure 5-6
Mission Trails Subunit
Santee MSCP Subarea Plan

Table 5-7. Natural Habitat to be Conserved within Mission Trails Subunit

Vegetation Communities	Hardline Project Preserves	Upland Standards Areas [b] in Mission Trails Subunit	City-owned Preserve Lands	Totals by Vegetation Type
Coastal Sage Scrub	-	99.0	-	99.0
Chaparral	-	7.6	-	7.6
Grassland	-	15.5	-	15.5
Riparian	-	0.1	-	0.1
Vernal Pool Complex	-	17.7	-	17.7
Totals: [a]	**-**	**139.8**	**-**	**139.8**

[a] Numbers may not sum exactly due to rounding.

[b] Acreage estimates for Standards Areas based on the assumption that 70 percent of each habitat type present would be conserved (100 percent for the vernal pool complex).

The conservation strategy the City will implement in the Mission Trails Subunit is as follows.

- A larger block of Upland Standards Areas that is centrally located within this subunit is situated between two blocks of existing habitat preserves (MTRP and the CNLM East Mesa HCA); this area serves as a vital ecological linkage. Maintaining functional ecological connectivity through this central portion of this subunit will be a priority for the City when reviewing any Covered Activities within this subunit. The City will require that any Covered Activities are designed and implemented to avoid disruption of wildlife movement corridors or ecological linkages into and through this subunit through compliance with the Linkages, Wildlife Corridors and Wildlife Crossing Structure Criteria (see Section 5.5.3).
- Smaller segments of Upland Standards Areas are located between existing protected areas and the currently urbanized portions of the Plan Area. The City will ensure that the implementation of the Upland Standards Areas criteria, which requires future Covered Activities within these areas to cluster development and associated infrastructure adjacent to and close by to the developed/urbanized areas and conserve habitat areas adjacent to the existing protected habitat or other open space/undeveloped areas.
- This subunit includes a portion of the MTRP (181 acres) that extends into the Plan Area. As part of the Preserve Steward role, the City of Santee will coordinate with the County of San Diego and City of San Diego Parks Departments that are responsible for managing the MTRP on issues related to trails, public access, edge effects, and defensible space within this area.
- The City will ensure that Covered Activities that have the potential to impact ecological functions and values of potential vernal pool habitat within this subunit that is located near Grossmont College adhere to the conservation standards, including the Vernal Pool Conservation Standards (Section 5.5.7) and the Aquatic, Wetlands and Riparian Area Protection Standards (Section 5.5.5).
- The City will ensure that ecological linkage and wildlife movement connectivity of the Subunit with the adjacent open space areas of the MTRP is conserved and managed/monitored.

5.3.3.2 East Santee Uplands Subunit

The East Santee Uplands Subunit (Figure 5-7) includes two properties designated as City-owned Preserve Lands (City Parcel near Walker Preserve and Altair) and smaller blocks of Upland Standards Areas in the southeastern portion of the City along State Route-67 and on 'Tank Hill' on the north side of the San Diego River. Natural vegetation on these lands is dominated by coastal sage scrub. Table 5-8 summarizes the acreage of vegetation communities that will be conserved within the East Santee Uplands Subunit of the Subarea Plan Managed Preserve. This subunit supports many Covered Species, including San Diego barrel cactus, Crotch's bumble bee, Belding's orange-throated whiptail, Blainville's horned lizard, coastal cactus wren, and coastal California gnatcatcher.

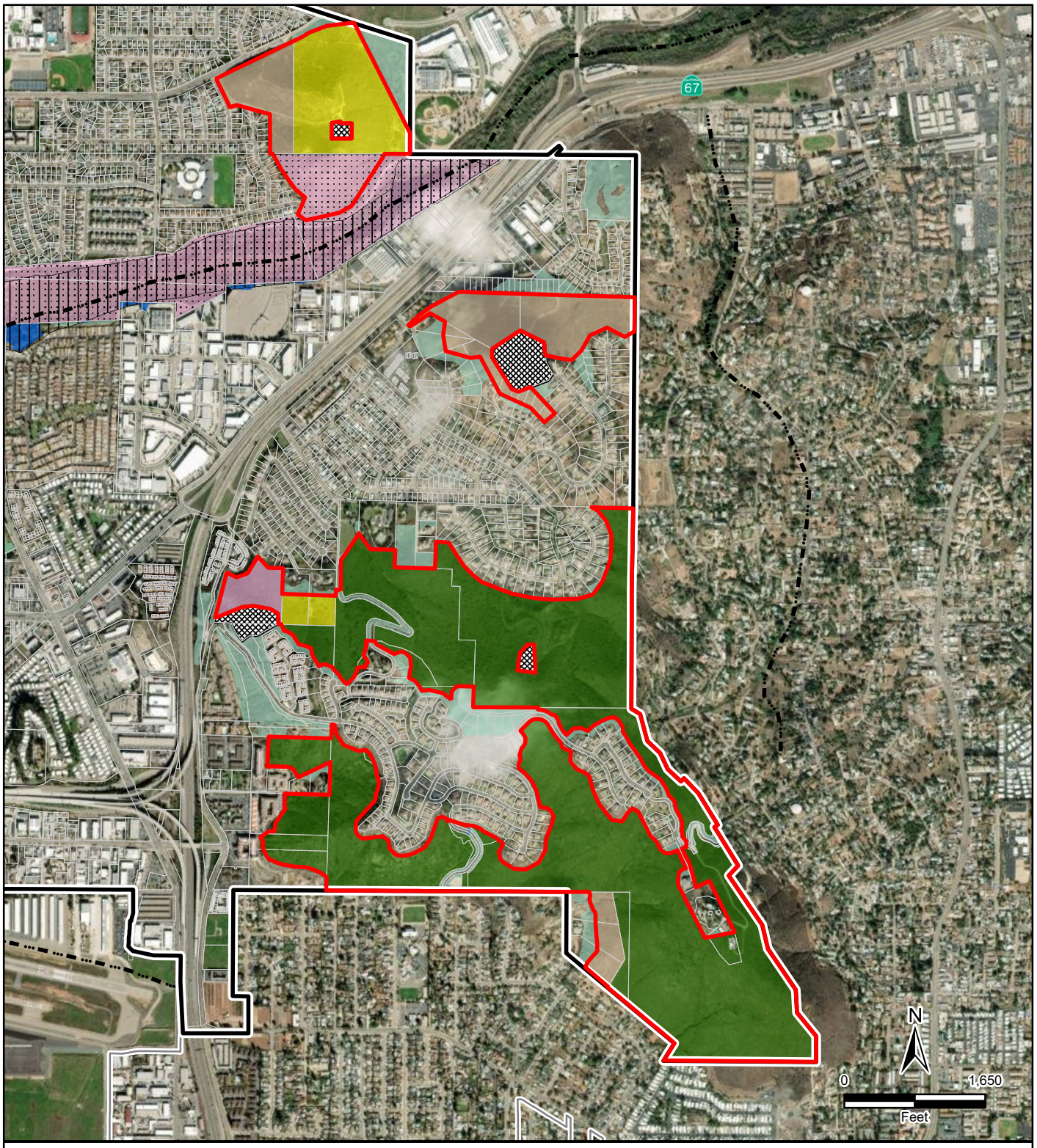
Table 5-8. Natural Habitat to be Conserved within East Santee Uplands Subunit

Vegetation Communities	Hardline Project Preserves	Upland Standards Areas [b] in East Santee Uplands Subunit	City-owned Preserve Lands	Totals by Vegetation Type
Coastal Sage Scrub	-	27.0	22.2	49.2
Grassland	-	1.5	-	1.5
Totals: [a]	**-**	**28.5**	**22.2**	**50.7**

[a] Numbers may not sum exactly due to rounding.
[b] Acreage estimates for Standards Areas based on the assumption that 70 percent of each habitat type present would be conserved.

The conservation strategy the City will implement in the East Santee Uplands Subunit is as follows.

- The City will provide long-term management and monitoring of the City-owned Preserve Lands within this subunit (City Property near Walker Preserve and Altair Open Space). The properties will be encumbered with a Restrictive Covenant within one year of permit issuance. These properties support coastal sage scrub. The City will monitor threats, stressors, and biological functions and values for coastal cactus wren and coastal California gnatcatcher in accordance with Section 7.2.
- This subunit includes Upland Standards Areas on a portion of 'Tank Hill' and on private land between the Altair Open Space preserve and existing protected open space on Rattlesnake Mountain. The City will ensure any future development is clustered in a manner that is close to the existing development areas and protects native habitat blocks that will be conserved, consistent with the Upland Standards Areas conservation of 70 percent in the Managed Preserve within the subunit.
- The Preserve Steward on behalf of the City will coordinate with Preserve Managers and land management entities to manage and monitor the coastal sage scrub/cactus scrub habitat blocks that function as a stepping-stone corridor for the coastal California gnatcatcher and other species. This stepping-stone corridor connects habitat (predominantly for avian and highly mobile wildlife species due to intervening fragmentation) on Rattlesnake Mountain with habitat to the north in the Plan Area, as well as probable stepping-stone linkage to coastal California gnatcatcher populations adjacent to the Plan Area to the southeast (slopes of east El Cajon near Crest and Dehesa).



City Boundary
East Santee Uplands Subunit
Rivers/Streams/Creeks
100-Year Floodway
Not a Part
Acquired Through State/Federal Funding

Subarea Plan Managed Preserve

Subarea Plan Mitigation Lands
Hardline Conservation Lands
Upland Standards Areas

Subarea Plan Protected Open Space
City-Owned Preserve Lands

Existing Protected Open Space
Fully Conserved Existing Conservation Lands
Partially Conserved Existing Conservation Lands
Other Protected Open Space

Habitats Outside Managed Preserve and Outside Existing Protected Open Space
Riparian/Aquatic Habitats
Upland Habitats within Infill Development Areas

Basemap Source: ESRI World Imagery

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Subunits\Figure 5-6 East Santee Uplands Subunit.mxd Date: 2/11/2025 34153

Figure 5-7
East Santee Uplands Subunit
Santee MSCP Subarea Plan

5.3.3.3 San Diego River Subunit

The San Diego River Subunit (Figure 5-8) includes three properties identified as City-owned Preserve Lands (Walker Preserve, Mast Park West, and Mast Park East (Mission Creek) properties) and portions of the San Diego River Regulatory Floodway. This subunit essentially follows the Floodway corridor from river levee to levee. The majority of natural communities within this subunit are riparian, freshwater marsh, and open water (generally former sand mining pits), and this area also supports smaller areas of coastal sage scrub, grassland, unvegetated channel, and other non-riparian areas as part of a buffer along the riparian corridor. Table 5-9 summarizes the acreage of vegetation communities within the San Diego River Subunit of the Subarea Plan Managed Preserve. This subunit supports many Covered Species, including San Diego ambrosia, variegated dudleya, willowy monardella, Quino checkerspot butterfly, Hermes copper butterfly, Belding's orange-throated whiptail, Blainville's horned lizard, coastal California gnatcatcher, and least Bell's vireo.

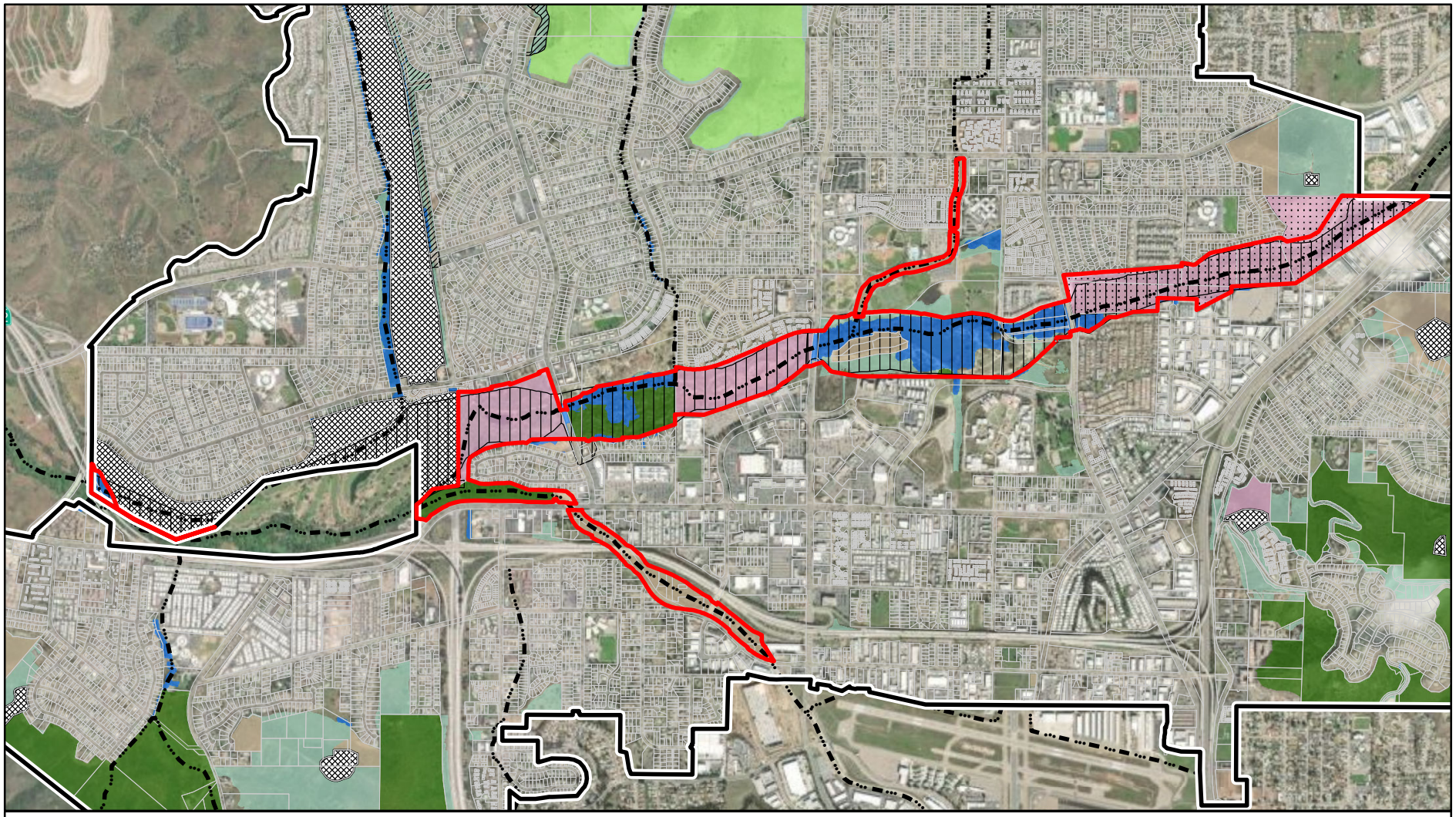
Table 5-9. Natural Habitat to be Conserved within San Diego River Subunit

Vegetation Communities	Hardline Project Preserves	Upland Standards Areas	City-owned Preserve Lands	Totals by Vegetation Type
Coastal Sage Scrub	-	-	11.7	11.7
Grassland	-	-	-	
Riparian	-	-	81.7	81.7
Freshwater Marsh	-	-	12.7	12.7
Disturbed Wetland	-	-	-	-
Freshwater (Open Water)	-	-	38.8	38.8
Non-Vegetated Channel or Floodway	-	-	<0.1	<0.1
Totals: [a]	**-**	**-**	**145.0**	**145.0**

[a] Numbers may not sum exactly due to rounding.

The conservation strategy the City will implement in the San Diego River Subunit is as follows.

- The City will provide long-term management and monitoring of City-owned Preserve Lands located in the San Diego River Subunit, including the Walker Preserve, Mast Park West, and Mast Park East (Mission Creek) property. These properties will be encumbered with a Restrictive Covenant within one year of permit issuance. The City will manage and monitor the properties and focus on the protection and enhancement of habitats that support riparian-dependent species, including least Bell's vireo.
- The Preserve Steward, on behalf of the City, will coordinate with other Preserve Managers of Existing Protected Open Space within the San Diego River Subunit to address broader habitat management and enhancement efforts as described in Section 7.2.3.



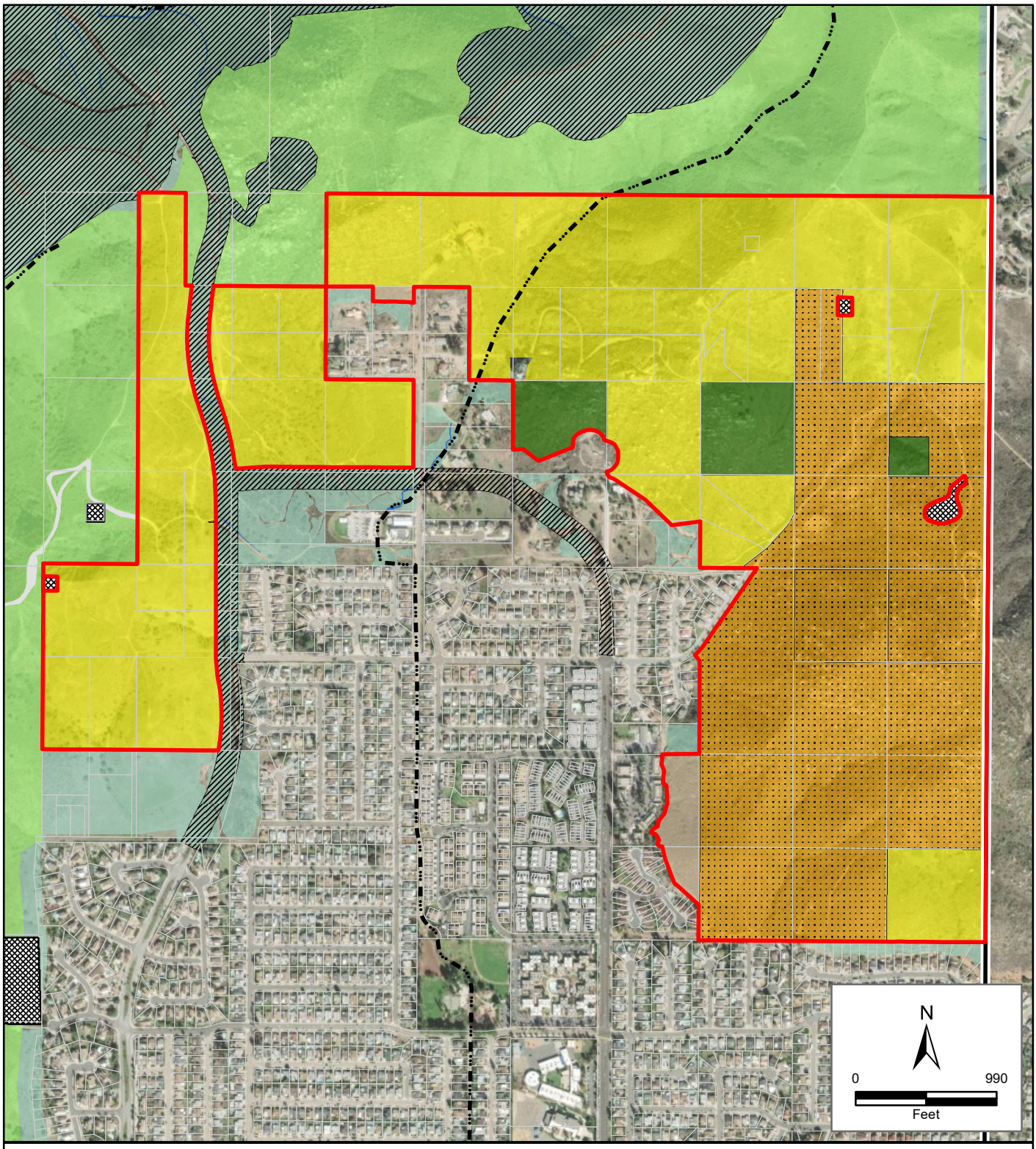
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Figure 5-8
San Diego River Subunit
Santee MSCP Subarea Plan

- The City will design and construct a future trail system in coordination with the Wildlife Agencies that will identify compatible uses on the trails and ensure the trails are located in areas that do not diminish the protection and functions of biological resources, including minimization of potential indirect effects. The City will focus on creating a connected trail system along the north and south edges of the Floodway (outside of river levees) and reduce the extent of existing trails that cross the Floodway (north-south trail connections). Covered Activities impacts within this subunit (approximately 37.6 acres) will be offset through the City's inclusion of 145.0 acres of habitat in the subunit into the Managed Preserve. City Covered Activities will minimize impacts through implementation of the conservation measures in Section 5.5, including Avoidance and Minimization of Sensitive Biological Resources (Section 5.5.1.1), Nesting Birds Conservation Standards (Section 5.5.5.2), and Stormwater and Water Quality Best Management Practices (Section 5.5.5.3). The proposed trail network in the San Diego River Subunit is shown in Figure 4-6, Trail Network – San Diego River Subunit.
- The City will ensure the maintenance of a functional east–west ecological linkage and wildlife corridors through the Subarea Plan Area by maintaining contiguous linear areas of native riparian and upland cover and support vegetation along the River, minimize human uses and avoid obstructions to wildlife movement, maintain and enhance appropriate riparian-riverine hydrology, and minimize noise and nighttime lighting reaching the linkage/corridor/habitat areas, to the extent practicable. The City will ensure that ecological linkage and wildlife movement connectivity is conserved within the Subunit so that it continues to connect to undeveloped areas adjacent to the Plan Area (e.g., upstream and downstream of the Plan Area along the San Diego River). The City will plan and implement its activities (e.g., drainage maintenance, vector control) to minimize direct and indirect biological effects (e.g., edge effects) in part through the use of Best Management Practices and avoid disturbance during the nesting season as described in Section 5.5.1.2, *Nesting Bird Conservation Standards*.

5.3.3.4 North Magnolia Subunit

The North Magnolia Subunit (Figure 5-9) includes the Upland Standards Areas east and west of Summit and North Magnolia Avenues but does not include land within the Hardline Development Project site. This subunit includes relatively steep terrain consisting of coastal sage scrub, with smaller pockets of chaparral, and grasslands. Table 5-10 summarizes the acreage of vegetation communities anticipated to be conserved within the North Magnolia subunit of the Subarea Plan Managed Preserve. This subunit supports many Covered Species, including San Diego barrel cactus, Crotch's bumble bee, Hermes copper butterfly, Quino checkerspot butterfly, Belding's orange-throated whiptail, Blainville's horned lizard, and coastal California gnatcatcher.



City Boundary
North Magnolia Subunit
Rivers/Streams/Creeks
Not a Part
Hardline Development Areas
Acquired Through State/Federal Funding

Subarea Plan Managed Preserve

Subarea Plan Mitigation Lands
Hardline Conservation Lands
Upland Standards Areas

Subarea Plan Protected Open Space
City-Owned Preserve Lands

Existing Protected Open Space
Fully Conserved Existing Conservation Lands
Partially Conserved Existing Conservation Lands
Other Protected Open Space

Habitats Outside Managed Preserve and Outside Existing Protected Open Space
Riparian/Aquatic Habitats
Upland Habitats within Infill Development Areas

Basemap Source: ESRI World Imagery

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Subunits\Figure 5-8 North Magnolia Subunit.mxd Date: 3/13/2025 34153

Figure 5-9
North Magnolia Subunit
Santee MSCP Subarea Plan

Table 5-10. Natural Habitat to be Conserved within North Magnolia Subunit

Vegetation Communities	Hardline Project Preserves	Upland Standards Areas [b] in North Magnolia Subunit	City-owned Preserve Lands	Totals by Vegetation Type
Coastal Sage Scrub	-	153.7	-	153.7
Chaparral	-	3.9	-	3.9
Grassland	-	5.0	-	5.0
Totals: [a]	**-**	**162.6**	**-**	**162.6**

[a] Numbers may not sum exactly due to rounding.

[b] Acreage estimates for Standards Areas are based on the assumption that 70 percent of each habitat type present would be conserved.

The primary conservation strategy the City will implement in the North Magnolia Subunit is as follows:

- The City will coordinate planning with landowners proposing Covered Activities in Upland Standards Areas within the North Magnolia Subunit. Coordinated planning will further the goals of this subunit due to the large number of small parcels and the importance of maintaining a functioning ecological linkage through this area to connect the northeast and southwest portions of the Fanita Ranch Subunit. The City and Preserve Steward will also provide voluntary guidance to landowners in this area (e.g., direct mailings, website information, seminars, etc.), including suggestions on how to best maintain and enhance ecological linkage and wildlife movement (e.g., minimizing spillover of outdoor lighting, types of recommended fencing, native planting suggestions, non-feeding of wildlife recommendations, recommendations that reduce Argentine ant and exotic rodent propagation, invasive species control/elimination, yard-waste brushpile recommendations, indoor cat and wildlife-conflict reduction suggestions) across private parcels with development in this subunit.
- As future Covered Activity development projects are proposed within this subunit, the City will evaluate the project design in accordance with the HLIT ordinance (i.e., locate new proposed development in the least sensitive areas on the property, cluster development, avoid disruption of wildlife movement corridors and ecological linkages into and through this subunit with conditions on development, such as driveways, fencing, nighttime lighting, buffers, irrigation overspray and run-off and ensure functional habitats are avoided and wildlife movement corridors or ecological linkages are not constricted or compromised). See requirements for development in the Upland Standards Area in Section 5.3.1.2.
- As part of the Preserve Steward role, the City will coordinate with Preserve Managers who are managing Existing Protected Open Space areas within this subunit.

5.3.3.5 Fanita Ranch Subunit

As described in Section 5.3.1.1, The Fanita Ranch Subunit includes habitat preserves to be set aside as part of the Fanita Ranch Hardline Development Project (Figure 5-10). This includes an Onsite Preserve and Offsite Conservation Areas for the Quino checkerspot butterfly and Hermes copper butterfly. The types of natural vegetation occurring on the Fanita Ranch Onsite Preserve include coastal sage scrub (including important areas of the subtype cactus scrub), native and nonnative grasslands, chaparral, vernal pools, and riparian and oak woodland areas. Table 5-11 summarizes the acreage of vegetation communities within the Fanita Ranch Subunit of the Managed Preserve. The Fanita Ranch Subunit supports many Covered Species, including San Diego barrel cactus, San Diego goldenstar, variegated dudleya, willowy monardella, Crotch's bumble bee, Hermes copper butterfly, Quino checkerspot butterfly, San Diego fairy shrimp, Belding's orange-throated whiptail, Blainville's horned lizard, western spadefoot toad, coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo.

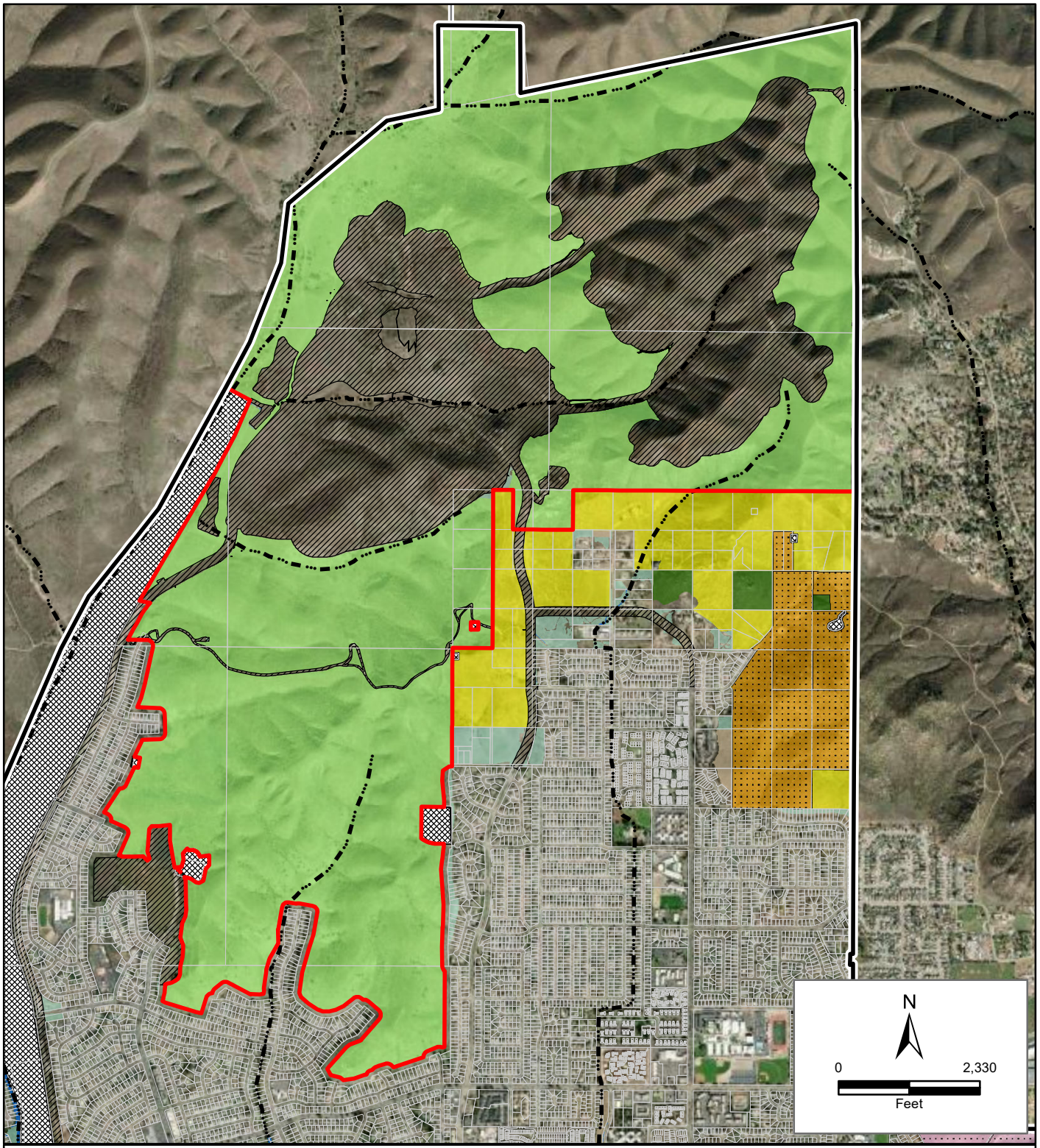
Table 5-11. Natural Habitat to be Conserved within Fanita Ranch Subunit

Vegetation Communities	Hardline Project Preserves [b]	Upland Standards Areas	City-owned Preserve Lands	Totals by Vegetation Type
Maritime Succulent Scrub	7.3	-	-	7.3
Coastal Sage Scrub	1,070.4	-	-	1,070.4
Chaparral	377.6	-	-	377.6
Grassland	212.0	-	-	212.0
Coast Live Oak Woodland	26.4	-	-	26.4
Engelmann Oak Woodland	57.2	-	-	57.2
Riparian	4.2	-	-	4.2
Vernal pool	2.9	-	-	2.9
Disturbed Wetland	0.1	-	-	0.1
Non-vegetated channel/floodway	6.7	-	-	6.7
Totals: [a]	**1,764.8**	**-**	**-**	**1,764.8**

[a] Totals may not sum due to rounding.
[b] Includes onsite and offsite conservation areas.

The conservation strategy for the Fanita Ranch Subunit is as follows:

- **CM-1 Habitat Preserve.** The project proponent will establish an Onsite Preserve and two separate offsite conservation areas that will include Resource Management Plans (RMPs) for both the Onsite Preserve and Offsite Conservation Areas, secure long-term funding, and establish legal site protection mechanisms (see Table 7-1, *Summary of Management and Monitoring for the Managed Preserve*, for details). The project proponent will ensure the protection and enhancement of habitat to support the Covered Species through conservation of chaparral, coastal sage scrub (including measures/acreages for cactus scrub) grassland, oak woodland, riparian, and vernal pools.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Subunits\Figure 5-9 Fanita Ranch Subunit.mxd Date: 7/9/2025 34153

Figure 5-10
Fanita Ranch Subunit
Santee MSCP Subarea Plan

- **CM-2 Upland Restoration Plan**. Temporary impacts to sensitive upland vegetation communities occurring in both on- and offsite improvement areas are anticipated to require a total of 127.6 acres of restoration. Temporary impacts shall be restored in place. A 1:1 ratio of in-place restoration for impacts to native grassland areas (i.e., valley and needlegrass grassland [including disturbed]), in addition to a 1:1 ratio of preservation and/or creation of native grassland within the Onsite Preserve, would be consistent with the 2:1 mitigation ratio for impacts to native grassland outlined in Table 5-13, *Uniform Mitigation Ratios*.
    - Temporary impact areas shall be restored to the appropriate native vegetation community type. In order to determine the appropriate restored habitat, the Upland Restoration Plan includes an evaluation of restoration suitability specific to proposed vegetation types, soil preparation, plant palettes, irrigation, erosion control, maintenance and monitoring program, and success criteria. All areas shall be monitored for a minimum of 5 years to maximize the likelihood of establishment of intended plant communities. If temporary impact areas are not considered appropriate for restoration of the sensitive native plant community that originally was mapped in that area, these areas shall be considered permanently impacted and mitigated in conformance with mitigation ratios for permanent impacts to sensitive upland vegetation communities. The Upland Restoration Plan will be included in the RMP, which is subject to review and approval prior to issuance of a grading permit for the Hardline Development Project.
    - To prevent inadvertent disturbance to areas outside the limits of grading, all grading locations shall be monitored by a City-approved qualified biologist. Prior to the issuance of any grading permit for areas adjacent to open space, the project proponent shall retain a qualified biologist for monitoring activities. The biologist shall monitor all grading and other significant ground-disturbing activities in or adjacent to open space areas. The biologist shall monitor these activities to ensure compliance with the appropriate standard conditions and mitigation measures, including the following:
        1. Prior to the commencement of clearing and grading operations or other activities involving significant soil disturbance, all open space areas shall be identified with temporary fencing or other markers clearly visible to construction personnel.
        2. A contractor education program shall be implemented for all workers and subcontractors and shall include a description of environmental restrictions relevant to construction and the penalties for violations. A chain of command and protocol for communicating problems or potential construction changes that may affect biological resources shall be established with the contractor and the City of Santee. Workers shall be made aware of what resources require protection through the use of photos or on-the-ground demonstration.
        3. The biologist approved by the City shall be onsite during any clearing of natural vegetation (i.e., annual ground cover, shrubs, or trees).
        4. Following the completion of initial clearing/grading/earthmoving activities, all open space areas to be avoided by construction equipment and personnel shall be marked with temporary fencing and other appropriate markers clearly visible to construction

personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.

5. In areas bordering the open space area, vehicle transportation routes between cut-and-fill locations shall be restricted to a minimal number consistent with project construction requirements. Waste dirt or rubble shall not be deposited on adjacent protected habitats. Regular preconstruction meetings involving the monitoring biologist, construction supervisors, and equipment operators shall be conducted and documented to ensure maximum practicable adherence to these measures.
6. The monitoring biologist shall verify that the construction site is implementing the following Stormwater Pollution Prevention Plan best management practices:
    a. Dust-control fencing
    b. Removal of construction debris and a clean work area
    c. Covered trash receptacles that are wildlife-proof and weather-proof
    d. Prohibition of pets on the construction site
    e. A speed limit of 15 miles per hour during the daylight hours and 10 miles per hour during nighttime hours
7. Open space areas in the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves, as recommended by the monitoring biologist.
8. Oversee the construction site so that cover and/or escape routes for wildlife from excavated areas shall be provided on a daily basis. All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and prior to sealing the exposed area) by an approved biologist to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.

- **CM-3 Narrow Endemic Plant Species and Covered Plant Species Translocation.** Mitigation requirements for impacts to Covered Plant Species provide for adequate preservation of the species to ensure long-term population stability. The narrow endemic species policy identified in the Subarea Plan requires 100 percent conservation in open space (i.e., the Fanita Ranch Onsite Preserve) and 80 percent conservation through translocation in permanent impact (i.e., take-authorized) areas. These requirements will be met by the Hardline Development Project for the three Covered Plant Species identified as narrow endemics. For Covered Species that are not narrow endemics, the Covered Plant Species Translocation and Restoration Conservation Standards, Section 5.5.8, also require 80 percent of the occurrences/populations in Covered Activity impact areas be protected in perpetuity through protection and/or

translocation/restoration within habitat preserve lands. Based on the estimated impacts, San Diego goldenstar will require translocation of individuals and/or planting to meet the 80 percent conservation in take-authorized areas.

San Diego goldenstar require translocation or planting of impacted populations in order to adequately mitigate project impacts. Translocation requires evaluation of the donor site for suitability of translocation method and of the receptor site for suitability of sustaining San Diego goldenstar. The translocation program is detailed in the Upland Restoration Plan and Preserve Management Plan and will be integrated with the overall uplands and wetlands restoration of the project site.

The rare plant mitigation component of the Upland Restoration Plan discusses appropriate methods for plant salvage and/or growing and planting; in general, the impacted population of the sensitive plant shall be targeted for salvage and translocation in order to meet the 80 percent minimum translocation survival rate. Where this is not feasible, germination and growing of appropriate genetic stock shall occur and be planted on site in suitable receptor sites. Success of the translocation program will be measured through 5 years of monitoring and annual reporting to the City.

- **CM-4 Ecological Linkages, Wildlife Corridors, and Wildlife Crossing Structure Criteria.** The project proponent will ensure that the proposed development footprint maintains a north-south ecological linkage (with functional wildlife movement crossings including culverts, minimized lighting, low vehicle speed limits/speed control features, narrow road widths, appropriate curbs, gutters, fencing, signage, and vegetation cover (considering the range of wildlife species involved), etc. associated with roads that will bisect the open space areas) through the property.

  The project will include an interior corridor that is minimally 1,200 feet wide and a northern corridor that is minimally 1,400 feet wide with the exception of one location that narrows to 600 feet for an approximate 800-foot length. This length is adjacent to the protected and managed Goodan Ranch/Sycamore Canyon Preserve to the north so it would still function for wildlife movement of mountain lion, coastal California gnatcatcher, and all other species. The western boundary shall include a corridor that is mostly approximately 1,000 feet wide except at the southern edge where it narrows to 400 feet at the stormwater catch basin. This entire area is bordered and managed by the Marine Corps Air Station Integrated Natural Resources Management Plan. In order to retain wildlife movement to the north along the eastern boundary of the project site, a secondary corridor has been included.

  The project proponent will ensure that connectivity is maintained via ecological linkages with the Managed Preserve between the North Magnolia Subunit to open space areas on MCAS Miramar (to the west), and to the County lands (to the north and east). A functional wildlife crossing will be included in the Cuyamaca Road extension. A wildlife undercrossing will be constructed approximately 400 feet south of the project site boundary within the Cuyamaca Street extension to adequately convey coyotes, mule deer, and smaller-sized wildlife. The wildlife undercrossing will utilize existing or manufactured topography. The crossing will be designed to provide a greater than 0.6 openness ratio (calculated as width times height divided by length in meters). Crossings

will have a raised floor and/or side platform to allow dry passage for wildlife when water is flowing.

In addition, a 48-inch reinforced concrete pipe culvert and directional curbs shall be constructed to allow western spadefoot and other small wildlife to cross under Fanita Parkway.

- **CM-5 Cactus Wren Habitat Management.** The cactus wren conservation strategy includes the following components:

  Onsite Protection:

  - Approximately 64 acres of existing occupied habitat in the southern portion of the Onsite Preserve will be managed and monitored in perpetuity. Management of the remaining occupied cactus wren habitat along with the active restoration and enhancement areas will address fire, drought, control of non-native grasses and other annual vegetation, and competition from woody plants.

  Active Restoration (35 acres):

  - Opuntia and cholla cactus "starters" will be replanted in sparse but otherwise potentially suitable cactus wren habitat, generally in the Southern Preserve area. Specific areas will be identified in the detailed restoration plan in coordination with the Wildlife Agencies.
  - Newly established cactus patches will be restored and managed to achieve the height, structure, and density of cactus suitable for cactus wren, and minimize the annual grass cover and competing woody shrubs as will be described in the restoration plan.
  - Project proponent will transfer/transplant the majority of the medium and large size cactus within the proposed development footprint into appropriate cactus scrub areas within the Onsite Preserve before or concurrent with construction activities. These transfer/transplant measures would take place within the 35-acre cactus wren/cactus scrub intensive restoration/enhancement area, in areas of existing early successional stage cactus scrub occurring in the southern Preserve.

  Habitat Enhancement (35 acres):

  - Habitat enhancement will be initiated immediately following initiation of vegetation removal or ground disturbing activities.
  - Specific locations for enhancement will be specified in the detailed restoration plan in coordination with the Wildlife Agencies. Locations will be within early successional stage cactus scrub or areas that likely previously supported cactus scrub (i.e., areas subject to previous fire damage). These 35 acres of enhancement will involve similar management, but slower and less intense restoration measures, as compared to the Active Restoration noted above.
  - A detailed restoration plan will be developed for the active restoration and enhancement areas in coordination with the Wildlife Agencies prior to the initiation of grading. The restoration plan will describe the criteria to document evidence of use of these areas over time.

- Project proponent will restore, enhance, and actively manage at least 70 acres of cactus scrub on site (35-acre intensive cactus scrub restoration/enhancement area, plus 35-acre cactus scrub enhancement area) to support a minimum of 10 pairs of cactus wren through the long-term, including supporting this minimum 10 pairs within the managed 70 acres during and through the scenarios of extended droughts and wildfires.

  A detailed restoration plan will be developed for the active restoration and enhancement areas in coordination with the Wildlife Agencies prior to issuance of a grading permit for the Hardline Development Project.

- **CM-6 Quino Checkerspot Butterfly Conservation Standards**. The project proponent will provide management and restoration of habitats to offset impacts to Quino checkerspot butterfly and habitat through preservation within the Onsite Preserve and at the Quino checkerspot butterfly Offsite Conservation Area. For the offsite component, the City of San Diego will be responsible for the Quino habitat restoration and long-term management and monitoring, which will be funded by the project proponent. The components of the Quino checkerspot butterfly conservation strategy addressing Fanita Ranch impacts include:

  - *Conservation Acreage*: The offsite conservation includes acquisition and restoration of properties in the East Elliott portion of Mission Trails Regional Park that total 90.73 acres of acquisition and 36.25 acres of restoration and long-term management of habitat supporting Quino host plants. The 90.73 acres of offsite acquisition will be purchased in fee-title and encumbered with a legal instrument for the conservation of Quino. If the total acreage of acquired Quino habitat is not able to be achieved in East Elliot portion of MTRP due to the lack of willing sellers, a biologically equivalent mitigation alternative will be developed with Wildlife Agencies' concurrence. The onsite conservation totals 12.89 acres within the northern portion of the Fanita Ranch Onsite Preserve. This acreage will be legally protected for its perpetual conservation.

  - *Level of Management* (offsite conservation areas outside host plant enhancement): Project proponent will provide management of the conserved properties outside of the Quino restoration sites at a "stewardship level." Although portions of the properties outside the Quino restoration sites will not receive the same intensity of long-term management as the restoration sites, the entirety of the conserved properties would be managed in a manner that maintains or improves the quality of Quino nectaring and dispersal habitat and addresses potential threats to this habitat (e.g., unauthorized human access, invasion by non-native plants, fire) consistent with a Property Analysis Record or equivalent analysis that will identify the tasks and associated funds needed to implement perpetual monitoring and management at that level.

  - *Level of Management (offsite host plant enhancement and management)*: The proposed conservation strategy includes a commitment by the project proponent to restore and manage 17.85 acres of Quino host plant habitat within properties that are to be acquired and 18.40 acres on property already owned by the City of San Diego. The project proponent and the Wildlife Agencies have mutually identified properties where offsite conservation is likely to occur within the East Elliot portion of Mission Trails Regional Park.

- *Level of Management (onsite host plant enhancement and management)*: The onsite Quino hostplant habitat in the northern portion of the Fanita Ranch Onsite Preserve will be enhanced and managed in a manner similar to the offsite Quino hostplant habitat. The monitoring and management costs will be determined by a PAR or PAR-like analysis.

- **CM-7 Hermes Copper Butterfly Conservation Standards**. The conservation strategy for Hermes copper butterfly has an onsite component and an offsite component.

  Onsite:

  1. Protect and manage in perpetuity 74.44 acres of suitable Hermes habitat. This includes 65.56 acres in the northern portion of the Fanita Ranch Onsite Preserve and 17.75 acres in the southern portion (credited at 50 percent or 8.88 acres), but not including the Hermes habitat in the SDG&E easement;
  2. Restore/create an additional 35 acres of suitable Hermes habitat in the Fanita Ranch Onsite Preserve through establishment of redberry and buckwheat patches in the linkage connecting Fanita Ranch to previously occupied Hermes habitat offsite (e.g., Lakeside Downs HCA) and enhancement of redberry-only patches;
  3. Manage the 109.44 acres (74.44ac + 35ac) for Hermes to provide for expansion as a receiver site for potential future translocation.

  Offsite:

  1. Off-site Conservation Location: The project proponent will acquire 80.4 acres of habitat that is occupied by Hermes copper butterfly in the eastern part of San Diego County near Alpine. Offsite conservation will be legally encumbered for its perpetual conservation and fully funded in accordance with a PAR or PAR-like analysis to ensure perpetual management and monitoring consistent with a management and monitoring plan reviewed and approved by the City and Wildlife Agencies.

- **CM-8 Western Spadefoot Relocation.** During the wet season prior to clearing or grading operations, biologists shall collect western spadefoot adults from areas within 300 meters of known occupied pools. Adults shall be relocated to another area on the project site that has suitable breeding habitat and few or no western spadefoot individuals.

  Details on the western spadefoot relocation effort are included as a component of the Vernal Pool and Wetland Mitigation Plan (Appendix D), were made available to the U.S. Geological Survey (USGS) for review, and is subject to approval by the Wildlife Agencies. The Western Spadefoot Relocation Plan includes, at a minimum, the following elements:

  - The timing and methods for surveying, capturing, and releasing adults. Long-term care methods shall also be discussed if this option is used.
  - Collection shall occur during the first three or four large rain events of the season. Ideally, these rain events shall produce a minimum of 0.20 inch during a 24-hour period.

- **CM-9 Vernal Pool Mitigation.** A Vernal Pool and Wetland Mitigation Plan (Appendix D) has been prepared and would allow disturbance of seasonal basin features (i.e., natural vernal pools and street ruts containing vernal pool indicator plant and wildlife species). The Vernal Pool Mitigation

Plan is subject to approval from the Regional Water Quality Control Board, U.S. Army Corps of Engineers, and Wildlife Agencies and shall comply with Clean Water Act Section 404 and 401 permit/certification by the U.S. Army Corps of Engineers and Regional Water Quality Control Board, respectively, as well as federal Endangered Species Act requirements. The Vernal Pool Mitigation Plan describes and identifies those areas slated for preservation, rehabilitation and enhancement, and requires the creation of new seasonal basin resources within the Habitat Preserve as mitigation for anticipated development impacts. The Vernal Pool Mitigation Plan is focused on seasonal basin features and associated upland watershed habitat enhancement opportunities and cover the following: vernal pool design and location, planting plan (planting palettes for both vernal pool and upland watershed habitats), and supplemental water program; maintenance and monitoring guidelines; San Diego fairy shrimp and western spadefoot translocation; and ownership arrangements and long-term management strategy.

Natural vernal pools will be mitigated at a 4:1 ratio, including preservation and management of existing pools, rehabilitation/enhancement of existing features within the Habitat Preserve, and creation of new features. Constructed pools (i.e., artificial features and street ruts) will be mitigated through rehabilitation/enhancement and/or creation at a 3:1 or 2:1 ratio, depending on whether the feature supports plant or wildlife indicator species. Rehabilitation/enhancement will occur in existing features within the Habitat Preserve that are not included as vernal pools (i.e., street ruts lacking vernal pool indicator species). This would entail repairing degraded features through the manipulation of surface topography to improve the overall ecological function of the vernal pool, control of invasive species, and planting of appropriate native species. Creation would consist of establishing new vernal pools in areas where they did not previously occur and/or the returning of areas to a pre-existing condition through manipulation of surface topography to support inundation and ponding for vernal pools. Created features shall exhibit the same or improved characteristics as those within the impact area currently supporting fairy shrimp, indicator vernal pool plant species, and western spadefoot, and shall maintain comparable individual pool sizes and watersheds.

Existing permanently impacted features that support San Diego fairy shrimp and indicator vernal pool plant species shall have the top 1 to 3 inches of soil removed and set aside prior to mass grading. This soil shall be kept in a dry location until it is deposited into the new features. Once the created or enhanced pools are proven to hold water for the appropriate amount of time, they shall be inoculated with the soil from the impacted features. The acreage of surface area that shall be created shall be verified using on-site soil hydrologic properties and modeling of rainfall seasons. The target surface area acreage is 0.50 acre, based on the acreage of impacted features recorded of which 0.40 acre shall need to include creation of new pools. This plan may be modified and augmented pending U.S. Army Corps of Engineers, Regional Water Quality Control Board, and wildlife agency.

- **CM-10 Wetland Mitigation.** The Vernal Pool and Wetland Mitigation Plan describes the on-site mitigation program to mitigate anticipated temporary and permanent development impacts to waters of the United States and wetland vegetation communities. A total of 9.79 acres of impacts to jurisdictional resources, including 8.02 acres of permanent impacts and 1.77 acres of temporary impacts, would occur on and off site. Impacts to jurisdictional resources require permits and

authorizations by the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife prior to impacts. The applicant shall provide the City with permits and authorizations from each resource agency demonstrating approval of project impacts to aquatic resources prior to the approval of the grading and improvement plans.

Both on- and offsite mitigation sites are needed to provide full compensation for project impacts, and therefore, two plans shall be required. The offsite mitigation will provide wetland habitat through a combination of habitat preservation, enhancement, restoration, and creation. With this program, wetland habitat that is comparable in habitat type and quality to the impact area shall be enhanced, restored, or created within the City's jurisdiction and within the San Diego River and/or its tributaries. The offsite restoration program shall be subject to the same standards and rules as the on-site mitigation program, including management of access control, invasive species, and native vegetation cover and diversity. Offsite restoration shall include these management efforts and a program of revegetation of wetland species with planting and seeding. The offsite habitat creation shall also include potential topographic alteration to expand and create bed and bank areas appropriate for the establishment of new wetland habitat. At least 7.53 acres of offsite mitigation shall be habitat creation and/or re-establishment. This total is based on the current aquatic resource assessment and impacts, and the no-net-loss requirement in the Subarea Plan. The offsite preservation/enhancement component may occur at the 11-acre parcel, owned by the project proponent, adjacent to the lower Santee Lakes to satisfy the offsite preservation/enhancement requirement. The City has agreed to allow the remaining offsite creation/re-establishment mitigation component to be completed within City-owned lands in the same hydrologic unit, next to the San Diego River. Based on preliminary evaluations, several opportunities have been identified to provide offsite mitigation for the remaining creation/re-establishment mitigation component, indicating that it is feasible to accomplish the offsite compensatory mitigation.

The Vernal Pool and Wetland Mitigation Plan (Appendix D) is consistent with the USEPA's 2008 Compensatory Mitigation Rule and subsequent guidance documents. The Vernal Pool and Wetland Mitigation Plan shall use the latest available tentative tract map to define the mitigation areas. The Vernal Pool and Wetland Mitigation Plan provides a description of project impacts and required mitigation at approved replacement ratios. An implementation section includes the different types of wetland mitigation areas including treatments such as soil preparation, plant palettes, and temporary interim erosion control. Plant palettes incorporate sensitive species that will be impacted by the proposed project, as appropriate. A maintenance plan to promote the successful establishment of the target vegetation communities includes the specific activities to be performed over the 5-year maintenance period. A monitoring plan is included that describes performance criteria for each vegetation community, monitoring frequency, and methods. The Vernal Pool and Wetland Mitigation Plan includes reporting requirements and contingency measures.

Since the temporary impact areas are not appropriate for restoration of jurisdictional resources, these areas shall be considered permanently impacted and shall be mitigated in conformance with the mitigation ratios for permanent impacts to jurisdictional resources, consistent with Table 5-13, *Uniform Mitigation Ratios*.

- **CM-11 Brown-Headed Cowbird Trapping.** A brown-headed cowbird trapping program shall be initiated on the Hardline Development Project site as necessary. The trapping program includes the following: trapping shall begin during the first phase of grading and continue for a period of 15 years or until an alternative control method is developed, which would then replace the trapping program through the 15-year period. The trapping program shall be based on the most current trapping methods. Three traps shall be set at appropriate locations within open space or adjacent to open space on site, though there is flexibility to install one at another location within the City's sphere of influence (e.g., Santee Lakes Recreation Preserve) that might provide better local and regional benefits (e.g., along a river or creek or at a local equestrian center). Trapping shall be performed between April 1 and August 1 unless there are 21 days without observing brown-headed cowbirds, then trapping may end for that year.

  In order to establish whether a cowbird trapping program is necessary, focused surveys shall be conducted in and around the Fanita Ranch Onsite Preserve. A qualified biologist shall survey the Onsite Preserve during February, April, and May of each year during the construction phase through final buildout. If final buildout occurs before 10 years, then at least 10 years of surveys shall be required. During the survey, no single biologist may cover more than 300 acres of Onsite Preserve per day. If 10 or more males or 5 or more females or juveniles are observed on any single occasion, then trapping shall commence. No additional monitoring or trapping shall be required after 10 years even if the brown-headed cowbird occurrence thresholds have not been met. Since there is a small segment of trail designated for equestrian use, monitoring for brown-headed cowbirds will be addressed in the RMP and that area shall be monitored and managed in accordance with that plan, even if the 10-year threshold has been met for the remainder of the Habitat Preserve. Yearly reporting of the trapping results shall be provided with the RMP reporting and will minimally include the rationale for trap placement, number of target species, non-target species, mortalities of each, sex and age of each as able to be determined, comparison to prior trapping, and suggestions for the following year.

- **CM-12 African Clawed Frog Trapping.** African clawed frogs have been detected in the past within Sycamore Canyon Creek and vernal pool features on the Hardline Development Project. A monitoring and control program will be included in the Resource Management Plan and designed to determine the presence of African clawed frogs within occupied fairy shrimp and western spadefoot features. Monitoring shall consist of surveying flowing and pooled portions of Sycamore Canyon Creek and restored and natural vernal pool features on the project site once per month from January through April while the proposed project is in construction. After construction is complete, these areas shall be surveyed for African clawed frogs once per year in March. If African clawed frogs are observed during the construction or post-construction monitoring, then control measures shall be implemented. Since different areas may require control each year, yearly updates shall be made as necessary.

- **CM-13 Argentine Ant Control and Monitoring.** Upon initiating construction, including landscaping in the development area, quarterly monitoring by a qualified biologist shall be initiated for Argentine ants along the development–Onsite Preserve interface at sentinel locations where invasions could occur (e.g., where moist microhabitats that attract Argentine ants may be created). A qualified biologist shall determine the monitoring locations. Ant pitfall traps, bait

sampling, or similarly appropriate sampling method shall be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, direct control measures shall be implemented immediately to help prevent the invasion from worsening. These direct controls may include but are not limited to nest/mound insecticide treatment or available natural control methods being developed. A general reconnaissance of the infested area shall also be conducted to identify and correct the possible source of the invasion, such as uncontrolled urban runoff, leaking pipes, or collected water. Quarterly monitoring reports, as needed, shall be submitted to the City. Monitoring reports shall include remedial recommendations and issue resolution discussions when necessary. Monitoring and control of Argentine ants shall occur in perpetuity and shall be included in the Preserve Management Plan.

- **CM-14 Nesting Bird Survey.** To avoid impacts to nesting migratory birds and raptors and other nesting birds, which are sensitive biological resources pursuant to the California Environmental Quality Act, the Migratory Bird Treaty Act, and the California Fish and Game Code, breeding season avoidance shall be implemented and included on all construction plans.

  Except as specified below, there shall be no brushing, clearing and/or grading allowed during the breeding season of migratory birds (between February 15 and August 31) or raptors (January 1 and August 31) or coastal California gnatcatcher (between February 15 and August 15). If vegetation is to be cleared during the nesting season, all suitable habitat within 500 feet of impact area shall be thoroughly surveyed for the presence of nesting birds by the qualified biologist no earlier than 72 hours prior to clearing. If project activities are delayed or suspended for more than 14 days during the nesting bird season, surveys should be repeated. The survey results shall be submitted by the applicant to the City. If any active nests are detected, the area shall be flagged and mapped on the construction plans along with an initial 300-foot buffer for listed passerines (e.g., coastal California gnatcatcher) and up to a 500-foot maximum buffer for raptors. The nests shall be avoided and buffers maintained until the nesting cycle is complete or it is determined that the nest has failed. The final appropriate buffer distance, as well as cycle completion or nest failure, shall be determined by an approved biologist. Factors used to determine and guide the appropriate buffer distance shall include individual pair behavior responses, amount of buffering topography, proximity to existing disturbance, and ambient noise levels. In addition, an approved biologist shall be present on the project site to monitor the vegetation removal to ensure that nests not detected during the initial survey are not disturbed. If the monitoring biologist determines that the nesting activities are being substantially disrupted by adjacent construction activity, the City shall be notified, and measures to avoid or minimize such impacts shall be developed. Such measures could include installation of noise barriers, increased buffering, stopping construction in the area, or other measures, as developed.

- **CM-15 Land Use Adjacency Guidelines.** The City will ensure that all project development adjacent to the boundary of the Onsite Preserve adheres to the following adjacency guidelines as set out in Section 7.2.3.6:
  - Drainage — All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, excess water, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem processes within the preserves. This

shall be accomplished using a variety of methods, including natural detention basins, grass swales, or mechanical trapping devices. The project design shall comply with the Standard Urban Stormwater Management Plan such that stormwater flows conveyed from the project site do not adversely affect off-site vegetation communities or jurisdictional resources by significantly altering natural hydrologic patterns.

- Lighting — Lighting of all developed areas adjacent to the Onsite Preserve shall be directed away from the Preserve wherever feasible and consistent with public safety. Low-pressure sodium lighting shall be used whenever possible.
- Noise — Uses adjacent to the Onsite Preserve shall be designed to minimize noise impacts. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could affect or interfere with wildlife utilization of the Habitat Preserve.
- Invasive species — No invasive non-native plant or wildlife species shall be introduced into areas immediately adjacent to the Onsite Preserve. All open space slopes immediately adjacent to the Onsite Preserve shall be planted with native species that reflect the adjacent native habitat.
- Buffers — There are no requirements for buffers outside the Onsite Preserve, except as may be required for wetlands pursuant to federal and/or state permits.
- Defensible space zones — Defensible space zones shall be fully contained adjacent to the project's development. Prior to implementing the project development adjacent to the Habitat Preserve, the City shall review and approve proposed defensible space to ensure that no new defensible space will be required within the Habitat Preserve.
- Fencing, barriers, and edge treatment
  - Fencing, barriers, or functional edge treatment and signage will be required for all new or modified projects developed on lots abutting(or effectively adjacent to) Preserves and shall be designed to prevent intrusion of domestic animals and people into the Preserve. This requirement may be waived with written approval from the Wildlife Agencies.
  - The use of gates, openings, or other entry means besides allowed formal trails will be prohibited in project fencing, barriers and edge treatment that would allow human access to the Preserve. This requirement may be waived with written approval from the Wildlife Agencies.

- **CM- 16 Preserve Protection.** Conformance with the Land Use Adjacency Guidelines listed above will be made a condition of project approval and included in Covenants, Conditions, and Restrictions.

  Throughout the Onsite Preserve, the following measures shall be implemented:

  1. Lighting shall be directed toward development and shielded away from the Habitat Preserve.
  2. Trails shall not be in use from dusk to dawn, pets must be on leashes, and trails shall only be used for hiking and biking with the exception of the extreme northeastern trail (approximate 1,200-foot long section) that is already established for equestrian use.

3. Trails shall be managed in accordance with the Public Access Plan, and disclosed in the Covenants, Codes & Restrictions (CC&Rs):
    a. Only the trail types discussed within the Public Access Plan shall be allowed;
    b. Unnecessary trails shall be abandoned and restored in accordance with the Public Access Plan, Preserve Management Plan, and Upland Restoration Plan; and
    c. Trails shall be monitored on a regular basis and protected and maintained in accordance with the Public Access Plan and Preserve Management Plan;
4. Trails may be temporarily closed to control unauthorized access.
5. Trails may be closed on a seasonal basis to protect Covered Species in the Habitat Preserve.
6. Streets "V" and "W," which connect the Vineyard Village to Fanita Commons and Orchard Village, shall provide safety lighting that shall be button started with a timer shut-off delay such that lighting shall not permanently be on at night, but only on when needed for emergency purposes or pedestrian safety.

- **CM- 17 Weed Control Treatments.** Weed control treatments shall include all legally permitted chemical, manual, and mechanical methods applied with the authorization of the County of San Diego agriculture commissioner. The application of herbicides shall be in compliance with all state and federal laws and regulations under the prescription of a pest control advisor and implemented by a licensed applicator. Where manual and/or mechanical methods are used, disposal of the plant debris shall follow the regulations set by the County of San Diego agriculture commissioner. The timing of the weed control treatment shall be determined for each plant species in consultation with the pest control advisor, the County of San Diego agriculture commissioner, and the California Invasive Plant Council with the goal of controlling populations before they start producing seeds. Additionally, the herbicides used during landscaping activities shall be contained within the proposed project's impact footprint.
- **CM- 18 Stormwater Pollution Prevention Plan.** The applicant shall prepare a Stormwater Pollution Prevention Plan pursuant to National Pollution Discharge Elimination System General Construction Permit (Water Quality Order 99-08-DWQ). The Stormwater Pollution Prevention Plan shall include, at a minimum, the best management practices listed below. The combined implementation of these requirements shall protect adjacent habitats and special-status species during construction to the maximum extent practicable with the goal of providing multiple beneficial uses. At a minimum, the following measures and/or restrictions shall be incorporated into the Stormwater Pollution Prevention Plan and noted on construction plans, where appropriate, to avoid impacts on special-status species, sensitive vegetation communities, and/or jurisdictional aquatic resources during construction. An approved biologist shall verify the implementation of the following design requirements:
    1. Fully covered trash receptacles that are wildlife-proof and weather-proof shall be installed and used by the operator to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Littering shall be prohibited, and trash shall be removed from construction areas daily. All food-related trash and garbage shall be removed from the construction sites on a daily basis.

2. Pets on or adjacent to construction sites shall not be permitted by the contractor.
3. Any equipment or vehicles driven and/or operated shall abide by a speed limit of 15 miles per hour during daylight hours and 10 miles per hour during dark hours.
4. Construction activity shall not be permitted in jurisdictional aquatic resources, except as authorized by applicable law and permit(s), including permits and authorizations approved by the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board.
5. Temporary structures and storage of construction materials shall not be located in jurisdictional aquatic resources.
6. Staging/storage areas for construction equipment and materials shall not be located in jurisdictional aquatic resources.
7. Any equipment or vehicles driven and/or operated in jurisdictional aquatic resources, as authorized by applicable law and permit(s), shall be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.
8. No stationary equipment, such as motors, pumps, generators, and welders, or fuel storage tanks, shall be located within jurisdictional aquatic resources.
9. No debris, bark, slash sawdust, rubbish, cement or concrete, or washing thereof; oil; or petroleum products shall occur where it may be washed by rainfall or runoff into jurisdictional aquatic resources.
10. When construction operations are completed, any excess materials or debris shall be removed from the work area according to the conditions outlined in the permit(s).
11. No equipment maintenance shall be performed within or near jurisdictional aquatic resources, where petroleum products or other pollutants from the equipment may enter these areas.

- **CM-19 Public Access Program.** The project proponent will work with the City and Wildlife Agencies to finalize a public access program that allows compatible siting of trails and uses within certain areas of the Onsite Preserve consistent with the goal of Covered Species conservation and habitat protection.
- **CM-20 Fire Protection Plan.** The City worked with the project proponent to ensure a fire protection plan was developed that includes measures to reduce the potential for habitat degradation due to wildfire. This plan is to be reviewed and approved prior to issuance of a grading permit for the Hardline Development Project.
- **CM-21 Crotch's Bumble Bee.** The Hardline Development project area has suitable habitat for Crotch's bumble bee. Therefore, presence is assumed and a habitat suitability assessment and focused surveys of the Hardline Development Project impact area are not required unless construction activities are planned during the Colony Active Period. Baseline inventory surveys and periodic monitoring will be performed within the Onsite Preserve areas.

Pre-Construction Surveys and Nest Avoidance. If project impacts must occur during the Colony Active Period (April 1 through August 31), then pre-construction surveys for active bee nest colonies will be required no more than 5 days prior to any ground disturbance or vegetation removal. The following method for nest surveys shall be used unless the Wildlife Agencies provide an updated method based on current understanding of bumble bee nests in the future:

- Within non-developed habitats, the biologist shall look for nest resources (e.g., burrows) suitable for bumble bee use. If an area of bumble bee activity is detected, the biologist shall watch potential nest resources for a period of time (up to 30 minutes if early in the Colony Active Period, and up to 10 minutes during the peak of the Colony Active Period) looking for exiting or entering worker bumble bees. Worker bees should arrive and exit an active nest site with frequency, although the rate can vary depending on whether it is early/late or at the peak of the Colony Active Period. If a bumble bee worker is detected, then a representative shall be identified to species. This should be possible without capture in Santee. Biologists should ensure that 100 percent visual coverage of all potential burrow resources are surveyed. Therefore, the biologist should select a view that balances viewing multiple burrows while ensuring detection if bees are present. It is up to the discretion of the biologist regarding the actual survey viewshed limits from the chosen vantage point; but this limit shall not exceed 50 feet. The biologist will reduce the 50-foot limit as necessary to ensure 100 percent visual coverage of potential burrow resources depending on topography, vegetation height and cover, and other factors. This approach should allow the biologist to assess multiple burrows at one time to sufficiently determine if bees are entering/exiting them. If a nest is suspected, the surveyor can block the entrance of the possible nest with a sterile vial or jar until nest activity is confirmed (no longer than 30 minutes). A photo voucher of the bee species shall be collected, and the location mapped using GPS. If identification is not feasible without capture, then the project proponent will consult with CDFW prior to allowing the biologist to capture and identify to species (using the protocol for the California Bumble Bee Atlas project managed by the Xerces Society) to determine if a CESA Memorandum of Understanding (MOU) and/or Scientific Collecting Permit (SCP) would be required.
- A written survey report shall be submitted to the City and Wildlife Agencies within 30 days of the pre-construction nest surveys. The report shall include survey methods, weather conditions, and survey results, including botanical results, a list of insect species observed, and a figure showing the locations of any Crotch's bumble bee nest sites or individuals observed (as appropriate for the level of survey required). The survey report shall include the qualifications of the surveyor(s) and approved biologist(s) for identification of photo vouchers and a detailed habitat assessment. If Crotch's bumble bee nests are observed, location information shall be submitted to the California Natural Diversity Database at the time of, or prior to, submittal of the survey report. There are no approvals required from the City of Wildlife Agencies or additional coordination requirements.
- If a Crotch's bumble bee nest is detected, the project biologist will establish, monitor, and maintain a no-work buffer around the nest. The size and configuration of the no-work buffer will be based on best professional judgement of the project biologist in consultation with the Wildlife Agencies. The buffer will provide at least 50 feet of clearance around nest entrance(s).

Construction activities will not occur within the no-work buffer until the colony is no longer active. To determine that a nest is no longer active, the nest will be observed for a minimum of 60 minutes each day across a minimum of 3 days during suitable flight weather (i.e., ambient air temperature between 60 and 90 degrees Fahrenheit, winds under 10 mph, and no precipitation higher than a drizzling rain). If no bees are seen flying in or out of the nest by the end of the observation period, it will be determined that the nest is no longer active. If project activities occur outside of the Colony Active Period, then pre-construction surveys for active bee nest colonies and avoidance measures are not required.

Preserve Baseline Inventory Surveys. These surveys will occur during the survey season (Colony Active Period; April 1 through August 31) in 2025. Baseline survey methods for the Onsite Preserve include the following:

- For the Baseline survey, a habitat suitability assessment will be conducted to identify areas of high occurrence of floral resources known to support Crotch's bumble bee (e.g., *Salvia mellifera*-dominated chaparral) using aerial imagery (e.g., drone acquired) or reconnaissance survey methods. Survey efforts will subsequently focus on those areas. A minimum of 10 percent of the Preserve will be sample surveyed during the Baseline survey.
- The focused survey shall be performed by a biologist with expertise in surveying for bumble bees (i.e., has participated in a field training class, has actively participated in the National Bumble Bee Atlas Project, holds a CDFW MOU permit, or demonstrable similar experience) during the Colony Active Period and include a minimum of three (3) survey passes for that are spaced 2 to 4 weeks apart. Survey passes may be reduced to two (2) passes spaced 2 to 4 weeks apart if conducted during the peak of the Colony Active Period (April 15 through June 15). Surveys may occur between 1 hour after sunrise and 2 hours before sunset. Surveys shall not be conducted during wet conditions (e.g., foggy, raining, or drizzling) and surveyors shall wait at least 1 hour following rain. Optimal surveys are when there are sunny to partly sunny skies and a temperature greater than 60°F and less than 90°F. Surveys shall not be conducted when it is windy (i.e., sustained winds greater than 8 mph).
- The biologist will focus their time within areas with a high abundance of nectar and pollen sources that are commonly associated with Crotch's bumble bee and/or that are considered attractive to bumble bees in general. The biologist will meander through these focused nectar/pollen source areas at a rate of no more than 5 acres per hour. Given that nectar/pollen source areas shift during the course of the blooming season, the biologist will adjust the focused nectar/pollen source areas during each survey round as needed – trying to survey the most promising areas. Once a Crotch's bumble bee is detected, the surveyor may consider the area within a 0.5 km radius to be occupied and cease surveying within that area.
- Identification for the baseline surveys shall include trained biologists preferentially photographing specimens on flowers or netting/capturing representative bumble bees in appropriate insect nets, per the protocol for the California Bumble Bee Atlas project managed by the Xerces Society. Biologists that will use capture techniques must be approved by CDFW or hold an active MOU and/or SCP issued by CDFW for Crotch's bumble bee prior to performing captures.

- **CM22 Burrowing Owl.** The western burrowing owl has unique requirements to address its nesting and habitat impacts. Impacts to occupied western burrowing owl habitat shall be avoided to the maximum extent practicable. Where impacts cannot be avoided, the following conservation measures shall be required:
    - Determine if suitable burrowing owl nesting and overwintering habitat occurs within the project site based on current field surveys and a habitat assessment. If suitable (e.g., >11 cm in diameter and >150 cm in depth; CDFW 2012) and/or occupied burrows are present within the project site, surveys shall also include potential foraging habitat within the project area.

      If suitable burrowing owl habitat is present, conduct focused burrowing owl surveys consistent with the CDFW Staff Report on Burrowing Owl Mitigation[16] (CDFW 2012). A site is considered occupied if at least one burrowing owl has been observed occupying a burrow within the last three years. Occupancy may also be indicated by burrowing owl sign such as molted feathers, cast pellets, or excrement at or near a burrow entrance or perch site.

      If a project site is determined or assumed to be occupied by burrowing owl, the following measures will be implemented for all Covered Activities:

      a. Seasonal restrictions: Project activities will be restricted within occupied burrowing owl habitat during the breeding season (generally February 1 – August 31 but may vary with climatic conditions) until nesting is complete (i.e., the young have dispersed and are fledged, independently foraging, and no longer using the burrows or burrow complex, and/or adults are no longer nesting). If project activities cannot be avoided while burrowing owl are present on the project site at any time of year, no-disturbance buffers shall be implemented, as outlined below in measure 3I.

      b. Pre-construction surveys: No more than 14 days prior to the initiation of project activities, a qualified biologist will conduct at least two surveys at least 7 days apart, with the final survey conducted no more than 48 hours prior to the initiation of project activities. A report of the survey results, including mapping of any occupied burrows (including natural or man-made), burrowing owls, or burrowing owl sign observed, will be submitted to the City for their review and approval prior to initiation of project activities. Pre-construction surveys will be required year-round to address potential impacts during both overwintering and nesting seasons.

      c. No-disturbance buffers: Some project activities may be conducted when burrowing owls are present if appropriate no-disturbance buffers are established around occupied burrows or burrow complexes, paired with daily monitoring by a qualified biologist. A no-disturbance buffer is the area around a burrow or burrow complex inside which project activities are prohibited. Buffers will be established by a qualified biologist consistent with guidance provided in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012)

[16] Or the most recently CDFW-approved burrowing owl guidance document, if applicable. This caveat applies to all references to the 2012 CDFW Staff Report on Burrowing Owl Mitigation. Per current guidance, detection probability for burrowing owl surveys is highest during the breeding season. Therefore, focused surveys should be conducted between February 1 – August 31 except in limited circumstances (i.e., the site is believed to be a wintering site only based on negative breeding season results).

or the most recently CDFW-approved burrowing owl guidance document, if applicable. Appropriate buffer size will depend on the time of year, level of disturbance, and project-specific site conditions. Buffers around active nesting sites will be a minimum of 200 meters (656 feet) regardless of the time of year. Buffers around occupied overwintering burrows will be a minimum of 50 meters (164 feet). The monitoring biologist will have the authority to order stop work if burrowing owl exhibit distress or abnormal behavior and will consult with the Plan Coordinator to determine next steps (e.g., stop work or increase buffers).

Where impacts to burrowing owl are unavoidable, the following measures shall be required:

d. If suitable but un-occupied burrows cannot be avoided, burrow exclusion may be appropriate. Burrow exclusion will only be allowed after the burrow has been determined by a qualified biologist to be inactive. No exclusions will be permitted during the nesting season when there is evidence of burrowing owl activity. Prior to the initiation of any burrow exclusions, a Burrow Exclusion Plan will be submitted to the City, CDFW, and USFWS for review and approval.

e. Mitigation for impacts to occupied habitat will occur through the conservation of occupied burrowing owl habitat in the onsite preserves (Managed Preserve), at a ratio of no less than 1:1 for the territory of the burrowing owl. If occupied burrowing owl habitat is not available for mitigation within the Plan Area, lands with potential to be occupied through appropriate restoration, management, and enhancement of burrowing owl nesting and foraging requirements may be considered. The land to be conserved shall be approved by the City and Wildlife Agencies. The land to be conserved will be secured by a legal instrument (e.g., conservation easement) to the satisfaction of the Wildlife Agencies to ensure the conservation of the property in perpetuity in advance of any aspects of the Covered Activity commencing. Perpetual funding will also be required for the conserved property to ensure management and monitoring of the site for burrowing owl.

In certain circumstances, impacted individuals may be relocated out of the impact area to a location with suitable habitat by a qualified biologist using methodologies consistent with steps outlined by the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) or the most recently CDFW-approved burrowing owl guidance document, if applicable. A Burrowing Owl Translocation Plan will accompany any request to relocate burrowing owls. The plan will thoroughly describe the schedule, the techniques to be used, the suitability of the receiver site, and the experience of the biologists that will be employed. The plan will be submitted to the City, CDFW, and USFWS for review and approval prior to any relocation. All evictions and/or translocations must occur outside of the breeding season.

5.3.4 Relationship with Other Conservation Plans

The following describes the Subarea Plan relationship with other conservation and management plans in the Plan Area.

5.3.4.1 San Diego Gas & Electric NCCP/HCP/Amendment

The San Diego Gas & Electric (SDG&E) NCCP/HCP (SDG&E 1995, amended 2023) addresses potential impacts on sensitive species and/or habitats associated with SDG&E's on-going operation and management of its gas and electric systems throughout the SDG&E service area. As part of the SDG&E NCCP/HCP, SDG&E has been issued take permits by USFWS (Permit PRT-809637, ESPER4956429) and an NCCP permit by CDFG (Permit 2835-1995-79-5) for 110 Covered Species. SDG&E manages its operations to avoid potential impacts and provide appropriate mitigation where such impacts are unavoidable. The SDG&E NCCP/HCP is designed to be consistent with the local habitat conservation plans and the overall preserve planning effort. The SDG&E NCCP/HCP defines SDG&E's responsibilities for either restoration or mitigation of temporary impacts that occur to native habitat communities. The underlying land management entity will then be responsible for managing those impact areas over the long-term by keeping invasive weeds from invading the temporarily impacted areas and ensuring that the native vegetation remains intact. Permanent impacts to native habitats resulting from SDG&E's activities within a habitat preserve area will be mitigated at a 2:1 ratio or otherwise defined by the SDG&E NCCP/HCP. Overall, the SDG&E power line easements do not fragment potential preserve areas and are consistent with the establishment of the Managed Preserve.

Existing SDG&E transmission facilities in the Plan Area are as follows.

- A 150-foot-wide easement for electrical power transmission lines that traverses Santee in an east–west direction (Mission-Miguel Line). The easement runs through the natural habitat at the northern terminus of Magnolia Avenue in the North Magnolia Subunit and then crosses the Fanita Ranch Subunit. This includes about 22 acres of powerline right-of-way with three overhead transmission lines, plus a dirt access road largely outside this 150-foot-wide right-of-way, running across the preserve area to be set aside as part of the Fanita Ranch Hardline Development Project.
- A 20-foot-wide easement located behind existing residences on Ramsgate Drive. At Ramsgate Drive, the transmission line traverses hilly terrain and natural habitat within the "Tank Hill" portion of the East Santee Uplands Subunit.

These utility easements are included in the Managed Preserve where the preserve boundaries overlap however, this area is not included in the newly conserved lands acreage total and SDG&E activities within these areas are only covered by the SDG&E NCCP/HCP and are not Covered Activities under the Subarea Plan.

5.3.4.2 Existing Preserve Management Plans

As described in Section 2.3.4.1, Existing Protected Open Space within Santee, existing open space occurs in the Plan Area and is part of the baseline conditions for the Subarea Plan. A number of these open space properties have preserve managers and are being actively managed pursuant to existing management plans. Any conservation and management in these existing habitat preserves are not regulated by the Subarea Plan (i.e., the Plan does not add additional management and monitoring requirements). As part of the City's commitment to provide an overview and coordination of conservation activities across the Plan Area, the City will fund a Preserve Steward position who will be responsible to collaborate with all Preserve Managers, including the existing and future managers within the Plan Area (see Section 5.4.3, City Role for Overview and Coordination of Preserve System).

5.4 Conservation Measure 2—Manage and Monitor Subarea Plan Managed Preserve

Implementation of the Subarea Plan will result in the establishment of an approximately 2,261.2-acre Subarea Plan Managed Preserve designed to protect and maintain natural habitats and associated Covered Species. As previously described in Section 5.3, the Subarea Plan Managed Preserve will be assembled through:

1. Hardline Conservation Lands – the establishment of 1,764.9 acres of natural habitats within the Fanita Ranch Onsite Preserve and Offsite Conservation Areas as part of the Fanita Ranch Hardline Development Project.
2. City-owned Preserve Lands – the commitment by the City to provide long-term management and monitoring on 167.3 acres of natural habitats within City-owned properties to be included in the Managed Preserve and ensuring these lands are legally protected.
3. Upland Standards Areas – the legal protection of a minimum of 70 percent of the Upland Standards Areas (330.8 acres of natural habitats) through onsite mitigation of future projects within the three Upland Standards Areas.

An important element of the Subarea Plan is to ensure funding for management and monitoring for habitat preserves that will make up the Managed Preserve and the ecological connections of the Managed Preserve with other Existing Protected Open Space. Adequate funding for the perpetual management and monitoring will be determined using a PAR or other appropriate program. This will be accomplished through the following actions by the City:

- Define Management and Monitoring Requirements on Individual Preserve Properties (Section 5.4.1)—The Subarea Plan sets forth requirements for how individual habitat preserves (Section 7.2.2) within the Subarea Plan Managed Preserve will be managed and monitored and funded in perpetuity.
- City Preserve Manager (Section 5.4.2)—The City will contract with a preserve management entity once the Subarea Plan is adopted by the City and prior to any project moving forward to support the management and monitoring on City-owned Preserve Lands. The preserve management entity will be the City Preserve Manager and will be provided with funding from the City to complete the activities identified in the RMP that will be prepared by the City Preserve Manager. In addition, the City Preserve Manager may be contracted to serve as the Preserve Manager for future preserves within the Upland Standards Areas if a project proponent does not prefer to use their own Preserve Manager.
- City of Santee's Role for Oversight and Coordination of a Preserve System across the Plan Area (Section 5.4.3)—As part of the Subarea Plan implementation, the City will create and fund a staff position with the role and responsibility to provide oversight and coordination of the overall Subarea Plan Managed Preserve in collaboration with Existing Protected Open Space preserve managers (see Section 2.3.4.1).
- Create Opportunities and Incentives to Increase the Level of Management and Monitoring (Section 5.4.4)—A component of the Preserve System assembly involves the coordination with

Existing Protected Open Space that are currently protected with legal site protection instruments but are not fully managed to MSCP standards. Implementation of the Subarea Plan will create opportunities and incentives to increase, over time, the level of management and monitoring on these properties, typically through the use of future funds to enhance management.

5.4.1 Management and Monitoring Requirements for the Managed Preserve

For lands included within the Managed Preserve, the Subarea Plan defines requirements for preservation, management, and monitoring. The City, Preserve Manager, and any project proponent for a component of the Managed Preserve will ensure the following requirements are met to ensure a minimum standard for conservation benefits for Covered Species as follows:

- Manage and protect these properties specifically for conservation of Covered Species and the ecosystems upon which they depend.
- Conserve and protect these properties by a recorded irrevocable land protection mechanism (conservation easement, or equivalent legal land protection mechanism approved by the Wildlife Agencies).
- Manage these properties in accordance with completed and approved (by the City and Wildlife Agencies) Resource Management Plan (RMP).
- Manage and monitor these properties, including general stewardship, control of public and illegal/unpermitted access, monitoring of Covered Species and their habitats, management of sensitive biological resources, and control of invasive species.
- Secure perpetual funding such as a non-wasting endowment for management and monitoring of these properties as determined by a PAR or similar program.
- Provide annual monitoring reports on these properties to the City and Wildlife Agencies by March 31 of each year.
- Confirm allowable uses on these properties, if any, compatible with Covered Species conservation to be approved by the City and Wildlife Agencies as part of the RMP review.

Section 7.2, *Preserve Management and Monitoring*, defines the management and monitoring requirements in more detail.

5.4.2 City Preserve Manager

The City will contract with a preserve management entity who will serve as the City Preserve Manager and conduct the biological management and monitoring on City-owned Preserve Lands. In addition, the City Preserve Manager may be contracted to serve as the Preserve Manager for future preserves that will be established within the non-City owned Preserve Lands within the Upland Standards Areas if a project proponent does not prefer to use their own Preserve Manager. The City's goal in identifying a single Preserve Manager is to create consistency with monitoring and management across the Preserve Lands and cost savings created by the economy of scale for smaller habitat preserves by being managed/monitored as part of the other Preserve Lands.

5.4.3 City Role for Overview and Coordination of Preserve System

The Subarea Plan Managed Preserve will connect to Existing Protected Open Space. Additional conservation or management on existing protected lands is not required by the Subarea Area Plan. Likewise, these existing protected lands are not directly relied upon as part of the conservation strategy for the Subarea Plan and associated Permits. However, these existing protected lands do provide baseline conservation for the Subarea Plan and are part of the conservation context that the Subarea Plan is evaluated in considering the status and threats to Covered Species. Since the Subarea Plan Managed Preserve boundaries will maximize the opportunities and requirements to connect to these existing protected open space properties, the City will define roles for a Subarea Plan Coordinator and Preserve Steward with the responsibilities to coordinate management and monitoring activities with other Preserve Managers throughout the Plan Area.

The **Santee Subarea Plan Coordinator** will function as the main point of contact for issues relating to the Subarea Plan implementation and serve as the liaison between City of Santee departments, private landowners, Wildlife Agencies, other public agencies, landowners of protected open space lands adjacent to the Plan Area (e.g., Miramar Air Station, City of San Diego, County of San Diego) and the general public to facilitate partnering opportunities for regional conservation efforts as well as manage other Subarea Plan administration issues. The Subarea Plan Coordinator will also be responsible for conducting project development reviews of Covered Activities to ensure compliance with Subarea Plan guidelines and standards and that the RMPs are being implemented.

The **Preserve Steward** will be directly responsible for the oversight and coordination of activities within the Subarea Plan Managed Preserve and Open Space System. This position will be the primary point of contact for all preserve management and monitoring issues within the Plan Area and provide direction to the City Preserve Manager. It will be the responsibility of the Preserve Steward to ensure implementation of individual RMPs and gather information needed for Subarea Plan annual reporting through regular coordination with Preserve Managers.

Both the Subarea Plan Coordinator and the Preserve Steward will be responsible for pursuing eligible grant funding opportunities to improve and enhance management of the Subarea Plan Managed Preserve and Open Space System from a City-wide perspective that is above and beyond the funding requirements necessary for the implementation of the Managed Preserve, Subarea Plan, and Permit requirements. This may include activities that would complement the Subarea Plan but are not required, such as additional restoration of habitat for Covered Species and/or regional invasive species removal. The City will meet annually or as needed with the Wildlife Agencies to discuss issues of concern, such as Subarea Plan implementation, conservation issues, monitoring issues, land acquisition, financial integrity of the Subarea Plan, and effectiveness of the Subarea Plan to fulfill its conservation goals.

Section 8.2, *Roles and Responsibilities*, and Section 8.4, *Subarea Plan Funding* further address the approach for staffing and funding of these positions.

5.4.4 Create Opportunities and Incentives to Increase Management and Monitoring

Approximately 1,134 acres of Existing Protected Open Space exist within the Plan Area that have a range of management and monitoring levels. As part of the implementation of the Subarea Plan, the City will establish a Subarea Plan Conservation Fund (see Section 8.4.1.5, *Subarea Plan Conservation Fund*). This fund will allow small development projects (less than 5 acres) within the Infill Development Areas with less biological impacts or fewer opportunities to mitigate onsite to offset biological impacts by paying an appropriately comparable mitigation fee (as compared to mitigation requirements of similarly situated landowners in nearby Standards Areas) used to acquire, maintain, and/or enhance management of sensitive biological resources within the Open Space System. The City and Wildlife Agencies will jointly determine if the Subarea Plan Conservation Fund is appropriate to be used to fund additional management and monitoring on Existing Protected Open Space that are not fully managed, and that will benefit the overall conservation goals of the Subarea Plan.

5.5 Conservation Measure 3—Avoidance, Minimization, and Mitigation

Section 5.5 describes the biological resource surveys and avoidance and minimization measures that will be implemented by the City for all Covered Activities undertaken within the Plan Area that have the potential to result in take of Covered Species and/or loss of habitat. Avoidance and minimization measures will be implemented by the City to reduce effects on Covered Species and their habitats by Covered Activities through a process that verifies that project implementation adheres to a set of protection measures outlined in this section. If direct and/or indirect impacts are unavoidable, this section describes the appropriate minimization and mitigation measures required to offset impacts. Table 5-12 indicates the applicability of each conservation measure to the various subunits in the Plan Area.

5.5.1 Avoidance and Minimization

To facilitate the evaluation and approval process for Covered Activities, the City will promulgate a Habitat Loss and Incidental Take (HLIT) Ordinance (see Section 8.3.1). The HLIT Ordinance will apply to all private and public projects where the City has jurisdictional land use authority in the Plan Area, qualify as a Covered Activity, and will result in potential impacts to biological resources or Covered Species. As part of the issuance of HLIT permits, the City will require avoidance and minimization of sensitive biological areas, Covered Species and their habitat, conformance with nesting bird conservation standards, and implementation of stormwater and water quality best management practices (BMPs) as described below.

5.5.1.1 Avoidance and Minimization of Sensitive Biological Resources

Prior to final design of a development project, the City will require the project proponent to complete project-specific biological surveys to identify biologically sensitive areas within and adjacent to the project site/parcels. The City will require these surveys to be completed as part of the HLIT permitting

Table 5-12. Application of Conservation Measures to Subunits

Measures	Mission Trails Subunit	East Santee Uplands Subunit	San Diego River Subunit	North Magnolia Subunit	Fanita Ranch Subunit	Infill Development Areas Within Subunits
5.3.3.5 Conservation Measures 1-22					X	
5.5.1 Avoidance and Minimization						
5.5.1.1 Avoidance and Minimization of Sensitive Biological Resources	X	X	X	X		X
5.5.1.2 Nesting Birds Conservation Standards	X	X	X	X		X
5.5.1.3 Stormwater and Water Quality Best Management Practices	X	X	X	X		X
5.5.2 Mitigation Standards for Vegetation Communities			X			X
5.5.3 Ecological Linkages, Wildlife Corridors, and Wildlife Crossing Structure Criteria	X	X	X	X		
5.5.4 Fire and Defensible Space Standards	X	X	X	X		X
5.5.5 Aquatic, Wetlands, and Riparian Protection Standards	X	X	X	X		
5.5.6 Narrow Endemic Species Standards	X	X	X	X		
5.5.7 Vernal Pool Conservation Standards	X	X	X	X		
5.5.8 Covered Plant Species Translocation and Restoration Conservation Standards	X	X	X	X		X
5.5.9 Species-Specific Conservation Standards						
5.5.9.1 General Conditions for Covered Species Conservation Standards	X	X	X	X		X
5.5.9.2 Western Spadefoot Conservation Standards	X	X	X	X		
5.5.9.3 Hermes Copper Butterfly Conservation Standards	X	X	X	X		
5.5.9.4 Least Bell's Vireo Conservation Standards	X	X	X	X		
5.5.9.5 Western Burrowing Owl Conservation Standards	X	X	X	X		X
5.5.9.6 Crotch's Bumble Bee Conservation Standards	X	X	X	X		

process. The biological surveys shall be conducted by a qualified biologist[17], and the surveys shall include, at a minimum, an initial field survey to map sensitive resources and natural communities and determine if potential habitat of Covered Species exists within the project area. Information from these biological surveys will be incorporated into a Biological Resources Technical report. Based on the results of the field surveys, the City will require the project proponent to modify the project design, as appropriate, prior to approval. The City will also require that the project is adjusted, as necessary, to ensure the project implementation scheduling avoids and minimizes effects on biological resources while taking into consideration the degree of sensitivity of biological resources within the project area. Habitat types with a higher degree of sensitivity, such as rare/limited vegetation types (e.g., native grasslands, cactus scrub) and riparian/wetland features, will be avoided to the maximum extent practicable as determined by the City in coordination with the Wildlife Agencies.

The City will require that standard BMPs be implemented for all Covered Activities to avoid and minimize impacts on biological resources. Standard BMPs will include, but not be limited to:

- **Delineation of Environmentally Sensitive Areas.** Prior to clearing, grubbing, grading, or construction activities, highly visible barriers (such as orange construction fencing, stakes, or flagging depending on the size of the project and the sensitivity and proximity of the biological resources) will be installed around areas along the edge of the project footprint to designate environmentally sensitive areas to be protected from construction related activities. Environmentally sensitive areas to be avoided will be identified as part of the environmental review process by a qualified biologist. No project activity of any type will be permitted within these environmentally sensitive areas (with exceptions for planned biological restoration activities such as transplantation). In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the environmentally sensitive areas. All construction equipment will be operated in a manner so as to prevent accidental damage to environmentally sensitive areas and associated barriers. No structure of any kind, equipment staging, incidental storage of equipment or supplies, or construction access roads will be allowed within these protected zones. Silt fence barriers will be installed, as appropriate, at the environmentally sensitive area boundary to prevent accidental deposition of fill material or sediment run-off into areas where vegetation or other sensitive features are adjacent to planned grading activities.
    - Construction footprints for Covered Activities in the Preserve or abutting the Preserve will be clearly defined with flagging and/or fencing and will be removed upon completion of the Covered Activities.

[17] Qualified Biologist is a person having the appropriate expertise and level of experience to complete habitat assessments, focused surveys, and application of avoidance, minimization, and avoidance measures described in the Plan. At minimum, the person shall have a BS or BA in wildlife management, ecology, zoology, botany, biology, or other closely related field, and at least two years' experience conducting field investigations in San Diego County. If undertaking surveys or activities (e.g., relocation, translocation) that could result in take of any federally listed species the person shall possess appropriate Section 10(a)(1)(A) recovery permits and for any state-listed or state species of special concern shall possess appropriate state permits/memoranda to conduct such surveys or activities. Qualifications shall be approved by the City of Santee.

- **Restoration of Temporary Impacts.** Areas of natural habitat that are temporarily affected by Covered Activities will be restored to a condition that will reflect the surrounding native vegetation characteristics and return to pre-disturbance conditions, if not better if the site is in degraded condition at the initiation of the project. Restoration plans will be completed as part of the project design for review and approval by the City. Restoration plans will include specific details for onsite and offsite restoration activities and will document how the proposal provides offsets for the temporal loss (as described in Table 5-13, *Uniform Mitigation Ratios*) including success criteria (e.g., percent cover of specified plants) and the timeline for restoration. Restoration that does not meet the success criteria within three years will be considered a permanent impact and will be required to mitigate accordingly, consistent with Section 5.5.2, *Mitigation Standards for Vegetation Communities*, below.
- **Invasive Species Control.** Invasive exotic plant species will be removed from the project work area and controlled during construction and operation periods. The use (i.e., planting, seeding, propagation, or transplantation) of known invasive plant species (i.e., plant species listed in California Invasive Plant Council's [Cal-IPC's] California Invasive Plant Inventory) will be prohibited for construction, revegetation, and landscaping activities. Project measures will be included to ensure invasive plant material is not spread from the project site to other areas by disposal off site or by tracking seed on equipment, clothing, and shoes. Equipment/material imported from an area of invasive plants must be identified and measures implemented to prevent importation and spreading of nonnative plant material within the project site. Disposal of the plant debris shall follow the regulations set by the County of San Diego agriculture commissioner. All construction equipment will be cleaned to remove dirt, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds before arriving to and leaving the project site. Eradication strategies (i.e., exotic plant abatement programs) will be employed should an invasion occur during construction. In addition, all planting stock to be brought onto the project site for landscaping should be first inspected by a qualified pest inspector to ensure it is free of pest species (e.g., Argentine ants (*Iridomyrmex humil*) and fire ants (*Solenopsis invicta*) that could invade natural areas.
- **Trash Control**. To avoid attracting predators of Covered Species and other sensitive species, the project site will be kept clean of debris. All food-related trash items will be enclosed in sealed containers and regularly removed from the site(s) daily.
- **Onsite Training.** When in or near natural habitat areas, all personnel involved in the onsite project construction will be required to participate in a preconstruction training and education program administered by the City to understand the avoidance and minimization obligations of the project.
- **Construction Monitoring.** The City will require that a qualified biologist monitor construction activities, as determined during the project-specific environmental review, for the duration of the project to ensure that measures required by the HLIT permit are being implemented.
- **Lighting.**
    - **Temporary Safety Lighting.** Any temporary safety or security night lighting for Covered Activities abutting or nearby to the Preserve will be selectively placed, utilize the lowest light

intensity practicable, fully shielded to prevent spillover in preserve areas, and directed away from all native vegetative communities.

- **New Lighting.** No new lighting shall be allowed in the Preserve areas except where essential for roadway, facility use, and safety and security purposes. New light sources abutting or nearby to the Preserve will be oriented downward, use the lowest light intensity and be pointed away from habitat areas to the extent practicable, and fully shielded so that the lighting does not spillover into preserve areas and potentially impact wildlife and other ecosystem resources. See the following link for more information: https://www.softlights.org/wp-content/uploads/2020/06/Longcore-and-Rich.-2017.-Artificial-night-lighting-and-protected-lands.pdf

- **Stockpiling Topsoil.** Topsoil stockpiling associated with Covered Activities will be placed only outside of Preserve areas to minimize the damage to habitats. If fill or topsoil is imported into the Preserve, the fill will be clean and free of foreign debris and non-native plant material.

5.5.1.2 Nesting Birds Conservation Standards

The City will ensure that all Covered Activities implement the nesting bird conservation standards including the following:

- Proposed Covered Activities (including, but not limited to, staging and disturbances to native and nonnative vegetation, structures, and substrates) will occur outside of the avian breeding season defined here as February 15 to September 30 to avoid disturbance to most breeding birds or destruction of the nest or eggs. A list of migratory birds protected under the Migratory Bird Treaty Act (MBTA) is published by USFWS (USFWS 2018).

- If avoidance of the avian breeding season is not feasible then pre-project surveys must be conducted at least 2 weeks prior to the initiation of Covered Activities by a qualified biologist with experience in conducting breeding bird surveys to determine nesting activity. The surveyor(s) will conduct weekly bird surveys to detect presence/absence of native bird species and nesting activity that is to be directly or indirectly impacted and (as access to adjacent areas allows) any other habitat within a distance should be 300 feet (500 feet for raptors). If nesting activity is detected, then all construction activity must occur outside of a 300-foot buffer surrounding each nest. Reductions in the nest buffer may be possible depending on site-specific factors (e.g., topography, screening vegetation, ambient noise levels, etc.), in coordination with the City and Wildlife Agencies. Construction noise levels should not exceed 60 dBA Leq hourly within the 300-foot buffer zone unless authorized by the Wildlife Agencies. The buffer zones and noise limits will be implemented until the nestlings fledge or the nest fails. Status of the nest will be monitored by a qualified biologist. A report will be submitted to the City and Wildlife Agencies for review prior to discontinuing the noise limits and nest buffers. The surveys will continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of project activities. Flagging, stakes, and/or construction fencing will be used to demarcate the inside boundary of the buffer between the project activities and the nest. The project proponent personnel, including all contractors working onsite, are required to be instructed on the sensitivity

of the area. The project proponent will document the results of the recommended protective measures described above to demonstrate compliance with the HLIT permit.

- A biological monitor will be present onsite during all grubbing and clearing of vegetation to ensure that these activities remain within the project footprint (i.e., outside the demarcated buffer) and that the flagging/stakes/fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project activities. The biological monitor will send weekly monitoring reports to the City during the grubbing and clearing of vegetation and will notify the City immediately if project activities take, possess, or needlessly destroy the nest or eggs of any bird as well as birds-of-prey and their nest or eggs.

5.5.1.3 Stormwater and Water Quality Best Management Practices

Potential effects of Covered Activities on water quality and sedimentation can impact Covered Species (e.g., least Bell's vireo, western spadefoot) directly or indirectly dependent upon natural hydrological processes and aquatic/wetland/riparian natural communities. The City will require project proponents to identify and implement structural and nonstructural BMPs to control sediment and non-stormwater discharges from project sites to protect water quality and minimize sedimentation/siltation effects offsite. Actions to prevent sediment from entering watercourses, aquatic areas, wetlands, and riparian areas during and after construction may include, but are not limited to, the following BMPs: sedimentation basins, silt fencing, fiber rolls and other erosion control blankets, gravel bag berms, sand bag barriers, tracking controls, stockpile management, dry season scheduling, proper material delivery and storage, solid waste management, concrete waste management, preservation of existing vegetation, temporary soil stabilization, dust and erosion control, soil binders, and straw mulch. No site personnel will discard solid or liquid materials into jurisdictional water features, wetland or riparian areas, or any preserve lands. Temporary, construction-related BMPs will include (where appropriate), but are not limited to, the following:

- **Silt Fence**. A silt fence is made of a filter fabric that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.
- **Fiber Rolls**. A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll and wrapped by netting, which can be photodegradable or natural. Fiber rolls with plastic netting that poses a wildlife entanglement hazard will not be used. Fiber rolls used for erosion control will be certified as free of noxious weed seed. When fiber rolls are placed at the toe and on the face of slopes along contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.
- **Gravel Bag Berms**. A series of gravel-filled bags are placed on a level contour to intercept sheet flows. Gravel bags pond sheet flow runoff, allowing sediment to settle out and release runoff slowly as sheet flow, preventing erosion.

- **Preservation of Existing Vegetation**. Carefully planned preservation of existing vegetation minimizes the potential removal or injury to existing trees, vines, shrubs, and grasses that protect soil from erosion.
- **Stockpile Management**. Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, aggregate sub-base or pre-mixed aggregate, and pressure-treated wood.
- **Vehicle and Equipment Maintenance**. Contamination of stormwater resulting from construction vehicle and equipment maintenance can be prevented or reduced by running a "dry and clean site." The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing containment features under equipment for potential contaminant spills and covers for materials stored outside, regularly checking equipment and material for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

In addition to temporary construction-related BMPs, permanent treatment BMPs will be included in the project design as part of the upgrading and installation of storm drain system facilities and storm drain controls associated with a project. Permanent BMPs would be implemented for the protection of water quality designed to meet Regional Water Quality Control Board (RWQCB) and National Pollutant Pollution Discharge Elimination System (NPDES) permit requirements and will be included within the project footprint. The probable selection of permanent treatment BMPs includes infiltration devices (infiltration trenches), biofiltration swales, and biofiltration strips. Infiltration trenches are basins or trenches that store runoff and allow it to infiltrate into the ground, thus preventing pollutants in the captured runoff from reaching surface waters. Biofiltration strips are vegetated land areas, over which stormwater flows as sheet flow. Biofiltration swales are vegetated channels, typically configured as trapezoidal or v-shaped channels that receive and convey stormwater flows while meeting water quality criteria and other flow criteria. Pollutants are removed by filtration through the vegetation, sedimentation, adsorption to soil particles, and infiltration through the soil. Strips and swales are effective at trapping litter, total suspended sediment, and particulate metals. Biofiltration strips and swales will be required by the City where appropriate, with consideration toward wherever site conditions and climate allow vegetation to be established and where flow velocities will not cause scour. The intent of the BMPs implemented for the Covered Activities is to reduce pollutants in stormwater discharge to the maximum extent practicable.

The City of Santee implements the Guidelines for Surface Water Pollution Prevention (Santee 2015) to support the City's Storm Water Management and Discharge Control Ordinance (Storm Water Ordinance), codified as Santee Municipal Code Chapter 9.06. This program establishes what dischargers must do to comply with the City of Santee ordinance and to receive permits for projects and activities that are subject to them.

5.5.2 Mitigation Standards for Vegetation Communities

For Covered Activities that will result in unavoidable impacts to natural habitats and/or Covered Species (including the Hardline Development Project), the City will ensure that mitigation of direct and indirect impacts will be required through land preservation and/or restoration as outlined below. Projects within the Infill Development Areas will be required by the City to implement the mitigation ratios in Table 5-13. All conservation properties established through habitat mitigation will be required by the City to implement the following:

- Site protection mechanism. A legal site protection instrument will be recorded on the mitigation property as a Conservation Easement (CE) for privately held land or Restrictive Covenant (RC) for City-owned land prior to any ground disturbance activities for the associated project.
- Management/Monitoring Plan. A RMP will be prepared that identifies the long-term management and monitoring obligations (see Chapter 7, *Management and Monitoring*). The RMP will be reviewed and approved by the City and Wildlife Agencies prior to any ground disturbance activities.
- Secure Perpetual Funding. A PAR or similar PAR-like analysis will be completed to establish the long-term management and monitoring costs for the mitigation property. A perpetual and secure funding source will be established and held by a qualified third-party (see Chapter 8, *Subarea Plan Implementation and Funding*) prior to any ground disturbance activities for the associated project.

The City will ensure that mitigation will be achieved through one of the following, as applicable:

1. Hardline Development Project. Impacts resulting from the Fanita Ranch Hardline Development Project will be offset through the establishment of onsite and offsite Habitat Preserves that will be incorporated into the Managed Preserve. The Preserves will be legally protected, managed and monitored, and fully funded in perpetuity.
2. Upland Standards Areas. Impacts resulting from Covered Activities within the Upland Standards Areas will be offset through the dedication of 70 percent of the property as onsite mitigation, which will be incorporated into the Managed Preserve (see Section 5.3.1.2, *Upland Standards Areas*) and will be legally protected, managed and monitored, and fully funded in perpetuity.
3. Infill Development Areas. Impacts resulting from Covered Activities within Infill Development Areas will be offset by one or a combination of the following and in accordance with the required mitigation ratios established in Table 5-13
    a. Acquisition of an offsite undeveloped property and recordation of a conservation easement within the Upland Standards Areas or San Diego River Subunit depending on the type of habitat being impacted so that impacts will be mitigated in-kind. Acquired property would be included in the Managed Preserve and managed and monitored in perpetuity.

Table 5-13. Uniform Mitigation Ratios

Vegetation Type [a]	Habitat Criteria	Type of Impact	Mitigation Ratio
Riparian Forest/Woodland	All riparian forest, including oak riparian	Temporary impacts [e]	2:1
	All riparian forest, including oak riparian	Permanent impacts	3:1
Riparian Scrub	Drainages with riparian scrub	Temporary impacts	2:1
	Drainages with riparian scrub	Permanent impacts	3:1
Freshwater Marsh, Freshwater Seep, Disturbed Wetlands, Natural Channel, Open Water [f]	Absence of native species or small (< 0.25 acre) amount of habitat	Temporary impacts or mitigation prior to or upon impact or impacts limited to open water with no emergent vegetation	2:1 [g]
	Presence of native species or large (> 0.25 acre) amount of habitat	Permanent impacts or mitigation delay in excess of 1 year after impact	3:1
Vernal Pools [b]	Natural vernal pool	Permanent and temporary impacts	4:1
	Man-made vernal pools with indicator plant species	Permanent and temporary impacts	3:1
	Man-made pools with covered wildlife species	Permanent and temporary impacts	3:1
Oak Woodland	Oak woodland containing any Engelmann oaks	All impacts	3:1
Individual Oaks	Trees with at least one trunk of 6” or more Dbh [c] or multi-trunked native oaks with aggregate diameter of 10” or more.	All Impacts	10:1 by tree
Coastal Sage Scrub Coastal Sage/ Chaparral Scrub	Habitat small, isolated patches <1 acre	All impacts and temporary impacts to all others	2:1
	Habitat patches >1 acre	All impacts except temporary	3:1
Chaparral	All	All impacts	2:1
Native Grassland	All	All impacts	3:1
Non-native Grassland	All	All impacts	1:1
Disturbed lands, Eucalyptus, agricultural lands [d]	No known habitat value for Covered Species	All impacts	None
	Habitat value for or presence of burrowing owls	All impacts	1:1 as appropriate to ensure like value.

Table 5-13. Uniform Mitigation Ratios (cont.)

Vegetation Type [a]	Habitat Criteria	Type of Impact	Mitigation Ratio
[a] Vegetation types based on the Holland vegetation classification system. See Appendix E, *Vegetation Communities Descriptions*, for descriptions of each of the vegetation community types that exist in the Subarea Plan Area. All other natural habitat types not listed in this table have a 1:1 mitigation requirement.[2] [b] Vernal pool mitigation must meet a 'no net loss' criteria through creation of new vernal pool habitat and/or restoration or enhancement of existing vernal pool habitat. Preservation of existing vernal pool alone does not provide mitigation credits. If an existing vernal pool is significantly disturbed, enhancement of the existing pool can be implemented to provide up to a 1:1 mitigation credits towards the total requirement. [c] Dbh = Diameter at Breast Height. Tree diameter is measured at 4 ½ feet above ground level. This measure is known as diameter at breast or DBH. Diameter can be measured with diameter tape. [d] Disturbed land may include agricultural lands, ruderal, eucalyptus, and previously authorized graded areas. [e] Temporary impacts that are not restored sufficient to achieve success criteria will be mitigated as permanent impacts. [f] Any impacts to open water areas within abandoned sand mining pits along the San Diego River should be mitigated with creation of riparian scrub or riparian woodland, as these open water areas are unnatural, are relatively common, and these same areas likely supported riparian areas before mining occurred. [g] Different ratios may be required under separate regulatory programs under the Clean Water Act, the Porter-Cologne Water Quality Control Act, and Section 1600 et seq. of the Fish and Game Code.			

b. Payment of a fee to the Subarea Plan Conservation Fund (see Section 8.4.1, *Funding Sources*, for a description of how the Subarea Plan Conservation Fund will be administered and implemented). The Subarea Plan Conservation Fund will allow smaller development projects (where the total acres of direct impacts to natural habitats does not exceed 5.0 acres) located within the Infill Development Areas to offset biological impacts by paying into the fund, which is used to acquire, maintain, and/or manage the conservation of lands within the Subarea Plan Managed Preserve and Open Space System for the benefit of Covered Species.

c. Use of regional mitigation mechanisms with approval by the Wildlife Agencies. This may include the SANDAG Transnet local roads mitigation funds or other similar mitigation programs.

Temporary Impacts. Temporary impacts are those impacts associated with a Covered Activities Project that are intended and designed to be fully mitigated in place (i.e., restoration of the exact area impacted) after the project is completed. These types of impacts are often associated with development of public utility projects like pipelines or facility maintenance; although private Covered Projects may have impacts that qualify as temporary. Temporary impacts shall be mitigated at the ratios identified in Table 5-13. If habitat cannot be restored in place, or the restoration effort does not meet the success criteria within three years, then the impact would be considered permanent, and the mitigation requirements for permanent impacts would apply. If temporary impacts are repeated with regularity (such as regular maintenance grading of dirt roads or firebreaks where sensitive habitats may have reestablished during the period between repeated impacts), the impacts will be counted once as permanent (requiring mitigation ratios accordingly) and then not considered as impacts (permanent or temporary) following additional repeated impact disturbances (assuming future repeated impacts do not affect previously unimpacted habitat areas or mitigation sites).

5.5.3 Ecological Linkages, Wildlife Corridors, and Wildlife Crossing Structure Criteria

The Managed Preserve has been designed to protect and conserve important ecological linkages and wildlife movement corridors between biological resources and core areas (see Section 5.3.3, *Ecological Linkage, Wildlife Corridors, and Wildlife Crossing Structure Criteria*). In order to accomplish this, the City will require the portions of the Managed Preserve where future development (Covered Activities) and open space will be established (i.e., hardline and Upland Standard Areas, San Diego River Subunit) will be designed and implemented in a manner that maintains the essential functionality of the linkages and movement corridors, as appropriate.

The following are the design criteria that will be utilized by the City to require protection of the biological values of ecological linkages and wildlife corridors within the Managed Preserve, through implementation of Covered Activities (based on the Attachment H of the MSCP Subregional Plan).

1. Ecological linkages, as defined below, rather than just wildlife corridors will be maintained.
2. Existing wildlife movement corridors within larger ecological linkages will be identified and maintained.
3. Wildlife corridors with functional vegetative and/or topographic cover, or where it can be effectively enhanced, will be protected.
4. Ecological linkages will be protected to conserve a diversity of topographic features such as streams, washes, ridges, canyons, steep slopes, and ridgelines to provide connectivity for a range of species that move along different features of the landscape.
5. Ecological linkages that accommodate travel and live-in habitats for a wide range of wildlife species, especially those linkages that support resident populations of wildlife, will be conserved.
6. The preserved width of an ecological linkage will be based on the best available biological information for the target species, the functions of the habitats within and at each end to the linkage, topography, and adjacent land uses. Where limited topographic relief exists or would exist with future development, the linkage must be functionally vegetated and adequately buffered from adjacent development and nearby uses (e.g., noise, human activity, pet activities, recreation, outdoor nighttime lighting, etc.).
7. If a wildlife corridor is relatively long, it must be wide enough with sufficient cover for wildlife to hide in during the day. Generally, wide linkages are better than narrow ones. If narrow corridors are unavoidable, they will be relatively short. If the minimum width of a corridor is 400 feet, it will be no longer than 500 feet. A width of greater than 1,000 feet is recommended for large mammals and birds. Wildlife corridors for bobcats, deer, mountain lions, and other large animals should reach rim-to-rim along drainages, especially if the topography is steep.
8. Visual continuity (i.e., long lines-of-sight) will be provided within wildlife corridors. This makes it more likely that the animals will keep moving through it. Developments along the rim of a canyon used as a corridor will be set back from the canyon rim, avoid outdoor nighttime lighting on the corridor side, and screened to minimize their behavioral impact on wildlife.

7. Wildlife corridors with low levels of human disturbance, especially at night, will be conserved as a priority. This includes maintaining low noise levels and minimizing artificial outdoor lighting.
8. Barriers, such as roads, will be minimized within ecological linkages and wildlife corridors. Roads that cross corridors will have 10-foot-high fencing that channels wildlife to underpasses located away from interchanges. Sufficient effective crossings, including appropriate underpasses along new roads, will be provided where roads cross wildlife corridors or ecological linkages. The length-to-width ratio for such wildlife underpasses will be less than two, although this restriction can be partially relaxed for underpasses with a height of greater than 30 feet.
9. Wildlife crossings such as road bridges for vehicular traffic rather than tunnels for wildlife use will be constructed where roads cross wildlife corridors or ecological linkages. Box culverts (utilizing the largest size practicable for the location) will only be used when they can achieve the wildlife crossing/movement goals for a specific location. Crossings will be designed as follows: sound insulation materials will be provided; the substrate (bottom of the crossing) will be left in a natural condition and vegetated with native vegetation; the wildlife undercrossing will be straight and provide a line-of-sight to the vegetated cover at other end for target wildlife species; and, if necessary and appropriate for the target species, low-level illumination will be considered in the undercrossing.
10. If continuous corridors (i.e., contiguous natural areas without intervening development including substantial barriers) do not exist and cannot be effectively restored or enhanced at a location, archipelago (or stepping-stone) corridors will be protected and conserved for maintaining partial ecological connectivity for short distances between core biological areas. For example, the coastal California gnatcatcher may use disjunct patches of sage scrub for dispersal between core areas if the distance involved is under 1-2 miles.

5.5.4 Fire Defensible Space Standards

In October of 2016, with the City's adoption of the California Fire Code (City of Santee Ordinance #545), the City amended Chapter 49 of the California Fire Code, which includes standards for fire-safe development in Wildlands Urban Interface (WUI) areas. Two key elements of the City's ordinance, as they relate to the Santee Subarea Plan, are the special building construction regulations and the defensible space provisions.

Brush management is required to be undertaken in the City of Santee in areas where urban development interfaces with open space to reduce fire fuel loads and to reduce fire hazard to homes. The City of Santee defines two zones requiring different levels of brush management/fuel reduction activity, representing a total minimum of 100 feet (Zone 1 = 50 feet; Zone 2 = 50 feet). The width of the defensible space zone is measured starting from inhabited structures, with Zone 1 being closest to the structure. Uninhabited structures (e.g., sheds, gazebos) are not allowed within the defensible space, unless they are constructed of approved non-combustible materials. These zones are intended to accomplish three essential functions: (1) provide fire protection of residents and communities; (2) provide safer conditions for fire response agencies to access areas and fight fires; and (3) protect the habitat and species inhabiting the Managed Preserve from adjacent, burning structures. The two defensible space zones are described below.

- **Zone 1**: Zone 1 (closest to the inhabited structure) is the least flammable, and shall consist of pavement and permanently landscaped, irrigated, and maintained ornamental planting. This area is to be maintained by individual property owners. The vegetation is required to be kept in a well-watered condition and cleared of dead material. This zone requires year-round maintenance. Fire resistant trees are allowed if placed or trimmed so that crowns are maintained more than 10 feet from the structure. Highly flammable trees such as conifers, eucalyptus, cypress, and junipers are not allowed in the urban-wildland interface areas.
- **Zone 2**: Zone 2 (beginning generally 50 feet beyond the structure and out to a minimum of 100 feet) – any plantings shall consist of low-growing, fire-resistant shrubs and ground covers (refer to the suggested plant list for a defensible space included in the County of San Diego Department of Planning and Land Use (DPLU) publication #99, "Fire, Plants, Defensible Space, and You", [County of San Diego 2004]). The average height of new plants for revegetation should be less than 24 inches. In this zone, 30 percent of the native, non-irrigated vegetation cover should be retained. This zone requires inspection and periodic maintenance. This area will be maintained by individual property owners or homeowner's associations.

In addition to the zones described above, the City's Code requires that an area of 50 feet from each side of fire apparatus access roads and driveways be maintained clear of all but fire-resistant vegetation so residents have a safe evacuation route and that fire engines have adequate access.

Any deviations of defensible space are subject to a Fire Management Plan to be approved by the City's Fire Chief. The Fire Management Plan will consider unique conditions resulting from the location, topography, geology, flammable vegetation of the site, and the climatic conditions experienced at the site.

For all future development projects' plans and approvals, defensible space must be considered part of the development footprint for determining project impacts and mitigation requirements. Defensible space shall not be counted as biological open space for the purpose of determining onsite or offsite credit toward mitigation requirements. With the exception of City Covered Activities in the San Diego River Subunit, future defensible space zones are not allowed inside the Managed Preserve. Covered Activities' impacts will include the impacts associated with the establishment of new defensible space. These defensible space zones shall be established to take advantage of existing roads, disturbed or developed areas, and avoid sensitive habitats, to the extent practicable.

The establishment of defensible space requires vegetation clearing or thinning, including natural vegetation, and may reduce habitat functions, and directly or indirectly harm Covered Species. Seasonal restrictions on vegetation clearing will apply in conformance with nesting bird and other measures identified in Section 5.5, *Conservation Measure 3—Avoidance, Minimization, and Mitigation*).

5.5.5 Aquatic, Wetlands, and Riparian Protection Standards

A goal of the Subarea Plan is to assist in the region's effort to sustain and enhance the habitats for species dependent on aquatic, wetland and riparian resources.

Aquatic, wetlands, and riparian area protection under the Subarea Plan will be provided through individual project entitlement reviews and the HLIT permit process for Covered Activities. As part of the environmental review, all Covered Activities which support aquatic, wetland, or riparian areas will address the following:

1. Covered Activities which contain aquatic, wetland, or vernal pool communities within their project boundaries will be required to demonstrate that proposed impacts to these areas have been avoided to the maximum extent practicable.
2. If a Covered Activity would have unavoidable impacts to aquatic, wetland, or riparian areas, the project proponent will prepare an aquatic, wetland, and/or riparian areas mitigation program that will be included in the project's MMRP and incorporated as a condition of the project's entitlement permits from the City. The project proponent will be required to demonstrate that such impacts have been minimized to the maximum extent practicable.
3. The City will determine aquatic, wetland, and/or riparian area mitigation requirements by applying the mitigation ratios identified in Table 5-13. Wetland mitigation must include a component of restoration and/or creation to adequately meet the required no-net-loss criterion. The mitigation ratios provide a standard for each aquatic, wetland, or riparian area community type in the Plan Area, but may have to be adjusted depending on the functions and values of both the aquatic, wetland, and/or riparian area affected as well as the mitigation proposed for the project. The City will also consider the aquatic, wetland, or riparian areas type(s) that would be affected and utilized for mitigation in establishing whether these standards will be met.
4. Aquatic, wetland, and/or riparian area mitigation for Covered Activities will be preferably accomplished within the Managed Preserve boundaries. If Covered Activity mitigation is proposed for aquatic, wetland, or riparian areas within the Plan Area but outside of the Managed Preserve boundaries, an amendment and boundary line adjustment will be implemented to incorporate these mitigation areas into the Managed Preserve. The strategy of the Subarea Plan is to avoid and minimize Covered Activity impacts to aquatic, wetland, and riparian areas in the context of a landscape-level plan. The emphasis of the Plan is on making project-level and Subarea Plan-level decisions that will result in optimal biological functions and values. Compliance with the Subarea Plan and Take Permits is independent of other regulatory requirements under of the Federal and/or State wetland permitting processes. The Subarea Plan does not provide the authority to permit Federal and/or State wetland impacts. Thus, the City reserves the right to provide flexibility in the CEQA mitigation analysis and the MMRP requirements to enable a project applicant to substitute the mitigation measures imposed by another Federal or State agency for the same wetlands impacts for the mitigation imposed under the Subarea Plan provided that the Federal or State agency mitigation measures would result in biological functions and values that are equivalent to or greater than those imposed by the City under the Subarea Plan.

The city will review and approve the aquatic, wetland, and/or riparian area mitigation program as part of the Covered Activity project review process.

5.5.6 Narrow Endemic Species Standards

Narrow endemic species are native species that are confined to a specific geographic region, soil type, and/or natural community type. These species are also considered rare or declining throughout their range. The additional conservation standards described in this section will apply to three plant species that are considered narrow endemics under the Plan: San Diego ambrosia, San Diego thornmint, and variegated dudleya. For all Covered Activities that have the potential to impact any one of these Narrow Endemic Species, the project will be required to implement standards that require avoidance and minimization of impacts and species-specific mitigation measures for any remaining unavoidable impacts that will not exceed 20 percent loss of any individual subpopulation/occurrence outside of the Preserve. The standards for protection and species conservation are as follows:

- For Narrow Endemic Species, the City will require, in priority order, the avoidance of impacts, minimization of impacts, and species-specific mitigation measures for unavoidable impacts. Any species-specific mitigation required by the Subarea Plan will be designed to minimize and mitigate adverse effects to species viability and to contribute to species recovery. All impacts to vegetation communities associated with impacts to Narrow Endemic Species (species habitats) will be mitigated according to the habitat-based mitigation requirements outlined in Section 5.5.2, *Mitigation Standards for Vegetation Communities*. Translocation of a narrow endemic species into appropriate otherwise degraded unoccupied habitat may be included in a mitigation package but does not qualify as part of the required avoidance in the requirements of the Narrow Endemic Species Standards.
- No more than a 20 percent impact to a Narrow Endemic Species subpopulation/occurrence or occupied acreage is allowed outside of the habitat Preserves unless a Biologically Superior Alternative is agreed to with the Wildlife Agencies.
- Areas conserved for Narrow Endemic Species shall include biologically justified buffer zones (i.e., as required by the particular species and site characteristics as recommended by a qualified biologist) around the subpopulation/occurrence sites to retain ecological and physical processes likely important to the species, including allowing for natural expansion and contraction of standing (above ground) individuals within subpopulations/occurrences over time,[18] provide a buffer for habitat resistance against exotic plant invasions and reduction of trampling, support and persistence of important pollinators, and other important ecological functions. Biological buffer zones will be determined by a qualified biologist in coordination with the Wildlife Agencies based on the species and environmental context (adjacent land uses, etc.). In no case shall the biological buffer zone be less than 50 feet without specific concurrence of the Wildlife Agencies. Any conserved lands that support Narrow Endemic Species (including the buffer zones) shall be placed under a perpetual conservation easement, added to the Managed Preserve, and managed in perpetuity pursuant to the management and monitoring requirements of the Subarea Plan.
- Impact avoidance, minimization, and mitigation standards for Narrow Endemic Species may vary from the standards only if a Biologically Preferred Alternative is proposed that is approved by the

[18] At occurrences of San Diego thornmint surveyed over a number of years, the size of an occurrence can differ by an order of magnitude. [[https://www.fws.gov/story/san-diego-thornmint]]

City and with concurrence by the Wildlife Agencies. A determination of Biologically Superior Alternative by the City will be based upon new information provided by the project proponent that demonstrates that the alternative would result in an overall Preserve design and configuration biologically superior for the species. Demonstration that the Biologically Superior Alternative would provide benefits to the species with respect to Preserve design and configuration will be considered in the context of the effects on the following factors:

1. Conserved habitats;
2. Covered Species;
3. Ecological linkages and functions of Preserve areas;
4. Preserve configuration and management;
5. Ecotones or other conditions affecting species diversity; and
6. Sensitive species not on the Covered Species list.

Determining impacts. Species subpopulation/occurrence size will be used as the metric of impact for Narrow Endemic Species. Subpopulation/occurrence size will be determined by number of individuals or occupied acreage, depending on whichever measure is biologically most appropriate for the species based on the best available science (see Conservation Analysis for more information). For annual plants (i.e., *Acanthomintha ilicifolia*) and geophytes (i.e., perennial bulb and corm plants; *Dudleya variegata*), the allowable impact shall be based on occupied acreage because a portion of the subpopulation/occurrence would likely only be present in the seed bed and not fully expressed each season (note that surveys must be conducted during the period at which the species is most likely to be identified, see Chapter 3, *Covered Species*). For perennial plants other than geophytes (i.e., *Ambrosia pumila*), the allowable impact shall be based on population size (i.e., number of standing/above ground individuals) in a contiguously occupied area of habitat.

Exceptions to the Narrow Endemic Species Standards. In some cases, even 100 percent avoidance of a Narrow Endemic Species subpopulation/occurrence with a modest buffer would result in a "postage stamp preserve" isolated by development, resulting in no reasonable opportunity to establish a viable preserve area where the Narrow Endemic Species subpopulation/occurrence would have reasonable connectivity via proximity or direct contiguity with other parts of the Preserve. Such small preserve areas are not expected to maintain viable habitat for the Narrow Endemic Species over time as a result of habitat degradation caused by urban, recreational, or other edge effects that would overcome the noted buffer. Additionally, there may be cases where, due to the limited number of individuals or their location relative to the developable portions of a given property (e.g., in the center of the project site or adjacent to the only access point), it may be infeasible to avoid impacting all or a majority of the onsite subpopulation/occurrence and associated acreage.

In either of these cases, it may be biologically preferable for the Narrow Endemic Species to identify offsite mitigation, restoration, translocation, or enhancement actions within other parts of the Preserve. In such cases, the above Biologically Superior Alternative determination must be adhered to, the proposed mitigation plan must be developed by a qualified biologist with input from the

Wildlife Agencies, prior to any disturbance of the Narrow Endemic Species subpopulation or occurrence.

Implementation procedure. The City will follow a standardized procedure to implement the Narrow Endemic Species Standards in a manner to ensure that Narrow Endemic Species are not adversely affected by Covered Activities beyond the limits set forth through these standards. All other projects within the Infill Development Areas, Upland Standards Areas, or San Diego River Subunit will avoid at least 80 percent of the Narrow Endemic Species subpopulations/occurrences. These procedures include the following steps:

1. As a part of the project-specific environmental review or other permitting/approval process for a proposed Covered Activity, the City will use the data collected from previous species baseline monitoring and current (within one year) focused surveys for all Narrow Endemic Species (see Chapter 3, *Covered Species*) submitted by the project applicant to determine if any Narrow Endemic Species may be adversely affected by a proposed project. A focused survey is defined here as a species-specific survey of a given parcel following accepted survey protocols for the target species under appropriate conditions for a very high likelihood of detection if present. Any baseline surveys for a given site will include focused surveys for Narrow Endemic Species as well as all other Covered Species.
2. If the biologist does not find evidence of one or more Narrow Endemic Species through current surveys, and past surveys were also negative for the species, even though predicted/suitable habitat is modeled on the project site (see Chapter 3, *Covered Species*) (or the site is otherwise determined by the City or Wildlife Agencies to be potentially suitable), the biologist will be required to provide a habitat assessment that explains why the species was not found onsite and, if applicable, why the species is unlikely to be occur or be currently detectable onsite (e.g., soil types, slope aspects, invasive species, disturbances, drought survey year, seasonal rains, recent wildfire, etc.). The habitat assessment will include a written evaluation of biological resources present onsite and known from adjacent properties, conserved sensitive biological resources on adjacent lands, and adjacent land uses. The City will coordinate with the Wildlife Agencies to ensure they are mutually satisfied with the habitat assessment and written evaluation of the biological resources prior to agreeing or rejecting the assessment/evaluation.
3. If any Narrow Endemic Species are present within a Covered Project ’s proposed footprint or will be indirectly affected by a proposed project (e.g., impacts would occur within a 100-foot distance from the Narrow Endemic Species), the project applicant’s biologist will delineate the occurrences based on a species subpopulation/occurrence size estimate (e.g., visible standing/above-ground stems) and occupied acreage to fully assess the anticipated impacts.
4. After the subpopulation/occurrence has been delineated and counted, the City will work with the Covered Activity project proponent to avoid all impacts to the Narrow Endemic Species to the extent practicable; however, if it is not practicable, the City will allow losses of the Narrow Endemic Species population size/occupied acreage within the Covered Activity project site, as outlined above. The City will be responsible for tracking the Narrow Endemic Species habitat losses in the delineated area and include the losses in the Annual Report to ensure the losses are tracked and not exceeded throughout the permit term.

5. If the 80 percent conservation standard described in these standards cannot be met for a given project, the project applicant may present a Biologically Superior Alternative and biological equivalency findings consistent with the guidelines described above. The City shall obtain approval of the deviation from these standards from the Wildlife Agencies at the time of project-specific environmental review or other permitting process.
6. All conserved areas containing Narrow Endemic Species will be within the Managed Preserve and managed in perpetuity consistent with the Subarea Plan and preserve-specific RMP.

5.5.7 Vernal Pool Conservation Standards

The Vernal Pool Conservation Standards for the Subarea Plan provide a framework to protect, enhance, and manage vernal pool resources within the City. These standards have been developed in a manner to closely follow definitions and requirements included in the City of San Diego Vernal Pool Habitat Conservation Plan (VPHCP) (San Diego 2017), which was finalized in October 2017. The Vernal Pool Conservation Standards are summarized below and set forth in detail in Appendix G, *Vernal Pool Conservation Standards*.

5.5.7.1 Vernal Pool Field Survey Protocols

If a project site has suitable vernal pool habitat or man-made pools that could support Covered Species, field surveys will be completed following the current protocols described in the USFWS "Survey Guidelines for the Listed Large Branchiopods" (USFWS 2015), or any subsequent revisions.

5.5.7.2 Vernal Pool Definition

For the Subarea Plan, the following definitions and categorization of vernal pools will be used:

- **Vernal Pools** – Seasonal, depression-type wetlands that result from a unique set of physical parameters and support a specific biological assemblage of plant and animal species that are typically indicators of vernal pools. Functional vernal pool ecosystems form under specific physical conditions when small, shallow depressions collect precipitation to create a seasonally perched water table.
- **Natural vernal pools** – a seasonally flooded depression is herein considered a natural vernal pool if ponding is predominantly a result of natural conditions and topography (i.e., ponding is not primarily based on anthropogenic disturbance such as the grading (construction/maintenance) and compaction (ongoing use) of a dirt road) and includes one or more of the vernal pool covered species (San Diego button-celery, San Diego mesa mint, Riverside fairy shrimp, San Diego fairy shrimp, western spadefoot) or vernal pool indicator plant species (USACE 1997), which are listed in Exhibit A of Appendix G. In addition, if a natural vernal pool does not have covered or indicator species but is part of a larger vernal pool complex and located adjacent to other natural vernal pools with covered and/or indicator vernal pool species, it will be considered a natural vernal pool.

- **Man-made vernal pools with indicator plant species** – If a seasonally flooded depression is formed primarily as a result of anthropogenic disturbance (e.g., road ruts) and includes vernal pool indicator plant species or covered-plant species, it will be treated as a vernal pool.
- **Man-made pools with covered wildlife species** – If a seasonally flooded depression formed primarily through anthropogenic disturbance (e.g. road ruts created and maintained by road maintenance and use on Plan-covered roads) does not include indicator plant species, but includes or supports covered vernal pool wildlife species (i.e., San Diego fairy shrimp, Riverside fairy shrimp, and/or western spadefoot toad
- **Man-made vernal pools without indicator plant species or covered plant/wildlife species** – If a seasonally flooded depression is formed primarily as a result of anthropogenic disturbance and does not include or would likely not support vernal pool indicator plant species or covered plant/wildlife species, it will not be treated as a vernal pool. It will be treated as a seasonally flooded depression that does not need specific coverage under the Subarea Plan.
- **Vernal Pool Watershed** – A topographically defined catchment area from which surface water typically flows to a vernal pool or pools.
- **Vernal pool complex** – A vernal pool complex is an assemblage of vernal pools, swales and associated uplands within a defined area (e.g., micro-watershed). Groups of vernal pools are sometimes referred to as vernal pool complexes that may include two to several hundred individual vernal pools (Keeler-Wolf et al. 1998). Vernal pool complexes are (or were before permanent losses in the area) typically part of a series of similarly situated pools that have a similar influence on the physical, chemical and biological integrity of downstream waters and are similarly situated on the landscape. These pools often have hydrologic (surface or subsurface) or ecological connection between pools, from processes including overflow, animal vectors, and/or wind dispersal. The groups of vernal pools and the associated watersheds within a vernal pool complex often have soils, topography, and landscape positions that are similar. The uses of complexes are a helpful tool for planning and management, but it is recognized that what constitutes a complex can be subjective.

5.5.7.3 Avoidance and Preservation of Vernal Pools

The Subarea Plan Vernal Pool Conservation Standards include measures to avoid and minimize impacts to vernal pools. Direct and indirect impacts from Covered Activities shall be designed to avoid and minimize impacts to vernal pools to the maximum extent practicable. If impacts cannot be avoided, mitigation will be required consistent with Section 5.5.7.4 and any species-specific conservation strategy requirements (e.g., western spadefoot).

If existing vernal pools are protected through onsite habitat protection, the area of habitat protection that will include the vernal pools, as well as associated watershed, habitat buffers, and adjacent uplands as needed to maintain the functionality of the vernal pools, will be included in the Managed Preserve. The project proponent shall ensure the long-term protection, management, and funding for the onsite vernal pool preservation areas shall occur in perpetuity.

5.5.7.4 Compensatory Mitigation of Unavoidable Impacts to Vernal Pools

If a proposed project includes unavoidable impacts to vernal pools, the following measures will be implemented as mitigation to offset impacts:

- Vernal pool mitigation must meet a 'no net loss' criterion through creation and/or enhancement of vernal pool habitat. Preservation of existing vernal pools does not provide mitigation credits. While the mitigation ratios below will be applied to the basin area, the mitigation site must include appropriate watershed to support created and/or enhanced basins.
- Mitigation will be based on size and type of vernal pools based on the following ratios:
    - Natural vernal pools: 4:1
    - Man-made vernal pools with indicator plant species: 3:1
    - Man-made vernal pools or seasonal depressions with covered wildlife species: 2:1
- If an existing vernal pool is disturbed, enhancement of an existing pool can be implemented to provide up to a 1:1 mitigation credits. Enhancement actions may include weeding, improvements to watersheds, and upland restoration. A determination of enhancement effort to achieve mitigation credits will be determined on a case-by-case basis in coordination with and approval from both the City and Wildlife Agencies.
- A vernal pool Mitigation Plan will be prepared for review and approval by the City and concurrence from the Wildlife Agencies.

5.5.8 Covered Plant Species Translocation and Restoration Conservation Standards

There are four Covered Species that are plants that can be reliably translocated and/or grown from seed or cuttings, including:

- San Diego barrel cactus
- San Diego goldenstar
- Variegated dudleya
- Willowy monardella

For these Covered Plant Species, if a proposed Covered Activity has occurrences/populations within the Covered Activity project area, the project proponent will be required to demonstrate 80 percent of the occurrences/populations will be protected in perpetuity through protection and/or translocation/restoration within habitat preserve lands. If translocation or restoration is required to meet this threshold, the project proponent will complete a restoration plan based on the guidance included in Section 7.3, *Standards and Requirements for Habitat Restoration and Species Reintroduction/Translocation*.

5.5.9 Species-Specific Conservation Standards

The City will ensure that effects from Covered Activities will be offset through the implementation of mitigation standards described in Section 5.5.2, *Mitigation Standards for Vegetation Communities*. Securing the protection of comparable habitats will mitigate for the direct impacts to the Covered Species from Covered Activities. In addition, species with very limited geographic ranges (Narrow Endemic Species), will require additional efforts designed to protect these species per the Narrow Endemic Species Standards (Section 5.5.6., *Narrow Endemic Species Standards*). General Conditions for Covered Species Conservation Standards are listed below. The City will ensure implementation of the Subarea Plan required avoidance and minimization measures as enforceable conditions in all HLIT permits, operations, and authorizations/approvals to proceed with the Covered Activities listed in Chapter 4, *Covered Activities and Impact Assessment*. Species-specific conservation measures for covered species are summarized for each species (not addressed in previous sections) below. These measures are required to maintain Permit coverage for each Covered Species. In addition, for the Covered Species not addressed as part of the MSCP Subregional Plan and other species with unique mitigation requirements/options, species-specific conservation standards are set forth below that define methods for conducting project-specific habitat assessment, determination of impacts, and species-specific mitigation requirements and methods.

5.5.9.1 General Conditions for Covered Species Conservation Standards

The following conditions for coverage apply to all Covered Species:

1. A habitat assessment will be conducted by a qualified biologist for all Covered Activities. The habitat assessment must include a survey of the proposed project site for Covered Species and suitable habitats during the appropriate field conditions and timing in accordance with protocols, as applicable. If no individuals or suitable habitat are found, the project applicant must submit a letter from the qualified biologist substantiating the claim. If individual Covered Species or suitable habitat are detected or the City or the Wildlife Agencies do not agree with the conclusions of a negative habitat assessment, focused surveys for this species must be conducted within suitable habitats (including modeled habitats) by a qualified biologist during the appropriate field conditions/time of year for detection and using accepted survey protocols prior to any proposed impacts (e.g., as a component of CEQA review, project approval, and/or HLIT permit application).
2. Direct and indirect impacts to occupied habitat will be avoided to the maximum extent feasible when developing the project footprint. Measures such as installation of temporary fencing, construction crew education, lighting and noise minimization measures, and restoration of temporary impacts (Section 5.5.1.1, *Avoidance and Minimization of Sensitive Biological Resources*) will be utilized to ensure impacts to suitable and occupied habitats are avoided to the maximum extent practicable. All unavoidable direct/indirect impacts will be minimized and mitigated.
3. Monitoring for Covered Species within Preserves and as part of Covered Activities will be completed as specified in Table 7-2, *Type and Frequency of Periodic Monitoring for Effectiveness Monitoring*.

4. Subpopulations or occurrences of Covered Species within a Preserve property will be legally protected (i.e., conservation easement), enhanced, and damaged habitat restored, through the management program developed by the Preserve Manager following monitoring efforts (see Section 7.2, *Preserve Management and Monitoring)*.

5.5.9.2 Western Spadefoot Conservation Standards

The western spadefoot was not covered in the MSCP Subregional Plan. The following conservation standards for potential impacts to western spadefoot have been developed in part based on input from the Independent Science Advisor Report (Rochester *et al.* 2017) (see Appendix F.3). The distance that western spadefoot range from aquatic (breeding) resources for dispersal and aestivation has wide spatiotemporal variation. Halstead (2021) found adult western spadefoot home ranges to be from <1 acre to >15 acres, with most individuals found within 1,594 feet of their breeding pool; the maximum observed distance from a breeding pool was 1,972 feet, but during another study at the same location during a dry year, the maximum distance observed was only 860 feet (Baumberger et al. 2019). Proposed Covered Activities will implement the following actions for avoidance, minimization, and mitigation of impacts to western spadefoot.

1. Determine if there are occurrences of western spadefoot:

    a. If a Covered Activity project area has potentially suitable habitat (see Figure 3-16 or as determined during the habitat assessment), then the site will be evaluated to determine if there are potential breeding locations (seasonal depressions that hold water) within the Covered Activity boundary.

    b. To be reasonably confident that spadefoot are not present at a site, at least six (6) surveys, each survey consisting of both a daytime and nighttime component, must be conducted during the breeding season.

    c. If a Covered Activity project area has potentially suitable breeding locations, surveys for western spadefoot will be conducted as part of project biological resource surveys. Surveys for spadefoot will begin within 48 hours of the first significant rain (≥0.25 inch), as early as October or November, with peak breeding season typically occurring February through April. Surveys for spadefoot eggs and tadpoles can be done during the day and do not require nighttime surveys. Daytime and nighttime components of the survey may occur within the same 24-hour period, with the daytime component occurring between 1 hour after sunrise and 1 hour before sunset. Extreme weather conditions can cause variations in the breeding season; these conditions should be fully considered when developing a schedule of surveys. Daytime surveys will be conducted by walking slowly along pool margins and in adjacent riparian habitat, visually searching for (but not disturbing) eggs, larvae, and juveniles. Note that spadefoot may breed in a variety of ephemeral and perennial habitats from side pools of large rivers to road ruts. Nighttime surveys should not be conducted during nights when there is a full or near-full moon or during adverse weather conditions such as heavy rain, high winds, or flood flows. Nighttime surveys will occur between one hour after dusk and midnight and should be timed within 48 hours of rainfall and during temperatures ≥50 degrees Fahrenheit. Nighttime surveys (assuming eggs, larvae, and/or juveniles have not been detected) will be

conducted by walking slowly and carefully along water features and between suspected breeding and upland habitats. Nighttime surveys must be conducted as silently as possible, because talking or other human-generated noises may cause western spadefoots to stop calling or leave the area. Strong headlights or flashlights may be used to visually locate and identify adult western spadefoots and flash photography may be used to document sightings of solitary individuals; otherwise, lighting should be kept to a minimum. Surveyors should stop periodically and remain still, silent, and with light sources off, for approximately 5 minutes at appropriate sites to wait for western spadefoots to begin calling. The presence of eggs and tadpoles is also a positive sign that adults are present (Rochester *et al.* 2017). Pool size, depth, water temperature, and notes on habitat type and vegetation in and near the pools will be recorded. It is not uncommon for spadefoot to fail to breed every year. If spadefoot are not detected after the first rain, surveys will be repeated with the next rain event. To prevent the spread of pathogens, all field gear must be cleaned between sites with a 16:1 Bleach Water solution. Surveys will be completed by a qualified biologist.

d. Areas within 2,000 feet of known western spadefoot occurrences (documented by the presence of eggs, larvae, juveniles, or adults) that have Suitable Upland Habitat will be characterized as Occupied Upland Habitat. Sources that should be checked include CNDDB and CFWO.

e. If there is no known breeding habitat onsite as determined through field surveys and no known western spadefoot occurrences within 2,000 feet of the project boundaries, then no specific avoidance, minimization, and mitigation measure specific to western spadefoot will be required.

2. If occurrences of western spadefoot toad are detected, the project site will be mapped into following categories:

   a. Breeding Habitat

      1) *Known Breeding Habitat* – Vernal pool and seasonal basins identified as occupied by western spadefoot during field surveys.

      2) *Suitable Breeding Habitat* – Other vernal pools, seasonal basins, and vernal complexes within project area that could support western spadefoot breeding.

   b. Upland Habitat

      1) Suitable Upland Habitat: Based on the following factors:

         a) *Vegetation Type* – Include coastal sage scrub, chaparral, grassland, woodland, riparian scrub, freshwater marsh, and vernal pool types. Dense riparian forest, open water, and developed areas should be excluded.

         b) *Slope* – Exclude areas with greater than 30 degrees slope.

         c) *Patch* – Exclude areas that are not part of a patch of natural habitat contiguous with the breeding location. Consider public roadways with considerable traffic as a barrier to western spadefoot movement between breeding and upland habitat, unless

appropriately sized and designed wildlife crossings are included that connect patches of natural habitat.

2) Occupied Upland Habitat – Suitable upland habitat within 2,000 feet of western spadefoot occurrences.

2. Vernal pools and/or seasonal basins with western spadefoot will be treated as vernal pools under the Subarea Plan and the Vernal Pool Conservation Standards (see Section 5.5.7) will apply. This includes:

   a. Avoidance of pools occupied by western spadefoot to maximum extent practicable.

   b. Minimization of adverse effects to occupied pools occupied by western spadefoot to the maximum extent practicable. Adjacent and nearby potential indirect effects (e.g., outdoor nighttime lighting, spillover noise, human activities, invasive species, etc.) will be minimized to the maximum extent practicable.

   c. Permanent protection of Preserve pools and their watersheds through a legal instrument (i.e., conservation easement).

   d. Compensatory mitigation of unavoidable impacts must include:

      1) No-net-loss of breeding habitat.

      2) 2:1 mitigation ratio for impacts to western spadefoot, creation and/or enhancement must offset at two times the total area of the pools.

      3) Preparation of a vernal pool enhancement/mitigation plan to be reviewed and approved by the City and Wildlife Agencies prior to any ground disturbance activities.

      4) Secure perpetual management and monitoring of vernal pools (existing preserved, enhanced and created) to be determined by a PAR or similar program.

3. In addition to the meeting the vernal pool conservation standards, additional conservation standards for impacts to western spadefoot breeding habitat include:

   a. Compensatory mitigation for unavoidable impacts includes:

      1) A minimum 1:1 mitigation ratio for the number of pools supporting western spadefoot.

4. Impacts to Occupied Upland Habitat will be at a 2:1 ratio. Mitigation will be achieved through preservation of equivalent or greater quality spadefoot habitat onsite and/or within an approved offsite mitigation site containing Occupied Upland Habitat within the Plan Area.

5. Occupied and created pools must demonstrate that they maintain functionality (including holding water for a duration sufficient for completion of the larval stage) for western spadefoot. The project proponent will include in the vernal pool enhancement plan and an analysis (approved by the City and Wildlife Agencies) that demonstrated how each meets the following:

   a. Breeding habitat is connected to upland habitat.

   b. Breeding habitat is part of a large patch (greater than 50 acres) of protected natural habitat.

   c. Breeding habitat locations are protected from edge effects, trails, and trail users (>50 feet).

5.5.9.3 Hermes Copper Butterfly Conservation Standards

The Hermes copper butterfly was not addressed as part of the MSCP Subregional Plan based on insufficient distribution and life history data. The following conservation standards for Hermes copper butterfly are based in part on an Independent Scientific Advisory Report for the Conservation Strategy for Hermes Copper Butterfly in the City of Santee (EDAW AECOM 2009) (see Appendix F.2) and the County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*) (San Diego 2010). The following Covered Activities approval process will be implemented for the avoidance, minimization, and conservation of Hermes copper butterfly and its habitat:

1. Habitat suitability will be determined using the "County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*), which can be found at the following link: https://www.sandiegocounty.gov/content/sdc/pds/procguid.html#biological. If suitable habitat is identified, surveys will be conducted following the U.S. Fish and Wildlife Service protocol, which can be found at the following link: https://www.fws.gov/media/hermes-copper-butterfly-survey-protocol.
2. Any impact to occupied or potentially suitable habitat for Hermes copper butterfly is significant and requires avoidance and minimization, as feasible, and mitigation, if impacts are unavoidable. Mitigation measures will be based on the following criteria:
3. Currently occupied habitat will be avoided.
4. Any impact to potentially suitable habitat requires mitigation by preservation of suitable habitat at a ratio of 2:1.
5. Preserve areas will be established with the largest and most continuous blocks of habitat as possible. Proposed preserve areas must be approved by the City prior to project permitting.
6. If a proposed project is determined to be unable to provide the required occupied and/or potential Hermes copper butterfly habitat preservation onsite, offsite mitigation may be considered. Offsite mitigation will occur within the Subarea Plan Area.
7. For purposes of assessing impacts of a project, a negative survey will be valid for one year. Poor flight years, as assessed regionally by the Service, may mean that negative results are invalid/inconclusive.

5.5.9.4 Least Bell's Vireo Conservation Standards

Least bell's vireos are negatively affected by the high levels of noise. The following conservation standards for least Bell's vireo will be implemented as part of the Covered Activity approval process:

All vegetation clearing activities within or nearby (within a 300-foot buffer) to occupied habitat, whether inside or outside of the Preserve, shall take place outside of the vireo breeding season (March 15 through September 30). If proposed Covered Activities (other than vegetation clearing) cannot completely occur outside the vireo breeding season, pre-construction surveys for occupied territory areas shall be conducted by a qualified biologist no more than seven days prior to the initiation of construction. If occupied habitat is found, work may proceed provided that Covered Activity would be located at least 300 feet from the closest edge of least Bell's vireo territory use areas, and project-

related noise levels would not exceed 60 dBA Leq hourly at the edge of the territory use area. However, the City may reduce these buffer widths depending on project or site-specific conditions (e.g., relatively quiet proposed Covered Activities involving hand tools) or the existing ambient level of noise at the edge of the territory use area. If Covered Activities must take place within the recommended buffer widths above, the project applicant will contact the City to determine the appropriate buffer based on the requirement of no measurable project-caused increase in effective noise over ambient levels within a territory use area (e.g., if existing ambient noise levels are 65 dBA Leq hourly within the portion of the territory closest to proposed project, then the project would be limited to maximum measured noise levels of 65 dBA Leq hourly at the territory edge closest to the project). Covered Activity noise levels shall be monitored, and monitoring reports shall be provided to the City. Proposed noise levels in excess of this threshold shall require written concurrence from the Wildlife Agencies and may require additional minimization/mitigation measures. Noise attenuation measures or alternate construction operations may be used to reduce noise levels below 60 dBA Leq hourly within territory areas. If noise levels still exceed 60 dBA Leq hourly within the territory areas and/or a no-construction buffer cannot be maintained, construction shall be deferred in that area until after the completion of the nest cycle (i.e., nestlings have fledged, or if a nest has failed there is no further indication of breeding activity).

All impacts to least Bell's vireo critical habitat within the City must be mitigated with critical habitat within the same recovery unit within the Plan Area.

5.5.9.5 Western Burrowing Owl Conservation Standards

The western burrowing owl has unique requirements to address its nesting and habitat impacts. Impacts to occupied western burrowing owl habitat shall be avoided to the maximum extent practicable. Where impacts cannot be avoided, the following conservation measures shall be required:

1. Determine if suitable burrowing owl nesting and overwintering habitat occurs within the project site based on current field surveys and a habitat assessment. If suitable (e.g., >11 cm in diameter and >150 cm in depth; CDFW 2012) and/or occupied burrows are present within the project site, surveys shall also include potential foraging habitat within the project area.
2. If suitable burrowing owl habitat is present, conduct focused burrowing owl surveys consistent with the CDFW Staff Report on Burrowing Owl Mitigation[19] (CDFW 2012). A site is considered occupied if at least one burrowing owl has been observed occupying a burrow within the last three years. Occupancy may also be indicated by burrowing owl sign such as molted feathers, cast pellets, or excrement at or near a burrow entrance or perch site.

[19] Or the most recently CDFW-approved burrowing owl guidance document, if applicable. This caveat applies to all references to the 2012 CDFW Staff Report on Burrowing Owl Mitigation. Per current guidance, detection probability for burrowing owl surveys is highest during the breeding season. Therefore, focused surveys should be conducted between February 1 – August 31 except in limited circumstances (i.e., the site is believed to be a wintering site only based on negative breeding season results).

3. If a project site is determined or assumed to be occupied by burrowing owl, the following measures will be implemented for all Covered Activities:

    a. Seasonal restrictions: Project activities will be restricted within occupied burrowing owl habitat during the breeding season (generally February 1 – August 31 but may vary with climatic conditions) until nesting is complete (i.e., the young have dispersed and are fledged, independently foraging, and no longer using the burrows or burrow complex, and/or adults are no longer nesting). If project activities cannot be avoided while burrowing owl are present on the project site at any time of year, no-disturbance buffers shall be implemented, as outlined below in measure 3I.

    b. Pre-construction surveys: No more than 14 days prior to the initiation of project activities, a qualified biologist will conduct at least two surveys at least 7 days apart, with the final survey conducted no more than 48 hours prior to the initiation of project activities. A report of the survey results, including mapping of any occupied burrows (including natural or man-made), burrowing owls, or burrowing owl sign observed, will be submitted to the City for their review and approval prior to initiation of project activities. Pre-construction surveys will be required year-round to address potential impacts during both overwintering and nesting seasons.

    c. No-disturbance buffers: Some project activities may be conducted when burrowing owls are present if appropriate no-disturbance buffers are established around occupied burrows or burrow complexes, paired with daily monitoring by a qualified biologist. A no-disturbance buffer is the area around a burrow or burrow complex inside which project activities are prohibited. Buffers will be established by a qualified biologist consistent with guidance provided in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) or the most recently CDFW-approved burrowing owl guidance document, if applicable. Appropriate buffer size will depend on the time of year, level of disturbance, and project-specific site conditions. Buffers around active nesting sites will be a minimum of 200 meters (656 feet) regardless of the time of year. Buffers around occupied overwintering burrows will be a minimum of 50 meters (164 feet). The monitoring biologist will have the authority to order stop work if burrowing owl exhibit distress or abnormal behavior and will consult with the Plan Coordinator to determine next steps (e.g., stop work or increase buffers).

4. Where impacts to burrowing owl are unavoidable, the following measures shall be required:

    a. If suitable but un-occupied burrows cannot be avoided, burrow exclusion may be appropriate. Burrow exclusion will only be allowed after the burrow has been determined by a qualified biologist to be inactive. No exclusions will be permitted during the nesting season when there is evidence of burrowing owl activity. Prior to the initiation of any burrow exclusions, a Burrow Exclusion Plan will be submitted to the City, CDFW, and USFWS for review and approval.

    b. Mitigation for impacts to occupied habitat will occur through the conservation of occupied burrowing owl habitat in the onsite preserves (Managed Preserve), at a ratio of no less than 1:1 for the territory of the burrowing owl. If occupied burrowing owl habitat is not available for mitigation within the Plan Area, lands with potential to be occupied through appropriate restoration, management, and enhancement of burrowing owl nesting and foraging requirements may be considered. The land to be conserved shall be approved by the City and

Wildlife Agencies. The land to be conserved will be secured by a legal instrument (e.g., conservation easement) to the satisfaction of the Wildlife Agencies to ensure the conservation of the property in perpetuity in advance of any aspects of the Covered Activity commencing. Perpetual funding will also be required for the conserved property to ensure management and monitoring of the site for burrowing owl.

c. In certain circumstances, impacted individuals may be relocated out of the impact area to a location with suitable habitat by a qualified biologist using methodologies consistent with steps outlined by the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) or the most recently CDFW-approved burrowing owl guidance document, if applicable. A Burrowing Owl Translocation Plan will accompany any request to relocate burrowing owls. The plan will thoroughly describe the schedule, the techniques to be used, the suitability of the receiver site, and the experience of the biologists that will be employed. The plan will be submitted to the City, CDFW, and USFWS for review and approval prior to any relocation. All evictions and/or translocations must occur outside of the breeding season.

5.5.9.6 Crotch's Bumble Bee Conservation Standards

The Crotch's bumble bee was not covered in the MSCP Subregional Plan. The following conservation standards for potential impacts to Crotch's bumble bee have been developed in consultation with the California Department of Fish and Wildlife subsequent to its reinstatement as a candidate species under the California Endangered Species Act in September 2022.

Proposed Covered Activities will implement the following actions for avoidance, minimization, and mitigation of impacts to Crotch's bumble bee.

a. A habitat assessment will be conducted by a qualified biologist to determine whether Crotch's bumble bee has a potential to occur. The habitat assessment shall consider historical and current species distribution, proximity to the last known sighting, and potential foraging (including native and nonnative plant species), nesting, and overwintering resources. The habitat assessment shall be conducted during the floral blooming period (generally April through August but may vary annually depending on rainfall) and include an in-person project site observation and quantification of the amount of known used genera and species blooming plants (e.g., percent cover) and as assessment of plant diversity.

d. If the habitat assessment determines a potential exists for Crotch's bumble bee to occur onsite, focused surveys for Crotch's bumble bee will be performed. A proposed survey protocol will be submitted to the Wildlife Agencies for review and approval on a project- and site-specific basis, including the qualifications of the biologist who will be conducting the surveys[20] and/or taxonomist providing species identification purposes. Survey results will be provided to the Wildlife Agencies for review and are valid for one year.

    1) If survey results are negative, then no additional measures are required if the Covered Activity commences within one year of the surveys.

[20] Potential qualifications include coursework, bumble bee-specific workshops, training completed, number of surveys, number of survey hours, experience working with a permitted expert, and number of species observed.

2) If survey results are positive (or focused surveys are not completed and Crotch's bumble bee is assumed to be present based on the habitat assessment) and project impacts will occur during the Colony Active Period (April 1 through August 31), then pre-construction surveys for active bee nest colonies will be required no more than 5 days prior to any ground disturbance activities. If a Crotch's bumble bee nest is detected, the project biologist will establish, monitor, and maintain a no-work buffer around the nest. The size and configuration of the no-work buffer will be based on best professional judgement of the project biologist in consultation with the Wildlife Agencies. The buffer will provide at least 50 feet of clearance around nest entrances. Construction activities will not occur within the no-work buffer until the colony is no longer active. To determine that a nest is no longer active, the nest will be observed for a minimum of 60 minutes each day across a minimum of 3 days during suitable flight weather (i.e., ambient air temperature between 60 and 90 degrees Fahrenheit, winds under 10 mph, and no precipitation higher than a drizzling rain). If no bees are seen flying in or out of the nest by the end of the observation period it will be determined that the nest is no longer active. If project activities occur outside of the Colony Active Period, then pre-construction surveys for active bee nest colonies are not required.

3) The following method for nest surveys shall be used unless the Wildlife Agencies provide an updated method based on current understanding of bumble bee nests in the future. For nesting surveys, within non-developed habitats, the biologist shall look for nest resources (e.g., burrows) suitable for bumble bee use. If an area of bumble bee activity is detected adjacent to available nest resources, the biologist shall watch potential nest resources for a period of time (up to 30 minutes if early in the Colony Active Period, and up to 10 minutes during the peak of the Colony Active Period), looking for exiting or entering worker bumble bees. Worker bees should arrive and exit an active nest site with frequency, although the rate can vary depending on whether it is early/late or at the peak of the Colony Active Period. If a bumble bee worker is detected, then a representative shall be identified to species. This should be possible without capture in Santee. Biologists should ensure that 100 percent visual coverage of all potential burrow resources are surveyed. Therefore, the biologist should select a view that balances viewing multiple burrows while ensuring detection if bees are present. It is up to the discretion of the biologist regarding the actual survey viewshed limits from the chosen vantage point; but this limit shall not exceed 50 feet. The biologist will reduce the 50-foot limit as necessary to ensure 100 percent visual coverage of potential burrow resources depending on topography, vegetation height and cover, and other factors. This approach should allow the biologist to assess multiple burrows at one time to sufficiently determine if bees are entering/exiting them.

   If a Crotch's bumble bee nest is suspected, the surveyor can block the entrance of the possible nest with a sterile vial or jar until nest activity is confirmed (no longer than 30 minutes). A photo voucher of the bee species shall be collected and the location mapped using GPS. If identification is not feasible without capture, then the project proponent will consult with CDFW prior to allowing the biologist to capture and identify to species (using the protocol for the California Bumble Bee Atlas project managed by the Xerces Society) to determine if a CESA Memorandum of Understanding (MOU) and/or Scientific Collecting Permit (SCP) would be required.

4) A written survey report shall be submitted to the City and Wildlife Agencies within 30 days of the pre-construction nest surveys. The report shall include survey methods, weather conditions, and survey results, including botanical results, a list of insect species observed, and a figure showing the locations of any Crotch's bumble bee nest sites or individuals observed (as appropriate for the level of survey required). The survey report shall include the qualifications of the surveyor(s) and approved biologist(s) for identification of photo vouchers and a detailed habitat assessment. If Crotch's bumble bee nests are observed, location information shall be submitted to the California Natural Diversity Database at the time of, or prior to, submittal of the survey report.

Chapter 6
Conservation Analysis

6.1 Introduction

This chapter provides a conservation analysis that identifies the likely outcomes from the City's implementation of the conservation strategy (establish Subarea Plan Managed Preserve, management and monitoring of Preserve, and implementation of monitoring and avoidance, minimization, and mitigation measures for Covered Activities) relative to the Subarea Plan biological goals and objectives (see Section 5.2, *Biological Goals and Objectives*). The conservation analysis evaluates how the assembly and management of the Managed Preserve and implementation of avoidance, minimization, and mitigation measures for Covered Activities will achieve the Subarea Plan's biological goals and objectives for landscapes, habitat connectivity, natural communities, and Covered Species. The conservation analysis is organized according to the landscape, natural community, and species-level biological goals and objectives of the Subarea Plan.

6.2 Landscape-Level Conservation Analysis

The landscape-level conservation analysis identifies the Subarea Plan's likely ecological outcomes.

6.2.1 Size and Configuration of Managed Preserve

Landscape Goal 1 (L-1): Conserve natural vegetation communities of sufficient size and configuration to support ecological integrity and sustainable subpopulations of Covered Species and that are connected to each other and/or other areas of protected habitat in and adjacent to the Managed Preserve.

Section 5.3, *Conservation Measure 1-Establish Subarea Plan Managed Preserve*, describes how the City will assemble the Managed Preserve from a variety of components. Table 6-1 summarizes the acreage of natural habitat within the Managed Preserve resulting from the different components of the Managed Preserve, and Figure 5-1 depicts the configuration of the Managed Preserve.

The acres of the Managed Preserve resulting from the Hardline Conservation Preserves and Future Preserves in Upland Standards Areas are estimated based on the anticipated levels of mitigation that would result from full build out of the Fanita Ranch Hardline Development Project and future development of Covered Activities expected to occur during the permit term. In addition, the City is providing an additional level of conservation and management on existing City-owned Preserve Lands. The following describes how the Managed Preserve is of a sufficient size and configuration to meet the landscape goals to support essential ecological integrity for the ecosystems upon which the Covered Species depend and are connected with other areas of existing protected habitats adjacent to the Managed Preserve.

Table 6-1. Total Acres Natural Habitat within Subarea Plan Managed Preserve

Subarea Plan Managed Preserve – Components	Acres Conserved within Managed Preserve
Onsite Fanita Ranch Preserve	1,593.8
Offsite Butterfly Conservation Areas	171.1
Future Preserves in Upland Standards Areas	330.8 [a]
Existing City-owned Preserve Lands	167.3
Total Within the Subarea Plan Managed Preserve:	**2,263.0** [b]

[a] Acreage estimates for Standards Areas are based on the assumption that 70 percent of each habitat type present would be conserved (100 percent for vernal pool complex).

[b] Approximately 2,095.7 acres are newly conserved, and 167.3 acres are enhancement of existing protected lands. The Managed Preserve is slightly larger than the number of natural habitat acres reported because of the presence of trails, a road, utility easements, and in the case of the San Diego River Subunit, also defensible space.

- *Connects with Existing Protected Lands*. The design of the Managed Preserve will ensure viable ecological connections with existing protected lands both within and adjacent to the Plan Area (see Figure 5-3). This includes:
    - *North Magnolia Subunit* – The Upland Standards Area within the North Magnolia Subunit connects with the Existing Protected Lands owned and/or managed by the Endangered Habitats Conservancy (EHC) and Center for Natural Lands Management (CNLM) and the Fanita Ranch Preserve. The North Magnolia Upland Standards area also will connect with Cheyenne, Lakeside Downs, Capralis, Brown (purchased with State and Federal section 6 funding) among other protected undeveloped lands adjacent to the Plan Area to the east.
    - *Mission Trails Subunit* – The Upland Standards Area within the Mission Trails Subunit connects to the Mission Trails Regional Park and CNLM habitat preserve lands within the Plan Area. The Mission Trails Upland Standards Area and Mission Trails Regional Park lands within the Plan Area connect to large existing conserved areas of Mission Trails Regional Park adjacent to the Plan Area to the southwest.
    - *San Diego River Subunit* – The San Diego River Subunit includes existing protected lands along the San Diego River in the Plan Area, notably the Lowes Preserve, Mast Wetlands Mitigation, and the Metropolitan Transit Development Board (MTDB) mitigation area, as well as City-owned Preserve Lands of Mast West, Mission Creek, and Walker Preserve. These City-owned lands are connected to "Tank Hill" existing conservation and Upland Standards Area lands nearby to the north of the San Diego River, which would help provide refugia for some wildlife species from flood waters during larger flood events. These existing conservation lands along the San Diego River are connected to lands to the east (upstream) along the San Diego River adjacent to the Plan Area in Lakeside. A functional ecological connection downstream (west) along the San Diego River does not currently exist and therefore would not be conserved by the Plan due to existing residential development and golf course land that is Not a Part of the Plan Area.

- *East Santee Uplands Subunit* – The Upland Standards Areas in the East Santee Uplands Subunit connect with existing protected areas on "Tank Hill" and the existing Rattlesnake Mountain habitat preserve.
- *Fanita Ranch Subunit* – Lands to be preserved within the Fanita Ranch Subunit are connected to existing open space to the north and west on Marine Corps Air Station (MCAS) Miramar, through to East Elliot within the City of San Diego. It also provides a connection to the Goodan Ranch/Sycamore Canyon County Preserve to the north and linkages within the Plan Area to the North Magnolia Subunit. The Fanita Ranch Hardline Development Project also maintains habitat connectivity to the southeast to important conserved land in the former Lakeside Downs property.

- *Larger Blocks of Natural Communities*. The Managed Preserve protects larger natural community blocks associated with the hardline development project in the Plan Area:
  - Fanita Ranch Preserve – As described in Chapter 4, *Covered Activities and Impact Assessment*, the Fanita Ranch Hardline Development Project will result in impacts to a large block of natural habitat in the northern segment of the City. These impacts are offset with the establishment of an onsite Preserve totaling approximately 1,593.8 acres of natural habitat as well as two Offsite Conservation Areas. The southern portion of the Fanita Ranch onsite Preserve will total approximately 900 acres of predominately coastal sage scrub (including some cactus scrub) and grassland areas, supporting coastal cactus wrens and coastal California gnatcatchers. The northern portion of the Fanita Ranch onsite Preserve (approximately 400 acres) is predominately chaparral and coastal sage scrub. This portion will connect with and provide a buffer from development impacts to extant protected habitat areas to the north and west of the Fanita Ranch Hardline Development Project, adjacent and surrounding the northwest portion of the Plan Area (e.g. MCAS Miramar, Goodan Ranch/Sycamore Canyon County Preserve).

6.2.2 Representative of Natural Landscapes

Landscape Goal 2 (L-2): Conserve representative portions of the natural landscapes and natural vegetation communities contiguous to other protected areas to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.

Table 6-2 summarizes the representative percent of the vegetation/natural communities that will be conserved within the Managed Preserve versus the overall Plan Area.

The Managed Preserve areas to be protected/conserved generally correspond to the overall percentages of natural vegetation communities extant within Plan Area, with a slightly higher representative percentage of coastal sage scrub and slightly less representative percentage of chaparral and grassland.

Table 6-2. Comparison of Representative Percentages of Vegetation Communities in Subarea Plan Area and Managed Preserve

Vegetation Communities	Total Acres within Plan Area	Percent of Remaining Acreage by Vegetation Community	Total Acres within Managed Preserve	Percent of Total Conserved Habitat	Change in Representative Percent
Maritime Succulent Scrub	7.3	0.2%	7.3	0.3%	0.1%
Coastal Sage Scrub	2,664.1	58.1%	1,388.0	61.3%	3.2%
Chaparral	884.7	19.3%	385.0	17.0%	-2.3%
Grassland	577.1	12.6%	234.3	10.4%	-2.2%
Coast Live Oak Woodland	30.0	0.7%	26.4	1.2%	0.5%
Englemann Oak Woodland	57.2	1.2%	57.2	2.5%	1.3%
Riparian	258.1	5.6%	86.2	3.8%	-1.5%
Freshwater Marsh	17.3	0.4%	12.7	0.6%	0.2%
Vernal Pool Complexes	19.3	<0.4%	20.3	0.9%	0.0%
Disturbed Wetland	8.3	0.2%	0.1	<0.1%	0.2%
Freshwater (Open Water)	48.8	1.1%	38.8	1.7%	0.6%
Non-Vegetated Channel or Floodway	10.1	0.2%	6.7	0.3%	0.1%
Natural Habitat Totals:	**4,582.3**	**100.0%**	**2,263.0** [a]	**100.0%**	**0.0%**

[a] Approximately 2,095.7 acres are newly conserved, and 167.3 acres are enhancement of existing protected lands. The Managed Preserve is slightly larger than the number of natural habitat acres reported because of the presence of trails, a road, and utility easements.

6.2.3 Conserve Ecological Linkage and Wildlife Movement Corridor Connectivity

Landscape Goal 3 (L-3): Sustain and conserve ecological linkages and effective wildlife movement corridors, including interchange between core habitat areas to maintain ecological integrity and connectivity within and beyond the Plan Area.

As described in Section 5.3.2, *Ecological Linkage and Wildlife Corridor Connectivity*, an important consideration in the configuration and functionality of the Managed Preserve is to conserve habitats, connections, configurations, conditions (e.g., lack of spillover nighttime lighting), and features within the Plan Area to maintain ecological linkages and wildlife movement corridors. In addition, global climate change presents a challenge to conventional reserve design in that many ecological elements selected for protection are expected to shift from their current locations under most climate scenarios; ecological linkages are likely to be important to providing ecological connectivity for such shifts. Figure 5-3 shows the relationship of the Managed Preserve and important linkages or corridors between core ecological blocks of natural open space surrounding the Plan Area, as well as key ecological linkages and wildlife corridors within the Plan Area. Implementation of the Subarea Plan

conservation strategy ensures that the following key ecological linkages and wildlife corridors will be conserved and perpetually protected with a legal instrument, including:

- The City will ensure that ecological linkage connectivity will be maintained to open space adjacent to the Subarea Plan Area boundary, including:
    - The Fanita Ranch onsite Preserve will conserve ecological linkages to adjacent open space on MCAS Miramar and Goodan Ranch/Sycamore Canyon County Preserve, to the west and north of the Plan Area. The Fanita Ranch onsite Preserve will provide conservation of over 300 acres of natural areas along the hardline project's northern boundary with an average width of 2,000 feet from the edge of the development to property boundary that is contiguous with the large adjacent core ecological areas of MCAS Miramar and Goodan Ranch/Sycamore Canyon County Preserve.
    - The Upland Standards Areas criteria within the North Magnolia Subunit are designed and will be implemented to ensure an ecological linkage from the portions of the Fanita Ranch Hardline Development Project to be conserved to the Lakeside Downs Habitat Conservation Area (HCA) outside of and along the eastern border of the Plan Area is maintained.
    - The implementation of Upland Standards Areas criteria within the Mission Trails Subunit are designed/implemented/managed to ensure that ecological linkages from the Mission Trails Regional Park to protected open space/existing conservation lands, and through the Mission Trails Subunit in the southwest of the Plan Area, are maintained.
    - The City will coordinate with surrounding jurisdictions and landowners within the City identified as Not a Part of the Plan Area (including Carlton Oaks Golf Course and Padre Dam Municipal Water District) to maintain and enhance the ecological linkage along the San Diego River on the western and eastern edges of the Plan Area.
- As depicted in Figure 5-3, the City will ensure that ecological linkages and wildlife movement corridors within the Plan Area will be protected and maintained, including:
    - Establish and maintain/protect an ecological linkage through the Fanita Ranch onsite Preserve to maintain north–south connectivity to the North Magnolia Subunit and the southern portions of the Fanita Ranch onsite Preserve. Ensure that wildlife movement through the central portion of the property meets the Subarea Plan wildlife movement and wildlife crossing criteria (see Section 5.5.3, *Ecological Linkages, Wildlife Corridors and Wildlife Crossing Structure Criteria*). In addition, a wildlife corridor will be protected and maintained along the eastern border of the Plan Area for maintaining wildlife movement to and from lands adjacent to the Plan Area, north and east of the Fanita Ranch Project.
    - Establish and maintain an east-west ecological linkage between open space in the southern portion of Fanita Ranch and through the North Magnolia Subunit to the protected open space properties on the eastern portion of the Plan Area, such as Cheyenne. The Fanita Ranch Hardline Development Project will include a wildlife corridor crossing beneath the planned Cuyamaca Street extension and will include protected open space forming an east-west ecological linkage up to this wildlife corridor crossing. The implementation of Upland

Standards Areas criteria within the North Magnolia subunit will design/implement/manage an ecological linkage from this wildlife corridor crossing through the North Magnolia Subunit.

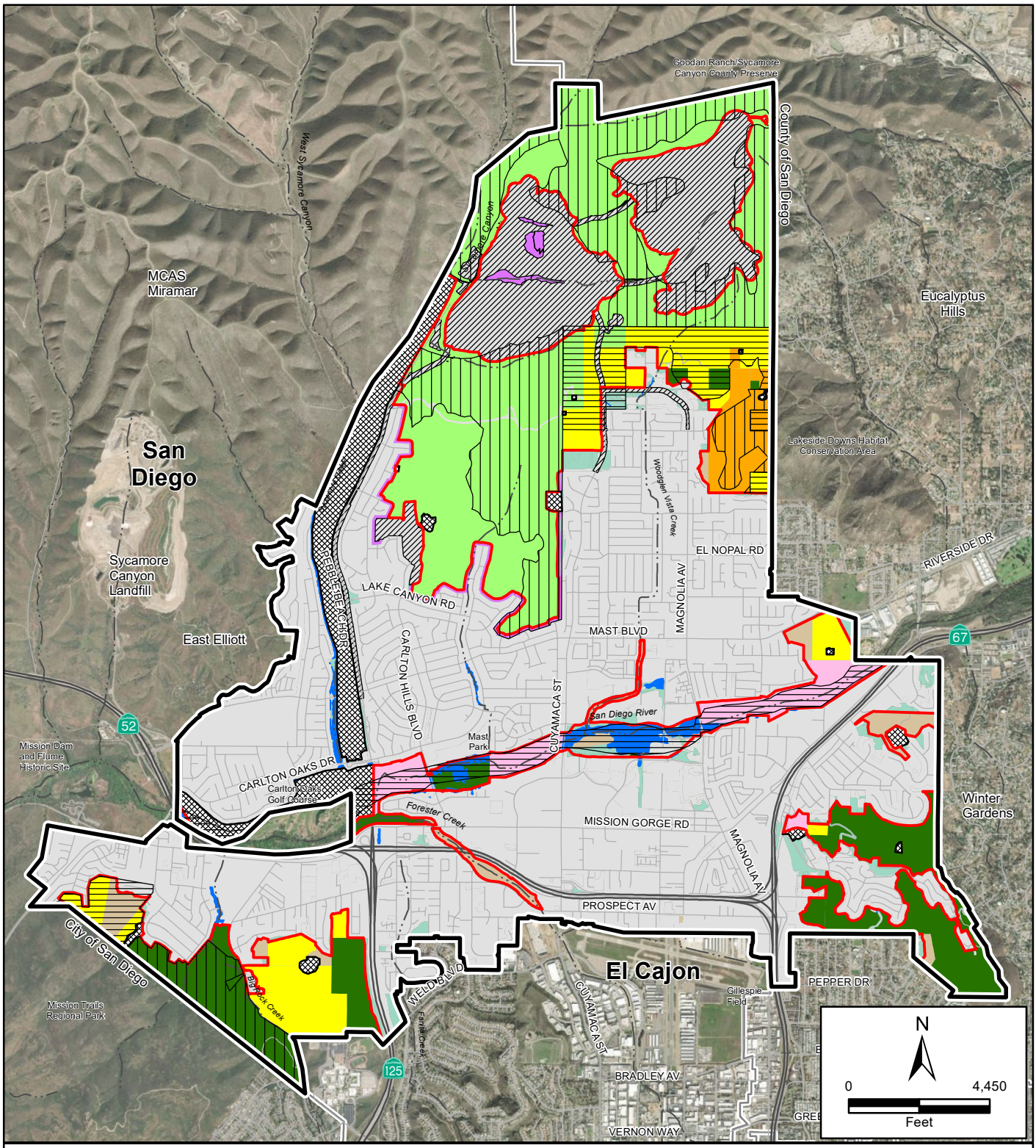
- Implementation of the Subarea Plan will result in protection and enhancement of the ecological linkage along the San Diego River within the Plan Area being maintained through conservation and management of City-owned Preserve Lands and future conservation within the San Diego River Subunit.
- Maintain an ecological linkage from Mission Trails Regional Park lands to CNLM East Mesa HCA through the Mission Trails Subunit Upland Standards Area. The implementation of Upland Standards Areas criteria within the Mission Trails subunit will be designed/ implemented/managed to maintain and protect a functional ecological linkage.
- Protect and maintain sufficient blocks (e.g., size and configuration) of coastal sage scrub on the eastern side of the Plan Area that function as a "stepping-stone" wildlife corridor for coastal California gnatcatchers within the Plan Area, with stepping-stone wildlife corridor connectivity from Rattlesnake Mountain to 'tank hill' and then to existing protected open space properties managed by EHC (Cheyenne, Capralis, and Brown open space properties). This will be accomplished with the specified design/implementation/management of the Upland Standards Areas criteria, and conservation and management of the City-owned Preserve lands within the East Santee Subunit Upland Standards Area.

The MSCP Subregional Plan included a delineation of the Multi-Habitat Planning Area (MHPA) which were intended as an initial expectation for each subarea of the MSCP and any modifications to the MHPA preserve design must result in an equal or better level of conservation of species and habitats. Overall, the Santee Subarea Plan Managed Preserve and Open Space System will result in an increase of protected natural habitat over the targets established in MSCP Subregional Plan. Figure 6-1 displays a comparison of the Subarea Plan Managed Preserve and Open Space System relative to the MHPA boundaries.

In addition, the MSCP Subregional Plan identifies targets for conservation of biological core and linkage areas within each Subarea Plan (see Table 3-2 of the MSCP Subregional Plan included in Appendix B). The Santee Subarea Plan has a target of at least 55 percent of the Mission Trails/Kearny Mesa/E. Elliot/Santee biological core area be protected (see Figure 2-12, *MSCP Biological Core and Linkage Areas*). Figure 6-2 and Table 6-3 display and summarize how the Subarea Plan Managed Preserve will conserve and protect at least 58 percent of the Santee portions of the MSCP biological core and linkage areas. When combined with existing protected open space that qualifies as biological core areas, implementation of the Subarea Plan will result in 71.1 percent (2,195.1 acres) of the biological core area within the Plan Area being conserved and/or protected.

Table 6-3. Conservation of Biological Core Areas

Biological Core Area	Total Acres	Acres within Plan Area	Acres Conserved within Subarea Plan Managed Preserve	Percent Conserved within Subarea Plan Area
10 – Mission Trails /Kearny Mesa /E. Elliot/Santee	17,629.0	3,087.9	1,790.0	58.0%



Subarea Plan Managed Preserve

Subarea Plan Mitigation Lands

- Hardline Conservation Lands
- Upland Standards Areas

Subarea Plan Protected Open Space

- City-Owned Preserve Lands

Existing Protected Open Space

- Fully Conserved Existing Conservation Lands
- Partially Conserved Existing Conservation Lands
- Other Protected Open Space

Habitats Outside Managed Preserve and Outside Existing Protected Open Space

- Riparian/Aquatic Habitats
- Upland Habitats within Infill Development Areas

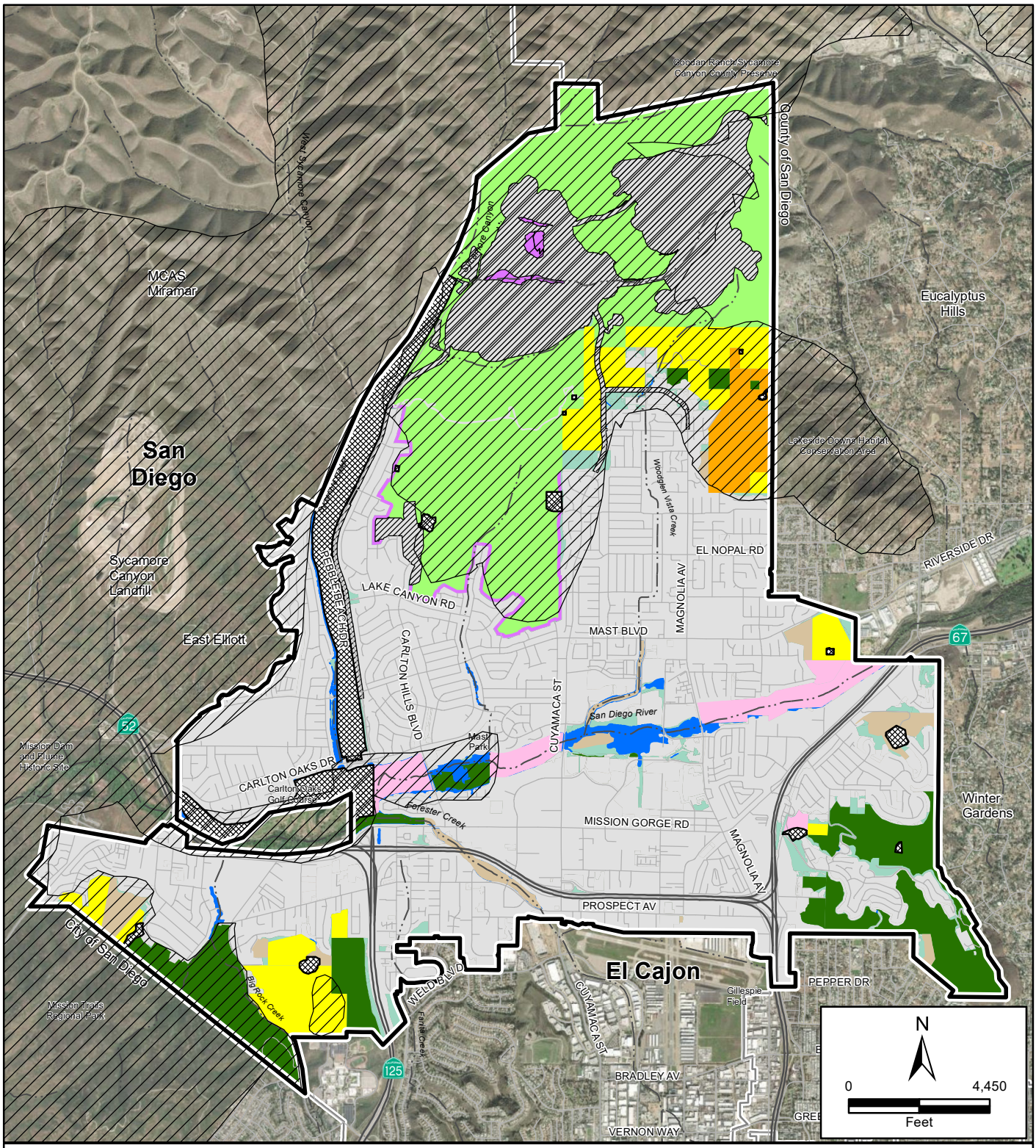
- City Boundary
- Open Space Network
- Hardline Development Areas
- Hardline Neutral Areas
- Not a Part
- Developed/Disturbed

MSCP MHPA 1998

- 100 Percent Conserved
- 90 - 95 Percent Conserved

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 6-01 SAP Preserve Compared MHPA.mxd Date: 7/16/2025 34153

Figure 6-1
Santee Managed Preserve and Open Space System Compared with MHPA
Santee MSCP Subarea Plan



Subarea Plan Managed Preserve

Subarea Plan Mitigation Lands

- Hardline Conservation Lands
- Upland Standards Areas

Subarea Plan Protected Open Space

- City-Owned Preserve Lands

Existing Protected Open Space

- Fully Conserved Existing Conservation Lands
- Partially Conserved Existing Conservation Lands
- Other Protected Open Space

Habitats Outside Managed Preserve and Outside Existing Protected Open Space

- Riparian/Aquatic Habitats
- Upland Habitats within Infill Development Areas

- City Boundary
- Open Space Network
- Hardline Development Areas
- Hardline Neutral Areas
- Not a Part
- Developed/Disturbed

MSCP Core Biological Resource Areas

- Biological Core

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\Figures\Figure 6-02 SAP Preserve with BCLA.mxd Date: 7/16/2025 34153

Figure 6-2
MSCP Core Biological Resource Areas Protected Through Santee Managed Preserve and Open Space System
Santee MSCP Subarea Plan

6.2.4 Maintain Range of Environmental Gradients

Landscape Goal 4 (L-4): Conserve natural vegetation communities within a range of environmental gradients and contiguous to other protected areas to allow for shifting species distributions in response to catastrophic events (e.g., fire, prolonged drought) or climate change.

Assembly of the Managed Preserve will result in the conservation of natural habitats and vegetation communities across a range of environmental gradients. Inclusion of a range of environmental gradients protects a greater diversity of environmental conditions and greater native species diversity. In addition, a range of gradients conserves opportunities for species to adapt to changed circumstances, including climate change by dispersing along environmental gradients across biological core areas and through ecological linkages. This conservation of natural habitats and vegetation communities will include riparian and freshwater marsh communities along the San Diego River portion of the Plan Area, grassland, oak woodland, and coastal sage scrub (including cactus scrub) communities on lower slopes of the adjoining hillsides, and coastal sage scrub and chaparral communities on the higher elevations and ridgelines of the Plan Area within the northern and southern (conserved) portions of the Fanita Ranch onsite Preserve. The location and distribution of the Managed Preserve captures a range of environmental gradients that is representative of the existing habitat and vegetation community distributions. Table 6-4 summarizes the representative percentages across elevation ranges of the Managed Preserve.

Table 6-4. Representative Percentages of Natural Habitat across Elevation Ranges in Subarea Plan Managed Preserve

	Total Acres within Plan Area	Percent of Remaining Natural Habitat	Conserved Habitat within Managed Preserve	Percent of Conserved Habitat	Change in Representative Percent
Less than 450 feet	588.9	12.9%	179.3	7.9%	-5%
450-600 feet	1,054.2	23.0%	454.2	20.1%	-2.9%
600-750 feet	1,312.6	28.7%	694.8	30.7%	2%
750-900 feet	697.3	15.2%	493.2	21.8%	6.6%
900-1,050 feet	616.5	13.4%	296.2	13.1%	-0.3%
More than 1,050 feet	312.8	6.8%	145.3	6.4%	-0.4%
Totals:	**4,582.3**	**100.0%**	**2,263.0**	**100.0%**	**0.0%**

6.3 Natural Communities-Level Conservation Analysis

6.3.1 Upland Vegetation Communities

Natural Community Goal 1 (N-1): Conserve upland vegetation communities to promote native biodiversity.

Assembly of the Managed Preserve in association with the Subarea Plan implementation will result in the conservation of natural habitats that will meet the natural community objectives for upland vegetation communities. The protection and conservation of relatively large ecologically

interconnected natural habitats will promote conservation of native biodiversity and benefit Covered Species. Table 6-5 summarizes the amounts of natural habitats/vegetation communities found on lands to be conserved within the Managed Preserve.

Table 6-5. Natural Habitats/Vegetation Communities Protected in Subarea Plan Managed Preserve

Vegetation Communities	Hardline Project Preserves	Future Preserves in Upland Standards Areas	City-Owned Preserves	Total Conserved within Managed Preserve
Maritime Succulent Scrub	7.3	-	-	7.3
Coastal Sage Scrub	1,070.4	279.6	33.8	1,383.8
Chaparral	377.6	11.4	-	389.0
Grassland	212.0	22.3	<0.01	234.3
Coast Live Oak Woodland	26.4	-	-	26.4
Engelmann Oak Woodland	57.2	-	-	57.2
Riparian	4.2	0.1	81.9	86.2
Freshwater Marsh	-	-	12.7	12.7
Vernal Pool	2.9	17.4	-	20.3
Disturbed Wetland	0.1	-	-	0.1
Freshwater (Open Water)	-	-	38.8	38.8
Non-Vegetated Channel or Floodway	6.7	-	0.1	6.8
Natural Habitat Totals:	**1,764.8**	**330.8** [a]	**167.3**	**2,263.0**

[a] Acreage estimates for Standards Areas are based on the assumption that 70 percent of each habitat type present would be conserved (100 percent for vernal pool complex).

6.3.2 Aquatic, Riparian, Wetland, and Vernal Pool Habitats

Natural Community Goal 2 (N-2): Conserve aquatic, riparian, wetland, and vernal pool habitats to benefit Covered Species, promote native biodiversity, and ensure no net loss of ecological functions and values of wetland and vernal pool communities.

Assembly of the Managed Preserve will result in new conservation of natural habitats that will meet the natural community objectives for aquatic, riparian, and wetland vegetation communities. The conservation of natural habitat will promote conservation of native biodiversity and benefit Covered Species. Table 6-5 also summarizes the amount of aquatic, riparian, and wetland vegetation communities to be protected with the assembly of the Managed Preserve.

The Subarea Plan sets forth the Aquatic, Wetlands, and Riparian Protection Standards (Section 5.5.5) to ensure aquatic, riparian, and wetland areas and their associated hydrology will be conserved to achieve no-net-loss of acreage, functions (e.g., ecosystem services, as support of habitats for Covered Species, and water quality or floodplain protection) and values (to support wildlife corridor maintenance, biodiversity, ecosystem services, and aesthetics) within the Plan Area. Aquatic, riparian, and wetland area protection under the Subarea Plan will be provided through individual Covered

Activity project entitlement reviews and the associated CEQA and Habitat Loss Incidental Take Permit (HLIT) permitting processes. The City will ensure that Covered Activity project areas supporting aquatic, riparian, or wetland areas will adequately address potential biological impacts to those areas through priorities of first avoidance, then minimization, and if impacts are unavoidable, through aquatic, riparian, or wetland resource mitigation. Mitigation for wetlands and vernal pool communities will include enhancement, restoration, and/or creation measures to result in no-net-loss of ecological functions and values to those resources.

The Subarea Plan sets forth the Vernal Pool Conservation Standards (Section 5.5.7 and Appendix G) to provide Covered Activities standards and requirements for the protection, enhancement, and management of vernal pool resources within the Plan Area, including associated vernal pool watersheds. These Covered Activity standards closely follow definitions and requirements included in the City of San Diego Vernal Pool Habitat Conservation Plan (VPHCP) (San Diego 2017). As part of the Covered Activity approvals, including future project entitlement reviews and the associated CEQA and HLIT permitting processes, Covered Activity project areas that support vernal pools/seasonal basins will address these pools/basins and their associated watersheds through priorities of first avoidance, then minimization, and if impacts are unavoidable, through mitigation that includes restoration and/or creation measures to adequately meet the no-net-loss standard for vernal pool/seasonal basin ecological functions and values.

The Hardline Development Project will result in direct and unavoidable impacts to 0.4 acres of vernal pools. A Vernal Pool and Wetland Mitigation Plan has been developed (Appendix D). The Hardline Development Project will conserve 29.9 acres of vernal pools and associated watershed within the Onsite Preserve, including:

- 2.9 acres of vernal pool restoration, including:
    - 0.25 acres of existing vernal pool preservation
    - 0.82 acres existing vernal pool reestablishment
    - 1.85 acres of new vernal pool creation
- 26.9 acres of associated watershed.

For other Covered Activities that are determined by the City, in coordination with the Wildlife Agencies, to have potential direct and unavoidable impacts to vernal pools, seasonal basins, or their watersheds, the Subarea Plan includes the following requirements:

- **Vernal Pool Mitigation Plan**: The City will require that a Vernal Pool Mitigation Plan (VPMP) be prepared for Covered Activities during the permit application phase for any projects that are proposing to disturb seasonal basin features (i.e., natural vernal pools and man-made features containing vernal pool indicator plant and wildlife species) or associated watersheds. The VPMP, which will be prepared in conformance with the Vernal Pool Conservation Standards (see Appendix G), will describe proposed methods and measures for preservation, rehabilitation or enhancement, and creation of new seasonal basin resources within the Managed Preserve as mitigation to fully offset anticipated Covered Activity impacts. The VPMP will focus on seasonal basin features and associated upland watershed enhancement opportunities and appropriately

cover the following: conceptual level vernal pool enhancement/restoration/creation design, pool/basin/watershed hydrology analysis, pool/basin soils analysis, planting plan (planting palettes for both vernal pool and surrounding upland habitats), and supplemental water program for plant establishment; maintenance and monitoring guidelines; soil, flora, and fauna pool/basin salvage opportunities; San Diego fairy shrimp and western spadefoot translocation; and ownership arrangements, site legal and physical protection (i.e., fencing, barriers, avoidance of planned public use of the site, etc.), and long-term pool/basin and watershed management strategies. The Vernal Pool Mitigation Plan will be submitted to the City for review and approval prior to any grading or grubbing.

Natural vernal pools subject to impacts from Covered Activities will be mitigated at a 4:1 ratio, typically including a combination of preservation and management of existing pools, rehabilitation/enhancement of existing pool/basin features within the Preserve, and creation of new vernal pools/seasonal basins. Man-made pools (i.e., artificial features and road ruts) subject to impacts from Covered Activities will be mitigated through rehabilitation/enhancement and/or creation at a 3:1 or 2:1 ratio, depending on whether the affected pool/basin supports pool/basin plant or wildlife indicator species. Mitigation of Covered Activities affecting pools/basins through rehabilitation/enhancement may occur in existing basin features within the Managed Preserve that are not vernal pools (i.e., road ruts lacking vernal pool indicator species). This would entail repairing degraded basin features through the manipulation/enhancement of surface watershed and/or basin topography and soil conditions to improve the overall ecological function of the basin, control of invasive species, and planting of appropriate native species. Mitigation of Covered Activities through creation would consist of establishing new vernal pools in areas where they have not previously occurred and/or the returning of vernal pool and watershed areas to a pre-existing condition through manipulation of existing surface topography to support appropriate inundation and ponding for vernal pools. Created vernal pools shall exhibit equivalent or improved ecological characteristics as those within the Covered Activity impact area; this will include such characteristics as pools currently supporting fairy shrimp, indicator vernal pool plant species, and/or western spadefoot and will maintain equivalent or larger individual pool sizes and watersheds.

Approved Covered Activity permanent impacts to vernal pools or seasonal basins that support San Diego fairy shrimp, covered plant species, and/or other vernal pool indicator plant species will have the minimum top 3 inches of soil removed from the pool/basin and appropriately salvaged/set aside/stored prior to mass grading of the site. This salvaged soil will be stored in an appropriate dry location until it is to be utilized for deposition into the new vernal pools being created or enhanced as mitigation for the project. Once the created or enhanced pools are effectively prepared and proven to hold water for the appropriate amount of time considering the watershed and typical rainfall, the pools will be inoculated with the soil from the pools or basins affected by the project. The acreage and pool configuration of vernal pool water surface area that will be created by the enhancement or creation measures shall be verified using onsite soil, pool, and watershed hydrologic properties and modeling of rainfall seasons.

6.4 Species-Level Conservation Analysis

This section summarizes the mitigation and conservation outcomes of the Subarea Plan's conservation strategy for Covered Species and describes how outcomes are consistent with ESA and NCCPA standards. The effects of Covered Activities and level of conservation are summarized for each.

A quantitative summary of estimated allowable impacts and conservation of suitable habitat for each Covered Species is included as Table 6-6. For each Covered Species, a figure is provided showing the overlay of the Managed Preserve and Existing Natural Open Space with the distribution of suitable habitat and known occurrences.

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Table 6-6. Summary of Subarea Plan Estimated Impacts and Conservation for Covered Species Suitable Habitat (acres)

Biometric	Total in Plan Area	Estimated Acres of Impact [a]					Acres Conserved			
		Planned and Future Development					Subarea Plan Managed Preserve			
		Hardline Project	Within Upland Standards Areas	Infill Development Areas	San Diego River Subunit	Total	Hardline Project Preserves	Future Preserves in Upland Standards Areas	City-Owned Preserves	Total
Plants										
San Diego ambrosia										
Suitable habitat	974.8	133.8	16.4	17.4	36.9	204.5	180.4	38.2	116.0	334.6
Critical habitat	0.3	-	-	0.1	-	0.1	-	-	-	-
San Diego barrel cactus										
Suitable habitat	3,186.3	561.9	136.8	53.1	1.6	753.4	1,263.4	319.3	24.3	1,607.0
San Diego button-celery										
Vernal pools	19.3	0.4	-	-	-	0.4	2.9	17.4	-	20.3
San Diego goldenstar										
Suitable habitat	3,251.4	549.1	127.4	51.7	1.1	729.3	1,251.2	297.3	22.9	1571.4
San Diego mesa mint										
Vernal pools	19.3	0.4	-	-	-	0.4	2.9	17.4	-	20.3
San Diego thornmint										
Suitable habitat:										
Higher value (0.75 – 1)	661.4	323.9	10.8	5.6	0.0	340.3	280.5	25.2	-	305.7
Moderately high value (0.5 – 0.75)	1,169.6	292.8	33.2	8.1	0.0	334.1	612.6	77.5	-	690.1
Moderate value (0.25 – 0.5)	1,961.7	247.9	88.8	32.9	0.0	369.6	645.2	207.3	17.5	870.0
Lower value (0.0 – 0.25)	126.8	5.2	7.3	8.4	2.6	23.5	16.2	17.1	13.4	46.7
Suitable habitat subtotal:	3,883.6	869.8	140.2	55.0	2.6	1,067.5	1,554.5	327.1	30.9	1,912.5
Variegated dudleya										
Suitable habitat	3,379.7	563.9	120.1	50.5	1.1	735.6	1,440.1	280.1	22.9	1,743.1
Willowy monardella										
Suitable habitat	336.5	28.8	3.4	6.9	11.1	50.2	89.2	7.9	49.0	146.1
Critical habitat	117.6	3.6	-	0.4	-	4.0	113.1	-	-	113.1
Invertebrates										
Crotch's bumble bee										
Suitable habitat	4,287.3	877.2	141.8	65.0	32.2	1,116.2	1,592.2	331.0	132.2	2,055.4
Hermes copper butterfly										
Potentially suitable vegetation communities	3,504.8	686.6	132.0	39.9	2.3	860.8	1,505.5	308.0	28.2	1,841.7
Critical Habitat	3,004.7	851.1	67.7	8.8	-	927.6	1,486.4	158.1	-	1,644.5
Quino checkerspot butterfly										
Potentially suitable vegetation communities	3,713.7	605.5	140.0	55.8	13.2	814.5	1,409.7	326.7	47.2	1,783.6
Riverside fairy shrimp										
Vernal pools	19.3	0.4	-	-	-	0.4	2.9	17.4	-	20.3

Table 6-6. Summary of Subarea Plan Estimated Impacts and Conservation for Covered Species Suitable Habitat (acres) (cont.)

Biometric	Total in Plan Area	Estimated Acres of Impact [a]					Acres Conserved			
		Planned and Future Development					Subarea Plan Managed Preserve			
		Hardline Project	Within Upland Standards Areas	Infill Development Areas	San Diego River Subunit	Total	Hardline Project Preserves	Future Preserves in Upland Standards Areas	City-Owned Preserves	Total
San Diego fairy shrimp										
Vernal pools	19.3	0.4	-	-	-	0.4	2.9	17.4	--	20.3
Reptiles and Amphibians										
Belding's orange-throated whiptail										
Suitable habitat	4,204.7	871.8	141.8	62.4	29.3	1,105.3	1,559.1	330.9	125.6	2,015.6
Blainville's horned lizard										
Suitable habitat	4,241.6	874.1	141.8	64.1	31.8	1,111.8	1,585.5	330.9	125.6	2,042.0
Western spadefoot										
Suitable habitat										
Known breeding habitat	0.3	0.3	-	-	-	0.3	-	-	-	-
Other potentially suitable breeding areas	19.9	1.0	5.1	0.4	-	6.5	1.0	11.9	-	12.9
Suitable upland habitat adjacent to known breeding habitat	813.8	384.0	5.4	7.3	-	396.7	350.0	12.6	-	362.6
Other suitable upland habitat	2,837.0	520.0	120.6	34.0	-	674.6	1,270.0	281.4	-	1,551.4
Suitable habitat subtotal:	3,671.0	905.3	131.1	41.7	-	1,078.2	1,621.0	305.9	-	1,926.9
Birds										
Coastal California gnatcatcher										
Suitable habitat:										
Very high	2,021.4	340.6	92.3	18.9	<0.1	451.9	898.8	215.3	17.6	1,131.7
High	611.9	34.8	35.0	12.3	0.1	82.2	149.0	81.8	9.0	239.8
Moderate	35.3	2.4	0.0	3.2	1.1	6.7	7.1	-	0.9	8.0
Suitable habitat subtotal:	2,668.6	377.8	127.3	34.3	1.3	540.8	1,054.9	297.1	27.5	1,379.5
Critical habitat	3,806.8	855.1	125.4	21.4	-	1,001.9	1,481.4	292.5	-	1,773.9
Least Bell's vireo										
Suitable habitat	362.5	1.7	0.1	4.3	26.7	32.8	4.2	0.2	116.1	120.5
Critical habitat	175.6	-	-	1.4	8.3	9.7	-	-	-	-
Coastal cactus wren										
Suitable habitat:										
Higher value (0.75 – 1)	1,879.3	290.9	85.4	15.5	-	391.8	834.9	199.3	11.1	1,045.3
Moderate value (0.5 – 0.75)	630.8	147.8	25.8	5.7	<0.1	179.4	255.9	60.1	2.1	318.1
Suitable habitat subtotal:	2,510.1	438.7	111.2	21.1	<0.1	571.2	1,090.8	259.4	13.2	1,363.4
Western burrowing owl										
Suitable habitat	1,837.4	380.1	48.1	22.3	11.2	461.7	619.4	112.2	28.1	759.7

[a] Approximately 2,095.7 acres are newly conserved, and 167.3 acres are enhancement of existing protected lands. The Managed Preserve is slightly larger than the number of natural habitat acres reported because of the presence of trails, a road, utility easements, and in the case of the San Diego River Subunit, also defensible space.

6.4.1 San Diego Ambrosia



Species Goal 1 (S-1): Conserve and maintain suitable habitat to provide opportunities for expansion of San Diego ambrosia in the Plan Area.

6.4.1.1 Conservation Summary

The four known extant occurrences of San Diego ambrosia occur on Existing Protected Open Space (Section 3.4.1.2, *San Diego Ambrosia Species Distribution and Population Trends*). Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the Subarea Plan's biological goals for the species through the conservation, protection, and management of 334.6 acres of suitable habitat for San Diego ambrosia (34.3 percent of total in the Plan Area) (see Figure 6-3 and Table 6-6). Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. As required by the Narrow Endemic Species Standards found in Section 5.5.6, implementation of the Subarea Plan will permanently protect, manage, and monitor San Diego ambrosia occurrences within the Managed Preserve and a minimum of 80 percent preservation and/or translocation of all newly identified locations within future Covered Activity project footprints. The City will also ensure that potential impacts from public uses (e.g., trampling, crushing) nearby to occurrences are adequately managed and protected against. The Subarea Plan will therefore provide for the conservation and management of self-sustaining occurrences of San Diego ambrosia in the Plan Area.

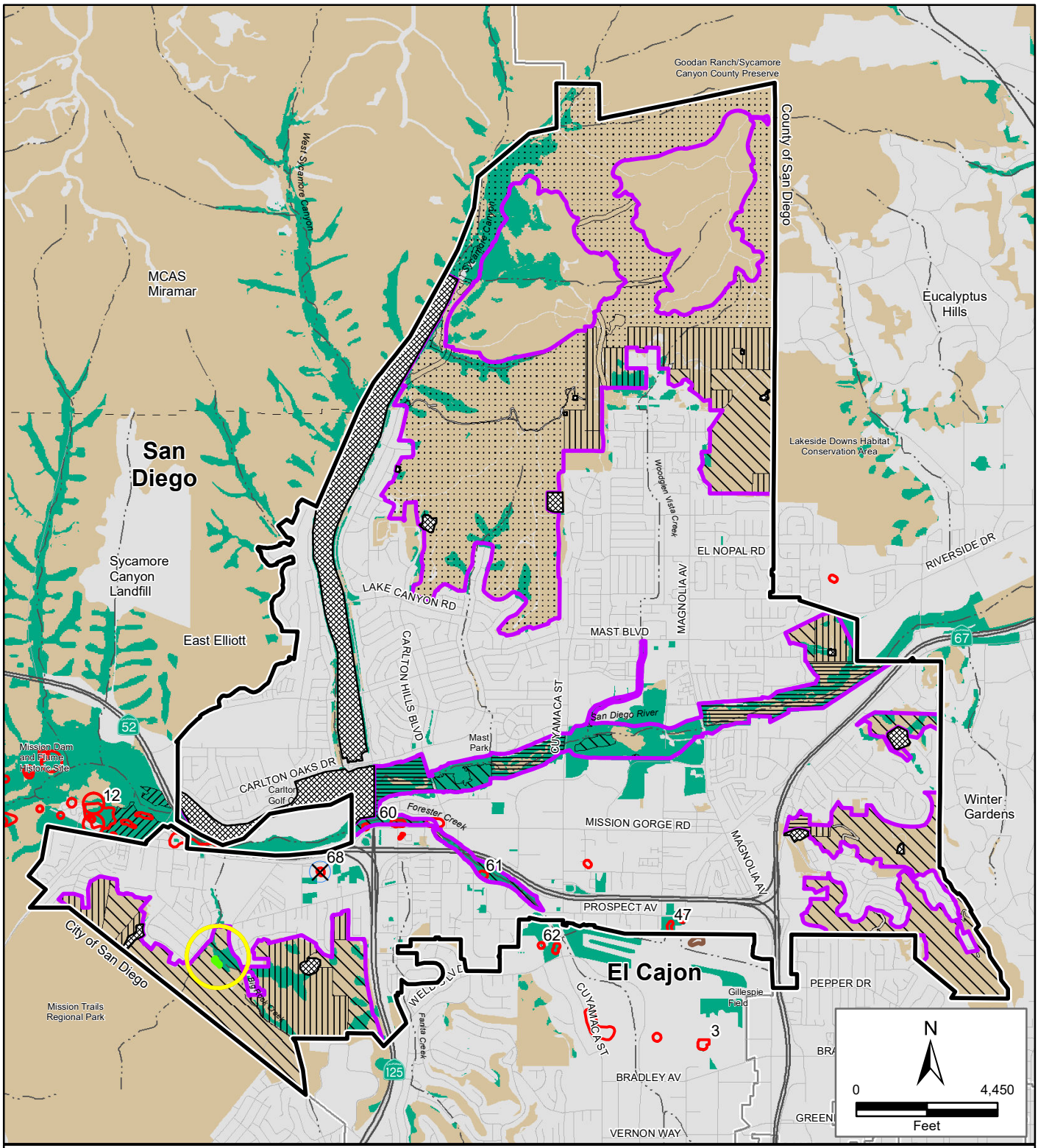
6.4.2 San Diego Barrel Cactus



Species Goal 2 (S-2): Maintain viability, protect, and increase the size and number of San Diego barrel cactus populations and conserve and maintain suitable habitat for San Diego barrel cactus within the Plan Area.

6.4.2.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the Subarea Plan's biological goals for the species through the conservation, protection, and management of 1,607.0 acres (50.4 percent) of suitable habitat for San Diego barrel cactus (see Figure 6-4 and Table 6-6). Approximately 4,267 individuals (88 percent of the total found within the Hardline Development Project) will be conserved in the Fanita Ranch Onsite Preserve, which will complement existing occurrences in the Plan Area in Existing Protected Open Space, including the Cheyenne property, CNLM Rattlesnake Mountain HCA, and CNLM East Mesa HCA.



Subarea Plan Area
Habitat Model
Final Critical Habitat (USFWS 2010)

Species Occurrence Locations * #
Current (post-1999)
Historic (pre-2000)
CNDDB 2010 #36
Proposed Transplantation Area
Translocated

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

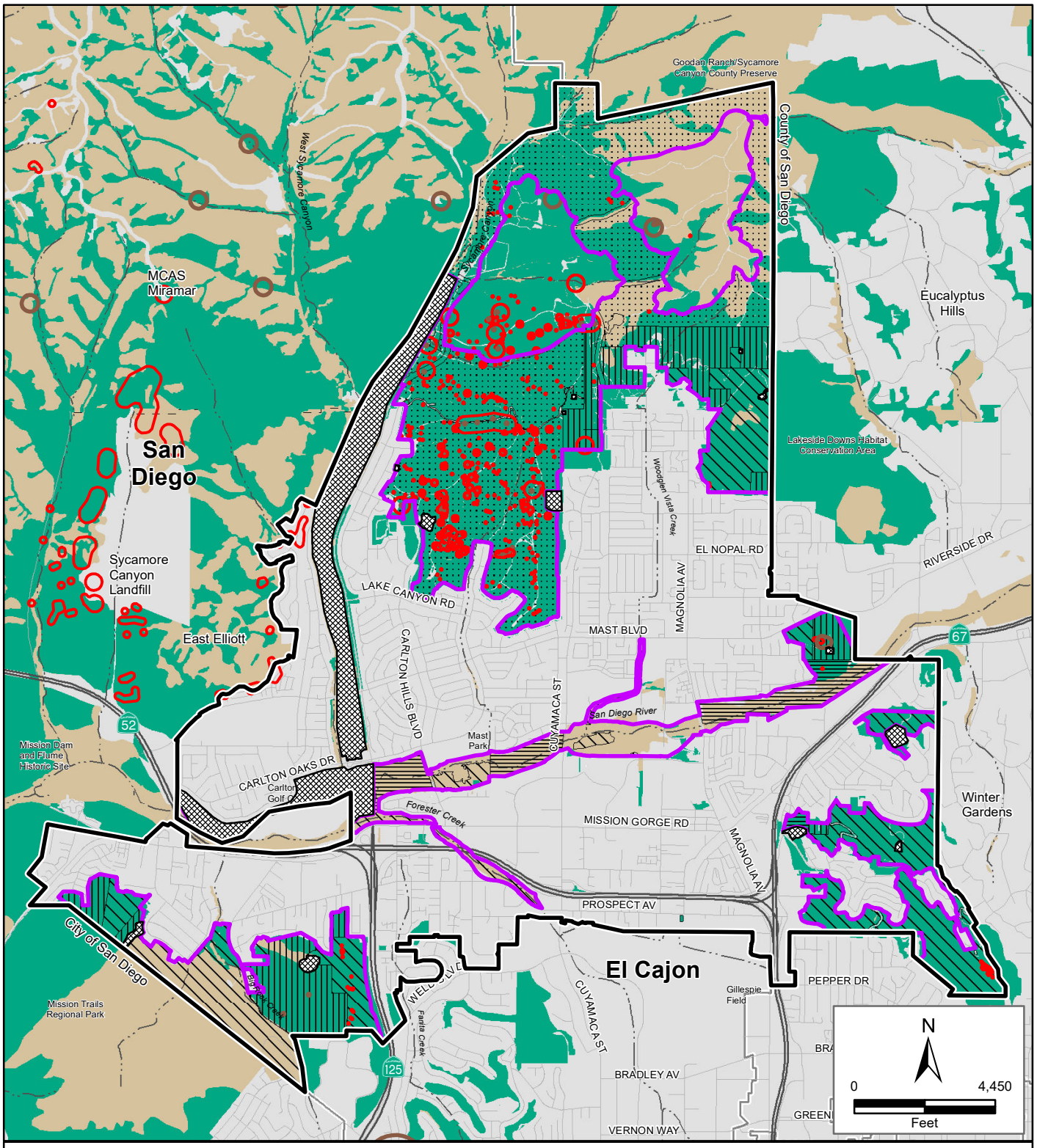
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

CNDDB occurrence number

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

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Figure 6-3
San Diego Ambrosia - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-04 San Diego Barrel Cactus-Unique.mxd Date: 2/11/2025 34153

Figure 6-4
San Diego Barrel Cactus - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

In the Upland Standards Areas, a project proponent will be required to demonstrate that a minimum of 80 percent of the occurrences/populations will be protected in perpetuity through protection and/or translocation and restoration within onsite habitat preserves pursuant to the Covered Plant Species Translocation and Restoration Conservation Standards (Section 5.5.8). Implementation of the Subarea Plan will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. The conservation actions under the Subarea Plan will provide for the conservation and management of self-sustaining occurrences of San Diego barrel cactus in the Plan Area.

6.4.3 San Diego Button-celery

Species Goal 3 (S-3): Conserve and maintain suitable habitat for San Diego button-celery within the Plan Area.

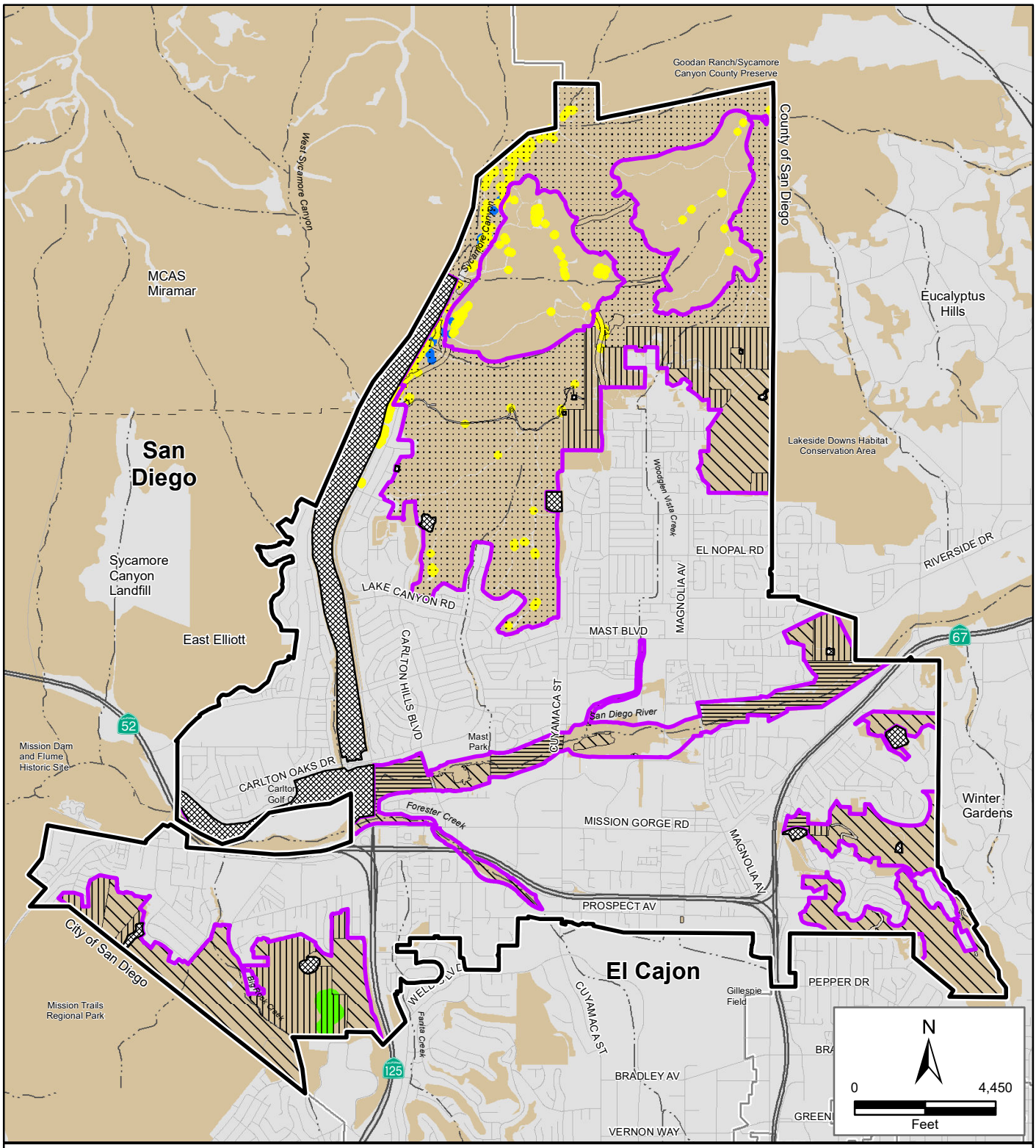


6.4.3.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the Subarea Plan's biological goals for the species through the conservation, protection, management, and monitoring of a total of 47.3 acres of newly conserved suitable vernal pool/seasonal basin habitat (and associated watersheds) within the Managed Preserve (see Figure 6-5 and Table 6-6) and the introduction of San Diego button-celery into the suitable habitat. Habitat conserved will include:

- 29.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve, including:
    - 2.9 acres of vernal pool restoration, consisting of:
        - 0.25 acres of existing vernal pool preservation
        - 0.82 acres existing vernal pool reestablishment
        - 1.85 acres of new vernal pool creation
    - 26.9 acres of associated watershed
- 17.4 acres of vernal pool complex/associated watershed in the Upland Standards Areas

Implementation of the Subarea Plan will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. The City will also ensure that impacts from public uses (e.g., trampling, crushing) nearby to occurrences are adequately managed/protected against.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-05 San Diego Button Celery.mxd Date: 2/11/2025 34153

Figure 6-5
San Diego Button-Celery - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

The conservation measures and standards under the Subarea Plan will provide for the conservation and management of self-sustaining occurrences of San Diego button-celery in the Plan Area.

6.4.4 San Diego Goldenstar



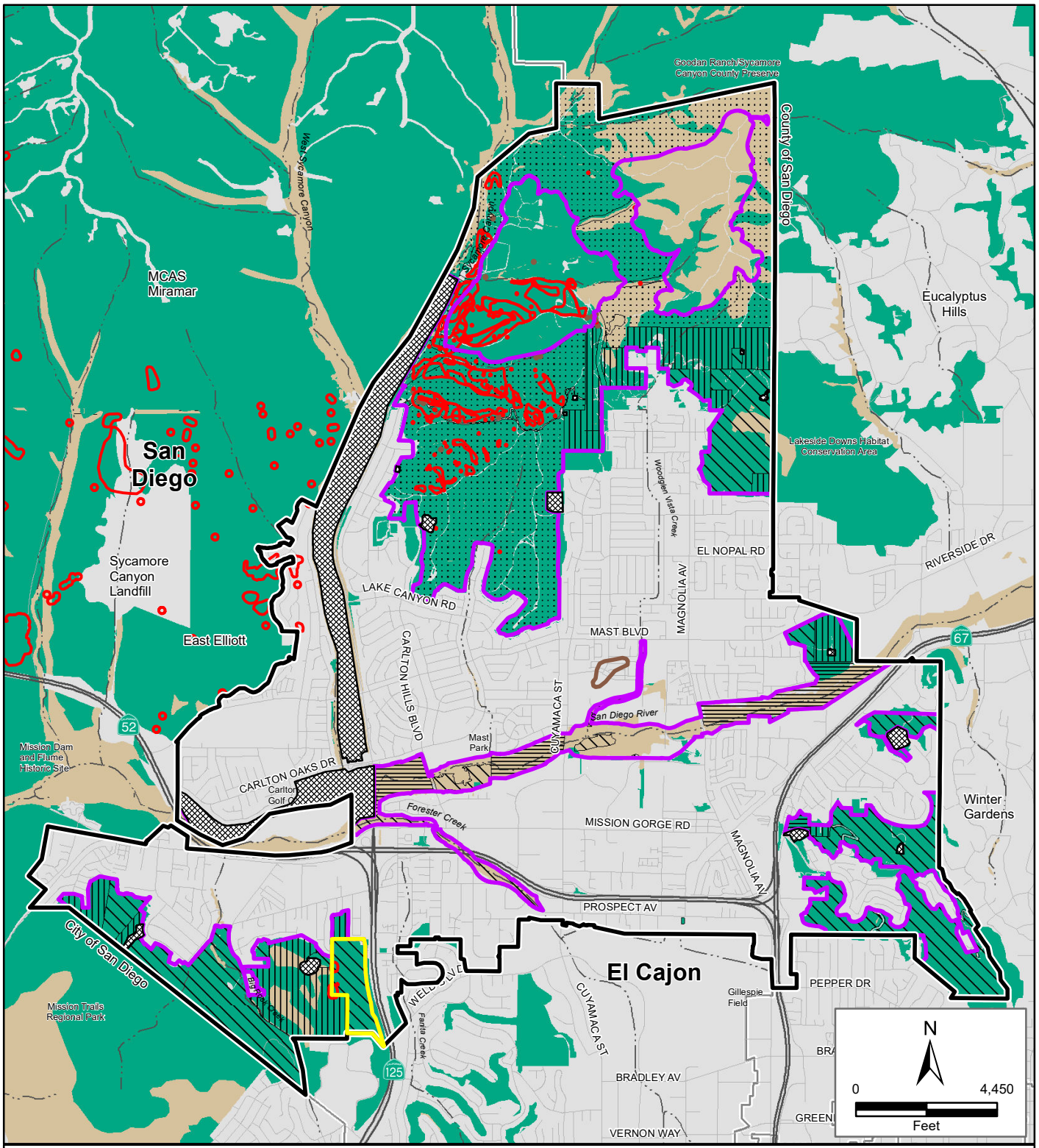
Species Goal 4 (S-4): Maintain viability, protect, and increase the size and number of San Diego goldenstar populations and conserve and maintain suitable habitat for San Diego goldenstar within the Plan Area.

6.4.4.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the Subarea Plan's biological goals for the species through the conservation, protection, management, enhancement, and monitoring of at least 1,571.4 acres of suitable habitat for San Diego goldenstar (48 percent of the total suitable habitat in the Plan Area) (1,548.5 newly conserved acres in the Hardline Onsite Preserve and Future Preserves in the Upland Standards Areas and enhancement of 22.9 acres of City-owned Preserve Lands-see Figure 6-6 and Table 6-6). Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area is avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated.

San Diego goldenstar plants found within Covered Activity footprints will be transplanted into protected suitable habitat for the species in the Plan Area, if necessary, in order to maintain the minimum acreages, percentages, and numbers of plants required by Species Objective S-4.3. Areas subject to transplantation will be further enhanced through management, including ongoing control of invasive plants, to ensure re-establishment of self-sustaining occurrences of San Diego goldenstar in the transplant location.

At least 1,251.2 acres of San Diego goldenstar suitable habitat will be avoided and protected associated with the Hardline Development Project. Implementation of the Subarea Plan will permanently protect, manage, and monitor San Diego goldenstar occurrences within the Managed Preserve or translocate within habitat preserve lands, including: a minimum of 4 locations within the Hardline Development Project, a minimum of 80 percent preservation and/or translocation (See Species Objective S-4.3) of all known locations within the Covered Activity project footprints (i.e. Fanita Ranch), and a minimum of 80 percent preservation and/or translocation of all newly identified locations within Covered Activity project footprints. Any impacts to San Diego goldenstar plants from the Hardline Development Project that are unable to be avoided will be required to be salvaged and translocated or planted in the Fanita Ranch Onsite Preserve. The translocation program will include methods for plant salvage and/or growing and planting for Covered Species of plants so that the occurrences of San Diego goldenstar that will be affected by the Hardline Development Project will be effectively salvaged and translocated/managed in order to meet the 80 percent minimum translocation survival rate for at least 5 years.



Subarea Plan Area
Habitat Model

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

Natural Vegetation
Developed/Agriculture/Disturbed Habitat
CNLM East Mesa (Hagenmaier and Gross parcels) HCA Preserve
Not a Part

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-06 San Diego Goldenstar-Unique.mxd Date: 2/11/2025 34153

Figure 6-6
San Diego Goldenstar - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

The conservation, protection, enhancement, and management actions under the Subarea Plan will ensure that the impacts from Covered Activities are minimized and fully mitigated, ensure impacts from public uses (e.g., trampling, crushing, flower picking) nearby to occurrences are adequately managed/protected against, and provide for the conservation of self-sustaining subpopulations of San Diego goldenstar in the Plan Area.

6.4.5 San Diego Mesa Mint

Species Goal 5 (S-5): Conserve and maintain suitable habitat for San Diego mesa mint within the Plan Area.



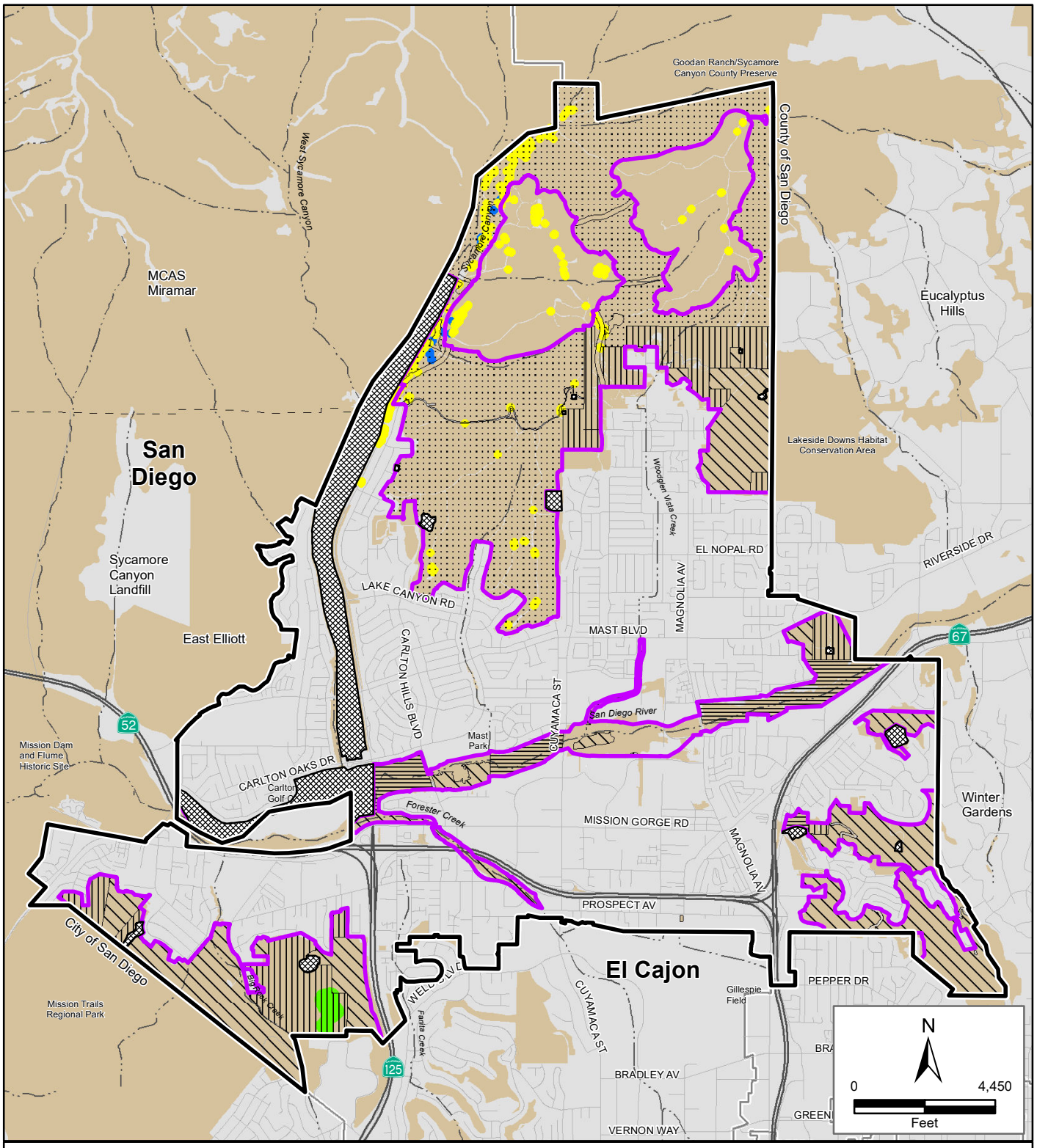
6.4.5.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan for the species through the conservation, management, and monitoring of a total of 47.3 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) within the Managed Preserve and the introduction of San Diego mesa mint into the suitable habitat. (see Figure 6-7 and Table 6-6). Habitat conserved will include:

- 29.9 acres of vernal pools and associated watershed within the Fanita Ranch Onsite Preserve, including:
    - 2.9 acres of vernal pool restoration, including:
        - 0.25 acres of existing vernal pool preservation
        - 0.82 acres existing vernal pool reestablishment
        - 1.85 acres of new vernal pool creation
    - 26.9 acres of associated watershed
- 17.4 acres of vernal pool complex/associated watershed in the Upland Standards Areas

Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area is avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated.

The conservation actions under the Subarea Plan include introduction of the species and directed enhancement/management of any protected vernal pools where San Diego mesa mint is detected in the Plan Area, such that the conservation and management of a self-sustaining occurrence(s) of San Diego mesa mint will be provided.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-07 San Diego Mesa Mint.mxd Date: 2/11/2025 34153

Figure 6-7
San Diego Mesa Mint - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.6 San Diego Thornmint



Species Goal 6 (S-6): Conserve and maintain suitable habitat for San Diego thornmint within the Plan Area.

6.4.6.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan for the species through the conservation of 1,912.5 acres of suitable habitat (49.2 percent of the total suitable habitat in the Plan Area) for San Diego thornmint (see Figure 6-8 and Table 6-6). Implementation of the Subarea Plan will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. As required by the Narrow Endemic Species Standards found in Section 5.5.6, implementation of the Subarea Plan will permanently protect, manage, and monitor San Diego thornmint occurrences within the Managed Preserve and a minimum of 80 percent preservation and/or translocation of all newly identified locations within future Covered Activity project footprints. The conservation actions under the Subarea Plan will provide for the conservation and management of San Diego thornmint in the Plan Area.

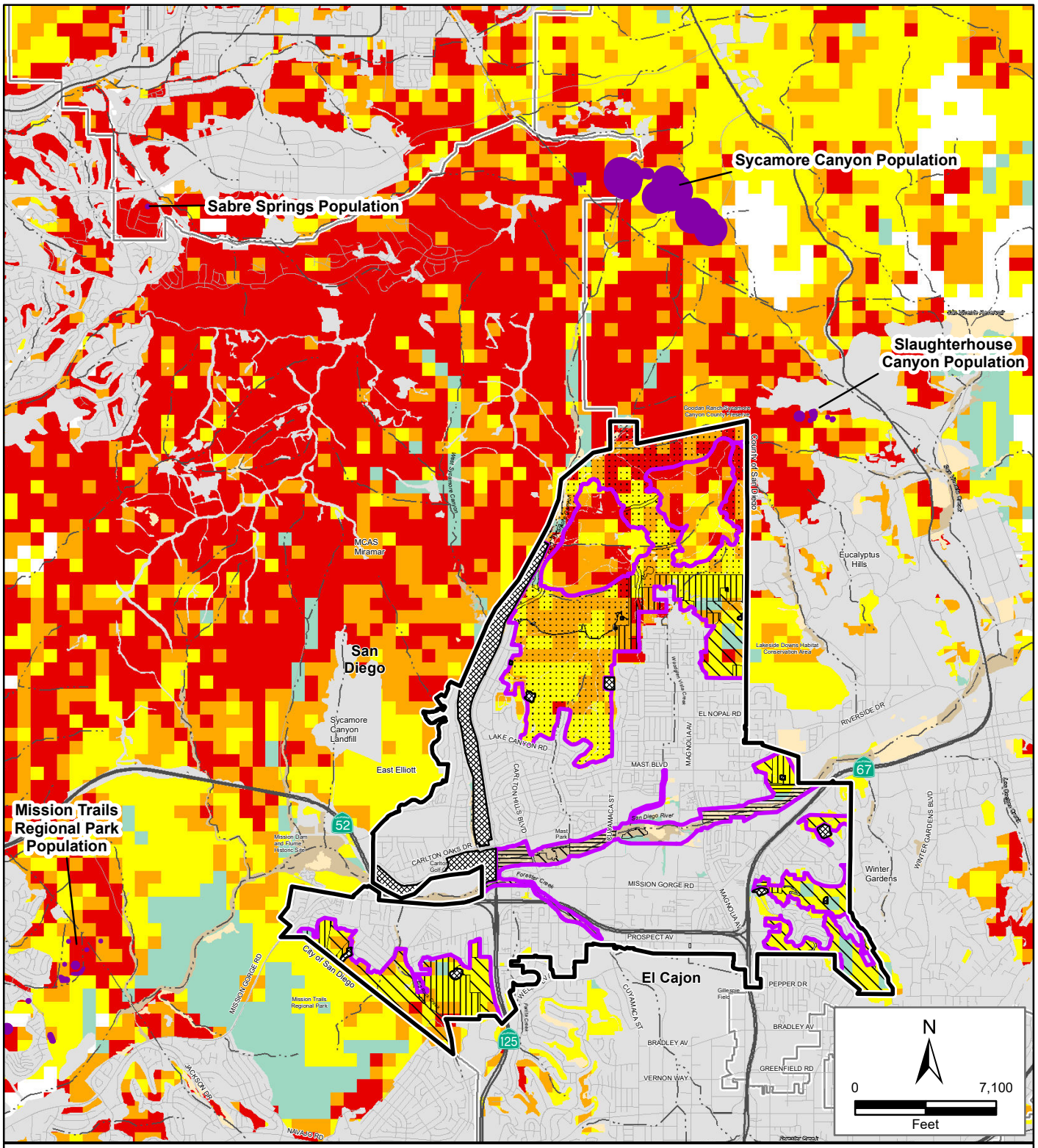
6.4.7 Variegated Dudleya



Species Goal 7 (S-7): Maintain viability, protect, and increase the size and number of variegated dudleya populations and conserve and maintain suitable habitat for variegated dudleya within the Plan Area.

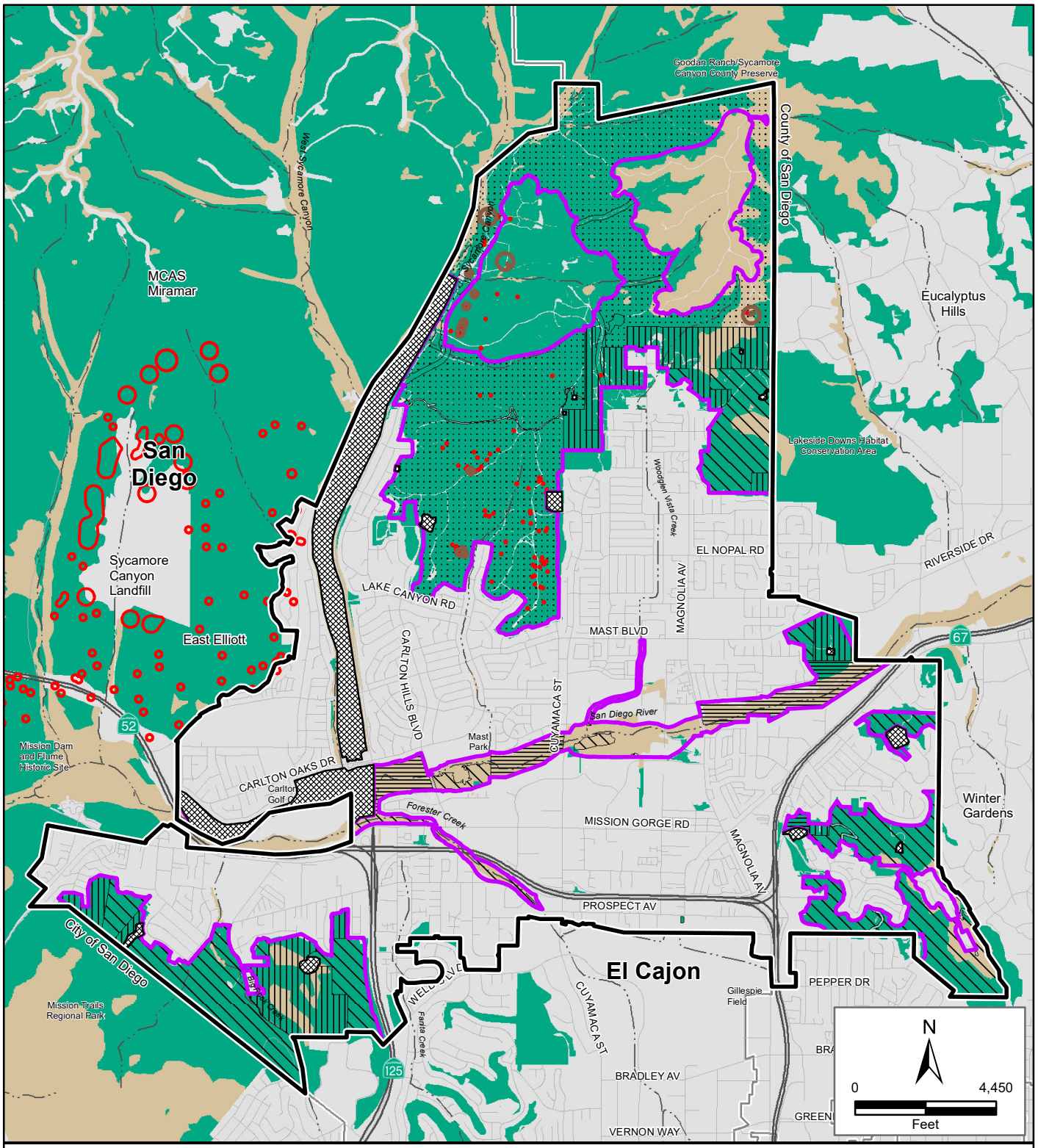
6.4.7.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals for variegated dudleya through the conservation of 1,743.1 acres of suitable habitat (51.6 percent of the total suitable habitat in the Plan Area)(see Figure 6-9 and Table 6-6). Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals and that potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable in accordance with the Narrow Endemic Species Standards (Section 5.5.6), and any remaining impacts fully mitigated. The Subarea Plan will permanently protect, manage, and monitor variegated dudleya occurrences within the Managed Preserve. Covered activities will transplant variegated dudleya plants found within Covered Activity footprints into protected suitable habitat for the species in the Managed Preserve.



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Figure 6-8
San Diego Thornmint - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan



Subarea Plan Area
Habitat Model

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-09 Variegated Dudleya-Unique.mxd Date: 2/11/2025 34153

Figure 6-9
Variegated Dudleya - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

Areas subject to transplantation will be further enhanced with management for the species, including ongoing control of invasive plants, in order to re-establish self-sustaining occurrences of variegated dudleya in the transplant locations. As required by the Narrow Endemic Species Standards found in Section 5.5.6., implementation of the Subarea Plan will permanently protect, manage, and monitor variegated dudleya occurrences within the Managed Preserve and a minimum of 80 percent preservation and/or translocation of all newly identified locations within future Covered Activity project footprints.

The conservation actions required under the Subarea Plan for the species will provide for the conservation and management of self-sustaining subpopulations of variegated dudleya in the Plan Area.

6.4.8 Willowy Monardella

Species Goal 8 (S-8): Maintain viability, protect, and increase the size and number of willowy monardella populations and conserve and maintain suitable habitat for willowy monardella within the Plan Area.

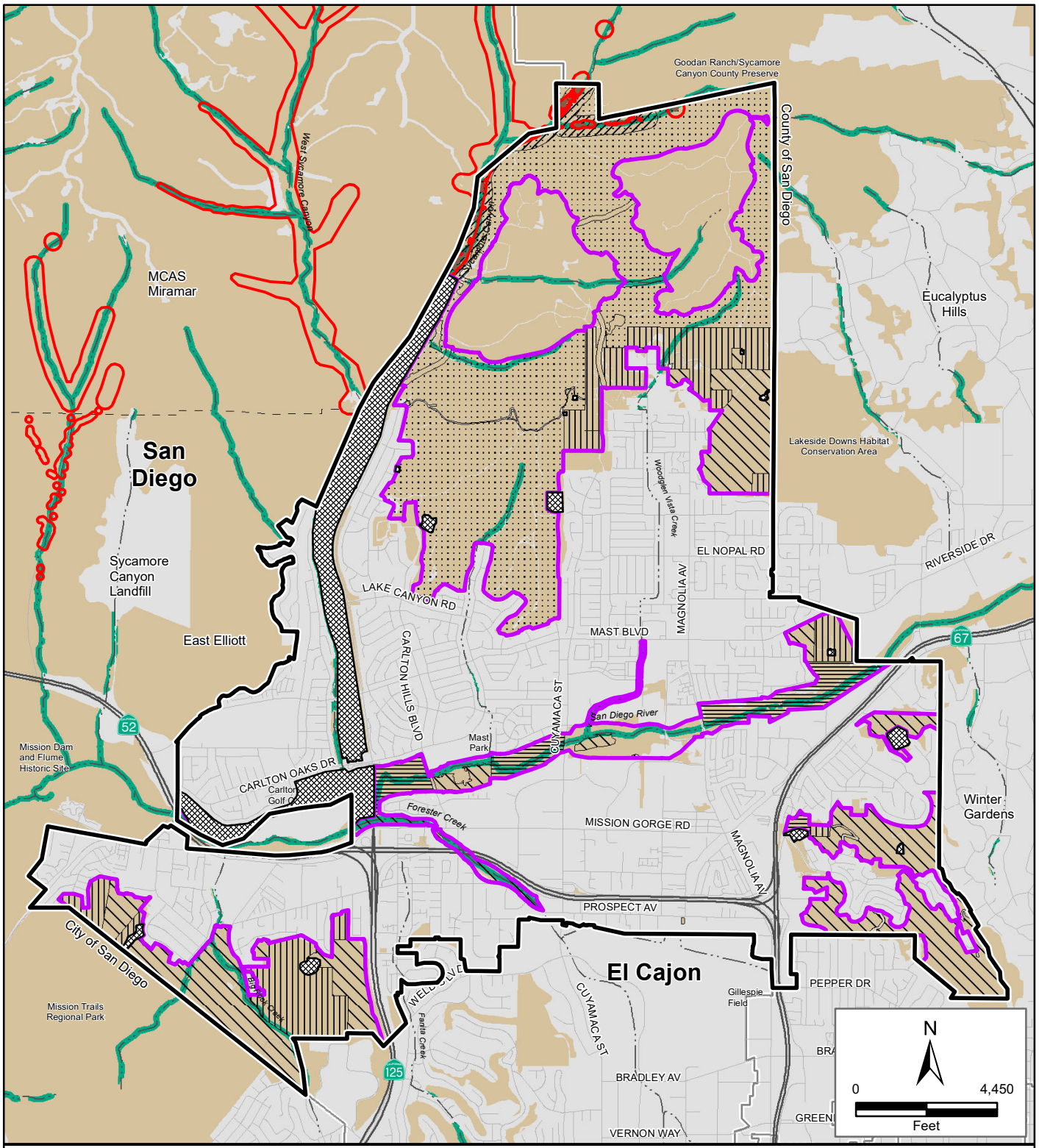


6.4.8.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Plan through the conservation of 146.1 acres of suitable habitat (43.42 percent of the total suitable habitat in the Plan Area) for willowy monardella (see Figure 6-10 and Table 6-6). Implementation of the Subarea Plan will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals and that potential impacts from Covered Activities are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated.

Approximately 56.9 acres (16.9 percent of the total suitable habitat within the Plan Area) of suitable habitat for the species outside of Fanita Ranch in the Plan Area would be protected and managed under the Plan, with about 49.0 acres of this occurring on existing City-owned Preserve Lands. Approximately 89.2 acres of suitable habitat (26.5 percent of the total suitable habitat within the Plan Area) within the Fanita Ranch Onsite Preserve would be protected and managed. The Subarea Plan will preserve a minimum of 1,621 willowy monardella individuals (99 percent of the total) within the Fanita Ranch Onsite Preserve (refer to Species Objective S-8.3). As required by the Narrow Endemic Species Standards found in Section 5.5.6., implementation of the Subarea Plan will permanently protect, manage, and monitor willowy monardella occurrences within the Managed Preserve and a minimum of 80 percent preservation and/or translocation of all newly identified locations within future Covered Activity project footprints.

The conservation actions required under the Subarea Plan for the species will provide for the protection, conservation, and management of self-sustaining subpopulations of willowy monardella in the Plan Area.



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Figure 6-10
Willowy Monardella - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.9 Crotch's Bumble Bee



Species Goal 9 (S-9): Conserve suitable habitat for Crotch's bumble bee within the Plan Area to ensure long-term persistence of the species in the Plan Area.

6.4.9.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan through the conservation of 2,259.6 acres of suitable habitat for Crotch's bumble (48 percent of the total suitable habitat in the Plan Area) (see Figure 6-11 and Table 6-6) and implementation of avoidance, minimization, and mitigation measures. Implementation of the Plan will ensure that potential Covered Activity footprints are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable (Section 5.5.9.6, *Crotch's Bumble Bee Conservation Standards*), and any remaining impacts fully mitigated. Similarly, the City will ensure that Preserve areas are appropriately surveyed for the species and areas found to be occupied will be appropriately protected and managed. The conservation actions required under the Subarea Plan for the species will provide for the protection, conservation, and management of self-sustaining subpopulations of Crotch's bumble bee in the Plan Area.

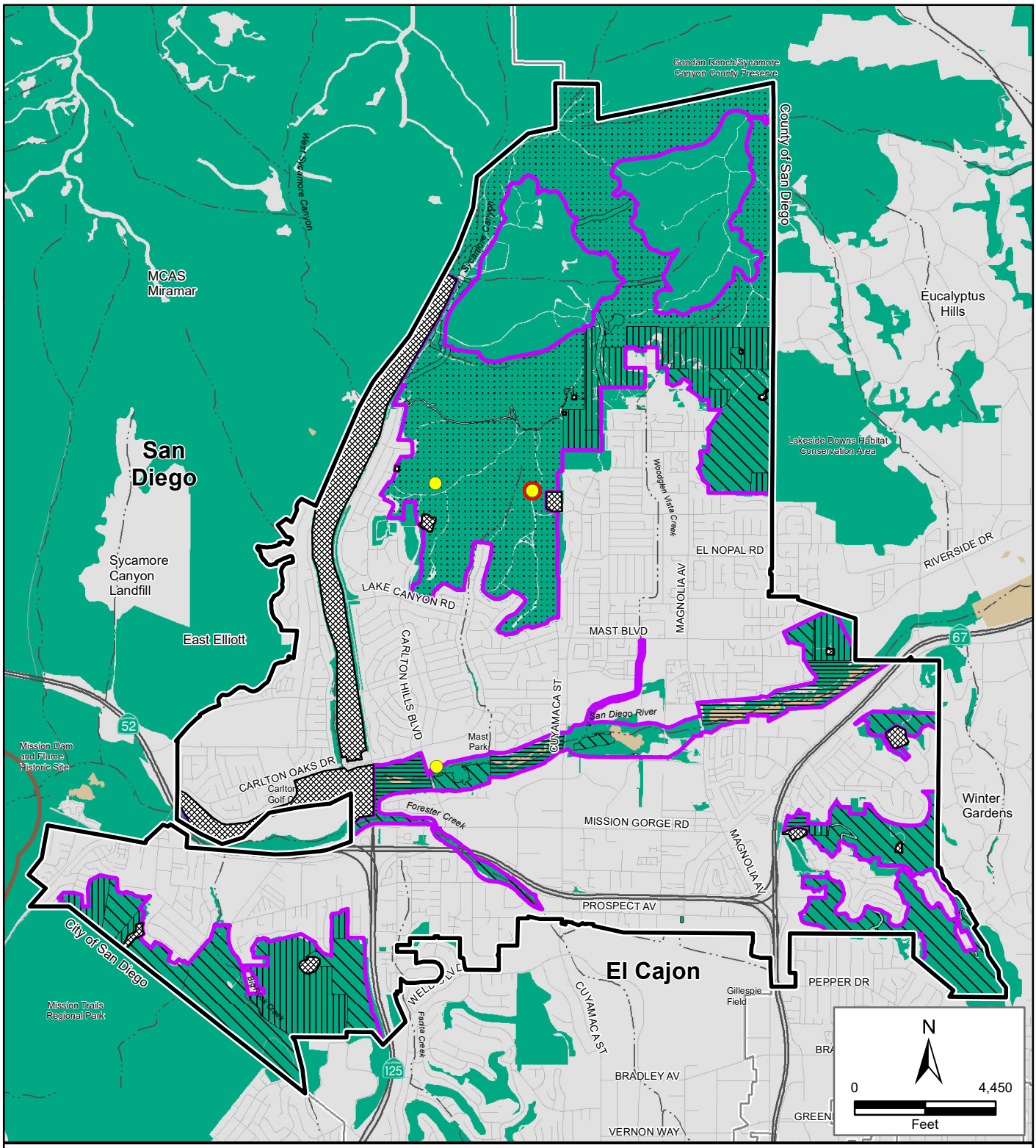
6.4.10 Hermes Copper Butterfly



Species Goal 10 (S-10): Conserve viable suitable habitat for Hermes copper butterfly to ensure long-term persistence of the species in the Plan Area.

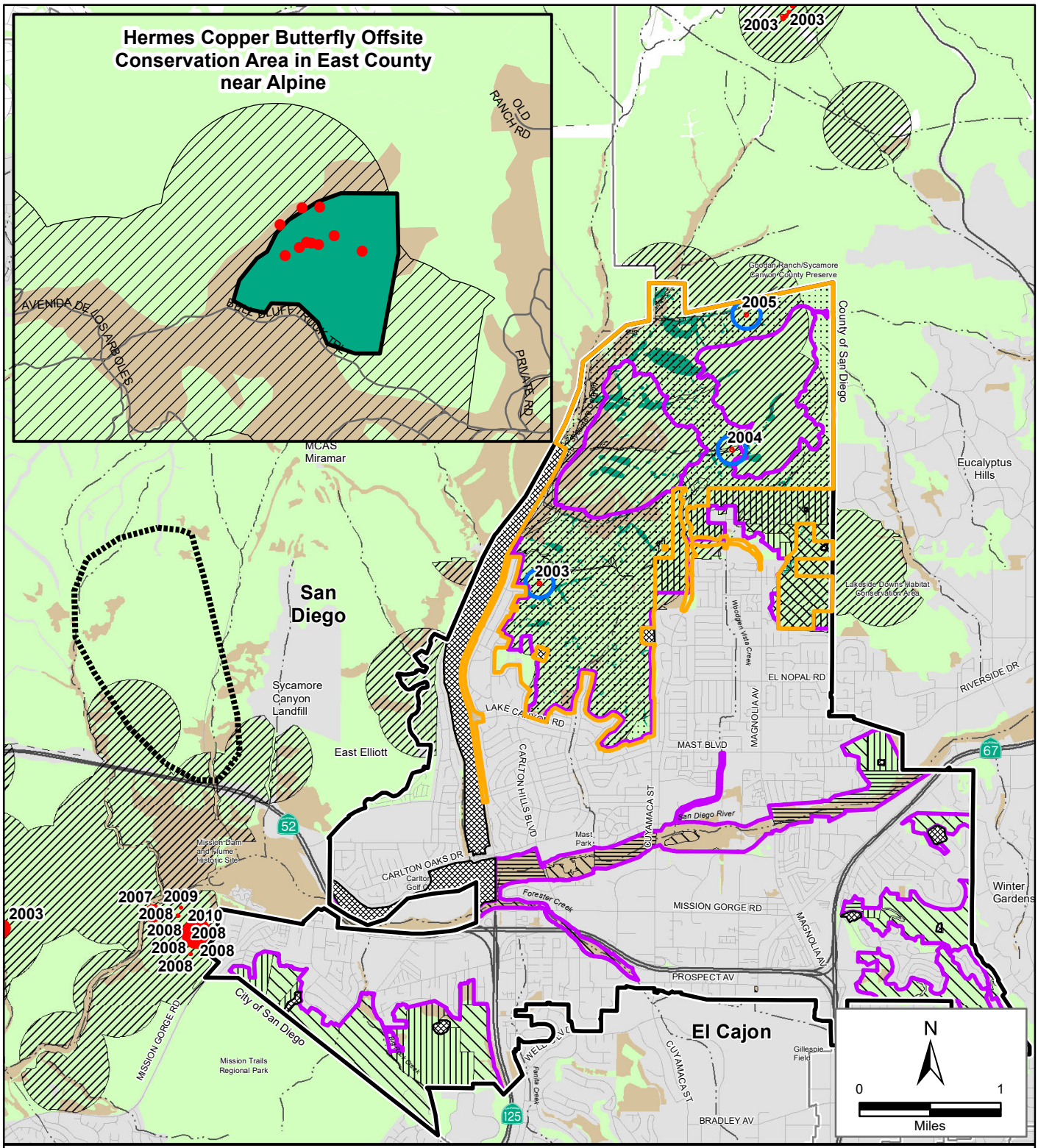
6.4.10.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals through the permanent protection and management of 1,841.7 acres of newly conserved suitable habitat for Hermes copper butterfly (52.55 percent of the total suitable habitat in the Plan Area). Of this, 1,425.1 acres would be within the Fanita Ranch Onsite Preserve, 80.4 acres would be within the Hermes Copper Butterfly Offsite Conservation Area, and 308.0 acres would be within the Upland Standards Areas. (see Figures 6-12a and 6-12b, and Table 6-6). In addition, within the Fanita Ranch Onsite Preserve, 35 acres of the newly conserved habitat will be restored through the establishment of red berry and buckwheat patches. This area is connected to previously occupied habitat that is outside the Plan Area (see Figure 6-12a and Table 6-6). In addition, the City will enhance management of 27.0 acres within City-owned Preserve Lands.



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Figure 6-11
Crotch's Bumble Bee - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan



Subarea Plan Area
Potentially Suitable Vegetation Communities (coastal sage scrub and chaparral)
Final Critical Habitat (USFWS 2021)
Project Boundaries of Focused Surveys Completed for Hermes Copper Butterfly
Hermes Copper Butterfly Occurrences (with occurrence year)
500-Foot Buffer Around Occurrences
Quino Checkerspot Butterfly Offsite Conservation Area

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

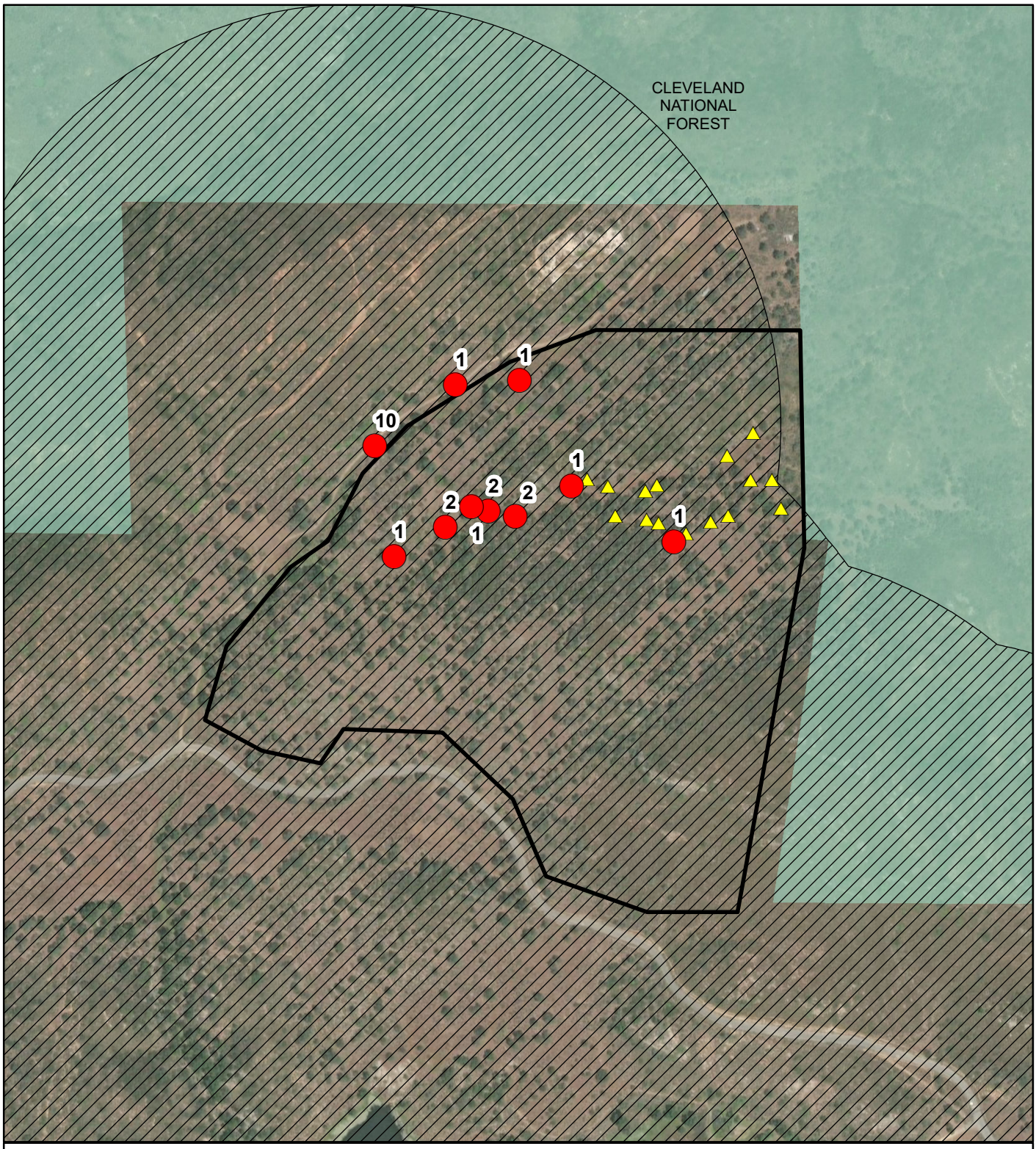
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

Mapping of Habitat Model Based on Field Surveys
Habitat Model

Note: Focused surveys for hermes copper butterfly completed on the Fanita Ranch property in 2014 and 2016 and on the Cheyenne property in 2010 were negative.

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Figure 6-12a
Hermes Copper Butterfly - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan



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Figure 6-12b
Hermes Copper Butterfly: Known Occurrences at Offsite Conservation Area
Santee MSCP Subarea Plan

Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. Therefore, the Subarea Plan will provide for the conservation and management of potentially self-sustaining occurrences of Hermes copper butterfly in the Plan Area.

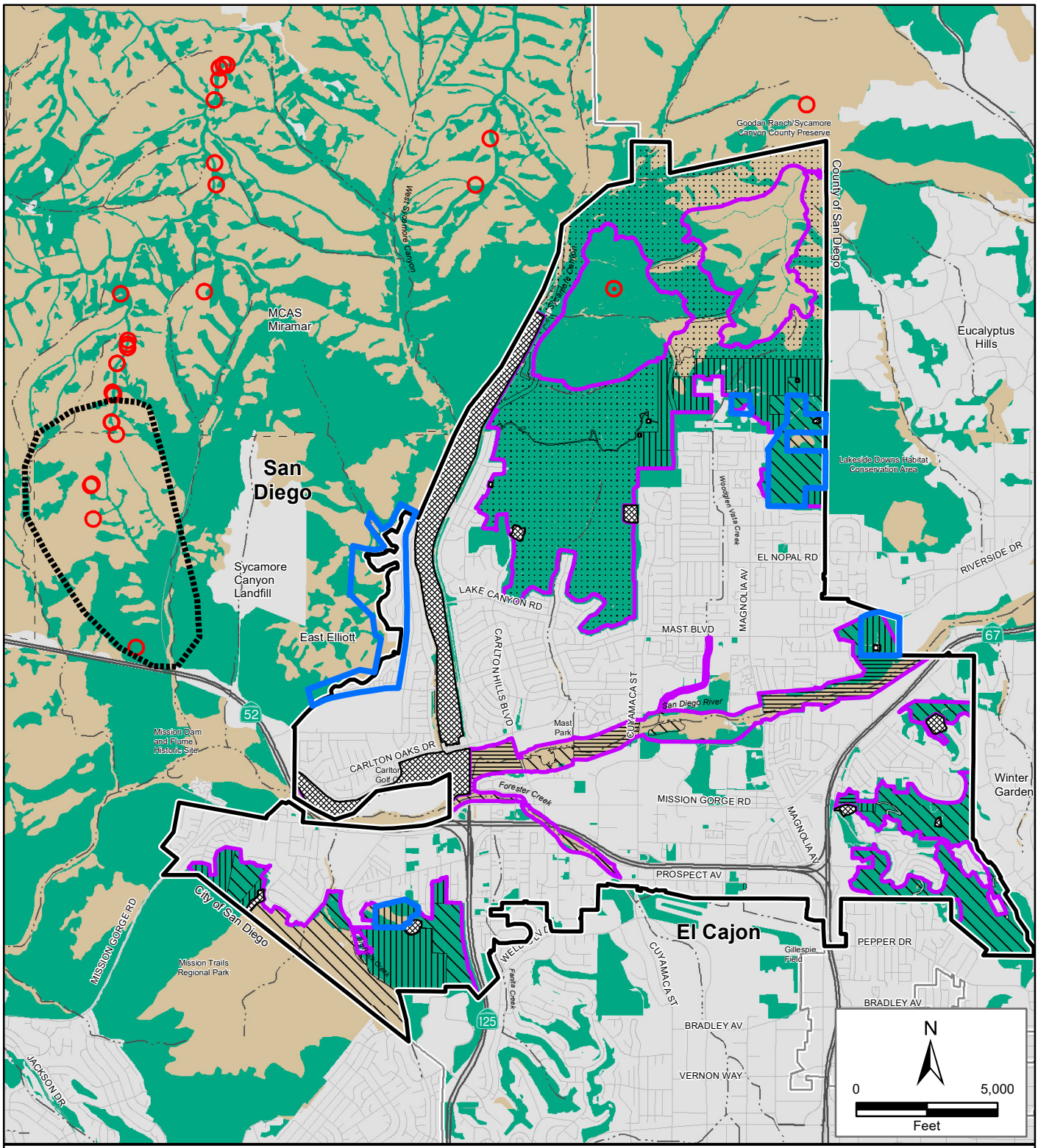
6.4.11 Quino Checkerspot Butterfly

Species Goal 11 (S-11): Conserve and restore suitable habitat to ensure the long-term persistence of Quino checkerspot butterfly within the Plan Area.



6.4.11.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals through the conservation of 1,783.6 acres of suitable habitat for Quino checkerspot butterfly (38 percent of the total suitable habitat in the Plan Area). Approximately 1,409.7 acres of suitable habitat will be conserved by the Hardline Development Project, consisting of 1,319.0 acres on the Fanita Ranch Onsite Preserve and 90.7 acres of acquisition in the Quino Checkerspot Butterfly Offsite Conservation Area. In addition, 326.7 acres of suitable habitat will be conserved in the Upland Standards Areas (see Figure 6-13 and Table 6-6). Within the Managed Preserve, approximately 49.2 acres of the newly conserved Quino checkerspot butterfly host plant will be restored or enhanced and managed for the benefit of the species (36.3 acres will be restored/enhanced in the Quino Offsite Conservation Area and 12.9 acres will be restored/enhanced in the northern portion of the Fanita Ranch Onsite Preserve). In addition, the City will enhance management of 42.45 acres within City-owned Preserve lands. Implementation of the Subarea Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. Therefore, the Subarea Plan will provide for the conservation and management of potentially self-sustaining occurrences of Quino checkerspot butterfly in the Plan Area.



Subarea Plan Area
Habitat Model

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

Projects Surveyed for Quino with Negative Results
Quino Checkerspot Butterfly Offsite Conservation Area
Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-13 Quino Checkerspot Butterfly-Dudek.mxd Date: 7/14/2025 34153

Figure 6-13
Quino Checkerspot Butterfly - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.12 Riverside Fairy Shrimp



Species Goal 12 (S-12): Conserve and restore suitable habitat for Riverside fairy shrimp within the Plan Area.

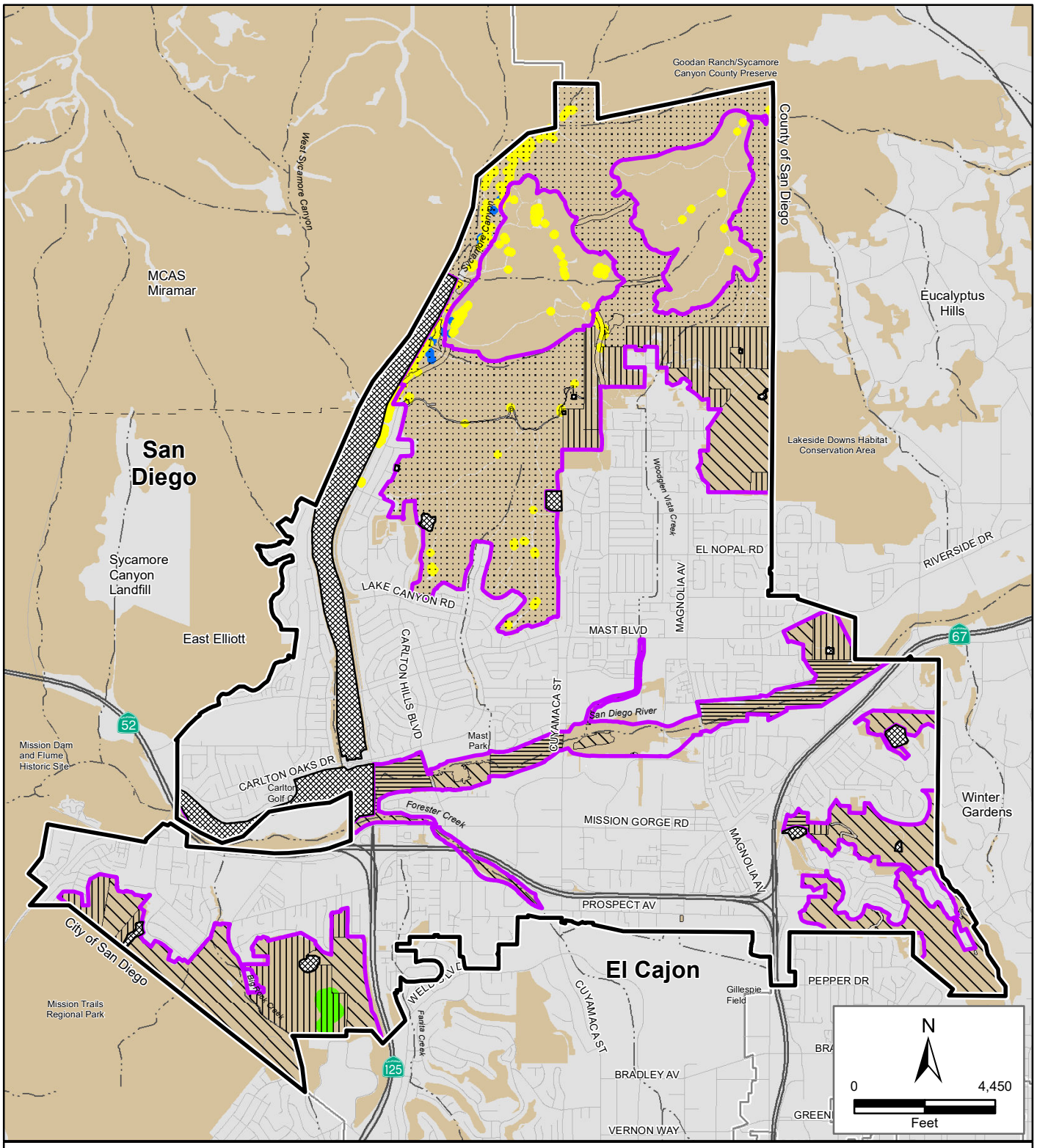
6.4.12.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan through the conservation of suitable vernal pool/seasonal basin habitats that have the potential to support Riverside fairy shrimp (see Figure 6-14 and Table 6-6). Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated.

A total of 47.3 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) will be conserved for Riverside fairy shrimp within the Managed Preserve and the species will be introduced into the habitat within the Fanita Ranch Onsite Preserve. Habitat conserved will include:

- 29.9 acres of vernal pools and associated watershed within the Hardline Conservation Areas (Fanita Ranch Preserve), including:
    - 2.92 acres of vernal pool restoration, consisting of:
        - 0.25 acres of existing vernal pool preservation
        - 0.82 acres existing vernal pool reestablishment
        - 1.85 acres of new vernal pool creation
    - 26.9 acres of associated watershed
- 17.4 acres of vernal pool complex/associated watershed in the Upland Standards Areas

The conservation actions under the Subarea Plan will provide for the conservation and management of self-sustaining occurrences of Riverside fairy shrimp in the Plan Area.



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Figure 6-14
Riverside Fairy Shrimp - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.13 San Diego Fairy Shrimp



Species Goal 13 (S-13): Conserve and restore suitable habitat to expand the distribution of San Diego fairy shrimp within the Plan Area.

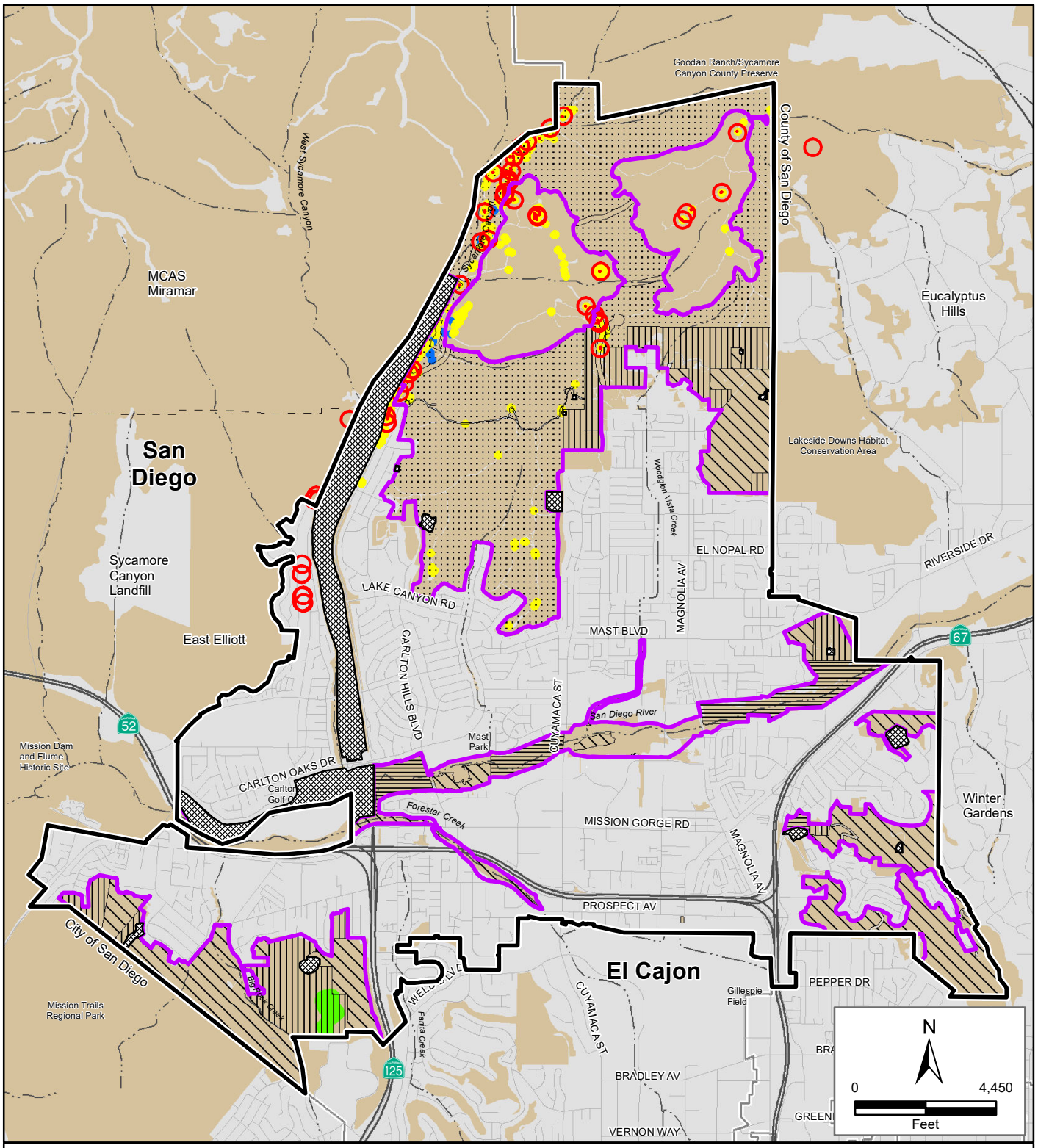
6.4.13.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan through the conservation of suitable vernal pool/seasonal basin habitats that support San Diego fairy shrimp, including 38 occurrences (see Figure 6-15 and Table 6-6). Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated.

A total of 47.3 acres of suitable vernal pool/seasonal basin habitat (and associated watersheds) will be conserved within the Managed Preserve, including:

- 2.9 acres of vernal pool restoration, consisting of:
    - 0.25 acres of existing vernal pool preservation
    - 0.82 acres existing vernal pool reestablishment
    - 1.85 acres of new vernal pool creation
- 26.9 acres of associated watershed
- 17.4 acres of vernal pool complex/associated watershed in the Upland Standards Areas

Soil from occurrences located within Covered Activity footprints in the Hardline Development Project will be collected and used to introduce the species into newly created vernal pools in the Fanita Ranch Onsite Preserve. Implementation of the Vernal Pool and Wetland Mitigation Plan (Appendix D) for the Hardline Development Project will ensure a no net loss of functions and values for San Diego fairy shrimp habitat. The conservation actions under the Subarea Plan will provide for the conservation and management of self-sustaining occurrences of San Diego fairy shrimp in the Plan Area.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-15 San Diego Fairy Shrimp.mxd Date: 2/11/2025 34153

Figure 6-15
San Diego Fairy Shrimp - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.14 Belding's Orange-throated Whiptail



Species Goal 14 (S-14): Conserve suitable habitat to ensure the long-term persistence of Belding's orange-throated whiptail within the Plan Area.

6.4.14.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan through the conservation of 2,015.60 acres of suitable habitat for Belding's orange-throated whiptail (47.9 percent of the total suitable habitat in the Plan Area) (see Figure 6-16 and Table 6-6) that includes 30 known occurrences.

Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. The conservation actions required under the Subarea Plan for the species will provide for the protection, conservation, and management of self-sustaining subpopulations of Belding's orange-throated whiptail in the Plan Area.

6.4.15 Blainville's Horned Lizard

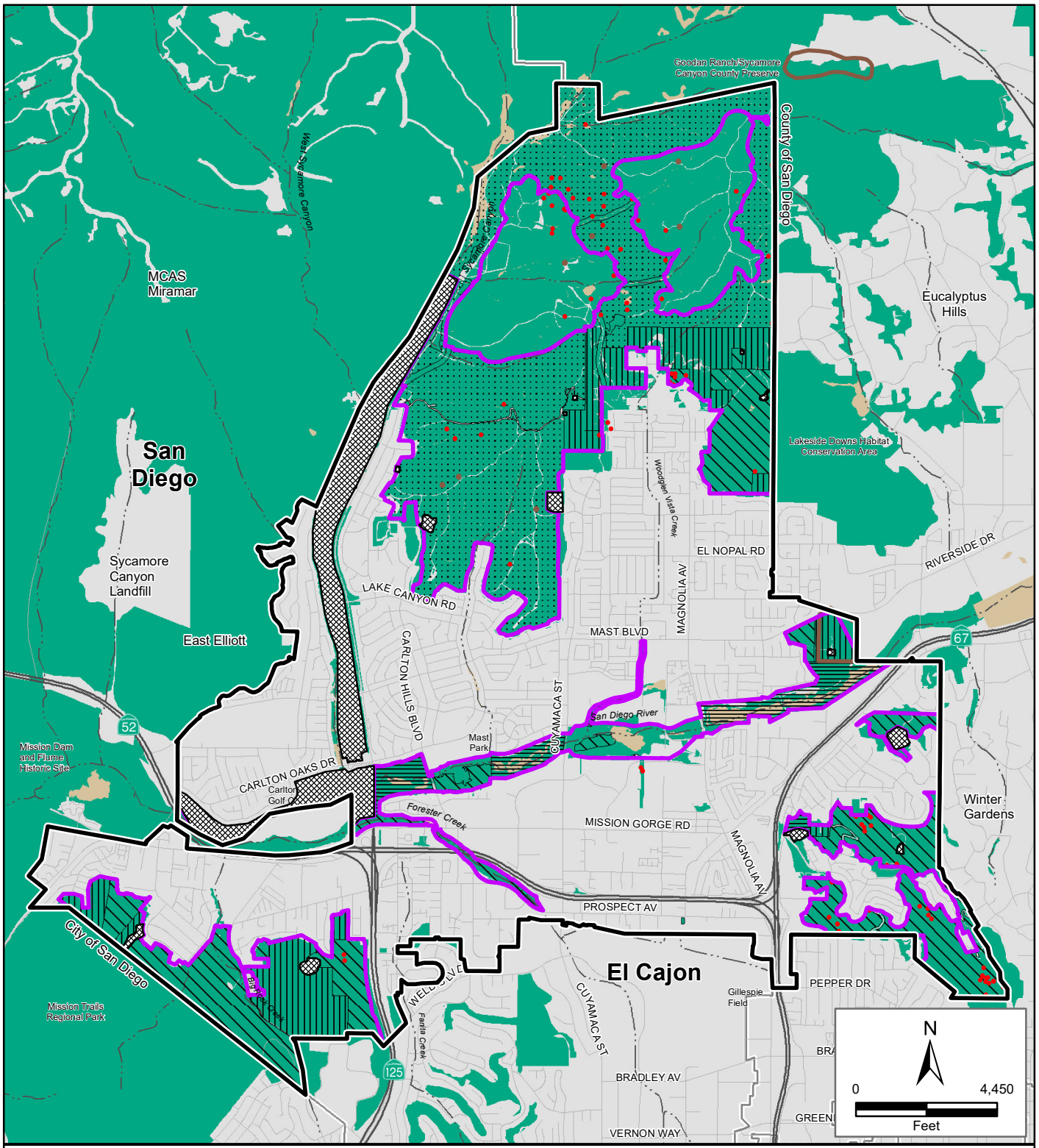


Species Goal 15 (S-15): Conserve suitable habitat to ensure the long-term persistence of Blainville's horned lizard within the Plan Area.

6.4.15.1 Conservation Summary

Of the 4,241.60 acres of suitable habitat for the species in the Plan Area, implementation of the Subarea Plan and assembly of the Managed Preserve will conserve approximately 2,042.2 acres of suitable habitat (48.1 percent of the total in the Plan Area) suitable habitat, and 58 percent (10 of 17) of known occurrences, for Blainville's horned lizard in the Plan Area (see Figure 6-17 and Table 6-6).

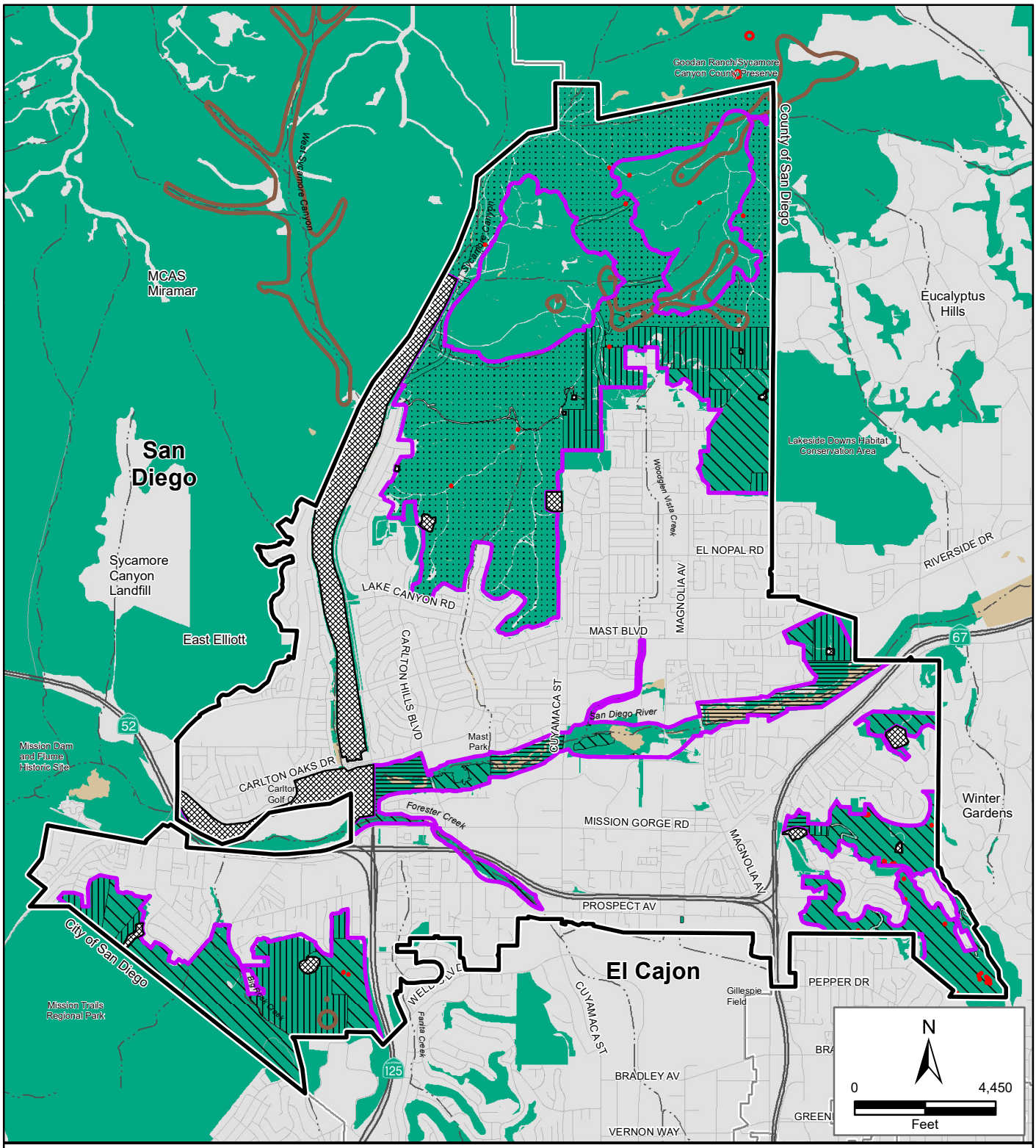
Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed preserve areas are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts to the species are fully mitigated. Occurrences of Blainville's horned lizard found within Covered Activity footprints will be appropriately translocated to suitable habitat within the Managed Preserve.



* The CNDDB collects information from a wide variety of sources and with a range location detail provided in the source materials.There are records of this species occurring within and/or in the vicinity of the Plan Area that are too generalized of a location to display on the figure.

\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-16 Beldings Orange-throated Whiptail-Unique.mxd Date: 2/11/2025 34153

Figure 6-16
Belding's Orange-throated Whiptail - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan



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\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-17 Blainvilles Horned Lizard-Unique.mxd Date: 2/11/2025 34153

Figure 6-17
Blainville's Horned Lizard - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

These areas will be appropriately managed for the species, including ongoing control of Argentine ants and invasive plant species. Similarly, the City will ensure that Preserve areas are appropriately surveyed for the species, and that areas found to be occupied by Blainville's horned lizard will be appropriately protected and managed, including through control of Argentine ants and invasive plant species. The conservation actions required under the Subarea Plan for the species will provide for the protection, conservation, and management of self-sustaining subpopulations of Blainville's horned lizard in the Plan Area.

6.4.16 Western Spadefoot

Species Goal 16 (S-16): Conserve existing populations, conserve and maintain suitable habitat to ensure the long-term persistence of western spadefoot within the Plan Area.

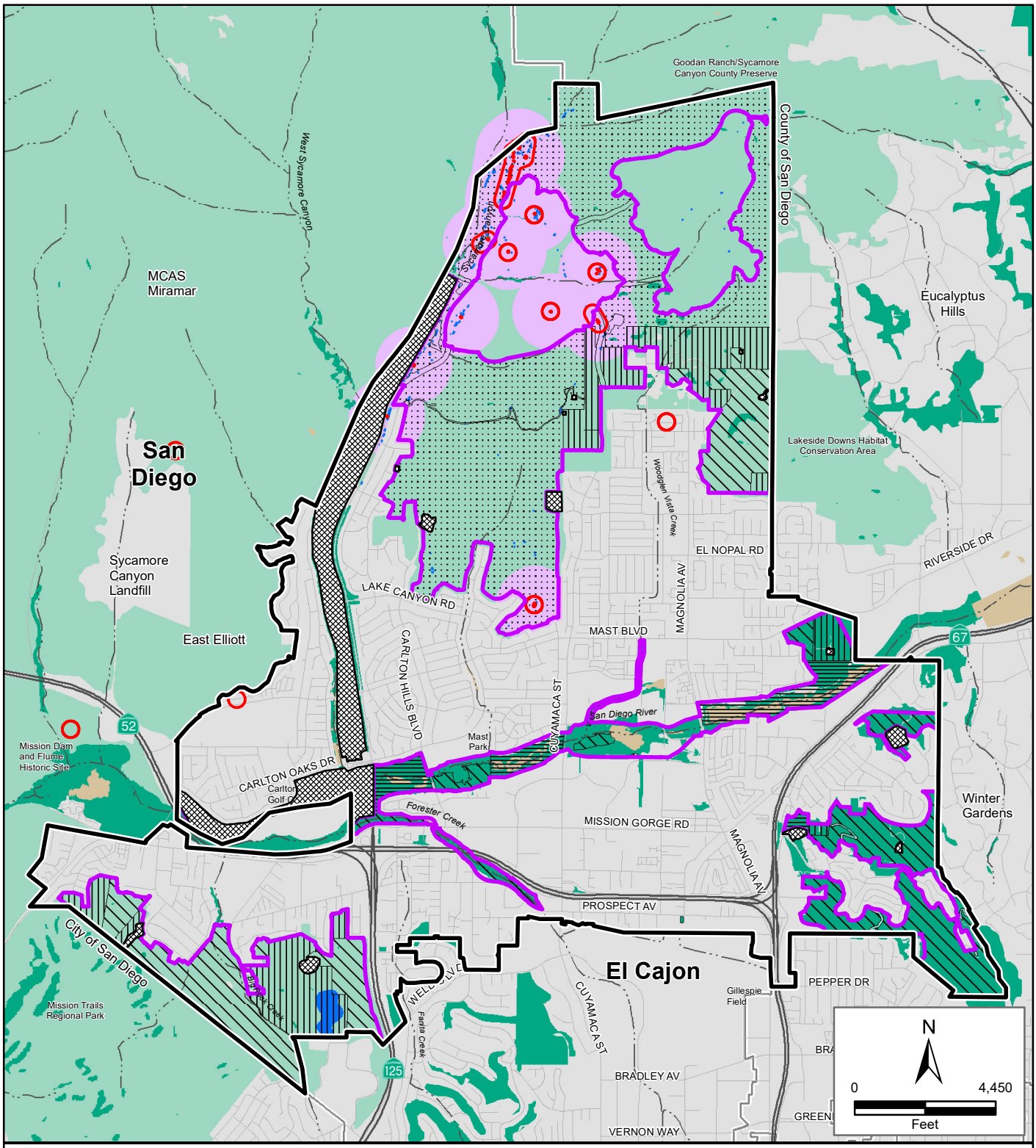


6.4.16.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will conserve 12.9 acres of suitable breeding habitat (64.82 percent of the total in the Plan Area), including 24 occupied features, and 1,926.9 acres of suitable upland habitat (52.5 percent of the total suitable habitat in the Plan Area) for western spadefoot (see Figure 6-18 and Table 6-6). Meeting the biological objectives for western spadefoot would also result in the conservation of a minimum of 5 distinct (i.e. separated by at least 40 meters) occupied western spadefoot breeding areas (i.e. pool complexes) within the Managed Preserve.

As a requirement of the Hardline Development Project, culverts beneath the planned Fanita Ranch Parkway extension will be designed, constructed, and maintained to allow for movement of western spadefoot under and past the road to adjacent suitable upland habitat. The Fanita Ranch Parkway extension will also include measures to facilitate effective wildlife movement, including specific avoidance and minimization of spillover nighttime lighting along and near corridors (including the noted culvert undercrossings) and linkages, appropriate wildlife fencing and other features near undercrossing to direct target wildlife to the undercrossings (and off of roadways), and appropriate native vegetation cover along the roadway. Furthermore, implementation of the Vernal Pool and Wetland Mitigation Plan (Appendix D) for the Hardline Development Project will include mitigation for occupied western spadefoot toad breeding habitat to ensure a no net loss of functions and values standard.

Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas are appropriately surveyed for western spadefoot in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts to the species are fully mitigated.



Subarea Plan Area

Habitat Model
- Known Breeding Habitat
- Potentially Suitable Breeding Habitat
- Suitable Upland Habitat Adjacent to Areas of Known Breeding Habitat
- Other Suitable Upland Habitat

Species Occurrence Locations *
- Current (post-1999)
- Historic (pre-2000)

Managed Preserve and Open Space Network
- Hardline Conservation Lands
- Upland Standards Areas
- City-Owned Preserve Lands
- Existing Protected Open Space
- Open Space Network

- Natural Vegetation
- Developed/Agriculture/Disturbed Habitat
- Not a Part

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\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-18 Western Spadefoot Toad-Unique.mxd Date: 2/11/2025 34153

Figure 6-18
Western Spadefoot Toad - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

Occurrences of western spadefoot adults and/or juveniles found within Covered Activity footprints will be appropriately translocated to areas with suitable breeding and upland habitats within the Managed Preserve; these areas will be appropriately managed for the species, including ongoing control of invasive species within breeding pool/pond/basin features. Similarly, the City will ensure that Preserve areas are appropriately surveyed for the species and areas found to be occupied (or likely occupied based on suitable upland habitat found within 2,000 feet of occupied breeding habitat) by western spadefoot be appropriately managed. The conservation actions required under the Subarea Plan for the species will provide for the protection, conservation, and management of self-sustaining subpopulations of western spadefoot in the Plan Area.

6.4.17 Coastal cactus wren

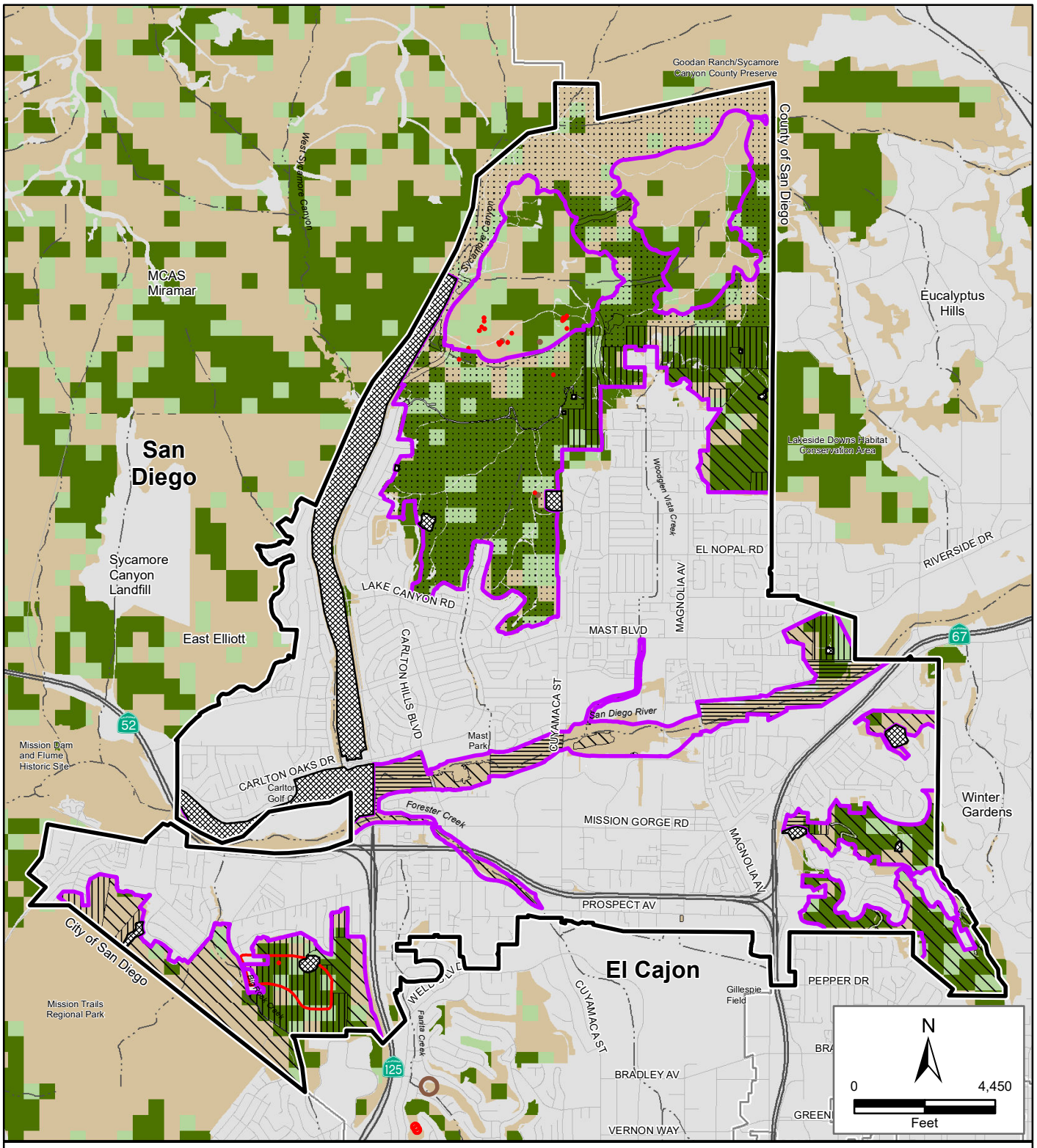
Species Goal 17 (S-17): Conserve existing populations, conserve and maintain suitable habitat with landscape-level connections to ensure the persistence of coastal cactus wren within the Plan Area and support the regional population.



6.4.17.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan for the species. A minimum of 1,363.4 acres of suitable habitat (extant patches of cactus scrub) for coastal cactus wren (54 percent of the total suitable habitat in the Plan Area) as well as known and potentially newly identified occurrences for coastal cactus wren will be protected and managed in the Managed Preserve (see Figure 6-19 and Table 6-6), including 1,090.8 acres within the Fanita Ranch Onsite Preserve and 259.4 acres within the Upland Standards Areas. In addition, there will be enhanced management of 13.2 acres within the City-owned Preserve Lands.

The City will ensure that potential Covered Activity footprints with suitable habitat are appropriately surveyed for coastal cactus wrens in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts to coastal cactus wrens are fully mitigated. Individual cactus plants within cactus scrub suitable habitat found within Covered Activity footprints will be appropriately salvaged and translocated to suitable habitats in need of enhancement with Preserve areas, to maximum extent practicable; these areas will be appropriately managed for the species, including ongoing control of invasive plant species and appropriate wildfire risk management. Similarly, the City will ensure that Preserve areas with suitable habitat are appropriately surveyed for the species and areas found to be occupied by coastal cactus wrens are appropriately managed and protected. The Hardline Development Project will ensure conservation of at least 10 pairs of coastal cactus wrens within the onsite Preserve in the long term, and maintenance of at least 70 acres of occupiable coastal cactus wren habitat, through predicted future drought and wildfire. The conservation actions required under the Subarea Plan for the species will provide for the protection, conservation, and management of self-sustaining occurrences of coastal cactus wren in the Plan Area.



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\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-19 Coastal Cactus Wren-SDMMP.mxd Date: 7/14/2025 34153

Figure 6-19
Coastal Cactus Wren - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.18 Coastal California Gnatcatcher

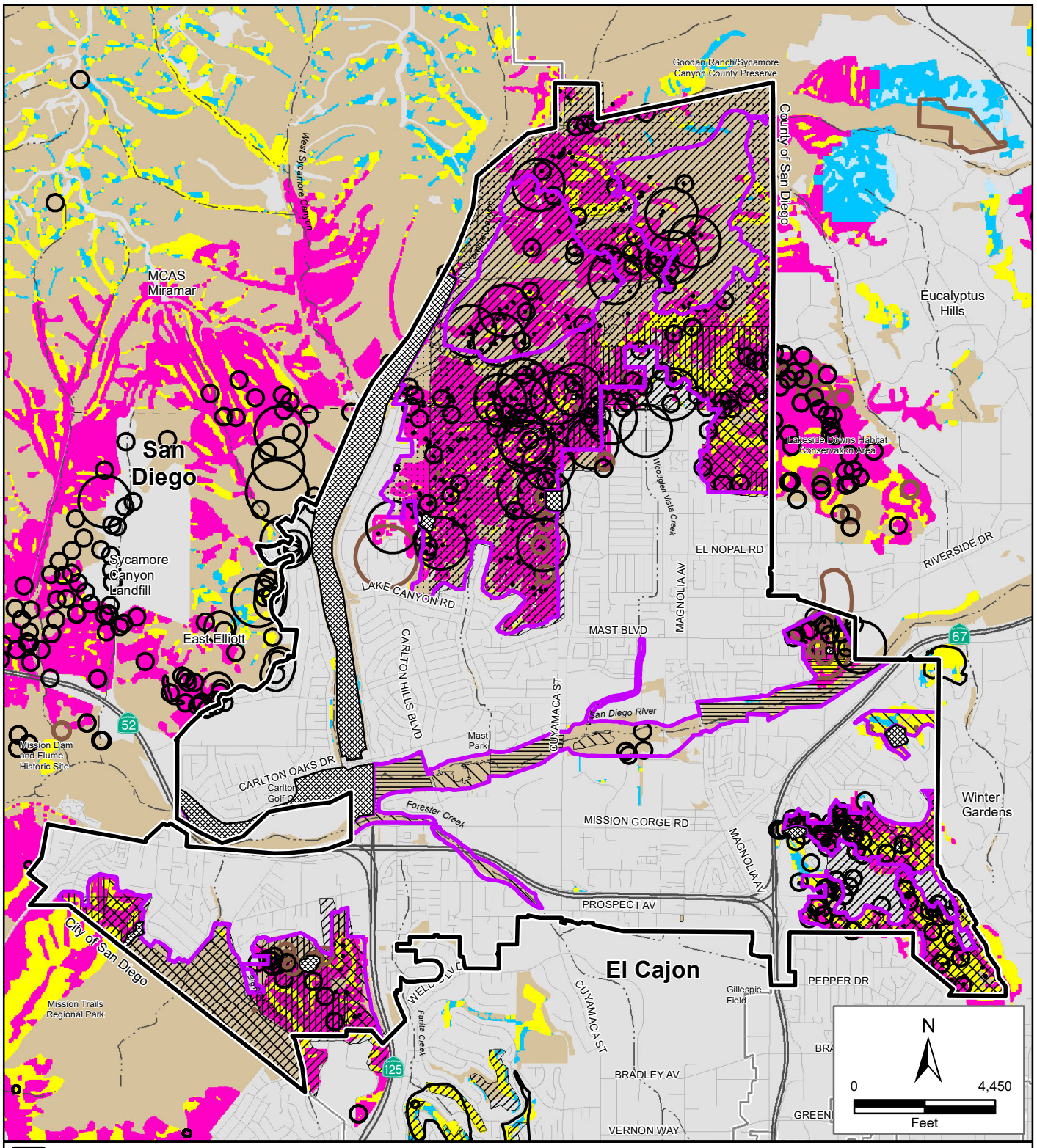


Species Goal 18 (S-18): Conserve existing populations, conserve and maintain suitable habitat with landscape-level connections to ensure the regional persistence of coastal California gnatcatcher within the Plan Area.

6.4.18.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan for the coastal California gnatcatcher. A minimum of 1,379.50 acres of suitable habitat (51.7 percent of the total suitable habitat in the Plan Area) will be permanently protected and managed under the Plan, including 1,054.9 acres of suitable habitat for the species within the Fanita Ranch Onsite Preserve (see Figure 6-20 and Table 6-6). A minimum self-sustaining population of 36 pairs of coastal California gnatcatcher will be maintained within the Managed Preserve by the end of the permit term. The Managed Preserve has also been designed to support a minimum of 5 stepping-stone areas containing suitable occupied coastal California gnatcatcher habitat that connect to occupied areas outside the Plan Area to facilitate species dispersal and movement.

Implementation of the Plan by the City will ensure that potential Covered Activity footprints with suitable habitat are appropriately surveyed for coastal California gnatcatcher in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts to the species are fully mitigated. Similarly, the City will ensure that Preserve areas with suitable habitat are appropriately surveyed for the species and areas found to be occupied by coastal California gnatcatchers are appropriately managed and protected. As such, the Subarea Plan will provide for the conservation and management of self-sustaining subpopulations of coastal California gnatcatchers in the Plan Area.



Subarea Plan Area
Final Critical Habitat (USFWS 2007)

Habitat Model
Very High Habitat Value
High Habitat Value
Moderate Habitat Value
Low Habitat Value

Species Occurrence Locations *
Current (post-1999)
Historic (pre-2000)

Managed Preserve and Open Space Network
Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

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\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-20 Coastal California Gnatcatcher-CHSR.mxd Date: 2/11/2025 34153

Figure 6-20
Coastal California Gnatcatcher - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

6.4.19 Least Bell's Vireo



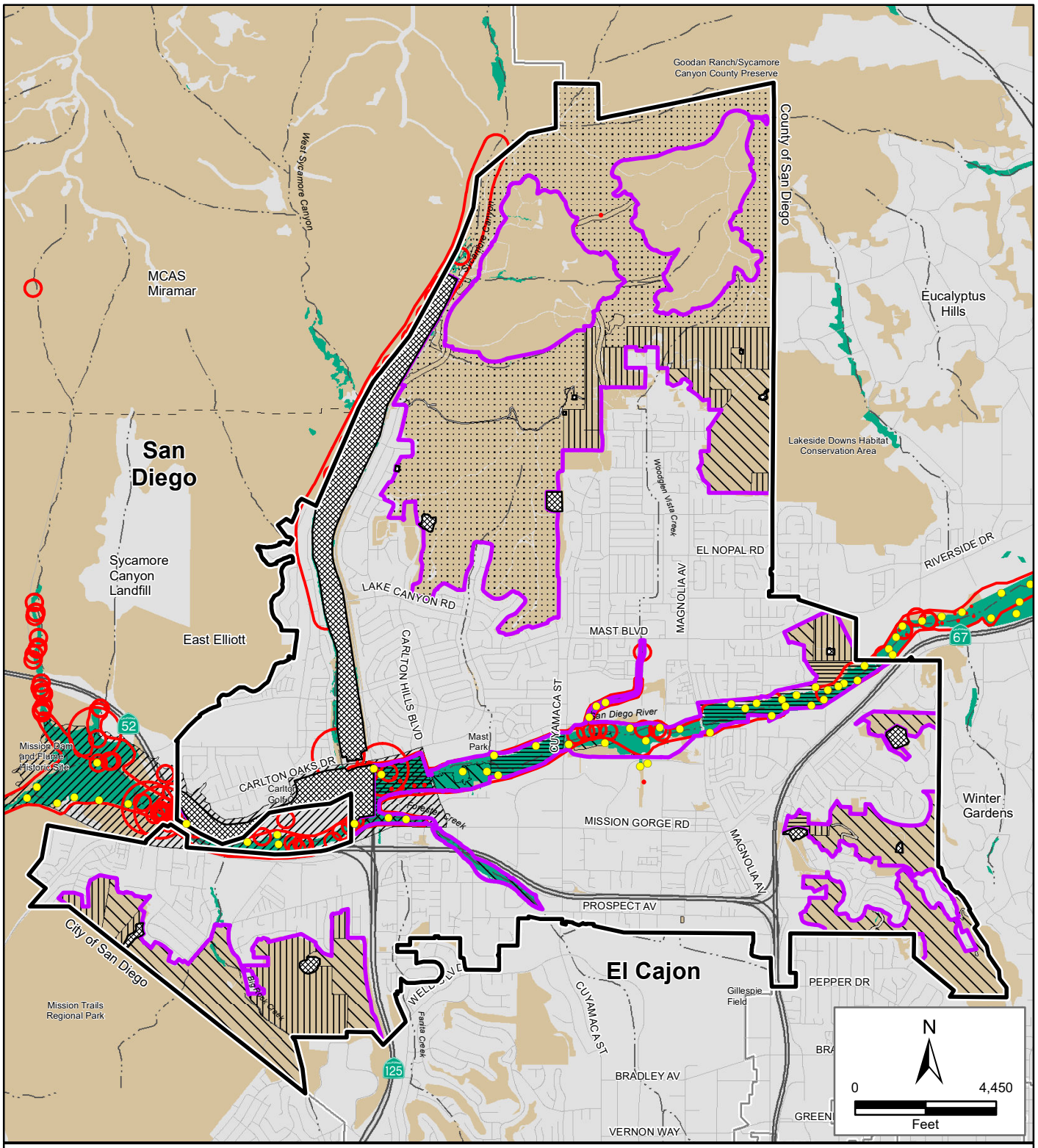
Species Goal 19 (S-19): Conserve existing populations, conserve and maintain suitable habitat, and increase reproductive success of least Bell's vireo within the Plan Area.

6.4.19.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals through the perpetual protection and conservation of 120.5 acres of suitable habitat for least Bell's vireo (33.2 percent of the total suitable habitat in the Plan Area)(consisting of 4.4 acres newly conserved within the Hardline Development Onsite Preserve and Future Preserves in Upland Standards Areas and 116.1 acres of enhancement of existing City-owned Preserve Lands) located primarily in the San Diego River Subunit (see Figure 6-21 and Table 6-6). The conservation of suitable habitat and the conservation actions and policies in the Subarea Plan, including 5.5.9.1 *General Conditions* and 5.5.9.4 *least Bell's Conservation Standards*, will provide for the conservation and management of self-sustaining populations of least Bell's vireo in the Plan Area and will ensure that the impacts from Covered Activities are minimized and fully mitigated.

In addition to protecting and managing 120.5 acres of suitable habitat, the Subarea Plan will conserve at least 38 pairs/territorial males and reduce the ongoing threat of least Bell's vireo nest parasitism caused by brown-headed cowbirds through implementation of an appropriate cowbird trapping program(s) within the Managed Preserve. As described in Section 5.4.3, *City Role for Overview and Coordination of Preserve System*, the Subarea Plan Administrator, Preserve Steward, and City will identify actions for funding that will improve and enhance management of the City-owned Preserve Lands, including enhancement and management activities directed at least Bell's vireo such as control of brown-headed cowbirds.

Implementation of the Plan by the City will ensure that potential Covered Activity footprints and proposed Preserve areas with suitable habitat for the least Bell's vireo are appropriately surveyed in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts to the species are fully mitigated. Similarly, the City will ensure that Preserve areas with suitable habitat are appropriately surveyed for the species and areas found to be occupied by least Bell's vireo are appropriately managed and protected.



Subarea Plan Area
Habitat Model
Final Critical Habitat (USFWS 1994)

Species Occurrence Locations *

Recent Least Bell's Vireo Population Survey (Kus 2022)
Current (post-1999)

Managed Preserve and Open Space Network

Hardline Conservation Lands
Upland Standards Areas
City-Owned Preserve Lands
Existing Protected Open Space
Open Space Network

Natural Vegetation
Developed/Agriculture/Disturbed Habitat
Not a Part

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\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-21 Least Bells Vireo-Unique.mxd Date: 2/11/2025 34153

Figure 6-21
Least Bell's Vireo - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

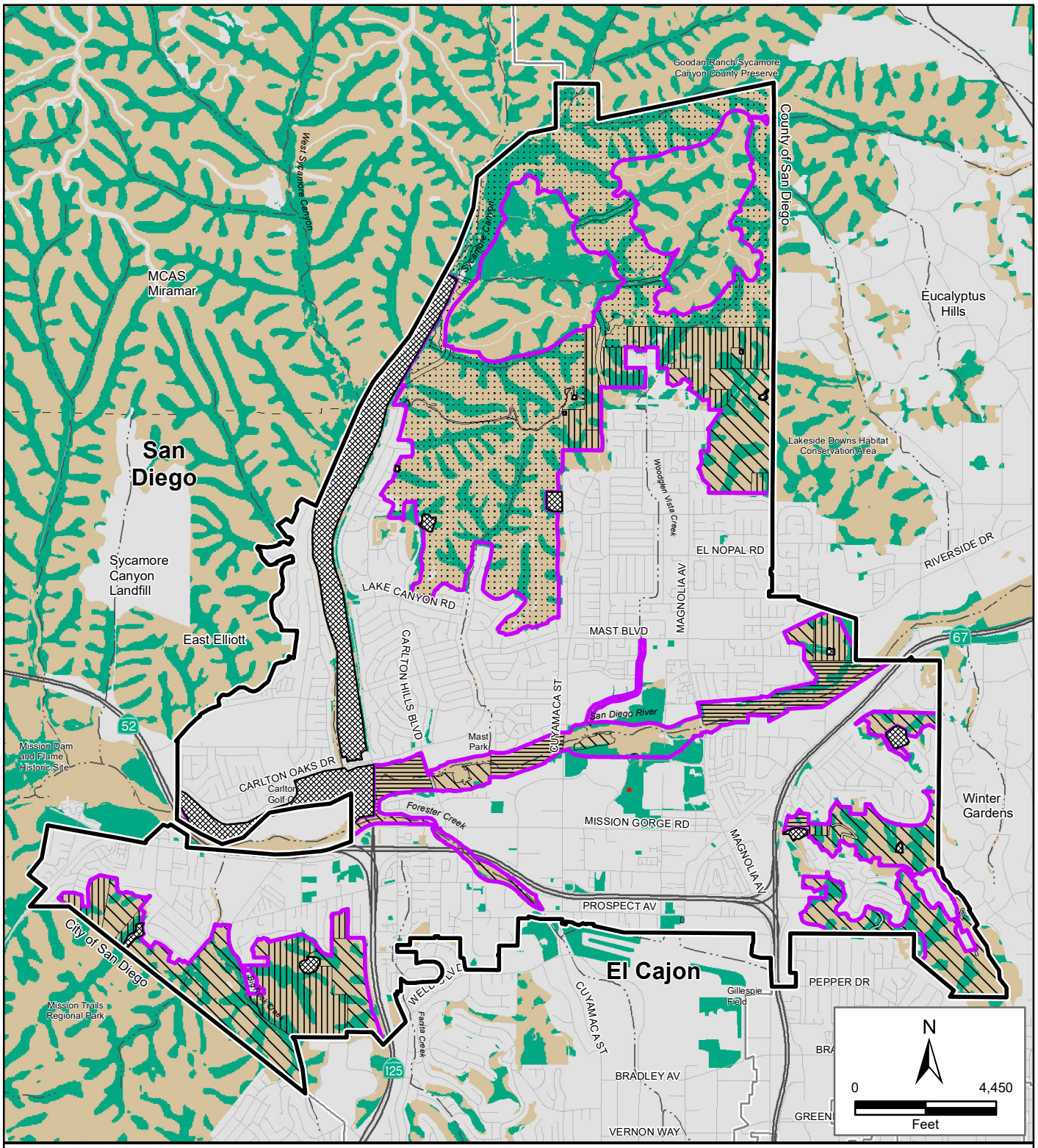
6.4.20 Western Burrowing Owl



Species Goal 20 (S-20): Conserve and maintain suitable habitat for western burrow owl within the Plan Area and protect western burrowing owl when they occur in the Plan Area.

6.4.20.1 Conservation Summary

Implementation of the Subarea Plan and assembly of the Managed Preserve will achieve the biological goals of the Subarea Plan for the species through the conservation of 759.7 acres of suitable habitat for western burrowing owl (41 percent of the total in the Plan Area) (see Figure 6-22 and Table 6-6), 619.4 acres of which will occur in the Fanita Ranch Onsite Preserve, 112.2 acres in future preserves in the Upland Standards Areas, and 28.1 acres in existing City-owned Preserve Lands. Implementation of the Plan by the City will ensure that potential Covered Activity footprints are appropriately surveyed for the species in advance of City project approvals, potential impacts from Covered Activities to suitable habitat for the species in the Plan Area are avoided and minimized to the maximum extent practicable, and any remaining impacts fully mitigated. The City will also ensure that Preserve areas with suitable habitat are appropriately surveyed for the species and areas found to be occupied by burrowing owl are appropriately managed. The conservation of suitable habitat and the conservation actions and policies in the Subarea Plan, including Sections 5.5.9.1, *General Conditions for Covered Species Conservation Standards,* and 5.5.9.5, *Western Burrowing Owl Conservation Standards*, will provide for the conservation and management of self-sustaining populations of burrowing owl in the Plan Area.



\\PDCCITRDSGIS01\San Diego\projects\City_of_Santee\MSCP_SAP_00641_14\mapdoc\SpeciesModels\Chapter6\Figure 6-22 Western Burrowing Owl-Unique.mxd Date: 2/11/2025 34153

Figure 6-22
Western Burrowing Owl - Known Occurrences and Habitat Model Relative to Managed Preserve and Open Space Network
Santee MSCP Subarea Plan

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Chapter 7
Management and Monitoring

This chapter provides an overview of the management and monitoring requirements and approach for the Subarea Plan. Subarea Plan monitoring should determine whether or not: (a) the City is in compliance with the permits and the Subarea Plan; (b) progress is being made toward meeting the Plan's biological goals and objectives; (c) the Plan's conservation program is effective at minimizing and/or mitigating impacts; (d) there is a need for adjusting measures to improve the Subarea Plan's conservation strategy. The types of management and monitoring addressed in this chapter include:

1. Compliance Monitoring (Section 7.1)
2. Preserve Management and Monitoring (Section 7.2)
3. Standards and Requirements for Habitat Restoration (Section 7.3)

7.1 Compliance Monitoring

Compliance Monitoring is the process used to ensure that the Subarea Plan Covered Activities and Conservation Strategy are being implemented in accordance with Subarea Plan and associated Permit requirements; it is specifically monitoring and reporting that explains compliance with implementing the Subarea Plan's and permit's avoidance, minimization, and mitigation measures during the reporting period. Compliance Monitoring provides information that allows the City and the Wildlife Agencies to track important features of Subarea Plan implementation. Compliance Monitoring will involve implementation of the following tracking, oversight, and reporting actions:

1. **Impact Monitoring and Tracking.** The City is responsible for collecting and maintaining information that tracks impacts to natural resources resulting from Covered Activities to ensure that the amount of impacts that occur under the Subarea Plan does not exceed the amount of impacts contemplated in the Subarea Plan and authorized in the Permits issued by the Wildlife Agencies. For all Covered Activities, the City will track: (1) acreage of impacts by habitat types, (2) acreage of impacts to Covered Species and their habitats, and (3) location of those Covered Activities and impacts, (4) direct impacts to natural habitat relative to the caps allowed under the Subarea Plan within the Infill Development Areas, San Diego River subunit, and Hardline Development Project Areas (5) implementation of and state of compliance with avoidance, minimization, and mitigation measures, and (6) collection and use of funds through the Subarea Plan Conservation Fund. The City will also provide or require appropriate monitoring/reporting on implementation of Covered Activities to assure compliance with Plan and permit-related requirements for avoiding and minimizing impacts to Covered Species, such as adherence to project footprint boundaries, seasonal restrictions, indirect effects minimization measures, and protection of onsite natural resources. The City will provide reporting of this information to the Wildlife Agencies annually and use this tracking information to demonstrate that impacts associated with Covered Activities do not proceed out of rough step with the levels of conservation anticipated under the Subarea Plan and Permits. The City's reporting to the Wildlife

Agencies will include identification of any activities that may have gone wrong or were incorrectly implemented per the Subarea Plan, identification of factors that led to the potential non-compliance, and identification of steps to remedy those factors so that non-compliance is less likely to occur in the future.

2. **Conservation Tracking**. The City will produce an annual accounting report of the acreage, type, and location of habitats and Covered Species conserved. The habitat tracking will include areas gained/conserved and/or restored to offset impacts from Covered Activities or through other conservation actions. The City will maintain records in a ledger and GIS format using the HabiTrak application (or similar methodology) that is currently being used in other regional conservation plans. As part of the habitat conservation tracking, the City will track the overall conservation for the Upland Standards Areas to ensure these portions of the Plan Area maintain a minimum of 70 percent conservation level and that habitat connectivity is protected/conserved. The information will contribute to the annual public report demonstrating compliance with the terms and conditions of the Subarea Plan and associated Permits. The City will provide reporting of this information to the Wildlife Agencies annually.

3. **Subarea Plan Managed Preserve Tracking**. The City will provide oversight and tracking of the management and monitoring of the Managed Preserve to ensure it is completed in a manner consistent with the requirements included in this chapter and within Preserve Complex and Preserve-specific Resource Management Plans (RMPs). This will include close coordination with the City Preserve Manager (who will be contracted by the City to complete biological resources management and monitoring of the City-owned Preserve Lands), the Preserve Manager(s) for the Fanita Ranch Onsite Habitat Preserve and Offsite Conservation Areas, and the Preserve Manager(s) of future Preserves established during the Subarea Plan permit term. For each individual Preserve or Preserve complex (group of Preserves of a similar type within the same subunit), an annual report will be submitted that documents the implemented management and monitoring actions and status of Covered Species and habitats within those Preserves pursuant to the associated RMP. These Preserve-specific annual reports will be summarized in the Subarea Plan Annual Report (Section 8.5.2) and provided to the Wildlife Agencies upon request.

4. **Existing Protected Open Space Coordination**. The City will collaborate with other Preserve Managers and landowners of existing protected open space within the Plan Area. The City will actively coordinate with the group of other Preserve Managers on an annual basis (or more often if needed) to address potential issues such as, but not limited to, public access, unauthorized encroachment/disturbance, enforcement/site protection, management, adaptive management, and funding. The City will host a meeting(s) that will include the other Preserve Managers, the City Preserve Manager, the Subarea Plan Coordinator, the Preserve Steward, and the Wildlife Agencies to address, Covered Species, Covered Activities, policy, monitoring, management/adaptive management and other technical topics relative to the management within the Managed Preserve. The City will invite Preserve Managers of existing protected open space to the meeting(s). An agenda will be circulated 30 days in advance of the meeting to solicit input from all partners listed above. The City will collect Preserve-specific annual reports and monitoring data (if available) from the other Preserve Managers to include within the Subarea Plan Annual Report.

5. **Annual Reporting**. The City will prepare the Subarea Plan Annual Report (Annual Report) summarizing activities over the reporting year (January 1 to December 31) which will be provided to the partners listed above by March 31st of the next year. An annual public meeting on the Annual Report will be held after submittal. The Annual Report will include tables and descriptions (i.e. acres subject to impacts and conserved) and location of Covered Activities implemented during the year, summary of any Minor or Major Amendments, summary of impact tracking for habitat and Covered Species, summary of habitat conserved, status of Preserve management and monitoring, status of restoration projects, summary of Subarea Plan funding (see 8.5.2, *Subarea Plan Annual Report*) and species status.

7.2 Preserve Management and Monitoring

This section defines management and monitoring expected to be undertaken by the Preserve Managers of the Managed Preserve to ensure the long-term viability of Covered Species and their habitats, and ecological functions/processes. Monitoring is required to demonstrate progress towards achieving the biological goals and objectives described in the Subarea Plan. Preserve monitoring described herein is the major component of this required compliance. These Managed Preserve properties will be conserved and managed in perpetuity in support of the Subarea Plan and associated permits. Table 7-1 summarizes the management and monitoring for the Managed Preserve. The management and monitoring activities are established herein to assess, monitor, and manage the status of Covered Species, natural communities, and ecosystem processes/function on each Preserve property, amongst the Preserve properties (Preserve Complex), and evaluate the effects of Preserve management actions to ensure the success of the Subarea Plan Conservation Strategy.

Interim land management will be provided for the Managed Preserve for the Hardline Project and City-owned Preserve Lands, as well as for management of the completed preserve system in perpetuity. Interim management will cover the period between Subarea Plan approval and approval of the applicable Preserve RMP. Management activities will generally be the responsibility of the owners of the conserved lands unless other arrangements have been provided. Prior to finalization and approval of the RMPs, management activities within the Hardline Development Onsite and Offsite Preserves and City-owned Preserve lands will focus on basic access controls and maintaining or increasing existing habitat values for Covered Species.

The requirements included in this section are to be used by the Preserve Managers in developing Preserve Complex and Preserve-specific Resource Management Plans (RMPs). The RMP outline is included as Appendix H, *Preserve Resource Management Plan (RMP) Outline*, and will be followed by all Preserve Managers within the Managed Preserve. This section outlines the types of management and monitoring that will be done on the Preserves and describes how an adaptive management approach will be implemented by the Preserve Managers using an iterative decision-making and learning process. Preserve Managers will use the following approach to complete management and monitoring:

1. Preserve Managers will manage the Preserves in accordance with the principles and procedures for adaptive management, as set forth in Section 7.2.5, *Adaptive Management and Monitoring of the Preserves Guidelines and Approach*.

2. Monitoring will be completed by the Preserve Managers. This will include general stewardship and effectiveness monitoring. The effectiveness monitoring includes annual surveys of invasive species, surveys of Covered Species threats and stressors every 3 years, population assessment surveys (by as qualified biologists) of Covered Species every 3–5 years, and comprehensive mapping of natural communities every 10 years. See Table 7-2, *Type and Frequency of Periodic Surveys for Effectiveness Monitoring*.

3. The RMPs will set forth Preserve Complex and/or Preserve-specific goals and objectives that support and contribute to the Subarea Plan goals and objectives. Additional targeted monitoring will be integrated where necessary to address site-specific threats to Covered Species and natural communities within the Preserves and/or address issues related to adaptive management that will be defined and prioritized as part of the development of Preserve-specific RMPs. RMPs will be prepared by the Preserve Managers and reviewed by the City and the Wildlife Agencies every 5 years and revised, as needed (see Section 7.2.2, *Preparation of Preserve Complex and Preserve-Specific Resource Management Plans (RMPs)*). Once the RMPs are reviewed, they will subsequently be approved after the City and Wildlife Agencies discuss their review.

4. The City will convene a meeting with the Wildlife Agencies, the Subarea Plan Coordinator, Preserve Steward, City Preserve Manager, and other Preserve Manager(s) operating in the Plan Area, and other habitat management entities in the region to coordinate at least annually to share concepts, techniques, and resources to the extent practicable for management and adaptive management.

7.2.1 Preserve Management and Monitoring Responsibilities

Preserve management and monitoring will be the responsibility of the Preserve Managers for the individual Preserves that make up the Managed Preserve. There will be oversight and collaboration with the Subarea Plan Coordinator and Preserve Steward. The Preserve Managers will include:

- Hardline Development Project Preserve Manager for onsite and offsite Preserves
- City Preserve Manager Responsible for City-Owned Preserve Lands
- City Preserve Manager or Other Approved Preserve Manager(s) for Future Preserves

In addition to the Preserve Managers responsible for the Managed Preserve, as described above, the Subarea Plan Coordinator and Preserve Steward will coordinate with other Preserve Managers and landowners responsible for management and monitoring of existing protected open space within the Plan Area to promote the conservation goals and objectives of the Subarea Plan related to habitat connectivity.

The following describes specific Preserve management and monitoring responsibilities.

Table 7-1. Summary of Management and Monitoring for the Managed Preserve

Subunit	Preserve / Preserve Complex	Preserve Manager	Resource Management Plan	Type of Legal Site Protection Mechanism	Source of Funding for One-Time Startup Expenses	Type of Secure Funding for Long-Term M&M	Acres of Natural Habitat	Key Biological Features / Management Issues
Fanita Ranch Subunit and Offsite Conservation Areas	Fanita Ranch Onsite Conservation Lands	City Preserve Manager or Approved Preserve Manager	Fanita Ranch Onsite Conservation Lands RMP	Conservation Easement (CE)	Project proponent	Community Facilities District (CFD) based on a PAR or similar program	1,593.8	• Public access • Restoration (coastal cactus wren, vernal pools, rare plants) • Invasive species control (e.g., invasive plants and Argentine ants) • Fire management
	Offsite Hermes Copper Butterfly Conservation Site	City Preserve Manager or Approved Preserve Manager	Subarea Plan Offsite Hermes Copper Butterfly Conservation Site RMP	CE	Project proponent	Endowment based on PAR or similar program	80.4	• Protection of occupied suitable habitat for Hermes copper butterfly • Signage, fencing and fencing maintenance
	Offsite Quino Checkerspot Butterfly Conservation Area	City of San Diego	Mission Trails Regional Park NRMP	City of San Diego Park Lands or Restrictive Covenant (RC)	Project proponent	CFD and/or endowment based on the City of San Diego's projected costs	90.7	• Protection of 90.7 acres and restoration of 18.4 acres of existing protected suitable habitat for Quino checkerspot butterfly
San Diego River Subunit	City-Owned Preserve Lands (Mast Park West, Mission Creek, Walker Preserve)	City Preserve Manager	San Diego River Preserve Complex RMP	Mast Park West – CE (2009) Mast Park East (Mission Creek) – RC (pending) Walker Preserve – RC (2012)	City funding	City General Fund based on PAR or similar program	145.2	• Riparian habitat protection and management • Least Bell's vireo monitoring and management (including cowbird management) • Public access and trails along edges of floodway • Trespassing and encampments • Trash and dumping • San Diego River crossings • Collaboration with other existing open space along San Diego River • Nighttime lighting along and near the San Diego River • Wildlife Corridor/landscape linkage connectivity east-west along and through San Diego River • Noise • Defensible space • Invasive plant and animal species management • Hydrology and erosion control • Unleashed pets, domestic animals • Signage, fencing and fencing maintenance • Fire management

Table 7-1. Summary of Management and Monitoring for the Managed Preserve (cont.)

Subunit	Preserve / Preserve Complex	Preserve Manager	Resource Management Plan	Type of Legal Site Protection Mechanism	Source of Funding for One-Time Startup Expenses	Type of Secure Funding for Long-Term M&M	Acres of Natural Habitat	Key Biological Features / Management Issues
East Santee Uplands Subunit	City-Owned Preserve Lands Upland Areas (City Property near Walker Preserve, Altair)	City Preserve Manager	East Santee Uplands Preserve Complex RMP (future)	City Property near Walker Preserve – RC (pending) Altair – RC (pending)	City funding	City funding based on PAR or similar program	20.2	• Upland habitats protection and management • Coastal California gnatcatcher and coastal cactus wren suitable habitat and stepping-stone linkage • Fire management • Defensible space • Collaboration with other existing open space on Tank Hill and Rattlesnake Mountain areas • Signage, fencing and fencing maintenance
	Future Preserves within Other Upland Standards Areas	City Preserve Manager or Approved Preserve Manager		CE (private) or RC (City) – Future	Individual Preserve RMP addendum – Project proponent	Endowments based on PAR or similar program	~ 28.5	
North Magnolia Subunit	Future Preserves within North Magnolia Upland Standards Areas	City Preserve Manager or Approved Preserve Manager	North Magnolia Uplands Preserve Complex RMP (future)	CE (private) or RC (City) – Future	Subunit RMP development – City funding Individual Preserve RMP addendum – Project proponents	Endowments based on PAR or similar program	~ 162.6	• Upland habitat protection and management • Habitat-landscape linkage connectivity/ wildlife corridors • Fire management • Defensible space • Collaboration with other adjacent existing open space and Preserves (EHC properties and Fanita Ranch Onsite Conservation Lands) • Signage, fencing and fencing maintenance • Unleashed pets, domestic animals
Mission Trails Subunit	Future Preserves within Mission Trails Upland Standards Areas	City Preserve Manager or Approved Preserve Manager	Mission Trails Uplands Preserve Complex RMP (future)	CE (private) or RC (City) – Future	Subunit RMP development – City funding Individual Preserve RMP addendum – Project proponents	Endowments based on PAR or similar program	~ 139.7	• Upland habitats protection and management • Habitat-landscape linkage connectivity/ wildlife corridors • Fire management • Defensible space • Collaboration with other exiting open space including Mission Trails Regional Park and CNLM property • Signage, fencing and fencing management • Unleashed pets, domestic animals
						Total:	**2,260.9**	

7.2.1.1 Fanita Ranch Preserve and Conservation Lands Preserve Manager

There will be Preserve Managers for the following components of the Fanita Ranch conservation lands:

- **Fanita Ranch Onsite Conservation Lands** – The Fanita Ranch project proponent will hire a Preserve Manager to undertake the perpetual management and monitoring of the onsite Preserve based on the Wildlife Agencies-approved Fanita Ranch Conservation Lands RMP that will be prepared prior to the issuance of grading permits. The City will review and approve the selection of the Fanita Ranch Preserve Manager.
- **Hermes Copper Butterfly Offsite Conservation Site** – The Hermes Offsite Conservation Area is located in east San Diego County and will be perpetually managed and monitored in accordance with a Hermes Copper Butterfly Offsite Conservation Area RMP. The Fanita Ranch Preserve Manager for the onsite property will likely also be responsible for management and monitoring of this offsite property.

  Quino Checkerspot Butterfly Offsite Restoration and Acquisition Areas – For the offsite conservation actions for Quino checkerspot butterfly, the City of San Diego will be responsible for the Quino habitat restoration and long-term management and monitoring, which will be funded by the Fanita Ranch project proponent. The City of Santee will ensure that the project proponent for the Hardline Development Project funds the habitat restoration and long-term management and monitoring in the Quino Offsite Conservation Area and complies with all other aspects of CM-6.

7.2.1.2 City Preserve Manager Responsible for City-Owned Preserve Lands

The City will contract with a Preserve management entity (City Preserve Manager) once the Subarea Plan is adopted by the City. The City Preserve Manager will conduct the biological resources management and monitoring on the City-owned Preserve Lands (see Figure 5-1). The City Preserve Manager will be responsible for preparation of the Preserve Complex RMPs (see Section 7.2.2, *Preparation of Preserve Complex and Preserve-Specific Resource Management Plans (RMPs)*), threat assessments, public access monitoring, invasive species management, wildlife species management, effectiveness monitoring, and management of Covered Species, and adaptive management and monitoring. The City Preserve Manager will coordinate with other City departments on general stewardship maintenance actions such as access control (fencing, gates), trash removal, signage, and patrols/enforcement. The City will assure their perpetual conservation by recording a legal instrument on the City-owned Preserve Lands once they adopt the Subarea Plan. The City will provide funding for management and monitoring as described in Chapter 8, *Subarea Plan Implementation and Funding*.

7.2.1.3 City Preserve Manager or Other Approved Preserve Manager(s) for Future Preserves

The City Preserve Manager will generally be the entity contracted to serve as the Preserve Manager for future Preserves that will be established following the Subarea Plan guidelines (Chapter 5, *Conservation Strategy*). During the Covered Activities project approval process (which includes all

steps required to establish perpetual conservation and recording a legal instrument for lands included in the Managed Preserve), the City will coordinate with project proponents to use the City Preserve Manager as the land management entity to fulfill the Preserve management and monitoring role. The City will also work with the Covered Activity project proponents to ensure they provide appropriate funding consistent with a PAR or similar program to establish long-term funding to monitor and manage the future preserves. If a project proponent prefers to use their own Preserve Manager, the project proponent must obtain approval from the City to designate a qualified Preserve Manager for their property prior to issuance of a grading permit for the Covered Activity.

7.2.1.4 Other Preserve Managers for Existing Protected Open Space

Within the Plan Area, there are several individual properties that were previously set aside as habitat Preserves associated with various projects or established independently for non-mitigation ecological conservation purposes (see Section 2.3.4.1 *Existing Protected Open Space within Santee*). A number of these existing protected lands already have Preserve Managers who are responsible for management and monitoring of these lands. As part of Subarea Plan implementation, additional conservation or management on existing protected lands is not required on these baseline properties. The Managed Preserve boundaries will maximize the opportunities to ecologically connect to existing protected open space. A component of the City Preserve Steward's responsibilities will be to coordinate management and monitoring activities with other Preserve Managers within the Plan Area to maximize the functionality of the overall Preserve and Open Space Network for conservation values.

7.2.2 Preparation of Preserve Complex and Preserve-Specific Resource Management Plans (RMPs)

The City has subdivided the Managed Preserve into seven segments based on the Subarea Plan Subunits, ownership, and management/monitoring responsibilities. For each of the seven segments, a Preserve Complex RMP will be prepared to guide Preserve monitoring and management activities. A Preserve Complex RMP will include Preserve Complex-specific goals and objectives relating to natural communities, Covered Species, and other ecosystem function(s) (e.g., for connectivity/wildlife movement), which demonstrate how the Preserve Complex will accomplish the relevant goals and objectives of the Subarea Plan (as set forth in Section 5.2, *Biological Goals and Objectives*). To accomplish the identified goals and objectives, Preserve Complex RMPs will identify required site-specific management strategies and actions for Covered Species and natural communities, as well as a public access/site protection plan for managing Covered Activity recreation and other access/encroachment for Preserves within the Managed Preserve.

Importantly, the Preserve Complex RMPs will also set forth an adaptive management approach for iterative decision-making and learning and will identify critical uncertainties to be addressed to accomplish the Preserve Complex-specific as well as Subarea Plan goals and objectives. RMP development will be guided by the reconnaissance and baseline surveys (often completed as part of the project approval process). Preserve Complex RMPs will be prepared within three years of permit decisions and following a general format attached as Appendix H, *Preserve Resource Management*

Plan (RMP) Outline. For new Preserve Complex RMPs associated with the Hardline Development Project, the RMPs will be prepared prior to the City issuing grading permits.

As individual Preserves are established within the boundaries of a Preserve Complex RMP, an individual Preserve RMP addendum will be prepared by the approved Preserve Manager that addresses the specific Preserve property requirements. The individual Preserve RMP addendums will be streamlined documents that tier off and are incorporated into the Preserve Complex RMPs.

The following is a description of the seven Preserve Complex RMPs:

- **Fanita Ranch Subunit and Offsite Conservation Areas –** The following RMPs will be prepared for the onsite and offsite conservation areas associated with the Fanita Ranch Hardline Development Project:
    - **Fanita Ranch Onsite Preserve RMP** – The Fanita Ranch project proponent has prepared a draft Preserve RMP for the onsite Preserve. This RMP addresses the onsite conservation and restoration activities for coastal cactus wren habitat, vernal pools, and rare plants including a public access plan, fire management plan, and invasive species control plan. The City and Wildlife Agencies will review and approve the RMP prior to issuance of grading permits. The Preserve Manager will provide annual reporting on the status of the Fanita Ranch Onsite Preserve to the City that will be included in the Subarea Plan Annual Report. This RMP will address the phasing of the dedication of the Fanita Ranch Onsite Preserve commensurate with development phases.
    - **Santee Subarea Plan Offsite Hermes Copper Butterfly Conservation Site RMP** – A Preserve RMP will be prepared to address management and monitoring of the offsite Hermes copper butterfly conservation site. This RMP will be prepared by a Preserve Manager identified by the Fanita Ranch project proponent and reviewed and approved by the City and Wildlife Agencies prior to issuance of grading permits. The Preserve Manager will provide annual reporting of the status of the Hermes copper butterfly Offsite Conservation Area to the City that will be included in the Subarea Plan Annual Report.
    - **Mission Trails Regional Park NRPM (RMP for Quino Checkerspot Butterfly Offsite Conservation)** – The Fanita Ranch project proponent will fund the City of San Diego to complete the restoration/enhancement activities and the long-term management and monitoring of the Offsite Quino Checkerspot Butterfly Conservation and Restoration Area within the East Elliott portion of the Mission Trails Regional Park. The City of San Diego will complete this work under the Mission Trails Regional Park NRMP that covers their property. The City of San Diego will provide annual reporting of the status of the Quino checkerspot butterfly offsite conservation area to the City of Santee that will be included in the Subarea Plan Annual Report.
- **San Diego River Preserve Complex RMP** – The City Preserve Manager will prepare the San Diego River Preserve Complex RMP within 3 years from permit decision on the Subarea Plan. This RMP will cover the City-owned Preserve Lands along the San Diego River riparian corridor (Walker Preserve, Mast Park West, Mast Park East (Mission Creek)). The key management and monitoring issues will include riparian habitats, least Bell's vireo, trails along the berm edges of the floodway,

bridges and trails across the San Diego River corridor, public access and trespassing, encampments, trash, rogue trails and encroachment, cowbirds, patrols/enforcement, and invasive species (e.g., Arundo). This RMP will address ecological connectivity through the Preserve Complex and with adjacent existing protected areas including the Caltrans Forester Creek Mitigation Site, MTS Restoration Site, Lowes Preserve, and Mast Park Wetland Restoration Project/Preserve.

- **East Santee Uplands Preserve Complex RMP** – The City Preserve Manager will prepare the East Santee Uplands Preserve Complex RMP within three years from permit decision on the Subarea Plan. This RMP will cover the upland City-owned Preserve Lands (City parcel adjacent to Walker Preserve, Altair). The key management and monitoring issues will include conservation of upland habitats (e.g., coastal sage scrub) as stepping-stone "corridor" for coastal California gnatcatchers and coastal cactus wren, site protection, and encroachment. This RMP will address ecological connectivity with adjacent existing protected areas including the Rattlesnake Mountain Habitat Conservation Area and other protected open space on the Tank Hill area and near Highway 67. As additional mitigation and/or conservation action(s) occur within the Other Upland Standards Areas that result in the establishment of a new Preserve(s) within the boundaries of the East Santee Uplands Preserve Complex RMP, these new Preserve areas will be integrated as addenda into this RMP.
- **North Magnolia Uplands Preserve Complex RMP** – The City Preserve Manager and Preserve Steward will prepare the North Magnolia Uplands Preserve Complex RMP within three years from permit decision on the Subarea Plan. This RMP will define the structure for how management and monitoring will be implemented as future Preserves are established within this subunit. The key management and monitoring issues will include maintaining habitat connectivity, site protection, encroachment, and protection of upland Covered Species. This RMP will address ecological connectivity with adjacent existing protected areas including the Fanita Ranch Conservation Lands, EHC Preserves, CNLM Santee Hills HCA, and Cutri Onsite Preserve. As mitigation and/or conservation action(s) occur within the North Magnolia Upland Standards Areas, these new Preserve(s) will be integrated as addenda into this RMP.
- **Mission Trails Uplands Preserve Complex RMP** – The City Preserve Manager and Preserve Steward will prepare the Mission Trails Uplands Preserve Complex RMP within three years from permit decision on the Subarea Plan. This RMP will define the structure for how management and monitoring will be implemented as future Preserves are established within this subunit. The key management and monitoring issues will include maintaining habitat connectivity and protection of upland Covered Species. This RMP will address connectivity with adjacent existing protected areas including the Mission Trails Regional Park and CNLM East Mesa HCA. As mitigation and/or conservation action(s) occur within the Mission Trails Upland Standards Areas, these new Preserve(s) will be integrated as addenda into this RMP.

7.2.2.1 Timing for RMP Review and Approvals

The City, in coordination with the Preserve Managers, will submit the Preserve Complex RMPs for review and approval by the Wildlife Agencies. The Wildlife Agencies will provide comments to the City within 60 days of receipt of a draft document. The City will address the Wildlife Agencies' comments,

if any, in a revised draft plan which will be provided to the Wildlife Agencies within 60 days of receipt of comments for an additional 60-day review period. If an initial draft RMP or any subsequent revised RMPs adequately addresses the Wildlife Agencies' comments, the Wildlife Agencies will notify the City within 60 days, which will serve as the Wildlife Agencies' approval for purposes of this Subarea Plan, the IA, and the Permits. If a Wildlife Agency does not provide comments within 60 days after receiving the revised draft RMP, the RMP will be deemed to have been approved by the Wildlife Agencies for purposes of this Subarea Plan, the IA, and the Permits. The individual Preserve RMP addenda will require review and approval by both the City and Wildlife Agencies following the procedures described above for Preserve Complex RMPs approval.

RMPs will be reviewed by the City every 5 years and updated by the Preserve Managers as necessary to adjust and prioritize management actions based on the changing Preserve Complex needs. Revisions to the RMPs must be reviewed and approved by the City and Wildlife Agencies following the procedures described above for RMP approval.

7.2.2.2 Land Protection Mechanism

In addition to RMPs, each Preserve property within the Preserve Complex will have a legal instrument recorded to ensure it is maintained and managed in perpetuity as a habitat Preserve and will be protected from future development or other encroachment. A conservation easement will be recorded for privately held Preserve properties prior to ground disturbing activities and an equivalent land protection mechanism (e.g., restrictive covenant) will be recorded for City-owned Preserve Lands within one year of issuance of the Permits. The land protection instrument will be recorded prior to issuance of a grading permit for the associated activity. Conservation easements or equivalent land protection mechanisms will be held by appropriate entities, depending upon the Preserve Manager and other factors. The City, in coordination with the Wildlife Agencies, will review and approve all land protection mechanisms.

7.2.3 Preserve Management Guidelines

The Subarea Plan includes guidelines for the Preserve Managers of the Subarea Plan Managed Preserve to use when preparing the Preserve Complex RMPs and updates to the RMPs as individual mitigation or conservation actions result in new Preserves. Because each Preserve Complex is unique, these guidelines are meant to describe the range of management activities that could be needed, depending on a variety of Preserve Complex-specific conditions. Preserve management strategies, the types of activities that may be compatible with the Permits on each Preserve property, and monitoring obligations will then be specific to each Preserve. In addition, Preserve Managers will provide information to adjacent landowners regarding how to avoid/minimize conflicts with Preserve lands, conservation obligations associated with the Preserve lands, and how to reduce edge effects on the Preserve from adjacent uses.

7.2.3.1 Vegetation Management

Native Plants

Clearing, mowing, or pruning of native vegetation will be avoided in Preserve areas except when necessary as part of Covered Activities such as minor road and trail maintenance activities or defensible space and fire control activities, as described below in the *Fire Management* section. A dense canopy, multi-layered understory, and mid-story growth provide valuable nesting, foraging, and sheltering opportunities for wildlife species and thus will be protected from unnecessary pruning, mowing, or clearing.

Any native leaf litter, duff materials, and native vegetation/tree trimmings resulting from Covered Activities management and maintenance activities will be retained onsite when beneficial and placed in appropriate native habitat areas based on a restoration ecologist's recommendations. Collected leaf litter, duff materials, and native vegetation/tree trimmings onsite will be kept out of defensible space areas and away from public roads (unless they are being utilized as a management tool) to reduce the risk of fire. Decomposing vegetation provides valuable microhabitats for invertebrates, reptiles, small mammals, and birds. In addition, the decomposition of dead wood and leaf litter is necessary for the replacement of soil nutrients and minerals.

If pruning of native tree foliage, limbs, and/or disturbance of root zones of native trees is necessary for the noted maintenance or defensible space management Covered Activities, the Preserve Manager will have a certified arborist provide recommendations for appropriate pruning or root disturbance locations and methods.

The collection of plant species (including seeds), except for approved research, study, and/or restoration as part of Preserve management, is prohibited. Collection for ceremonial purposes would require case-by-case approval from the City and Wildlife Agencies. Coordination between the Preserve Managers, City, and the researcher will occur in advance, as appropriate.

Invasive Nonnative Plants

The control of invasive nonnative plant species and restoration with native plant species is one of the most important components of a RMP because these invasive nonnative plants species can aggressively out-compete native plant species; thereby, reducing habitat function within a Preserve property.

- Prioritize areas for nonnative species control based on the aggressiveness of invasive species, the degree of threat to Covered Species, native vegetation, and ecosystem processes, and the ability to manage those invasive species. The Preserve Manager will monitor those species with high priority for eradication, as determined by the current California Invasive Plant Inventory (Cal-IPC 2023). A species with a Cal-IPC rating of "high" will be a priority for eradication or control, with the objective to control and remove it as soon as possible after discovery consistent with the methods described below. Examples of high-priority plant species include, but are not limited to, giant reed (*Arundo donax*), salt cedar (*Tamarix spp*.), stinknet (*Oncosiphon pilulifer*), artichoke thistle (*Cynara cardunculus*), and pampas grass (*Cortaderia* spp.). Species rated "moderate" or "limited" are a lower priority and may be allowed to persist if monitored at low population levels

following initial eradication efforts or may be selectively controlled as part of species enhancement or habitat restoration efforts (e.g., invasive annual grasses or forbs). "Moderate" and "limited" rated invasive exotic plants will be monitored, and these plants will be controlled if invasion levels on a managed Preserve are determined to be ecologically detrimental or problematic to Covered Species or the ecosystem they depend upon.

- Develop and implement an early detection monitoring program for invasive plant species to ensure that emerging invasive species (including species new to the region, Subarea Plan Area, or a managed Preserve site) are detected in a timely fashion and eradicated quickly on a site before they become a long-term problem. Early eradication of new satellite occurrences of exotic plants is typically one of the most cost-effective ways to control ecological effects of exotic plants. Preserve Managers will maintain a list of potentially occurring invasive species, based on Cal-IPC and other regional and local sources (e.g., San Diego Department of Weights and Measures, Invasive Weed Watch, Management Priorities for Invasive Non-native Plants A Strategy for Regional Implementation San Diego County, California [Dendra et al. 2012]). A list of zero tolerance invasive nonnative species for the Subarea Plan Area is included as Appendix I, *Invasive Nonnative Plant Species List*. The Preserve Manager will monitor for these species during general stewardship and biological reconnaissance activities.
- Where feasible, use an Integrated Pest Management (IPM) approach (EPA 2023) to controlling exotic plants. The IPM approach is a step-wise process that achieves the desired goals with the least biologically intrusive control method known at the most appropriate period of the growth cycle to eradicate undesirable species and avoid adverse effects to Covered Species. The control steps include:
    - *Cultural Control***:** The continual improvement of natural community health so it can successfully compete against pests.
    - *Mechanical Control***:** The physical elimination of a pest.
    - *Biological Control***:** The use of living organisms to lower pest populations (grazing, predators, parasites and pest diseases).
    - *Preventative Control***:** The act of preventing the initial entry and spread of pests (quarantines, inspections and certified seed).
    - *Chemical Control***:** The application of a pesticide to reduce a pest threat (to be used only after proper scouting has confirmed pest populations to be large enough to warrant chemical control).
- Consider both mechanical and chemical methods of control. Only herbicides that are compatible with the biological goals and objectives of the Plan, avoid adverse effects to Covered Species, and consistently provide a net benefit to ecosystems that the Covered Species depend upon may be used. A list of allowable herbicides to be used within a Preserve will be included in the RMPs. Licensed pest control advisors who are familiar with Department of Pesticide Regulations will be used to make specific pest control recommendations. The application of herbicides will be conducted by licensed pest control personnel.

- Dispose of all invasive plant materials that are removed from the Preserves at an appropriate facility designed specifically to avoid the spread of nonnative plant species through seeds or other propagules. All removed plant materials will be covered during transport and will go to a "green" waste recycling facility if appropriate (so as to prevent propagation of the invasive species elsewhere if such greenwaste is utilized in mulch, etc.) or otherwise legally disposed of, as necessary.
- Passively or actively revegetate invasive plant removal areas with native species appropriate to the biological goals and objectives for the Preserve and/or adjacent native habitats, as applicable to the target natural community for the Preserve site and the restoration timing results desired (e.g., restoration of native grassland natural community within 8 years of initiation of invasive species control activities). Onsite native plant species seed or stock should be used for revegetation efforts.

7.2.3.2 Covered Wildlife Species Management

Protection and conservation measures specific to Covered Species management on Managed Preserve parcels include seasonal restrictions on activities, and general restrictions, as described below.

Seasonal Restrictions

As noted above, native vegetation removal is prohibited on the Preserves, except when implementing Covered Activities such as road maintenance activities, or habitat restoration or enhancement for Covered Species. Use of equipment and power tools may be necessary for Covered Activities such as defensible space management and road maintenance tasks as well as Preserve management activities such as nonnative plant control and the installation of erosion control best management practices (BMPs). The noted maintenance and management, non-emergency Covered Activities on the Managed Preserve that would potentially directly disturb native vegetation or potentially cause noise and/or human activity impacts to Covered Species of wildlife (including native and nonnative tree and vegetation removal and the use of loud or disruptive equipment and tools) will be avoided during the breeding season for birds (and many wildlife species), including raptor species (February 15 to September 15). All Covered Activities within Managed Preserve areas with potential to disturb wildlife will avoid the breeding season (February 15 through September 15) to the maximum extent practicable (e.g., non-emergency activities). The City or Preserve Manager will provide mitigation measures to repair or offset such vegetation disturbances.

If vegetation disturbance/clearing or loud/disruptive activities must occur in the breeding season within or adjacent to areas that potentially support nesting bird species between February 15 and September 15, a preconstruction nesting bird survey will be conducted. A minimum 100-foot avoidance/exclusion zone or a buffer/barrier zone to help attenuate noise and reduce disruption effects will be placed around all active nests (i.e., nests with eggs or chicks) for the duration of the breeding season if practicable, but at least until the nestlings have fledge or the nest fails. Status of the nest(s) will be monitored by a qualified biologist. A report will be submitted to the Wildlife Agencies for review and concurrence prior to discontinuing the noise limits and nest buffers. The City

or Preserve Manager will provide mitigation measures to repair or offset such vegetation disturbances.

For other Covered Activities occurring outside the breeding season or in areas of non-native vegetation (such as areas appropriately surveyed and determined to be clear of nesting birds), if nesting bird activity is subsequently detected within the footprint of these activities, or proximity to loud (e.g., above 60 dBA Leq hourly) or disruptive activities, then all construction, maintenance, or management activities must cease if it is not outside of at least a 300-foot buffer surrounding each nest. Reductions in the nest buffer may be possible depending on site-specific factors (e.g., topography, screening vegetation, ambient noise levels, quiet activities with hand tools, etc.), in coordination with the Wildlife Agencies. Construction, maintenance, and/or management activity noise levels will not exceed 60 dBA Leq hourly within the 300-foot buffer zone unless authorized by the Wildlife Agencies. The wildlife biologist will monitor all vegetation clearing or pruning activities. The City or Preserve Manager will provide mitigation measures to repair or offset such vegetation disturbances.

- Invasive Nonnative Animal Species Control of the spread of Argentine ants will be implemented by Preserve Managers by following the guidelines below:
    - Ensure that all landscaping and native habitat restoration materials do not contain invasive ant or other exotic invasive arthropod species by inspecting all container plant stock for these species before it enters the Preserves (See Appendix I, *Invasive Nonnative Plant Species List*). The City will also review and approve vegetation pallets plans proposed for development areas adjacent to the Preserves.
    - Monitor landscaping irrigation adjacent to the Preserves to avoid any overflow, which may attract and sustain nonnative ants by increasing soil moisture. Increases in soil moisture may attract or sustain nonnative ants which negatively impact native plants and wildlife. Landscaping irrigation located adjacent to the Preserves will be designed so that any overflow, runoff, or overspray is directed away from the Preserve. Should overflow, runoff, or overspray from adjacent irrigation impact the Preserve, written notice to remedy the situation will be provided to the property owner by the City.
    - Empty trash receptacles located along trails and/or associated with edges of the Preserves on a regular basis, as determined by the Preserve Manager based on monitoring of the Preserves.
    - To the maximum extent practicable, the City will require or encourage the minimization of permanent artificial irrigation landscaping and the use of native landscaping with limited irrigation, where appropriate, within 600 feet of Preserves.
- Monitor and manage aquatic predators such as nonnative species of turtles, fish, African clawed frogs, bullfrogs, and crayfish by following the guidelines below:
    - Monitor and control nonnative aquatic predators within water bodies of the Managed Preserve.
    - Coordinate with the Wildlife Agencies to implement nonnative animal trapping and eradication activities. Methods will include trapping, netting, gigging, electro-fishing (prior

approval by the California Department of Fish and Wildlife [CDFW] needed), or hand captures where appropriate.

- The City will fund/implement ongoing control of invasive wildlife species within the Preserves under its ownership or control, including within open water areas in former sand mining pits along the San Diego River.

Cowbird Trapping

- Brown-headed cowbirds (*Molothrus a*ter) are parasitic, nonnative species in California that contribute to the decline of many native bird species. This transient bird species originally followed bison herds and has adapted to forage near domestic European livestock and outdoor human eating areas. As a result, any new corral or equestrian facility that requires the approval of the City must be required to have a qualified biologist monitor for cowbirds for three years, and every third year thereafter, to determine their presence. If cowbirds are present, a cowbird trapping program and/or other effective measures will be funded and implemented by the project proponent.
- In parts of the Preserve located near established equestrian-use areas (e.g., stables, feed lots, staging corrals, and equestrian trails), periodically monitor and document the extent of cowbird parasitism on Covered Species nests.
- If cowbird parasitism is detected in Preserves, establish a cowbird trapping program to increase nesting success of Covered Species affected by cowbird parasitism. Cowbird traps will be placed in select locations that maximize cowbird captures and reduce cowbird parasitism pressures. Cowbird traps will be operated consistent with current state and federal protocols.

  The City will fund/operate at least three brown-headed cowbird traps annually, spaced appropriately along the San Diego River, unless ongoing cowbird monitoring detects no cowbird parasitism within the City or the Wildlife Agencies concur that such trapping in unwarranted. Preserve Managers will assess the potential of cowbird parasitism within the Preserves every 3 years as a component of the Status and Threat Assessment, or as needed if impacts of nest parasitism are otherwise detected. If it is determined that cowbird parasitism is a threat, the Preserve Manager will seek out opportunities to participate in other cowbird trapping programs or initiate its own cowbird trapping program. Cowbird traps shall be erected in areas near concentrated uses, such as staging areas and well-used trails. Trapping locations shall be accessible to vehicles and have water and perching areas nearby. A reconnaissance of the areas shall be conducted to identify potential predators. Traps shall be erected and set by March 15 and will be checked daily from March 15 through June 1. Once the birds have been caught within the traps, incidental non-target birds will be collected with a net and released. Adult cowbirds shall be humanely euthanized. The data sheets and a report documenting the findings shall be included in the annual report.

Feral and Domestic Animal Control

- On certain trails within the Managed Preserve deemed compatible with Covered Species conservation by the City, Preserve Managers, and Wildlife Agencies, dogs may be allowed and

must be leashed at all times. The Preserve Manager will provide appropriate signage regarding the potential effects of dogs on and off leash within such Preserve areas.

- Within Preserve areas where dogs or other pets are considered incompatible with Covered Species Conservation by the City, Preserve Managers, or the Wildlife Agencies, dogs and other pets will be prohibited within Preserves from trails and other areas (including implementation of a City ordinance, as necessary), with appropriate signage provided at all trailheads and trial junctions, as necessary and appropriate.
- The City will require that Covenants, Conditions and Restrictions (CC&Rs) for new developments adjacent to Preserves include a prohibition of free-roaming domestic cats within and adjacent to the development.
- The City will provide or fund education programs regarding the impacts of exotic predators on natural open spaces and conserved habitat areas/Preserves. These programs will also cover the ecological consequences on native wildlife of feeding feral animals and trap-neuter-release activities in Preserves.
- Preserve Managers on the Managed Preserve will document evidence of feral or domestic animal activity and the associated impacts in the Preserves during regularly scheduled stewardship monitoring.
- If the Preserve Manager determines a problem exists, a domestic and/or feral animal removal program for conserved habitat (Preserves) will be established by the Preserve Manager.
- If a problem persists, the Preserve Manager on the Managed Preserve will provide fencing between the Preserve and adjacent development to keep pets or feral animals out of the Preserves. This fencing will be incorporated into Preserve management.
- The City will require Covered Activities (e.g., new development) to provide appropriate animal control fencing where such development abuts existing or potential Preserve areas.

7.2.3.3 Preserve Management

Trash and Debris

- Preserve Managers for the Managed Preserve will regularly remove trash and debris on an as-found or as-reported basis. Trash and debris can be an attractant and a hazard for wildlife and may support nonnative ant species (e.g., Argentine ants).
- Preserve Managers will place only wildlife-proof trash and recycling receptacles in the Managed Preserve, and locate these receptacles in or near any/all points of public access
- Preserve Managers for the Managed Preserve will patrol any public use areas daily to pick up any loose trash and debris, and empty trash receptacles regularly, based on the amount of use.

Lighting and Noise

- The City and Preserve Managers, as appropriate, will eliminate lighting in or adjacent to conserved habitat except where essential for roadway use, facility use, safety, or security purposes. The City will require/use shielding (directed only where needed, shielded elsewhere), light intensity (e.g.,

minimum lumens, no brighter than necessary) reductions, controlled (light will be used only when useful), of appropriate color (using "warmer" color lights wherever practicable), and other appropriate BMPs (i.e., National Park Service/Longcore and Rich, 2017, "Artificial Night Lighting and Protected Lands")[21] to the maximum extent practicable per its discretion on public and private lands and ROWs within the Managed Preserve and within 500 feet of existing and the Managed Preserve. The City and Preserve Managers will use/require low-pressure sodium illumination sources or other similar best available technology to reduce ecological impacts. The City and Preserve Managers on the Managed Preserve will not use outdoor or trail lighting, spotlights, or bug lights. The City and Preserve Managers on the Managed Preserve will shield light sources adjacent to the Preserve so that the lighting is directed downward and away from these areas.

- The City will implement a lighting ordinance requiring the minimization of spillover lighting, prevention of light trespass, and minimization of light pollution into Preserve lands from light sources on public and private lands within 500 feet of Preserve boundaries, to the maximum extent practicable.
- The City and Preserve Managers will not allow public access or trail use on the Managed Preserve during the nighttime (e.g., nighttime mountain biking) and will provide for effective enforcement in these areas through regular patrols.
- If Covered Activities that generate noise cannot be completed outside of breeding season due the health and public safety, as described above, the City will address potential effects of noise at the edge of the territory or likely use area of the covered bird species by keeping noise levels at or below 60 dBA Leq hourly.
- The City and Preserve Managers will avoid the use of noise-generating equipment within or nearby Preserves to the maximum extent practicable.
- Preserve Managers will prepare and disseminate informational materials to adjacent neighbors and users of Preserve properties to educate the public about the importance of minimizing edge effects such as nighttime lighting and noise.

Fencing

- The City and Preserve Managers will eliminate unnecessary fencing from interior areas within the Managed Preserve.
- The City and Preserve Managers will prohibit, to the maximum extent practicable, the creation, maintenance, and/or use of unlocked gates, openings, or other entry means along the edges of new and existing development and public ROWs into the Managed Preserve.
- The City and Preserve Manager, as appropriate, will maintain or install/maintain fencing when necessary to:
    - Limit road kills along roads within the Managed Preserve and along public roads

[21] https://www.softlights.org/wp-content/uploads/2020/06/Longcore-and-Rich.-2017.-Artificial-night-lighting-and-protected-lands.pdf

- Direct wildlife through wildlife movement corridors, including undercrossings
- Discourage human use of rogue or unapproved trails
- Protect erosion control or revegetation efforts
- Protect native vegetation during Covered Activities, including the use of/requirement for temporary fencing where appropriate to delineate project footprint edges.
- Protect particularly sensitive resources (e.g., vernal pools, small populations of sensitive plants)
- Discourage dumping by providing fencing, barriers, and/or gates, as appropriate, along public ROWs where dumping is problematic in existing and the Managed Preserve stemming from access from public roads.
- Provide public safety or security

- The City and Preserve Managers will select, require, and maintain fencing or barriers that best accomplishes human, pet, and/or vehicle access control with minimal wildlife interference, as appropriate. Fencing to control human use of/access to an area will generally be a minimum of 5 to 6 feet high, avoiding barbed wire to maximum extent practicable. Fences within or at the boundary of Preserves will generally consist of three- to five-strand wire, which does not significantly impede wildlife movement. Welded wire fences, tall wooden fences, split-rail fences (where appropriate and sufficient), or masonry/stone walls are all potentially suitable at the perimeter of human use areas to restrict humans and domestic pets from the Preserve areas. Portions of chain link fencing exist in some locations along existing/Managed Preserve edges. This fencing may be left in place unless it is determined that the fencing is prohibiting wildlife movement. Fences installed to minimize roadkill must meet height and design standards based on current research for effective directional fencing. The specific type(s) of fencing used will depend on the particular Preserve Complex's landscape and species.
- The City and Preserve Managers will maintain fence lines in a way that minimizes impacts on sensitive species and habitats.

Signage

- The City and Preserve Managers will provide educational brochures, kiosks, interpretive centers (outside Preserves), and signs to educate the public about the Preserve's conservation goals, biological/physical resources, and appropriate and prohibited uses on and adjacent to the Preserve, including appropriate trail user etiquette on Preserves that provide public access. Within Preserves, these features will be located in disturbed/unrestored areas (outside of extant natural communities) to maximum extent practicable.
- The Preserve Managers will install signage for education about the Preserve at the periphery of conserved habitat that is open to human access. The City and Preserve Managers will install signage for access control along Preserve edges. Preserve Managers will post signs to prohibit firearms, paintball guns, open flames, trespass (include appropriate penal code citation), OHVs, motorized bikes, and smoking, as well as bicycle, equestrian, and pet restrictions where appropriate.

- Preserve Managers will avoid the use of signs that attract attention to the specific location of species or ecological resources that are sensitive to human disturbance.
- Preserve Managers will use temporary signs to indicate habitat restoration or erosion control areas.
- Preserve Managers will use barriers and informational signs to discourage shortcuts and unapproved ("rogue') trails from being developed or used in the trail system, including placing signage at entry to specific problem areas.
- Signs that identify expected wildlife crossings and corridors will be posted within 100 feet of each point where a road traverses the wildlife corridor.
- **Speed Limit.** The speed limit on any roads that extend across Preserve properties will be identified and addressed in the RMPs, and signs will indicate a maximum of 10 mph for access roads within Preserves.

7.2.3.4 Hydrology and Erosion Control

Changes in natural hydrology or reductions in plant cover within or upstream of the Preserves can have many adverse effects on water quality, natural communities, and native species and their habitats in waters, wetlands, and upland areas.

- The City and Preserve Managers will implement permanent or temporary BMPs as necessary to reduce unnatural erosion (e.g., excess scour and undercutting) or sedimentation in streams, washes, or vernal pools caused by artificial changes in upstream hydrology or plant cover.
- The City and Preserve Managers will inspect and maintain vulnerable areas, such as trails, roads, other disturbed areas, and drainages to avoid unnatural erosion, especially after a heavy rainstorm to identify problems with erosion and sedimentation. Install BMPs as soon as possible to avoid further damage.
- If existing flood risk management channels are present in the Preserves, coordinate the performance of operations and maintenance (these activities are permitted outside the Plan), such as clearing and dredging, during the months of September through February to avoid disturbance during the breeding season of riparian birds (February 15 through September 1) and other breeding wildlife.

7.2.3.5 Land Uses within Preserves

Conditionally Allowed Uses

The following uses are typically conditionally allowed within a Preserve property, provided that it can be demonstrated that the uses have no impact to Covered Species and resource values within the Preserve and they conform with the Preserve RMP:

- **Compatible Hiking, Biking, and Equestrian use**—Hiking, biking, and equestrian use on formal trails and limited creation/maintenance of trails for hiking, biking, or equestrian use is conditionally allowed in some Preserves, provided that a) such use is compatible with the Preserve ecosystem, b) trails are sited to avoid Covered Species and their habitats and other sensitive

resources, c) trails are marked with signage and/or directed with barriers (e.g., at trail short-cuts) to keep all activities strictly on the trails, and d) trails are monitored and patrolled for compliance, maintained, and designed to meet all other goals and guidelines of the Subarea Plan. In some Preserves no public trail use will be allowed, while in others biking, dogs, and/or equestrian use will not be allowed based on the biological resources involved. See description of public access below.

Prohibited Uses

The following land uses and activities are prohibited within all Preserves:

- **Development** involving the construction of buildings, roads, parking lots, battery storage facilities, or other structures. This includes residential, commercial, industrial, and institutional development. As described in Section 4.3.3, *Compatible Uses within Subarea Plan Managed Preserve*, however, the Subarea Plan provides for up to 3.5 acres of impact to habitat within the Managed Preserve from Essential Public Projects that can meet the requirements for a deviation by demonstrating that avoidance of the Managed Preserve is impracticable.
- **Agricultural uses**, including all row crops, orchards, improved pastures, nurseries, greenhouses, and feedlots.
- **Active recreation**, including ball fields, golf courses, improved park facilities, bicycle jump or BMX ("pump") tracks, off-road vehicle use, geocaching, or any other recreational activity that involves off-trail use or requires the conversion of native habitats (e.g., pruning, clearing, grubbing, or planting of nonnative vegetation or turf grasses) or facility construction (e.g., equestrian facilities, buildings, or paved pathways) or otherwise removes or negatively affects natural vegetation or wildlife habitat values.
- **Camping**.
- **Mineral extraction**, including all sand and gravel mining activities.
- **Landfills**.
- **Itinerant worker or homeless encampments**.
- **Brush control or defensible space management.** Brush control or defensible space that exceeds the required distance from existing structures pursuant to the City's Municipal Code. New development adjacent to Preserves must accommodate defensible space zones or other vegetation management actions outside of the Preserve boundary and not encroach into the Managed Preserve except where it is necessary on existing Preserves to prevent the loss of human life or property during a fire event or prevent the loss of or to enhance sensitive biological resources. New development adjacent to Preserves must accommodate defensible space zones or other vegetation management actions outside of the preserve boundary.
- **Shooting, archery, target practice, hunting**.
- **Paintball, airsoft, etc**.
- **Nighttime Recreation (e.g., nighttime trail use by mountain bikes or hikers)**

- **Off trail/off-road activities except by authorized users (e.g., Preserve Managers guiding school groups)**
- **Off-road vehicle use, including motorized bicycles**.
- **Aerial drone use except by Preserve Managers or for authorized Preserve monitoring**.

7.2.3.6 Land Uses Adjacent to Preserves

Preserve Managers and the City will enforce trespassing regulations and prevent and remove illegal intrusions into Preserves. Barriers (fencing, rocks/boulders, appropriate vegetation) and/or signage along Preserve boundaries will be installed by the City or Preserve Manager where necessary/appropriate to protect the Preserves from unauthorized access and direct public access to appropriate locations. Additionally, educational information will be disseminated to nearby residents and landowners by Preserve Complex Managers and the City to heighten their awareness of the Preserves' role in achieving the Subarea Plan biological goals, and provide information regarding approved access (where Preserve public access is allowed), appropriate and suggested native plantings nearby to the Preserves, restrictions on construction or disturbance within Preserve boundaries, pet and livestock control, fire management, spillover lighting requirements and recommendations, irrigation over-spray, spillover noise requirements, and other adjacency issues and prohibitions.

In reviewing proposed new developments nearby (typically within 300 feet) to the boundaries of the Managed Preserve and existing Preserves, the City will ensure that the new development adheres to the following adjacency requirements to avoid and minimize potential impacts to the nearby Preserve, including native species and vegetation communities. The City will require the site design review process for new developments to consider the following topics: access and staging areas, defensible space zones, predator and exotic species control, fencing, signage, lighting, increased stormwater and urban runoff, increased erosion, increased noise levels on nearby parcels, landscaping/irrigation, and potential unauthorized public access to adjacent Preserves. The review will identify measures to avoid or minimize impacts to biological resources associated with all elements of project design within new developments. Avoidance and minimization measures to reduce or eliminate impacts to biological resources will be incorporated as enforceable conditions in all City permits, operations, and authorizations to proceed with work.

The following adjacency guidelines will be implemented for new developments or Covered Activities, as applicable:

- **Drainage**—All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, excess water, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem processes within the Preserves. This will be accomplished using a variety of methods, including natural detention basins, grass swales, or mechanical trapping devices.
- **Lighting**—The City's Municipal Code will be modified as necessary to require lighting as directed herein to avoid and minimize spillover lighting into Preserves. Nighttime lighting from all developed areas nearby to the Preserve will be fully shielded and directed downward and,

wherever practicable and consistent with public safety, away from the Preserve, wildlife, and all native vegetation communities. Low-pressure sodium lighting should be used whenever possible unless other lighting technology with less ecological impacts becomes practicable. Nighttime lighting of roadways, parking lots, walkways and similar features nearby to or within Preserve lands will be avoided wherever practicable and otherwise will utilize: the minimum lighting (number and intensity of lights) necessary, the lowest height necessary, lighting that is directed downward and away from Preserve lands, and light sources that are fully shielded so as to only illuminate the area that requires the lighting (e.g., only illuminate the road and sidewalk). Lighting in new or modified developments nearby to Preserves shall comply the City's revised Municipal Code requirements for exterior lighting.

- **Noise**—Human activities and uses within and nearby to the Preserves will be designed and implemented to minimize noise impacts to Preserves and wildlife. Covered Activities nearby to Preserves will implement minimization and mitigation measures for unavoidable noise impacts from these Covered Activities that would be above 60 dBA Leq hourly (or for project noise impacts that would be measurably above ambient noise levels, if ambient noise levels are above 60 dBA Leq hourly) at the Preserve, including incorporating noise reduction strategies in equipment, siting and site design, features, timing, noise barriers, landscaping, and buffer separation.
- **Invasive species**—No invasive nonnative plant or animal species will be introduced into or maintained in areas within or nearby to the Preserves. All open space areas (e.g., golf courses, public parks, landscape areas) nearby to the Preserve areas will be planted and maintained with native species that reflect the nearby native natural communities within the Preserve. Invasive plants will be avoided/removed on all City-controlled properties in the Plan Area.
- **Buffers**—There are no requirements for buffers outside the Managed Preserve, except as may be required for wetlands pursuant to Federal and/or State permits or by local agency CEQA mitigation conditions.
- **Defensible space zones**—Defensible space zones will be fully contained on adjacent properties for all new development. Prior to implementing new developments adjacent to Preserves, the local fire authority and the City will review and approve proposed defensible space to ensure that no new defensible space areas will be located within the Preserve properties. Changes to defensible space that will impact a Preserve will require an Amendment to the Subarea Plan.
- **Fencing, barriers, and edge treatment**
    - Fencing, barriers, or functional edge treatment and signage will be required for all new or modified projects developed on lots abutting (or effectively adjacent to) Preserves and shall be designed to prevent intrusion of domestic animals and people into the Preserve. This requirement may be waived with written approval from the Wildlife Agencies.
    - The use of gates, openings, or other entry means besides allowed formal trails will be prohibited in project fencing, barriers and edge treatment that would allow human access to the Preserve. This requirement may be waived with written approval from the Wildlife Agencies.

7.2.3.7 Public Access and Recreation

The primary purpose of the Managed Preserve is to meet the biological goals and objectives required for the proposed Covered Species identified in the Subarea Plan. While the Managed Preserve is not a public park, the City will plan for opportunities to provide compatible passive recreation in the form of limited trail use in some areas within the Managed Preserve, where appropriate. A Recreation Management Plan will be developed as part of the Resource Management Plan prior to Preserve areas being available to public access. The Recreation Management Plan will be reviewed and approved by the Wildlife Agencies. Passive compatible recreation activities within the Managed Preserve will be limited to daytime hours (with specific noted exceptions) and only for those activities that are compatible with the ecological functioning of the Preserve, including protection of the Covered Species and natural communities. The location, type, seasonal timing, and frequency of compatible recreation activities in the Preserves will be determined prior to Preserve areas being available to public access. Existing recreational uses will be evaluated and will be modified or removed to reduce or remove impacts on and stressors to biological resources including Covered Species and their habitats.

Passive Compatible recreational use in the Preserves will be monitored, patrolled, and managed to ensure recreational uses are consistent with the protection and enhancement of biological resources. Passive recreation activities consist of walking, jogging, hiking, bird watching, non-competitive/non-electric mountain biking in appropriate areas, equestrian use in appropriate areas, and limited picnicking where appropriate and consistent with a Recreation Management Plan; all these uses will be limited to formal trails, trailheads, and picnic areas. Existing trails will be modified and managed to promote the maintenance/enhancement of habitat functions and values within Preserves. Passive recreation may be allowed within some of the Preserves but will be managed and directed away from sensitive biological resources including Covered Species and their habitats. All existing trails will be assessed during development of the Recreation Management Plan (as a component of the applicable RMP) to determine the location, appropriate uses (if any), trail width (existing and ideal), recommended changes, and trails or roads designated for decommissioning/restoration.

To ensure that trails within the Managed Preserve will be designed and sited to be compatible with resource protection, the following trail siting criteria will be followed. Deviations from these criteria require Wildlife Agency review and approval as a component of the RMP development.

- Locate trails and view overlooks in the least sensitive areas of the Managed Preserve, as determined by presence or proximity of Covered Species and rarity of vegetation type. Utilize existing access roads, fire roads, utility roads/easements, and existing non-designated trails for trail alignments, if appropriate.
- Locate trails along the edge of urban development and other land uses (e.g. agriculture) adjacent to the Managed Preserve and other conserved lands where feasible to reduce edge effects.
- Siting of trails within riparian areas, wetlands, and vernal pools will be minimized consistent with the Aquatic, Wetlands, and Riparian Protection Standards (Section 5.5.5). Trails crossing creeks and drainages should be perpendicular to the channel in the shortest distance possible or utilize existing disturbed areas or trails. Locate staging areas for equestrian use at a sufficient distance (e.g., 300-500 feet) from areas of the Preserve with riparian and coastal sage scrub habitats.

- Trail alignments should incorporate appropriate buffers from sensitive biological resources.
- Minimize siting trails within or adjacent to active wildlife linkages and corridors, including canyon bottoms.
- Construct trails to prominent features or viewpoints, as ecologically appropriate, which are likely to attract trail users, thereby preventing off-trail trampling and compaction.

The following requirements will be made part of the Recreation Management Plan in coordination with the Wildlife Agencies. The City's Preserve Manager will:

- Determine appropriate levels of passive recreational activities, if any, within the Preserve, depending on the resources to be protected and season (if applicable). Every three years review access and recreational uses within the Preserve to determine their consistency with the evolving Preserve management policies, practices, and priorities under the adaptive management program.
- Designate authorized and approved formal trails as part of the development of RMPs for each Preserve if public access is allowed. Provide signage within a Preserve for authorized formal trails and trails that have been selected to be decommissioned. Provide barriers on trails that have been decommissioned, such as vertical mulching[22], rock barriers, fencing, etc. Where there are existing authorized formal trails (designated as part of a regional or general plan) that occur within a Preserve and are compatible with the goals and objectives of the Subarea Plan, these trails will be incorporated into the RMP as appropriate.
- Prohibit nighttime use of trails except in emergencies. Certain formal trails adjacent to and across the San Diego River may remain accessible to the public during nighttime hours.
- Monitor existing access points to the Managed Preserve to ensure that they do not degrade biological values, and site future access areas away from the most sensitive biological resources (e.g., riparian areas, areas that provide habitat for Covered Species).
- Seasonally or temporarily restrict access to certain trails if deemed necessary, such as to prevent disturbance of breeding activities or to minimize the potential for erosion.
- Permanently restrict specific uses on certain trails where ecologically appropriate, including specific restrictions on dogs, bikes, and/or equestrian access, with appropriate signage.
- Close and restore unnecessary and/or ecologically inappropriate trails to minimize or ameliorate biological impacts based on the assessment described above. Close and restore steep eroding trails and/or trails that bisect sensitive habitat types with the potential to support Covered Species. Monitor trails/trail use and provide barriers to and restoration of unauthorized trail widening and short-cutting of trails (e.g., at switchbacks). Install signage, post and cable, rock barriers, vertical mulching, and/or restore native vegetation in order to eliminate/prevent recreation activities on unauthorized trails and trail shortcuts. Quickly provide signage and

[22] Vertical mulching is a trail closure and restoration strategy technique that involves the placement of structure (live vegetation, rocks, dead shrubs and "snags", native bunch-grasses, and various woody material) within the confines of a closed roadway or trail surface, both on the ground surface and in a vertical manner, designed to conform with adjacent vegetation and terrain. The goal, in part, it to make closed trails literally disappear into the landscape.

barriers to newly developed unauthorized trails and trail shortcuts to prevent establishment of use.

- Relocate existing trails away from sensitive biological resources or restrict their use so that Covered Species or sensitive species (e.g., nesting raptors) and their habitats are not adversely affected.
- Install water breaks on steep trails to prevent accelerated runoff and erosion.
- Establish regular patrols to identify unauthorized uses, trail maintenance needs, garbage, vandalism, and habitat degradation and enforce Preserve use restrictions. Utilize cameras and other technologies and a permitting system as appropriate.
- Limit or restrict uses in important wildlife areas during the breeding season, as determined appropriate.
- Minimize adverse effects of passive recreation, such as trampling vegetation and erosion by installing barriers or fencing; maintain trail surfaces annually or as needed, to minimize erosion; and install trail features (e.g., waterbars) to minimize erosion and sedimentation.
- Provide and maintain litter control measures, such as closed garbage cans and recycling bins, at access points/trailheads in each of the preserves.
- Site any picnic areas at the edges of Preserves in appropriate locations per conservation of Covered Species and ecological resources.
- Collect garbage frequently and instruct (through signage and outreach) users and nearby landowners not to feed wildlife.
- Develop an educational/outreach program to inform the public and nearby landowners about allowable uses and appropriate activities in and around the Preserves. The program may include distributing brochures in surrounding neighborhoods, working with homeowners associations in the vicinity, developing an informational website, installing educational kiosks, providing outdoor experiences, etc.
- Accommodate compatible scientific research within the Preserves by allowing researchers and students to access some areas per authorization and guidance of Preserve Managers. Scientific research projects are subject to approval by the Preserve Manager in coordination with the Wildlife Agencies.
- Preserve Manager will coordinate with special interest groups and the City to encourage volunteer opportunities, such as trash pick-up and weed removal programs that support the goals and objectives of the Subarea Plan.

Equestrian Use

Equestrian use of Preserves will be limited solely to existing authorized equestrian trails (not including trails to be decommissioned for restoration or protection of biological values). Where equestrian uses are allowed within Preserves, the following requirements will apply:

- Prohibit horses along riparian areas and minimize creek crossings. Ensure existing trails are relocated away from riparian or other sensitive habitat.
- Equestrian use in Preserves will not be permitted where such disturbance would likely be ecologically incompatible with the Preserve or would not likely be effectively managed or controlled/enforced (e.g., sufficient patrols to control off-trail use).
- Limit equestrian use to specified trails that are wider than foot trails (minimum of 8 feet wide) to prevent trail edge disturbance, with grades no greater than 25 percent. If trails become degraded because of heavy use, rotate or limit use during certain seasons to minimize further degradation.
- Restrict development of new corrals, arenas, stables, and other associated equestrian facilities in the Managed Preserve. Covered Activities such as new trails will be included in a Trails Plan that will be part of the Recreation Management Plan and sited adjacent to existing roads in previously disturbed areas and away from Covered Species, their habitats, and sensitive biological resource areas. This construction disturbance will be offset by restoration of habitats/natural communities with equivalent or greater ecological functions and values.

Mountain Biking

- Mountain bike trails may be allowable only in areas that are not highly susceptible to erosion and outside of riparian and/or wetland areas or other biologically sensitive areas as identified in Trails Plan.
- Biking in Preserves will not be permitted where such disturbance would likely be ecologically incompatible with the Preserve or would not likely be effectively managed or controlled/enforced (e.g., sufficient patrols to control rogue or off-trail use).
- Maintain trails that are wider than foot trails (minimum of 6 feet wide) to prevent trail edge disturbance, with grades no greater than 25 percent.
- Rotate bike use by closing and rehabilitating trails periodically or permanently to prevent trail degradation if a problem develops as determined by the Preserve Manager.
- Construct barriers to restrict access to sensitive areas, such as vernal pools.
- Post the maximum allowed speed of bicycles to be less than 10 mph.
- Prohibit competitive mountain bike racing.
- Prohibit electric bikes, electric-assist bikes, or other motorized vehicles within the Preserves except as provided in an approved RMP.

Enforcement of Public Access

Damage caused by unauthorized public access is one of the greatest threats in a Preserve system near urban population centers. Without enforcement and fines for violations, it is often difficult to change human behavior, especially in areas that have been used historically for activities that are not compatible with habitat conservation (e.g., off-road vehicle use).

Recognizing the importance of appropriately managing recreational use within the Managed Preserve to protect habitat areas from intrusions, Preserve Managers and the City will implement the following actions to increase enforcement capabilities and thereby minimize impacts of recreational use on Preserve habitat values:

- Install informational signage that includes the citation information associated with illegal trespass. Clearly identify allowable and prohibited uses within the Preserve Complexes.
- Public access in Preserves will not be permitted where such activity/disturbance would likely be ecologically incompatible with the Preserve or would not likely be effectively managed or controlled/enforced (e.g., sufficient management or patrols to control and manage uses).
- Monitor and document the use of the Preserves every three months to assess potential for impacts from these uses.
- Trail user groups will be encouraged to develop and participate in "self-monitoring and policing" programs to minimize instances of off-trail activities and other abuses of ecological resources within the Preserve.
- As allowed by state and local regulations, Preserve Managers and their staff may be given the authority to issue citations for misuse of trail and other Preserve facilities. Only specific state and county entities are given the authority to issue citations. The City will develop appropriate ordinances, as needed, for enforceable and citable prohibitions related to Preserves.
- Preserves that allow public access will be regularly patrolled.
- Fines will be levied for abuse of Preserve areas, including actions resulting in degradation of Covered and sensitive species' habitats. Preserve Managers will coordinate with law enforcement to issue fines or more serious penalties, as needed.
- Repeated offenses by users that degrade Covered and sensitive species' habitats will provide the grounds for temporary or permanent closure of trail segments and, where necessary, closure of an entire Preserve to public access as a means of avoiding adverse impacts on natural communities/habitats/species within the Preserve. Such temporary or permanent closures will also serve to educate users concerning the need to obey Preserve rules and regulations, thereby attempting to reduce future recreational impacts on biological resources of the Preserve.

Enforcement of laws and regulations in Preserves falls into two categories of offenses. First are the minor infractions, such as hiking or riding off trail or on a closed trail, unauthorized equestrian or mountain biking use, off-leash dog use, and over-watering the nearby landscaping that leads to erosion or degradation on Preserve properties. Minor infractions will be handled by the Preserve Manager through patrols and subsequent discussion and education of the offending party. Preserve Managers will work with the City and local community groups on a public education program to explain goals and regulations as well as educate the public about the Preserve's biological resources and the Subarea Plan.

Major infractions would include illegal off-road vehicle use; unauthorized access to closed Preserves, illegal dumping; repetitive hiking or riding off trail or on closed trails; vandalism, including cutting vegetation or building new trails, building trail shortcuts, tunnels, or bike jumps; illegal encampments

(itinerant workers and transients); and excessive repeat offences of minor infractions. Unfortunately, vandalism is a common occurrence in many Preserves, and fencing and signage are frequent targets of vandals. Involvement of law enforcement officials is necessary to address major infractions.

7.2.3.8 Fire Management

Preserve Managers will have the responsibility for any fire management/brush abatement on lands they manage. Preserve management for fire will include the following elements, which will be incorporated into a fire management section of the RMPs or as a separate Fire Management Plan (FMP):

- In consultation with the City of Santee Fire Department, the Preserve Manager will prepare site-specific fire management information as part of the preparation of an FMP that will be included within the Preserve RMP or as a stand-alone document prepared under the same timeline as the RMP. The FMP will establish policies and approaches to maximize protection of biological resources during fire suppression activities, to the degree feasible. Include the City of Santee Fire Department contacts and guidelines for pre-fire prevention activities, fire suppression, and post-fire restoration. The FMP will identify environmentally sensitive lands (ESLs) that need to be avoided so as to avoid unmitigated impacts on biological and cultural resources during fire suppression activities. The ESLs will include Covered Species locations, suitable habitat, and sensitive natural communities. A map will be prepared that shows fire management and ESLs and will include the following:
    - Preferred access points and access routes on the Preserve and potential staging areas for fire suppression vehicles and activities.
    - Covered Species and their suitable habitats, sensitive species, and sensitive natural communities that are highly susceptible to fire or fire suppression activities (e.g., coast prickly pear scrub, and locations of previously recorded rare plant observations). The ESL map will distinguish between areas that will be protected from fire versus areas that will be protected from surface disturbance (e.g., grading) based on the ability of target resources to recover from these impacts in the short- and mid-term with passive or active restoration, and any requirements to provide active restoration. It is expected that natural community areas within Preserves that need to be protected in advance from fire for ecological reasons would be quite limited, with specific protections expected around and within larger coast prickly pear scrub patches and some rare plant locations.
    - Location of recommended bulldozer lines, if these are a potential component of the fire suppression strategy for protection of the Preserve's biological resources.
- Conduct pre-fire management, as appropriate, such as the limited removal of combustible, nonnative plants in accordance with the Fire Code and Section 4.2.8.1, *Defensible Space Activities*. The City or Preserve Manager will provide mitigation measures to offset any associated native natural community disturbances when performed to protect areas and/or structures outside of the Preserve.
- Coordinate with surrounding landowners to ensure that adequate setbacks are established that allow defensible space to be established outside of the Preserve boundaries (up to 100 feet from

structures and 50 feet from roads) for new structures and facilities. As indicated above, the City will ensure that any new developments authorized adjacent to Preserve lands will incorporate the appropriate buffers needed for defensible space inside those property boundaries (and not within the Preserve). The City, adjacent landowners, or Preserve Manager will provide mitigation measures to offset any associated natural community disturbances on the Preserve when performed to protect areas or structures outside of the Preserve.

- When available, established defensible space will include existing roads and disturbed or developed habitats that are not important for restoration to support Covered Species, thus typically avoiding impacts to Covered Species and other sensitive habitats. Where feasible, development configurations on Preserves will provide approximately 15 feet of horizontal clearance to enable fire authority vehicles access to access roads within the Preserve.
- Conduct emergency post-fire erosion control on Preserves where appropriate. Repair and restore fences, trails, culverts, and landscaped slopes to pre-fire conditions. Monitor post-fire recovery closely and immediately remediate new problems associated with erosion, sedimentation, invasion by nonnative species, etc.
- Plan all post-fire actions, such as active restoration, invasive species removal, erosion control, or trail stabilization, in coordination with and approval from the City and Wildlife Agencies prior to project initiation.

7.2.3.9 Public Outreach and Education

Public education and involvement are critical components for ensuring public support that promotes the successful conservation of the Managed Preserve. If the public is properly informed of the biological values, goals, objectives and restrictions within the Managed Preserve, it is more likely that management goals and guidelines will be respected, followed, and promoted. The Subarea Plan Coordinator, Preserve Steward, and Preserve Managers will coordinate two times per year to determine the most effective methods and promotional materials for educating the public. The City will ensure that public outreach and education will occur on an annual basis. This will include the following:

- Hold annual public meetings to present information regarding Preserve goals, objectives, guidelines, restrictions, and compatible uses. These meetings may be held concurrently with the annual Subarea Plan reporting meeting.
- Establish a website that provides information on the Preserves, Preserve Manager contact information and links to additional information on ecosystems within Santee, Covered Species, Subarea Plan and Preserve goals and objectives, and Subarea Plan guidelines including the Subarea Plan itself.
- Install signs, displays, fences, kiosks/boards, and provide pamphlets that explain Preserve rules and management goals and promote citizen stewardship.
- Develop a volunteer program that addresses a variety of education and management issues, including, but not limited to, preparation of educational materials, trail repair, erosion control,

invasive species removal, native habitat and plant restoration, trash removal, biological monitoring, and management patrols.

7.2.4 Preserve Monitoring Guidelines

This section describes the monitoring guidelines Preserve Managers must follow to collect the appropriate data to ensure that the goals and objectives of the Subarea Plan and individual Preserve Complexes are met, determine if Preserve management strategies are having the desired effect, and evaluate if underlying biological assumptions are supported by field-collected data from the Preserves. These guidelines include the following activities:

- Tracking the distribution and condition of natural communities and habitats throughout the Preserve Complexes.
- Periodic monitoring of Covered Species to determine presence/absence and/or relative abundance and distribution over time (see Table 7-2, *Type and Frequency of Periodic Surveys for Effectiveness Monitoring*).
- Monitoring to evaluate effectiveness of specific management actions.
- Identifying and monitoring threats to habitat conditions and Covered Species, including introduction or spread of invasive plant/animal species, wildfire, major climate events, unnatural erosion, night-time lighting, noise, fugitive dust, and fragmentation/edge effects.
- Monitoring encroachment, trespass, encampments, public uses, and other activities/uses and their effects, within and adjacent to the Preserve Complexes.

Biological monitoring of Preserve areas will measure the effectiveness of the overall conservation strategy on a Preserve in achieving the biological goals and objectives of the Plan, will support informed adaptive management decisions, and provide the Wildlife Agencies and regional habitat monitoring entities information to monitor trends of natural communities, Covered Species, and their habitats. The following guidelines have been developed to assist the Preserve Managers in prioritizing monitoring tasks and completing them efficiently and within the allocated budget and schedule.

The Preserve Managers, in coordination with the City, regional monitoring entities (e.g., SDMMP), and Wildlife Agencies, will identify the appropriate types of monitoring to address management questions and select monitoring methods that align with goals and objectives. In some cases, coordination with species experts or experts in monitoring or sampling design may be necessary.

Definitions of Monitoring Types

1. **Baseline (Inventory) Monitoring.** Baseline monitoring establishes conditions at a given point in time. This monitoring requires biological expertise. It is a one-time event that characterizes the status of conserved resources on a site, as well as threats and stressors, for planning or future comparisons. Baseline monitoring will also include an inventory of all existing trails, disturbances, and uses. Baseline monitoring is a necessary precursor to development of an RMP as it identifies both target resources and management issues. Baseline (inventory) monitoring will be conducted

within 1 year of Preserve acquisition for new Preserves and within 3 years from permit decision for City-owned Preserve Lands.

2. **General Stewardship Monitoring.** General stewardship monitoring identifies general management issues and documents whether management actions are carried out as planned. This monitoring is used for general land management activities (e.g., access control, trail closures, erosion control, fence repair, signage installation, routine invasive plant/animal inventory and control). General stewardship monitoring may commence upon Preserve acquisition and does not generally involve an adaptive management component because uncertainty in management outcomes is low and best management practices (BMPs) are available to address the issue(s) of concern. Preserve Managers will conduct monthly general stewardship monitoring visits of their Preserves as part of their ongoing responsibilities and will report any issues to the City within 1 week of discovery. As part of general stewardship monitoring, the status and identified threats to biological resources on the Preserve will be recorded.

3. **Effectiveness Monitoring.** Effectiveness monitoring is completed to assess the status and trends of Covered Species populations and threats and stressors within the Managed Preserve. Effectiveness monitoring requires biological expertise and it is the responsibility of the Preserve Managers to have effectiveness monitoring completed by qualified biologists. There are different types of effectiveness monitoring including (1) population assessments – focused surveys of Covered Species following approved protocols, (2) threats and stressor assessments – surveys to monitor threats and stressors for Covered Species, and (3) comprehensive mapping – used for mapping for vegetation communities on the Preserves. The information from the effectiveness monitoring is used to assess and track progress towards achieving the Subarea Plan's biological goals and objectives, as well as those of the individual Preserve property. Effectiveness monitoring will be completed, at a minimum, following the frequency and Covered Species' survey protocols listed in Table 7-2 in perpetuity. The effectiveness monitoring of the Preserves will be compared with baseline surveys and subsequent periodic biological surveys.

4. **Targeted Monitoring.** Targeted monitoring is used to answer specific management questions (hypotheses) and determine the effect of management actions on target resources. Targeted monitoring is completed by the Preserve Manager and may require additional input from outside sources with respect to sampling design, data collection, and analyses. In addition, results may be used to develop or refine BMPs. Targeted monitoring necessary to address site-specific threats to Covered Species and habitats within the Managed Preserve will be identified and prioritized by the Preserve Managers as part of the development of the Preserve Complex and Individual Preserve RMPs or through subsequent stewardship or effectiveness monitoring.

5. **Regional Monitoring.** The Preserve Managers and City will not be responsible for collecting additional biological monitoring data (beyond their obligations for the Subarea Plan monitoring) for regional assessments but may contribute to such efforts, as appropriate/feasible, through the collection of comparable data. Data comparability will be facilitated annually with the Preserve Managers of the Managed Preserve, Subarea Plan Coordinator, Preserve Steward, City Preserve Manager, Wildlife Agencies, regional monitoring entities, and other Preserve Managers in the Plan Area and across the San Diego region to support the use of similar methods, coordination of

survey schedules, and other relevant efforts regarding monitoring issues. The City will ensure access to the Managed Preserve will be available for other entities to collect regional biological monitoring data, as appropriate. In addition, the Subarea Plan Coordinator and Preserve Steward will coordinate the submittal of Preserve data to an appropriate data repository, such as the BIOS, CNDDB, or other regional databases.

Methods

There are many monitoring methods or protocols available to address goals, objectives, and management questions. Different methods may be required for different types of monitoring, and methods will be objective-driven. For example, if the objective is to determine whether a species occurs on the Preserve, then presence/absence monitoring will suffice. If the objective is to determine whether population size is stable, increasing, or declining over time (trend), full census/total counts, probability sampling (transects, quadrats, trapping lines, grids, visual encounter surveys), or mark-recapture surveys may be required, depending on level of impact of the monitoring effort. Further, linking change to specific threats will require some measure or assessment of those threats. Method selection will also be dependent on the monitoring target, as identified through existing protocols or conceptual models. For many resources, the monitoring target will be obvious (e.g., the species of concern), although targets may also be other objects of interest (e.g., burrows, nests, tracks). Finally, monitoring protocols should be consistent with other protocols in San Diego County and/or southern California to facilitate comparison and help inform data analysis.

It is important to point out that all species may not need the same level, frequency, or intensity of monitoring, depending on status and threats. Further, there are some species for which habitat monitoring may be sufficient to determine trends and threats. However, assumptions about species-habitat relations must be supported by data prior to relying on ”surrogate” monitoring (Atkinson *et al.* 2004). Surrogate monitoring is generally more appropriate for widely distributed species that do not require specific vegetation characteristics and would benefit from habitat management.

Table 7-2 presents protocols and a timeline for effectiveness monitoring of biological resources. It is possible these protocols will be adjusted over time, and the City will coordinate with the Wildlife Agencies, regional monitoring entities, and other Preserve Managers in and outside the Subarea Plan Area to ensure that the most current, established protocols are being used. Preserve Managers of the Managed Preserve, in coordination with the City, Wildlife Agencies, and other species experts, will review and select the most appropriate monitoring method(s) to address resource-specific management questions. The Preserve Managers will be responsible for ensuring monitoring is completed by qualified biologists. Monitoring methods, as determined appropriate for each individual Preserve, will be included in RMPs.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
Vegetation	Comprehensive	Baseline, then updated every 10 Years	Vegetation communities will be mapped using two compatible classification systems: (1) Holland (1986) as modified by Oberbauer (Oberbauer *et al.* 2008), and (2) the *Vegetation Classification Manual for Western San Diego County* (SANDAG 2011). Both systems provide methods to classify vegetation. Holland communities are described at a landscape scale and are currently used by Santee for mitigation analysis and to plan conservation targets for the Subarea Plan. The San Diego Vegetation Classification system provides a higher-resolution view into the specific vegetative components of communities and changes within communities over time and is more detailed than the Holland classification system. Vegetation mapping on Preserves will be completed based on field surveys using the San Diego Vegetation Classification system and cross-walked to the Holland classification (not the other way around).
Invasive Species	Threats and Stressors Assessment	Ongoing and Annually	Ongoing invasive plant and animal surveys will be conducted along natural conduits for dispersal (trails, drainages, disturbed areas) during general stewardship or biological monitoring, and/or through volunteer patrols. A comprehensive survey and assessment of the distribution of invasive plant and animal species will be completed annually and summarized in the Preserve Complex-specific annual report.
Covered Species			
Plants			
Rare Plants: San Diego Ambrosia San Diego barrel cactus San Diego goldenstar San Diego thornmint Variegated dudleya Willowy monardella	Population Assessment	5 years during the term of the Permits, depending on precipitation conditions and 10 years thereafter.	If the Preserve has potentially suitable habitat for rare plants, conduct comprehensive floristic surveys to identify rare plants within the Preserve following California Native Plant Society (CNPS) survey guidelines (CNPS 2001). Surveys must be conducted during the blooming period (spring, late summer and fall). Floristic surveys will be led by a qualified rare plant botanist. If populations of rare plants are identified during floristic surveys, map the perimeter of the current extent of the occurrence. This will represent the maximum extent of the occurrence. In subsequent years, the occurrence may vary in size, and the maximum extent will expand to include all areas occupied by the species across survey years.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
	Threats and Stressors Assessment	3 years during the term of the Permits and 6 years thereafter	Monitoring of known occurrences of rare plants will be conducted every 3 years following the most current Management Strategic Plan (MSP) Rare Plant Protocol (SDMMP 2017b) unless rains do not exceed 75 percent of the long-term average annual precipitation as measured during the July-June rain year. In survey years that do not meet this threshold, monitoring will occur during the next season that meets the above criteria as approved by the Wildlife Agencies. If less than 75 percent of the long-term average precipitation occurs for 3 consecutive years, monitoring will take place on the following year. The MSP Rare Plant Protocol is a rapid assessment protocol for assessing the status, habitat, and threats to a rare plant population. The current MSP rare plant protocol provides details on how to conduct monitoring and how to complete a Rare Plant Occurrence Monitoring Form. The protocol includes the following steps: • Within each sampling area, conduct occurrence status assessment as described in the protocol, using the Rare Plants Occurrence Monitoring Form. • Map the perimeter of the current extent of the occurrence and make a population estimate. This will represent the maximum extent of the occurrence. In subsequent years, the occurrence may vary in size and the maximum extent will expand to include all areas occupied by the plant across survey years. • Conduct photo-monitoring. • Conduct habitat assessment within sampling area using the Rare Plant Occurrence Monitoring Form. • Document threats assessment within the habitat plot on the Rare Plant Occurrence Monitoring Form. Assess the maximum extent of the rare plant population for any other threats.
Vernal Pool Rare Plants: San Diego button-celery San Diego mesa mint	Population and Threats and Stressors Assessment	Based on conditions	A tiered, three-level monitoring approach will be completed at vernal pool complexes that will be managed within the Managed Preserve that requires both qualitative and quantitative monitoring. Monitoring intervals include annual qualitative surveys, annual surveys for covered vernal pool plant species, and as-needed fairy shrimp density surveys based on qualitative observations. Monitoring approaches and methods are described in detail in Appendix G, *Vernal Pool Conservation Standards*. Monitoring would be the responsibility of the Preserve Manager in which the vernal pools are located and conducted by a qualified biologist so that all will follow a standard monitoring protocol.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
			Monitoring would be coordinated with regional efforts conducted by other entities (e.g., USFWS, SDMMP).
Invertebrates			
Crotch's bumble bee	Population Assessment	5 years during the term of the permits and 10 years thereafter.	• This protocol for surveying of Crotch's bumble bee on Preserve lands, and the similar protocol developed for the Fanita Ranch Onsite Preserve in CM 21 (see Section 5.3.3.5, *Fanita Ranch Subunit*), was developed using published survey methods for California bumble bees, generalized bumble bee life history, published papers specific to Crotch's bumble bee life history and behavior, the CDFW petition to list Crotch's bumble bee, and consultation with Crotch's bumble bee entomologists. This survey protocol may be refined and evolve as further research becomes available for this species. The City and Wildlife Agencies will coordinate to adjust changes to this survey protocol over the permit term. The protocol for preserve areas other than the Fanita Ranch Onsite Preserve includes the following: • Crotch's bumble bee surveys will be conducted within the Preserve where suitable habitat exists. Paved roads, bare ground, open water, and urban developed areas with pavement and/or residential footprints are excluded; however, due to the broad range of potential suitable habitat for this species and their foraging range, all other habitats are considered potentially suitable. • A habitat assessment will be conducted prior to surveys in order to determine the most suitable areas to conduct Crotch's bumble bee surveys. Areas with dense chaparral and/or steep inaccessible slopes will be eliminated from the survey area so that surveys can be focused within habitats that allow observers better visibility and more efficient coverage of areas within high abundance nectar/pollen sources. A qualified biologist will map areas with highly abundant nectar and pollen sources most commonly associated with Crotch's bumble bee. The species composition and flowering status will be documented within survey areas and subsequently tracked as it is expected to shift during the survey season. The flowering status across the survey area as a whole will be updated during each round of surveys in order to aid the surveyors in determining which polygons are most attractive as the surveys progress. • Crotch's bumble bee surveys will be conducted by a qualified biologist from 1 April through 31 July, during the most active flight period for Crotch's bumble bee and peak blooming period of potential nectar and pollen sources (Richardson 2023; Thorp et al.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
			1983; Xerces Society et al. 2018). Three (3) rounds of surveys, spaced at least 2 weeks apart, will be conducted during the survey period where at least one survey will occur during May, June and July. Surveys will be conducted between the hours of approximately 9:00 AM and 5:00 PM to encompass the bee's most active periods "hat are typically in the mid-morning and early afternoon (Richardson 2023). The ambient air temperature will be between 60 and 90 degrees Fahrenheit (F) as this temperature range is ideal for bumble bee foraging and flight activity (Couvillion et al. 2010). Surveys will only be conducted when appropriate environmental conditions are met. While surveying during overcast conditions is acceptable, surveys will not be conducted during overcast conditions if the ambient air temperature is less than 65 degrees or sustained wind speed is higher than 10 mph. Surveys will also not be conducted in fog or times of low visibility or precipitation heavier than a drizzling rain (Corbet et al. 1993; Uthoff and Ruxton 2022). If adverse weather conditions delay survey, surveys may be spaced a minimum of 1 week apart in order to complete the 35 rounds of surveys. • For nesting surveys, within non-developed habitats, the biologist shall look for nest resources (e.g., burrows) suitable for bumble bee use. If an area of bumble bee activity is detected adjacent to available nest resources, the biologist shall watch potential nest resources for a period of time (up to 30 minutes if early in the Colony Active Period, and up to 10 minutes during the peak of the Colony Active Period), looking for exiting or entering worker bumble bees. Worker bees should arrive and exit an active nest site with frequency, although the rate can vary depending on whether it is early/late or at the peak of the Colony Active Period. If a bumble bee worker is detected, then a representative shall be identified to species. This should be possible without capture in Santee. Biologists should ensure that 100 percent visual coverage of all potential burrow resources are surveyed. Therefore, the biologist should select a view that balances viewing multiple burrows while ensuring detection if bees are present. It is up to the discretion of the biologist regarding the actual survey viewshed limits from the chosen vantage point; but this limit shall not exceed 50 feet. The biologist will reduce the 50-foot limit as necessary to ensure 100 percent visual coverage of potential burrow resources depending on topography, vegetation height and cover, and other factors. This approach should allow the biologist to assess multiple burrows at one time to sufficiently determine if bees are entering/exiting them.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
			• If a Crotch's bumble bee nest is suspected, the surveyor can block the entrance of the possible nest with a sterile vial or jar until nest activity is confirmed (no longer than 30 minutes). A photo voucher of the bee species shall be collected and the location mapped using GPS. If identification is not feasible without capture, then the project proponent will consult with CDFW prior to allowing the biologist to capture and identify to species (using the protocol for the California Bumble Bee Atlas project managed by the Xerces Society) to determine if a CESA Memorandum of Understanding (MOU) and/or Scientific Collecting Permit (SCP) would be required. • For larger preserve properties (greater than 200 acres), the Preserve Manager may propose a modified survey methodology that incorporates a stratified random sampling design focused on the portions of the Preserve with the more highly abundant nectar and pollen sources most commonly associated with Crotch's bumble bee. The modified survey methods would be reviewed and approved by the Wildlife Agencies as part of the review and approval of the RMP.
	Threats and Stressors Assessment	3 years during the term of the permits and 6 years thereafter.	If a Preserve has known occupied habitat of Crotch's bumble bee, a habitat evaluation and threats assessment will be conducted every 3 years. The Preserve Manager will evaluate if enhancement of floral resources in suitable areas of the Preserve is feasible, where appropriate, with a focus on the establishment of "preferred native plant species" (e.g., salvia, milkweed, phacelia) and floral diversity and abundance available throughout the colony life cycle with early, mid, and late blooming native plants. Limited use of herbicides and insecticides will be monitored and evaluated in relation to bloom period of potential floral resources and the requirement for avoidance all applications of insecticides during the queen and gyne flight seasons (February-March and September-October, respectively) within and adjacent to the Preserve. No honey bee hives will be introduced within the Preserve.
Hermes copper butterfly	Population Assessment	5 years during the term of the permit and 10 years thereafter	Habitat suitability will be determined using the "County of San Diego Guidelines for Hermes Copper (Lycaena hermes), which can be found at the following link: https://www.sandiegocounty.gov/content/sdc/pds/procguid.html#biological. If suitable habitat is identified, surveys will be conducted following the U.S. Fish and Wildlife Service protocol, which can be found at the following link: https://www.fws.gov/media/hermes-copper-butterfly-survey-protocol.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
	Threats and Stressors Assessment	3 years during the term of the permit and 6 years thereafter	If a Preserve has known occupied habitat of Hermes copper butterfly, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment will focus on the distribution and quality of mature spiny redberry and threats and stressors (invasive species, changes in vegetation type cover resulting from alteration of fire regime and/or climate change) as it pertains to the habitat needs of Hermes copper butterfly.
Quino checkerspot butterfly	Population Assessment	5 years, depending on weather conditions during the term of the permit and 10 years thereafter	For Preserves that have host plant populations as determined during the habitat assessment, baseline and effectiveness monitoring surveys will include focused surveys for Quino checkerspot butterfly, conducted at the height of the flight season in the highest quality habitat. Surveys must be conducted by a qualified biologist holding a USFWS recovery permit for this species. Except for the numbers of surveys, the surveys will follow the USFWS survey guidelines (USFWS 2014) regarding timing, weather conditions, and survey coverage. Focused surveys for Quino on the Managed Preserve will include at least three surveys. For Preserves less than 50 acres, surveys will cover all suitable habitat known to or potentially supporting host plants. For Preserves over 50 acres, surveys will cover up to 10 acres of suitable habitat known to or likely to support host plant, and then 20 percent of the suitable habitat of the entire Preserve, focusing on highest potential habitat (as determined by professional judgment of the USFWS permitted surveyor). To avoid surveying during suboptimal seasons, if precipitation totals are 25 percent or more below the mean rainfall by February of the survey year (i.e., 5th year), the focused surveys would be postponed until the next year (6th year). If rainfall is similarly low in the 6th year, surveys would be postponed until the next year (7th year). Surveys will be conducted during the 7th year regardless of rainfall, and the monitoring period will be reset.
	Threats and Stressors Assessment	3 years during the term of the permit and 6 years thereafter	If a Preserve has known occupied habitat of Quino checkerspot butterfly, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment will focus on the function of host plants (invasive species, changes in vegetation type cover resulting from alteration of fire regime and/or climate change) as it pertains to the habitat needs of Quino checkerspot butterfly. If multiple populations exist, a threats assessment will be conducted for each occurrence.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
Vernal Pool Invertebrates: Riverside fairy shrimp San Diego fairy shrimp	Population and Threats and Stressors Assessment	Based on conditions	A tiered, three-level monitoring approach will be completed at vernal pool complexes that will be managed within the Managed Preserve that requires both qualitative and quantitative monitoring. Monitoring intervals include annual qualitative surveys, annual surveys for covered vernal pool plant species, and as-needed fairy shrimp density surveys based on qualitative observations. Monitoring approaches and methods are described in detail in Appendix G, *Vernal Pool Conservation Standards*. Monitoring would be the responsibility of the Preserve Manager in which the vernal pools are located and conducted by a qualified biologist so that all will follow a standard monitoring protocol. Monitoring would be coordinated with regional efforts conducted by other entities (e.g., USFWS, SDMMP).
Reptiles and Amphibians			
Belding's orange-throated whiptail and Blainville's horned lizard	Population Assessment	5 years during the term of the permit and 10 years thereafter	If a Preserve has potentially suitable habitat for Belding's orange-throated whiptail and/or San Diego horned lizard, conduct presence/absence surveys as part of baseline surveys and effectiveness monitoring every 5 years. Surveys will be completed using a focused visual encounter survey methodology for terrestrial reptiles during the peak activity period for the species. These surveys will follow the time-constrained search methodology (Corn and Bury 1990). Such surveys will also record visible presence/absence of preferred native ant prey for Blainville's horned lizard and Argentine ants.
Western spadefoot toad	Population Assessment	5 years during the term of the permit and 10 years thereafter	If a Preserve has potentially suitable breeding and/or primary (non-breeding) habitat for western spadefoot toad, surveys will be conducted as part of baseline surveys and effectiveness monitoring every 5 years. During the winter, spadefoot tadpoles can be observed in the breeding pools for up to 8–10 weeks after breeding, but can be as little as 40 days. Surveys for spadefoot will begin within a week of the first significant winter rains that fill breeding pools if known nearby breeding pools support tadpoles or calling western spadefoot males, otherwise surveys will begin as early as January and only after adequate rains have formed suitable potential breeding pools. Surveys for spadefoot eggs and tadpoles when potentially suitable pools are full can be done during the day and do not require nighttime surveys. If spadefoot are not detected after the significant rains that fill breeding pools, surveys will be repeated with the next rain event. Once breeding has been confirmed, surveys will be repeated at 4–6 week intervals to document the likely success or failure of the breeding effort. It is not uncommon for spadefoot to fail to breed every year. Nighttime surveys for adult spadefoot after potential breeding pools have

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
			filled; males call at night while floating on the water of breeding pools. Listening for calling males is a way to determine whether the species is present or not. The presence of eggs and tadpoles is also a positive sign that adults are present (Rochester *et al.* 2017). Pool size, depth, water temperature, and notes on habitat type and vegetation in and near the pools will be recorded (Fisher et al 2004).
	Threats and Stressors Assessment	3 years during the term of the permit and 6 years thereafter	If a Preserve has known occupied habitat of western spadefoot toad, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment will focus on the functions of breeding, transit, and upland aestivation/foraging habitat (e.g., invasive plant species, presence of nonnative animal species such as bullfrogs, crayfish, and Argentine ants, hydrologic modifications to potential breeding habitat and watersheds, changes in habitat resulting from alteration of fire regime and/or climate modifications, stressors to viable transit connections between breeding habitat and upland aestivation habitat) as it pertains to the ecological needs of western spadefoot toad. Document the level of perceived human activities or stressors in breeding, transit, and non-breeding habitat (e.g., trail and off-trail use, damage to breeding pools and watersheds, roadkill, barriers to movement, littering, vehicle use, encroachment, pesticide use, clearing, and vandalism) as well as other threats to determine management needs. At pools with water and western spadefoots present, quantitative measurements will be taken including: water depth, width and length of the pool, and water quality parameters (temperature, dissolved oxygen, conductivity, pH, turbidity). Relevant native and exotic wildlife species in or near the pool will be recorded. Upland habitat parameters and distance to roads will also recorded.
Birds			
Coastal cactus wren	Population Assessment	5 years during the term of the permit and 10 years thereafter	If a Preserve has potentially suitable or early-successional stage habitat for coastal cactus wren, comprehensive field surveys will be completed in conjunction with surveys for coastal California gnatcatcher. Because of similar habitat requirements of coastal cactus wren and coastal California gnatcatcher, surveys for coastal cactus wren will be completed simultaneously with coastal California gnatcatchers using the same protocols. The survey results will include the location of pairs and individuals observed onsite. A detailed mapping and inventory of all cactus scrub habitat on the Preserve will be completed and maintained using the same methods and protocols used by SDMMP to

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
			map cactus patches on other Preserve lands in San Diego County (TNC 2015). The cactus scrub habitat will be categorized based on cactus plant and patch size, density, function, , type, seral stage, presence of bare ground areas, and an assessment of apparent succession progression (e.g., post-wildfire) and threats (e.g., invasive plant and animal species, important coastal cactus wren predators such as Cooper's hawks and any likely artificial support factors, wildfire risk factors such as exotic or native plant fuel loads within and nearby to cactus scrub, Argentine ants, domestic cats, artificial runoff, nearby human uses or indirect effects). This information will serve as a baseline of cactus scrub habitat on the Preserve, support fire management planning and implementation, serve as a benchmark for restoration of disturbed cactus scrub or if a fire or other damage occurs, and facilitate the exchange of information with other regional entities on how to address cactus scrub habitat distributions.
	Threats and Stressors Assessment	3 years during the term of the permit and 6 years thereafter	If a Preserve has known occupied or formerly habitat of coastal cactus wren, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment will include an evaluation of the vegetation and potential coastal cactus food resources as it pertains to the needs of coastal cactus wren (e.g., native or nonnative vegetation overtopping cactus, low cactus density, etc.), and potential threats associated with wildfire, extended drought, relevant exotic plant and animal species including Argentine ants and domestic cats, nearby or intruding human uses/indirect effects, important predators, etc. Photo monitoring and qualitative site visits of each cactus scrub patch location within the Preserve will be completed.
Coastal California gnatcatcher	Population Assessment	5 years during the term of the permit and 10 years thereafter	If a Preserve has potentially suitable habitat for coastal California gnatcatcher, conduct comprehensive field surveys for coastal California gnatcatcher as part of baseline surveys and effectiveness monitoring to identify whether occupied habitats exist within the Preserve. Surveys will follow the USFWS' survey protocol for NCCP areas (i.e., from February 15 and August 30, a minimum of three (3) surveys shall be conducted at least one week apart.)
	Threats and Stressors Assessment	3 years during the term of the permit and	If a Preserve has known occupied habitat of coastal California gnatcatcher, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment will focus on the function of coastal sage

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
		6 years thereafter	scrub habitat (invasive species, changes in vegetation type cover resulting from alteration of fire regime and/or climate change) as it pertains to the habitat needs of coastal California gnatcatchers. Other potential threats include human activity, edge effects, and nest predation.
Least Bell's vireo	Population Assessment	5 years during the term of the permit and 10 years thereafter	If a Preserve has potentially suitable habitat for least Bell's vireo, conduct comprehensive field surveys for least Bell's vireo as part of baseline surveys and effectiveness monitoring to identify whether occupied habitats exist within the Preserve. With the exception of the number and time separation of visits, surveys for least Bell's vireo will follow the USFWS Least Bell's Vireo Survey Guidelines Surveys (USFWS 2001). A total of three surveys will be conducted, one in mid-May, one in June, and one in early July. The survey methods include: • Surveys will be completed by a qualified biologist familiar with vireo vocalizations, appearance, and behavior. • Surveys will be conducted between dawn and 11:00 a.m. and will not be conducted during inclement weather that may reduce likelihood of detection. • Data pertaining to vireo status and distribution will be recorded. Data pertaining to function of habitat for vireo nesting and foraging will be recorded. • Numbers and locations of brown-headed cowbirds within riparian areas will be recorded.
	Threats and Stressors Assessment	3 years during the term of the permit and 6 years thereafter	If a Preserve parcel has known occupied habitat of least Bell's vireo, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment will include an evaluation of the vegetation as it pertains to the needs of least Bell's vireo (e.g., nonnative vegetation outcompeting native saplings, low tree density, etc.). Also conduct photo monitoring at riparian locations within the Preserve. Take photographs at each photo station in the same cardinal direction as in previous years.
Western burrowing owl	Population Assessment	5 years during the term of the permit and	If a Preserve has potentially suitable habitat for western burrowing owl based on habitat assessment, presence/absence surveys will be completed as part of baseline surveys and effectiveness monitoring to identify if occupied habitat exist within the Preserve. Surveys will follow the methodology described in Appendix D of the CDFW Staff Report on

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
		10 years thereafter	Burrowing Owl Mitigation (CDFW 2012). A site is considered occupied if at least one burrowing owl has been observed occupying a burrow within the last three years. Occupancy may also be indicated by burrowing owl sign such as molted feathers, cast pellets, or excrement at or near a burrow entrance or perch site. The western burrowing owl survey methodology includes: • *Number of visits and timing*. For breeding season surveys, conduct four survey visits: (1) at least one site visit between February 15 and April 15, and (2) a minimum of three survey visits, at least 3 weeks apart, between April 15 and July 15, with at least one visit after June 15. Note: many burrowing owl migrants are still present in southwestern California during mid-March, therefore, exercise caution in assuming breeding occupancy early in the breeding season. For non-breeding season surveys, conduct at least four visits, spread evenly, throughout the non-breeding season. • *Survey method*. Conduct surveys in all portions of the Preserve that were identified in the suitable habitat. Conduct surveys by walking straight-line transects spaced 7–20 meters apart, adjusting for vegetation height and density. At the start of each transect and at least every 100 meters, scan the entire visible project area for burrowing owls using binoculars. During walking surveys, record all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls, so observers will also listen for burrowing owls while conducting the survey. • *Minimize disturbance*. Care will be taken to minimize disturbance near occupied burrows during all seasons and not to "flush" burrowing owls especially if predators are present to reduce any potential for needless energy expenditure or burrowing owl mortality. • *Weather conditions*. Poor weather may affect the surveyor's ability to detect burrowing owls; therefore, avoid conducting surveys when wind speed is >20 kilometers per hour and there is precipitation or dense fog. Surveys have greater probability of detection if conducted when ambient temperatures are >20°C, winds are <12 kilometers per hour, and cloud cover is <75 percent. • *Time of day*. Surveys between morning twilight and 10:00 a.m. and 2 hours before sunset until evening twilight provide the highest detection probabilities.

Table 7-2. Type and Frequency of Periodic Surveys for Effectiveness Monitoring (cont.)

Biological Resource	Effectiveness Monitoring Type	Frequency	Protocols/Methods
	Threats and Stressors Assessment	3 years during the term of the permit and 6 years thereafter	If a Preserve has known occupied habitat of western burrowing owl, a habitat evaluation and threats assessment will be conducted every 3 years. A threats assessment protocol similar to the SDMMP's Rare Plant Monitoring Protocol (IMG form) (SDMMP 2017b) will be used. The threats assessment methodology includes: • Focus sampling plots within high priority areas and in the vicinity of documented occurrences (i.e., direct observations made during that year's species survey, observations from previous years' surveys, or incidental observations made during other site visits). • To limit disturbance by the monitoring biologist, estimate the perimeter of the sampling plot rather than installing permanent markers or using a measuring tape. Threats and habitat assessments will be conducted concurrently and can be conducted at the same time as species surveys. • Threats assessment will include documentation the following with field notes: detection of predators such as coyotes or raptors, signs of unauthorized access such as off-road vehicle use, lack of mammal burrows, potential use of rodenticide, and thick or tall vegetation. Threats assessments can be conducted concurrently with species surveys and/or habitat condition assessments. • Annual habitat assessment will include documentation of the following with field notes: presence/absence of ground squirrels, presence/absence of mammal burrows, percent cover of bare ground, and presence/absence of brush piles, scattered shrubs or structures that could be used as cover to hide from predators. Take photographs of the sampling area as described in the rare plant protocol.

7.2.5 Adaptive Management and Monitoring of the Preserves Guidelines and Approach

Adaptive management and monitoring of the Preserves will be implemented by the Preserve Managers of the Managed Preserve to (1) ensure that City is in compliance with their Subarea Plan requirements on the Managed Preserve, (2) assess the status and trend of conserved resources (Covered Species, natural communities, ecosystems), (3) measure the effectiveness of conservation and management actions, and (4) provide information to guide and refine management actions to benefit Covered Species and other sensitive species, and improve the ecological health and stewardship of the Managed Preserve.

Adaptive management is an iterative decision-making and learning process used when there is uncertainty regarding resource responses to management actions (Atkinson *et al.* 2004, Williams *et al.* 2009, Lewison and Deutschman 2014) and will be employed in the management of the Managed Preserve. The HCP Handbook (USFWS 2016) defines *adaptive management* as "an integrated method for addressing uncertainty in natural resource management that incorporates a structured process for learning by doing." Pursuant to Section 2805(a) of the California Fish and Game Code, "'adaptive management' means to use the results of new information gathered through the monitoring program of the plan and from other sources to adjust management strategies and practices to assist in providing for the conservation of covered species." Adaptive management seeks to reduce uncertainty and improve success in achieving conservation goals through structured monitoring and evaluation of management actions. Under the Subarea Plan, RMPs for each Preserve or Preserve Complex that make up the Managed Preserve will include an adaptive management component.

This section provides the framework for developing, implementing, and evaluating conservation strategies to meet the measurable biological goals and objectives of the Subarea Plan and modifying management actions in accordance with new findings or changed conditions. In this way, adaptive management incorporates flexibility into long-term planning and management of Covered Species and habitats (Atkinson *et al.* 2004, Williams *et al.* 2009). General guidelines for Preserve-level monitoring and adaptive management are described below; detailed guidelines will be included in the RMPs.

7.2.5.1 Roles and Responsibilities

The monitoring and management of the Managed Preserve will be a cooperative effort between the City, Subarea Plan Coordinator, Preserve Steward, Preserve Managers, and Wildlife Agencies. The public will also be provided an opportunity to provide support to the Preserves by volunteering and self-patrolling. Individual Preserve Managers will be responsible for general stewardship and biological monitoring of the individual Preserves that make up the Managed Preserve. The City will provide control, oversight, and coordination of the Preserve Managers per its responsibilities under the Subarea Plan; this will be a primary role of the Subarea Plan Coordinator and Preserve Steward. The Preserve Managers will implement and monitor management actions and evaluate their effectiveness. Regular coordination on annual basis will occur among the Preserve Managers, Preserve Steward, and Subarea Plan Coordinator to ensure that all activities are consistent with

commitments made within the Subarea Plan. The Preserve Manager will be responsible for the development of the Preserve RMPs and providing Preserve-specific annual reports to the City. The City is responsible for the preparation of a Subarea Plan annual report that will include references to the individual Preserve annual reports and summaries of these reports. The annual reports will be submitted to the Wildlife Agencies by March 31st of each year. The Wildlife Agencies will review these documents and will be involved in regular Managed Preserve oversight through annual and other ad hoc meetings. These documents will be available to the public for review and input. In addition, coordination with other Preserve Managers in other Subareas will occur to help determine and address regional and local trends in management needs that may be occurring across the San Diego County region. See Subarea Plan Section 8.2, *Roles and Responsibilities,* for more details of the Subarea Plan participants.

7.2.5.2 Adaptive Approach

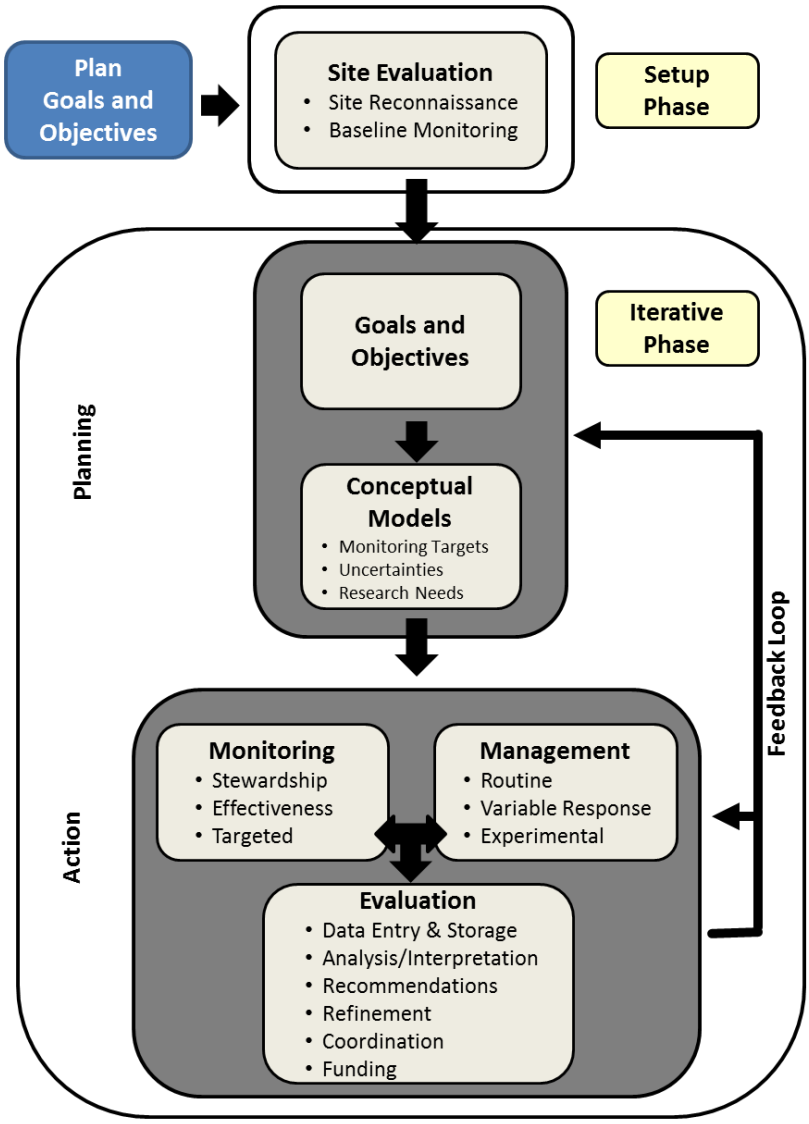
Monitoring, management, and adaptive management of the Managed Preserve will follow guidelines set forth in Atkinson *et al.* (2004) and refined in later documents (e.g., Hierl *et al.* 2007, Lewison and Deutschman 2014). This approach includes Setup, Planning, and Action phases (see Figure 7-1), and will be initiated once an RMP is approved and Preserve management has commenced. The Setup phase identifies Preserve-level conservation resources and potential threats and stressors. The Planning phase defines and prioritizes monitoring and management issues. The Action phase (1) Monitors resources to assess status or trends and determine management needs, (2) implements management actions to enhance resource functions and reduce adverse effects from threats and stressors, (3) evaluates resource response to management actions, and (4) modifies monitoring and management actions, as necessary. Except for the initial site evaluation, all elements are iterative; thus, planning and action phases will likely overlap.

Key elements of Preserve-level adaptive management and monitoring include:

- Site Evaluation
- Goals and Objectives
- Monitoring
- Management
- Evaluation

It is important to reiterate that adaptive management is used when there is substantial uncertainty regarding management outcomes. Management issues that do not include uncertainty do not require an adaptive management approach and will be prioritized for early action.

Figure 7-1. Adaptive Management Process



Source: Lewison and Deutschman 2014.

7.2.5.3 Adaptive Management and Monitoring Guidelines

Biological monitoring and management are mandatory elements of all NCCPs and HCPs and interdependent components of any adaptive management program. The sections below provide a structured process for developing, implementing, and evaluating monitoring and management actions to protect and enhance conserved resources, minimize or avoid threats to those resources, and improve management effectiveness and efficiency through iterative learning.

Site Evaluation

Site evaluation will be conducted as soon as possible but no later than 1 year from new Preserve acquisitions/establishment and within 1 year from Permit decisions for City-owned Preserve Lands. The Fanita Ranch Onsite Preserve will be evaluated prior to Permit decisions. The Preserve Manager

will evaluate available data for the individual Preserve area, conduct an initial reconnaissance monitoring visit(s) to identify what field surveys will be prioritized (e.g., for Covered Species), and a proposed timeframe, identify inappropriate and appropriate land uses and roads or trails that should be closed, and identify immediate management and maintenance needs (e.g., fencing, runoff from adjacent properties, invasive species, off leash pets, removal of structures or trash, dumping or inappropriate public access). Baseline (inventory) monitoring for conserved resources will be conducted subsequent to the site reconnaissance in order to obtain data necessary to assess resource status and management needs. Subarea Plan goals and objectives will focus the evaluation on key conservation resources (e.g., Covered Species, vegetation communities, ecosystems, connectivity) and potential threats and stressors.

Existing subregional and Preserve-level documentation will be reviewed to identify and describe conservation resources (including types of data available), data gaps, and site history (i.e., land uses, fire, any previous management and monitoring) relevant to resource management. Potential data sources include (but are not limited to) the Subarea Plan, biological reports, regional databases (e.g., California Natural Diversity Database [CNDDB], Biogeographic Information and Observation System [BIOS], Cal-IPC Weed Mapper), other conserved lands near the Preserve, and expert opinion (species experts, science advisors, other Preserve Managers, Wildlife Agencies). Based on this assessment, the Preserve Manager will prepare a Preserve-specific list of conservation resources and data gaps, including potential threats and stressors.

As part of the initial site reconnaissance or subsequent baseline surveys, the Preserve Manager will map vegetation communities (using the *Vegetation Classification Manual for Western San Diego County* [SANDAG 2011]) and level of disturbance, identify threats and stressors, and evaluate the existing and future (e.g., with passive or active restoration/enhancement) potential of the property to support Covered Species. Prior to surveys, the Preserve Manager will identify type(s) of data required to evaluate status and/or management needs for each resource to ensure appropriate data collection and desired outputs. The emphasis during this stage is on surveys that are broad-based, comprehensive, and relatively rapid, with a focus on habitat condition and potential to support Covered Species (Lewison and Deutschman 2014).

Upon completion of the site evaluation (initial site reconnaissance and baseline monitoring), the Preserve Manager, in consultation with and approval by the City and Wildlife Agencies, will develop the RMP (including adaptive management program) for the Preserve and a 2-year timeline of priority surveys and management needs.

Goals and Objectives

Goals and objectives guide decision-making and provide a standard for measuring management effectiveness and, ultimately, the biological success of the Subarea Plan (Atkinson *et al.* 2004, Lewison and Deutschman 2014). Goals are “broad, concise visionary statements that set the overall direction for monitoring and management, while objectives are concrete, measurable statements that detail how a specific goal can be attained” (Lewison *et al.* 2011). A single goal may have multiple objectives. Further, each objective may require one or more management actions (implementation tasks) (Lewison *et al.* 2011).

The Subarea Plan goals and objectives are presented in Subarea Plan Section 5.2, *Biological Goals and Objectives*. Using site evaluation and baseline monitoring results, as a guideline, the Preserve Manager will review Subarea Plan goals and objectives for applicability at the Preserve-level and will identify and incorporate Preserve-level goals and objectives into the RMPs.

Preserve-level objectives will be refined to meet SMART criteria (Adamcik *et al.* 2004, Lewison *et al.* 2011, SDMMP 2017a, Lewison and Deutschman 2014), which are defined as:

- **Specific** — objectives will be detailed, clear, concise, and unambiguous.
- **Measurable** — objectives will include criteria for measuring progress.
- **Achievable** — objectives will not be unrealistic to achieve nor below acceptable standards.
- **Results-oriented** — objectives will specify an end result.
- **Time-fixed** — objectives will specify an end-point for being met.

Well-defined objectives promote effective and efficient use of management and monitoring resources.

All objectives will be prioritized. Priority 1 objectives will be implemented on an ongoing basis and, in general, accomplished through the implementation of effectiveness monitoring, targeted monitoring, and Preserve management. Each Preserve will have sufficient funds allocated to cover activities for Priority 1 objectives. The Priority 1 objectives will occur first, and the results of the Priority 1 efforts will inform further adaptive management decisions that will be prioritized as Priority 2 objectives. Priority 2 objectives will be funded using either funds allocated for adaptive management, by reprioritizing Preserve management actions, as appropriate.

Priority 2 objectives will be implemented in consultation with the City for conserved resources that are impacted or declining, based on monitoring results. Within Priority 2, objectives will be further prioritized based on (1) alignment with Subarea Plan goals and objectives, (2) regional context (e.g., value or importance of a Preserve for a given resource), (3) level of threat, (4) expected effectiveness of proposed action (e.g., proven methods available to affect change), (5) logical sequencing (e.g., invasive species control may precede restoration), (6) catastrophic events (e.g., wildfire may necessitate a shift in priorities), (7) funding and staffing, and (8) "SMARTness" of objectives (i.e., well-defined objectives are easier to achieve than poorly defined objectives).

Adaptive Management

Adaptive management is an approach to reduce uncertainty and improve management effectiveness through iterative monitoring and evaluation. While management will be required for a variety of issues, only those management actions that involve some measure of uncertainty and can be adjusted in response to what is learned (i.e., there are opportunities for iterative decision making) will require an adaptive management approach. In these cases, the level of uncertainty will dictate the type of management and monitoring design. Management approaches based on levels of uncertainty are discussed below (including the "No Uncertainty" alternative). Detailed implementation tasks will be developed at the Preserve-level for specific management issues.

When there is no uncertainty in the management outcome, adaptive management is not required, and management may proceed immediately. BMPs are well-established and management triggers are well-understood (Lewison and Deutschman 2014). Monitoring will be simple and relatively inexpensive and will focus on documenting the management action. Management actions that fall into this category may include, but are not limited to, general stewardship activities such as trash and debris removal, runoff control, fencing and signage installation and repair, routine (minor) weed control, illegal access and encroachment violations, seasonal restrictions and trail closures, trail maintenance, vandalism repair, erosion control, maintenance of defensible space, public outreach and education, and enforcement of Preserve regulations. General Preserve management guidelines will be sufficient to address most or all of these issues.

An adaptive management approach is required where there is some uncertainty in the management outcome. Information exists to support the management action, but the response may be variable. An example is the response of native species to invasive species control. While this type of management does not require a detailed experimental design, it does require data collection and analyses. Modifications to the prescribed management or alternative management actions may be implemented if outcomes are unsuccessful or if an alternative approach is identified that can achieve the specified biological objective(s) in a more efficient and/or cost-effective manner.

An adaptive management approach is also required where uncertainty is high. In this case, neither BMPs nor adequate information are available to support management outcomes, and an experimental approach is required to determine both management response and cause and effect between management action and response. This type of management requires a detailed experimental design (control, alternative treatments, replication, and randomization). This approach can be time- and cost-intensive but offers a high return in terms of reducing uncertainty (Lewison and Deutschman 2014).

Evaluation (Feedback Loop)

The final step in the adaptive management process is evaluating or interpreting data to determine whether goals and objectives have been met and to guide future monitoring and management. This evaluation will be conducted yearly, and information will be used to refine goals, objectives, conceptual models, monitoring methods, and management actions.

Implementation of adaptive management is defined as successful if progress is made toward achieving management goals through a learning-based (adaptive) decision process. The individual RMPs for each Preserve will include an adaptive management component to ensure that site-specific objectives are being met and are contributing to the overarching goals and objectives of the Subarea Plan. Revisions to management components identified through adaptive management will be documented in the annual report and incorporated as a revised approach/method in the annual work plan as applicable for each Preserve.

Data Entry and Storage. It is anticipated that a significant amount of data will be collected yearly at each Preserve. The City will maintain a GIS database of monitoring results from all Preserves in a format that is consistent with other state and regional monitoring databases, such as BIOS and CNDDB. The City will share the database with SDMMP. The GIS database will include species, habitat,

and management-relevant data, and will allow data to be input and extracted easily. Additional databases may be required to store non-digital data (e.g., data forms, photodocumentation).

Data Analysis and Interpretation. Data analysis and interpretation are necessary to evaluate management effectiveness, improve understanding of the system, and reduce uncertainty. Data analysis can be simple or complex, depending on the management approach selected. Where uncertainty is absent or low, analyses may consist of graphics, summary statistics, or simple hypothesis testing. Where uncertainty is high, complex statistical analyses may be required. In the latter case, the Preserve Manager may need to work with outside entities (e.g., SDMMP) to ensure that data is analyzed appropriately. Data results and interpretation will be presented in the Preserve's annual report. The City will include results, analyses, and recommendations from each Preserve in the Subarea Plan's annual report (see Subarea Plan Section 8.5.2, *Subarea Plan Annual Report*).

Evaluation. Evaluation completes the "feedback loop" or iterative learning process for adaptive management. Evaluation includes documentation and dissemination of results and recommendations, and refinements to goals, objectives, conceptual models, monitoring methods, and management actions, as necessary.

Decision-making. The accumulation of understanding and subsequent adaptation of a management strategy depends on feeding information obtained from monitoring results back into the decision-making process. The link between the technical and decision-making steps requires regular interaction and an exchange of information between the technical staff and decision-makers. This will be accomplished by an annual meeting involving the Preserve Managers, Subarea Plan Coordinator, Preserve Steward, and the Wildlife Agencies where both policy and technical expertise can be integrated into revising goals and objectives, refining models, adjusting management and/or monitoring activities, or allocating funding. Meetings will be timed such that any new information discussed assists with the planning of upcoming seasonal work (i.e., invasive species control, vegetation management, or biological surveys). Timing certain meetings to coordinate with other regional conservation planning meetings is encouraged to maximize communication and cooperation in the region.

Annual Report. The Preserve Managers will prepare an annual report that summarizes monitoring and management activities on their Preserves including (but not limited to) baseline surveys, general stewardship monitoring, effectiveness monitoring, and targeted monitoring. These reports will document monitoring results and link results to goals and objectives. The reports will identify new or ongoing management issues and threats and stressors, and provide recommendations for future monitoring, management, and research. The Preserve-specific annual reports will be submitted to the Subarea Plan Coordinator and will be referenced as part of the Subarea Plan annual report prepared by the City to be submitted by March 31 of each year. The Subarea Plan Annual Report will summarize the monitoring, management, and activities within the Managed Preserve, based on the annual reports provided to the City by the individual Preserve managers (as described in Section 8.5.2, *Subarea Plan Annual Report*). In addition, the following information will be submitted with the Preserve-specific annual reports for inclusion in the City GIS (and other) databases.

- A digital copy of monitoring data, including metadata (e.g., Excel spreadsheet).

- Spatial data (GIS shapefiles).
- Photodocumentation.
- A comprehensive annual assessment identifying and documenting the major threats to conserved habitat and Covered Species, impacts from public use, management needs, and issues requiring focused research.

Management Actions Evaluation. The Preserve Managers of the Managed Preserve will evaluate management actions yearly (or at a frequency determined by the management action) to determine whether changes are warranted based on resource response and/or new information. This evaluation will address progress (positive and negative) toward goals and objectives. Proposed changes will be summarized in the Preserve-specific annual report (see Section 8.5.2, *Subarea Plan Annual Report*) and detailed in the work plan for the upcoming year.

Monitoring Programs Evaluation. The Preserve Managers will evaluate monitoring programs yearly (or at a frequency determined by specific monitoring programs) to ensure that data are (1) collected efficiently, (2) address information needs, and (3) adequately assess resource responses to management actions. Changes in monitoring methods, protocols, or frequency will be summarized in the Preserve-specific annual report and detailed in the work plan for the upcoming year.

Goals and Objectives Evaluation. The Preserve Managers, in consultation with the City, will evaluate monitoring or management results that indicate that conservation actions will not meet RMP goals and objectives. Where the cause of poor performance is understood, prescriptive actions will be implemented, including (but not limited to) adjusting conservation actions based on monitoring data or other scientifically defensible sources of information and implementing alternative management actions.

Coordination. The Subarea Plan Coordinator and Preserve Steward will promote coordination among Preserve Managers in the Subarea Plan Area and within the San Diego region to ensure that results of monitoring and management are shared and to encourage consistency in goals, objectives, monitoring methods, and monitoring priorities. Forums for coordination will include an annual meeting the City, Preserve Managers, SDMMP, and other regional workshops.

Funding. The support required for an adaptive approach includes not only funding for monitoring and evaluation but also an investment in inclusive and robust decision-making processes. The Preserve Manager will identify in the RMP how adaptive management is funded for their Preserve based on funding mechanisms.

7.2.6 Management Actions and Adaptive Management Strategies for Covered Species

7.2.6.1 Plants

Where populations of Covered Plant Species or suitable habitat are identified within a property that is part of the Managed Preserve, the following management actions will be incorporated into the RMP

and implemented by the Preserve Manager to protect known populations within the Managed Preserve:

1. **Protect known occurrences**

   Where populations of plant Covered Species or suitable habitat are identified within a Preserve during baseline and/or subsequent surveys, the Preserve Manager will identify and implement appropriate measures to protect known populations to minimize disturbance and edge effects. Appropriate protection measures will include:

   - Protect areas of known occurrences from disturbance through fencing, signage, realignment of trails, and enforcement. The Preserve Manager will inspect Preserves at least quarterly, to assess the integrity of fencing, signage, and to watch for any new disturbances, including trespass and fire. The Preserve Manager will correct access controls as possible, while onsite, and will coordinate enforcement if necessary. Proposed trails will not be located adjacent to Covered Plant Species occurrences.

2. **Apply adaptive management based on monitoring results**

   a. **Adaptive management recommendations**. The Preserve Manager will develop adaptive management recommendations specific to Covered Plant Species based on results of monitoring efforts. Adaptive management recommendations will be included in the annual report that will be reviewed by the City and the Wildlife Agencies.

   b. **Implement adaptive management strategies.** Adaptive management strategies will be implemented based on monitoring results. Adaptive management will be initiated whenever there is a significant disturbance of suitable habitat of more than 20 percent within the Preserve, or if field observations and expert judgment indicate a change in management approach is needed (USFWS 2016). Adaptive management actions will include, but are not limited to:

      - **Conduct invasive plant management near known occurrences**. Conduct invasive plant and defensible space management in the vicinity of known occurrences of Covered Plant Species. Maintain less than 10 percent invasive plant cover. The Preserve Manager will have maintenance conducted at least twice a year if invasive plant cover is greater than 10 percent. No change in management is needed if invasive plant species coverage is declining or below these threshold levels.

      - **Adjust vegetation management methods along the urban/wildland interface if feasible.** If a Covered Plant Species occurrence is located within and near vegetation management zones, assess opportunities for adjusting vegetation management methods (e.g., modifying weeding activities to allow plants to seed; avoiding trimming plants) to avoid potential impacts and maintain vegetation management.

San Diego button-celery and San Diego mesa mint are vernal pool obligate species under the Subarea Plan. Management and monitoring of vernal pool plant species is further addressed in the vernal pool management and monitoring section (see Subarea Plan Section 5.5.7 (*Vernal Pool Conservation*

Standards), Appendix D (*Vernal Pool and Wetland Mitigation Plan)*, and Appendix G (*Vernal Pool Conservation Standards*).

7.2.6.2 Animal

Where populations of Covered Animal Species or suitable habitat is identified within a property that is part of the Managed Preserve, the following management actions will be incorporated into the RMP and implemented by the Preserve Manager:

1. Protect known occurrences and suitable habitat

If a Covered Animal Species or suitable habitat is identified on Preserves during surveys, the Preserve Manager will identify and implement appropriate measures to protect occupied and/or suitable habitat and to minimize disturbance and edge effects. Appropriate measures will include:

- **Manage invasive plant species in suitable habitat**. Suitable or occupied habitat will be inspected for potential threats. If invasive plant species exceed 10 percent total vegetated cover, implement invasive species control measures. No change in management is needed if invasive plant species coverage is declining or below the threshold level.
- **Protect suitable habitat from unauthorized human activity**. If human activity (e.g., trail use) occurs in the vicinity of suitable or occupied habitat, evaluate the potential need for exclusionary fencing and signage and implement where potential for human ingress exists. The Preserve Manager will prioritize efforts to minimize edge effects, manage invasive plant species, implement fire management, and control unauthorized public access in portions of the property known to support suitable habitat.
- Avoid disturbing burrowing owl occupied burrows during the breeding season. Based on the existing vegetation, topography, and type and intensity of human disturbance (e.g., trail use), the Preserve Manager will establish an appropriate buffer distance from occupied burrows. Recommended setback distances range from 50 meters to 500 meters based on time of year and level of disturbance (CDFW 2012).
- Avoid impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid direct destruction of burrows resulting from vegetation management activities (e.g., fire management, invasive plant species management, or disking to thin vegetation cover).
- Place visible markers near burrows to ensure that management activities do not collapse burrows.
- Eliminate actions that reduce burrowing owl forage and burrowing surrogates (e.g., ground squirrel). Do not fumigate, use treated bait, or other means of poisoning nuisance animals in areas where burrowing owls are known or suspected to occur (e.g., sites observed with nesting owls, designated use areas).

2. Apply adaptive management based on monitoring results

Adaptive management strategies will be implemented based on monitoring results. Adaptive management recommendations will be included in the annual report that will be reviewed by the City and the Wildlife Agencies. Adaptive management actions will include, but are not limited to:

- Adaptive management will be initiated whenever there is a substantial disturbance of suitable or occupied habitat of more than 20 percent, or if field observations and expert judgment indicate a change in management approach is needed (USFWS 2016). If occupied habitat is substantially impacted by fire, the Preserve Manager will pursue opportunities to implement habitat restoration to improve and speed habitat recovery and habitat quality. In accordance with Section 8.7.2, *Changed Circumstances*, of the Plan, the Preserve Manager will take active steps to assess species status following a fire and facilitate post-fire recovery of habitat back to its original state. After a fire, the Preserve Manager will complete an inventory of suitable habitat that have been affected and estimate the potential for the habitat to recover to its original state through passive restoration. If it is determined that active habitat restoration is warranted or beneficial, suitable habitat restoration will be implemented using current information on best approaches and strategies for habitat restoration, including planting techniques, seeding, post-planting watering regimes, herbivore protection, invasive plant control, and success criteria.
- Identify and address any activities along the urban-wildland interfaces that facilitate Argentine ant infestations. Argentine ant infestations can be facilitated by over-watering of landscaping which can create artificially damp soil conditions preferred by Argentine ants. The Preserve Manager will establish a schedule for general stewardship monitoring along the urban/wildlands interface to identify any activities that facilitate Argentine ant infestations. If situations occur, the Preserve Manager will coordinate with adjacent landowners to address the situation. The frequency of urban/wildlands interface monitoring will depend upon the level of urban/wildlands interface that occurs on Preserves and the type of urban development.
- Conduct activities to encourage native termite activity. As native termites are a primary prey of Belding's orange-throated whiptail, the Preserve Manager will conduct activities to encourage natural decomposition of woody material in and adjacent to riparian areas. Any necessary fuels reduction near riparian areas will focus on removal of flashy herbaceous material over sticks and other woody material. This would not necessarily apply to defensible space in the Managed Preserve adjacent to development.
- If trail use is allowed within a Managed Preserve and new trails are proposed, new trails will be sited away (at least a 100-foot buffer) from areas of occupied habitat to the extent feasible. Similarly, existing trails within 100 feet of occupied areas will be considered for re-routing or closure, as practicable. The goal will be to avoid the introduction of new trails that could reduce habitat function, increase risk of trampling, or allow for unauthorized collecting.
- Implement a public awareness program that includes information for residential developments adjacent to the Managed Preserve about the negative impacts to species from collecting, off-road driving, and uncontrolled pets.

- Removal of nonnative aquatic species to protect and enhance known populations of western spadefoot. The Preserve Manager will evaluate status and conditions of nonnative aquatic species detrimental to western spadefoot (e.g., American bullfrogs, African clawed frogs, crayfish) to determine if actions within the Preserve property should be taken to protect and enhance western spadefoot breeding habitat. The Preserve Manager will be responsible for the preparation of a nonnative aquatic species control plan, to be included in the RMP. Nonnative aquatic species removal may need to be implemented as part of a regional effort to effectively remove and control nonnative aquatic species within the Managed Preserve and surrounding watershed.
- Prevent mortality of western spadefoot adults from use of roads and trails within Preserves. During the time of year that metamorphs are dispersing from the breeding pools, ensure that they also have the means to safely cross roads and trails (i.e., through temporary trail/road closures, and/or temporary fencing to guide spadefoot away from the trail/road). If western spadefoot are identified on roads or trails within the Managed Preserve or on adjacent local roads, it should be determined from where they are entering the road and if the situation can be modified to reduce access to the road surface.
- The Preserve Manager will minimize to the extent feasible edge effects, manage invasive plant and animal species, implement fire management, implement defensible space around cactus scrub potential/suitable habitat where appropriate, and control and redirect away any public and domestic pet uses in and near portions of the Preserve that supports coastal cactus wren or suitable habitat. Any covered Activities to be implemented nearby to suitable coastal cactus wren habitat will minimize edge effects including controlling pets (e.g., dogs off-leash or outdoor cats) and avoiding/minimizing nighttime lighting spilling into Preserve areas, manage invasive species including Argentine ants and invasive plants, fence or gate uses where appropriate, salvage and transplant native cactus into Preserve areas adjacent to cactus scrub where appropriate. The City will implement fire management on adjacent lands to minimize potential migration of fire into Preserve areas from Covered Activity footprints, to the extent feasible.
- Identify situations in which vegetation management (e.g., thinning of native woody plants, removal of exotic grasses/herbaceous plant material, dethatching, exposure/creation of bare ground areas) around or within cactus patches is warranted to reduce the threats of nest predation and/or fire intensity, as well as enhance coastal cactus wren foraging opportunities. The goal of the woody vegetation thinning and removal of exotic grasses/herbaceous plants near and within cactus patches is to reduce the potential fire intensity (e.g., minimization of adjacent fire flame front heat from severely damaging cactus plants) around a cactus patch during a fire and/or reduce the opportunity for nest predation from ground species (e.g. snakes, ground squirrels, woodrats). Native woody shrubs within two feet of cactus patches should also be pruned back from cactus, as these can serve as ladders for predators, as well as overtop cactus and reduce suitability of nesting habitat.
- Cactus scrub restoration will be implemented using best available information on BMPs for cactus scrub restoration. SDMMP has outlined best approaches and strategies for cactus scrub restoration, including site selection, patch size, cactus salvage, large specimen

collection, propagule selection, planting layout (cactus planting, co-planting), plant protection, weed control, and supplemental watering (TNC 2015). A qualified restoration biologist will conduct monitoring of restored habitat following accepted monitoring protocols. Each restoration project site will be unique and warrant site-specific monitoring success criteria be developed.

- Conduct post fire evaluation and restoration. For at least the first 3 years following a wildfire, conduct surveys to determine the status of coastal cactus wren occurrences affected by the wildfire. Use established permanent camera stations and conduct photo-monitoring and qualitative site visits within cactus scrub patches to characterize post fire cactus scrub habitat recovery. Identify and prioritize management actions to recover coastal cactus wren populations and important cactus scrub habitat patches. If warranted, cactus scrub restoration will be implemented using best available information on BMPs for cactus scrub restoration. SDMMP has outlined best approaches and strategies for cactus scrub restoration, including site selection, patch size, cactus salvage, large specimen collection, propagule selection, planting layout (cactus planting, co-planting), plant protection, weed control, and supplemental watering (TNC 2015). A qualified restoration biologist will conduct monitoring of restored habitat following accepted monitoring protocols. Each restoration project site will be unique and warrant site specific monitoring success criteria be developed.
- Coastal sage scrub restoration will be implemented using current information on best approaches and strategies, including planting techniques, post-planting watering regimes, protection from herbivory, invasive plant control, and success criteria.
- Any necessary tree removal will be conducted in a manner to avoid and minimize impacts to least Bell's vireo (see Section 5.5.9.4, *Least Bell's Vireo Conservation Standards*). In addition, regional efforts to control pests and pathogens may include removal of infected trees in riparian areas. Current pests and pathogens affecting trees in San Diego County riparian areas include goldspotted oak borer (GSOB) and Kuroshio shot hole borer (SHB)/*Fusarium* sp. Complex. Tree removal will be conducted outside of the bird breeding season to avoid potential impacts. If there is a clear and immediate need to remove infected trees during the breeding season, the Preserve Manager will implement the Nesting Birds Conservation Standards.
- Conduct invasive plant species management near known occupied habitat. Identify situations in which invasive species control (e.g. removal of invasive riparian species that displace native riparian trees such as giant reed or tamarisk) around riparian habitat is warranted. Increase habitat suitability for native plant and wildlife species as well as enhance least Bell's vireo foraging opportunities by providing the biodiversity of native plant species that supports insect prey for least Bell's vireo. The goal of the invasive species removal is to remove non-native plants that alter morphology, hydrology, and biodiversity of riparian habitat for least Bell's vireo and other native riparian species (SDMMP 2017a).
- Riparian habitat restoration will be implemented using best available information on BMPs for riparian restoration. SDMMP has outlined best approaches and strategies for least Bell's vireo habitat restoration, especially with respect to avoid cowbird parasitism, which entails

focusing restoration on increasing density of understory vegetation to shield parental activity from searching cowbirds (SDMMP 2017a). Conduct monitoring of restored habitat.

San Diego fairy shrimp and Riverside fairy shrimp are vernal pool obligate species under the Subarea Plan. Management and monitoring of vernal pool plant species are addressed in the vernal pool management and monitoring section (see Subarea Plan Section 5.5.7 (*Vernal Pool Conservation Standards*), Appendix D (*Vernal Pool and Wetland Mitigation Plan)* and Appendix G (*Vernal Pool Conservation Standards*).

7.3 Standards and Requirements for Habitat Restoration and Species Reintroduction/Translocation

7.3.1 Habitat Restoration

Restoration is the process of re-establishing or enhancing historical biological functions and values to degraded habitats. Habitat restoration will be implemented under the following situations:

- **Restoration of temporary impact areas.** To be determined during review of development projects as part of the City's review and permitting, as described in Sections 4.2.8, *Operations and Maintenance Activities,* and 5.5.2, *Mitigation Standards for Vegetation Communities*.
- **Restoration, enhancement and/or creation of habitats as mitigation of impacts on sensitive habitats**. To be determined during review of development projects as part of the City's review and permitting based on requirements to include restoration as a component of mitigation for wetland impacts, as described in Section 5.5.5, *Avoidance and Minimization*.
- **Restoration of habitats within the Managed Preserve impacted by natural events such as fire or flood.** Implemented by the Preserve Managers in response to natural events.
- **Restoration and/or enhancement of native habitats within the Managed Preserve after removal of nonnative plant species.** Implemented by the Preserve Managers per actions required to control invasive species.

Habitat restoration activities will implement the applicable avoidance and minimization measures in Section 5.5, *Avoidance and Minimization*. The Preserve Managers will identify areas within the Managed Preserve to be targeted for restoration for the benefit of Covered Species (as outlined in Section 7.2, *Preserve Management and Monitoring*, above), or in response to temporary impacts associated with Covered Activities within the Preserve and/or Changed Circumstances. Key habitats for restoration are coastal sage scrub, cactus scrub, vernal pools, Quino checkerspot butterfly habitat, Hermes copper butterfly habitat, and riparian areas.

Habitat-specific restoration will occur only on sites assessed as suitable for that habitat type. Once the site and size of the restoration effort is determined, a project-specific Habitat Restoration Plan shall be prepared and approved by the City in coordination with the Wildlife Agencies according to the following guidelines:

1. The Habitat Restoration Plan will specify plant and seed palettes that will be used in the restoration effort. A qualified restoration ecologist will develop a site-specific seed list that corresponds to site-specific restoration goals. Success criteria will be developed that include the metrics for achieving the restoration goals including percent cover, timelines, species diversity, level of exotics, etc.

2. The types of erosion control that will be used and how they will be applied will be outlined in the Habitat Restoration Plan. Erosion-control measures can include, but are not limited to, straw wattles, blown straw, crimped straw, and/or erosion-control matting. No erosion control devices will be used that contain seeds from nonnative plants or fibers/fishing line.

3. The Habitat Restoration Plan will incorporate local plant species of concern wherever possible and appropriate to the site conditions. To implement restoration projects, planning ahead is important when adding a sensitive species to the restoration plan to be able to obtain enough seed to have a viable restoration effort.

4. No irrigation systems will be installed unless such installation is approved by the City's geotechnical consultants and will be removed at least two years prior to final sign-off of the restoration site by the City in coordination with the Wildlife Agencies.

5. The Habitat Restoration Plan will include the following restoration site preparation criteria:

   The site will be prepared by fixing any erosion that may have occurred and scarifying any compacted areas, as applicable.

   a. Weed control should begin in the winter before installation of the restoration. Treatment should continue during the winter and spring months as needed. After the weeds have been controlled and disposed of appropriately, the site should be raked to remove aboveground biomass, and remain fallow until the appropriate time to begin revegetation.

   b. A qualified restoration ecologist will oversee any use of herbicide to control weeds, following the recommendations of a licensed Pest Control Advisor, and will be supervised by a Qualified Applicator.

6. The Habitat Restoration Plan will provide details specifying how the restoration site will be monitored (with appropriate success criteria) and maintained over time along with the associated long-term funding, according to the following guidelines:

   a. Actively monitor and maintain the restoration site for a minimum of 5 years following installation. After the specified monitoring and maintenance period has passed, if the site has not achieved the established success criteria remediation will be performed to ensure the site is functional for the Covered Species it was targeted to support.

b. Establish a clear schedule for restoration site maintenance activities (e.g., monthly, annually, or on an as-needed basis), as recommended by a restoration ecologist. Maintenance activities to facilitate restoration success include general site visits, weed control, erosion control, and access control.

c. Remove or control invasive exotic species. Invasive exotic species, such as but not exclusive of, Arundo, tamarisk, pampas grass, fountain grass, pepper trees, gum tree, castor bean, tree tobacco, and fennel, will be removed wherever they occur within the restoration area. Annual weeds such as mustard, wild radish, and annual grasses may also need to be controlled. The restoration ecologist will determine what annual weeds need to be controlled to ensure restoration success and specifications for the disposal of removed weeds.

d. Control access to restoration sites. Access to restoration sites should be on existing dirt roads if possible. All vehicles should remain outside the restoration areas. If off-road vehicles or human activities become a problem in the restoration area, the restoration ecologist will recommend remedial measures.

7.3.2 Species Reintroduction and Translocation

Species translocations or reintroductions are sometimes used as tools to help recover endangered species or as a last resort to salvage individuals or populations from destruction. *Translocation* (or *transplantation* for plants) involves moving animals (or plants) from a donor (source) population to a receiver site that may or may not currently support the species. These methods are sometimes used to remove (salvage) a population from an area to be developed and introduce it into a suitable Preserve area where it can be managed and monitored. In general, *in situ* conservation (conservation in their naturally occurring locations) is the preferred method of conservation, and salvage translocation should only be considered as a mitigation measure if *in situ* conservation is infeasible. Furthermore, translocation of a rare or narrow endemic species may be included as a component of a Covered Activity but does not qualify as part of the required avoidance or mitigation in the requirements of the Narrow Endemic Species Standards.

Reintroduction involves translocation to a receiver site from which the species has previously been extirpated (as opposed to translocations used to bolster an existing population or to establish populations outside the species' original distribution). Species reintroduction must always be treated as experimental, generally as part of a comprehensive, well-planned species recovery program. Where reintroduction is appropriately used as a tool for species recovery, it should be allowed within a Managed Preserve where the species is known to have existed (e.g., Quino checkerspot butterfly, Hermes copper butterfly) and where the population can be effectively managed and monitored.

Reintroduction or translocation of any federally or State-listed threatened or endangered species will be done in coordination with the Wildlife Agencies. Species translocation and/or reintroduction may be allowable under the conditions discussed below.

7.3.2.1 Species Translocations

Development or other projects may be designed to allow onsite conservation and use translocation (transplantation) only where no feasible, as determined by the Wildlife Agencies, alternative exists

and only with species that have been approved by the Wildlife Agencies (including appropriate permits) for translocation. Translocation may not take the place of, but may be in addition to, any species-specific mitigation required by the Subarea Plan. However, translocation may be used to supplement the above mitigation measures or as a means of enhancing recovery potential for sensitive species with the approval of the Wildlife Agencies in each specific case.

Prior to translocation, a Translocation Plan, to be approved by the City and the Wildlife Agencies, will be developed that identifies: appropriate receiver site(s) for the population(s); the methods to be used; how the donor site will be selected and managed and monitored in perpetuity (including adaptive management measures); success criteria that will be used to monitor the health of the translocated population; and remediation measures that will be undertaken if the success criteria are not met. Receiver sites must be inside the Managed Preserve, legally protected, ecologically suitable. And as similar to the donor site as possible, considering soils, slopes, aspects, microclimate, and other biologically appropriate measures. As a part of the RMPs for a Preserve or Preserve complex, translocated populations must be monitored for a minimum of five generations to document successful establishment of the new population, and then periodically thereafter as a part of routine species and habitat monitoring and management associated with the Preserve. A species translocation may be allowed as long as it:

- Is approved by the Wildlife Agencies.
- Has been determined that it will not damage the genetic integrity of neighboring species and/or populations.
- Is preceded by a thorough investigation of the cause for the absence, decline, or extirpation of a species at a particular site, with appropriate remedies identified.
- Will not adversely alter existing ecology.
- Is implemented under an approved Translocation Plan with an adaptive management component..

7.3.2.2 Species Reintroductions

Species reintroduction could further enhance conservation of Covered Species within the Plan Area and contribute to overall species recovery. Species reintroduction may also be appropriate where extirpations have occurred in response to Changed Circumstances. While not a requirement of the Plan, where suitable habitat conditions exist but no historic record of species occurrence is known, species introduction may also be considered provided the suitable habitat is available. However, the decision to reintroduce a species depends on numerous species- and site-specific factors, and any reintroduction effort will require detailed planning and monitoring, as well as available funding for planning and implementation.

With the approval of the Wildlife Agencies (including appropriate permits in place) and where such actions would further the recovery of Covered Species, reintroduction of Covered Species may occur in the Managed Preserve. Reintroduction efforts are appropriate if the species or proposed reintroduction site displays all or most of the following characteristics:

- High priority species (e.g., listed as Federal- or State-endangered).

- Such release will further the conservation of the species.
- Species biology is known or is being researched (some research may be conducted as part of the reintroduction effort).
- The site is within the historic range of the species.
- The site is ecologically appropriate based on similarity of environmental variables to known occurrences and species-specific requirements (e.g., presence of host plants, hydrology, tolerance to disturbance, etc.).
- Suitable donor populations/propagule sources exist.
- The site is in the Managed Preserve, and threats to its establishment and long-term viability have been minimized.

Reintroduction is likely not be feasible for all species under consideration, based on biological, physical, logistical, or evolutionary factors. A complete assessment should be made before committing resources to a reintroduction effort. Key criteria include existing site conditions; presence or potential for appropriate pollinators and seed dispersal agents; possible genetic contaminants (hybrids or cultivars); connectivity to other extant populations; physical factors such as soils, topography, slope, aspect, elevation, drainage, hydrologic regime, and light environment; site protection status and degree of protection; access for monitoring and research; site location (e.g., known versus potential habitat); and evolutionary potential.

The goal of any reintroduction effort will be to establish self-sustaining population(s) of the target species. A Reintroduction Plan will be prepared for all proposed species reintroductions and must be approved by the City and Wildlife Agencies prior to implementation. The Reintroduction Plan will specify project management and implementation responsibilities and will also:

1. Specify design criteria, including a scientifically valid experimental design.
2. Indicate the appropriate time of year for reintroduction, based on species phenology and/or life history.
3. Indicate reintroduction methods, including any specialized equipment that may be needed.
4. Specify type and source of source material and provide a schedule for procuring source materials in a timely fashion.
5. Specify performance standards or success criteria by which the reintroduction will be judged.
6. Design a biological monitoring program for the reintroduction site to supply data to evaluate these standards.
7. Specify the process for implementing remedial measures.
8. Establish maintenance standards to ensure reintroduction success.
9. Provide for annual reporting of the reintroduction success along with recommendations for the next year’s program.

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Chapter 8
Subarea Plan Implementation and Funding

8.1 Introduction

The City of Santee (City), as Permittee, has responsibility for ensuring implementation and funding of the Subarea Plan. As described in this chapter, the City will rely on other entities and landowners/Preserve Managers under the City's control to ensure implementation of various aspects of the Subarea Plan. Implementation of the conservation strategy, monitoring program, and reporting specified under the Subarea Plan requires coordinated actions among the multiple departments of the City and the Wildlife Agencies, along with the City Preserve Manager for future protection and management of habitat preserves that will be established as part of the Managed Preserve. This chapter describes the overall implementation structure, policies, and guidelines of the Subarea Plan, including roles and responsibilities, implementation tools such as management plan templates, Subarea Plan funding, annual reporting requirements, and procedures for amending the Subarea Plan. In addition, this chapter addresses required responses by the City to Changed and Unforeseen Circumstances under the Subarea Plan that may occur during the Subarea Plan permit term.

8.2 Roles and Responsibilities

8.2.1 City of Santee

The City will be responsible for administration, implementation, and assurance of funding of the Subarea Plan. The City will dedicate and fund in house staff and/or contract staff to implement the roles of Subarea Plan Coordinator and Preserve Steward who will be responsible for program implementation, compliance, oversight, and administration of the Subarea Plan and the Santee Managed Preserve and Open Space System. These positions will be filled/staffed by the City within 90 days of permit issuance by the Wildlife Agencies. The City will be responsible for completing the review, approval, and compliance enforcement of Covered Activities and the associated City ordinances to ensure avoidance, minimization, and mitigation measures are implemented as specified in the Subarea Plan. The City will also be responsible for managing and monitoring City-owned Preserve Lands, ensuring that all properties within the Managed Preserve are funded, managed, monitored, and protected for compliance with the Plan and ensuring perpetual conservation of the Covered Species, through the processes outlined below.

8.2.1.1 Subarea Plan Coordinator and Preserve Steward

The Subarea Plan Coordinator's role is to ensure, oversee, and coordinate Subarea Plan implementation including the following:

- Serve as the main point of contact for issues relating to the Subarea Plan.
- Serve as the liaison between City departments, private landowners, Wildlife Agencies, other public agencies, and the general public as needed or as described below.

- Conduct project reviews (for Covered Activities) with appropriate reporting on these reviews to applicants, City Planning Department, and City Council before project approvals to ensure Covered Activity compliance with Subarea Plan guidelines and standards, including avoidance, minimization, and mitigation measures, the IA, HLIT Ordinance, and Permit requirements.
- Assist City staff by providing guidance regarding Subarea Plan standards, including for development adjacent to Managed Preserve boundaries and within the San Diego River Subunit and Standards Areas.
- Work with City staff to prepare Subarea Plan related items for City Council consideration.
- Coordinate with local environmental groups, Tribes, other interest groups, HOAs, and the public to discuss Subarea Plan issues, track conservation or environmental planning activities in the Plan Area, and facilitate partnering opportunities.

The Preserve Steward's role will include the following:

- Serve as the main point of contact for oversight of all preserve management and monitoring within the Plan Area.
- Oversee management and monitoring on City-owned Preserve Lands and coordinate development and implementation of the Complex Resource Management Plans (RMPs) with the City Preserve Manager (as discussed in Section 7.2.2, *Preparation of Preserve Complex and Preserve-Specific Resource Management Plans (RMPs)*).
- Provide oversight and tracking of the management and monitoring of the Managed Preserve to ensure Plan-required management and monitoring are completed in a manner consistent with the requirements included in Chapter 7, *Management and Monitoring*, of this Plan and within Preserve-specific RMPs.
- Meet annually with Preserve Managers in the Plan Area and the Preserve Managers from protected lands surrounding the Plan Area to discuss coordination of Plan Area- and region-wide management issues. Meet as needed with Plan Area Preserve Managers individually to ensure implementation of individual preserve RMPs, review and ensure monitoring and monitor compliance, review status of potential threats, problems, and other issues of concern, coordinate enforcement of Plan rules and requirements and relevant City Ordinances and Codes, and address adaptive management activities, funding issues, and edge effects.
- Coordinate with the City Preserve Manager, Wildlife Agencies, and other regional monitoring entities (e.g., SDMMP) to facilitate regional monitoring efforts to help reduce costs through the sharing of resources and ensuring access of properties within the Managed Preserve.
- Gather information from the City Preserve Manager, City staff, and other entities as needed for Subarea Plan compliance monitoring and effectiveness monitoring. Report all non-compliance situations to the Subarea Plan Coordinator.
- The Preserve Steward will be responsible as the City's representative for overseeing compliance of Preserves and Preserve Managers with Plan requirements.
- Update the City's Subarea Plan biological resource database annually.

- In coordination with local law enforcement, City Code Compliance staff, and Preserve managers as necessary, the Preserve Steward will be responsible for the portion of Plan and City Ordinance and Code Compliance enforcement within and adjacent to the Preserve associated with public access, trail usage, off-trail use, OHV/e-bike use, trespassing, dumping, vandalism, poaching of plants or animals, spillover noise and lighting, irrigation overspray, rogue trail creation/use, off-leash pets, and littering. The Preserve Steward will work in coordination with other City departments for all other enforcement issues associated with Preserve conservation.

Both the Subarea Plan Coordinator and the Preserve Steward will implement and coordinate the following tasks:

- Prepare annual management and monitoring reports on Plan implementation for submittal to the Wildlife Agencies (see Section 8.5.2, *Subarea Plan Annual Report*).
- Coordinate with Preserve Managers to collect relevant information about the Preserve areas within the City. Coordinate the City's participation in an annual public workshop on Plan implementation with other MSCP jurisdictions.
- Meet annually (starting the first year after permit issuance) with Wildlife Agencies to discuss Subarea Plan implementation, compliance requirements/monitoring/management/actual compliance to date, Plan and associated Code compliance problems within and adjacent to Preserve areas and existing open space land within the Plan Area, conservation issues within the Plan Area, conservation land acquisition in the Plan Area, financial integrity of the Subarea Plan including appropriate or needed funding of extant and planned Preserves, new potential funding sources for non-mitigation conservation measures within the Plan Area, issues regarding planned and newly constructed developments within and adjacent to the Plan Area, an accounting of the effectiveness/compliance of the Subarea Plan in implementing Plan requirements (e.g., Covered Activities as required, project pre-approval review, mitigation, monitoring, funding, etc.) and fulfilment of its conservation goals and objectives, and the implementation of the regional MSCP Biological Monitoring Program within and for the City of Santee once it is established.
- Coordinate as needed, but no less than annually, with other MSCP Subregional Plan jurisdictions and other NCCP/HCP implementation entities to discuss NCCP/HCP implementation, regional monitoring, and status of Covered Species and habitats. Discussions should include but not be limited to consistency of monitoring protocols, data collection methods, and data management.
- Coordinate regularly, but no less than annually, with appropriate City departments (e.g., Community Services, Code Compliance, Fire, and the Public Works Division of the Community Services Department), City Preserve Manager, other Preserve Managers, local groups, and HOAs to provide guidance and develop a public outreach program to educate the public about Covered Species and their status rangewide and within the Plan Area, land stewardship, reasons and basis for Plan Area land conservation (as compared to public parks and recreation), conservation priorities relative to public use of some Preserve lands, suggested native landscaping recommendations to private landowners outside of Preserves and existing open space, pollinator garden recommendations, seasonal tree-trimming guidance, integrated pest management measures (e.g., minimized pesticide and eliminated rodenticide usage) on private lands, residential and commercial land fertilizer use effects, edge and spillover causes/effects onto

Preserves and existing open space, select Plan Area plant and animal natural histories, native predators that occur in urban areas and open space lands, wildlife movement, invasive plant and animal species life history and recommended measures, orchard/stable/chicken coop management recommendations, wildlife feeding guidance, pet control (e.g., outdoor cats, off-leash dogs, dog waste), coyote guidance, dumping effects and costs to the City, OHV use, suggested native wildlife-friendly measures (e.g., bluebird, barn owl, native bee, and bat box designs and placement) on residential and commercial lands, suggested nighttime lighting measures, household chemical waste management (e.g., vehicle fluids and pesticide waste recycling), outdoor chemical use/vehicle leaks and the storm drain to stream system, defensible space implementation and recommendations, Plan Area bird checklist, and other conservation issues pertinent to Covered Species and the related ecosystems.

8.2.1.2 City Preserve Manager

The City Preserve Manager will conduct and implement the biological management and monitoring on City-owned Preserve Lands, as outlined in Section 7.2.1.2, *City Preserve Manager Responsible for City-Owned Preserve Lands*. In addition, the City Preserve Manager will be contracted to serve as the Preserve Manager for future preserves that will be established within the Standards Areas, unless addressed by Section 8.2.3 below.

The City's Preserve Steward and City Preserve Manager will be responsible for overseeing and completing the Plan-required management and monitoring of City-owned Preserves Lands within the Managed Preserve. They will accomplish this through coordinating and directing the appropriate City departments to accomplish Plan-required tasks, including directing the Public Services Division of the Community Services Department that will perform and complete the land stewardship and maintenance activities required under the Plan on the noted Preserves. The City Preserve Manager will complete the required biological management and monitoring on the noted Preserves.

Figure 8-1 shows the locations of City-owned Preserve Lands within the Managed Preserve, and Table 8-1 summarizes acreage and general habitat types for each property.

Table 8-1. City-Owned Preserve Lands

City-Owned Existing Preserve Lands within Subarea Plan Managed Preserve	Biological Management and Monitoring By	Habitat Type	Acres of Natural Habitat
Walker Preserve	City Preserve Manager	Riparian	73.8
Mast Park East (Mission Creek)	City Preserve Manager	Riparian	30.9
Mast Park West	City Preserve Manager	Riparian	40.5
City Property near Walker Preserve	City Preserve Manager	Upland	14.4
Altair Open Space	City Preserve Manager	Upland	7.7
		Total:	**167.3**

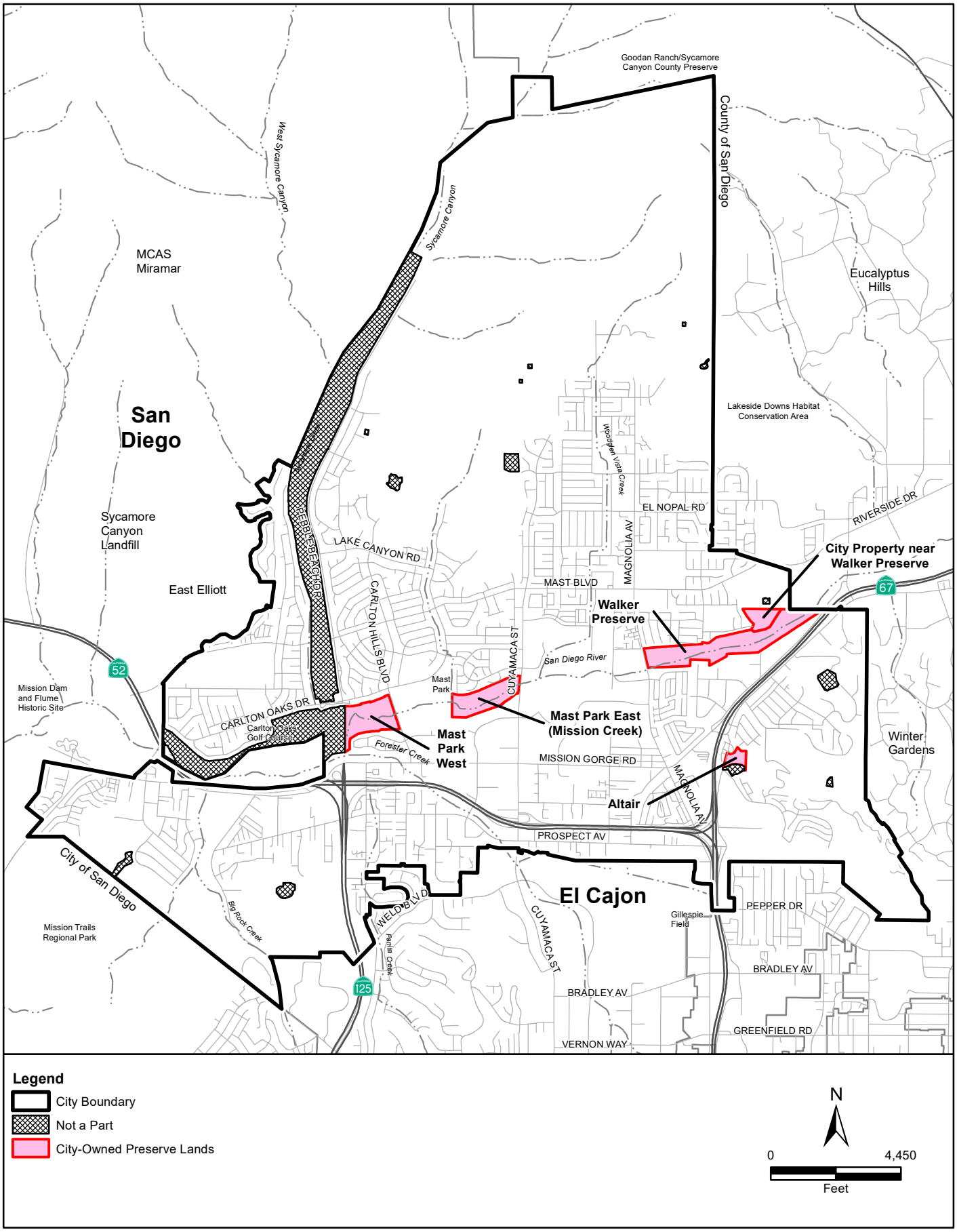


Figure 8-1
City-Owned Preserve Lands
Santee MSCP Subarea Plan

8.2.1.3 City Departments

City staff from multiple departments will be responsible for and assist on various aspects of Subarea Plan implementation in the Plan Area, including:

- Planning & Building Department: The Planning & Building Department will ensure that planned Covered Activities subject to the City's development application process are reviewed and modified (as appropriate) by the City as part of the HLIT permitting process so that they will be consistent with the Subarea Plan, General Plan updates, land use, and zoning compliance. The Planning & Building Department will also conduct public outreach activities associated with the Plan in conjunction with the annual reporting process as described in Section 8.5.2, *Subarea Plan Annual Report*.
- Code Compliance: The Code Compliance Division of the Planning & Building Department will enforce city codes to prevent and abate nuisances on private property such as illegal dumping, too many animals, illegal construction, spillover noise, spillover nighttime lighting, industrial noise complaints, and overgrown vegetation.
- Fire Department: The Fire Department will conduct fuel management zone clearing, review, and enforcement. These fuel management elements will be implemented by the Fire Department consistent with the minimums and maximums (e.g., clear zones, weed abatement, acreages of natural vegetation to be affected/mitigated, etc.) specified within Chapter 4, *Covered Activities and Impact Assessment,* of the Subarea Plan, where these activities qualify as Covered Activities.
- Local Law Enforcement (the City currently contracts with San Diego County Sheriff's Department for law enforcement): Local Law enforcement will conduct activities in the Plan Area including compliance enforcement within natural areas of the Plan Area, including within and adjacent to Preserve areas and existing open space areas, such as potential violations of trespass, dumping, arson, graffiti, vandalism, off-road vehicle use, poaching, unleashed pets, unpermitted night activities, use of areas closed to public use.

8.2.1.4 City Council

The City Council has the final decision-making authority for adopting the Subarea Plan, which will include the City's commitments to implement the Plan, funding, staffing, and allocation of City-directed resources. Once the Plan is approved by the City, the Subarea Plan Coordinator will work with City staff to prepare appropriate Plan-related implementation items for City Council consideration. Plan-related agenda items that will typically come before the City Council include, but will not be limited to, review and approval of land development plans that qualify as Covered Activities, agreements with third-party entities for Preserve management and monitoring of properties directed to City ownership, and proposed amendments to the Subarea Plan.

8.2.2 Fanita Ranch Preserve Manager

The Fanita Ranch Preserve Manager's role is to oversee, coordinate, ensure compliance, and implement the permanent management and monitoring of the Fanita Ranch onsite and offsite preserves (as outlined in Section 7.2.1.1, *Fanita Ranch Preserve and Conservation Lands Preserve Manager*). These tasks will include the following:

- Implement the Plan-required required enhancement, management, and protection of the Fanita Ranch onsite and offsite preserves.
- Implement measures to ensure compliance with the specifications for disallowed and allowed uses in the Preserve areas.
- Implement the Plan-required monitoring to the onsite and offsite preserves.
- Serve as the main point of contact for issues relating to Fanita Ranch compliance with the Subarea Plan, including oversight of all preserve management and monitoring.
- Serve as the liaison between City departments, other private landowners, Wildlife Agencies, other public agencies, and the general public as needed or as described below.
- Coordinate with local environmental groups, other interest groups, HOAs, and the public to address Subarea Plan issues such as non-compliance (e.g., off trial use, rougue trail creation/use, barrier damage, unleashed pets, dumping, etc.), track conservation or environmental planning activities in the area, and facilitate partnering opportunities.
- Meet with other Preserve Managers in the City annually to discuss coordination of City-wide management issues.
- Coordinate with the City Preserve Manager, Wildlife Agencies, and other regional monitoring entities (e.g., SDMMP) to facilitate regional monitoring efforts and potentially reduce costs through the sharing of resources.
- Update the Fanita Ranch Preserve's biological resource database per the Resource Management Plan.
- The Preserve Manager will provide enforcement within the Preserve associated with public access, trail and off-trial usage, rogue trail construction, vandalism, OHV and e-bike use, dumping, littering, etc. The Preserve Manager will coordinate with and seek assistance from local law enforcement and City Code Compliance where necessary and applicable for compliance and enforcement.

Coordination and Reporting:

1. Prepare annual Fanita Ranch Preserve monitoring and management reports for submittal to the City and Wildlife Agencies. Develop a public outreach program to educate the Fanita Ranch residents and businesses about land stewardship, edge effects, local plants and animals, and other conservation issues pertinent to Covered Species and the related ecosystems prior to any ground disturbance activity associated with the Fanita Ranch project.

2. Meet annually with the City and Wildlife Agencies to report monitoring and management results, compliance results, Covered Species status within the Fanita Ranch Preserves, issues regarding activities on adjacent and nearby parcels, and to discuss other issues of concern, such as Subarea Plan implementation results and conservation issues, and a relevant accounting of the effectiveness of the Subarea Plan to fulfill its specific conservation goals and objectives, and the coordination/implementation of the regional MSCP Biological Monitoring Program within Fanita Ranch.
3. Coordinate no less than annually with appropriate City of Santee departments (e.g., Code Compliance, Community Services, Fire, and the Public Works Division of the Community Services Department), City Preserve Manager, other Preserve Managers, local groups, the outdoor recreational community, and HOAs to provide guidance and information on the public outreach program to educate the Fanita Ranch residents and businesses about land stewardship, edge effects, local plants and animals, and other conservation issues pertinent to Covered Species and the related ecosystems identified above.

8.2.3 Other Preserve Managers

Within the Plan Area, several individual properties were set aside before development of the Subarea Plan as habitat preserves as mitigation for various projects or established as non-mitigation conservation (See Section 2.3.4.1 *Existing Protected Open Space within Santee*). A subset of these existing protected lands has Preserve Managers currently in place who are responsible for management and monitoring of these lands. Others of these properties do not have Preserve Managers and do not have full management of ecological resources. As part of the Subarea Plan implementation, additional conservation or management on existing protected lands is not required. These existing protected lands provide an essential part of the contextual environmental baseline for the necessary conservation analysis for the Wildlife Agency Permits for the Subarea Plan, but additional new conservation on these lands is not required as integral to the conservation analysis conclusions for these Permits. The Managed Preserve will not ecologically function in isolation, and the Preserve connects to existing protected open space through ecological linkages and wildlife corridors. A component of the City Preserve Steward's responsibilities will be to coordinate on management and monitoring activities occurring on and adjacent to the Preserve with other Preserve Managers within and adjacent to the Plan Area to maximize the ecological functionality of the overall Santee Preserve and Open Space Network for conservation values.

In addition, during the City project-approval process for Covered Activities (which includes all steps required to establish perpetual conservation for lands included in the Managed Preserve to offset Covered Activities), the City will require project proponents to utilize the City Preserve Manager as the land management entity to provide long-term management and monitoring for new lands being added to the Preserve, unless a functionally equivalent Preserve Manager is proposed by the project proponent. If a project proponent proposes to utilize their own functionally equivalent Preserve Manager, the project proponent must obtain approval from the City to designate the qualified Preserve Manager for conserved lands prior to the Covered Activity being approved by the City.

8.2.4 Wildlife Agencies

The Wildlife Agencies' responsibilities will include, but not be limited to, the following:

- Review and approve specific proposed habitat restoration design plans and success criteria for consistency with the criteria addressed in Chapter 7, *Management and Monitoring*, of the Subarea Plan.
- Review and approve (within 60 days of initial submittal) the preparation of preserve Resource Management Plans (RMPs) for consistency with the criteria addressed in Chapter 7, *Management and Monitoring,* and Appendix H, *Preserve Resource Management Plan (RMP) Outline*, of the Subarea Plan.
- Collaborate with the Preserve Steward and City Preserve Manager to review annual work plans, adaptive management strategies, and preserve-specific annual reports.
- Annually review compliance of implementation of the Plan with the permit on the Plan relevant to each Wildlife Agency and provide feedback to the City on such compliance.
- Review and provide feedback to City on pertinent information in the Subarea Plan annual reports, including on Plan overall compliance and whether the annual reports are consistent with the criteria addressed in Section 8.5.2, *Subarea Plan Annual Report,* of the Subarea Plan, and make Plan-related recommendations to the City as appropriate.
- Meet annually with the City, Subarea Plan Coordinator, Preserve Steward, and City Preserve Manager. Participate in semi-annual (twice a year) meetings with Subarea Plan Coordinator, Preserve Steward, City Preserve Manager and other Preserve Managers.
- Review and approve any proposed changes amending the Subarea Plan (clerical and administrative changes, Minor Amendments, and Major Amendments) and approve (if the Wildlife Agencies concur) to ensure consistency with Section 8.6, *Modifying and Amending the Subarea Plan*.
- Review and approve proposed responses by City and Preserve Managers to Changed Circumstances.
- Respond to and address Unforeseen Circumstances as outlined in Section 8.7.3 below.

8.3 Implementation Tools

8.3.1 Habitat Loss and Incidental Take (HLIT) Ordinance

The City will promulgate a Habitat Loss and Incidental Take Ordinance (HLIT) to both require and facilitate implementation of the land conservation policies of the Subarea Plan through the City's project review and approval process for Covered Activities. This ordinance will be adopted by the City at the same time as the Subarea Plan and will identify the processes by which Covered Activities will be evaluated by the City to ensure they are consistent with the Subarea Plan, including its conservation goals and objectives as well as the avoidance, minimization, and mitigation measures identified in Chapter 5, *Conservation Strategy*. These processes will apply to all private and public

projects that qualify as a Covered Activity and that could result in potential direct and indirect impacts to biological resources, natural communities, or Covered Species.

The City's Subarea Plan Coordinator in coordination with the Director of the Planning & Building Department will ensure existing City regulations are implemented to conform with the Subarea Plan, IA, HLIT Ordinance, and Permit requirements (see Section 8.2.1, *City of Santee*). For any Covered Activity, the City shall ensure that the project proponent implements the required avoidance, minimization, and mitigation measures prior to any ground disturbing activities, as described in the Subarea Plan. The Take Authorization allowed under the NCCPA and ESA permits will be extended to project proponents within the Plan Area boundaries who are implementing Covered Activities where the City (Permittee) has control over the action, and the activities are consistent with the Subarea Plan. A Certificate of Inclusion (Exhibit A of the Implementing Agreement) will be necessary to extend incidental take coverage from the associated Permits to entities that have agreed to be under the City's control and bound by the Subarea Plan, IA, HLIT Ordinance, and Permit requirements when they are not otherwise subject to the City's discretion. The City is ultimately responsible for ensuring compliance by all project proponents receiving Take Authorizations for Covered Activities, with all applicable requirements, terms and conditions identified in the Subarea Plan, IA, HLIT Ordinance, and the associated Permits.

In order to approve a project (Covered Activity) and issue an HLIT Permit, the City will:

- Ensure the Covered Activity is identified within the Subarea Plan. Review the biological survey report on the proposed Covered Activity prepared by a qualified biologist for the project proponent. The report must adequately evaluate the Covered Activity's potential impacts to biological resources, natural communities, Covered Species, and Covered Species habitats in order for the report to be deemed adequate by the City for this step in the review process to be complete. The City will formally review and approve the adequacy of such reports.
- Determine if the proposed Covered Activity is identified and is consistent with the Subarea Plan and will implement the avoidance, minimization, and mitigation measures included the Conservation Strategy (see Section 5.3, *Conservation Measure 1- Establish Subarea Plan Managed Preserve* and Section 5.5, *Conservation Measure 3-Avoidance, Minimization, and Mitigation*), including:
    - Avoidance and Minimization (Section 5.5.1)
    - Upland Standards Areas (Section 5.3.1.2)
    - Infill Development Areas (Section 5.3.1.5)
    - Mitigation Standards for Vegetation Communities (Section 5.5.2)
    - Ecological Linkages. Wildlife Corridors and Wildlife Crossing Structure Criteria (Section 5.5.3)
    - Fire Defensible Space Standards (Section 5.5.4)
    - Aquatic, Wetlands, and Riparian Protection Standards (Section 5.5.5)
    - Narrow Endemic Species Standards (Section 5.5.6)
    - Vernal Pool Conservation Standards (Section 5.5.7)

- Covered Plant Species Translocation and Restoration Conservation Standards (Section 5.5.8)
- Species-Specific Conservation Standards (Section 5.5.9)

8.3.2 General Plan and Municipal Code Implementation Actions

With the adoption of the Subarea Plan, the Santee City Council will adopt General Plan amendments to reflect adoption of the Subarea Plan. General Plan text that currently refers to a "draft", "proposed" or "future" Subarea Plan will be modified by the City to reflect the Subarea Plan's adoption. In addition, the Municipal Code will be amended by the City Council to include Habitat Loss and Incidental Take Permit provisions and procedures and will be considered for first reading with the adoption of the Subarea Plan. The Municipal Code update will be considered for second reading within 30 days post Subarea Plan adoption.

8.4 Subarea Plan Funding

The City will provide funding to fulfill the roles of Subarea Plan Coordinator, Preserve Steward, and City Preserve Manager for the City-Owned Preserve Lands. The City will provide adequate funding for compliance monitoring and mitigation of Covered Activities performed for or by the City. The City will provide adequate funding for management and compliance and effectiveness monitoring of City-owned Preserve lands.

Funding for compliance monitoring of Covered Activities that are not performed for or by the City will be directly provided by the project proponent; this funding will be required and ensured by the City as part of City approvals of the Covered Activity. Funding for management and compliance and effectiveness monitoring for hardline conservation areas and future habitat preserves in the Standards Areas or San Diego River Subunit will be directly provided by the project proponents; the City will ensure that the proponents of these Covered Activities provide the necessary funding and assurances for these Subarea Plan components through appropriate conditions, requirements, and follow-up as part of project approvals by the City.

Table 8-2 provides a summary of the Subarea Plan implementation actions requiring funding, the entity responsible for implementation of the action, the entity responsible for funding, the funding source, timing, and basic methods to determine the funding requirements.

Table 8-2. Subarea Plan Implementation Actions Requiring Funding

Implementation Action	Responsible Party	Funding Source	Timing	Cost Methodology and Assumptions	Cost Estimate [a]
City Actions/Funding					
Subarea Plan Coordinator (SAPC): Staff (role and duties included in Sections 7.2, *Preserve Management and Monitoring*, and 8.2, *Roles and Responsibilities*, of the Subarea Plan (SAP).	City	General Fund	To be hired within 90 days of Permit issuance (SAP Sect. 8.2.1).	Cost included in Annual Budget. Staff ongoing cost. Assumption 0.5 FTE. Implementation structure and staffing needs to be reviewed throughout the Permit Term.	$60,000-$75,000/year
Preserve Steward (PS): Staff or contractor (role and duties included in Sections 7.2 and 8.2 of the Subarea Plan (SAP).	City	General Fund	To be hired within 90 days of Permit issuance (SAP Sect. 8.2.1).	Cost included in Annual Budget. Staff or contract. Ongoing cost. Assumption 0.5 FTE. Implementation structure and staffing needs to be reviewed throughout the Permit Term.	$150,000 - $200,000/year
Preparation of Complex RMP for North Magnolia and Mission Trails Preserve: Staff or contractor duties include baseline biological surveys and preparation of Complex RMP for the North Magnolia Uplands Preserve (162.6 acres of natural habitat) and Mission Trails Preserve (139.7 acres of natural habitat), including but not limited to Property Assessment Reports (PAR), Recreation Management Plan and Fire Management Plan.	City	General Fund	To be completed within 3 years of Permit issuance.	Cost included in Annual Budget for that fiscal year. Staff or contractor. Early one-time cost.	$175,000/ Complex RMP or $350,000 for both Complex RMPs, if contracted.

Table 8-2. Subarea Plan Implementation Actions Requiring Funding (cont.)

Implementation Action	Responsible Party	Funding Source	Timing	Cost Methodology and Assumptions	Cost Estimate [a]
City Preserve Manager (CPM): Staff or contractor to manage and monitor City-owned lands (role and duties included in Sections 7.2 and 8.2 of the Subarea Plan (SAP) and including species-specific conservation actions.	City	General Fund during term of Permits, non-wasting endowment after term of Permits	Upon approval of the SAP and adoption by the City (SAP Sect. 7.2.1.2).	Cost included in Annual Budget and in non-wasting endowment at the end of the Permit Term. Staff or contractor. Ongoing cost. Assumption 0.5 FTE. Cost estimates will be refined through a PAR-like analysis that will be relied upon for determining the size of the non-wasting endowment.	$60,000 - $150,000/year
Preparation of Complex RMP for City-owned Lands: Staff or contractor. Includes baseline biological surveys and preparation of Complex RMPs for City-owned lands including but not limited to a PAR, Recreation Management Plan and Fire Management Plan. This may be one or two RMPs, one for the Mast Park West, Mission Creek and Walker Preserve lands in the San Diego River Subunit and one for the East Santee Upland Subunit properties (land near Walker Preserve and Altair).	City	General Fund or other funding sources	One time cost. To be completed within 3 years of Permit issuance.	Cost included in Annual Budget for that fiscal year. Staff or contractor. Early one-time cost.	$175,000/ Complex RMP or $350,000 for both Complex RMPs, if contracted.
Responses to changed circumstances: Contractor and Project Proponents.	City and project proponents	General Fund for City-owned Preserve Lands and CFD/endowment for project proponents	Prior to year 10 of the Permit Term	By year 10 of the Permit Term. Based on anticipated frequency and number of responses for each changed circumstance. One response to fire at $15,000. One response to flood at $15,000.	$75,000 total

Table 8-2. Subarea Plan Implementation Actions Requiring Funding (cont.)

Implementation Action	Responsible Party	Funding Source	Timing	Cost Methodology and Assumptions	Cost Estimate [a]
				One response to prolonged drought at $15,000. Two responses to invasive species at $15,000 each ($30,000 total).	
Hardline Development Project Funding					
Interim Management and development of RMP	Hardline project developer		Prior to approval of the RMP		$250,000/yr for stewardship $175,000 for RMP
Long-term management and monitoring of Preserve lands	Hardline project developer	CFD for onsite preserve and non-wasting endowment for offsite preserve	In perpetuity	To be determined based on an approved RMP and a PAR or PAR-like analysis.	$2,500,000 - $3,000,000 for vernal pool restoration $750,000 - $1,000,000 for Hermes Copper butterfly habitat restoration $1,500,000 - $2,000,000 for Cactus Wren habitat restoration $3,500,000 - $4,000,000 for Offsite Conservation Areas (171.1 acres) for butterfly habitat acquisition
Responses to Changed Circumstances	Hardline project developer	CFD for onsite preserve and non-wasting endowment for offsite preserve	Per Phase at time of dedication	One remedial response for wildfire- $22,500 for the onsite preserve and $2,500 for the Hermes offsite preserve.	$125,000 total

Table 8-2. Subarea Plan Implementation Actions Requiring Funding (cont.)

Implementation Action	Responsible Party	Funding Source	Timing	Cost Methodology and Assumptions	Cost Estimate [a]
				One remedial response for flood- $22,500 for the onsite preserve and $2,500 for the Hermes offsite preserve. One remedial response for prolonged drought- $22,500 for the onsite preserve and $2,500 for the Hermes offsite preserve. Two remedial responses for invasive species- $22,500 for the onsite preserve each response and $2,500 for the Hermes offsite preserve each response.	
Other Private Covered Activities/Funding					
Preparation of Individual RMPs and PARs for future preserves (within Standards Areas)	Project proponent	Project proponent	Prior to any ground disturbing activities	One-time cost. Project and preserve specific.	$175,000/RMP
Long -term management and monitoring of future preserves (within Standards Areas)	Project proponent	Project proponent	In perpetuity	Project and preserve specific. Depends on PAR and RMP	$105,000/yr
Responses to Changed Circumstances	Project proponent	Project proponent	At time management funding is provided	One remedial response for wildfire $10,000. One remedial response for flood $10,000 One remedial response for prolonged drought $10,000. Two remedial responses for invasive species $10,000 each response ($20,000 total).	$50,000 total

[a] To be adjusted annually for inflation by the City using Consumer Price Index (CPI).

8.4.1 Funding Sources

The following sections provide an overview of the funding sources that the City will use for Subarea Plan implementation and perpetual conservation, management, and monitoring of the Managed Preserve.

8.4.1.1 General Fund

The City is responsible for providing a range of municipal services that include law enforcement, fire and life safety, street and public infrastructure maintenance, traffic circulation, planning and community development, park and landscape maintenance, code compliance/enforcement, building inspection and recreation programs. The annual budget serves as the foundation for the City's financial planning for the range of municipal services. The appropriated budget is prepared by fund, program, and department. Revenues by source for all funds, including the General Fund, in Fiscal year 2022-23 totaled approximately $77.1 million, with 56.4 percent of this amount derived from property taxes and sales taxes (Santee 2024).

The General Fund is the chief operating fund of the City. The General Fund addresses encumbrances and appropriations and is updated for changes in conditions. Funds will be appropriated by the City Council to cover City costs associated with Subarea Plan implementation. Through the adoption of the Subarea Plan and IA, and appropriate revisions to the City's General Plan, Zoning, and other land use regulations, funding to implement all aspects of the Plan will be assured. The one-time costs and perpetual costs that will be available to implement the Subarea Area are outlined in Table 8-2. The City will ensure that annual funding in the amount set forth in the cost estimates in Table 8-2 is available to address the Subarea Plan implementation items that are funded directly by the City.

8.4.1.2 Other City Funding Sources

Other more focused funding sources the City may be able to use for Subarea Plan implementation include:

- **Flood Control Fund**: Another source of City funds that will go toward reducing biological impacts to City-owned lands and other lands of the Plan Area that receive storm runoff is the Zone 2 Flood Control District Fund. This fund is used primarily for activities required by the Municipal Storm Water Permit issued by the San Diego Regional Water Quality Control Board. Fiscal Year 2024-25 revenues are projected to total $547,440 (Santee 2024). Through the implementation of a suite of programs, the City uses funds from the Zone 2 Flood Control District Fund to prevent/minimize runoff pollution (e.g., materials and chemicals washed into the storm drains from streets, gutters, neighborhoods, industrial sites, parking lots and construction sites) and reduce discharges to the storm water conveyance system and waterways within the City to the maximum extent practicable. Program components include: development and planning review, construction site compliance (e.g., implementation of erosion control BMPs), commercial and industrial business inspections, routine maintenance (e.g., sediment and trash removal) of the City's storm water conveyance systems, community education and outreach, regional coordination, complaint/hotline response, and water quality monitoring (sampling). The maintenance of the City's storm water conveyance systems likely offers opportunities to provide management

benefits to biological resources on City-owned lands, such as targeted invasive plant species control measures within open channel conveyance system areas that are subsequently left vegetated with native plants.

8.4.1.3 Developer-Funded Endowments

Consistent with the City's land use powers, and subject to the constitutional restrictions on those powers, the City anticipates that the funding of Plan-required management and monitoring of conserved lands within the Managed Preserve will occur primarily through City approvals and implementation of Covered Activities, which will require that the developer fund an initial period of management and monitoring upfront through a wasting endowment and fund perpetual management and monitoring through a non-wasting endowment.

A wasting endowment is a restricted fund intended to be expended on the initial typically three years of a habitat management fund. These funds are spent on preserve set-up at the onset of permanent management to allow the non-wasting endowment to accrue investment returns into a distributable account. A non-wasting endowment is also a restricted fund. Only the interest from these funds can be spent, not the principal that anchors the endowment. The goal is to derive investment earnings, and a portion of the earnings is used to cover the administrative costs and ongoing Preserve costs (e.g., annual biological management and monitoring, restoration) with the remainder reinvested into the endowment principal to assure the endowment grows, keeping up with inflation and maintaining its buying power (i.e., non-wasting). As such, inflation and variations in the rate of return over time are important in the determination of the principal amount. Generally, professional money managers oversee endowment funds to achieve a sustaining rate of return, and, when held by a third-party entity, that entity shall be subject to an initial fiscal evaluation and periodic reviews by the City to ensure that the funds are available to conduct the management and monitoring activities addressed in the preserve RMP.

It is crucial that the endowment amount be calculated accurately to allow for sufficient annual earnings to cover the costs of the activities proposed yearly. To this end, the Center for Natural Lands Management, among other preserve management entities, has developed a software program called a "Property Analysis Record" (PAR) that can be used to itemize all tasks associated with long-term Preserve management tailored to a specific property. These tasks reflect the management activities described in Section 7.2, *Preserve Management and Monitoring*, including stewardship, public access enforcement, habitat management, public education/outreach, biological monitoring, and reporting. A cost is assigned to each task. Costs must also include liability insurance, a contingency fund to cover remedial measures tied to vandalism, or accidents within the preserve, as well as responses for "Changed Circumstances" (Table 8-2). A PAR or PAR-equivalent analysis will be conducted by the project proponent and reviewed/approved by the City as part of the Covered Activity approval process for each new parcel to be established as a preserve and incorporated into the Managed Preserve.

8.4.1.4 Community Facilities District (CFD) Funding

HomeFed Fanita Rancho LLC (HomeFed) is the owner/permittee of the project. HomeFed (or subsequent legal owners) shall be financially responsible for the implementation and management of mitigation and long-term habitat management. HomeFed will post a performance bond to ensure the

success of the mitigation element of the project during the construction and implementation phase and in accordance with applicable performance standards. Once the construction and implementation phases are completed, HomeFed will utilize a Community Facilities District (CFD), thus ensuring a reliable funding mechanism for ongoing maintenance, management, monitoring and reporting to meet permitting agencies' requirements for a funding source in perpetuity.

Pursuant to the Mello-Roos Community Facilities Act of 1982 (California Government Code section 53311 and following), the City of Santee may establish a Community Facilities District or Districts (CFD) to finance certain limited public services, including management, maintenance, and monitoring of open space preserves. Within a CFD, a special tax is levied on property owners to generate a perpetual funding source for the required public service.

The CFD approach provides a secure and viable option to pay for, in full or in part, the management, maintenance, and monitoring of preserve lands included into the preserve network as part of the development review. The City and preserve managers will enter into an operating contract and the pledge of the CFD special taxes pursuant to the contract which will prevent the CFD from being dissolved or changed. When the CFD is created, the project developers would, as a condition of approval, agree to either form or annex the development area into the CFD. The funds generated annually through the CFD would then be used to manage, maintain, and monitor the conserved lands within the preserve area in perpetuity.

The formation of the CFD involves the following steps:

- **Application by property owner:** The property owner will submit a formal request to the City to establish a CFD and provide funding for the initial costs incurred by the City of processing of the proposed CFD.
- **Preparation of a rate and methodology for setting the special tax:** A Rate and Method of Apportionment (RMA) will be prepared by a qualified tax consultant to establish the parameters for setting the special tax on all properties within the CFD. The special tax rates set in the RMA will be based on a comprehensive annual budget (using Property Analysis Record (PAR) or PAR-equivalent analysis) using actual and/or estimated cost estimates for preserve management and monitoring activities. A maximum annual special tax rate is established at the time of district formation, based upon the anticipated budget needed to fund maintenance and management activities and to cover annual costs to administer the CFD. The special tax rates established in the RMA would be adjusted annually based on a cost index to ensure that future year special tax revenues would be sufficient to fund the annual budget.
- **Adoption by the City Council:** The formation of the CFD will require several actions by the City Council and the property owners within the proposed CFD. The first action is the City Council will adopt a resolution of intention that will include the RMA, the proposed boundary of the CFD and the services to be funded. A minimum of 30 days after the adoption of the resolution of intention, the City Council will adopt a resolution of formation, conduct a public hearing, and hold an election of the eligible voters of the CFD. The voters will be the property owner within the boundaries of the proposed CFD (HomeFed). Upon the approval of the property owner (HomeFed), the City will be authorized to levy the CFD special taxes in perpetuity. The operating

contract between the City and preserve managers and the pledge of the CFD special taxes pursuant to the contract will ensure that the CFD may not be dissolved or changed.

A PAR or similar cost estimation method will be prepared to document the initial and ongoing annual funding for the perpetual long-term management, maintenance, and monitoring of the biological conservation easement area by an agency, non-profit organization, or other entity approved by the resource agencies. HomeFed will submit the final HMMP to the permitting agencies and will also ensure funds go to contractors and/or the management entity within 60 days of receiving approval of the HMMP. HomeFed will not initiate project impacts until the HMMP is approved by the permitting agencies and a funding mechanism acceptable to the Wildlife Agencies is in place.

8.4.1.5 Subarea Plan Conservation Fund

The City will implement a Subarea Plan Conservation Fund that allows developers whose Covered Activity projects are within the Infill Development Areas to mitigate biological impacts by paying into the Fund instead of directly acquiring land. The Fund would support efforts by the City to implement some conservation actions within Preserve areas that are beyond existing mitigation responsibilities associated with Covered Activities. Payment into the Fund will be an optional mechanism for eligible Covered Activities within Infill Development Areas to satisfy mitigation obligations under the Plan.

The Conservation Fund will be operated based on following:

- Limited to Covered Activities located within the Infill Development Areas that have direct impacts to natural habitats that would not exceed 5.0 acres.
- The mitigation amount to be paid will be determined by the City at the time of the project application based on the estimate for habitat mitigation management and monitoring costs within the potential land acquisition areas of the Subarea Plan Upland Standards Areas or San Diego River Subunit. Prior to any ground disturbance activities associated with the Covered Activity, the City will coordinate with the City Preserve Manager to develop a PAR or PAR-equivalent calculation to estimate the costs for long-term management and monitoring for a conceptual mitigation property typically used to offset impacts for such a project/activity if it performed traditional mitigation. The City will also include a 10 percent administrative fee.
- Mitigation funding will be deposited into a Conservation Fund that the City will establish. Funds collected will be spent within 10 years of deposit into the Conservation Fund.
- The Conservation Fund will be used to implement actions that provide appropriate ecological enhancement and improvements to protected habitats within the Plan Area (e.g., Managed Preserve or other existing protection open space lands in need of enhancement actions due to inadequate existing management).
- The Preserve Steward and City Preserve Manager will be responsible for identifying conservation opportunities to utilize the funds collected in the Conservation Fund. These actions will be “on the ground” actions that are in addition to the biological management and monitoring required by the Subarea Plan. Prior to such actions being initiated, the City will coordinate with the Wildlife Agencies to reach a common agreement on the conservation actions to be undertaken using the Conservation Funds. The Wildlife Agencies will review and provide approval of the location and

type of conservation actions. A variety of conservation actions could be implemented, including, but not be limited to:

- Cactus wren habitat enhancements on appropriate City-owned Preserve Lands.
- Expanded cowbird trapping programs along the San Diego River or near horse stables or livestock corrals in the Plan Area.
- Translocation of select rare plant species into appropriate Preserve areas or protected open space areas.
- Invasive species control.

- The City and Wildlife Agencies will collaborate to identify and initiate conservation actions as funds accumulate. A one million dollar "cap" will be placed on the amount of money that may accumulate in the Conservation Fund. The purpose of this cap is to help ensure that funds are spent in a timely manner. After the cap has been reached, the City must meet with the Wildlife Agencies and agree on an Expenditure Plan. In addition, specific mitigation payments collected will be spent as soon as practicable but not later than 10 years from deposit into the Conservation Fund.
- The City will provide information to the Wildlife Agencies in the Subarea Plan Annual Report by March 31 of each year related to the status of the Conservation Fund. This will include a list of Covered Activities that used the Conservation Fund to mitigate for impacts; the overall acreages covered by each Covered Activity and the acreages of natural areas/habitats affected by each Covered Activity; the funds collected in connection with each Covered Activity and the associated mitigation calculations; conservation actions completed within the reporting time period and the associated costs (funds spent), and ongoing balance of funds within the Conservation Fund.

8.5 Annual Reporting Requirements

8.5.1 Habitat Tracking and Reporting

The City will monitor Plan compliance for all Covered Activities and maintain an accounting of all Covered Activities within the Subarea Plan Area resulting in impacts to natural communities/habitats or Covered Species in the Plan Area, including any resulting from plan amendments described in Section 8.6. The information will be entered into a spatial Geographic Information System (GIS) database, and will include the name, dates, location, entity under the City's control that implemented the Covered Activity, description of the Covered Activity, acreages and the boundaries of the affected and conserved portions of the property. The specific direct losses by natural community/habitat type for each Covered Activity will be mapped (by polygons with associated project names) and acreages calculated, and any known location details regarding occupation by Covered Species will be included. The secure funding source established to perpetually monitor and manage each conservation property under the Plan will also be tracked. The noted GIS database will be available to the City and Wildlife Agencies at all times via a web-based program.

Boundaries of Covered Activity defensible space zones will be calculated and included in the database. The defensible space associated with new Covered Activities projects will only occur within the Covered Activity footprints and will not be within the conserved Preserve. The loss of habitat associated with defensible space zones for Covered Activities will be accounted for prior to any grading permit being issued as part of City's approval process for projects. For lands newly added to the Managed Preserve, the City will ensure that the habitat gain (through legally protected and managed lands) will be accounted for within the noted GIS database, a preserve RMP will be submitted to the City and Wildlife Agencies for approval, and a legal site protection mechanism will be recorded.

Using Habitrak software or equivalent program, the City will maintain an accounting of the amount and location of habitat loss and gain (by natural community/habitat type per specific named Covered Activity) resulting from Covered Activities within the Subarea Plan Area. Habitrak is a well-established GIS-based regional accounting and reporting system maintained by CDFW that is used by MSCP Subareas as well as other NCCP/HCPs in the San Diego region. The City will use Habitrack or equivalent program to assist the City in maintaining the Plan-required "rough step" between Covered Activity impacts and associated mitigation (i.e., preservation/protection/management of currently unprotected natural communities/habitats). The data tracked will be updated at least annually and included in the annual report and will be used to ensure that the City is making the required progress towards the conservation acreage outlined in the Subarea Plan, and that habitat preservation is proceeding in rough step with development.

8.5.2 Subarea Plan Annual Report

The City shall prepare and submit a public Subarea Plan Annual Report (annual report) to the Wildlife Agencies by March 31 of each year. The Wildlife Agencies will then review and provide comments on the annual report to the City. Annual reporting will focus on the key elements of the Subarea Plan that are required to be monitoring and the critical assumptions used to support those elements, including both Covered Activity and Preserve compliance and Plan effectiveness monitoring components. The annual report will include:

- All issuances of Covered Activity approvals and HLIT permits. Appropriate information on acreage, location, and type of habitat lost/committed to Covered Activities permitted/implemented under the Subarea Plan along with anticipated loss of Covered Species.
- Relevant details of compliance monitoring for all Covered Activities implemented in the reporting year.
- Relevant details of compliance monitoring for all Preserve activities in the reporting year.
- Relevant details of effectiveness monitoring for Preserve activities in the reporting year. This will include whether the conservation measures working as expected, whether the plan is meeting expectations, whether any trigger points have been tripped that might require action, and whether based on the trigger points, there is a need to implement adaptive measures.
- Progress on preserve assembly, including acreage and location of mitigation lands set aside as a result of specific Covered Activities, information regarding the mechanism used for land

protection (e.g., fee title, conservation easement, restrictive covenant), easement holders, and the entity responsible for management and monitoring of the land within the Managed Preserve, with a summary of management and monitoring required.

- Summary of all Minor Amendments to the Subarea Plan and boundary line adjustments to the Managed Preserve boundaries over the course of a given reporting year.
- Subarea Plan funding – to include an accounting of the funds expended by the City and other Preserve managers to implement the Plan, as well as the amount and source of funding available/generated for Subarea Plan implementation, broken down by the purpose of the funding (e.g., land acquisitions, program administration, management, adaptive management, monitoring, etc.) and how much is anticipated for the next year.
- Summary of management and monitoring activities within the Managed Preserve based on the annual reports provided to the City by the individual Preserve Managers and the City's summary of the lands that they manage and monitor. The City will summarize the status of activities, monitoring, management and applicable adaptive management, public outreach, funding, compliance, patrolling data, and other issues of concern from the City Preserve Manager and other Preserve Managers operating within the Managed Preserve.
- Updates on biological information on natural communities and Covered Species using information collected by Preserve Managers and other biological monitoring activities occurring within the Plan Area.
- Identification of any measures taken or planned in response to "changed circumstances."

Every year the City shall meet with the Wildlife Agencies to review and evaluate implementation of the Subarea Plan per its requirements during the previous year. Progress that the City has made toward achieving conservation goals and implementing/fulfilling of Plan requirements and success criteria will be reviewed at each annual meeting; key conservation, management and monitoring actions required by the Plan and implemented during the year will be summarized; and habitat management issues will be discussed along with a review of Covered Activity/project approvals issued by or under the control the City over the course of the reporting year. If any of the parties determine that the Subarea Plan is not being implemented as required, the City, in coordination with the Wildlife Agencies, will take the actions to remedy the situation. These actions may include additional management activities, modification of the Covered Activities/project compliance process, modifications of Covered Activities, and/or redirection of implementation funds, as long as they are consistent with the provisions of the Subarea Plan and IA. To allow for public participation, the City will participate with other MSCP jurisdictions to conduct an annual public meeting to describe progress on Subarea Plan implementation.

8.6 Modifying and Amending the Subarea Plan

Certain events may require modifications to the Subarea Plan, as described below. Although Subarea Plan amendments are not anticipated on a regular basis, amendments may be necessary to accommodate changes in conservation levels or preserve design or large annexations of land. Concurrence from the Wildlife Agencies is required for a Subarea Plan amendment. The Wildlife

Agencies will be notified as soon as the City confirms that a Subarea Plan amendment is warranted. CEQA and NEPA compliance may not be required for projects that trigger the Minor Amendment process. Both CEQA and NEPA compliance will be required for any project that triggers the Major Amendment process. The environmental review document(s) must address potential project or Plan modification impacts, as well as impacts on Subarea Plan implementation and any potential effects on permits held by the City.

Most changes to the Subarea Plan are expected to be of a clerical nature, and most amendments to the Subarea Plan are expected to be Minor Amendments, which will be accomplished through the process described below. A process for Major Amendments is also described. Minor and/or Major Amendments to this Subarea Plan will be initiated at the request of the City and are subject to approval by the Wildlife Agencies.

8.6.1 Clerical and Administrative Changes to the Subarea Plan

Sometimes an HCP/NCCP will need clarification to address small errors, omissions, or language that may be too general or too specific for practical application. The following potential clerical and administrative edits and updates to the Subarea Plan are considered to be modifications to the Plan rather than amendments:

- Corrections of typographic, grammatical, and similar editing errors in the Subarea Plan documents, IA, or Permits that do not change the intended meaning. Annual Reports shall include a summary of clerical changes made to the Plan in the preceding calendar year.
- Correction of any maps or exhibits to correct errors in mapping, to update species occurrence information, to refine habitat mapping, or to reflect previously approved changes in the Plan, IA, or Permits. Annual Reports shall include a summary of corrections to maps or exhibits made to the Subarea Plan in the preceding calendar year. Corrections that would involve “downgrading” the mapping or occurrence mapping on a site (e.g., changing the mapping on a site from “coastal sage scrub” to “disturbed”) would be subject to the review and approval of the Wildlife Agencies.
- Minor changes to survey, monitoring, or reporting protocols. Annual Reports shall include a summary of changes made to survey, monitoring, or reporting protocols in the preceding calendar year. These potential changes would be subject to the review and approval of Wildlife Agencies.

These non-substantive changes to the Subarea Plan may be made by the City on its own initiative or in response to a written request submitted by a Wildlife Agency and will not require any amendment to the Subarea Plan, Permits, or IA. All proposed clerical or administrative changes shall be circulated in writing among the parties (City and Wildlife Agencies) by the party proposing the change. Except as noted above, if no party objects to the proposed clerical or administrative change within 30 days of receipt, the change will be deemed accepted and can then be noted in the Plan. If a party objects to a proposed clerical or administrative change, the proposing party may elect to propose the change as a Minor or Major Amendment to the Plan. Each Annual Report will include a summary of all clerical and administrative changes made to the Subarea Plan during the preceding calendar year.

8.6.2 Minor Amendments to the Subarea Plan

Minor changes to the NCCP/HCP that do not result in coverage for new species, new activities, or previously unidentified substantive impacts to the Covered Species or their habitats, may be made through the Minor Amendment process. A Minor Amendment shall not require an amendment to the IA or Permits. The City shall provide the Wildlife Agencies with written notice of each proposed Minor Amendment along with relevant documents, including the City's rationale for requesting the change as a Minor Amendment. Before the decision to amend documents is memorialized, the City will specify to the Wildlife Agencies the old text, proposed new text, the reason for the change, the intended and potential effects, and justification for the modification. The Wildlife Agencies shall use their reasonable efforts to complete their review of the proposed Minor Amendment within 60 days of receipt of a complete request from the City. If the Wildlife Agencies do not concur in writing that the proposed modification may be processed as Minor Amendment, the City must propose the modification as a Major Amendment if the City wants to continue pursuing the modification.

Minor adjustments to the approved Managed Preserve boundaries ("boundary line adjustments") may be desirable under some circumstances and can be completed through a Minor Amendment (and serve herein as an example of the Minor Amendment process). These will be based on a biologically equivalent or superior exchange concept. Examples of situations where a boundary line adjustment may be appropriate include:

- New biological information is obtained through site-specific studies that identify a superior conservation configuration.
- Unforeseen engineering or design opportunities or constraints are identified during the siting or design of projects that require minor modification(s) of the Managed Preserve boundary that is/are neutral or beneficial.
- A landowner requests that a portion or all of his property be included within the Subarea Plan Managed Preserve boundary.
- Correction of minor mapping conflicts when there is a discrepancy between the Managed Preserve map and one or more of the other mapping databases (e.g., vegetation, approved "hardline areas", updated topography, etc.) or ground-truthed discrepancies with the Managed Preserve map and reality (e.g., preserve areas drawn over existing structures), provided those corrections would not change any of the conclusions in regard to the adequacy of the Plan's conservation for Covered Species.

Using information provided by the project proponent and verified by the City, the City will make a biological equivalency finding. The finding will determine if the boundary line adjustment will result in the same or higher biological value to the Managed Preserve and will result in no-net-loss of total conserved acreage and Managed Preserve function for Covered Species. The City will provide written notice of the proposed boundary adjustment and equivalency findings to the Wildlife Agencies at least sixty (60) days prior to scheduling the project for any public hearing. The biological equivalency findings will include the following:

- The exchange maintains or improves the amount, configuration, and ecological function of conserved habitats in the Managed Preserve.

- The exchange maintains or increases the conservation of Covered Species.
- The exchange maintains or increases the conservation of sensitive species not covered by the Subarea Plan.
- The exchange results in equivalent or improved habitat connectivity, preserve configuration, wildlife movement, corridor and overall habitat function, preserve design, management efficiency, and/or protection of biological resources.
- The exchange does not significantly increase the likelihood that a species not covered by the Subarea Plan will meet the criteria for listing under either the ESA or CESA.

The Wildlife Agencies will review the proposed boundary adjustment to determine if they have sufficient information (including maps) within 30 days of receipt of a boundary line adjustment request. Once the determination is made that the information is complete, the Wildlife Agencies will determine within 60 days of receipt of the request if they concur with the City's request to incorporate the boundary line adjustment in the Plan. If concurrence is received from both Wildlife Agencies, the City can proceed with the boundary line adjustment and any associated entitlement process. If concurrence cannot be provided, the basis for the non-concurrence will be provided by the Wildlife Agency(ies) to the City as part of the response. If the City does not receive concurrence from both Wildlife Agencies, and the reasons for non-concurrence cannot be resolved by meeting and conferring with the Wildlife Agencies, the boundary adjustment will need to be processed as a Major Amendment.

Most adjustments to the boundaries will be in areas immediately adjacent to identified Managed Preserve or based on refinements to the hardline development projects. The City shall report any agreed upon modification of preserve boundaries to the affected landowner(s), to adjacent jurisdictions if the modification might affect connectivity to their preserve areas, and to the public in the Subarea Plan Annual Report.

Minor Administrative Amendment - This is used when the Subarea Plan change is minor and has no substantive effect on the Covered species or Subarea Plan objectives. The Subarea Plan can be amended administratively without formal amendment of the permits where the net effect on the species involved and level of take resulting from the amendment is not significantly different than analyzed under the original Subarea Plan and the Wildlife Agencies' decision documents.

Examples of Subarea Plan changes where the incidental take levels and Covered Activities are not substantively altered include:

- Correcting insignificant mapping errors,
- Slightly modifying avoidance and minimization measures,
- Modifying annual reporting protocols,
- Making small changes to monitoring protocols,
- Making changes to funding sources, and
- Changing the names or addresses of responsible officials.

8.6.3 Major Amendments to the Subarea Plan

Major Amendments to the Subarea Plan would be unusual and will generally be required for any change to the Plan that results in the incidental take of Covered Species, impacts to their habitats, or impacts to the environment exceeding the limits addressed in the Subarea Plan, Permits, and/or the associated NEPA/CEQA documents. Such amendments must be approved in writing by the Wildlife Agencies and the City. Coordination with the Wildlife Agencies is required for a Major Amendment, and the Wildlife Agencies must be notified as soon as the City confirms that an amendment may be warranted. Requests for Major Amendments must be processed and any amendments to the Take Authorizations in the permits must be completed by the Wildlife Agencies in conformity with all applicable laws and regulations (including NEPA, CEQA, ESA, CESA, and the NCCPA) in effect at the time the request for an amendment is made.

Requests by landowners for a Major Amendment must be submitted to and initially approved by the City. The City will coordinate processing the Major Amendment with the Wildlife Agencies. The City will provide written notice of any proposed Major Amendment to the Wildlife Agencies at least sixty (60) days prior to scheduling the action and/or project for any public hearing. Such notice will include a copy of any required application for the proposed amendment, a statement of the reason for the amendment, alternatives which were considered, and an analysis of its environmental effects, if any, including any effects on Covered Species.

Each potential revision of the Subarea Plan, NEPA/CEQA, or other documents or processes established under the Plan will not necessarily result in amending the take permits. The need to amend the permits depends on the nature of the proposed Subarea Plan changes, how those changes would need to be reflected in the permits, and whether they would trigger additional environmental review.

Changes in implementation of the Subarea Plan may require amendments to the Plan, take permit(s), or other implementation-related documents. Either party can initiate amendments, but it is up to the Wildlife Agencies to decide the level of review needed to satisfy Federal ESA and State statutory and regulatory requirements.

The Wildlife Agencies typically will not need to advertise an amendment to the Subarea Plan when levels of incidental take would not increase, or the Covered Activities would not expand in ways not analyzed in the original NEPA/CEQA documents. Conversely, changes to the Subarea Plan that would increase incidental take or would expand Covered Activities in a way not analyzed in the original NEPA/CEQA documents will need to be reflected in amended Wildlife Agency permits. A permit amendment consists of the same process as the original permit application

Examples of Major Amendments to the Subarea Plan include:

- An increase in habitat impacts or deviation in the proposed mitigation for Covered Activities/projects described in Chapters 4, *Covered Activities and Impact Assessment*, and 5, *Conservation Strategy*, of the Subarea Plan, including but not limited to deviations in the identified area and dimensions of potentially dedicated Managed Preserve that is not equivalent to the proposed Plan mitigation as determined by the Wildlife Agencies.
- Adding or substantially changing a Covered Activity.

- Addition of lands to the Plan Area.
- Addition of one or more Covered Species to the Subarea Plan.
- An annexation of land that requires incidental Take Authorizations for development and is not covered by an existing NCCP/HCP and associated Take Authorizations; or a substantive variation in design or implementation from an existing NCCP/HCP.
- Land excluded from a Subarea Plan at the time of approval (Not a Part area), and therefore not covered by Take Authorizations, but is later planned for development purposes and the landowner is requesting to utilize the Subarea Plan for endangered species compliance.
- Changes in conservation levels or Preserve design.
- Removal of lands from Preserve Land and conservation areas.
- Reconfiguration of a Preserve(s) resulting in a likely decrease of acreage or functions of natural communities or habitats, as determined by the Wildlife Agencies.
- Substantial changes to the implementing regulations upon which the Subarea Plan is based, including CEQA, the General Plan, local zoning ordinances, etc.
- Changes to funding that affect the ability of the City to implement the Subarea Plan
- Increased level or different form of take for Covered Species
- Adjustment of defensible space areas due to increased fire protection requirements

8.6.3.1 Process for Adding or Changing Covered Activities under a Major Amendment

To add or change a Covered Activity, the project proponent will prepare the Major Amendment document describing the activities proposed to be covered, the species likely to be affected, the take (amount or extent) proposed to be permitted, and the avoidance, minimization, monitoring, and mitigation measures that are to be implemented in order to meet permit issuance criteria. The City will serve as the CEQA Lead Agency, and USFWS will serve as the Lead Agency for NEPA. The CEQA document will identify feasible alternatives that would maintain or exceed, to the maximum extent possible, the biological functions and values of the Managed Preserve that are to be conserved under this Subarea Plan. Where those functions and values would not be maintained, the alternatives will analyze and propose ways to improve the Covered Species conservation in the Managed Preserve in other meaningful ways.

If a project requires a Major Amendment, no project approval and Subarea Plan authorization shall be issued to the project proponent by the City until the Major Amendment has been completed and the amendments to the Incidental Take Permit and NCCP Permit have been issued by the Wildlife Agencies in accordance with all statutory and regulatory requirements.

8.6.3.2 Process for Adding Species to Covered Species List

If a species not on the Covered Species list is proposed for listing pursuant to the ESA or CESA, or a listed species not on the Covered Species list is discovered in the Subarea Plan Area and there is

substantial likelihood that take of that species would occur due to activities occurring in the Plan Area, the Wildlife Agencies will determine whether additional measures, beyond those prescribed by the Subarea Plan, are necessary to adequately avoid, minimize, mitigate, monitor, conserve, and/or manage for the species. If the Wildlife Agencies determine that no such measures are necessary and take of that species has substantial potential to occur due to Covered Activities, the species will be added to the Permits, following application by the City for a Major Amendment.

If the Wildlife Agencies determine that measures already contained in the Subarea Plan are not sufficient to meet permit issuance standards under ESA and NCCPA and that take of that species has considerable likelihood of occurring in the Plan Area, then upon written request by the City, the Wildlife Agencies will use their reasonable efforts to provide technical assistance to the City to identify additional avoidance, minimization, mitigation, monitoring, and/or conservation measures necessary to add such species to the list of Covered Species. In developing these additional measures, the parties will first look to habitat management practices and enhancement opportunities within the Managed Preserve using existing management resources, provided the redirection of such resources would not undermine/reduce conservation for any Covered Species.

If these options are not adequate to meet the species' conservation requirements, the Wildlife Agencies will provide technical assistance to the City in developing additional measures necessary to add the species to the Covered Species list. If the conservation measures necessary to add the species to the Covered Species list are identified when or after the species is proposed for listing, the City shall follow the planned response to Changed Circumstances identified in Section 8.7 of the Subarea Plan but will not be required to approve or implement these conservation measures until such time as the species is listed.

8.6.4 Process for Annexations

For annexations in which no change in Take Authorization is required because the lands do not support or potentially support natural communities/habitats or listed and/or Covered Species, the City will ensure that any proposed annexations are consistent with the Subarea Plan requirements and that the project designs will not result in impacts to the Managed Preserve or other conserved lands within or adjacent to the Plan Area, such as potential hydrological or ecological linkage/corridor changes to the San Diego River or the Fanita Ranch preserves that could affect Plan-related conservation. Proposed annexation projects will be reviewed and approved by the City. The Wildlife Agencies will be consulted by the City for such annexations within the Plan Area as part of the amendment process, even if, such lands and projects will not be covered under the Subarea Plan and would operate in a "no take" mode.

If the lands proposed for annexation are covered by another approved NCCP/HCP and Federal and state permits and the conservation and implementation strategies are consistent, a Major Amendment may not be required. In the case of annexations of land that do require changes to Take Authorizations for Covered Species, one of the following considerations shall apply:

- A Major Amendment to the Plan and amendment of the Take Authorizations are required to cover the annexed lands that are not adequately covered by an existing NCCP/HCP and Federal and state permits.

- If the lands to be annexed will require Take Authorizations for any species not covered under another approved NCCP/HCP or under the City's Subarea Plan, then a Major Amendment to the City's Subarea Plan and Permits shall be required.

8.7 Regulatory Assurances, Changed Circumstances and Unforeseen Circumstances

8.7.1 Regulatory Assurances under the Endangered Species Act - The No Surprises Rule

The "No Surprises" Rule of the United States Department of the Interior, (50 C.F.R. §§ 17.22(b)(5) and 17.32(b)(5), 1998) provides that once an incidental take permit has been issued pursuant to an HCP, and its terms and conditions are being fully and properly implemented, the USFWS "will not require the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water or other natural resources beyond the level otherwise agreed upon for the species covered by the conservation plan without the consent of the Permittee." Changed Circumstances are defined in 50 C.F.R. § 17.3 as changes in circumstances affecting a Covered Species or geographic area covered by the Plan that can reasonably be anticipated by the City and USFWS and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events). The No Surprises Rule requires that Changed Circumstances, and planned responses to those Changed Circumstances be incorporated into an HCP (50 C.F.R. §§ 17.22(b)(5) and 17.32 (b)(5)). If the status of a species addressed under an HCP unexpectedly declines, the preamble to the No Surprises Rule provides the following guidance:

> "Once an HCP permit has been issued and its terms and conditions are being fully complied with, the Permittee may remain secure regarding the agreed upon cost of conservation and mitigation. If the status of a species addressed under an HCP unexpectedly worsens because of unforeseen circumstances, the primary obligation for implementing additional conservation measures would be the responsibility of the Federal government, other government agencies, and other non-Federal landowners who have not yet developed an HCP" (63 FR 8867).

However, in the event of Unforeseen Circumstances, defined as changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by the City or Wildlife Agencies at the time of the Subarea Plan's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species, USFWS may require additional measures beyond those provided under the Subarea Plan provided they are limited to modifications in conserved natural community areas or to the Subarea Plan's operating conservation program for the affected species and maintain the original terms of the conservation plan to the maximum extent possible. These measures may not involve additional financial commitments or resource restrictions beyond those provided under the Subarea Plan without the consent of the Permittee (50 CFR 17.22(b)(5)(iii)(B) and 17.32(b)(5)(iii)(B)).

The assurances provided by the No Surprises Rule are not absolute and are tempered by other regulatory provisions of the ESA. The Permit Revocation Rule moderates the scope of the No Surprises

Rule, providing that in instances where the survival and recovery of a species covered by an HCP is threatened, USFWS may revoke the HCP permit (50 CFR 17.22(b)(9)).

Similarly, under the NCCP Act, provided the City properly implements the Subarea Plan, the Permits, and the IA, CDFW shall not require additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources for the life of the NCCP permit without the consent of City, unless CDFW determines that continued implementation of the Subarea Plan would jeopardize the continued existence of a Covered Species. Cal. Fish & Game Code Section 2820(f). Adaptive Management modifications and Subarea Plan responses to Changed Circumstances are provided under the Subarea Plan. Accordingly, the resources identified to support such modifications and planned responses, together with the other resources commitments of the Permittee reflected in the Subarea Plan, constitute the extent of the obligations of the Permittee pursuant to the NCCP Act assurances.

8.7.2 Changed Circumstances

Changed Circumstances addressed under the Subarea Plan such as fire, flooding, prolonged drought, and invasive species are also the focus of the ongoing monitoring and adaptive management program (see Section 7.2.5, *Adaptive Management and Monitoring of the Preserves Guidelines and Approach*). If a Changed Circumstance response is deemed necessary to respond to Changed Circumstances described in the Subarea Plan, the City will ensure that the Preserve Manager(s) implements the measures specified in this section using the dedicated Changed Circumstances funding. If one or more of the Changed Circumstances listed in this section occur, the City will provide written notification within seven (7) working days to the Wildlife Agencies upon learning of any Changed Circumstances. Within thirty (30) working days, the City will require Preserve Manager(s) to undertake response actions in accordance with this section of the Subarea Plan, as appropriate and to the extent necessary to address the effects of the Changed Circumstances. The City will report to the Wildlife Agencies on its actions within 30 days. Such remedial responses will be initiated without awaiting a response from the Wildlife Agencies.

Planned responses to most Changed Circumstances involve augmenting through increased funding the actions that would typically already be occurring through adaptive management and, when necessary, modifying the Preserve management program in place at the time. Any required planned response will be undertaken by the Preserve Manager(s) using funding allocated to address Changed Circumstances and any detrimental effects as a result of those Changed Circumstances (Table 8-2). As described in Table 8-2, separate Changed Circumstances funding accounts will be established for the Hardline Development Project, Uplands Standards Areas, and City-owned Preserve Lands and the required funding will be deposited in accordance with the time periods specified in Table 8-2.

The USFWS, CDFW, and the City agree that the Changed Circumstances defined by this section of the Subarea Plan represent all Changed Circumstances to be addressed by the City. A description of each potential Changed Circumstance, a risk assessment of the potential for these circumstances to occur, the preventative measures that will be taken to reduce that risk, and planned responses for each of these Changed Circumstances are provided below. Changed Circumstances that exceed the thresholds identified below are not considered reasonably foreseeable during the 35-year permit

term of the Subarea Plan and are, therefore, considered "Unforeseen Circumstances" under the Plan and Permits (see Section 8.7.3).

Current global and regional trends suggest climate change is likely to have an effect on the Subarea Plan Area. Increases in disturbance events associated with climate change, such as fire, flooding, and drought may increase the distribution of disturbance-dependent land cover types, such as non-native grasslands, within the Subarea Plan Area. An increase in the frequency and intensity of such disturbances or extremes (such as extended droughts) may increase the likelihood that these events will harm or kill individual Covered Species, and/or heavily degrade important habitat/ecological functions for those species. Events that occur with unpredictable or random frequency (called stochastic events), such as those described above, can have inordinately negative effects on naturally or artificially rare species, especially when increased in repetitive frequency and/or intensity. Although climate change is not specifically identified as a Changed Circumstance, the various ways in which climate change can be manifested, specifically fire, drought, floods, and increased invasive species, are identified as changed circumstances. Changed Circumstances addressed by this Subarea Plan include the following: fire, flooding, prolonged drought, invasion of exotic species, and listing of a non-Covered Species.

8.7.2.1 Fire

For the purpose of defining Changed Circumstance, fire is defined as wildfire occurring: 1) in the same location of up to 25 acres in size within one to fifteen years after a previous fire for most natural communities in the Plan Area (30 years for chaparral), or 2) on 500 to 1,000 acres of natural communities (approximately 50 percent of the Managed Preserve).

Risk Assessment

Much of the land covered by the Subarea Plan is located in arid areas that are susceptible to wildfires, which can adversely affect natural communities and ecosystems. It is important to acknowledge that fire is a natural phenomenon in southern California, and coastal sage scrub, native grasslands, and chaparral are fire-adapted plant communities, within certain limits including unnatural wildfire repeat intervals and high wind/exotic plant driven high-heat wildfires. In implementing the Subarea Plan, the City will use best management practices and coordinate with local fire departments to minimize adverse impacts associated with fire, and to monitor and respond to potential adverse biological impacts when they occur.

Because fire is a natural feature of the region, under normal circumstances natural re-growth and passive restoration of native natural communities is expected. However, extreme wildfire events (Tedim et al. 2018) consisting of extensive fires (covering a large area), or repetitive fires within the same area of the Plan Area have high potential to adversely affect the Covered Species and the natural communities they depend upon within the Plan Area , such as from type-conversion[23] from existing or passively/actively restoring native natural communities to invasive or non-native communities,

[23] Vegetation type-conversion is a major and persistent change in a natural community's dominant species, life forms, and/or ecological function that is both enduring and spatially extensive. [[https://www.swfireconsortium.org/wp-content/uploads/2020/08/Vegetation-Type-Conversion-Summary_Final.pdf]]

such as those dominated by exotic plants (e.g., non-native grassland) (Syphard et al. 2022). Additional impacts from extreme wildfire events can include long-term degradation or conversion of sensitive natural communities, such as conversion of cactus scrub to coastal sage scrub. Based on the existing data, a fire greater than 1,000 acres is not anticipated to occur within the Managed Preserve during the Permit term, and such a fire will be considered an Unforeseen Circumstance. Similarly, it is not anticipated that any natural community area greater than 25 acres would burn two or more times within any 15-year period within the Plan Area, and that situation will be considered an Unforeseen Circumstance.

Increasingly common large and severe fires in California are now often followed by vegetation type-conversions where once-dominant vegetation (native natural communities) fails to return to its pre-fire state (Gregg and Marshall. 2020). For example, short fire-intervals of the order of 10–20 years may eliminate or greatly reduce some coastal sage scrub species, particularly some dominant native shrub species (Malanson 1985). As natural sources of ignition are rare in coastal southern California, fire-return intervals for coastal sage scrub were likely historically on the average of 30 to 100 years (Rundel 2007). Increased fire frequency can also form a positive feedback loop with invasive exotic plant spread (Conlisk et al. 2016; Syphard et al. 2022). In some cases, these vegetation transitions may be persistent, and are associated with potential losses in biodiversity, ecosystem services, and cultural values. Natural community vegetation type-conversion may be catalyzed by severe, extensive, or frequent fire disturbances, or combinations of disturbances, that inhibit or protract successional return toward the pre-disturbance vegetation type (Gregg and Marshall. 2020).

Several factors interact to influence the sprouting potential of chaparral shrubs post-fire (Beyers and Wakeman 2000). In chamise (*Adenostoma fasciculatum*), for example (chamise is both “seeder” and a stump “sprouter” species), mortality has been shown to increase with increasing fire intensity, and those plants that do survive a high intensity fire tend to have fewer resprouts than those burned under more moderate conditions (Rundel 1982; Moreno and Oechel 1991). Additionally, wildfire severity has major influence on the existence of cactus scrub (particularly cactus of tall stature) and concomitantly reduce or temporarily eliminate coastal cactus wren occupation (Unitt 2008). Rea and Weaver (1990) identified fire as a threat to the coastal cactus wren, in calling fire “the chief limiting factor in the distribution of cacti in southern California.” Severe fire can thoroughly kill cactus plants within cactus scrub, whereas light (less severe) fire intensities can leave cactus patches intact (e.g., Martin 2014).

The Wildlife Agencies have indicated that for the natural communities prevalent in the Managed Preserve, including coastal sage scrub, a re-burn within the same footprint within 15 years of the original burn often can adversely hamper natural propagation and re-establishment of the characteristic native plants and interrupt the ability of the various natural communities to passively restore and rejuvenate in a timely/natural manner. After 15 years following natural wildfire, coastal sage scrub (the natural community type most prevalent in the Subarea Plan boundaries) is expected to normally be passively re-established and capable of natural regeneration (e.g., through seeds). More time (estimated at 30 years) between fires is likely to be needed for natural passive recovery of chaparral to pre-fire state. A “repetitive fire” (a fire anticipated to occur and to create the potential for type-conversion) is therefore considered a fire incident which occurs in the same location as a

previous fire incident (initial fire) no more than 15 years (30 years for chaparral communities) subsequent to the initial fire.

Threat Reduction Measures

Measures to reduce the likelihood of ecological harm from fire in the Managed Preserve are included in the preserve management guidelines specified in Section 7.2.3, *Preserve Management Guidelines*, of this Subarea Plan and will be more specifically identified in the Preserve Complex RMPs and/or Individual Preserve RMPs. Additionally, the following measures will be implemented by the City to prevent or respond to the effects of fire on Covered Species and/or natural communities/habitats:

- *Proximity of Fire Services*– The San Diego River component of the Managed Preserve is primarily an urban preserve that is bordered on the north and south by developed areas. The northern portion of the Managed Preserve, including the hardline development and the North Magnolia Subunits, are bordered on the south by urban development but connect to other open space to the west, north and east (i.e., MCAS Miramar, Mission Trails Regional Park, Sycamore Goodan Ranch, Lakeside Downs) (See Figure 2-9). Although the presence of urban uses may often increase the potential for fire, it is expected to decrease the incidents of large, non-contained fires due to the proximate location of non-flammable materials such as roadways and landscaping in portions of the Plan Area near Preserves acting as fuel breaks. Additionally, fire department responders are located in close proximity to the Managed Preserve and existing Open Space areas within the Plan Area, facilitating a rapid response by the local fire department at the urban-wildland interface. In fact, a new Fire Station is proposed in the central part of the Fanita Ranch community. Rapid response usually leads to fewer acres burned per fire. The average response time by the City fire department to fire incidents within the City is approximately seven to ten minutes.
- *Weed and Brush Abatement Program* – In order to further reduce the risk of fire to structures, the City implements a City-wide weed abatement and brush management program (Program) consistent with the Santee Fire Department approved fire and defensible space standards as described in the defensible space section along with the management described in Section 7.2.3.8, *Fire Management*, of the Subarea Plan. All defensible space for new development will occur outside the Managed Preserve and outside existing Open Space. Further, any defensible space activities around existing developments adjacent to the Managed Preserve and Open Space System that would expand beyond their existing boundaries would require a Minor Amendment to the Subarea Plan, as described in Section 8.6, *Modifying and Amending the Subarea Plan*.
- *Emergency Management* – The City Fire Department and any other supporting emergency responders will respond to any fire in or adjacent to the Managed Preserve, Open Space System, or natural communities on unprotected vacant lands, consistent with the Fire Code. The emergency responders will protect the Covered Species and natural communities/habitats within the Plan Area, to the extent that it is possible to do so, and remain consistent with the primary goal of containing and extinguishing fires to prevent harm to public health, safety, and welfare. The City will notify the Wildlife Agencies as soon as feasible after the onset of the fire. The City will restrict public access to the Managed Preserve, in times of drought, high winds, or as otherwise necessary, when fire hazard is very high, as well as temporarily restrict access to post-

burn areas so as to facilitate restoration of these areas, in areas where public access is normally allowed.

- Coastal cactus wren habitat- The Hardline Development Project will restore, enhance, and actively manage at least 70 acres of cactus scrub in the Fanita Ranch Onsite Preserve (35-acre intensive cactus scrub restoration/enhancement area, plus 35-acre cactus scrub enhancement area) to support a minimum of 10 pairs of cactus wren through the long-term, including supporting this minimum 10 pairs within the managed 70 acres during and through the scenarios of extended droughts and wildfires.
- Opuntia and cholla cactus "starters" will be replanted in sparse but otherwise potentially suitable cactus wren habitat, generally in the southern portion of the Fanita Ranch Onsite Preserve. Newly established cactus patches will be restored and managed to achieve the height, structure, and density of cactus suitable for cactus wren, and minimize the annual grass cover and competing woody shrubs. Management of the remaining occupied cactus wren habitat along with the active restoration and enhancement areas will address fire, drought, control of non-native grasses and other annual vegetation, and competition from woody plants.
- Invasive plant control measures generally within Preserves would include reducing exotic grass and herb fuels and in the San Diego River Subunit elimination of Arundo and eucalyptus.

Planned Responses

As discussed above, dedicated funding will be provided to address the additional costs of Changed Circumstances associated with fire over and above the operating expenses associated with Preserve monitoring and management. Upon the occurrence of a Fire Changed Circumstance as defined above, the Preserve Manager will notify the City who will subsequently notify the Wildlife Agencies within 15 days. Within 30 days of the fire incident that meets the Changed Circumstance criteria, the Preserve Manager will assess the damage caused by the fire. Depending upon the extent and severity of the fire damage, and as determined by the Preserve Manager, with concurrence of the City and Wildlife Agencies, the Preserve Manager will take the following action:

- The Preserve Manager will immediately implement Best Management Practices (BMPs) to avoid soil erosion and further impacts to natural communities/habitats within the burn footprint or firefighting disturbance footprint (movement of soils along dozer or fire lines[24] used as fire control or other soil disturbing activities). The Preserve Manager will then develop and implement a program to monitor natural re-growth within the damaged areas for a period of no less than three years from the fire to determine if the natural communities/habitats are recovering. The monitoring program will provide for site visits on a regular basis, as determined by the City and

[24] A fireline is a break in fuel (usually vegetation) made by cutting, scraping, or digging down to the mineral soil surface. It can be done by mechanized equipment, but in many areas it is done using hand tools in a strip between 6 inches and 3-feet wide (https://www.nps.gov/articles/wildland-fire-fireline-construction.htm).

the Wildlife Agencies and appropriate to the scope and severity of the burn, associated impacts, and the effectiveness of passive recovery of native natural communities.[25]

- If negative impacts on Covered Species or their habitats are identified from the monitoring of burned areas (e.g., habitat type conversion, lack of passive restoration of the original natural community) during the first two years following the fire, the Preserve Manager will notify the City and Wildlife Agencies, and an expedited analysis of the Preserve areas affected by the fire will occur. The Preserve Manager, City, and Wildlife Agencies will coordinate to develop measures to facilitate the recovery of the affected natural communities/habitats; these measures will be initiated within three years of the fire. These potential measures include erosion control, exotic plant species control, reseeding and/or planting of native plants, and/or other measures identified during the analysis. Covered Activities may continue in the Preserve while the new measures resulting from the analysis are developed provided they are not likely to worsen the impacts to the Preserve caused by the fires or associated disturbances (for example, existing authorized trail use and other non-restoration activities within burned/disturbed areas would be temporarily curtailed by the Preserve Manager if such uses would otherwise have considerable potential to impact recovery/re-establishment and restoration of burn areas post-fire). Management of the burned/disturbed area will emphasize removal/control of exotic plants, prevention of infestation by invasive species, and re-establishment of appropriate Covered Species/habitats (e.g., coastal cactus wren and tall/dense cactus scrub). If monitoring observations indicate a likely increase in invasive non-native species compared to surrounding areas and/or a problematic potential for type-conversion, the Preserve management program will be modified to eliminate the infestation and effectively minimize the potential for such invasion and/or type conversion. Active restoration (e.g., planting, seeding, temporary irrigation, etc. as described in Section 7.3.1, *Habitat Restoration*) of some areas may be warranted, as well as exotic plant control.
- The City shall implement the planned response using the identified Changed Circumstances funding identified in Table 8-2.

8.7.2.2 Flooding

For the purpose of defining Changed Circumstance, flooding is defined as natural rain runoff events occurring within the Managed Preserve associated with the City's three watersheds (i.e., the San Diego River, Forester Creek, and Sycamore Creek) and their associated tributaries, less than and including 100-year (1 percent annual exceedance probability)[26] flood levels, as classified by the

[25] After wildfires, burned landscapes are often vulnerable to invasive exotic plants depending on the fire severity, the recovery of vegetation, and the extent of invasive exotic plant populations prior to the fire that can colonize disturbed natural communities (Zouhar et al. 2008). Disturbances create opportunities for invasive exotic plants to flourish with limited competition after a fire. These disturbances can occur directly from the impact of the burn, or through secondary disturbances of such as management actions, recreation, or unauthorized activities.

[26] The term "100-year flood" is used in an attempt to simplify the definition of a flood that statistically has a 1-percent chance of occurring in any given year. Many agencies refer to the percent chance of occurrence as an Annual Exceedance Probability. An annual exceedance probability is always a fraction of one. So, a 1 percent annual exceedance probability flood has a 1 percent chance of occurring in any given year.

Federal Emergency Management Agency (FEMA). Damage to the Managed Preserve due to a flood at greater than a 100-year level is defined as an Unforeseen Circumstance.

Risk Assessment

FEMA provides local jurisdictions with mapping that defines the areas that are likely to be affected, or inundated, by specific flood events. FEMA typically addresses the 100-year flood event and its consequences for people and structures. A 100-year flood, as defined by FEMA, produces a magnitude/extent of inundation that has a one percent chance of occurring in any given year. A 100-year flood has a 39 percent chance of occurring in any given 50-year period and thus is reasonably foreseeable during the life of this Subarea Plan and associated Permits. However, flooding is a natural event and is not anticipated to cause damage sufficiently severe to normally prevent natural regeneration of existing habitats with the Managed Preserve. Nevertheless, natural flood events often cause some denudation of riparian vegetation areas along rivers and streams, and this disturbance can open such areas to increased and problematic invasion by exotic plant species such as giant reed grass (*Arundo donax*) and tamarisk (*Tamarix ramosissima*).

Information on flooding potentials is available from several sources. FEMA maps on file with the City identify the 100-year flood zones located within the Managed Preserve. These areas primarily follow the creeks which form the watersheds named above and are essentially confined to natural drainage channels and adjacent floodplain areas, where water has historically been known to occur during such events.

Threat Reduction Measures

Measures to reduce the likelihood of or harm from flooding in the Managed Preserve are included in preserve management guidelines specified in Section 7.2.3.4, *Hydrology and Erosion Control*, of this Subarea Plan. City land use policies ensure that land use regulations and public improvements accommodate 100-year flood events that approximate the rate, magnitude, and duration of natural flood flows.

All Covered Activities approved by the City will be required to include implementation of BMPs for stormwater and surface runoff, whenever applicable, pursuant to the standards promulgated by the California Regional Water Quality Control Board (RWQCB). For all Covered Activities, the City will include mitigation measures or other conditions, as appropriate, to reduce the likelihood that a flood event would adversely impact Covered Species and habitats. As a co-permittee of the RWQCB National Pollution Discharge Elimination System (NPDES) Permit, the City has adopted Standard Urban Storm Water Mitigation Plan (SUSMP) that it will apply to all Covered Activities, as applicable. All new Covered Activity development projects will be required by the City to meet SUSMP requirements to reduce pollution and runoff flows. The City's SUSMP includes a list of recommended source control and structural treatment BMPs for applicants to choose from, as appropriate to the situation per potential approval by the City.

The City will implement an exotic plant control program within the portion of the San Diego River within the Plan Area, to effectively control giant reed grass, eucalyptus, tamarisk, and other invasive exotic plants occurring within and adjacent to the 100-year floodplain (to the extent practicable per

landowner permissions), with control measures consistent with protection of Covered Species and their habitats (e.g., most work activities occurring during the non-breeding season, etc.). This will considerably reduce the potential for these exotic species to spread and invade within riparian and riverine vegetation areas within the San Diego River corridor, including the Managed Preserve, following flood events.

The City will implement at trash control program within the portion of the San Diego River and Forester Creek within the Plan Area, to effectively control trash deposited or occurring within and adjacent to the 100-year floodplain (to the extent practicable per landowner permissions), with control measures consistent with protection of Covered Species and their habitats. This will considerably reduce the spread of trash within the San Diego River corridor during and following flood events.

The City will work with local law enforcement and landowner to reduce substantially trespassing within the portion of the San Diego River within the Plan Area, to effectively reduce disturbance within the 100-year floodplain, with control and enforcement measures consistent with protection of Covered Species and their habitats. This will considerably reduce the disturbance of riparian and riverine areas in the Plan Area, improving their resistance to flood damage and exotics invasion during and following flood events.

Planned Responses

As discussed above, dedicated funding will be provided to address the additional costs of Changed Circumstances associated with flooding over and above the operating expenses associated with Preserve monitoring and management. Upon the occurrence of a Changed Circumstances as it relates to flooding as defined by this section, the City shall employ BMPs immediately to reduce and/or avoid additional impacts to the Managed Preserve. The City will then notify the Wildlife Agencies within 15 days of such flooding impacts. Within 30 days of the flood incident, the City will assess the ecological resource/ecological processes damage caused by the flood within the affected drainage to determine, with concurrence of the Wildlife Agencies, if development and implementation of a remediation and associated monitoring plan is required. Anticipated damage would include erosion of a stream channel or bank associated with loss of riparian vegetation that would potentially result in failure of passive restoration of the native riparian natural community. The assessment will identify measures to minimize adverse impacts on Covered Species resulting from the flood event and to mitigate any flood damage remediation activity impacts to natural communities (such as eroded slope repair activities). Appropriate measures would be developed by consensus between the City and the Wildlife Agencies, which may include active restoration. The City will initiate repair and/or remediation efforts within 60 days of this consensus agreement. Ongoing maintenance and operations activities within the flood-affected drainage areas may continue until new measures resulting from the assessment are developed, unless such measures would interfere with expected repair and remediation activities. These ongoing maintenance and operation activities would be appropriately modified per the ecological goals for the Preserve to adjust to the conditions of the drainage changed by the flooding event.

If the extent and severity of the flood damage necessitate additional or longer-term monitoring, the City will develop and implement a monitoring and response program for a period of three years to

monitor natural re-growth of appropriate native vegetation communities as well as potential invasion of exotic plant species within the flood-affected area. The monitoring program will provide for site visits on a regular basis, as determined by the City and the Wildlife Agencies, as appropriate to the scope and severity of the flood effects.

At any time during the monitoring program, if monitoring observations indicate that invasion by non-native species and/or increased potential for type conversion is occurring within flood affected or flood damage reduction/repair activity footprint (e.g., slope repair) areas, the Managed Preserve management program will be modified to effectively control the potential for such invasion and/or type conversion, consistent with the Section 7.2, *Preserve Management and Monitoring*. One or more of the following management activities will be incorporated into the modified management program, as appropriate for the circumstance: (1) removal of sediment and/or debris built up by the flood event, (2) control of non-native plants and other invasive exotic species through approved techniques, and/or (3) active ecological restoration.

8.7.2.3 Prolonged Drought

For the purpose of defining a Changed Circumstance, Prolonged Drought is defined as drought, as declared by the California State Department of Water Resources and/or the San Diego County Water Authority, of three to nine years in length. A drought of more than nine years is herein considered an Unforeseen Circumstance.

Risk Assessment

Drought is a cyclical weather phenomenon that is beyond human control. Drought is not uncommon in southern California, and it is a phenomenon to which local natural communities and native species have adapted over time. Prolonged Drought occurs slowly over several years, differing from the catastrophic events of fire and flood, which occur rapidly and afford little time for preparing for disaster response. Prolonged Drought conditions may adversely affect Covered Species and conserved vegetation communities, particularly if the species and/or habitats are unable to adapt to the changing conditions caused by Prolonged Drought. This is particularly relevant when associated with higher temperatures (e.g., increased drying effects) associated with climate change (Williams et al. 2015); climate models for the region indicate that the 21st century will be increasingly arid and droughts more severe and prolonged (MacDonald 2010). Combinations of Prolonged Drought and fragmented ecosystems can make local migrations/movements to drought-refugia habitats for some native species challenging or unavailable or temporarily eliminate effective availability of essential (during droughts) breeding habitats through development-blocked movement routes that were formerly intact. Prolonged Drought potentially effects Covered Species across the range of natural communities in the Plan area, including upland, riparian, wetland, and aquatic habitats.

Based on historic rainfall and pre-historic tree ring[27] data for drought periods, remedial actions to address predictable drought impacts are likely to be necessary over the Permit term. During drought,

[27] Earth's climate system exhibits variability in climate across a range of spatial and temporal scales covering several orders of magnitude. Instrumental records of climate and hydrology in western North America only span the last 100 years or so.

declines in surface water flows (streamflows) can be detrimental to human water supplies as well as habitats for aquatic, wetland, and riparian species. Unlike the effects of a drought on stream flows, groundwater levels may not reflect a shortage of rainfall for a year or more after a drought begins. Despite reduced availability, human reliance upon groundwater is substantial and often increases during drought through increased groundwater pumping to meet water demands. If water is pumped at a faster rate than an aquifer is recharged by precipitation or other sources, groundwater levels typically drop (increasing distance from the ground surface to the groundwater level), resulting in decreased water availability to many riparian, wetland, and aquatic natural communities and stream flows ((https://ca.water.usgs.gov/california-drought/what-is-drought.html).

Ultimately, the surface water and groundwater form one interconnected hydrologic system. Nearly all surface water features - streams, lakes, reservoirs, wetlands, and estuaries - interact with groundwater. In addition to being a major source of water to lakes and wetlands, groundwater plays a crucial role in sustaining streamflow between precipitation events - especially during protracted dry periods (https://ca.water.usgs.gov/california-drought/what-is-drought.html). Displaying similar connectiveness, stream flows are critical to long-term recharge groundwater levels in most aquifers (Stockton et al. 1989) and relatedly support stream-associated aquatic and riparian systems. Although the contribution of groundwater to total streamflow varies widely among streams, hydrologists estimate the average contribution is somewhere between 40 and 50 percent (https://ca.water.usgs.gov/california-drought/what-is-drought.html).

Soil moisture is one of the critical parameters for ecosystem components dependent on natural conditions (Stockton et al. 1989). Severe or extended droughts in California often lead to a wide range of ecological consequences, such as widespread tree mortality (McDowell and Allen 2015), larger wildfires, loss of primary productivity at both local and regional scales (Knapp et al. 2015), and reduced species richness in herbaceous communities, with disproportionate losses of rare species (Tilman and El Haddi 1992) and/or shallowly rooted species (Harte et al. 2006).

Threat Reduction Measures

This Subarea Plan does not contain measures to prevent drought because drought is not preventable by human intervention.

The City is served by the Padre Dam Municipal Water District (MWD), which is a member of, and purchases imported water from, the San Diego County Water Authority (SDCWA). In order to reduce reliance upon imported water, Padre Dam MWD extensively uses reclaimed water for landscape

Existing historical observations of the climate system in the U.S. are too short or too sparse to completely characterize this variability, particularly at decadal, multidecadal, and centennial time scales, including drought behavior. The instrumental records are also too short to provide evidence on the full range of factors that could produce severe and prolonged droughts. Paleoclimatology addresses the limitations of the instrumental era by extending climate information back into the past using "proxies," and tree rings are one of the most important sources of information about the climate of the last several thousand years. The characteristics of the annual rings (i.e., width) reflect past climate and environmental conditions, prior to our modern period of monitoring and measuring the climate of the region, and effectively allow us to recover observations of the past. [[Anchukaitis, K.J., 2017. Tree rings reveal climate change past, present, and future. Proceedings of the American Philosophical Society, 161(3), pp.244-263. MacDonald, G.M., 2007. Severe and sustained drought in southern California and the West: Present conditions and insights from the past on causes and impacts. Quaternary International, 173, pp.87-100.]])

irrigation within the City and for recreational uses at Santee Lakes. In addition, the City requires that 90 percent of all landscaping in non-turf areas be drought tolerant. Turf areas are limited to 25 percent of total landscape area (Santee Municipal Code, Title 17, Chapter 17.30).

To prepare for potential diminished water supply, the City will assess its use of recycled and advanced treated water City-wide, and will direct recycled or advanced treated water to areas of the Managed Preserve undergoing active restoration where water is needed, and where it is possible to do so. It is acknowledged that it may not always be feasible to use recycled or advanced treated water for active restoration areas in times of drought or diminished water supply. However, to the extent that it is able, the City will work with responsible water agencies to negotiate for adequate recycled water supplies to be available to serve restoration areas in the Managed Preserve. Water collected through stormwater collection basins may serve as another source of water for restoration areas.

The Hardline Development Project will restore, enhance, and actively manage at least 70 acres of cactus scrub in the Fanita Ranch Onsite Preserve (35-acre intensive cactus scrub restoration/enhancement area, plus 35-acre cactus scrub enhancement area) to support a minimum of 10 pairs of cactus wren through the long-term, including supporting this minimum 10 pairs within the managed 70 acres during and through periods of extended drought.

Planned Responses

Upon the official declaration by the State of California of a Prolonged Drought, as defined above, the City will notify the Wildlife Agencies within 15 days. Within 30 days, the City and the Wildlife Agencies will assess the condition of the Managed Preserve to determine if a management response and associated monitoring program is required for all or portions of the Managed Preserve. Based upon the extent and severity of the Prolonged Drought, the City will develop and implement an assessment of the condition of the Managed Preserve to determine whether Covered Species are being affected or whether there is potential for damage to their habitats. Based on the results of the assessment, the City will: 1) close authorized trails to public use in Preserves that are adjacent to vegetation communities likely stressed from the prolonged drought, 2) implement a program to monitor natural re-growth of native natural communities and potential extirpation of Covered Species (i.e., western spadefoot) within affected areas of the Managed Preserve after the Prolonged Drought is ended for a period of up to three years, and 3) implement a remediation and/or re-establishment program to restore areas that could benefit from restoration or enhancement. The management response and monitoring program will provide for site visits on a regular basis, determined by the City and the Wildlife Agencies, as appropriate to the drought situation. Additionally, monitoring will focus on whether additional actions under the City's control can be enacted to benefit Covered Species.

At any time during the monitoring program, if observations indicate that habitat regrowth is resulting in increased opportunity for invasion by exotic species and/or increased potential for type conversion, the Managed Preserve management program will be modified to reduce the potential for such invasion and/or type conversion, consistent with the Section 7.2, *Preserve Management and Monitoring*. One or both of the following management activities will be incorporated into the modified management program, as appropriate for the circumstance: (1) providing temporary irrigation to strategic areas of the Managed Preserve; and/or (2) controlling non-native plants and other invasive species through approved techniques.

8.7.2.4 Invasion of Exotic Species

For the purpose of defining Changed Circumstances, Invasion of Exotic Species is defined as an increase of percent cover of an invasive plant species within the Managed Preserve by more than 20 percent and less than 100 percent, and an increase of an invasive animal species to the extent that such increase has adversely affected more than 20 percent and less than 100 percent of the occurrences or habitat of any Covered Species. For the purpose of implementing the actions specified by this section, plant species to be considered potentially invasive are those defined in Appendix I, *Invasive Nonnative Plan Species List*. Invasive animal species known to inhabit San Diego County include, but are not limited to, bullfrogs (*Lithobates catesbeianus*), African clawed frogs (*Xenopus laevis*), common coqui (*Eleutherodactylus coqui*), red-eared slider (*Trachemys scripta elegans*), non-native crayfish (e.g., *Procambarus clarkii*)barred tiger salamanders (*Ambystoma mavortium tigrinum)*, Argentine ants (*Linepithema humile)*, brown-headed cowbirds (*Molothrus ater)* Shot hole borer (*Xyleborus sp.)*, and Goldenspotted oak borer (*Agrilus auroguttatus)*.

The City and Preserve Manager(s) will ensure that the Managed Preserve will be monitored and managed to ensure that the presence of non-native, exotic species are controlled and where possible eliminated (Section 7.2.3, *Preserve Management Guidelines*).

Risk Assessment

Although invasive, exotic, or pest species of plants and/or animals may currently be present within the Managed Preserve, certain invasive species (i.e., cowbirds) may create the potential for impacts to Covered Species which could already be having an adverse effect on one or more of the Covered Species within the conserved habitat. Existing exotic species within the Plan Area are likely adversely affecting Covered Species and the ecosystems they depend upon. Opportunities for increases in invasive or exotic species will likely occur as urban development expands in areas surrounding existing and newly conserved areas within the Plan Area, or if new invasive or exotic species not currently in the area are introduced.

Invasive species are organisms (plants, animals, or microbes) that are not native to an environment, and once introduced, they establish, often quickly reproduce and spread, and cause harm to the environment, economy, and/or human health. Invasive species threaten the diversity or abundance of native species through competition for resources, predation, parasitism, interbreeding with native populations, transmitting diseases, or causing physical or chemical changes to the invaded habitats. Native plants can often support 10 to 50 times as many species of native wildlife as non-native plants (Nipomo Community Services District 2013).

The introduction of non-native predators is a clear and well-documented driver of biodiversity loss (e.g., Butchart et al. 2010; Blaustein et al. 2011; Cardinale et al. 2012) as predation and competition for resources by non-native predators directly diminish community complexity (McGeoch et al. 2010). Non-native species also have the potential to alter trophic cascades and change ecosystem structure and functioning through indirect effects (Nilsson et al. 2012; Twardochleb et al. 2013; Kreps et al. 2016). In many cases, non-native predators threaten regional conservation value by altering ecosystem services (Turner & Daily 2008; Walsh et al. 2016). For example, zoonotic diseases may increase when larger predators that typically regulate vector species are reduced by the introduction

of non-native predators (Packer et al. 2003; Ostfeld & Holt 2004). Biodiversity loss due to non-native predators has been widely explored and the potential for downstream effects to ecosystem services is a significant conservation concern (Lodge et al. 2000).

The occurrence of many different events, including Changed Circumstances defined in this section, will precipitate measurable increases of invasive species. Planned responses to these Changed Circumstance events include measures to reduce the opportunity for Invasion by Exotic Species.

Threat Reduction Measures

Establishment of the Managed Preserve along with management and monitoring actions that will be undertaken as part of the implementation of this Subarea Plan will reduce the probability of sudden increases in invasive species. The Preserve management guidelines in Section 7.2, *Preserve Management and Monitoring*, of this Subarea Plan contain measures specifically designed to prevent invasive species from threatening conserved habitat. These measures include restrictions on the use of invasive plant species in landscape palettes, visitor/resident invasive species education, fencing around development areas, training and use of volunteers in removing invasive plant species, and inspecting container plants to limit invasive ants and other species. Covered Activities that include multi-unit residential development will prohibit free-roaming cats as part of their Covenants, Conditions and Restrictions. Through implementation of Preserve management and monitoring activities identified in Section 7.2, invasive species will be detected prior to becoming a threat to Covered Species. When invasive species are detected, the Preserve management program will implement measures to eliminate, reduce, and/or manage such species.

Planned Responses

Dedicated funding will provided to address the additional costs of Changed Circumstances associated with Invasive Exotic Species over and above the operating expenses associated with Preserve monitoring and management. If, as determined by the City in coordination with the Wildlife Agencies, an increase in invasive or exotic species has occurred within the Preserve System at a magnitude sufficient to meet the definition of a Changed Circumstance (i.e. greater than 20 percent), the City will notify the Wildlife Agencies within 15 days of discovering the threat. If the influx of invasive species involves a species included on the CalIPPC "List A", within 30 days of such notice to the Wildlife Agencies, the City will assess and implement changes to the management/adaptive management program that are necessary to control the invasive and exotic species. If the influx of invasive species involves a species listed on the CalIPPC "Red Alert" list (Appendix I, *Invasive Nonnative Plant Species List*), the City will also notify other relevant agencies as recommended by CalIPPC. Within 30 days of obtaining responses from the agencies contacted, the recommendations of the agencies will be used by the City with concurrence of the Wildlife Agencies to determine appropriate modifications to be made to the management and adaptive management program.

Modification of the management and adaptive management program to address this Changed Circumstance will include implementation of a management response and monitoring program of up to three years. The management response and monitoring program will provide for site visits on a regular basis, determined by the City and the Wildlife Agencies, as appropriate to the type, scope and location of the invasive or exotic species infestation or presence.

Some species (including some native species) may become problematic if the system becomes unbalanced. If cowbirds become a problem in the Managed Preserve, through increased numbers, incidental observations of cowbird parasitism on a gnatcatcher nest, or other issues, a cowbird trapping program may be initiated by City, following coordination with Wildlife Agencies. Similarly, if evidence indicates that key predator species (e.g., coyotes) are extirpated, and there is an increase in native or non-native mesopredators (e.g., raccoons, skunks, cats) adversely affecting Covered Species, the City will initiate a program to control mesopredators under the Subarea Plan's Changed Circumstances.

8.7.2.5 Future Listings of Non-Covered Species or Designation of Critical Habitat for Non-Covered Species

The City recognizes, as noted in the USFWS discussion of its "Habitat Conservation Plan Assurances ('No Surprise') Rule," (63 F.R. 8859; February 23, 1998), that the future listing of a species whose conservation was not provided for in the Subarea Plan to a level sufficient to include the species as a Covered Species can be viewed as a Changed Circumstance. In the event that a species, which is not a Covered Species pursuant to this Subarea Plan and associated take permit, is listed by either the USFWS or CDFW and/or Critical Habitat is designated subsequent to the issuance of a take permit pursuant to the Subarea Plan, such listing will be considered a Changed Circumstance.

For purposes of defining a Changed Circumstance, future listing of non-Covered Species is defined as the State or Federal listing under CESA or ESA, respectively, of any non-Covered Species with the potential to occur or historically occurring within the City. Although NCCPs and HCPs contribute to the conservation of habitat for species and aim to prevent the listing and contribute to the recovery of species, for several reasons (including factors outside of the control of the City) it is still reasonably foreseeable that a species occurring within the City may become listed; therefore, there is no Unforeseen Circumstance related to this category. Additionally, it is foreseeable that Critical Habitat could be designated under the ESA within the Plan Area for a non-covered species.

In the event a non-Covered Species is newly listed, the City and Wildlife Agencies will jointly identify measures that the City will follow to avoid take, jeopardy, and/or adverse modification of any designated Critical Habitat within the Subarea Plan boundary, until and unless the City's Subarea Plan and Permits are amended to include coverage for the newly-listed species or the Wildlife Agencies notify the City that such measures are no longer required to avoid take of the species, jeopardy of the species or adverse modification of designated Critical Habitat of the newly listed species. Among other measures, the City will require that prior to the City's issuance of approval for a Covered Activity, applicants must obtain take permits for any listed, non-Covered Species through appropriate Federal and/or State permit processes.

Risk Assessment

The development of the Covered Species list used a systematic process to review and assess the potential for listing of all sensitive species in the Plan Area. Species with a reasonably foreseeable potential to be listed during the permit term were included on the Covered Species list. Therefore, the risk is relatively low that a non-Covered Species will be listed or have Critical Habitat designated during the permit term.

Threat Reduction Measures

This Subarea Plan does not contain measures to prevent future listings/Critical Habitat designations of non-Covered Species. Although, the conservation benefits that non-covered species receive from the conservation, management, and monitoring measures conducted through Plan implementation may reduce the likelihood of additional species listings.

Planned Responses

Currently non-listed species that are not addressed as Covered Species in this Subarea Plan will not be included in the Permits and will not automatically receive Permit coverage in the event of listing. To the extent that the Wildlife Agencies determine that any such species would likely be taken, jeopardized, or the Critical Habitat of such species be adversely modified or destroyed as a result of the Covered Activities, the City will implement the "no jeopardy/no take/no adverse modification" measures, if any, identified by Wildlife Agencies until there is a Major Amendment for the Subarea Plan permits or until the Wildlife Agencies notify the City that such measures are no longer needed to avoid jeopardy to, take of, or adverse modification to the Critical Habitat of the non-covered species. It is expected that the habitat conservation and management under the Subarea Plan would benefit the newly listed species. Based on currently available information, the City believes that the land within the Preserve System, and the associated management provided under the Subarea Plan for the Preserve System lands, provides the necessary management and protection for the habitat features on those lands that are essential for the conservation of non-covered newly listed species within the Subarea Plan boundary.

8.7.3 Unforeseen Circumstances

Pursuant to the No Surprises Rule at 50 C.F.R. §§ 17.22(b)(5) and 17.32(b)(5), and provided that the Permittee is properly implementing the Plan, the USFWS shall not require the Permittee to provide additional land, water or other natural resources, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level provided for under the Plan, the IA and the section 10(a)(1)(B) Permit with respect to Covered Activities without the consent of the Permittee. Adaptive Management modifications and plan responses to Changed Circumstances are provided for under the Plan and, as such, are not unforeseen circumstances and are not subject to the regulatory assurances in the No Surprises Rule.

The Wildlife Agencies bear the burden of demonstrating that Unforeseen Circumstances exist, using the best available scientific and commercial data available and considering certain specific factors. Unforeseen Circumstances include future unanticipated conditions, which are either not defined as Changed Circumstances or which exceed the definitions developed for Changed Circumstances particularly in terms or severity or extent (e.g., flood or fire affecting species continued existence).

Notwithstanding the limits on conservation measures identified above under Section 8.7.2, the Incidental Take Permit may be revoked by the USFWS pursuant to 50 C.F.R. §§ 17.22(b)(9) and 17.32(b)(9) if, as a result of an Unforeseen Circumstance or any other cause, continuation of the Federal permit would be inconsistent with the criterion set forth in 16 U.S.C. 1539(a)(2)(B) (i.e., would appreciably reduce the likelihood of the survival and recovery of the species in the wild), and the

inconsistency has not been remedied. As recognized in the "No Surprises" Rule at 50 C.F.R. §§ 17.22(b)(6) and 17.32(b)(6), the USFWS, any Federal, State or local agency, or a private entity may take additional actions at their own expense to protect or conserve a species covered under the Subarea Plan.

8.7.3.1 Notification

If either one of the Wildlife Agencies or the City becomes aware of the existence of a potential Unforeseen Circumstance, they will immediately notify the others of the existence of a potential Unforeseen Circumstance. Except where there is a substantial threat of imminent, significant adverse impacts to a Covered Species, USFWS will provide the City and CDFW thirty (30) calendar days' notice of a written finding of Unforeseen Circumstances, during which time the Wildlife Agencies will meet with the City to discuss the proposed finding, provide the City and any affected Third-Party Participants an opportunity to submit information to rebut the proposed finding, and consider any proposed changes to the conservation strategies for the Managed Preserve and the Subarea Plan's conservation program.

8.7.3.2 Process to Respond to Unforeseen Circumstances

If the USFWS, CDFW, or the Permittee believe that an Unforeseen Circumstance exists, it shall immediately provide written notice of its proposed finding of Unforeseen Circumstances to the parties. Within 30 days of such notice, USFWS in coordination with CDFW shall clearly document the basis for the proposed finding regarding the existence of Unforeseen Circumstances pursuant to the requirements of 50 C.F.R. §§ 17.22(b)(5)(iii)(C) and 17.32(b)(5)(iii)(C). Within fifteen (15) days of receiving such notice, the Permittee and the Wildlife Agencies shall meet and confer to consider the facts cited in the notice and potential changes to the Subarea Plan's operating conservation program or management and operation of the Managed Preserve. Pursuant to 50 C.F.R. §§ 17.22(b)(5)(iii)(C) and 17.32(b)(5)(iii)(C), USFWS in coordination with CDFW shall make an Unforeseen Circumstances finding based on the best available scientific information, after considering any responses submitted by the City pursuant to this section of the Subarea Plan, and the USFWS in coordination with CDFW shall have the burden of demonstrating that Unforeseen Circumstances exist.

8.7.3.3 Interim Obligations upon a Finding of Unforeseen Circumstances

If the USFWS in coordination with CDFW makes a finding of Unforeseen Circumstances, during the period necessary to determine the nature and extent of additional measures required and available, if any, to address the Unforeseen Circumstances, the City shall avoid contributing to appreciably reducing the likelihood of the survival and recovery of the affected Covered Species. The City shall accordingly exercise its enforcement authorities as provided by law over third parties under the City's jurisdiction and control that are carrying out Covered Activities.

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Chapter 9
Alternatives to Take

9.1 Introduction

The Federal Endangered Species Act (ESA) requires that section 10 permit applicants specify in a Habitat Conservation Plan (HCP) what alternative actions to the take of federally listed species were considered and the reasons why those alternatives were not selected. The *Habitat Conservation Planning and Incidental Take Permitting Processing Handbook* (U.S. Fish and Wildlife Service 2016) identifies two types of alternatives commonly used in HCPs: (1) an alternative that would reduce take below levels anticipated under the HCP and (2) an alternative that would avoid take and, hence, not require a permit from the U.S. Fish and Wildlife Service (USFWS).[28]

This chapter identifies the alternatives considered by the City that would reduce or avoid the potential for take of Covered Species addressed in the Subarea Plan.

9.2 Description of Take Alternatives

The alternatives to take addressed in this chapter are the No Take/No Action Alternative, and the 1998 Conservation Strategy Take Alternative. These alternatives to take are assessed below in relation to the effects on Covered Species for the proposed conservation strategy and Covered Activities, as well as the reasons why these alternatives are not being selected by the City.

9.2.1 No Take/No Action Alternative

Under the No Take/No Action Alternative, the City would not request take permits and would not adopt a Subarea Plan to address impacts to species on a comprehensive level. The City and third parties undertaking activities in the City would be required to design activities to avoid take of currently listed species or as is currently the case, seek project-level take permits from USFWS and CDFW.

Chapter 4, *Covered Activities and Impact Assessment*, describes the Covered Activities, which include activities associated with planned and future residential, commercial, and infrastructure development in the Plan Area. This includes the Fanita Ranch Hardline Development Project and future development within the Upland Standards Areas, San Diego River Subunit, and Infill Standards Areas of the City. Under the No Take/No Action Alternative, these Covered Activities would have to be designed and configured to fully avoid take of listed species or obtain project-level take permits. Based on the distribution of known occurrences of Covered Species in the Plan Area (see Chapter 3, *Covered Species*), planned and future development designed to fully avoid take under this alternative would result in a substantial reduction in development.

[28] The California Natural Community and Conservation Planning Act requires that project alternatives be considered in the EIR prepared for the NCCP but not in the NCCP itself.

The No Take/No Action Alternative would have no adverse effects on Covered Species from Covered Activities that would rise to the level of take because the activities that would be reasonably certain to result in take would not receive take authorization via a permit issued to the City, and take would have to be avoided or permitted directly by the Wildlife Agencies. The No Take/No Action Alternative would also not provide the potential benefits of the Subarea Plan to Covered Species, because the Subarea Plan and its conservation measures would not be implemented. Under this alternative scenario, the Subarea Plan would not contribute to the protection and management of the Covered Species through its comprehensive landscape-level conservation strategy.

Avoiding take of listed species would be infeasible because it would prevent a substantial portion of development contemplated under the approved General Plan and capital improvement plans and prevent the City from implementing important infrastructure development activities (Covered Activities). As such, it is expected that there would be a substantial number of project-level take permit applications required under this alternative.

By focusing on individual projects one at a time, little consideration of a landscape-level conservation strategy would be possible or practicable, such as the required measures of the Plan that would protect large, contiguous blocks of land. It is likely that smaller and more isolated natural areas would be conserved as mitigation for projects under this alternative. Such a process would likely lead to more out-of-Plan Area mitigation for development projects. This fragmented conservation, as compared to what would occur under the Plan, would likely result in more impacts to Covered Species over time through reduced ecological functioning of the remaining protected mitigation areas.

For example, one of the Subarea Plan's landscape-level biological goals is to establish a Managed Preserve with representative natural communities that are both large and connected enough to support important ecosystem functions, sustain subpopulations of Covered Species, maintain or increase biological diversity of native species in the Preserve areas, and ecologically accommodate changing environmental conditions (e.g., climate change) over time. The purpose of creating the Managed Preserve is to protect suitable habitats/ecosystems for the Covered Species and minimize take in the Plan Area by directing where impacts and conservation will occur. Under project-by-project take permitting, a landscape-level preserve system would not be established. Rather, the Plan Area's landscape outside of Fanita Ranch would largely end up as a mosaic of small, protected land parcels surrounded by development, with reduced or no connectivity between the protected areas. This would likely lead to greater overall adverse effects on Covered Species and a decrease in the viability of those species.

The Subarea Plan would provide protection and management of natural communities and habitats that support the Covered Species within Preserve areas in the Plan Area. By comparison, project-by-project take permitting would lack large-scale planning and would produce piecemeal mitigation with less ecological connectivity between protected areas in the Plan Area. This flawed mitigation approach is what led to the MSCP Subregional Plan being developed by local jurisdictions and the Wildlife Agencies. The Subarea Plan's comprehensive regional planning requirements would preserve and enhance more functional habitat blocks (core areas) and linkages/corridors between them than the No Take/No Action alternative. The Subarea Plan and other comprehensive regional planning efforts

also protect and manage a broader number of native species than would occur through project-by-project take permitting under the No Take/No Action Alternative.

Project-by-project permitting also would increase the workload burden on the Wildlife Agencies and the City compared with adoption of a Subarea Plan. The proposed Plan and the associated permits from the Wildlife Agencies would coordinate and streamline the permitting process by allowing the City to provide coverage to entities/activities under the City's direct control through the issued state and Federal permits, which would require implementation of the Subarea Plan's conservation measures for Covered Activities. With this streamlined process, both costs and uncertainties would be reduced substantially for private landowners and the City, thus ensuring a more efficient use of public and private dollars.

Finally, the 2025 Draft Subarea Plan addresses changed circumstances (Chapter 8, *Subarea Plan Implementation and Funding*) that a project-by-project approach would not address or fund proactively. In this way, the Subarea Plan provides greater operational flexibility to the City and assures Subarea Plan funding and conservation requirements to address rare but foreseeable events in the Plan Area, such as large or intense wildfires and extended droughts.

The No Take/No Action Alternative was rejected because the proposed 2025 Subarea Plan provides a biologically superior mitigation approach, increases administrative efficiency for the City and the Wildlife Agencies, and provides funding and remedial responses for changed circumstances.

9.2.2 1998 Conservation Strategy Take Alternative

As described in Chapter 1, *Introduction and Overview*, the MSCP Subregional Plan (adopted in 1998) included the Multi-Habitat Planning Area (MHPA) that delineated areas where habitat conservation and preserve assembly should occur (see Section 1.1.3, *Consistency with the MSCP Subregional Plan*). In general, the MHPA represents the most biologically important areas that were considered to support very high to high biological function habitats. Subarea Plan Figure 1-4 identifies the original MHPA boundaries (as drawn in 1998) within and in proximity to the Plan Area. The 1998 Conservation Strategy Take Alternative is based on this map of preserve areas rather than the 2025 Draft Subarea Plan Preserve and Open Space System Map (Figure 5-1).

A comparison of the 1998 Conservation Strategy map and proposed Subarea Plan Preserve and Open Space System Map is depicted in Figure 9-1. The 1998 Conservation Strategy Take Alternative established the initial expectation of preserve areas to be protected within the Plan Area but would result in less habitat conservation than is proposed in the 2025 Draft Subarea Plan. In many respects the proposed Subarea Plan Preserve and Open Space System Map is similar to the 1998 Conservation Strategy, with the following notable exceptions that generally result in an increase in conserved habitat:

- East Santee Uplands Subunit – The East Santee Uplands Subunit includes existing protected open space areas, primarily the Rattlesnake Mountain Habitat Conservation Area (HCA)and City-owned preserve lands (Altair and City property near Walker Preserve). It also has Upland Standards Areas that were not included in the MSCP MHPA. This portion of the Plan Area includes blocks of

primarily coastal sage scrub on hillsides that form a functioning stepping-stone linkage for the coastal California gnatcatcher.

- Mission Trails Subunit – The Mission Trails Subunit includes the existing CNLM East Hills Habitat Conservation Area (HCA), plus Upland Standards Areas between the CNLM preserve and Mission Trails Regional Park (MTRP) that were not included in the MSCP MHPA.
- Fanita Ranch Subunit – The development plan footprint for the Fanita Ranch property that was included in the 1998 Conservation Strategy included three development "bubbles" with offsite coastal sage scrub/California gnatcatcher mitigation. In the current configuration of the Hardline Development Project, the southern development area and the coastal sage scrub offsite mitigation has been eliminated and the overall portion of the property to be dedicated as an onsite Habitat Preserve has increased approximately 250 acres compared to the boundaries delineated in the 1998 MSCP MHPA. In addition, the Offsite Conservation Areas for Hermes copper and Quino checkerspot butterflies will be provided as part of the Hardline Development Project.
- North Magnolia Subunit – The Cheyenne Property has been acquired by the Endangered Habitat Conservancy (EHC) and the entire property is part of the baseline protected open space used in Plan evaluation and development. This property had originally been anticipated to be partially developed under the 1998 Conservation Strategy. Other properties have also been acquired for conservation within this subunit. The 1998 Conservation Strategy had assumed a higher percent of future onsite conservation within this subunit (90–95 percent conservation with 5-10 percent development of the area). The higher percent conservation in Upland Standard Areas would have improved the level of conservation within the Upland Standards Areas and benefited habitat connectivity and Covered Species within these portions of the Plan Area. The 2025 Draft Subarea Plan requires future conservation at 70 percent and allows for future development of 30 percent of the natural area acreage within the Upland Standards Areas, including the North Magnolia Subunit.

The 1998 Conservation Strategy Take Alternative was rejected because it would result in less conserved habitat than the proposed Plan, and in particular for not including planning and conservation for the federally listed or proposed Hermes copper butterfly, Quino checkerspot butterfly, and western spadefoot as Covered Species. This Alternative also did not provide conservation for the State candidate Crotch's bumble bee. In addition, the 1998 Conservation Strategy Take Alternative would not connect with some existing protected open space areas that have been established/conserved since the 1998 Conservation Strategy was developed. Further, the percentage of conservation included in the 1998 Conservation Strategy for Upland Standards Areas was determined by the City to be too high relative to future development potential and property development rights within this area.

Chapter 10
List of Preparers

The following professional staff contributed to the preparation of this Subarea Plan:

City of Santee

10601 Magnolia Avenue, Santee, CA 92071

- Sandi Sawa, AICP, Director of Department of Planning and Building—Contributing Author, Document Review
- Marni Borg, Principal Environmental Planner—Contributing Author, Document Review
- Melanie Kush (retired), Director of Department of Development Services—Contributing Author, Document Review

ICF

525 B Street, Suite 1700, San Diego, CA 92101

- Scott Fleury, Ph.D., Project Director—Contributing Author, Document Review
- Patrick Atchison, Project Manager—Contributing Author, Document Review
- Dale Ritenour, Biologist—Contributing Author
- Debbie Turner—GIS Mapping and Analysis
- Greg Nichols—GIS Modeling

BBK

655 West Broadway, 15th Floor, San Diego, CA 92101

- Amanda Daams—Legal Review

Ebbin Moser + Skaggs LLP

11622 El Camino Real, Suite 100, San Diego, CA 92130

- Sean Skaggs—Contributing Author, Legal Review

California Department of Fish and Wildlife (CDFW)

3833 Ruffin Road, San Diego CA 92123

- Glen Lubcke—Environmental Program Manager
- Melanie Burlaza—Senior Environmental Scientist (Supervisory)
- David Mayer (retired)—Senior Environmental Scientist (Supervisory)

- Heather Schmalbach—Senior Environmental Scientist (Specialist)
- Sara Kern—Senior Environmental Scientist (NCCP Program Coordinator)
- Karen Drewe—Senior Environmental Scientist (Specialist)

U. S. Fish and Wildlife Service (USFWS)

2177 Salk Ave, Carlsbad CA 92008

- Jonathan Synder—Assistant Field Supervisor
- Mary Beth Woulfe—Fish and Wildlife Biologist
- Jon Avery—Fish and Wildlife Biologist

Chapter 11
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