

Biological Technical Report
for
Safari Highlands Ranch
San Diego County, CA



Prepared for

Safari Highlands Ranch, LLC
380 Stevens Avenue, Suite 307
Solana Beach, CA 92075

By

MERKEL & ASSOCIATES, INC.
5434 Ruffin Road
San Diego, CA 92123

and

ALTHOUSE AND MEADE, INC.
1602 Spring Street
Paso Robles, CA 93446

Keith Merkel, Principal Ecologist

Gina Krantz, Senior Biologist

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Cover Page Photo: Southern half of site dominated by coastal sage scrub and oak grove.

PREFACE

The biological investigations, analysis, and reporting for the Safari Highlands Ranch project have been performed in a sequential collaboration between Althouse & Meade, Inc. and Merkel & Associates, Inc. Patrick Mock, PhD of Althouse & Meade led the environmental biological work on the Safari Highlands Ranch project through the end of December 2016 when he was diagnosed with late stage terminal cancer. With Pat's untimely passing on February 11, 2017, Merkel & Associates took on the role as the lead biological consultant for the project. This preface summarizes the transition of authorship within this biological report.

Biological work on the Safari Highlands Ranch project has been underway since early 2014. Work conducted under the direction and oversight of Dr. Mock included general biological field surveys and habitat mapping, focused sensitive species surveys, wetland delineations, and biological technical report preparation. Dr. Mock was responsible for the biological document through early coordination with the Wildlife Agencies (i.e., U.S. Fish and Wildlife Service, California Department of Fish and Wildlife), City of Escondido (City), and County of San Diego, as well as screencheck document review by the City and the City's third party CEQA review consultant, Michael Baker International.

During the period of agency coordination and document review, Merkel & Associates (M&A) was retained by Safari Highlands Ranch, LLC to perform additional technical review of the project design and biological analysis, review of comments being received from agencies and the third party review. M&A was charged with supporting the environmental review process by providing a separate review of the project and biological technical report, recommending further project modifications to lessen impacts, recommending documentation improvements, and to work with Althouse & Meade to resolve or address issues raised in early review. M&A was also engaged to provide additional focused surveys for arroyo toad due to the wet winter period and non-local nature of Althouse & Meade.

After Pat's passing, M&A was requested and subsequently contracted to take on the lead biological consultant role. At the request of the County, M&A prepared an MSCP consistency analysis report for the project. M&A and the project owners met with the City, County, USFWS, and CDFW to review the status of the project. Subsequently, M&A and the project owners led an agency field visit with the USFWS, CDFW, and City of Escondido to review the site. M&A refined habitat mapping, conducted additional site reviews for specific sensitive resources, and updated the biological report to integrate changes made to the project, mapping, and analyses following site reviews and M&A evaluation.

The results of the transition are that much of the document remains the work product of Althouse & Meade prepared under Dr. Mock, however, M&A has reviewed, accepted, and in cases edited the document text, conducted updated investigations, and reconducted underpinning analysis in a manner that allows M&A to take on the lead biological consultant role and represent the document as an accurate representation of resources and project effects on those resources that would be anticipated to occur with project implementation.

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1.0 Introduction

This biological impact analysis report was prepared for the proposed Safari Highlands Ranch Project (Project). It provides the details of the existing biological resources present or potentially present onsite, discusses potential direct and indirect impacts to these resources from the proposed project, and includes proposed mitigation measures to compensate for unavoidable impacts to biological resources.

This document presents a fusion of biological data and analysis derived from work performed under the direction of Althouse and Meade and that completed by Merkel & Associates. The analysis has benefited from third party review conducted by Michael Baker International on behalf of the City of Escondido (City). It has also benefited from early coordination with and input from the U.S. Fish & Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), County of San Diego (County), as well as the public. Coordination with the Wildlife Agencies and/or the County thus far has resulted in their feedback regarding the need for the project to 1) be consistent with the adopted South County MSCP Subarea Plan, draft North County Planning Agreement, and adopted City of San Diego MSCP where applicable; 2) to consider the proposed fuel modification zone II as a temporary impact providing that this zone is not irrigated and would be revegetated with native species; and 3) refer to the USFWS guidance to prepare the project resource management plan.

1.1 Purpose of the Report

The purpose of this report is to document the existing biological resources present or with the potential for occurrence on the Safari Highlands Ranch project site; describe potential impacts from the proposed project to these biological resources; and recommend measures to avoid, minimize, and/or mitigate significant impacts with regards to federal, state, and local rules, regulations, and ordinances including the County of San Diego Biological Mitigation Ordinance (BMO) and the California Environmental Quality Act [CEQA]. This report has been prepared according to the City of Escondido's *Environmental Quality Regulations* (Zoning Code Article 47) and sections of the County of San Diego Report Format and Content Requirements (County of San Diego 2010) for CEQA compliance as it is intended to support project environmental review through the City of Escondido and annexation into the City of Escondido from the County of San Diego. In addition, the impact analysis in this report considers the following significance thresholds under CEQA: the *County of San Diego Biology Guidelines for Determining Significance* (County of San Diego 2010), the City of Escondido's *Environmental Quality Regulations*, and the *City of San Diego Significance Determination Thresholds* (City of San Diego 2012).

1.2 Project Location and Description

1.2.1 Project Location

The project site encompasses approximately 1,100 acres located along the southeastern boundary of the City of Escondido within an unincorporated area of the County of San Diego (County). The site is located two miles north of State Route 78 (San Pasqual Valley Road) and east of Cloverdale Road, as well as San Dieguito River that runs north-south, and over 2 miles south of Lake Wohlford (Figure 1). To the west and southwest of the project site are the Ranch San Pasqual and Rancho Vistamonte residential developments and Eagle Crest Golf Course within the Escondido city limits and to the south is the San Diego Zoo Safari Park within the municipal boundaries of the City of San Diego.

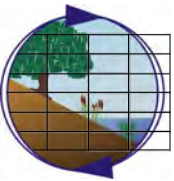
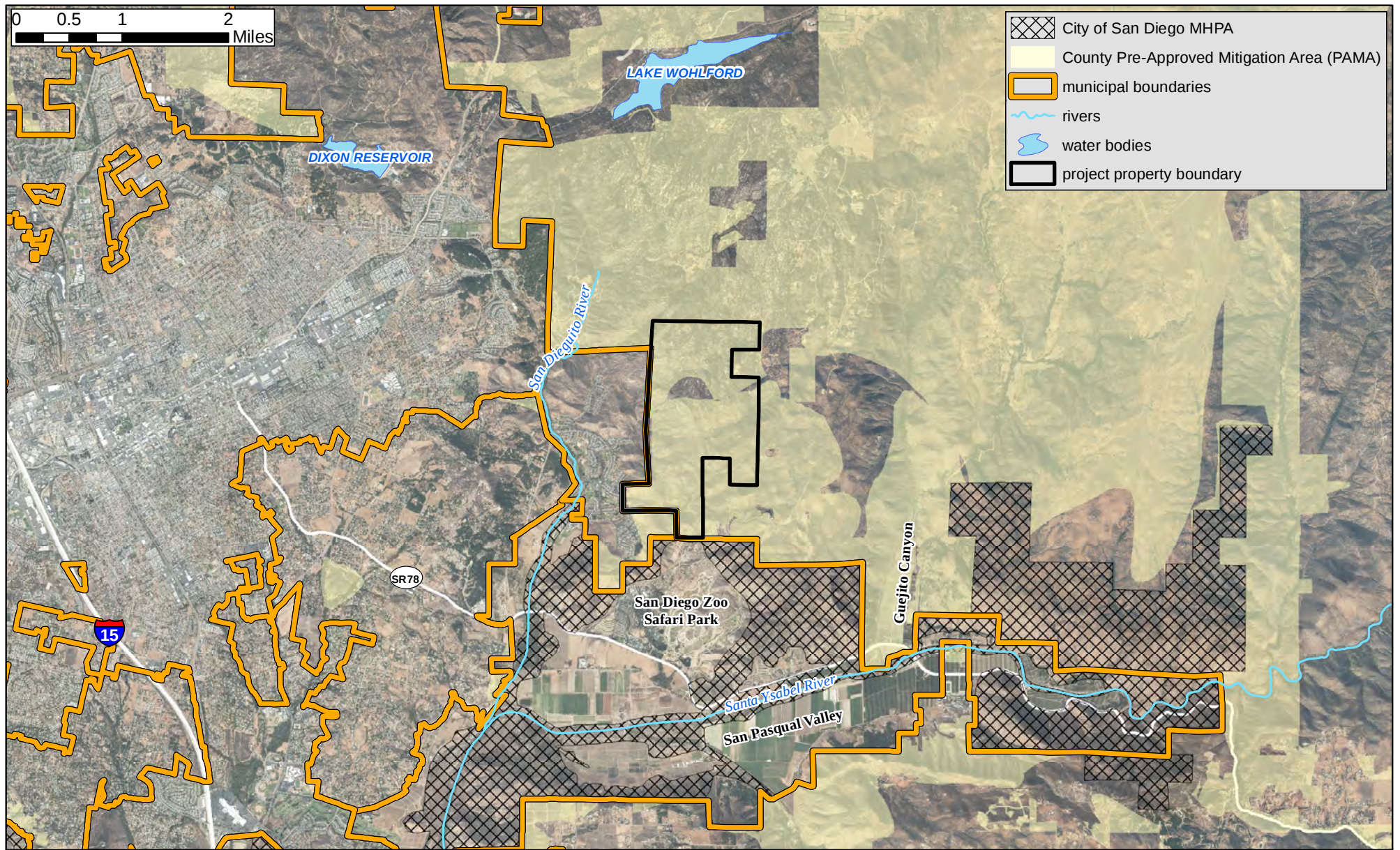
Generally, the southern half of the project site is within the County's approved Multiple Species Conservation Program (MSCP) Subarea Plan Area (within the Metro-Lakeside Jamul Segment) and the northern half of the project site and most of the offsite northern emergency access road is within the County's draft North County MSCP Subarea Planning Area for which there is an adopted Planning Agreement but the Subarea Plan is not yet adopted (Figure 1).

The entire project site and most of the offsite northern emergency access road is located within either an approved or draft Pre-Approved Mitigation Areas (PAMA), except for an approximate 43 acres near the center of the project site although the purpose of the exclusion appears to be driven by regional mapping anomalies rather than site specific intent. In addition, the offsite proposed emergency southern access road alignment is located within the adopted City of San Diego MSCP Subarea Plan area and outside of the City's Multi-Habitat Planning Area (MHPA), except for where the road traverses the MHPA in one small segment (Figure 1).

The proposed Safari Highlands Ranch project includes the proposed annexation of land within the project site currently within the County jurisdiction to the City of Escondido. This proposed annexation requires the preparation of an acceptable multi-party annexation agreement between the County, USFWS, CDFW, City, and the project applicant, Safari Highlands Ranch, LLC, as well as, approval by the San Diego Local Agency Formation Commission (LAFCO).

1.2.2 Project Description

The Project is a 1,098.6-acre portion of Specific Plan Area (SPA) 4 and proposes 550 luxury single-family residential dwelling units on lots ranging upwards from an average of approximately 16,400 square feet. Public uses will consist of a fire station, public parking for the fire station and a public trail system with approximately 9.3 miles of public trails, a trail head, and multiple vista viewpoints. Private uses will consist of a gated entrance to the residential area, recreation center with pools and tennis courts, a gym or workout facility, conference room, and a special event building. Additional private neighborhood parks, trails, and vista viewpoints will be provided. Stormwater basins are included in the design. The project achieves a clustered design that allows for the preservation of a contiguous block of habitat within the western and central portions of the site where sensitive habitat and the major drainage onsite occurs.



Vicinity Map
Safari Highlands Ranch

Figure 1

Onsite habitat providing proposed open space totals 757.69 acres (69 percent of the site) and is comprised of 629.09-acre habitat conservation open space encompassing approximately 57 percent of the project site as well as 128.60 acres of Homeowner's Association (HOA) maintained habitat open space consisting predominately of Fuel Modification Zone (FMZ) II. The 629.09 acres of habitat conservation open space is non-impacted habitat in large tracts that provide continuity with offsite existing conserved lands to the west and south, as well as connectivity to undeveloped private lands to the east. Protections of the habitat conservation open space will include a recorded conservation easement, fencing, and signage. The 128.60 acres of HOA maintained habitat open space provides a non-irrigated, intermittently thinned native habitat that separates the development footprint from the habitat conservation open space. While both of these open space types contribute to the continuity and value of the onsite habitat for both resident and transitory wildlife, the habitat conservation open space is not an impacted habitat, while the HOA maintained habitat open space including FMZ II is considered to be a temporary impact area. An extensive revegetation program within the HOA maintained habitat open space including FMZ II is proposed to buffer the edge of the development; lessen impacts, and provide expanded buffering function, and to support habitat function as a secondary goal to fire protection. Nonetheless, the HOA maintained habitat open space would be considered a temporary impact area and is not proposed as compensatory mitigation for the proposed project development impacts.

The proposed project fuel modification treatment areas are described in the Project Fire Protection Plan (Dudek 2017). The Fire Protection Plan includes FMZs I and II that are each 75 to 100 feet in width. FMZ I treatment includes irrigation, fuel reduction, and modification of plant species composition to exclude weeds and select flammable native species. FMZ II treatment is select thinning of existing vegetation and weed removal. FMZ II is non-irrigated. FMZ I fuel treatment areas are considered part of the development area and a permanent impact. FMZ II fuel treatment areas are also considered a project impact although temporary and will provide native habitat and wildlife value and a buffer between the project development and conservation open space.

Accompanying infrastructure will consist of an internal road circulation system, water, sewer, and stormwater drainage systems, and utilities. The circulation system will consist of all private roads. Safari Highlands Ranch Road will be the primary artery throughout the project. It will be private from its starting point at Rockwood Road and it will be maintained by the Safari Highlands Ranch HOA. Safari Highland Ranch Road will have two 18-foot traffic lanes, 6-foot bike lanes, plus a pedestrian path, shading trees and irrigated landscaping, with an overall right of way varying from 60-84 feet in width. Interior streets will be two lanes, some of which will allow on-street parking.

Two emergency access roads will be provided, one to the northwest and another to the south. The new segment of northern emergency access road will be approximately 2.4 miles long and will connect to Stonebridge Road, an existing road leading through Beacon-Sun Ranch. The southern emergency access road will consist of an approximately one mile long segment of Zoo Road, an existing road that will be upgraded to accommodate emergency vehicles accessing the project from State Route 78 (San Pasqual Valley Road).

Water utilities will include a hook-up to the City of Escondido water system, pumps to boost water to an onsite 80 foot diameter water tank, and an internal water distribution system that will use both pumps, reducing stations, and gravity feed. Sewer utilities will include a hook-up to the

City of Escondido sewer system. Stormwater runoff will be controlled onsite through a comprehensive water retention system that will meet the latest Regional Water Quality Control Board (RWQCB) and City regulations for drainage and stormwater runoff. Other utilities that are currently available to the site and that will be installed underground are gas, electrical, cable and phone service.

Seven phases of development are proposed, corresponding to the seven neighborhoods being created. Public facilities and services and phased development would be coordinated so that services are available and ready to serve the residences as need arises.

Habitat-oriented project design features that have been incorporated into the project to lessen potential adverse biological effects of the proposed project consist of:

1. Conservation of 629.09 acres of habitat conservation open space to be preserved in perpetuity through the placement of a conservation easement over the conservation open space that is acceptable to the City of Escondido, County of San Diego, USFWS and CDFW;
2. Avoidance of the onsite oak riparian habitats, except for necessary road crossings;
3. Clustering of neighborhoods where topography and drainages allow maximizing open space blocks and minimizing edge effects;
4. Establish an 128.60-acre HOA maintained habitat open space including FMZ II to buffer the proposed development and reduce edge effects to adjacent conservation open space;
5. Extensive revegetation program would be implemented within the HOA maintained habitat open space to better integrate development and natural areas. Such revegetation will include applicable palettes of native plants including oak (*Quercus* spp.) and native cactus (*Opuntia littoralis*).
6. Preservation of primary and secondary local onsite wildlife movement corridors through the design of designated wildlife road undercrossings, as provided by the following:
 - a. Providing ten wildlife movement undercrossings locations at key points primarily along the main access road (i.e., Safari Highlands Ranch Road) including the primary and secondary riparian wildlife movement corridors, along with traffic calming features including signage, speed bumps/rumble strip, and speed enforcement;¹
 - b. Designing appropriately sized and suitable wildlife undercrossings. Wildlife undercrossing suitability relates to the ratio of the cross-sectional area to the length of an undercrossing. This is known as the Openness Ratio ($OR = [\text{height} \times \text{width}] / \text{length}$). Many researchers have recommended a minimum OR of 0.75 (Ford 1976, Cain et al. 2003, Clevenger and Waltho 2005) to support a wide range of small- and large-sized wildlife species. Using the OR formula, it can be seen that the longer an undercrossing is, the greater the cross-sectional area must be to support high wildlife use. Other design factors also play a role in the enhancement of the suitability

¹ Signs with or without accessories (flashing/blinking lights, warning messages) would notify approaching motorists of the presence of wildlife crossings. Speed bumps/rumble strips may be used to reduce vehicle speeds and the potential for vehicle/animal conflicts, especially where sight distance is limited by a curve in the road or concealing vegetation, and where surrounding habitat increases the risk of such collisions (Carr et al. 2003). Controlling traffic speed is often the least expensive way to reduce rates of vehicle-wildlife collisions combined with enforcement.

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- of undercrossings, including providing a dry floor, native substrate on the bottom of the culvert/bridge, outer-culvert/bridge funneling features (e.g., fencing, wingwalls), and inner-culvert/bridge predator defense features (e.g., water resources, cover vegetation [but not too dense], scattered boulders/rocks along the inside outer edges). Wildlife undercrossings #1-#5 along the primary local wildlife movement route/main drainage, where larger animals move through the site, would meet or exceed the recommended OR of 0.75. The three undercrossings (#6a, #6b, “no #”) along the secondary local movement route (small ephemeral drainage) in the northern portion of the site consist of smaller culverts (e.g., 60 inch RCP) will facilitate wildlife movement of the smaller wildlife species that are expected to currently move through the site along this drainage. Although not required for wildlife movement, two additional wildlife undercrossings are proposed in the northwestern portion of the site where culverts (i.e., 48 inch RCP) are proposed for hydrology.
- c. Controlling other roadway design conditions that otherwise create greater risks of vehicle-wildlife collisions at proposed wildlife crossings such as providing suitable off-surface movement routes, minimizing crossings at tight corners, and avoiding roadside conditions that trap animals on road surfaces (e.g., impervious fencing or steep banks that do not provide escape areas or vegetation cover);
 - d. Limiting vehicle speeds on Safari Highlands Ranch Road to 30 mph;
 - e. Retaining riparian corridor widths as they emerge from narrow drainages to facilitate; continued use by wildlife, such as deer and coyote;
- 7. The proposed trail system will predominately utilize existing dirt roads/trails through the proposed reserve;
 - 8. Control of stormwater runoff through a comprehensive water retention system that will meet the latest RWQCB and City regulations for drainage and stormwater runoff pollutants. This system includes hydro-modification management practices that use biofilters, retention and detention basins to prevent scouring, erosion, sedimentation, siltation, and other water quality impacts from urban runoff constituents, within downstream water bodies and associated biological systems (e.g., wetlands, riparian, aquatic organisms).

1.3 Survey Methodologies

1.3.1 Literature Review

Prior to biological resource surveys being conducted on the property, a review of existing information on vegetation and sensitive species that occur or have the potential to occur in the vicinity of the project site was initiated. Existing vegetation mapping for the project vicinity as contained in the San Diego Geographic Information Systems (SanGIS) database (San Diego Association of Governments [SANDAG] 1995) was examined to get an initial assessment of the types of vegetation communities that may occur onsite. A prior Environmental Impact Report (Mooney & Associates 2002) and the associated biological reports from 1992 and 1998 surveys were also reviewed and the biological resources documented are incorporated into this report by reference. Historical and recent information on sensitive species detections in the project

vicinity from the CDFW California Natural Diversity Database (CNDDDB), USFWS, SANDAG MSCP database, San Diego County Bird Atlas (atlas survey cells J12 and I12), and consultant reports from adjacent parcels were reviewed to determine what species occurrences have been documented within and near the project area. Critical habitat areas for federal listed species that are in the vicinity of the project area were also examined (USFWS 1994, 2003, 2011a, 2011b, and 2016).

Prior to conducting focused field surveys, literature and databases relevant to the Biological Survey Area (BSA) were reviewed. The BSA consists of the 1,098 acre project site, offsite facilities, and a 100-foot buffer of the project site. The BSA was assessed for its potential to support special status species based on reported habitat preferences and past occurrences of species within the region (CNDDDB 2012, CNPS 2012, Baldwin et al. 2012, Holland 1986, Sawyer et al. 2009). Information reviewed included:

- USFWS, GIS Species Occurrence Data (2016)
- California Natural Diversity Database (CNDDDB 2015, 2017).
- California Native Plant Society (CNPS) On-Line Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2015, 2017).

Database queries were conducted for the U.S. Geological Survey (USGS) 7.5-Minute topographic quadrangles containing the BSA, plus the surrounding quadrangles. Quadrangles queried included San Pasqual, Escondido, Valley Center, Rodriguez Mountain, Ramona, Poway, San Vicente Reservoir, El Cajon Mountain, and Mesa Grande.

1.3.2 Biological Resource Surveys

Biological resource surveys were conducted by URS Corporation (URS) biologists within the 2014 onsite preliminary design grading limits plus a 50-ft buffer. Althouse and Meade, Inc. (A&M) biologists surveyed in 2015 the entire onsite 1,098 acres and where offsite improvements are proposed, to document the existing vegetation communities, plant species, and wildlife species within the project area. The 2015 effort focused on the botanical resources due to the drought conditions in 2014. Merkel & Associates, Inc. (M&A) conducted arroyo toad (*Anaxyrus californicus*) and western spadefoot toad (*Spea hammondi*) habitat assessments as well as arroyo toad protocol surveys within the late winter through early summer months of 2017. In addition, based on a field meeting with USFWS and CDFW in May 2017 where coastal sage species and chaparral species were observed to be co-dominant in the central portions of the site, it was determined that M&A should review and possibly update the habitat mapping in this area. Subsequently, M&A conducted a field survey and unmanned aerial vehicle (UAV) aerial survey specifically in the central portions of the site to update habitat mapping, where applicable. Tables 1 – 5 provide a list of survey dates, personnel, and weather conditions on survey days. The 2014-2015 biological resource surveys were conducted by walking the project proposed development area on foot to access as much of the site as possible. The 2017 toad habitat assessment was conducted by all-terrain vehicle (ATV) and on-foot; while the arroyo toad surveys were conducted on-foot within potentially suitable habitat identified in the habitat assessment.

Since the project had received a prior intensive biological assessment in 1998 (Mooney 2002) and the field conditions in Spring 2014 were poor due to a 3-year drought condition, 2014

botanical surveys were limited to one early April survey of the preliminary design development area, plus a 50-foot buffer. Limitations on botanical surveys performed come from seasonal factors. Sensitive annual and perennial species that are more easily identified in the early spring would have been detected. It was too dry to detect late blooming annual species. Biological resources observed were noted and mapped according to the County of San Diego's Biological Resource Mapping Requirements (County of San Diego 2010). Vegetation community mapping covered the entire BSA. In 2015, two botanical surveys were conducted during moderately improved environmental conditions for detecting sensitive annual species.

Since the 1998 California gnatcatcher surveys (Mooney 2002) were negative, all potentially suitable gnatcatcher habitat was surveyed per the USFWS three-visit protocol in 2014. The mulefat scrub habitat in the southwest portion of the site was surveyed for listed riparian birds using the USFWS least Bell's vireo (*Vireo bellii pusillus*) eight-visit protocol in 2014. Because the wildlife surveys were performed during the day, limitations to the compilation of a comprehensive wildlife list precluded direct observation of any nocturnal animals, but their sign (scat and tracks) were recorded. Edited compilation of flora and fauna lists includes the lists from Mooney (2002) and detections reported by other consultants.

Plant nomenclature follows that of Baldwin et al. (2012), Jepson Online Interchange (2009) and Rebman and Simpson (2014), Brenzel (2001) for ornamental plants, and California Native Plant Society (CNPS; 2007) for sensitive plants. Vegetation community classifications follow Holland (1986) as modified by Oberbauer (1996), except where use of the Sawyer et al. (2008) classification provided a more accurate description of select uncommon vegetation. Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (1998) and Unitt (2004); for mammals with Baker et al. (2003) and Hall (1981); for amphibians and reptiles with Crother (2001) and Crother et al. (2003); and for invertebrates with Mattoni (1990) and Opler and Wright (1999). Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for the species (Jennings and Hayes 1994; Unitt 2004; CDFW 2014a, 2014b, and 2014c; CNPS 2007; Reiser 2001), species occurrence records from the CNDDDB (State of California 20015), and species occurrence records from other sites in the vicinity of the BSA.

1.3.3 Focused Rare Plant Surveys

Focused rare plant surveys within the limits of preliminary grading, plus a 50-ft buffer were conducted in 2014 by URS Corporation Senior Botanist, Jeff Crain, Biologist Dennis Miller and independent botanist Michelle Balk on April 14, 15, 16, and 17, 2014 for a total of 12 person-days of field effort (Table 1). Focused survey methods were derived from the standardized guidelines issued by USFWS (USFWS 2000), CDFW (CDFG 2000 and 2009), and CNPS (CNPS 2001). Surveys were floristic in nature and were completed by walking parallel belt transects spaced at approximately 100-foot intervals throughout suitable habitat within the BSA. The distance between transects was adjusted when necessary to ensure adequate coverage of the BSA and to account for ground surface visibility, terrain, vegetation density, and access. Surveys were targeted within unique portions of the BSA where microhabitats had an increased potential to support special status species. Determinations for whether suitable habitat was present for special status plants were based on each species natural life history requirements, which included hydrology, existing habitat, elevation range, soils, current land uses, and/or disturbances. All

plant species observed during the surveys were noted. All oak trees and rare plants within the BSA were recorded with GPS units.

The 2015 botanical surveys were conducted on the entire project site and the offsite linear access roads leading to the site. Field methods were the same as in 2014 and included one survey each in April (March 29 through April 13) and May (May 4, 5, and 8) for a total field effort of 40 person-days (Table 1). Surveys were conducted by Althouse and Meade, Inc. Senior Biologist Jason Dart, Biologist Kyle Weichert, and independent botanists Michelle Balk, Brant Primrose, Wendy Rogers, and Shelley Lawrence.

Table 1. Botanical Survey Dates.

Date	Field Staff	Total Effort
April 14, 15, 16, 17, 2014	J. Crain, D. Miller M. Balk	12 person-days within proposed grading footprint plus a 50-ft buffer.
March 29 to April 13; May 4, 5, 8, 2015	J. Dart, K. Weichert, M. Balk, B. Primrose, W. Rogers, S. Lawrence.	40 person-days – entire project site and offsite facility areas
June 6, 2017	Gina Krantz (M&A)	Field survey to update habitat within areas that may be considered coastal sage-chaparral transitional in the central portions of site.
June 9, 2017	Gina Krantz, Jordan Volker (M&A)	Update habitat mapping through UAV aerial surveys of approximately 125 acres in the central and western portion of site.
September 25, 2017	Gina Krantz, Mary Tamburro (M&A)	Updated habitat mapping and general biological survey within revised areas of northern emergency access route.

Prior to conducting surveys the California Natural Diversity Database (CNDDDB; March 8, 2015 data) and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California were queried for special status species known to occur in nine USGS 7.5-minute quadrangles including and surrounding the BSA, which is within the Rodriguez Mountain and San Pasqual Quads. Reference populations for delicate clarkia (*Clarkia delicata*) and other species were checked by Michelle Balk so as to time the surveys to when the species was in bloom and identifiable to the taxon level of interest.

Botanical surveys were conducted on foot throughout the BSA. A grid system was used to methodically cover all areas and habitats within the project site and offsite roads alignments where native vegetation disturbance is proposed. Surveyors walked meandering transects through each grid block, focusing search effort on suitable micro habitat areas for special status plants. Each surveyor maintained an inventory of plant species observed each day. Special status plants were mapped using handheld GPS units and tablets outfitted with GPS boosters. The second 2015 survey was a more focused survey, focusing on micro habitats expected to support delicate clarkia and other potential California Rare Plant Rank (CRPR) 1B species. Identification of botanical resources included field observations and laboratory analysis of collected material.

1.3.4 Least Bell's Vireo Focused Surveys

Focused surveys for the least Bell's vireo (LBVI) were conducted in suitable habitat areas within the project boundary according to the USFWS protocol (USFWS 2001). Eight surveys were conducted by wildlife biologists, and the dates of the surveys are shown in Table 2. Suitable habitat areas were surveyed on foot with the aid of binoculars during the appropriate time of the day and breeding season.

Table 2. Least Bell's Vireo (LBVI) Monitoring Dates, Site Conditions, and Observations

Date	Observer	Survey Start Time	Survey End Time	Starting Temp	Ending Temp	Wind speed (mph)	Cloud Cover (%)	LBVI Detected?
4/14/2014	R. Bailey, J. Stout	0600	0900	52	82	0	0	No
4/24/2014	R. Bailey	0600	0900	52	77	0	0	No
4/29/2014	R. Bailey	0630	0930	65.3	82.6	4-6	0	No
5/5/2014	R. Bailey	0600	0900	53	77	0	100	No
5/9/2014	R. Bailey	0600	0900	50	82	0	0	No
5/20/2014	R. Bailey	0600	0900	55	69	0	80	No
5/30/2014	R. Bailey	0600	0900	53	82	0	0	No
6/13/2014	R. Bailey	0600	0800	63	65	1	100	No

1.3.5 Coastal California Gnatcatcher Focused Surveys

Focused surveys for the coastal California gnatcatcher were conducted in suitable habitat areas within the project boundary according to the USFWS protocol (USFWS 1997). Surveys were conducted on foot with the aid of binoculars and recorded gnatcatcher vocalizations. Daily survey area per surveyor was restricted to less than 80 acres of coastal sage scrub (CSS) habitat per day. A copy of the post-survey results letter to the USFWS is provided as Appendix E to this report. Methods followed the USFWS protocol (1997) for coastal California gnatcatcher Presence/Absence surveys. Three repeat survey visits were conducted within all potential habitats for coastal California gnatcatcher (including lower quality habitats dominated by deer weed and areas of steep, rocky, and sparse CSS vegetation). Surveys within non-CSS communities were only conducted along their interface with the CSS habitat, to about 200 feet into the non-sage scrub vegetation. A field map of the BSA was marked with grid lines that created eight survey grids, each containing a one-day survey allotment of 80 acres or less. These grids were then surveyed three times each, with at least 7 days between repeat visits. Survey visits were conducted between April 14 and May 30, 2014. Surveys were not conducted during adverse weather conditions of excess heat and wind. Such conditions occurred from April 30 to May 2, and again from May 12 to 16; site visits were cancelled on these dates. The 2014 presence/absence surveys were conducted by URS Biologists Eric "Rick" Bailey and Ryan Randall. Mr. Bailey and Mr. Randall supervised URS Biologists Laura Swadell and Julie Stout. Survey dates, weather conditions, and observations are included in Table 3. The 2015 gnatcatcher survey of the northern emergency access road alignment was conducted by subconsultant biologist Gretchen Cummings (Table 3 and Appendix E).

Table 3. CAGN Survey Dates, Site Conditions, and Observations.

Date	Time	Sky (% Clouds)	Temp. (°F)	Wind (mph)	Personnel and Observations
GRID 1					
4/15/2014	06:50 – 11:50	0 – 0	59 – 87	0 – 5	R. Randall: No CAGN present.
4/23/2014	06:46 – 11:50	95 – 0	56 – 73	0 – 2	R. Randall: No CAGN present.
5/8/2014	06:10 – 11:30	100 - 0	58 - 70	0 – 7	R. Bailey: No CAGN present.
GRID 2					
4/18/2014	06:15 – 12:00	100 - 40	58 - 70	0 – 4	R. Bailey: No CAGN present.
4/28/2014	06:23 – 11:22	0 – 0	53 – 82	0 – 6	R. Randall: No CAGN present.
5/8/2014	06:30 – 11:30	100 – 0	59 – 69	0 – 7	R. Randall: No CAGN present.
GRID 3					
4/21/2014	06:00 – 11:30	50 - 0	55 - 82	0 - 3	R. Bailey: No CAGN present.
4/29/2014	06:30 – 09:30	0 – 0	65 – 83	4 – 13	R. Randall: No CAGN present (stopped early due to hot, dry winds. Finished remainder on 5/8/2014).
5/19/2014	06:00 – 11:40	80 - 0	60 - 75	1 - 7	R. Bailey: No CAGN present.
GRID 4					
4/15/2014	06:30 – 12:00	0	58 - 82	0 - 8	R. Bailey: No CAGN present.
4/22/2014	06:40 – 11:40	100 – 20	60 – 75	0 – 5	R. Randall: No CAGN present.
5/7/2014	06:00 – 11:45	90	55 – 72	1 – 6	R. Randall: CAGN single male seen briefly near Grid 7 (same bird seen there on 5/5/2014).
GRID 5					
4/16/2014	06:30 – 12:00	100 – 0	55 – 70	0 – 2	R. Bailey & L. Swadell: No CAGN present.
4/25/2014	06:27 – 12:00	100 – 5	59 – 75	0 – 5	R. Randall: No CAGN present.
5/7/2014	06:10 – 11:40	90	55 - 72	1 - 6	R. Bailey: No CAGN present.
GRID 6					
4/17/2014	06:49 – 11:45	100 – 60	54 – 68	1 – 3	R. Bailey & L. Swadell: No CAGN present.
4/25/2014	06:15 – 12:00	100 - 10	55 - 74	0 - 8	R. Bailey: No CAGN present.
5/9/2014	06:00 – 12:00	0	50 - 82	0 - 7	R. Bailey: No CAGN present.
GRID 7					
4/14/2014	06:00 – 12:30	0	52 – 82	2 – 8	R. Bailey & J. Stout: CAGN adult pair nest building and a CAGN single male observed downhill to the west.

Date	Time	Sky (% Clouds)	Temp. (°F)	Wind (mph)	Personnel and Observations
4/24/2014	06:00 – 12:00	0	52 – 77	0 – 5	R. Bailey: CAGN incubating at nest and cactus wren observed nest building downhill to the west.
5/5/2014	06:00 – 12:00	100 -50	53 – 77	0 – 7	R. Bailey: CAGN pair feeding fledglings in west end of Grid. Single CAGN male in east end of Grid.
5/20/2014	09:00 – 12:00	80 - 20	55 - 69	0 - 7	R. Bailey: Survey east end of Grid to see if single male has a mate, no CAGN found.
5/30/2014	09:00 – 12:00	0 - 5	53 - 82	0 - 7	R. Bailey: Survey east end of Grid to see if single male has a mate, no CAGN found.
GRID 8					
4/14/2014	06:30 – 11:35	5 – 0	49 – 87	0 – 10	R. Randall and Laura Swadell: No CAGN present.
4/21/2014	06:46 – 11:50	85 – 0	54 – 88	0 – 2	R. Randall: No CAGN present.
5/6/2014	06:00 – 12:30	70 – 75	58 – 67	4 – 10	R. Randall: CAGN single male at south end of Grid.
Cummings and Associates Surveys Along NW Emergency Access Road					
2/13/2015	08:00 – 11:40	0	65.4 – 88.6	0 – 1.6 to 3.0	G. Cummings: No CAGN observed.
2/20/2015	08:30 – 12:00	100	64.1 – 71.4	<2.4	G. Cummings: No CAGN observed.
3/5/2015	08:00 – 12:00	0	59.9 – 78.5	<2.7 - <4.8	G. Cummings: No CAGN observed.

1.3.6 Arroyo Toad and Western Spadefoot Toad Habitat Assessment

M&A conducted a habitat assessment for the federally listed endangered arroyo toad (*Anaxyrus californicus*) and state Species of Special Concern (SSC) western spadefoot toad (*Spea hammondi*) within the project site in 2017 (Table 4). The suitability for potential habitat areas in the BSA to support the arroyo toad and/or western spadefoot toad was assessed using habitat and species ecological information for these species (USFWS 2014; Ervin et al. 2003; USFWS 2005). Drainage courses within the project area were visited and associated riparian habitats were assessed for characteristic arroyo toad habitat features. Similarly, the main drainage as well as any relatively flat areas such as existing dirt access roads and meadows was assessed to determine if they could support potentially suitable breeding pools for the western spadefoot toad.

Table 4. Arroyo Toad Survey Dates, Site Conditions, and Observations.

Survey	Date	Time	Sky (% Clouds)	Temp. (°F)	Wind (mph)	Biologists and Observations
Habitat Assessment	2/13/17	0830-1545	25-10	52-61	1-1	ELE/MCT
Habitat Assessment	3/16/17	1515-1640	5-5	75-72	1-0	ELE/MCT
ARTO Survey #1	3/16/17	1930-2040	70-80	68-64	0-0	ELE/MCT -No ARTO.
ARTO Survey #2	4/05/17	1920-2245	0-0	74-61	0-0	ELE/MCT -No ARTO
ARTO Survey #3	4/20/17	1730-2245	0-0	78-56	0-1	ELE/GMK -No ARTO.
ARTO Survey #4	5/03/17	1740-2230	0-0	77-54	1-1	ELE/GMK -No ARTO
ARTO Survey #5	5/30/17	1750-2300	20-60	70-57	0-1	ELE/GMK -No ARTO
ARTO Survey #6	6/6/17	1930-2330	100-100	69-59	1-0	ELE/GMK -No ARTO

ELE= Edward Ervin; MCT= Mary Tamburro; GMK= Gina Krantz

A daytime site habitat assessment was conducted to determine if the project site contains potentially suitable habitat areas for the arroyo toad and/or western spadefoot toad; and if applicable, to map recommended survey areas for arroyo toad protocol surveys. Although arroyo toad and western spadefoot toad potential breeding habitat may overlap in ephemeral streams, spadefoot toads also breed in suitable pools outside of streams in the upland habitat. The project site habitat assessment survey included suitable potential stream sections for arroyo toad as well as relatively flat areas such as existing dirt access roads and meadows that could support suitable pools for spadefoot toad.

Specifically for arroyo toad, the daytime habitat assessments consisted of hiking along the streams onsite while noting the key physical features known to be associated with suitable arroyo toad habitat. Using ATVs to access areas, all drainages considered to potentially support toads were visited. The key physical features for toad habitat suitability are: 1) stream gradient, 2) sandy stream substrate, 3) presence of sandy banks and uplands (i.e., adjacent flat sandy terraces), and 4) braided channels. As part of the daytime assessment, onsite habitat quality for potential arroyo toad presence was determined. Any given stream or portion with a gradient of greater than 3% was rated as poor quality and these were not directly surveyed at night for the presence of arroyo toads. Conversely, any stream segment with a gradient of less than or equal to 3% was assigned one of four habitat quality types as listed below and was surveyed for toads.

- *High*: Any given survey reach with a gradient of less than or equal to 3% and with all three of the key physical features present;
- *Good*: Any given survey reach with a gradient of less than or equal to 3% and only two of the three key physical features present;
- *Marginal*: Any given survey reach with a gradient of less than or equal to 3% and one of the three key physical features present; or
- *Poor*: Any given survey reach with a gradient of greater than 3%, or with a gradient of less than or equal to 3% and none of the three key physical features present.

Arroyo Toad Protocol Surveys

Where it were determined by the habitat assessment that the project site contained potentially suitable breeding habitat areas (i.e., at least “marginal” habitat) for the federally listed endangered arroyo toad, then a M&A permitted biologist(s) conducted protocol surveys in accordance with current USFWS *Survey Protocol for the Arroyo Toad* (USFWS 1999) (Table 4). A notice indicating the initiation of protocol surveys on the project site was submitted to the USFWS 15 days prior to the first survey. A minimum of six daytime/nighttime surveys, with at least seven days between the surveys, were conducted during the breeding season (March 15th through July 1st), with at least one survey being conducted per month during April, May, and June. Although some areas were excluded from nocturnal survey due to stream gradient, quiet conditions throughout the survey window would have allowed auditory detection of toads within approximately ¼ mile of the upstream and downstream ends of surveyed stream reaches.

Western Spadefoot Toad Focused Surveys

It was determined by the habitat assessment that the project site did not contain potentially suitable breeding habitat areas for the western spadefoot toad that were distinct from areas of the main drainage potentially suited to support arroyo toad breeding. As a result, separate spadefoot toad surveys were not undertaken, but rather arroyo toad surveys were used for detection of adults calling, egg masses, tadpoles and/or metamorphs dispersing from any potential breeding pools in the vicinity.

1.3.7 Jurisdictional Waters Delineation

The BSA was further refined for the purposes of delineating jurisdictional resources under the regulatory jurisdiction of U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFW, and/or County of San Diego. The delineation of potential wetlands and other waters was conducted by URS within the development footprint as well as the full extent of the mesic meadow and the mulefat scrub within the projectsite. URS conducted a review of available background information pertaining to the proposed project layout and geography prior to conducting the delineation. Site maps were generated with available aerial photographs and potentially jurisdictional features were identified and marked with lines and GPS coordinates to assist in field verification. URS Biologists conducted the delineations of the project site to identify and document existing conditions of the site in terms of the presence of wetlands, riparian habitats, drainages, and other features with potential to fall under the jurisdiction of the USACE, RWQCB, CDFW, and/or County (Table 5). Follow-up wetlands delineation visits were conducted in 2015 to assess additional areas proposed for development that were not included in the 2014 effort (Table 5). In 2017, M&A visited the ragweed mesic meadow to verify the condition and jurisdictional status, as well as supplement the existing wetland delineation data for this area. In addition, since the entirety of the existing jurisdictional resources within the BSA was not quantified in the original A&M report, M&A quantified and summarized the existing jurisdictional resources based on the digital files and tabular data provided by URS/A&M. Further, the project footprint had slightly changed since 2015; therefore M&A recalculated the proposed project impacts to jurisdictional resources based on the updated habitat mapping and project plans.

All potentially jurisdictional features were evaluated in the field based on protocols specified by Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region

(Version 2.0) (USACE 2008) and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (USACE 2008). Rainfall was below average prior to the 2014 field evaluations, and the potential effects on plant composition and dominance were considered during the determination of potential wetland areas. The ordinary high water mark (OHWM) of onsite channels was determined based on observations of physical evidence of flow that included direct observations of flow, scour marks, and drift lines of debris. The USACE routine onsite determination methods require the presence of three parameters to define an area as a federal wetland (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology). The USACE jurisdictional resources determined through the methods described above are also RWQCB jurisdictional under Section 401 of the CWA. The top of bank and/or the limits of riparian vegetation were delineated to establish the limits of CDFW jurisdiction within a stream.

Point locations of potentially jurisdictional features were recorded in the field with a hand-held GPS unit. Digital photographs were taken upstream and downstream of each feature to record individual features, as well as feature types and general habitat conditions of the entire project site. As part of the desktop analysis, channels were divided into segments at data points and confluences. The width and depth measurements recorded at the data points were applied to each segment and weighted by the length of each segment to calculate an average width and depth and jurisdictional area associated with each feature.

Table 5. Jurisdictional Waters Survey Dates

Date	Field Staff	Drainage Feature ID
5/8/2014	Mark Tucker, Jeff Crain	Mesic Meadows, Mulefat Scrub
5/29/2014	J.Stout, R. Randall	15, 16, 17, 18, 19, 20, 22, 23, 24, 14
5/30/2014	J.Stout, R. Randall	1
6/2/2014	J. Stout, L.Swadell	11, 12, 13, 21, 30
6/3/2014	J. Stout, L.Swadell	6, 7, 8, 9, 10, 31
6/4/2014	J. Stout, L.Swadell	3, 4, 5
5/27-29/15	R. Bailey	Extended segments of several features surveyed in 2014
8/20/15	R. Bailey	Verify riparian habitat limits within limits of grading
9/25/15	R. Bailey	Verify riparian habitat limits within limits of grading
6/6/17	G. Krantz, Edward Ervin (M&A)	Verify mesic meadow conditions and jurisdictional status
9/25/17	G. Krantz, M. Tamburro (M&A)	Verify and/or expand delineation within revised areas along the northern emergency access road.

The extent of jurisdictional boundaries were determined based on the ACOE, RWQCB [under the State Water Resources Control Board (SWRCB)] definitions of wetlands, navigable waters, and/or non-wetland waters of the U.S., and streambed under the CDFW. The following text describes each agency's jurisdiction.

U.S. Army of Engineers

Under the Clean Water Act regulated by ACOE, the term “waters of the U.S.” is defined in 33 CFR Part 328.3(a) as: (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide; (2) All interstate waters and wetlands; (3) All other waters such as intrastate lakes, rivers, streams, (including intermittent streams), mudflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as waters of the U.S. under the definition; (5) Tributaries of waters identified in (a) (1) through (4) of this section; (6) The territorial seas; (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section; and (8) Waters of the U.S. do not include prior converted cropland.

“Wetlands” are defined in 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Thus, all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to classify an area as an ACOE jurisdictional wetland under normal circumstances.

The limits of jurisdiction in non-tidal waters of the U.S. [33 CFR 328.4(c)] extend to the limits of the wetlands or adjacent wetlands. Non-tidal waters of the U.S. that lack one or two of the wetland parameters may still be jurisdictional under the ACOE as non-wetland waters of the U.S. In the absence of wetlands or adjacent wetlands, the limits of jurisdiction in non-tidal waters of the U.S. extend to the ordinary high water mark (OHWM), which is defined in 33 CFR 328.3(e) as, “that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

State Water Resource Control Board / Regional Water Quality Control Board

For waters of the State that are federally regulated under the CWA, the SWRCB [through its RWQCBs] must provide state water quality certification pursuant to section 401 of the CWA for activities requiring a federal permit or license that may result in discharge of pollutants into waters of the U.S. Where no federal jurisdiction exists over waters of the State, the SWRCB (through its RWQCBs) retains regulatory authority to protect water quality through provisions of the Porter-Cologne Water Quality Control Act.

Waters of the State include both surface and groundwater and are not restricted by geographic features. Like other state definitions, the SWRCB defines waters of the state as having any of the features of hydrophytic vegetation, hydric soils, or wetland hydrology. Impacts to waters of

the State are regulated through either the CWA section 401 water quality certification process or through the issuance of waste discharge requirements (WDRs) by either the SWRCB or the appropriate RWQCB.

California Department of Fish and Wildlife

Under section 1602 of the California Fish and Game Code, the CDFW has regulatory authority over any proposed activity that may substantially modify a river, stream, or lake. The CDFW regulates alterations of lakes or streambeds through the development of a Streambed Alteration Agreement (Agreement) under the Lake and Streambed Alteration Program (LSA).

The breadth of jurisdiction under the CDFW differs from the ACOE in that a “streambed” is not limited to the OHWM, but rather encompasses the entire width of the streambed, from bank to bank, regardless of the water level. CDFW regulatory authority under section 1602 of the Fish and Wildlife Code extends not only to the bed and bank of streams or lakes, but also to “adjacent riparian habitats” that are supported by a river, stream, or lake, regardless of the riparian area’s federal wetland status. For practical purposes of defining “adjacent riparian habitats”, these habitats include the extent of the canopy for stream-associated vegetation that is rooted within, and dependent on the jurisdictional streambeds, as well as all adjacent hydrophytic vegetation.

County of San Diego

As provided in the County of San Diego RPO and BMO, the County defines wetlands as having one or more of the following attributes:

- At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);
- The substratum is predominantly undrained hydric soil; or
- An ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

1.3.8 Habitat Connectivity, Wildlife Corridors and Linkages

M&A reviewed the GIS data for the BSA and surrounding properties in the project vicinity including habitat conservation/open space, vegetation types, and land use to assess the existing habitat connectivity landscape as well as the proposed habitat conservation/open space configuration as it relates to the surrounding conserved lands and/or undeveloped properties that support native habitat to address habitat connectivity.

In addition, the project site and regional surroundings were assessed to determine if the project site is included or contributes to a regional or local wildlife movement corridor or a linkage. Regional wildlife corridors/movement studies and/or regional planning documents such as the adopted County MSCP were reviewed and referenced where applicable. The County MSCP defines a corridor as a specific route that is used for movement and migration of species. Linkages are defined in the County MSCP as an area of land which supports or contributes to the long-term movement of wildlife and genetic material. A corridor may be different from a linkage since a corridor represents a smaller or narrower route for wildlife movement. The

wildlife corridor analysis predominately consisted of a map-based analysis of regional aerial photography, regional vegetation types, river systems and streams, and topography of the project area and surroundings; as well as literature review and onsite field work. During the field work evidence of wildlife species were noted including the presence of tracks, scat, or other sign; documented wildlife sightings within or immediately adjacent to the project site. This information was assessed to determine what wildlife species are present and/or potentially present and the locations of potential wildlife movement corridors onsite and/or in the project area. Further, potential wildlife movement impediments (e.g., roads) and/or likely animal crossings in the project area were analyzed by reviewing aerial photography and applicable traffic predictions, as well as the field investigations of the project area.

1.4 Applicable Regulations

1.4.1 Federal Regulations

Endangered Species Act – The federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a ‘take’ under the Endangered Species Act. Take of a federally listed threatened or endangered species is prohibited without a special permit. The ESA allows for take of a threatened or endangered species incidental to development activities once a habitat conservation plan has been prepared to the satisfaction of the USFWS and an incidental take permit has been issued. The ESA also allows for the take of threatened or endangered species after consultation has deemed that development activities will not jeopardize the continued existence of the species. The federal ESA also provides for a Section 7 Consultation when a federal permit is required, such as a Clean Water Act Section 404 permit.

“Critical Habitat” is a term within the federal Endangered Species Act designed to guide actions by federal agencies (as opposed to state, local, or other agency actions) and defined as “an area occupied by a species listed as threatened or endangered within which are found physical or geographical features essential to the conservation of the species, or an area not currently occupied by the species which is itself essential to the conservation of the species.”

Section 404 Clean Water Act Regulations – The Clean Water Act provides wetland regulation at the federal level and is administered by the USACE. The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting is required for filling waters of the U.S. (including wetlands). Permits may be issued on an individual basis, or may be covered under approved nationwide permits.

Migratory Bird Treaty Act – All migratory bird species that are native to the U.S. or its territories are protected under the federal Migratory Bird Treaty Act, as amended under the Migratory Bird Treaty Reform Act of 2004. The Migratory Bird Treaty Act is generally protective of migratory birds.

1.4.2 State Regulations

California Environmental Quality Act (CEQA) – CEQA requires that biological resources be considered when assessing the environmental impacts that are the result of proposed actions. The lead agencies determine the scope of what is considered an impact and what constitutes an “adverse effect” on a biological resource.

California Fish and Game Code – The California Fish and Game Code regulate the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act, Streambed Alteration Agreement regulations, and California Native Plant Protection Act. Fish and Game Code states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto,” and “unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird” unless authorized.

California Endangered Species Act – The California Endangered Species Act (CESA), similar to the federal ESA, contains a process for listing of species and regulating potential impacts to listed species. State threatened and endangered species include both plants and wildlife, but do not include invertebrates. The designation “rare species” applies only to California native plants. State threatened and endangered plant species are regulated largely under the Native Plant Preservation Act in conjunction with the CESA. State threatened and endangered animal species are legally protected against “take.” The CESA authorizes CDFW to enter into a memorandum of agreement for take of listed species to issue an incidental take permit for a state-listed threatened and endangered species only if specific criteria are met. Section 2080 of the CESA prohibits the take of species listed as threatened or endangered pursuant to the Act. Section 2081 allows CDFW to authorize take prohibited under Section 2080 provided that: 1) the taking is incidental to an otherwise lawful activity; 2) the taking will be minimized and fully mitigated; 3) the applicant ensures adequate funding for minimization and mitigation; and 4) the authorization will not jeopardize the continued existence of the listed species.

Streambed Alteration Agreement Regulations – Section 1602 of the Fish & Game Code requires any person, state, or local governmental agency to provide advance written notification to CDFW prior to initiating any activity that would: 1) divert or obstruct the natural flow of, or substantially change or remove material from the bed, channel, or bank of any river, stream, or lake; or 2) result in the disposal or deposition of debris, waste, or other material into any river, stream, or lake. The state definition of “lakes, rivers, and streams” includes all rivers or streams that flow at least periodically or permanently through a well-defined bed or channel with banks that support fish or other aquatic life, and watercourses with surface or subsurface flows that support or have supported riparian vegetation.

California Native Plant Protection Act – Section 1900-1913 of the California Fish and Game Code contains the regulations of the Native Plant Protection Act of 1977. The intent of this act is to help conserve and protect rare and endangered plants in the state.

Regional Water Quality Control Board – The RWQCB not only regulates impacts to water quality in federal waters of the U.S. under Section 401 of the Clean Water Act, but they also

regulate any isolated waters that are impacted under the state Porter Cologne Act utilizing a Waste Discharge Requirement. Discharge of fill material into waters of the State not subject to the jurisdiction of the USACE pursuant to Section 401 of the Clean Water Act may require authorization pursuant to the Porter Cologne Act through application for waste discharge requirements or through waiver of waste discharge requirements.

Natural Community Conservation Planning (NCCP) Act of 1991 – The NCCP Act is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. CDFW is the primary state agency that implements the NCCP. The NCCP plan provides for the comprehensive management and conservation of multiple wildlife species. It identifies and provides for regional protection of natural wildlife diversity while allowing for compatible and appropriate development and growth.

California Oak Woodland Conservation Act – This act established the Oak Woodland Conservation Program, administered by the Wildlife Conservation Board, to help local jurisdictions protect and enhance their oak woodland resources. It offers landowners, conservation groups, and cities/counties opportunities to obtain funding for projects designed to conserve and restore California’s oak woodlands.

1.4.3 Regional/Local Regulations

County of San Diego Multiple Species Conservation Program (MSCP)

The Multiple Species Conservation Program (MSCP) is a comprehensive subregional habitat conservation planning program that was adopted in 1998 for a 900-square mile area in southwestern San Diego County including the following jurisdictions: County of San Diego, City of San Diego, Poway, Santee, El Cajon, La Mesa, Lemon Grove, National City, Chula Vista, Imperial Beach, Coronado, and Del Mar. This subregional MSCP Plan along with the Subarea Plans adopted by the signatory jurisdictions serves as a multiple species Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act and a Natural Community Conservation Plan (NCCP) pursuant to the current California NCCP Act and the state Endangered Species Act. As part of the implementation of the NCCP, local agencies have adopted a Subarea Plan or are in the process of preparing a Subarea Plan. Subarea Plans approved under the NCCP allow “take” of various sensitive species through specific conditions of coverage under an Implementing Agreement and permit issued under section 10 of the FESA. The goal of the Subarea Plans are to maintain and enhance biological diversity in the region and maintain viable populations of endangered, threatened, and key sensitive species and their habitats while promoting regional economic viability through streamlining the land use permit process.

In the interim period when NCCP enrolled jurisdictions are actively developing their respective Subarea Plans, a special rule under Section 4(d) of the FESA provides for incidental take of coastal California gnatcatcher through the Habitat Loss Permit process for activities conducted in accordance with the NCCP Conservation Guidelines and Process Guidelines. Those enrolled jurisdictions that are not adequately progressing in actively developing their Subarea Plans to the satisfaction of USFWS have been notified in a letter from USFWS dated November 2, 2007 that USFWS will no longer concur on requested NCCP 4(d) Rule Habitat Loss Permits.

County Subarea Plan and Biological Mitigation Ordinance

The County of San Diego has an adopted South County MSCP Subarea Plan dated October 22, 1997 that implements the MSCP within three identified segments of the unincorporated areas of San Diego. The County is also in the process of preparing a draft North County MSCP Subarea Plan to implement the MSCP in the northern portions of San Diego County.

The approved MSCP is regulated by the BMO. It is expected that if the draft North County MSCP is adopted, it will also be regulated by the BMO which outlines the specific criteria (i.e., project design, impact allowances, and mitigation requirements) for projects within the MSCP boundary. The adopted and draft County MSCP Subareas include identified Pre-Approved Mitigation Areas (PAMAs) within which conservation efforts are to be concentrated and a preserve can be assembled. The MSCP generally provides incentives for development to occur outside of a PAMA but does allow for development that meets criteria within a PAMA.

The southern half of the Safari Highlands Ranch project site is within the subarea for the County's approved South County MSCP and existing PAMA; and the northern half of the site is located in the draft North County MSCP planning area within a proposed PAMA.

City of San Diego Subarea Plan

The City of San Diego has an adopted MSCP Subarea Plan dated March 1997. The proposed Safari Highlands Ranch project proposes offsite southern emergency access road improvements to an existing roadway within the City of San Diego MSCP Subarea located directly south of the project site. These proposed offsite road improvements will be guided by the City of San Diego's adopted MSCP Subarea Plan.

Multiple Habitat Conservation Plan (MHCP)

The Multiple Habitat Conservation Plan (MHCP) is a comprehensive subregional habitat conservation planning program that was adopted in 2003 for a 175 square mile area in northwestern San Diego County including the following jurisdictions: Oceanside, Vista, Carlsbad, San Marcos, Escondido, Encinitas, and Solana Beach.

City of Escondido Draft MHCP Subarea Plan

The City of Escondido has an unadopted draft MHCP Subarea Plan dated June 2001 and does not have an Implementing Agreement or incidental take permit. Therefore, this draft Subarea Plan is not specifically applicable to any potential projects under discretionary review although it may be referred to as a guideline. Further, based on the 2007 USFWS letter regarding non-concurrence of NCCP 4(d) rule Habitat Loss Permits, the City of Escondido has not progressed on actively developing their draft Subarea Plan and therefore, the USFWS will not concur on interim incidental take of coastal California gnatcatcher through the Habitat Loss Permit process, thus rendering the Subarea Plan ineffective to address gnatcatcher and coastal sage scrub impacts. Notwithstanding, the regulatory function of the unadopted draft City of Escondido MHCP Subarea Plan has been used as one tool for assessment of conservation design in this document.

The City of Escondido draft Subarea Plan specifies in Section 6.6 for Annexations that future annexations of land to the City of Escondido must be covered by the requirements of an NCCP Subarea Plan. It further states that if an approved County Subarea Plan and implementing

agreement exists for the area being annexed, the approved County Subarea Plan applies. In the case of the Safari Highlands Ranch project site, the County's adopted South County MSCP Subarea Plan applies for the southern half of the project site. Within the northern portion of the project site that occurs in the unadopted North County MSCP Subarea, the City of Escondido would work cooperatively with the County and Wildlife Agencies to ensure consistency with the applicable provisions related to conservation design in both the City of Escondido's unadopted draft Subarea Plan and the County's adopted and unadopted MSCP Subarea Plans. Finally, the City of Escondido would be responsible for ensuring that any project level conservation plan is implemented following annexation to the City.

MSCP/MHCP Summary

Because the project site presently straddles both adopted and unadopted conservation plan under the County MSCP and is proposed to be annexed into the City where an unadopted and inactive draft subarea plan has been prepared under an adopted MHCP subregional plan, the conservation planning environment for the site is complex. As a result, the analyses in this document consider the most stringent applicable criteria/standards and mitigation ratios of any of the plans, adopted or unadopted.

The base analysis in this biological report as discussed makes use of the adopted South County MSCP criteria/standards and mitigation ratios and is further analyzed for consistency in the project MSCP Consistency Analysis Report as an appendix to this biological report. Although the proposed project generally applies the criteria/standards and mitigation ratios from the approved South County MSCP and analyzes consistency with the adopted South County MSCP, North County MSCP Planning Agreement, and adopted City of San Diego MSCP, the project is also consistent with the draft City of Escondido Subarea Plan as well as the MHCP.

Based on this approach, it has been determined that all of the MSCP criteria/standards and mitigation ratios applicable to the project are provided in the adopted South County MSCP Subarea Plan, with one exception regarding the mitigation ratio for oak riparian woodland/oak woodland impacts. The City of Escondido's draft MHCP Subarea Plan mitigation ratio of 3:1 for impacts to oak woodland/Habitat Group B is greater than the adopted County's mitigation ratio of 2:1 for same habitat; therefore, the project proposes to apply the 3:1 mitigation ratio for impacts to oak woodland since this mitigation ratio is the most stringent for this habitat type among all the applicable adopted and unadopted MSCPs/MHCPs.

The Escondido Master Plan for Parks, Trails, and Open Space serves as a guide to developing a comprehensive and integrated open space system to achieve the quality of life standards set forth in the General Plan. A conceptual "wildlife corridor" is identified in the plan that connects key habitat areas in a continuous link around the perimeter of the City. Tributary corridors also link undeveloped, unincorporated County areas north and east of the City. The Master Plan proposes to work with property owners in these areas to set aside sufficient land for wildlife corridors when development plans are proposed. The Master Plan describes the information needed to assess a request to modify the width or location of a wildlife corridor, which includes the preparation of detailed biological data from a qualified biologist. The City is responsible for monitoring the overall alignment of the corridor to ensure that development proposals maintain effective corridor connections.

The City of Escondido Zoning Ordinance (Article 3, Sections 33-40 through 33-43) identifies an Open Space (OS) Zone, which provides permanent open space within the community consistent

with goals and objectives of the Community Open Space/Conservation Element of the existing General Plan and the Public Lands/Parks land use designation. The OS Zone allows limited use of land while conserving open space as a limited and valuable resource. Uses permitted in the OS Zone include agriculture, common open space, land bank and mitigation sites, schools, public recreational uses, and public utilities. Conditional uses include radio and television towers, retreat centers and camps, equestrian centers, firearms and archery ranges, and private recreational uses. NOTE: In the case of the Safari Highlands Ranch project, the proposed habitat conservation open space would provide permanent biological conservation of habitat in perpetuity and would not allow any of the permitted uses listed above that would conflict with habitat conservation for biological purposes.

The Flood Plain Overlay Zone identified in Article 4, Sections 33-50 through 33-56, provides land use regulations for property situated in the designated floodplain of a river, creek, stream, or water course and is applied as a supplement to the basic underlying land use zone. Development in the Flood Plain Zone that would cause stream channel alteration, affect the capacity of a floodway, or unduly increase flood heights is restricted.

The City's Open Space Development Standards (Article 5, Sections 33-70 through 33-77) provide regulations for development of land identified by the Community Open Space/Conservation Element as having open space value. Such land may contain slopes, vegetated conservation areas, and/or natural drainage courses not otherwise defined as floodways. Like the Flood Plain regulations, the requirements of this section are in addition to the property development standards of the underlying zone. Among other things, the section requires that natural features shall be protected and natural vegetation shall remain undisturbed except as necessary for approved construction. Prior to any disturbance or development, a development permit must be approved. The development permit must demonstrate that the Project conforms to the goals and objectives of the Community Open Space/Conservation Element of the existing General Plan.

Excavation and Grading Ordinance (Article 55) ensures that development projects protect the natural topographic character and integrity of the environment. Submittal and review requirements detail the need to identify biological habitats, areas of disturbance, setbacks, and mitigation measures to reduce potential impacts. The article establishes a Hillside and Ridgeline Overlay District (HROD), generally encompassing parcels with a slope of 15 percent or greater on any portion of the parcel, or those that are located in proximity to an identified intermediate or skyline ridge, and located in an area that has not been developed to its full potential. Development proposals in the HROD must identify sensitive species or habitats (indicating retention, relocation, or removal). Specific findings must be made prior to approval of projects in the HROD, including findings that the development respects and preserves the natural landform, vegetation, and wildlife of the project site. For a vegetation removal permit, findings must be made that the clearing is in conformance with applicable state and federal requirements, that proper environmental review has been completed, and that the proposed clearing or grading is not premature with regard to future discretionary actions and preservation options. The City may attach conditions to the vegetation removal permit. Protection and replacement standards include making every feasible effort to preserve sensitive biological habitat and species, recording deed restrictions to notify future property owners of responsibility for continued maintenance, and onsite or offsite mitigation at a ratio of 1:1 or higher.

California Environmental Quality Act Regulations (Article 47) implements the CEQA Guidelines for development projects in the City. Article 47 lists specific activities that fall within certain classes of exemption, such as ministerial projects and categorical exemption projects. The article also states that even though a project may otherwise be eligible for an exemption, no exemption will be granted in the following circumstances:

- Grading or clearing activities that disturb, fragment, or remove habitats of state or federally listed species and archaeological and cultural resources.
- Parcel maps, plot plans, and all other discretionary development projects that affect sensitive, threatened, or endangered species and their habitats; archaeological and cultural resources; wetlands; designated stream courses; unstable soils; and other factors requiring special review.

Article 47 requires reporting programs to ensure that all required mitigation measures for development projects are properly and fully implemented.

City's Municipal Code (Section 33-1069) includes vegetation and replacement standards for impacts to mature and/or protected trees. Section 33-1052 of the City's Municipal Code defines a "mature tree" as any self-supporting woody perennial plant, native or ornamental, with a single well-defined stem or multiple stems supporting a crown of branches. The single stem, or one of the multiple stems of any mature oak tree, shall have a diameter 4 inches or greater when measured at diameter breast height (DBH) above the tree's natural grade. All other mature trees shall have a diameter of 8 inches DBH, or greater, for a single stem or one of the multiple stems. A "protected tree" is defined as any oak that has a 10-inch or greater DBH, or any other species or individual specimen listed on the local historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code.

2.0 Environmental Setting

2.1 Physical Characteristics

The Safari Highlands Ranch BSA is part of the inland foothills and valleys of San Diego County (Figure 1). The project area includes topography consisting of a series of rolling hills, rock outcrops, and steep topography dissected by drainage courses that drain primarily to the southwest (Figure 2). Elevations across the project site range from 420 feet above mean sea level (AMSL) at the lowest to 1,820 feet AMSL at the highest. The seasonal main drainage course that runs generally across the central and southern portion of the site conveys storm water and was observed to retain waterflow in the drainage within the winter, spring, and early summer months of 2017 (an above normal rainfall year). The remainder of the drainages onsite are small ephemeral drainages that are limited to conveying stormwater during and immediately after rain events.

Climate conditions for the project area are typical of a Mediterranean climate regime, with a winter rainy season followed by a hot, dry summer. Spring and fall months tend to be mild in temperature and variable in rainfall amounts. The site is within the Climate Transition Zone where the effects of changes in elevation on temperature and rainfall influence vegetation and species distributions.

The underlying bedrock ranges from Jurassic/Triassic metavolcanics, Mesozoic granodiorites, adamellites, and basic intrusive rocks, to Quaternary alluviums (Rogers 1965). Soil types within the project area and vicinity consist of a series of sandy loam, coarse sandy loam, sand, and steep gullied land (U.S. Department of Agriculture [USDA] 1973; SANDAG 1995). Sandy loam and coarse sandy loam soils in the following soil series are present: Cienega Fallbrook rocky, sandy loams with 30-65 percent eroded slopes and Cienega very rocky, coarse sandy loams with 30-70 percent slopes (USDA 1973). There are smaller inclusions supporting Vista course, sandy loams with 15-30 percent slopes; Vista rocky, sandy loam with 5-15 percent slopes; Fallbrook rocky, sandy loam with 9-30 percent eroded slopes; Vista rocky, sandy loams with 15-30 percent slopes; and Vista course, sandy loams with 9-15 percent slopes. Runoff is described as moderate to rapid and the erosion hazard is on average moderate for these soil types (Figure 3).

The site has had a varied fire history since 1910. The site was burned completely in the 1910s, 1950s, 1993 (Guejito fire), and 2007 (Witch fire) and was partially burned in the 1930s (Dudek 2016, Wildfire Zone Website).

2.2 Regional Context

The southern half of the project site is within the County of San Diego's approved South County MSCP and the northern half is within the County's draft North County MSCP Planning Area. The entire site is within Pre-Approved Mitigation Areas (PAMA) for both approved and draft County MSCP plans (Figure 1). The applicable County PAMA's are soft-line areas that are the focus for the preservation of habitat within the Metro-Lakeside-Jamul Segment of the South County MSCP and within the draft North County MSCP. The surrounding parcels are mostly private lands. Conserved biological open space contiguous with the western project boundary is managed by the Rancho San Pasqual Homeowner's Association and open space contiguous with the southwestern boundary of the project site is managed by the Rancho Vistamonte Homeowners Association. City of San Diego owned land within the City's adopted

Figure 2. Topographic Map

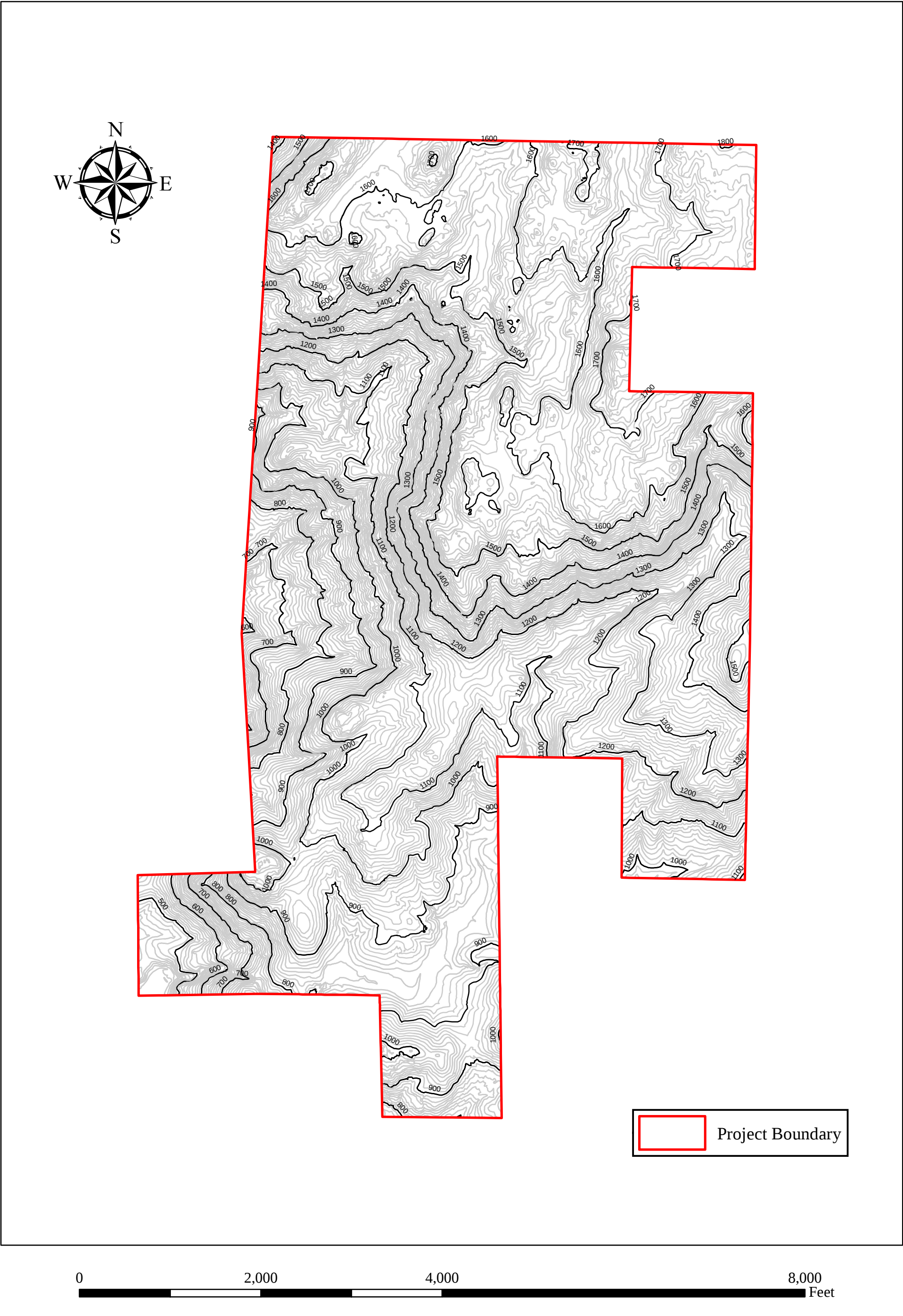


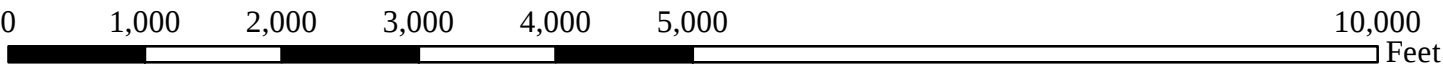
Figure 3. USDA Soil Map



 Survey Area



- VvD: Vista rocky coarse sandy loam, 5 to 15 percent slopes
VaC: Visalia sandy loam, 5 to 9 percent slopes
FeE2: Fallbrook rocky sandy loam, 9 to 30 percent slopes, ero ded
CIE2: Cieneba coarse sandy loam, 15 to 30 percent slopes, ero ded
RaD2: Ramona sandy loam, 9 to 15 percent slopes, eroded
- CmrG: Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes
CnG2: Cieneba-Fallbrook rocky sandy loams, 30 to 65 percent s slopes, erode
FxG: Friant rocky fine sandy loam, 30 to 70 percent slopes
VaA: Visalia sandy loam, 0 to 2 percent slopes
VsE: Vista coarse sandy loam, 15 to 30 percent slopes



MSCP Subarea is located directly south of the project boundary. This City owned land is partially within the City's MSCP Multi-habitat Planning Area (MHPA), a hard-line preserve that limits development and conserves habitat and sensitive species. The proposed offsite southern emergency access road consists of improvements along the existing Zoo Road within City owned land that crosses a narrow band (approximately 160 feet wide) of City MHPA in this area; the remainder of the southern access route is located outside of the MHPA (Figure 1). The eastern most part of the northern emergency access road is located in the draft North County MSCP and the western portion of this emergency access road is located in the City of Escondido, a jurisdiction that does not have an adopted Subarea Plan.

As of May, 2016, the County and its agency and private conservation partners have assembled 75,450 acres of the 98,379-acre South County Subarea Plan MSCP preserve, which represents 77% of the total MSCP conservation goal associated with Wildlife Agencies 50-year ESA/NCCP permit (County of San Diego 2016).

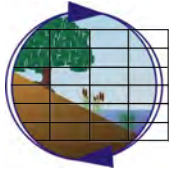
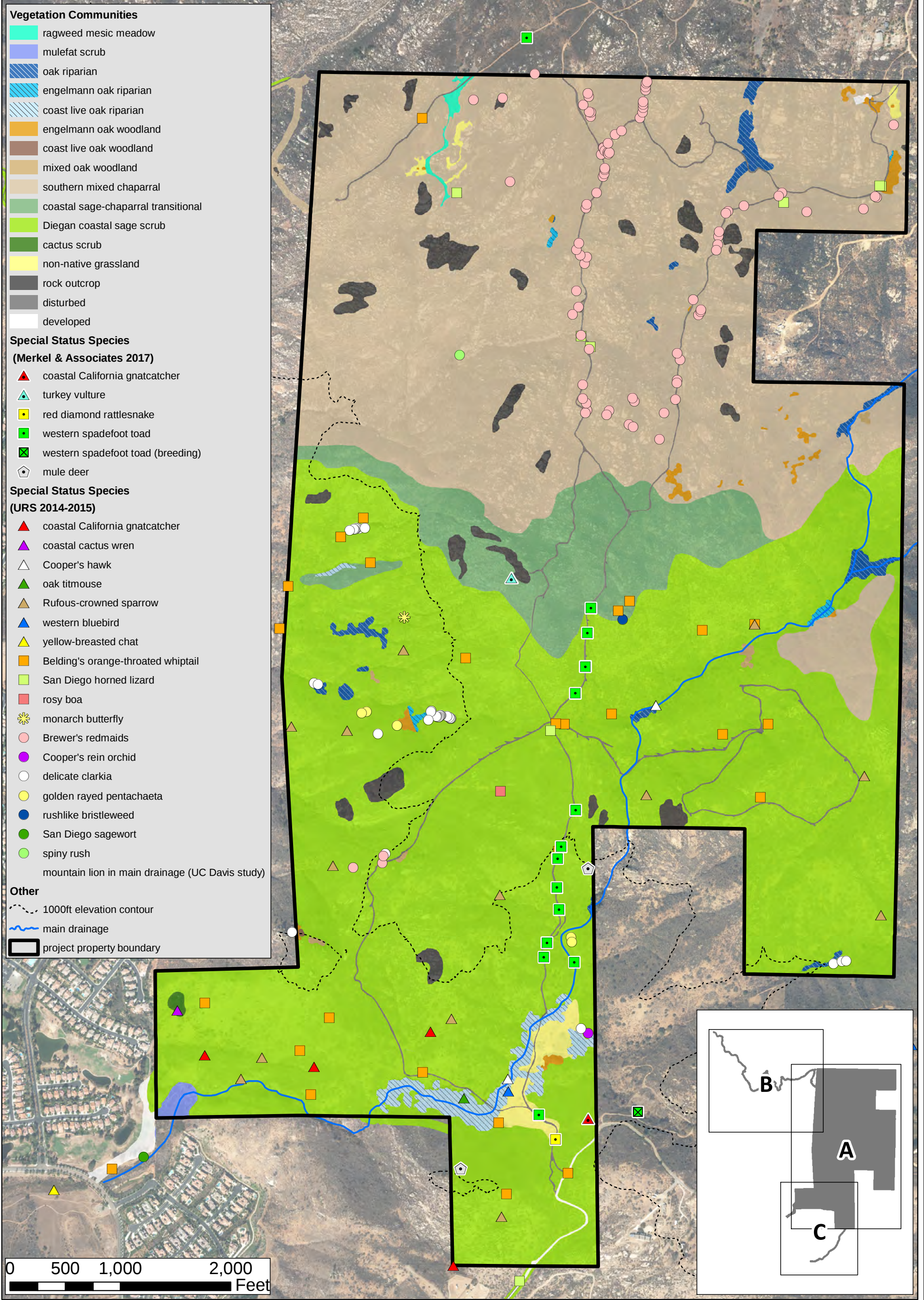
2.3 Habitat Types/Vegetation Communities

Vegetation communities and habitat types that are found in the project BSA consist predominately of native habitats and discussed separately below (Figures 4a-4c). Few areas of these habitat types/vegetation communities have portions that were characterized as disturbed. Acreages of each habitat type in the project area are given in Table 6. The habitats within the project site were mapped in 2014 and 2015 by URS. As discussed in the methods, some of these habitats were subsequently updated by M&A in 2017 specifically in the central portions of the site where previously mapped chaparral, coastal sage scrub, and/or deerweed scrub were updated to coastal sage-chaparral transitional and/or coastal sage scrub.

2.3.1 Non-native Grassland (42200)

Non-native grassland, a MSCP Tier III sensitive habitat, generally occurs on fine-textured loam or clay soils which are moist or even waterlogged during the winter rainy season and very dry during the summer and fall. It is characterized by a dense to sparse cover of annual grasses, often with native and non-native annual forbs (Holland 1986). This habitat is a disturbance-related community most often found in old fields or openings in native scrub habitats. This association has replaced native grassland and coastal sage scrub at many localities throughout Southern California due to past human activities. The predominate area mapped as non-native grassland onsite is located in the southern portion of the site and adjacent to the main drainage that supports a large patch of oak riparian woodland. This area of onsite non-native grassland includes slender wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), foxtail brome (*Bromus madritensis*), and rip-gut grass (*Bromus diandrus*). Characteristic forbs include red-stem filaree (*Erodium spp.*), mustard (*Brassica spp.*), tocalote (*Centaurea melitensis*) and Russian thistle (*Salsola tragus*).

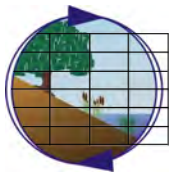
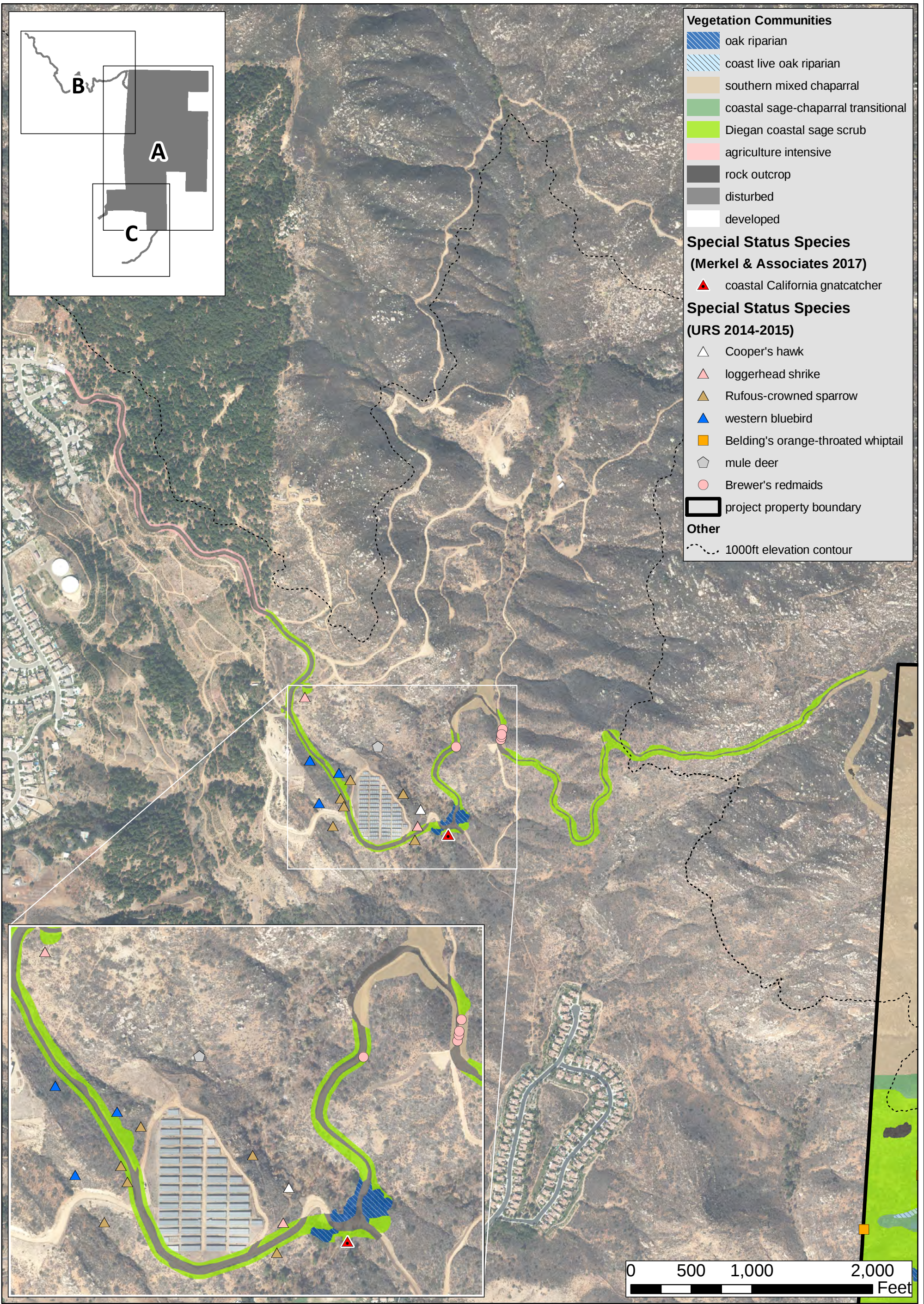
Smaller areas of non-native grassland are located in proximity to the mesic meadow in the northwestern portion of project site surrounded by southern mixed chaparral. These areas of non-native grassland predominately support non-native grasses consisting of bromes and slender wild oat, as well as *Erodium* species and to a lesser extent a few common native upland species such as clustered tarweed (*Deinandra fasciculata*) and California aster (*Corethrogyne filaginifolia*). Another small patch of non-native grassland occurs in the northeastern portion of



Source: URS, Althouse & Meade, and Merkel & Associates

Biological Resources Map
Safari Highlands Ranch

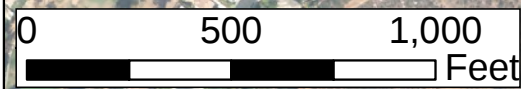
Figure 4a



Biological Resources Map
Safari Highlands Ranch

Source: URS, Althouse & Meade, and Merkel & Associates

Figure 4b



Vegetation Communities

- mulefat scrub
- coast live oak riparian
- engelmann oak woodland
- coast live oak woodland
- mixed oak woodland
- Diegan coastal sage scrub
- cactus scrub
- non-native grassland
- rock outcrop
- disturbed
- developed

Special Status Species

(Merkel & Associates 2017)

- coastal California gnatcatcher
- red diamond rattlesnake
- western spadefoot toad
- mule deer

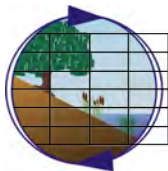
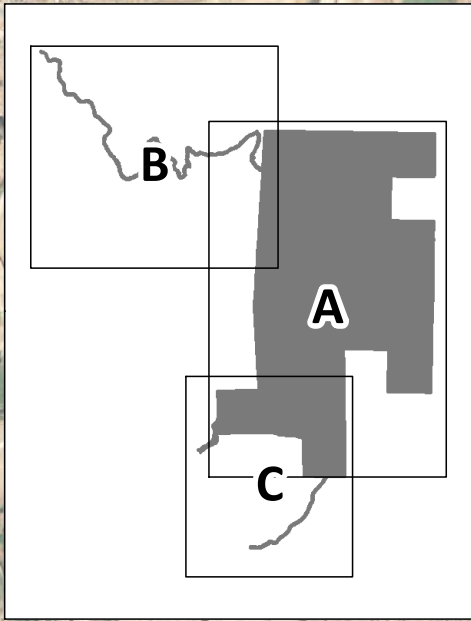
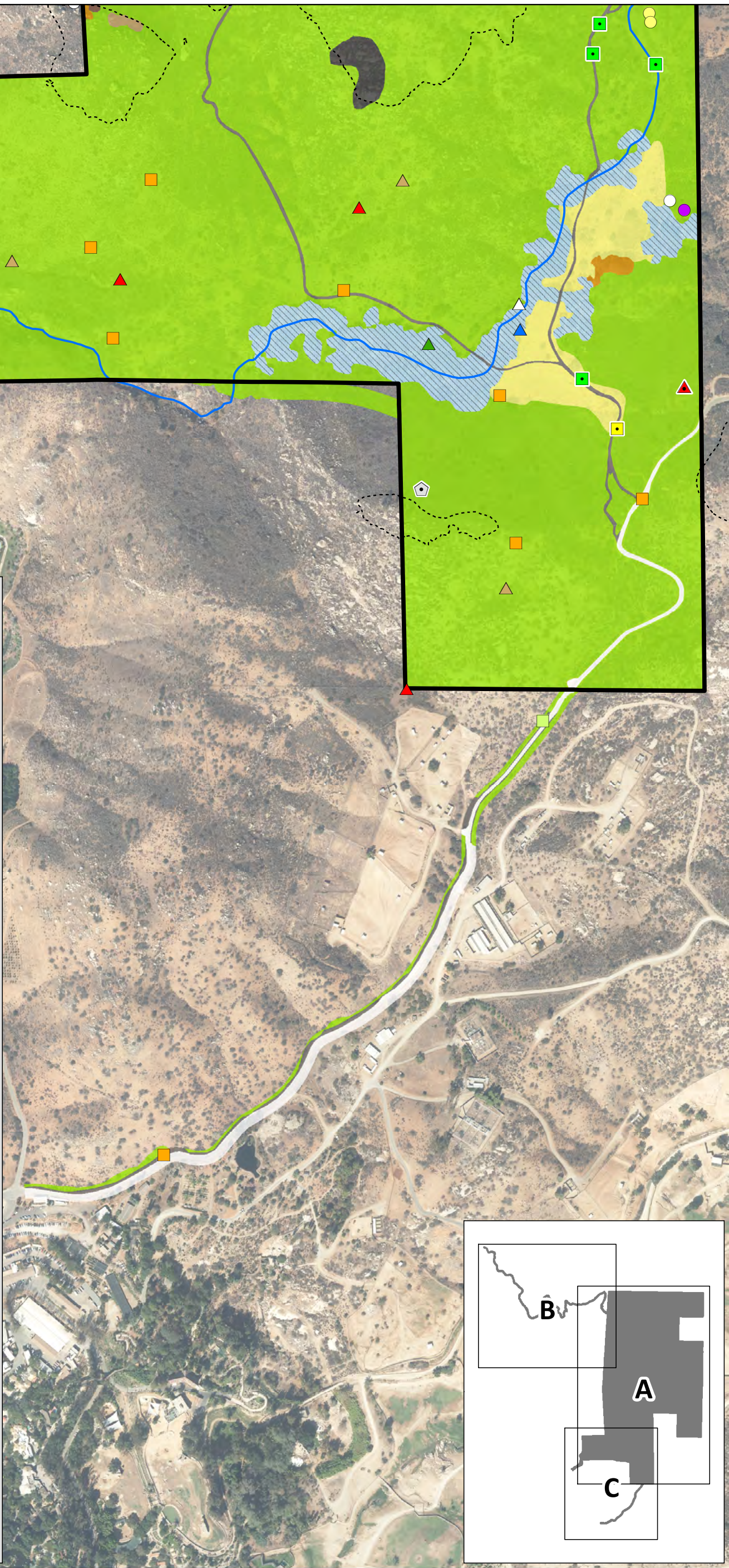
Special Status Species

(URS 2014-2015)

- coastal California gnatcatcher
- coastal cactus wren
- Cooper's hawk
- oak titmouse
- Rufous-crowned sparrow
- western bluebird
- Belding's orange-throated whiptail
- San Diego horned lizard
- Cooper's rein orchid
- delicate clarkia
- golden rayed pentachaeta
- San Diego sagewort
- mountain lion in main drainage (UC Davis study)

Other

- 1000ft elevation contour
- main drainage
- project property boundary



Biological Resources Map
Safari Highlands Ranch

Source: URS, Althouse & Meade, and Merkel & Associates

Figure 4c

Table 6. Vegetation on Safari Highlands Ranch Project Site and Offsite Facilities

Vegetation Communities	Holland Code or Sawyer Keeler-Wolf Alliance	Project Site (acres)	Offsite Facilities (acres)	Total Project (Onsite and Offsite) acres	100-ft Project Buffer (acres)*
Ragweed Mesic Meadow	<i>Ambrosia psilostachya</i> Herbaceous Alliance	1.29	0.00	1.29	0.18
Mulefat Scrub	63310	1.87	0.02	1.89	4.22
Oak Riparian Woodland	61310	19.95	0.50	20.45	1.09
Oak Woodland	71160	5.01	0.00	5.01	0.27
Cactus Scrub	Coast Prickly Pear Scrub	0.63	0.00	0.63	0.00
Diegan Coastal Sage Scrub (includes rock outcroppings)	32520	561.95	12.88	574.83	48.49
Coastal Sage-Chaparral Transition (includes rock outcroppings)	37G00	67.70	0.00	67.70	0.00
Southern Mixed Chaparral (includes rock outcroppings)	37131	420.10	4.22	424.32	36.44
Non-Native Grassland	42200	7.88	0.00	7.88	0.00
Disturbed Habitat	11300	11.26	7.58	18.84	1.21
Agriculture Intensive	18100	0.00	2.14	2.14	0.00
Developed	12000	0.97	5.86	6.83	2.83
Totals**		1098.61	33.20	1131.81	94.73

* This buffer is not a part of the project property parcel and is provided only for context, except in a few areas where the proposed offsite facilities cross through this buffer.

** Totals may reflect minor differences from the summation of areas in the table due to rounding of values.

the site with similar characteristics and surroundings. Both of these areas appear to have been subjected to off-road activity and/or mowing activities in the past.

2.3.2 Coastal Sage Scrub (32520)

Coastal sage scrub, a MSCP Tier II sensitive habitat, is comprised of low, soft-woody subshrubs to about 1 meter (3 ft) high, many of which are facultative drought-deciduous. This association is typically found on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water. Dominant shrub species in this vegetation type may vary, depending on local site factors and levels of disturbance. The dominant species within the coastal sage scrub onsite include California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), white sage (*Salvia apiana*), and our Lord's candle (*Yucca whipplei*). Other, less frequent, constituents of this onsite community include spiny redberry (*Rhamnus crocea*), deerweed (*Lotus scoparius*), broom baccharis (*Baccharis sarothroides*), monkey flower (*Mimulus aurantiacus*), and yellow bush-penstemon (*Keckiella antirrhinoides*). This habitat also supports many areas of rock outcroppings.

In addition, three distinct large areas generally in the central portion of the site were previously mapped by URS/A&M in 2015 as deer weed scrub, a post-fire successional vegetation community that is eventually displaced by sage scrub or chaparral, since the deer weed (*Lotus scoparius*) that dominated these areas appeared to be dead and did not show any new foliage during the 2015 spring season. However, based on the observations made by M&A in the spring of 2017, this habitat currently supports predominately laurel sumac, California sagebrush, and flat-top buckwheat and is considered fully recovered coastal sage scrub.

2.3.3 Southern Mixed Chaparral (37131)

Southern mixed chaparral, MSCP Tier III sensitive habitat, tends to occur on steeper, more mesic north-facing slopes than chamise chaparral. This vegetation community type is characterized by relatively high species diversity. Typical species onsite include chamise (*Adenostoma fasciculatum*), mountain mahogany (*Cercocarpus minutiflora*), hoary-leaf ceanothus (*Ceanothus crassifolius*), chaparral whitehorn (*Ceanothus leucodermis*), scrub oak (*Quercus berberidifolia*), and Ramona lilac (*Ceanothus tomentosus*). The understory component is generally better-developed in this association than in chamise chaparral. This is the dominant vegetation in the northern half of the project site.

2.3.4 Coastal Sage-Chaparral Transitional (37G00)

This habitat is typically a post-fire successional vegetation community that is an intermediate between coastal sage scrub and chaparral that over time would transition into either coastal sage scrub or chaparral habitat. Oberbaur and Holland (2008) classifies this habitat under chaparral; however, describes it as a “mix of sclerophyllous, woody chaparral species and drought-deciduous, malacophyllous sage scrub species. *Adenostoma fasciculata* and *Artemisia californica* are dominant and equal in cover.” The County MSCP Subarea includes coastal sage-chaparral scrub as a Tier II habitat along with coastal sage scrub and flat-topped buckwheat habitat types.

Coastal sage-chaparral transitional habitat occurs on the project site generally in the central portion nearest the top of a hill and along a ridgeline that generally separates the adjoining south-facing slopes that supports coastal sage scrub and the north-facing slopes that supports southern mixed chaparral. This transitional area supports both sage scrub species including California sagebrush and laurel sumac along with chaparral species including chamise, hoary-leaf ceanothus, and chaparral whitehorn.

2.3.5 Western Ragweed Mesic Meadow

A distinct area in the northwestern portion of the project site supports low growing herbaceous species with areas of surface water and/or moist soils and is surrounded by southern mixed chaparral. This defined area was mapped as western ragweed mesic meadow by URS in 2015. Although western ragweed (*Ambrosia psilostachya*) was apparently the co-dominant herbaceous species in the mesic meadow habitat potentially due to drought conditions in 2015, western ragweed is currently not the co-dominant species in the meadow based the 2017 M&A field surveys. Based on the M&A surveys in this area conducted between late winter and early summer of 2017, this meadow is dominated by toad rush (*Juncus bufonius*), a native species and grass poly (*Lythrum hyssopifolia*), an invasive non-native species. Other species within this habitat include western ragweed, blue-eyed-grass (*Sisyrinchium bellum*), redstem filaree (*Erodium cicutarium*), Mexican rush (*Juncus mexicanus*), deer grass (*Muhlenbergia rigens*), common checkerbloom (*Sidalcea malviflora* ssp. *malviflora*), and clustered tarweed (*Deinandra fasciculata*). This vegetation community is not specifically listed as a MSCP Tier sensitive habitat, but all wetlands are listed as Tier I.

2.3.6 Oak Woodland (71160)

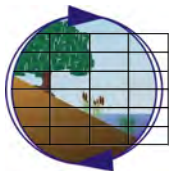
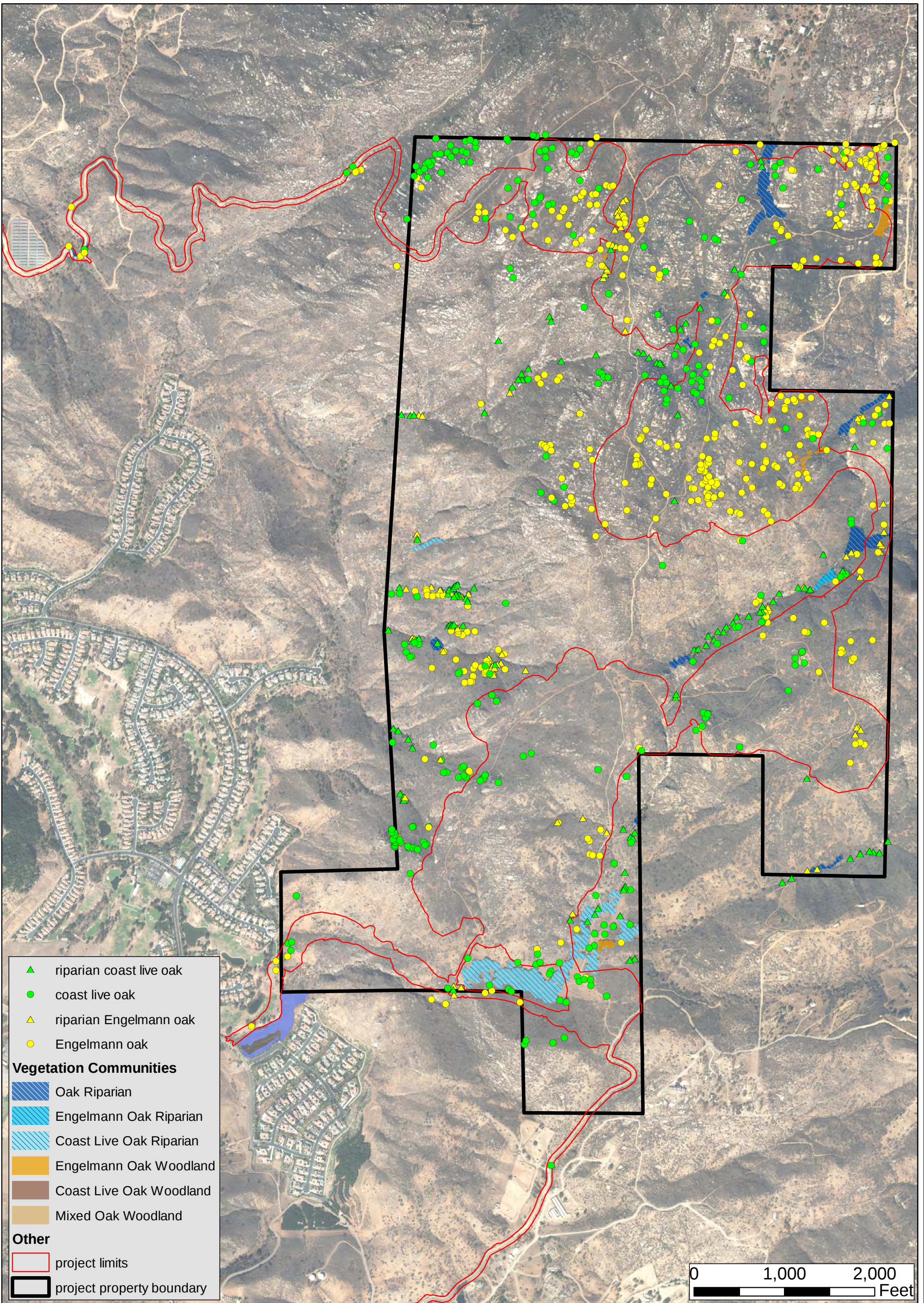
Oak woodlands, a MSCP Tier I sensitive habitat, located away from the drainage channels onsite are classified as an upland habitat. The majority of the oaks in this category are coast live oaks (*Quercus agrifolia*), but Engelmann oaks (*Quercus engelmannii*) also are present onsite. In many areas onsite, the Engelmann oaks occur in sparser densities as compared to the coast live oaks and were mapped as individual trees located within the sage scrub and chaparral matrix, rather than within oak woodland (Figures 4a-4c; Figure 5).

2.3.7 Oak Riparian Woodland (61310)

On the Safari Highlands Ranch site oak riparian woodland, MSCP Tier I sensitive habitat, is limited to mostly coast live oak trees clustered along the drainages; however, small patches of Engelmann oak dominated woodland along drainages also occur onsite. The larger oak grove in the southern portion of the site as well as one crossing along the northern emergency access road also supports to a lesser extent California sycamore (*Platanus californicus*), black willow (*Salix gooddingi*), arroyo willow (*S. lasiolepis*), toyon (*Heteromeles arbutifolia*), and a sparse understory of poison oak (*Toxicodendron diversilobum*), Douglas mugwort (*Artemisia douglasiana*), and western ragweed (Figures 4a-4c; Figure 5).

2.3.8 Mulefat Scrub (63310)

Mulefat scrub, a MSCP Tier I sensitive habitat, is a riparian scrub dominated by mulefat. Mulefat-dominated scrub occurs along intermittent streams with a fairly coarse substrate and



Oak Woodland Distribution Map
Safari Highlands Ranch

Figure 5

moderately deep water table. Understory vegetation is usually composed of nonnative, weedy species or is lacking altogether. The only stand of mulefat scrub onsite occurs in the southwest corner of the property and continues downstream offsite to the south. The onsite portion of the mulefat scrub habitat is monotypic. The connecting offsite mulefat scrub is located between an existing golf course and residential development.

2.3.9 Disturbed Habitat (11300)

Disturbed habitat typically develops on sites with heavily compacted soils following intense levels of disturbance such as grading. This type of disturbed area is dominated by bare ground and non-native broad-leaf herbaceous species such as mustards, fennel (*Foeniculum vulgare*), horseweed (*Conyza canadensis*), and thistles. A sub-dominant percent cover of non-native grasses is often present. The existing dirt roads and trails within the project site are included in this habitat category. This vegetation community is a MSCP Tier IV habitat which is not considered sensitive and not regulated by the County BMO.

2.3.10 Agriculture Intensive – Orchards (18100)

Avocado groves are adjacent to the western segment of the northwest emergency access route. This vegetation community is a MSCP Tier IV habitat which is not considered sensitive and not regulated by the County BMO.

2.3.11 Developed (12000)

Developed areas support no native vegetation and may be additionally characterized by the presence of human-made structures such as buildings or roads. The level of soil disturbance is such that only the most ruderal plant species would be expected. Ornamental vegetation would be associated with developed areas. Remnants of a small home site are in the northeast portion of the project site.

2.3.12 Other Notable Habitats

There is one patch of coast prickly pear cactus (*Opuntia littoralis*) located in southwest portion of the project site that is mapped as cactus scrub but is considered a type of coastal sage scrub. This cactus patch supports a single nesting pair of cactus wren (*Campylorhynchus brunneicapillus*). Throughout the site there are rock outcroppings, some of which support extensive mats of brushy spikemoss (*Selaginella biglovii*). Rock outcrops are used by wildlife as focal use areas for basking in the sun (reptiles) and as shelter and breeding sites (reptiles, bats, bobcat [*Lynx rufus*], other mammals, and select birds). For quantification, rock outcrops are included in the habitat type that surrounds these features.

2.4 Jurisdictional Waters

A routine wetland delineation, following the guidelines set forth by ACOE (1987 and 2008), was performed by URS to gather field data at potential jurisdictional waters/wetlands within the proposed grading footprint in most areas (only the full extent of the ragweed mesic meadow and mulefat scrub habitats were delineated) at the time of the surveys in 2014-2015. The extent of ACOE jurisdictional waters was delineated by the ordinary high water mark in addition to any adjacent federal wetland areas. In addition, the areas that would be regulated by ACOE under

the CWA would also be jurisdictional under RWQCB as waters of the state. CDFW jurisdictional streambed and/or adjacent riparian areas were delineated by the lateral limits of the bed and bank in addition to the lateral limits of the riparian canopy, if present.

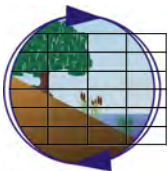
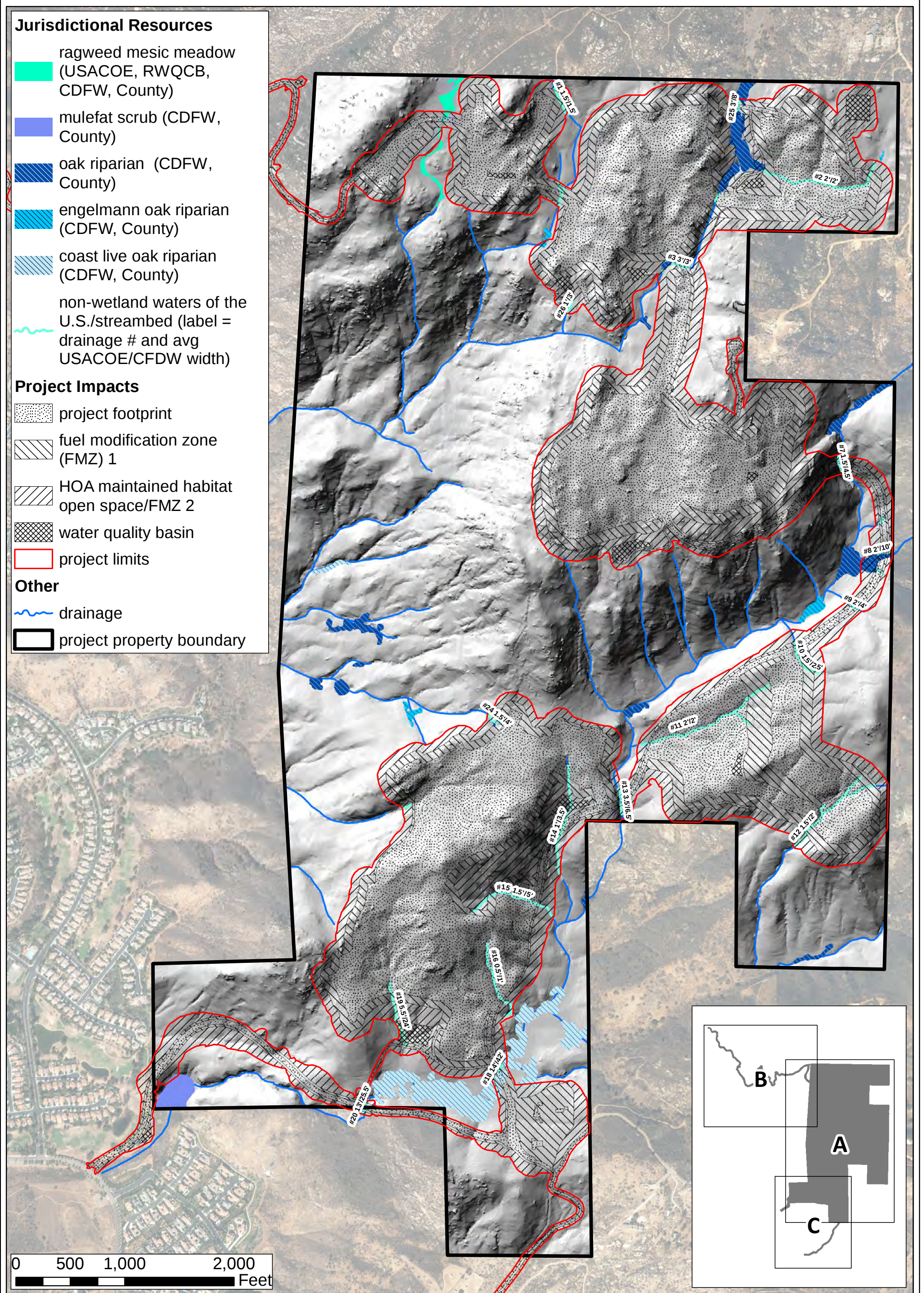
The results of the jurisdictional waters inventory is presented in Table 7 and shown on Figures 6a-6c. Potential jurisdictional resources were delineated and mapped by URS within the project footprint at the time of the delineation (except for the mesic meadow and mulefat scrub where the full extent of these habitats were delineated) and quantified in Table 7. Based on recent field observations, M&A updated the mesic meadow delineation polygons and determinations that were previously mapped as County/State only jurisdictional areas to non-jurisdictional areas. This change in jurisdiction was based on the non-wetland soil data collected by URS in 2015 and the lack of hydrophytic vegetation and/or wetland hydrology data provided by URS as well as field observations in these areas by M&A in 2017, a much wetter year than present in 2015. Although the entire reach of the drainages within the project site were not delineated, the majority of these drainages including the main drainage are shown in Figures 6a-6c for context. In addition, M&A calculated the overall acreages for each of the jurisdictional resources based on the digital data provided by URS as summarized in Table 7, as well as, updated the proposed project impact acreages since the project footprint had slightly changed since 2015.

Table 7. Summary of Jurisdictional Resources Present in Project Site (Onsite & Offsite)

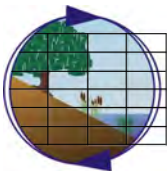
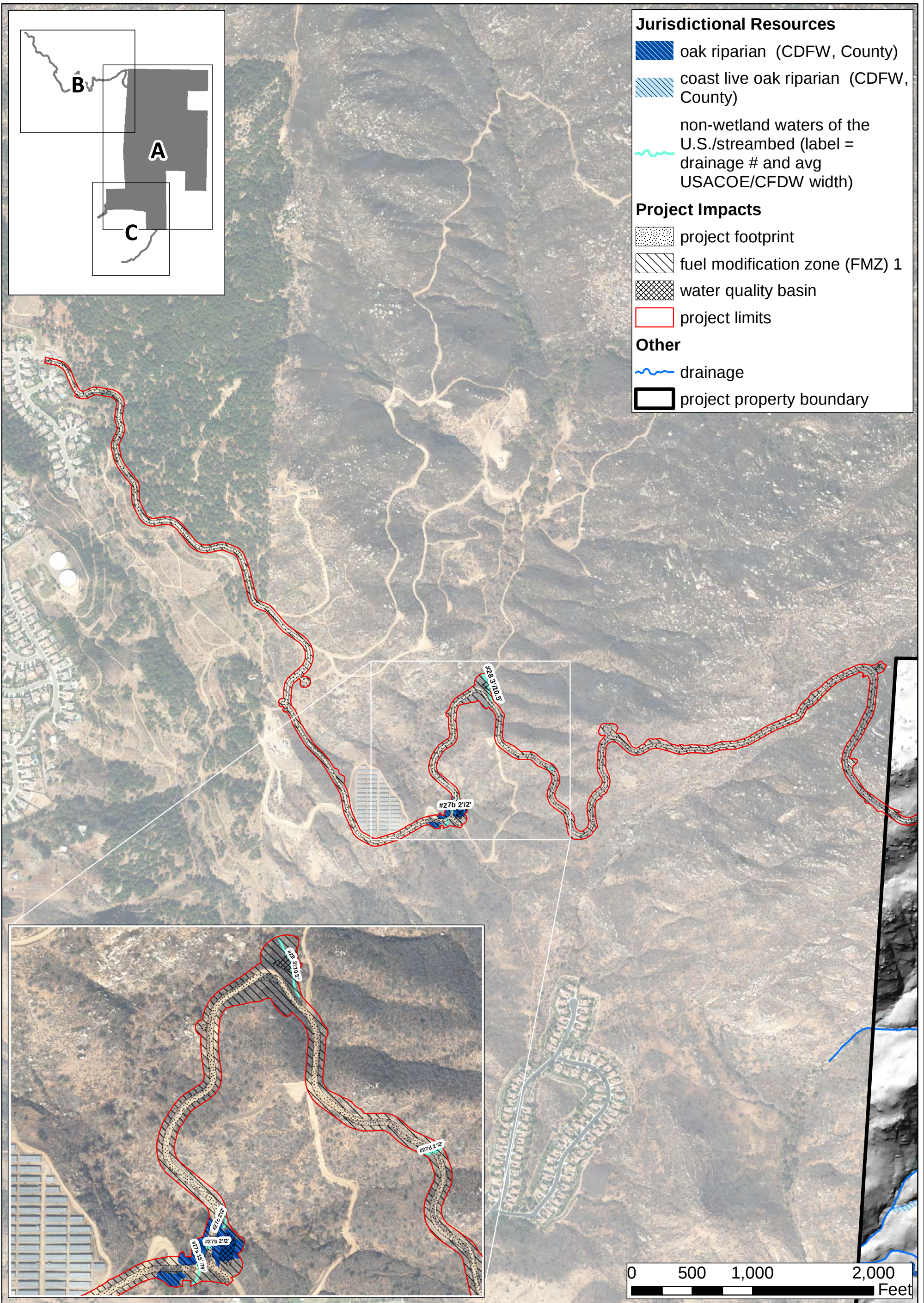
Wetland and Non-Wetland Jurisdictional Resources	Total Acreage	Onsite		Offsite	
		ACOE, RWQCB, CDFW & County Jurisdiction	CDFW and County Jurisdiction Only	ACOE, RWQCB, CDFW & County Jurisdiction	CDFW and County Jurisdiction Only
<i>Wetland</i>					
Ragweed Mesic Meadow	1.29	1.29	0.00	0.00	0.00
Mulefat Scrub	1.89	0.00	1.87	0.00	0.02
<i>Non-Wetland/Waters</i>					
Oak Riparian (adjacent riparian)	20.45	0.00	19.95	0.00	0.50
Non-wetland waters of the U.S./Streambed	1.58 (approx. 10,700 linear feet)	0.66	0.71	0.05	0.16
Total (acreage):	25.21	1.95	22.53	0.05	0.68

One federally regulated wetland was identified onsite: ragweed mesic meadow. This meadow is co-dominated by *Lythrum hyssopifolia* (OBL-obligate wetland species) and *Juncus bufonius* (FACW-facultative wetland species) with patches of *Juncus mexicanus* (FACW) and *Ambrosia psilostachya* (UPL-upland species) and other FACU (facultative upland species) or upland species to a lesser extent. A total of 1.29 acres of ragweed mesic meadow is categorized as a federal wetland since this area met the three-parameters for ACOE wetlands (Table 7). This wetland would also be regulated by RWQCB, CDFW, and the County.

A total of 1.89 acres of mulefat scrub occur within the project site and a small portion within the proposed offsite access route in the southwest corner of the property. This community did not meet all three of the federal wetland parameters; however, it would be a CDFW and County jurisdictional resource (Table 7). There are 20.45 acres of oak riparian woodland associated with the streambeds in the project site and/or offsite access alignments that would be considered adjacent riparian habitat that is regulated by the CDFW and County. The total acreage of federal unvegetated non-wetland water of U.S. within the project site is 0.71 acre. Total unvegetated channel categorized as streambed regulated by CDFW and County is 0.82 acre (Table 7).



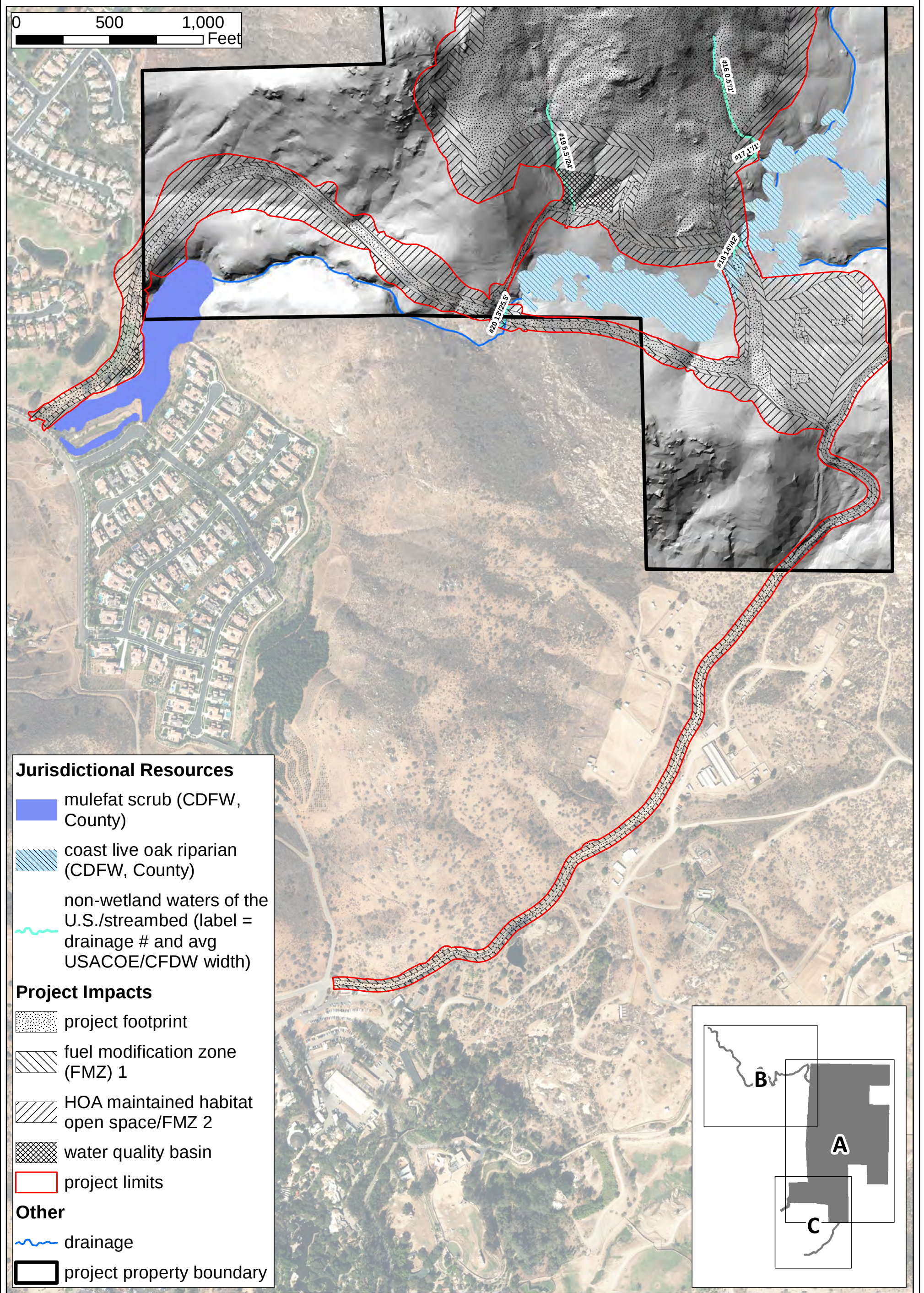
Source: URS, Althouse & Meade, and Merkel & Associates (ragweed mesic meadow update only)



Jurisdictional Resources and Impacts Map
Safari Highlands Ranch

Source: URS, Althouse & Meade, and Merkel & Associates (ragweed mesic meadow update only)

Figure 6b



Jurisdictional Resources and Impacts Map
Safari Highlands Ranch

Source: URS, Althouse & Meade, and Merkel & Associates (ragweed mesic meadow update only)

Figure 6c

2.5 Flora

The Safari Highlands Ranch project area predominately contains a diverse mixture of native species with non-native plant species occurring to a lesser degree. Non-native plants are mostly found in and adjacent to the disturbed areas that include non-native grassland, disturbed habitat, and developed portions of the site. Over 300 plant species have been identified in the project area during four separate botanical efforts in 1992, 1998, 2014, and 2015 (Appendix C; Mooney 2002, and this study).

The most common native plant species found on the site include California sagebrush, flat-top buckwheat, chamise, hoary-leaf ceanothus, coast live oak, and Ramona lilac. The diversity of native plants is highest in the southern mixed chaparral, followed by coastal sage scrub.

2.6 Fauna

The habitats in the project area support a diverse assemblage of wildlife species (115 species; Appendix D). Bird species were the most commonly observed animals, with 84 bird species being identified. Mammals detected or observed on the site include eight species of small mammals (i.e., rabbits, squirrels, rodents, and skunks) and seven species of larger mammals (deer, raccoon, bobcat, and coyote). Reptile species (i.e., lizards, snakes) and small and large mammals were most common in the coastal sage scrub, southern mixed chaparral, mulefat scrub, and rock outcrop areas.

2.7 Sensitive Plants

No federally or state listed plant species or MSCP narrow endemic plant species occur within the project site or are expected to occur onsite. Based primarily on direct observations during focused rare plant surveys onsite in 2014 and 2015, the BSA supports eight sensitive plant species (Figure 4a-4c). The following sensitive plant species that occur within the BSA are discussed further below: Brewer's redmaids (*Calandrinia breweri*), Cooper's rein orchid (*Piperia cooperi*), delicate clarkia (*Clarkia delicata*), golden rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*), Engelmann oak (*Quercus engelmannii*), rush-like bristleweed (*Xanthisma* [*Machaeranthera*] *juncea*), San Diego sagewort (*Artemisia palmeri*), and spiny rush (*Juncus acutus* spp. *leopoldii*). The observed locations of these special-status species is shown in Figures 4a-4c. None of the species observed are listed under the federal or state Endangered Species Acts. Historical occurrences (prior to 2006) within or directly adjacent to the project site based on CNDDB and USFWS GIS records, as well as previous field surveys onsite conducted in 1992 and 1998 are also mapped in Figure 7. In addition, the BSA has at least a moderate potential to support four additional species based on the results of the literature search, suitable habitat, soils, micro-habitat/conditions, historical records onsite or in the vicinity, as discussed further in the Sensitive Species Table in Appendix A. None of these additional plant species that have at least a moderate potential to occur onsite are federally or state listed species and/or MSCP narrow endemic species.

2.7.1 Brewer's Redmaids

Brewer's redmaids (*Calandrinia breweri*) is a CRPR 4.2 species native to the coastal mountains and canyons of California and Baja California, where it grows in several types of habitat, including chaparral, coastal sage scrub, recently burned and disturbed areas with sandy or loamy soils, disturbed sites and burns. It is distributed from San Francisco and Sacramento to Baja

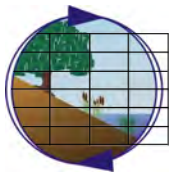
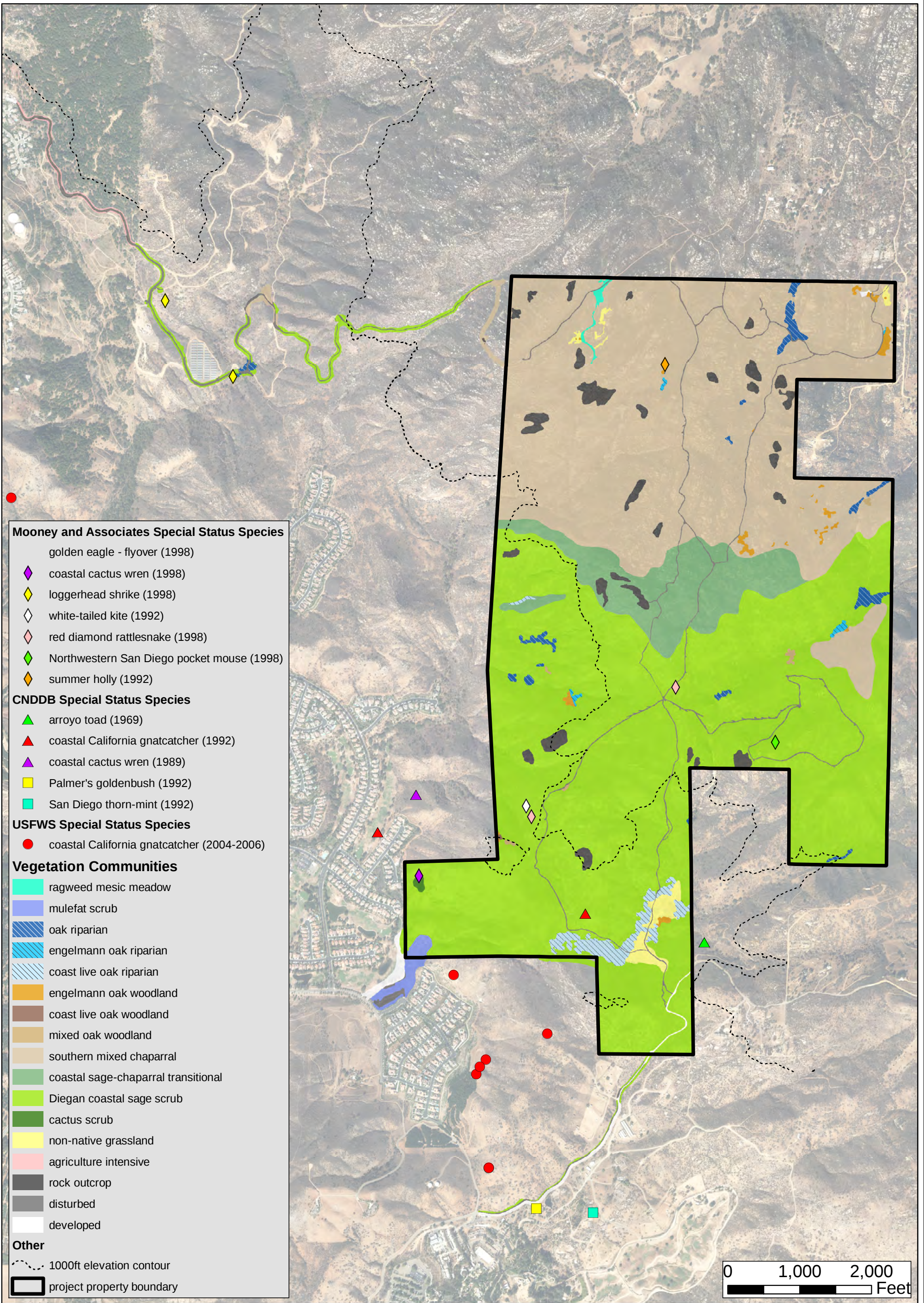
California. In San Diego County, it is known from Jamul Mountains, El Cajon, Alpine, and Poway. On the project site, this species is associated with disturbed chaparral along the dirt roads in the northern portion of the site and along the northern emergency access road alignment. A total of 1,863 individuals were recorded within the project site during the botanical surveys.

2.7.2 *Cooper's Rein Orchid*

Cooper's rein orchid (*Piperia cooperi*) is an uncommon species of orchid. It is a CRPR 4.2 species native to southern California, two Channel islands, and Baja California, where it can be found in Valley and foothill grasslands, chaparral and coastal sage scrub habitats. In San Diego County, it is recorded at Dulzura, Otay Mesa, Point Loma, Viejas Mountain, El Cajon Alpine, Del Mar and Fallbrook. Two individuals of this species were detected at one location in the southern portion of the project site within proposed open space.

2.7.3 *Delicate Clarkia*

Delicate clarkia is a CRPR 1B.2 species. This spring-blooming (April - June) annual species with pink to rose-lavender flowers generally occurs in shaded areas of southern oak woodland between 490 and 4,270 feet elevation. Reported localities include Palomar Mountain, Mesa Grande, Ramona, Bandy Canyon, Barona Valley, Foster, El Capitan Reservoir, Flinn Springs, Harbison Canyon, Lyons Valley, Bratton Valley, Moreno Dam, Campo, Potrero, Mother Grundy Truck Trail, Honey Springs Road, Lyons Valley, Featherstone Creek, Corte Madera, Harbison Canyon, Moreno Reservoir, Highland Valley Road, Orinoco Creek, Jamul Mountains, Lake Sutherland, Deerhorn Valley Road, Black Mountain Road/Lusardi, and Chariot Canyon. A total of 173 individuals of delicate clarkia were detected during the botanical surveys, all within proposed open space.



Historical Special Status Species Map
Safari Highlands Ranch

Figure 7

2.7.4 Golden-rayed Pentachaeta

Golden rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*) is an annual herb that is native to California and is endemic (limited) to Orange and San Diego counties. It is a CRPR 4.2 species that occurs in a variety of habitats, including chaparral, oak woodland, coastal sage scrub, montane coniferous forest, riparian woodland and valley and foothill grasslands. In San Diego County, it is recorded at Jamul, Otay Mesa, San Vicente Reservoir, El Cajon, Alpine, Poway, La Mesa, Julian, Rancho Santa Fe, Escondido, and San Luis Rey. This species was detected at five locations in the west-central and southern portions of the project site, with a total of 731 individuals recorded, all in proposed open space.

2.7.5 Rush-like Bristleweed

Rush-like bristleweed (*Xanthisma [Machaeranthera] juncea*) is a xeric, low-growing inconspicuous subshrub associated with chamise chaparral or Diegan sage scrub. Usually rush-like bristleweed grows in exposed locales with rocky substrate that does not foster much annual understory. This is an inconspicuous species that flowers late in spring. This plant is a CRPR 4.2 species known from Potrero, Dulzura, El Cajon, Alpine, Poway, Mesa Grande, Rodriguez Mountain, San Pasqual, Escondido, Boucher Hill, and Palomar Observatory. Two individuals were detected at one location in the central portion of the project site within proposed open space. In addition, this species is recorded from an adjacent parcel (Rancho Visamonte),

2.7.6 San Diego Sagewort

San Diego sagewort (*Artemisia palmeri*) is a CRPR 4.2 species that associates with chaparral, coastal sage scrub and riparian habitats. Its distribution is Baja California, San Diego, Orange and Riverside counties, with San Diego County occurrences at Barrett Lake, Dulzura, Jamul Mountains, National City, Imperial Beach, Viejas Mountain, San Vicente Reservoir, Alpine, Del Mar, La Jolla, La Mesa, Julian, San Pasqual, San Marcos, Rancho Santa Fe, Escondido, San Luis Rey, and Encinitas. Four individuals of San Diego sagewort were detected at one location adjacent to the primary entrance road within adjacent open space.

2.7.7 Spiny Rush

Spiny rush (*Juncus acutus* spp. *leopoldii*) is a large perennial associated with salt marsh, mesic coastal dunes, mesic meadows and alkaline seeps, freshwater marsh, and wet riparian areas. It is a CRPR 4.2 species distributed in southern California and Baja California. In San Diego County, it is recorded at In-ko-pah Gorge, Dulzura, Jamul Mountains, Otay Mesa, National City, Point Loma, Imperial Beach, Imperial Reservoir, El Cajon, Alpine, Del Mar, La Jolla, La Mesa, San Marcos, Rancho Santa Fe, Escondido, San Luis Rey, Oceanside, Encinitas, and Las Pulgas Canyon. A total of 50 individuals of this species were detected at one location in the north-central portion of the project site within proposed open space.

2.7.8 Engelmann Oak

Engelmann oak (*Quercus engelmannii*) is a CRPR 4.2 species (limited distribution or is infrequent throughout a broader area of California) and on the County of San Diego Sensitive Plant Species List D (limited distribution and are uncommon, but not presently rare or

endangered). This species occurs in oak woodland and also occur as a shrubby element within the chaparral. Typically in such a situation the understory is relatively dense and the small oaks (even mature oaks in this habitat usually remain stunted) are concentrated on the periphery of watercourses or mesic slope aspects. Scott (1991) estimated 77,868 acres of Engelmann oak woodland occurs in Southern California. The Safari Highlands Ranch project site is at the western end of the largest regional population that extends through the foothills of San Diego County between Highways 78, 76, and 79.

An estimated 522 Engelmann oak individual trees occur on the project site. Additional Engelmann oaks also occur in the oak woodland and/or oak riparian habitats mapped within the project site (Figure 5).

2.7.9 Summer Holly- Historically Present; Not Currently Present

Summer-holly (*Comarostaphylis diversifolia* ssp. *diversifolia*) is a large shrub generally observed on north-facing slopes. This CRPR 1B.2 species is found in scattered locations in chaparral below 2,300 feet elevation from the foothills to the coast in San Diego County and southward into Baja California. Reported localities in the County include the San Marcos Mountains, Mount Whitney, Rancho Santa Fe, Encinitas, Mount Soledad, Penasquitos Canyon, Del Mar Heights, Iron Mountain, canyons of Mission Valley, Jamul Valley, and Otay Mountain. Summer holly was detected (six individuals) onsite in the 1992 botanical survey, prior to the 1993 fire (Mooney 2002); however, this species has not been detected during subsequent biological botanical surveys in 1998, 2014 and 2015 and is not expected to be present onsite

2.8 Sensitive Wildlife

Based on direct observations or detections during relatively recent biological surveys onsite in 2014, 2015, and 2017, the BSA supports 15 sensitive wildlife species (Figures 4a-4c) of which only one is federally listed (i.e., California gnatcatcher). Six historical wildlife species occurrences within or directly adjacent to the project site are mapped in Figure 7; however, some of these species are not likely still present onsite. These 21 sensitive wildlife species are discussed below. Further, based on potentially suitable habitat and conditions and known records in the project area and/or historical records onsite, the BSA has at least a moderate potential to support an additional six species, as discussed further in the Sensitive Species Table (Appendix B).

2.8.1 California Gnatcatcher

Coastal California gnatcatcher (*Poliophtila californica californica*) is a federally-listed threatened species, a state species of concern, and a MSCP covered species under the adopted South County Subarea Plan and adopted City of San Diego Subarea Plan. The population of the coastal California gnatcatcher throughout its range in the United States is estimated to be approximately 5,000 pairs. Of this, roughly 2,500 pairs occur in San Diego County (Mock 2004). The distribution of gnatcatcher in San Diego County is generally limited by elevation where over 90% of gnatcatcher records are located below 1,000 feet (Atwood and Bolsinger 1992, Mock 1993, 1998). Like other species that rely on coastal sage scrub, the decline of the coastal California gnatcatcher has been caused by cumulative loss of coastal sage scrub vegetation to urban and agricultural development. Population level stress factors considered significant

include habitat loss, recurring wildfire in occupied and suitable habitat that leads to CSS converting to non-native grassland, climate change where CSS is affected, brood parasitism, and loss of habitat connectivity between gnatcatcher occupied areas. Though the California gnatcatcher is eliminated by development of its habitat, it does not appear especially sensitive to fragmentation of that habitat at the landscape scale (Bailey and Mock 1998, Winchell and Doherty 2008), in spite of the report to the contrary (see Crooks et al. 2001). Data supporting this conclusion include the species' persistence in patches of sage scrub long isolated from extensive stands, as in Florida Canyon, Balboa Park and Chollas Valley near Fairmount Avenue (Mock 2004) and elsewhere in southern California. Fire and the invasion of exotic vegetation, especially non-native grasses and annual forbs, interact to adversely affect gnatcatcher habitat. In much of coastal southern California, where these exotic plants are well-established and where the irreversible conversion of shrublands to grasslands is likely, fire frequency and burn size should be kept low. Where possible, flammable exotics should be removed or reduced. The wildfires of October 2003 affected 4% of known gnatcatcher occurrences, 16% of designated critical habitat, and 28% of the area the U.S. Fish and Wildlife Service's modelled as suitable habitat (Bond and Bradley 2004). At the population scale, large wildfires can make gnatcatcher occupied habitat unsuitable for nesting for three or more years, depending on rain conditions after the fire event (Winchell and Doherty. 2014). On this project site, the last major fire was in 2007 and gnatcatchers were detected in 2014, indicating that the project site was occupied less than six years after the fire through either retaining unburned habitat patches or recovery of habitat suitable to support colonization by gnatcatchers.

Disturbances that reduce sage scrub cover, such as frequent fire, mechanical disruption, livestock grazing, off-highway vehicles, and military training appear to reduce habitat suitability for the gnatcatcher. Construction-monitoring studies suggest that California Gnatcatchers tolerate adjacent construction and high noise levels (Famolaro and Newman 1998, Awbrey 1993). Nest predation is the most common cause of gnatcatcher nest failure (Mock 2004). Information on whether predation rate is influenced by anthropogenic factors is lacking, but California gnatcatcher nest success along habitat edges is no less than that within the interior of habitat blocks (Atwood 1998). Depending on the adjacent habitat's suitability to cowbirds, cowbird parasitism affects some California gnatcatcher populations more than others. However, the net demographic effect of nest parasitism may be small. The low rate of parasitism (3 of 134 nests) observed around Rancho San Diego in 1989–1992 suggests that gnatcatchers benefited from cowbird trapping along the nearby Sweetwater River (Grishaver et al. 1998). Cowbirds were detected onsite and portions of the offsite northern access road alignment during 2014-2015 surveys.

Historical data on the California gnatcatcher's abundance are minimal; its listing as a threatened species is based on the high fraction of its habitat already lost to agriculture and urbanization and the pressure to develop what remains. The primary strategy for its conservation is the establishment of a network of habitat reserves, encompassing enough of the remaining occupied "core" regions to sustain a viable metapopulation, connected by habitat linkages.

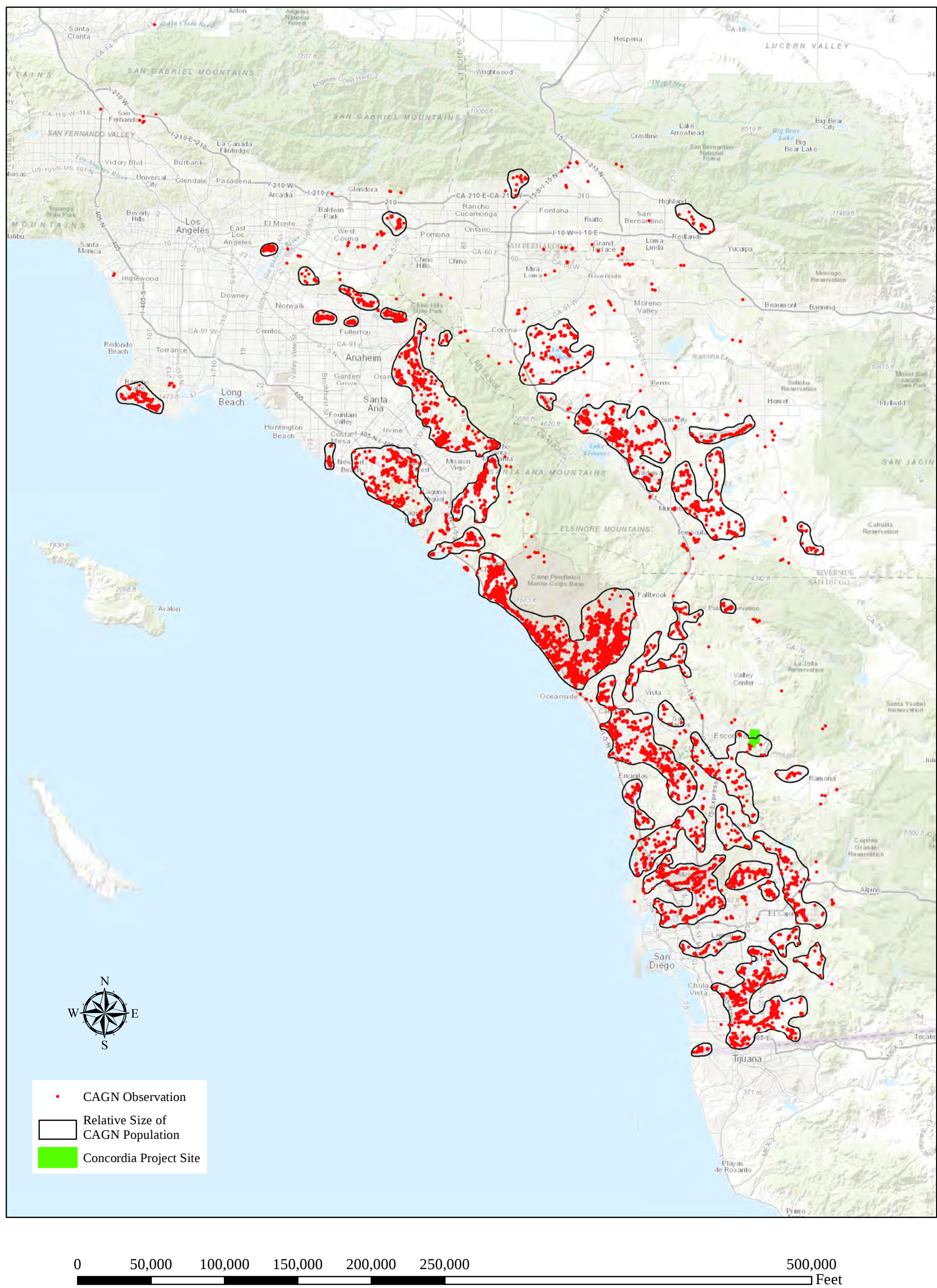
A total of two adult pairs and two single adult male California gnatcatchers were detected within Diegan coastal sage scrub on the Safari Highland Ranch project site during 2014 protocol surveys (Figures 4a-4c). In addition, a single male was detected by call incidentally by a M&A biologist in May 2017 during one of the field surveys in the south-central portion of the site. One of the pairs on the project site was observed nest building during initial detection, then

incubating at the nest during a later survey date. The other pair was initially detected as a single male, and later observed feeding fledglings during a subsequent survey. The two single males behaved secretively, and were each observed once for just a brief period. One of the single males likely maintains a territory that is only partially on the project site. All of the gnatcatcher observations/detections on the project site were located below 1,000 feet in elevation (Figure 4a). The previously mapped deerweed scrub habitat onsite was not considered good quality potential gnatcatcher breeding habitat at the time of the 2014 protocol surveys due both to condition of the habitat and the elevation of the habitat principally above 1,000 feet. Although these areas have recovered to coastal sage scrub due to the additional three years of vegetation growth since the 2014 surveys and the substantial precipitation during the 2016-2017 rainy season, these areas are located within the higher elevation range (i.e., above 1,000 feet) outside of where most gnatcatcher are known to occur. No gnatcatchers were observed or detected within the coastal sage scrub along the offsite proposed northern emergency access road alignment during the 2015 gnatcatcher protocol surveys; however, in 2017 an individual California gnatcatcher was incidentally observed by M&A biologists adjacent to this offsite northern access road located at approximately 520 feet in elevation within open riparian habitat adjacent to Diegan coastal sage scrub (M&A/Althouse 2017). It is unclear if the gnatcatcher individual observed in late September 2017 was moving through the project area, has an established territory within suitable sage scrub habitat in the vicinity of the proposed emergency access route, or moved into the more mesic riparian area during the late summer as is typical when sage scrub habitat begins to dry out. For purposes of project impact assessment, any suitable CSS habitat that occurs along the northern emergency access route that is located below 1,000 feet in elevation has been assumed to be occupied by gnatcatcher.

The 1998 gnatcatcher survey onsite was negative, which may have been due to the 1993 fire (Mooney 2002). Gnatcatchers were detected in 2000 prior to development of the adjacent Rancho Vistamonte site and are currently known to occur within City of San Diego-owned open space northwest of Zoo Road and south of the project property. It is notable that the 2014 gnatcatcher sightings onsite were restricted to below the 1,000 foot elevation contour, which is consistent with the regional distribution of gnatcatcher sightings and San Diego County sightings (SANDAG database; Atwood and Bolsinger 1992, Atwood and Bontrager 2001, Mock 1993a, 1998). The Safari Highlands Ranch site is at the elevational limit and eastern margin of the California gnatcatcher metapopulation (Figure 8) and is partially located within the northeastern portion of the Escondido/San Pasqual Valley “core” reserve identified in the Population Viability Analysis of the California Gnatcatcher within the MSCP Study Area (Mock 1993b, County MSCP BMO Attachment I). Gnatcatcher “core” reserves are defined in the Population Viability Analysis as relatively large blocks of gnatcatcher-occupied coastal sage scrub.

The project site currently supports 265.10 acres of potentially suitable gnatcatcher habitat (i.e., Diegan coastal sage scrub) that is located below 1,000 feet in elevation. These areas of suitable gnatcatcher habitat are limited to the southern and western portions of the project site (Figure 4a). All of the potentially suitable gnatcatcher habitat onsite would be considered occupied by gnatcatcher based on the 2014 protocol surveys or due to the improvement in habitat quality and likely dispersal from existing territories in the project area since the 2014 surveys.

Figure 8. California Gnatcatcher Metapopulation



2.8.2 Coastal Cactus Wren

The San Diego County population of coastal cactus wren (*Campylorhynchus brunneicapillus sandiegens*) is seriously endangered due to past development (Rea and Weaver 1990); however, it has not been listed under either the ESA or CESA. The San Diego cactus wren, a CDFW Species of Special Concern and MSCP Narrow Endemic and Covered Species, is found only in CSS, cactus scrub, and maritime succulent scrub that have extensive stands of *Opuntia sp.* cacti. Once widespread in San Diego County, by 1990 it had been reduced to fewer than 400 pairs in about 55 colonies. Most of the remaining coastal cactus wren colonies are threatened by proposed developments and the metapopulation viability is doubtful due to the apparent poor dispersal capacity of this wren (Mock 1993b, Unitt 2004, 2008). The long term viability of almost all cactus wren colonies is questionable because of habitat loss due to fire, degradation and fragmentation. Some of the larger wren colonies occur near Lake Jennings, San Pasqual Valley, and Lake Hodges. Cactus wrens found in San Diego County nest almost exclusively in prickly pear or cholla cactus. One breeding pair of cactus wren was detected in the only cactus patch present on the project site (Figure 4a). The remaining CSS habitat onsite does not support potentially suitable nesting habitat for cactus wren primarily due to the lack of cactus. Therefore, only the one pair of cactus wren is expected to occur onsite. This species of concern has regionally important populations in the project vicinity (Lake Hodges and San Pasqual Valley; Hamilton 2008).

2.8.3 Southern California Rufous-crowned Sparrow

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a resident species in San Diego County that prefers grassy or rocky slopes with open scrub at elevations from sea level to 1,969 feet. It forages and nests on the ground, usually near vegetative cover, and maintains year-round territories. Most of the species' population occurs in coastal sage scrub, so it has undoubtedly been reduced by urban and agricultural development. This species was formerly listed as a State of California species of concern, but was removed due to it being relatively common within suitable habitat and is a habitat edge tolerant species (Morrison et al. 2004). It is a County MSCP Covered Species and a County Group 1 species (San Diego County 2010). This species is common on the project site within the Diegan coastal sage scrub habitats and along the northern emergency access road alignment (Figures 4a-4c).

2.8.4 Western Bluebird

Western Bluebird (*Sialia mexicana*) does not hold any federal or state status; however, the western bluebird is a County MSCP Covered Species and a Group 2 species. Small winter flocks were noted as overflights near along the northern emergency access road alignment in 2012 (Cummings 2013) and was detected in 2014 as a breeding species in the large oak grove in the southern portion of the project site as well as along the northern emergency access road (Figures 4a-c).

2.8.5 Loggerhead Shrike

Where nesting, the loggerhead shrike (*Lanius ludovicianus*) is considered a SSC by the CDFW (CDFW 2017), and is a Group 1 species. This species is also a Bird of Conservation Concern to the USFWS in our area (U.S. Fish and Wildlife Service, 2008). A single individual was detected

onsite along the northern emergency access road (Figure 4b). According to Unitt (2004), this species is only known as a winter visitor in the immediate area.

2.8.6 Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) has no sensitivity status other than being considered a CNDDB Special Animal that is an oak woodland obligate, nesting in cavities in oak trees. It is a common species in oak woodlands, but is tracked by CDFW due to state-wide losses of oak woodland habitat. Oak titmouse was detected in the BSA during the spring 2014 and 2015 biological surveys and suitable nesting habitat is present in the oak woodland habitat in the BSA (Figure 4a).

2.8.7 Cooper's Hawk

Cooper's hawk (*Accipiter cooperii*) is a County MSCP Covered Species and Group 1 species that is a common urban-adapted raptor in San Diego County (Unitt 2004). Two individuals were detected onsite and along the northern emergency access road during the 2014 survey effort (Figures 4a-4c).

2.8.8 Turkey Vulture

Turkey vulture (*Cathartes aura*) does not hold any federal or state status; however, turkey vulture is a County Group 1 species. During an October 2012 survey for another project (Cummings 2013), one individual Turkey Vulture was seen flying over the western portion of the northern emergency access road alignment and several individuals were detected roosting on a rock outcrop and flying overhead on the project site. Similarly, in 2017 M&A consistently observed groups of turkey vulture flying over the project site and perched near rock outcroppings where they likely roost at night. No nest sites for this species are known in the project vicinity (Unitt 2004).

2.8.9 Raptor Foraging Habitat

The project site is utilized by red-tailed hawk and other common raptors for foraging as evidenced by the sighting of raptors hunting over the property during surveys for California gnatcatcher. Ample prey, such as the California ground squirrel and Audubon's cottontail were noted on the property during these surveys. Other small to mid-sized rodents are anticipated to also occur on the property and serve as prey for raptors. There is limited grassland onsite and the coastal sage scrub and chaparral is very dense in many areas, which may limit raptor foraging activities at the site.

2.8.10 Orange-throated Whiptail

Orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*) is a County MSCP Covered Species and a Group 2 species. This species is restricted to the extreme southwest California and northwest Baja California Norte, Mexico (Stebbins 1966). In California, it is found on the west side of the Peninsular Ranges between sea level and 3,000 feet, in Los Angeles, San Bernardino, Orange, Riverside and San Diego counties (Zeiner et al 1988). This species of concern prefers sage scrub that covers about 50 percent of the ground without dense grasses in between, but it also inhabits dense to extremely open stands of sage as well as chamise chaparral and floodplain

areas. A limiting factor to the species' range is the availability of its primary food item, the termite *Reticulitermes hesperus*. The mean home range of this lizard has been estimated at 0.11 acre (Bostic 1965) and is documented at up to 1 acre (Milstead 1957). It is still locally common in many areas where it remains. This species was detected in open coastal sage scrub onsite (Figure 4a-4c).

2.8.11 San Diego Horned Lizard

San Diego horned lizard (*Phrynosoma coronatum blainvillei*) is a CDFW SSC and Group 2 species that is endemic to extreme southwestern California (Stebbins 1966). In San Diego County it is relatively widespread and locally common from the coast to the western edge of the desert (SDHS 1980). This species of concern occurs from sea-level to elevations of over 8000 feet and frequents a variety of habitats from sage scrub and chaparral to coniferous and broadleaf woodlands (Stebbins 1966). It is most often found on sandy or friable soils with open scrub. Habitat requirements include open areas for sunning, bushes for cover, and fine loose soil for rapid burial. Harvester ants are the primary food item of the horned lizard and indicate potential for occurrence of the lizard in an area. This taxon is primarily active in late spring (April-May) and early summer (June-July) after which individuals typically estivate. Threats to this species include urban development, conversion of habitat to agriculture and collecting of individuals for the pet trade. Adverse effects associated with invasive exotic Argentine ants (*Linepithema humile*) are a concern (Suarez and Case 2002). Horned lizard was detected at three locations in the south central portion of the site during the 1998 survey (Figure 7) and was detected throughout the site during the 2015 field effort (Figures 4a-4c). This species is expected to utilize the project site where harvester ants are common and sandy soils are present and within the open coastal sage scrub and chaparral areas.

2.8.12 Rosy Boa

Rosy boa (*Lichanura trivirgata*) is a County Group 2 species that was once considered widely distributed in southern California, but due to recent taxonomic changes this species is now limited to southwestern San Diego County. Its sister species *L. orcuttii* occupies the remainder of the former taxon's range in southern California. In coastal areas, rosy boa inhabits rocky chaparral-covered hillsides and canyons, while in the desert it is found on scrub flats with good cover and in the mountains. It is a secretive snake and little is known about seasonality, but it is most frequently encountered in late spring and early summer. The species is known to occur in San Pasqual Valley, including within the native open space associated with the Safari Park. This species was detected in 1992 and only in one location during the 2015 surveys of the project site (Figure 4a); however, this secretive snake is expected to occur throughout the entire site within suitable habitat for rosy boa.

2.8.13 Red Diamond Rattlesnake

Red diamond rattlesnake (*Crotalus ruber*) is restricted to southern California and Baja California from Morongo Pass to the tip of the Baja Peninsula, with the majority of the California range in San Diego County. The red diamond rattlesnake is a CDFW SSC and a County Group 2 species. This species is distributed from sea level to 3000 feet and prefers dense vegetation in rocky areas having a supply of burrowing rodents for prey. Prey typically includes rabbits, lizards, birds, and other. It is often found in chaparral, coastal sage scrub, along creek banks, and in rock outcrops

or piles of debris. It is generally active from mid-spring to mid-fall. The species' limited distribution is threatened by urban development and agriculture. This species was observed during the 1998 survey onsite as well as during one of the 2017 field surveys conducted by M&A in the southern portion of the site (Figure 4a). This species is expected to occur throughout the site within suitable habitat.

2.8.14 Western spadefoot toad

Western spadefoot toad (*Scaphiopus hammondi*) is a CDFW SSC and a Group 2 species. As of July 2015, the USFWS reviewed the petitions to list this species and determined the petition contained substantial information. The Service is currently conducting a more in depth review of this species and its conservation status through a 12-month review. Spadefoot toads are primarily terrestrial and require upland habitats for foraging and burrowing for their long dry-season dormancy. The western spadefoot toad occurs primarily in grassland habitats, although it can also be found in oak woodlands and open chaparral or scrub. They emerge from their burrows during winter and/or spring rains where they are found, sometimes in large numbers, associated with ponded water. Larval development depends on food resources and temperature, but must be completed before pools dry. Little is known regarding the distance that western spadefoot toads may range from breeding pools for dispersal and estivation; however, current research suggests that average habitat utilization falls within 368 meters (1,207 feet) of aquatic habitats (USFWS 2005).

During the western spadefoot toad habitat assessment on the project site in 2017, the only potentially suitable breeding pools onsite were located along the main drainage within the central and southern portion of the site. These were surveyed concurrent with arroyo toad surveys. Although the mesic meadow in the northwestern portion of the site supported areas of pooling water in February and March, no spadefoot toad eggs or larvae were observed in these pools; furthermore, these pools did not hold water long enough for the potential development of spadefoot toads.

During the protocol surveys for arroyo toad conducted in 2017, no spadefoot toad eggs, larvae or calling adults were incidentally observed or detected onsite within the main drainage. However, a large chorus of calling adults was heard during the arroyo toad protocol surveys coming from an offsite in-stream seasonally drying stock pond located approximately 250 feet from the southeastern property boundary (Figure 4a). Subsequently, during the last two arroyo toad surveys (i.e., May 30 and June 6), numerous western spadefoot metamorphs were observed onsite along the main access dirt road and the main drainage presumably dispersing from the offsite pond as the large toadlets (3 cm in length) were estimated to be approximately 6 to 8 weeks past metamorphosis (Figure 4a). In addition, one western spadefoot toad metamorph (similar in size to those metamorphs in the southern portion of the site) was observed just offsite on a dirt road north of the project site (Figure 4a). It is expected that this observed individual may have dispersed from one of the two potential spadefoot breeding ponds located offsite approximately 1,700 feet north of the site within a large private lot. Based on the locations and number of metamorphs observed dispersing within the project site, the site is expected to support a substantial population of western spadefoot toads within suitable upland dispersal and estivation habitat (i.e., chaparral, coastal sage scrub, non-native grassland) throughout the project site.

2.8.15 Mountain Lion and Mule Deer

Mountain lion, a MSCP covered species, has historically been detected onsite. The UC Davis Southern California Cougar and Bobcat Study GPS-collared a juvenile male lion that passed through the site frequently via the primary drainage in the center of the site and also used the oak grove area to a lesser extent for four months before the lion died (Ernest et al. 2014). Two mountain lion mortalities have also been recorded south of the site between 1981 and 2013 as reported in the UC Davis study. The first was a lion killed by vehicle on State Route 78. The second was killed near the Zoo Safari Park under a depredation permit (Vickers et al. 2015). A third lion was killed under a depredation permit within a few miles to the east of the project site (Vickers et al. 2015).

Mule deer is a MSCP covered species that commonly occurs onsite. Evidence of mule deer (e.g., tracks) was located within the main drainage as well as observations of deer within the slopes supporting upland habitat onsite.

2.8.16 Monarch Butterfly

Monarch butterfly (*Danaus plexippus*) is a wide-spread species that migrates between the U.S. and Mexico. Milkweed species are the primary larval host plants. The USFWS is considering listing this butterfly under the ESA. Monarch butterfly is a sensitive species that migrates in the fall to wintering locations along the coast of central and southern California, and on mainland Mexico. Eucalyptus groves along the California coast harbor winter aggregations of thousands of monarch butterflies. No eucalyptus groves occur on the project site. A limited amount of monarch larval host plants occur onsite. Further, a limited amount of monarch butterflies were observed in the Diegan coastal sage scrub and riparian habitats onsite during the 2014-2015 field effort only.

2.8.17 Arroyo Toad - Not Present Onsite based on Protocol Surveys

Arroyo toad (*Bufo californicus*) is a federally-listed endangered amphibian (USFWS, 1994). It is also considered a SSC by the CDFW, a Group 1 species on the County of San Diego Sensitive Animal List, and a MSCP covered species.

The arroyo toad was once relatively abundant in coastal central and southern California. In 1994, the Service designated the arroyo toad as an endangered species under the ESA due to a combination of both man-made and natural threats impacting the species' survival. Urban development, agricultural conversion, mining and prospecting activities, operation of dams and changes in water flow, alteration of the natural fire regime, and road development and maintenance have all contributed to the species' decline. The invasion of nonnative predator species, like the bullfrog, and limited water resources, also contributed to the species' decline. Additionally, the threats of urbanization, dams and water diversions, introduced predators, and drought, all have current and ongoing impacts to the arroyo toad and its habitat. Currently, arroyo toads still exist within the range they occupied historically and at the time of listing, but the species' numbers continue to decline, as well as the area it occupies within its current range. Arroyo toads tend to be located at the lower end of third- to sixth- order stream segments where the coarsest sediments are lacking due to diminished gradients and flow energy, but where flow rates are great enough to keep silt and clay suspended to transport fines through the habitat without significant deposition. Arroyo toads breed and deposit egg masses in shallow, sandy

pools, which are usually bordered by sand and gravel flood terraces. Small arroyo toad populations have been found along first- and second- order streams at elevations up to 4,600 ft (USFWS 2014).

The project site is about 2.5 miles west from the nearest designated critical habitat for arroyo toad in the Guejito Creek watershed. Guejito Creek supports 11 areas occupied by arroyo toad. This population is maintained by perennial springs that fill the breeding pools (S. Sweet, pers. comm. to Patrick Mock). The only arroyo toad record in the project immediate vicinity is a 1969 CNDDDB arroyo toad occurrence located on the adjacent private parcel along the southwest project boundary (Figure 7). The locality description in the database is vague. The CNDDDB determined the coordinates of this location using this imprecise location description:

“High Valley Ranch, 5 miles east of Escondido and 2.75 miles NW of San Pasqual”

This historical record suggests that the potential for arroyo toad occurrence could not be precluded and therefore arroyo toad focused surveys were conducted within the project site in 2017.

M&A conducted focused surveys for arroyo toad for the purpose of determining the presence or absence on the Safari Highlands Ranch Project site. These surveys were conducted in accordance with the current USFWS *Survey Protocol for the Arroyo Toad* (USFWS 1999). Prior to the focused surveys, onsite drainages were evaluated and ranked for habitat quality by applying the methodology developed by USGS in, *Habitat Assessment and Surveys for the Arroyo Toad in Cuyamaca Rancho State Park, and Lucky 5 Ranch in Anza-Borrego Desert State Park, 2003* (Ervin and Fisher 2003). Based on the arroyo toad habitat assessment for the project site, the majority of the main drainage in the southern portion of the site qualified as marginal habitat for arroyo toad. In addition, a small portion of the downstream reach of the main drainage that supports mulefat scrub (restoration site) adjacent to the offsite emergency southern access alignment qualified as an atypical condition for arroyo toad. This mule fat area supported key habitat features but qualified as atypical habitat since it did not provide suitable breeding conditions for arroyo toad. Nonetheless, this mulefat scrub habitat was included in the arroyo toad surveys. The other potential areas assessed onsite qualified as poor quality habitat for arroyo toads and were not considered further.

M&A conducted the focused surveys within those areas identified as supporting at least marginal habitat for arroyo toad between February and June 2017. No arroyo toads in any life history stage (i.e., egg strings, larval, metamorphs, adults) were observed or detected during the six arroyo toad focused surveys. Based on the negative focused surveys for arroyo toad, this species is not considered present onsite (M&A 2017).

2.8.18 Least Bell’s Vireo -Not Present Onsite based on Protocol Surveys

No least Bell’s vireo (*Vireo bellii pusillus*) are expected to be present within the project BSA, since the 2014 protocol survey for the least Bell’s vireo within the mulefat scrub vegetation in the southwest corner of the site was negative. This habitat is not expected to be suitable habitat for vireo due to the limited amount of dense shrub cover and structurally diverse canopy that vireo require. The least Bell’s vireo U.S. populations have recovered to the point that the USFWS has recommended that the subspecies be down-listed to threatened status (USFWS 2006). Long term concerns remain regarding habitat management of conserved vireo populations and continued funding of cowbird management programs. The closest vireo

population to the project site is a source population in San Pasqual Valley and Santa Ysabel Creek with the closest record located approximately two miles to the southwest.

2.8.19 Golden Eagle-Not Expected to Nest and Only Limited Foraging Onsite

Golden eagle is not expected to nest onsite due to lack of potential nesting habitat and lack of known nesting records onsite. The nearest golden eagle (*Aquila chrysaetos*) nesting record is dated 1991 and is located approximately 5,400 feet east of the northeastern boundary of the project site in Rockwood Canyon (CNDDDB 2017). This golden eagle nesting location is extant (Robert Fisher, pers. comm., July 5, 2017) within Rockwood Canyon. The County applies a 4,000 foot no disturbance buffer around active golden eagle nests. The Rockwood Canyon golden eagle nesting record is located greater than 4,000 feet from the project site. The site supports potentially suitable peripheral foraging habitat although the golden eagles' primary prey (i.e., jackrabbits) has not been identified onsite and no golden eagles have been observed flying over and/or foraging onsite by URS, A&M, or M&A during their numerous biological surveys between 2014 and 2017; despite a single golden eagle flyover observation in 1998 by Mooney & Associates. Further, the best available data and information including the U.S. Geological Survey (USGS) biotelemetry data for golden eagle (Tracey et al 2016 and 2017) was reviewed for the project site. The USGS golden eagle telemetry data collected between 2014 and 2017 does not suggest frequent movement data within the project site; however, there are infrequent instances of golden eagle movement data within or in close proximity to the site. Specifically, based on the figures in the telemetry study one of the tracked eagles (ID GOEA-SD F002) had two movement routes in close proximity to the project site during the 2014-2016 survey period. The 2016-2017 telemetry data suggests one of the tracked eagles (ID GOEA-SD-F001) had one movement route over the project site during the 2016-2017 survey period. In addition, due to the scale of the figures and the extent of data in some of the figures, the project site is not distinguishable in relation to the movement data for two tracked eagles (ID GOEA-SD F014 and ID GOEA-SD M007); therefore, these two eagles may or may not have movement data on the project site. This study is not an exhaustive study of all golden eagle that may occur in the project region and can only provide data for eagles that are tracked.

2.8.20 Yellow-breasted Chat – Not Present Onsite, Observed Offsite outside of BSA

Yellow-breasted Chat (*Icteria virens*) was considered a common riparian species throughout the lowlands of coastal southern California in the early 1900s. By the 1970s, however, it was uncommon (Unitt 2004). As with other riparian birds, this species is suffering simultaneously from the widespread destruction of riparian woodland and the invasion of the Brown-headed Cowbird, a nest parasite. The chat is known as a common cowbird host over much of its range, including southern California. The chat's recent rebound has taken place since cowbird trapping was initiated and appears concentrated where that trapping has been focused. Nevertheless, other factors play a role too. The rate of destruction of riparian woodland slowed after the Least Bell's Vireo was designated as endangered in 1986, and some habitat has regenerated, especially in the Tijuana River valley and at the heads of reservoirs. A large breeding population is known from the San Pasqual Valley. This species was detected offsite just outside of the project BSA during 2014 vireo surveys in the mulefat scrub located southwest of the project offsite entry road alignment (Figure 4c).

2.8.21 White-tailed Kite – Historically Present, but Not Likely to be Currently Present Onsite

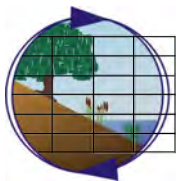
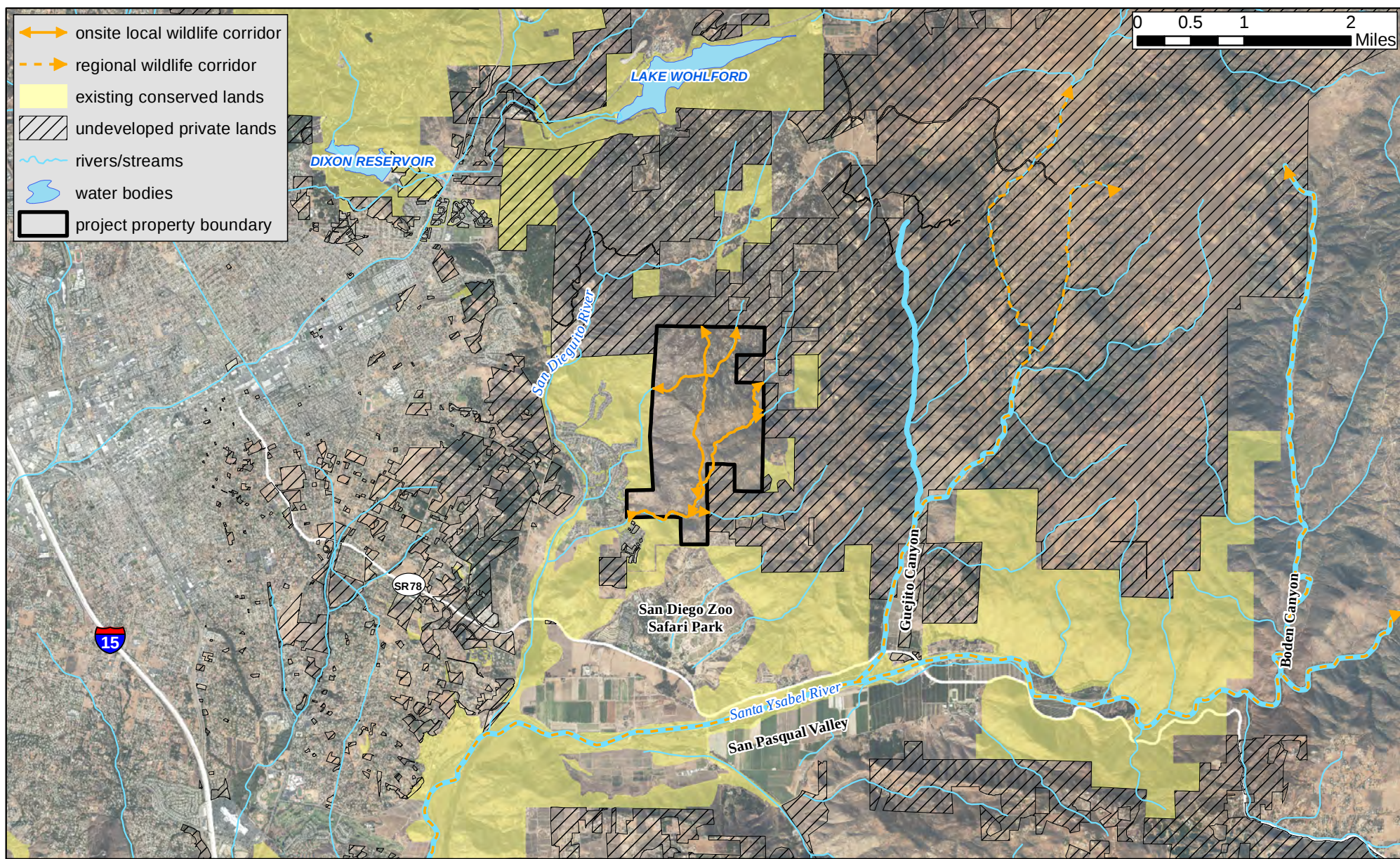
White-tailed kite (*Elanus leucurus*) is distributed along the Pacific Coast from Washington south to Baja California Norte, Mexico, with a small population in southeast Arizona, and along the Gulf Coast from Florida south into Mexico. This species also occurs in Central and South America, Australia, southern Eurasia, and Africa. In California, kites are found along the coast and in the Central Valley. The white-tailed kite is a fairly common resident in San Diego County (Unitt 2004). Apparently uncommon in the county in the 19th century, the kite was extirpated in San Diego County from 1892 to 1920. In the 1930's it began to recolonize with the population increasing rapidly between the late 1940's and 1970 (Unitt 2004). This species nests in riparian or oak woodland adjacent to grassland or open fields, where it hunts rodents. One pair of white-tailed kite was detected during the 1992 survey (Figure 7). They were not detected in 2014, 2015, or 2017 (Figures 4a-4c). The oak grove in the southern portion of the site may be suitable nesting habitat; however this species is not likely to be present due to the lack of recent observations of this conspicuous species during the numerous biological surveys conducted onsite more recently.

2.9 Habitat Connectivity and Wildlife Corridors

The project site lies within a landscape of predominately undeveloped lands supporting native habitat generally to the north, immediately to the west, portions to the south, and immediately and further east (Figure 9). Existing development occurs directly adjacent to the project site consisting of large residential developments and golf course to the southwest, smaller rural residential lots to the southeast and northeast, and the San Diego Zoo Safari Park to the south (Figure 9). Native habitat in the project area dominates the site with a limited amount of disturbed and developed areas represented by a network of dirt roads and the remnants of a small home site in the northeast portion of the project site. Habitat connectivity to offsite conserved and undeveloped lands is currently provided to the west, northwest, north-central, and portions to the east, southwest and southeast of the project site (Figure 9).

Wildlife corridors consist of connections between areas of open space and are integral to maintaining biological diversity, abundance, and population viability. A wildlife movement corridor can be defined as a linear landscape feature, allowing animal movement between two patches of habitat, and may be regional or local in nature. Regional corridors are defined as those linking two or more large areas of natural open space and local corridors are defined as those which allow resident animals to access critical resources within a smaller more local context.

No regional habitat linkages as identified in the County MSCP occur onsite or in the project vicinity. Similarly, no regional wildlife movement corridor occurs onsite. The closest regional linkage and wildlife corridor is the San Pasqual Valley / Santa Ysabel River approximately 1.5 miles south of the project site and/or Guejito Canyon approximately 1.5 miles east of the project site (Figure 9). Both of these regional corridors support topography that provides paths of least resistance in terms of energetics and likely movement routes by mammals such as along canyon bottoms, through riparian corridors, and along ridgelines and connectivity from one large core area to another. Further, these two regional wildlife corridors in the project vicinity support riparian habitat that provides suitable cover to facilitate wildlife movement, as well as water sources and foraging opportunities. The project site is not located within one of the five linkages identified in Section 4.2.3 of the County MSCP Subarea Plan. Boden Canyon is the closest of



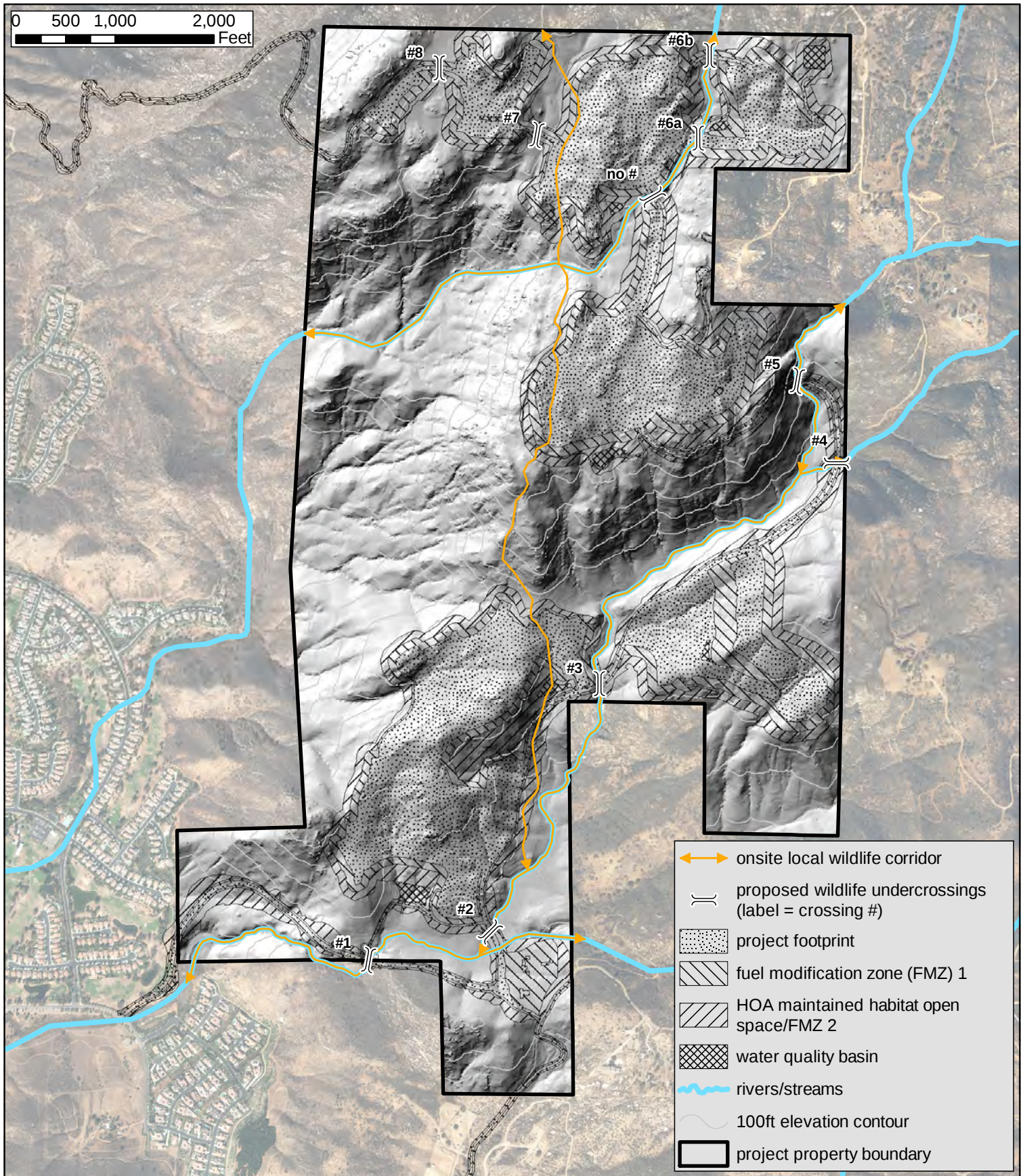
Habitat Connectivity and Wildlife Corridor Map
Safari Highlands Ranch

Figure 9

these identified MSCP linkages. Further, the project site is not located within or in proximity to a primary linkage/corridor between the northern and southern regional populations of California gnatcatcher in the population viability analysis for gnatcatcher, as referenced in the MSCP.

Three local wildlife movement corridors occur within the project site based on field observations and literature review. The larger main drainage/riparian corridor that runs east-west in the central and southern portions of the site is the primary local wildlife movement route onsite (Figure 10). Larger mammals consisting of mountain lion and mule deer have been documented along the main drainage onsite. The mountain lion occurrence is based on one juvenile mountain lion that was detected onsite through a U.C. Davis mountain lion study. U.C. Davis researchers monitored a GPS collared juvenile mountain lion for a four month period that passed through the site primarily via the major east-west drainage. This now deceased lion had Valley Center and the intersection of Hwy 79 and I-8 as the north and south ends of its home range (Ernest et al. 2014). Evidence of mule deer (e.g., tracks) was located within the main drainage as well as observations of deer within the slopes supporting upland habitat onsite. The width of the main drainage that likely facilitates local wildlife movement through the central portion of the site is generally steep and ranges between 1,000 feet to 1,600 feet in width spanning rim to rim. This drainage/canyon continues to the south where the canyon narrows to approximately 200-400 feet wide and the creek bottom is rocky near the southeastern project property boundary. The rocky drainage runs offsite for approximately 800 feet in length and then continues back onsite at the southeastern corner where it flattens out to a large linear patch of oak riparian woodland along the drainage. This reach of the riparian corridor onsite ranges from 200 feet to 700 feet wide and includes the entire extent of the oak riparian woodland and intermixed non-native grassland. The corridor continues to the west generally along the site's southern boundary approximately 200 feet wide rim to rim until the topography dramatically changes to a very steep and rocky drainage that continues offsite to an open and relatively flat section that supports mulefat scrub and further southwest through partially developed areas where it ultimately connects to San Dieguito River.

The other two local wildlife corridors onsite consist of a small ephemeral drainage in the northern portion of the site that continues offsite through the open space to the west and ultimately drains to the adjacent Eagle Crest golf course; and the main access dirt road that runs north-south generally in the center of the project site and continues offsite to the north (Figure 10). Due to the limited size of the small ephemeral drainage, only smaller wildlife (e.g., small mammals and herpetofauna) are expected to utilize this drainage for local movement. Based on sign and/or tracks observed along the main access dirt road, this access road facilitates movement for coyote, western toad, western spadefoot toad, striped skunk, as well as other common herpetofauna species and small mammals. This central dirt road provides a relatively open dispersal route for wildlife movements under current site conditions.



Wildlife Movement Corridor Map

Safari Highlands Ranch

Figure 10

3.0 Impact Assessment

CEQA Impact and Mitigation Definitions

Project impacts are categorized pursuant to CEQA as direct, indirect, or cumulative impacts.

- CEQA Guidelines §15358 (a) (1) and (b) (Title 14, Chapter 3, Article 20) defines a “direct impact or primary effect” as “effects which are caused by the project and occur at the same time and place” and relate to a “physical change” in the environment.
- CEQA Guidelines §15358 (a) (2) and (b) (Title 14, Chapter 3, Article 20) defines an “indirect impact or secondary effect” as “effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable” and relate to a “physical change” in the environment.
- CEQA Guidelines §15355 (Title 14, Chapter 3, Article 20) defines “cumulative impacts” as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”

CEQA Guidelines §15370 (Title 14, Chapter 3, Article 20) defines “mitigation” as:

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

Direct, indirect, and cumulative impacts can be described as either permanent or temporary. Permanent impacts are generally defined as effects that would result in an irreversible loss of biological resources; temporary impacts can be defined as effects that could be restored, thus providing habitat and wildlife functions and values effectively equal to the functions and values that existed before the area was impacted.

The following sections of the report discuss the potential direct, indirect, and cumulative impacts to biological resources from the proposed Safari Highlands Ranch Project, as well as proposed project design features to avoid and/or minimize impacts and/or applicable mitigation measures. Direct impacts are those incurred during the construction of the project that may result in the loss of biological resources (e.g., vegetation clearing, and fuel modification, elevated noise during breeding season). Indirect impacts are those effects that are reasonably foreseeable and caused by the project, but occur at a different time or place (e.g., edge effects due to elevated noise, light spill, landscape irrigation, invasive species, domestic pets).

Potential project impacts from the proposed Safari Highlands Ranch Project were evaluated based on examination of the proposed project plans (Hunsaker & Associates, dated January 25, 2017) and associated project Fire Protection Plan (Dudek, dated April 20, 2017) within the context of the biological and jurisdictional resources identified onsite during the field surveys, and those biological resources known to occur or assessed as having a likely potential to occur in the project area. Direct impacts were determined by overlaying the project plans on the mapped

vegetation communities/habitats in GIS ESRI software platforms. Indirect impacts were determined based on the design, intended use, and location of the proposed project elements relative to biological resources.

CEQA Thresholds of Significance

Further, the following project impact analysis addresses the significance of the identified project impacts pursuant to CEQA, in accordance with the CEQA Guidelines Appendix G, Section IV for Biological Resources, as summarized below.

Biological Resources – Would the project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?

The County of San Diego provides further guidance to determine if a project impact is significant under CEQA in their Biology Guidelines for Determining Significance (County 2010). The City of Escondido's CEQA significance thresholds are contained in its *Environmental Quality Regulations*. The City of San Diego provides their Significance Determination Thresholds, similar to the County. These applicable significance guidelines were reviewed and referred to where appropriate in the project impact analysis below.

3.1 Impacts to Habitats and Vegetation

The proposed project residential development footprint and the FMZ I would permanently and directly impact habitats and vegetation communities within the the project site and within portions of the linear offsite improvement areas for the primary access road and two emergency access roads (See Figures 11a-11c; Tables 8 through 10). Temporary direct impact areas consisting primarily of the FMZ II would be selectively thinned where applicable and revegetated with native plant palettes. No irrigation is proposed within FMZ II. Proposed trails through conserved open space will predominately utilize existing dirt roads/trails onsite.

The proposed permanent and temporary impacts to sensitive habitats (County MSCP Tier I-III) onsite are summarized in Table 8. Although the project design features include 1) the conservation of 629.09 acres of onsite conservation open space that supports sensitive habitat in perpetuity, 2) an additional 128.60 acres of HOA maintained habitat open space providing a buffer between the proposed development footprint and proposed conservation open space to reduce edge effects, and 3) avoidance of oak riparian woodland except for necessary road crossings would lessen any potential adverse effects from the project to sensitive habitats, the residual impacts to sensitive habitats would be potentially significant under CEQA and would require mitigation measures to reduce the impacts to a level below significance, as discussed further in Sections 4 and 5.

Table 8. Summary of Direct Impacts to Habitats and Vegetation Communities

Habitat/Vegetation Community	MSCP Habitat Tier	Total Project (Onsite and Offsite) Existing Condition (acres)	Onsite Impacts ¹ (acres)	Offsite Impacts ¹ (acres)
Ragweed Mesic Meadow	I	1.29	0.15	0.00
Mulefat Scrub	I	1.89	0.05	0.02
Oak Riparian Woodland	I	20.45	2.12	0.50
Oak Woodland	I	5.01	2.58	0.00
Cactus Scrub	II	0.63	0.00	0.00
Diegan Coastal Sage Scrub (includes rock outcroppings)	II	574.83	223.13	12.88
Coastal Sage-Chaparral Transition (includes rock outcroppings)	II	67.70	26.91	0.00
Southern Mixed Chaparral (includes rock outcroppings)	III	424.32	201.99	4.22
Non-native Grassland	III	7.88	3.06	0.00
Disturbed Habitat	IV	18.84	8.57	7.58
Agriculture Intensive	IV	2.14	0.00	2.14
Developed	none	6.83	0.90	5.86
TOTAL		1131.81	469.46	33.20

¹ Impacts include both permanent and temporary impacts. Temporary impacts will be revegetated

Table 9. Vegetation Onsite Impacts - Safari Highlands Ranch Ownership Only

Vegetation Community	Total Project (Onsite and Offsite) Existing Condition (acres)	Onsite Existing Condition (acres)	Proposed Project Onsite Impacts								
			Adopted South County MSCP		Draft North County MSCP		Adopted City of San Diego MSCP		Non-MSCP		Grand Total Onsite Impacts (acres)
			Permanent* Total (acres)	Temporary** Total (acres)	Permanent* Total (acres)	Temporary** Total (acres)	Permanent* Total (acres)	Temporary** Total (acres)	Permanent* Total (acres)	Temporary** Total (acres)	
Ragweed Mesic Meadow	1.29	1.29	0.00	0.00	0.09	0.06	0.00	0.00	0.00	0.00	0.15
Mulefat Scrub	1.89	1.87	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Oak Riparian Woodland	20.45	19.95	0.47	0.76	0.27	0.62	0.00	0.00	0.00	0.00	2.12
Oak Woodland	5.01	5.01	0.27	0.11	1.54	0.66	0.00	0.00	0.00	0.00	2.58
Cactus Scrub	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diegan Coastal Sage Scrub (includes rock outcroppings)	574.83	561.95	166.87	56.26	0.00	0.00	0.00	0.00	0.00	0.00	223.13
Coastal Scrub-Chaparral Transitional (includes rock outcroppings)	67.70	67.70	18.01	7.18	1.72	<0.01	0.00	0.00	0.00	0.00	26.91
Southern Mixed Chaparral (includes rock outcroppings)	424.32	420.10	16.00	9.99	132.18	43.82	0.00	0.00	0.00	0.00	201.99
Non-native Grassland	7.88	7.88	2.05	0.43	0.15	0.43	0.00	0.00	0.00	0.00	3.06
Disturbed Habitat	18.84	11.26	4.40	1.13	2.50	0.54	0.00	0.00	0.00	0.00	8.57
Agricultural Lands	2.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Developed	6.83	0.97	0.70	0.01	0.18	0.01	0.00	0.00	0.00	0.00	0.90
Grand Total	1131.81	1098.61	208.27	75.38	138.63	46.14	0.00	0.00	0.00	0.00	469.46

*Permanent Impacts consist of project development grading footprint and fuel modification zone I (FMZ I) areas that will be cleared and irrigated.

**Temporary Impacts consist of project fuel modification zone II (FMZ II) areas that will be maintained and thinned but not irrigated.

Table 10. Vegetation Offsite Impacts – Main Entrance Access Road and Two Emergency Access Roads

Vegetation Community	Total Project (Onsite and Offsite) Existing Condition (acres)	Offsite Existing Condition (acres)	Proposed Project Offsite Impacts								
			Adopted South County MSCP		Draft North County MSCP		Adopted City of San Diego MSCP		Non-MSCP		Grand Total Offsite Impacts (acres)
			Permanent* Total (acres)	Temporary** Total (acres)	Permanent* Total (acres)	Temporary** Total (acres)	Permanent* Total (acres)	Temporary** Total (acres)	Permanent* Total (acres)	Temporary** Total (acres)	
Ragweed Mesic Meadow	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mulefat Scrub	1.89	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Oak Riparian Woodland	20.45	0.50	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50
Oak Woodland	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cactus Scrub	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diegan Coastal Sage Scrub (includes rock outcroppings)	574.83	12.88	1.35	0.13	9.29	0.00	1.48	0.00	0.41	0.22	12.88
Coastal Scrub-Chaparral Transitional (includes rock outcroppings)	67.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Mixed Chaparral (includes rock outcroppings)	424.32	4.22	0.00	0.00	4.22	0.00	0.00	0.00	0.00	0.00	3.51
Non-native Grassland	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed Habitat	18.84	7.58	0.00	0.00	4.29	0.00	0.92	0.00	2.35	0.01	7.57
Agricultural Lands	2.14	2.14	0.00	0.00	0.00	0.00	0.00	0.00	2.14	0.00	2.14
Developed	6.83	5.86	0.00	0.00	0.00	0.00	2.93	0.00	1.94	0.99	5.86
Grand Total	1131.81	33.20	1.35	0.13	18.30	0.00	5.33	0.00	6.84	1.24	33.20

*Permanent Impacts consist of project development grading footprint and fuel modification zone I (FMZ I) areas that will be cleared and irrigated.

**Temporary Impacts consist of project fuel modification zone II (FMZ II) areas that will be maintained and thinned but not irrigated.

3.2 Impacts to Jurisdictional Waters/Wetlands

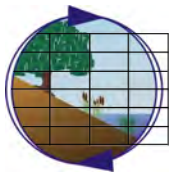
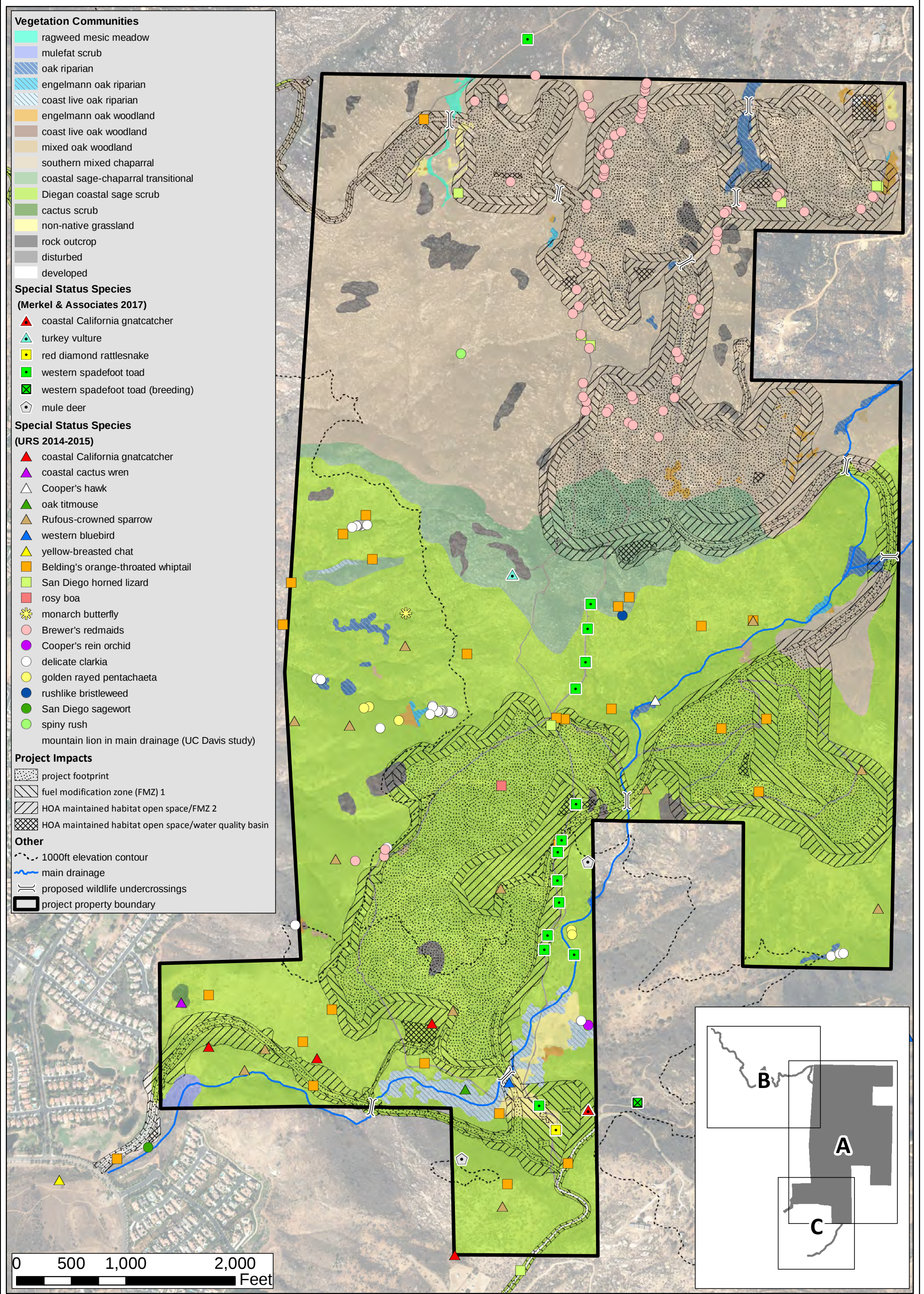
The proposed project would impact jurisdictional resources including wetlands regulated by the ACOE, CDFW, RWQCB, and/or County of San Diego, as depicted in Figures 6a-6c. Acreages for direct impacts to jurisdictional waters (wetlands and non-wetland waters/streambed), are summarized by jurisdiction in Table 11.

Table 11. Summary of Direct Impacts to Jurisdictional Resources

Wetland and Non-Wetland Jurisdictional Resources	Total Acreage within Project Site	Total Project Impacts	Onsite		Offsite	
			ACOE, RWQCB, CDFW & County Jurisdiction	CDFW and County Jurisdiction Only	ACOE, RWQCB, CDFW & County Jurisdiction	CDFW and County Jurisdiction Only
<i>Wetland</i>						
Ragweed Mesic Meadow	1.29	0.15	0.15	0.00	0.00	0.00
Mulefat Scrub	1.89	0.07	0.00	0.05	0.00	0.02
<i>Non-Wetland/Waterways</i>						
Oak Riparian (adjacent riparian)	20.45	2.53	0.00	2.03	0.00	0.50
Non-wetland waters of the U.S. and Streambeds	1.58* (approx 10,700 linear feet)	1.58	0.66	0.71	0.05	0.16
Total (acreage):	25.21	4.33	0.81	2.79	0.05	0.68

*Only those areas of the drainages located within the project footprint were delineated and quantified in this table.

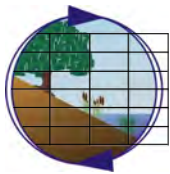
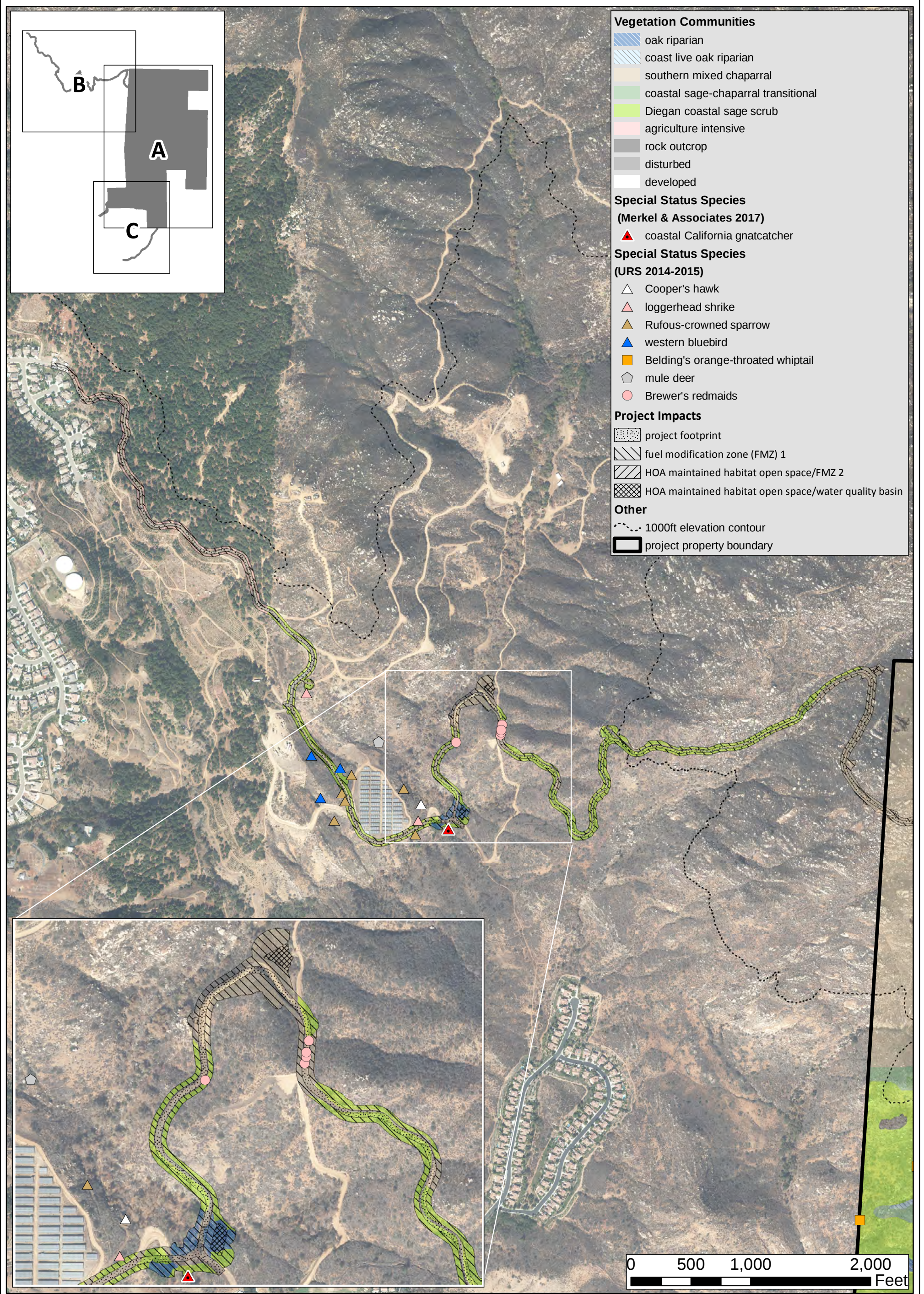
Although the project design features include the avoidance of oak riparian woodland habitat (jurisdictional resource) that would lessen potential adverse effects from the project to jurisdictional resources, the residual project impacts to federal wetlands (0.15 acre), non-wetland waters of the U.S. (0.71 acre) and state regulated jurisdictional resources (3.47 acres) would be potentially significant under CEQA and would require mitigation measures to reduce impacts to a level below significance. Applicable project mitigation requirements shall be implemented to reduce this impact to a level less than significant under CEQA, as discussed further in Sections 4 and 5.



Biological Impacts Map
Safari Highlands Ranch

Source: URS, Althouse & Meade, and Merkel & Associates

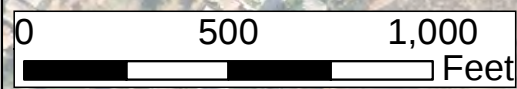
Figure 11a



Source: URS, Althouse & Meade, and Merkel & Associates

Biological Impacts Map
Safari Highlands Ranch

Figure 11b



Vegetation Communities

- mulefat scrub
- coast live oak riparian
- engelmann oak woodland
- coast live oak woodland
- mixed oak woodland
- Diegan coastal sage scrub
- cactus scrub
- non-native grassland
- rock outcrop
- disturbed
- developed

Special Status Species
(Merkel & Associates 2017)

- coastal California gnatcatcher
- red diamond rattlesnake
- western spadefoot toad
- mule deer

Special Status Species
(URS 2014-2015)

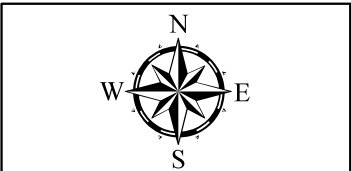
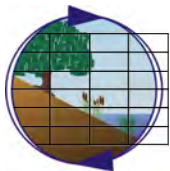
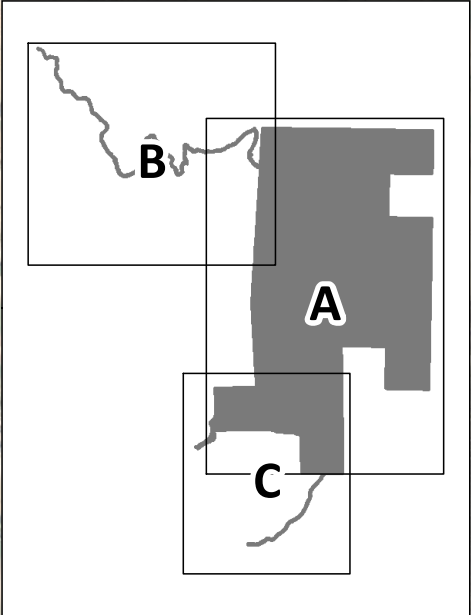
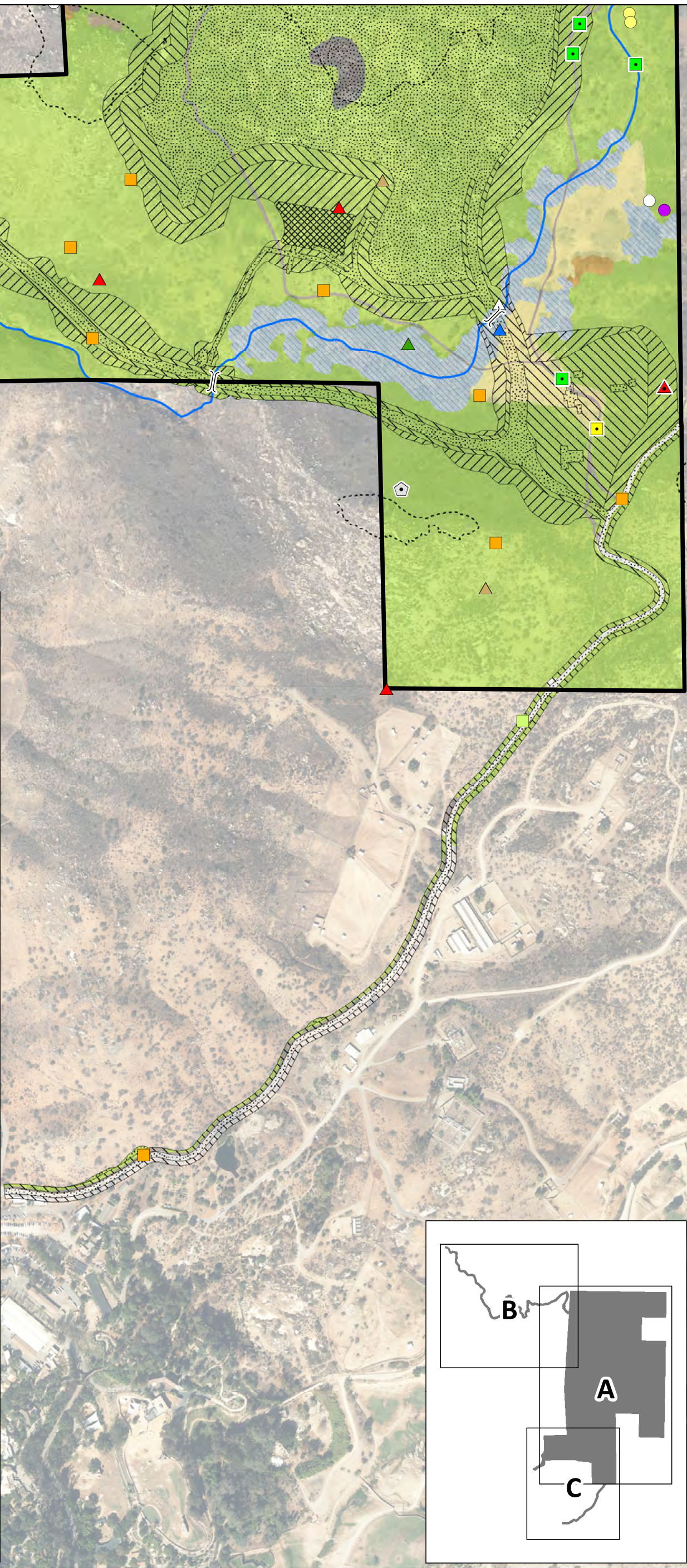
- coastal California gnatcatcher
- coastal cactus wren
- Cooper's hawk
- oak titmouse
- Rufous-crowned sparrow
- western bluebird
- Belding's orange-throated whiptail
- San Diego horned lizard
- Cooper's rein orchid
- delicate clarkia
- golden rayed pentachaeta
- San Diego sagewort
- mountain lion in main drainage (UC Davis study)

Project Impacts

- project footprint
- fuel modification zone (FMZ) 1
- HOA maintained habitat open space/FMZ 2
- HOA maintained habitat open space/water quality basin

Other

- 1000ft elevation contour
- main drainage
- proposed wildlife undercrossings
- project property boundary



Source: URS, Althouse & Meade, and Merkel & Associates

Biological Impacts Map
Safari Highlands Ranch

Figure11c

3.1 Impacts to Sensitive Species

This section discusses the direct and indirect impacts the proposed project would have on sensitive species present onsite. Impacts to sensitive plants and sensitive wildlife are discussed separately below (Figure 11a-11c).

3.1.1 Impacts to Sensitive Plants

The proposed project could directly impact an estimated 1,779 out of 1,863 individuals of Brewer's redmaids during grading. An additional 18 individuals occur within Fuel Modification Zone I impact areas not graded, where chronic irrigation is likely to substantially affect this annual species and result in its loss from this area (Table 12). Individual Engelmann oaks would also be impacted (Figure 5). A total of 212 out of 522 individual Engelmann oaks will be lost within the project grading footprint and FMZ I (Table 12). A total of 93 Engelmann oaks that occur in FMZ II would be considered impacted although the project plans to avoid these oak trees (Table 12). The remaining six sensitive plant species present onsite (i.e., delicate clarkia, golden-rayed pentachaeta, San Diego sagewort, Cooper's rein orchid, rush-like bristleweed, southwest spiny rush) are all in proposed onsite open space areas or located outside of offsite impact areas and not subject to direct impacts (Table 12). Therefore, the project would not impact these other sensitive plant species onsite.

Table 12. Summary of Sensitive Plant Species Locations and Project impacts

Plant Species	Project Footprint and FMZ I	FMZ II	Proposed Open Space	Grand Total
Brewer's Redmaids	1,779	0	84	1,863
Rush-like Bristleweed	0	0	2	2
Spiny Rush	0	0	50	50
Cooper's Rein Orchid	0	0	2	2
Delicate Clarkia	0	0	183	183
Golden Rayed Pentachaeta	0	0	731	731
San Diego Sagewort	0	0	4	4
Engelmann Oak	212	93	217	522

Although the onsite habitat conservation open space that supports sensitive plant species including Brewer's redmaids and Engelmann oak would lessen any potential adverse effects for these species, the residual project impacts to Brewer's redmaids and Engelmann oak would be potentially significant under CEQA and would require mitigation measures to reduce impacts to a level below significance. Potential indirect effects from the proposed residential development to sensitive plant species located within the proposed conservation open space may include typical edge effects such as invasive species and human intrusion into conserved habitat. The proposed project design feature to establish 128.60 acres of HOA maintained habitat open space would lessen adverse indirect impacts and edge effects from the development to the proposed onsite conservation open space that supports sensitive plant species. Applicable project mitigation requirements shall be implemented to reduce residual significant impacts to sensitive plant species to a level less than significant under CEQA, as discussed further in Sections 4 and 5.

3.1.2 Impacts to Sensitive Wildlife

Direct impacts to the native vegetation would reduce habitat for the following sensitive wildlife species known to occur (Table 13) or those species that have at least a moderate potential to occur onsite (Appendix B) including but not limited to the following species:

- **Amphibians** —western spadefoot toad (upland forage and estivation habitat only)
- **Reptiles** — red diamond rattlesnake, coastal whiptail, orange-throated whiptail, coastal rosy boa, and San Diego horned lizard;
- **Birds** — California gnatcatcher, southern California rufous-crowned sparrow, loggerhead shrike, turkey vulture, western bluebird, Cooper's hawk;
- **Mammals** — southern mule deer.

Although the proposed project includes onsite habitat conservation open space that supports suitable habitat for numerous sensitive wildlife species as well as the establishment of HOA maintained habitat open space that would lessen potential adverse effects to sensitive species including potential indirect impacts such as edge effects from the proposed development, the residual project impacts to some of the sensitive wildlife species would be potentially significant under CEQA and would require mitigation measures to reduce impacts to a level below significance. Applicable project mitigation requirements shall be implemented where appropriate to a level less than significant under CEQA. The project impact analysis for each applicable sensitive species or group of sensitive species is analyzed separately below and discussed further in Sections 4 and 5.

Table 13. Summary of Sensitive Animal Species Locations within Proposed Project Site

Animal Species Observation Points*	Project Footprint and FMZ I	FMZ II	Proposed Open Space	Grand Total
California Gnatcatcher	2	1	3	6
Coastal Cactus Wren	0	0	1	1
Cooper's Hawk	1	0	1	2
Turkey Vulture	0	0	5	5
Rufous-Crowned Sparrow	6	0	8	14
Loggerhead Shrike	1	0	0	1
Western Bluebird	6	0	0	6
Belding's Orange-Throated Whiptail	11	0	16	27
San Diego Horned Lizard	6	0	2	8
Coastal Rosy Boa	1	0	0	1
Red Diamond Rattlesnake	1	0	0	1
Western Spadefoot Toad**	-	-	-	14
Monarch Butterfly	-	-	-	3

* The point observations for individual animals assist in identifying the habitat affinities and general distribution of organisms on the site based on surveys conducted and do not reflect absolute counts of individuals.

** The locations of the observed spadefoot toad metamorphs during the 2017 field survey were due to these juveniles dispersing from an offsite breeding pond. These locations are not necessarily where these observed spadefoot would remain for the rest of their terrestrial lives.

3.1.2.1 California Gnatcatcher

California gnatcatcher is the only federally-listed species that occurs on the project site. Based on 2014 gnatcatcher protocol surveys conducted onsite and M&A field surveys, up to five territories of gnatcatcher occur within suitable Diegan coastal sage scrub habitat predominately occurring within the southern portion of the site (Figure 4a). Additional suitable gnatcatcher habitat presumed to be occupied is located in the western half of the project site and along the offsite southern emergency access (i.e., Zoo Road, Rockwood Road) alignment below 1,000 feet in elevation within Diegan coastal sage scrub (Figure 4b). Protocol gnatcatcher surveys conducted in 2015 for the northern emergency access road were negative; however, an individual California gnatcatcher was incidentally observed adjacent to this offsite northern access road in 2017 (Figure 4b). It is unclear if the gnatcatcher individual observed in late September 2017 was moving through the project area, has an established territory within suitable sage scrub habitat in the vicinity of the proposed emergency access route, or moved into the more mesic riparian area during the late summer as is typical when sage scrub habitat begins to dry out. For purposes of project impact assessment, any suitable CSS habitat that occurs along the northern emergency access route that is located below 1,000 feet in elevation has been assumed to be occupied by gnatcatcher.

The proposed project would directly impact two gnatcatcher territories from vegetation clearing, grading, and the construction of a water quality basin and recreational area, as well as the fuel management activities in the south-central portion of the site (Figure 11a). Portions of two additional gnatcatcher territories onsite in the southwestern portion of the site may be temporarily impacted by construction grading activities for the primary entry road alignment (Figure 4a). These two pairs of birds are expected to remain resident after road construction primarily since temporary habitat impacts within these two territories would be minimized through revegetation with appropriate coastal sage scrub species as well as the availability of suitable and occupied gnatcatcher habitat within the surrounding proposed conservation open space. One gnatcatcher territory location at the southern boundary of the project site is not expected to be directly impacted by the project due to its distance (i.e., over 500 feet) from the proposed project impact areas. Along the proposed southern emergency access road widening alignment (i.e., existing Zoo Road) there is a relatively small amount of gnatcatcher utilized coastal sage scrub habitat that would be impacted from vegetation clearing and/or grading (i.e. 20 feet on both sides of existing road for an approximate 3,600 foot alignment). Due to the nature of this proposed road work being an improvement to an existing road, this work would not be expected to result in substantial changes in gnatcatcher use of the adjacent lands and would not be expected to result in loss of gnatcatcher territories or reduction in productivity of existing territories in these areas.

Based on the recent incidental gnatcatcher observation along the offsite northern emergency access road, proposed construction vegetation clearing and grading activities for the improvement of the existing dirt road for the proposed northern emergency road, as well as new features along this road such as the fire department water tanks and water quality basins may impact occupied gnatcatcher habitat. Gnatcatcher are expected to remain resident if applicable after implementation primarily due to the nature of the work being an emergency access road that would be limited to infrequent emergency access by authorized personnel only (e.g., fire department during a wildfire), as well as the availability of remaining large blocks of contiguous suitable and/or assumed occupied gnatcatcher habitat within the surrounding lands.

A total of 189.06 acres of coastal sage scrub out of 265.10 acres of coastal sage scrub (71%) below the 1,000 elevation contour will be conserved in the proposed conservation open space onsite. This area represents the remaining onsite gnatcatcher occupied habitat after project implementation as

well as the remaining onsite portion of the Escondido/San Pasqual Valley “core” reserve gnatcatcher population identified in the Population Viability Analysis of the California Gnatcatcher that likely extends into the southernmost portion of the project site. It is expected that the onsite gnatcatchers will be able to continue to utilize the conserved suitable coastal sage scrub habitat after project implementation partially due to the proposed open space configuration that retains contiguous connectivity to offsite suitable/occupied gnatcatcher habitat and large areas of suitable/occupied gnatcatcher habitat onsite. Similarly, offsite gnatcatchers would be expected to continue to utilize the suitable habitat within the proposed conserved open space due to its connectivity to adjacent occupied and conserved coastal sage scrub habitat located south and west of the project.

Although the proposed project includes onsite habitat conservation open space that supports gnatcatcher occupied habitat as well as the establishment and revegetation within HOA maintained habitat open space that would lessen potential adverse effects to gnatcatcher, the residual project impacts to gnatcatcher would be potentially significant under CEQA and would require mitigation measures to reduce these impacts to a level below significance. Applicable project mitigation requirements for gnatcatcher shall be implemented as provided in the Sections 4 and 5 below.

3.1.2.2 Cactus Wren

The project site supports a limited amount of suitable habitat for cactus wren consisting of a patch of cactus scrub surrounded by Diegan coastal sage scrub in the southwestern portion of the site (Figure 4a). This cactus scrub patch supports one pair of cactus wren. The nearest proposed construction activities (temporary impacts from grading for main access road to be subsequently revegetated with coastal sage scrub plant species) to this cactus patch would be at least 75 feet away. No direct impacts to cactus scrub where the cactus wren pair resides and nests would occur from implementation of the proposed project, and this pair is expected to remain in the cactus scrub patch due to its location within the proposed habitat conservation open space (Figure 11a). In addition, this cactus wren pair is not expected to be indirectly impacted by the proposed project due to the distance from the proposed main access road, HOA maintained habitat open space buffering the road, and the conservation of surrounding habitat.

3.1.2.3 CDFW Species of Special Concern and/or County Group 1 Species

Based on the County Biology Guidelines for Determining Significance, project impacts to an onsite population of a CDFW SSC or County Group 1 animal species are considered potentially significant.

The following species are known to occur onsite and are designated CDFW SCC and/or a County Group 1 species: Cooper’s hawk, turkey vulture, rufous-crowned sparrow, loggerhead shrike, western spadefoot toad, San Diego horned lizard, and red diamond rattlesnake. Due to the sensitivity status of these species and the applicable County Biology Guidelines, the proposed impacts to these CDFW SSC and/or Group 1 species would be considered potentially significant under CEQA. Applicable project mitigation requirements for Cooper’s hawk, turkey vulture, rufous-crowned sparrow, loggerhead shrike, western spadefoot toad, San Diego horned lizard, and red diamond rattlesnake shall be implemented to reduce these impacts to a level below significance, as provided in the Sections 4 and 5 below.

3.1.2.4 County Group 2 Species

Based on the County Biology Guidelines for Determining Significance, project impacts to the local long-term survival of a County Group 2 animal species is considered potentially significant. The definition of “local” given in the Guidelines is the area covered by the applicable MSCP Subarea Plan such as the South County Subarea.

The following County Group 2 species are known to occur onsite: Belding’s orange-throated whiptail, coastal rosy boa, western bluebird, and monarch butterfly. The proposed project impacts to Belding’s orange-throated whiptail and coastal rosy boa are similar given they occur throughout the same habitat types (e.g., Diegan coastal sage scrub). Due to their lower sensitivity, relatively minor reduction of suitable habitat (from a MSCP Subarea perspective) for these species from project implementation, and proposed conservation of large tracts of suitable habitat for these species, the project impacts are not expected to impact the local long-term survival of Belding’s orange-throated whiptail and coastal rosy boa.

Similarly, the project is not expected to impact the local long-term survival of western bluebird or monarch butterfly predominately due to the relatively minor reduction of suitable habitat (from a MSCP Subarea perspective) for these wide ranging species from project implementation and the proposed conservation of the majority of suitable habitat onsite for these species. Therefore the proposed impacts to Belding’s orange-throated whiptail, coastal rosy boa, western bluebird, and monarch butterfly would not be considered significant under CEQA and no mitigation measures would be required.

3.1.2.5 Arroyo Toad

No impacts to arroyo toad would occur from implementation of the proposed project since the 2017 USFWS arroyo toad focused surveys onsite were negative and no arroyo toads occur or are expected to occur within the project site.

3.1.2.6 Least Bell’s Vireo

No impacts to least Bell’s vireo would occur from implementation of the proposed project since the 2014 USFWS least Bell’s vireo protocol surveys onsite were negative and no vireos occur or are expected to occur within the project site due to a lack of suitable habitat.

3.1.2.7 Golden Eagle

Golden eagle is not expected to nest onsite due to a lack of nesting habitat and no known nesting records on the project site. In addition, the closest extant nesting location (i.e., Rockwood Canyon) is located approximately 5,400 feet east of the northeastern boundary of the project site. The project site is located well beyond the County of San Diego’s golden eagle nest avoidance buffer of 4,000 feet. Therefore, no impacts to nesting golden eagle are expected from implementation of the proposed project.

Based on the field surveys and the best available information, golden eagle does not make more than infrequent use (i.e., flyover, foraging) of the site. Nonetheless, the project site supports potentially suitable foraging habitat along the periphery of known use areas for golden eagle. Due to the limited extent of potential golden eagle flyover and/or foraging use of the project site, no potentially significant impacts to foraging habitat for golden eagle is expected from implementation of the project.

3.2 Impacts to Wildlife Movement and Regional Linkages

3.2.1.1 Habitat Fragmentation and Movement Corridor Impacts

The development of the project site would retain large blocks of contiguous native habitat but reduce the size and availability of native vegetation within the project site and increase habitat fragmentation for select sensitive species (e.g., sensitive amphibians, reptiles and rodents). Proposed offsite emergency road improvements would not substantially affect wildlife movement primarily since these roads would not be in use or available for vehicular access except in the case of an emergency. In addition, the temporarily impacted areas along these roads would be revegetated with appropriate native species. No regional wildlife corridors/linkages identified in the approved MSCP Plan and the draft North County MSCP occur onsite. Identified regional corridors/linkages that occur generally in the project area consist of Guejito Canyon, Boden Canyon, and San Pasqual Valley (Figure 9). The project would not impact or obstruct a designated regional wildlife corridor/linkage.

Three local wildlife movement corridors occur onsite consisting of the main drainage (primary riparian corridor), smaller ephemeral drainage (secondary riparian corridor), and a dirt access path.

Both the primary and the secondary riparian corridor movement routes through the property are proposed to be retained through the use of wildlife undercrossings and the conservation of these corridors within open space. The proposed widths of the primary and secondary wildlife movement routes would generally retain the existing widths along these corridors, except where wildlife undercrossings are proposed. For example, segments of the primary corridor that are currently greater than 1,000 feet in width would remain greater than 1,000 feet in width after project implementation, while the areas of the corridor that are currently narrow based on existing conditions/topography would retain a narrow width. It is expected that the primary and secondary riparian corridor widths and buffering from development through the HOA maintained habitat open space would provide for continued local wildlife movement through the site. The existing main dirt road/path local corridor would be severed by the proposed project footprint and local movement would be expected to be focused on the primary and secondary riparian corridors.

Given the local nature of the wildlife corridors onsite, and the retention of two of the three movement routes identified, including the primary route, habitat fragmentation and the blockage of one secondary local wildlife route is not considered to be significant. However, wildlife movement areas will be crossed by roadways within the project site. The effects of the roadway crossings on wildlife movement can degrade the function of the corridor. As a result, the effects of roads on wildlife movement are discussed below.

3.2.1.1 Roadway Mortality

One of the greatest concerns with road crossings in habitat connections relates to road kills of organisms moving through the habitat. The concentration of wildlife movement in canyons and along drainages would be expected to result in localized wildlife losses due to location of vehicles along roads that cross drainages. These impacts would be greatest where vehicle speed is high, sight distance is low, and animals must transit over roads rather than under road surfaces or around roads. Mountain lion mortality data from UC Davis researchers shows that most (~97%) of the vehicle-related mountain lion mortality is on high traffic volume roads – freeways, State Route highways (e.g., SR 78 – San Pasqual Valley Road) and County “S” major arterial roads (e.g., S6 - Valley Center Road, S2 – Old Julian Hwy/Banner Grade, S1 – Beckman Springs Road, and S19 - Santiago Canyon [in Orange County]). There are few car-related lion mortalities (3 of 94) on rural

roads with lower expected crepuscular/night-time average daily traffic volumes and generally lower speed of travel.

The project proposes one main access roadway and two gated/secured emergency access roads. Emergency roads are not expected to have consequential traffic effects on wildlife as they generally would not carry traffic, except during an emergency. The main access road (i.e., Safari Highlands Ranch Road) connects with smaller onsite neighborhood roads within the proposed project footprint that cross with the two remaining local wildlife movement corridors that may potentially support elevated wildlife movement following the project construction (Figure 10). Local wildlife movement routes would be expected to become more concentrated along riparian features such as the primary local wildlife corridor within the proposed conservation open space as the project development may block diffuse wildlife movement over flatter upland terrain or along other movement routes such as the main dirt road that runs north-south along the center of the site.

Five (5) proposed wildlife undercrossing locations (out of a total of 10) occur at key points along the proposed Safari Highlands Ranch (SHR) Road (# 1-5; Figure 10). The traffic volumes for SHR Road at which the undercrossings may be located are provided in Table 14. The time-frames for typical wildlife movement occur in the early morning, late evening and night-time when site traffic would typically be at its lowest level. The traffic volumes at the onsite wildlife drainage crossings are compared to nearby locations where wildlife movement is known to occur. The estimated traffic volumes for SHR Road are expected to be substantially lower than other roads in the project vicinity where roadkill is a documented concern (Table 14), since these other roads are public roads and in the case of San Pasqual Valley is an extension of State Route 78.

Table 14. Wildlife Drainage Crossing Average Daily Traffic Volume (ADT) ComparisonSegment ^a	Morning ^b		Evening ^c			Night		
	5-6 AM	6-7 AM	5-6 PM	6-7 PM	7-8 PM	11-12 PM	12-1 AM	1-2 AM
Onsite Crossings								
SHR Rd Drainage Crossing #1	92	266	447	377	232	26	12	8
SHR Rd Drainage Crossing #2	92	266	447	377	232	26	12	8
SHR Rd Drainage Crossing #3	55	160	268	226	139	16	7	5
SHR Rd Drainage Crossing #4	40	114	191	161	99	11	5	3
SHR Rd Drainage Crossing #5	40	114	191	161	99	11	5	3
SHR Rd Drainage Crossing #7	6	15	24	21	12	2	0	0
SHR Rd Drainage Crossing #8	1	4	6	5	3	0	0	0
Offsite Crossings								
San Pasqual Valley Road, West of Zoo Road ^{d e}	334	543	714	384	222	64	37	20
San Pasqual Valley Road, East of Zoo Road ^{d e}	334	543	714	384	222	64	37	20
San Pasqual Road, South of San Pasqual Valley Road	106	254	403	228	171	24	6	7
Lake Wohlford Road, West of the dam	117	214	353	311	223	72	49	36
Valley Center Road, Near Lake Wohlford Road ^e	625	1,333	2,148	1,972	946	302	210	114

Footnotes:

- Under crossings are listed from South to North.
- Times are specified from: 5:00 AM to an hour after sunrise. Winter: 5-7 AM. Summer: 5-6 AM.
- Times are specified from: an hour before sunset to 8:00 PM. Winter: 5-8 PM. Summer: 7-8 PM.
- An ADT count for San Pasqual Valley Road, East of Cloverdale is utilized for this location.
- San Pasqual Valley Road and Valley Center Road both have documented mountain lion roadkill occurrences.

The proposed project roadways have low speeds and traffic calming features that would reduce wildlife road kill and injury. The speeds proposed would be lower than those found on roads with the vast majority of mountain lion road kills. Further, as indicated in Table 14, onsite drainage crossings #1 and #2 have the highest estimated Average Daily Traffic (ADT) for the project site; comparable to Lake Wohlford Road and San Pasqual Road (south of San Pasqual Valley Road). These comparable existing roads are considered rural roads that do not have recorded mountain lion roadkills. San Pasqual Valley Road (west and east of Zoo Road, directly south of proposed project) and Valley Center Road both have substantially higher ADTs (1.5 to 6+ times higher) than the Safari Highlands Ranch Road ADTs during the crepuscular/night-time periods. These two high traffic roads segments have mountain lion roadkill documented.

Implementation of the proposed project design features related to wildlife movement including appropriately sized wildlife undercrossings, fencing to direct wildlife to the undercrossings and

away from the roadway, speed limits, and traffic calming measures such as speed bumps or rumble strips would lessen potential adverse effects related to vehicle-wildlife collisions, roadkills, and wildlife movement corridor impacts and would not be considered significant.

3.3 Consistency with Applicable Multiple Species Conservation Plans

A MSCP Consistency Analysis Report was prepared for the proposed project to address how the proposed project would meet the applicable MSCP findings, criteria, and/or goals within the adopted South County MSCP Subarea Plan, draft North County MSCP Planning Agreement, and adopted City of San Diego MSCP Subarea Plan (Appendix G). In summary, the proposed project habitat mitigation is consistent with mitigation ratios of the adopted South County MSCP as well as planned conservation levels of habitat and species specific conditions. In addition, the project is consistent with the project design criteria, preserve design criteria, and corridor design criteria specified in the South County MSCP Findings, North County MSCP Planning Agreement, and City of San Diego MSCP Findings and Adjacency Guidelines. As provided in Section 1.4.3 of this report, although the proposed project generally applies the criteria/standards and mitigation ratios from the adopted South County MSCP and analyzes consistency with the South County MSCP, North County MSCP Planning Agreement, and adopted City of San Diego MSCP, the project is also consistent with the unadopted draft City of Escondido Subarea Plan as well as the adopted subregional Multiple Habitat Conservation Plan (MHCP).

Further, as provided in the County MSCP-Implementing Agreement (page 24), “In the event land within the County’s jurisdiction is annexed to another jurisdiction, an agreement shall be reached between the County, the annexing jurisdiction, the USFWS, and CDFW, as part of the annexation process, to ensure that any development of the annexed lands proceeds in accordance with the conservation goals of the MSCP....” In addition, the City of Escondido draft Subarea Plan specifies in Section 6.6 for Annexations that future annexations of land to the City must be covered by the requirements of an NCCP Subarea Plan. It further states that if an approved County Subarea Plan and implementation agreement exists for the area being annexed, the approved County Subarea Plan applies. In addition, for annexations of land greater than 10 acres that require take authorizations for development, the City will work cooperatively with the County of San Diego to ensure consistency between the City’s Subarea Plan and County MSCP, as well as consult with the Wildlife Agencies.

The project applicant has been and plans to continue to work cooperatively with the County, City, and Wildlife Agencies toward an annexation. Although the annexation of lands to the City of Escondido could provide take for Covered Species within the project site development, the proposed conservation and loss acreages would be retained within the County’s MSCP tracking. The proposed conservation would contribute to County habitat conservation goals as provided in the MSCP and the County would retain conservation allocation accounting opportunity to fulfill MSCP preserve goals. Therefore, the project would not jeopardize the buildout of the adopted County MSCP preserve, nor would it preclude or prevent the preparation of the draft North County MSCP, and would be in accordance with the conservation goals of the MSCP and finally would not be considered significant under CEQA.

3.4 Cumulative Impacts

CEQA guidelines §15355 define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts”.

The proposed project would result in additional, cumulative impacts to ragweed mesic meadow, mule fat scrub, oak woodland, Diegan coastal sage scrub, coastal sage-chaparral transitions, southern mixed chaparral habitat, and non-native grassland, as well as the potential impact to California gnatcatcher, in the region. The County MSCP and the City of San Diego MSCP were designed to compensate for the loss of biological resources throughout the program’s region; therefore, projects that conform to the MSCP would not result in a cumulatively considerable impact for those biological resources adequately covered by the program. The aforementioned direct and indirect impacts resulting from the proposed project would therefore not be cumulatively considerable if the project mitigation measures are implemented to ensure conformance to the MSCP Subarea Plans, County of San Diego Biology Guidelines, and City of San Diego Biology Guidelines.

4.0 Project Design Features and Mitigation Requirements Summary

The Safari Highlands Ranch Project has incorporated project design features that would lessen potential adverse effects from the project to biological resources. Any residual effects to biological resources after the project design features are considered would be a potential significant impact under CEQA. To reduce any potential significant impacts below the level of significance, the project proposes specific mitigation measures, as discussed separately below and listed in Section 5 of this report.

4.1 Vegetation Communities

One of the many project design features incorporated into the project includes the conservation of 629.09 acres of onsite habitat conservation open space. The proposed onsite habitat conservation open space encompasses approximately 57 percent of the project site (Figure 12). This large tract of conservation open space provides continuity with offsite existing conserved lands to the west and south. A conservation easement acceptable to the City of Escondido, County of San Diego, USFWS and CDFW would be placed over the proposed onsite habitat conservation open space areas to conserve and protect this open space in perpetuity.

In addition, implementation of the proposed project design feature to establish 128.60 acres of HOA maintained habitat open space reduces potential significant indirect impacts and edge effects from the development to the proposed onsite conservation open space. This HOA maintained habitat open space includes FMZ II and provides a non-irrigated, intermittently thinned native habitat area that separates the proposed development/FMZ I footprint from the habitat conservation open space and is expected to support habitat function as a secondary goal to fire protection within FMZ II (Figure 12). An extensive revegetation program within the HOA maintained habitat open space would be implemented as a project design feature.

The majority of the project habitat mitigation requirements for vegetation community impacts would be met onsite within the onsite 629.09 acres of conservation open space. The project habitat mitigation requirements are based on the mitigation ratios within the adopted South County MSCP Subarea Plan for the entire project site including those areas that lie within the draft North County MSCP Planning Area. The draft North County MSCP Subarea Plan is not an adopted document and although the North County MSCP Subarea has an adopted Planning Agreement, this agreement does not include adopted mitigation ratios. There is one exception to the application of the adopted MSCP mitigation ratios (i.e., MHCP/draft City of Escondido Subarea Plan mitigation ratio for oak riparian and oak woodland was applied since it is greater than the adopted South County mitigation ratio for this habitat). The proposed project habitat mitigation ratio requirements are summarized in Table 15. Table 15 provides the proposed project habitat impacts, applicable mitigation ratio, habitat mitigation acreage requirement, proposed onsite habitat conservation, and any offsite habitat mitigation requirements.

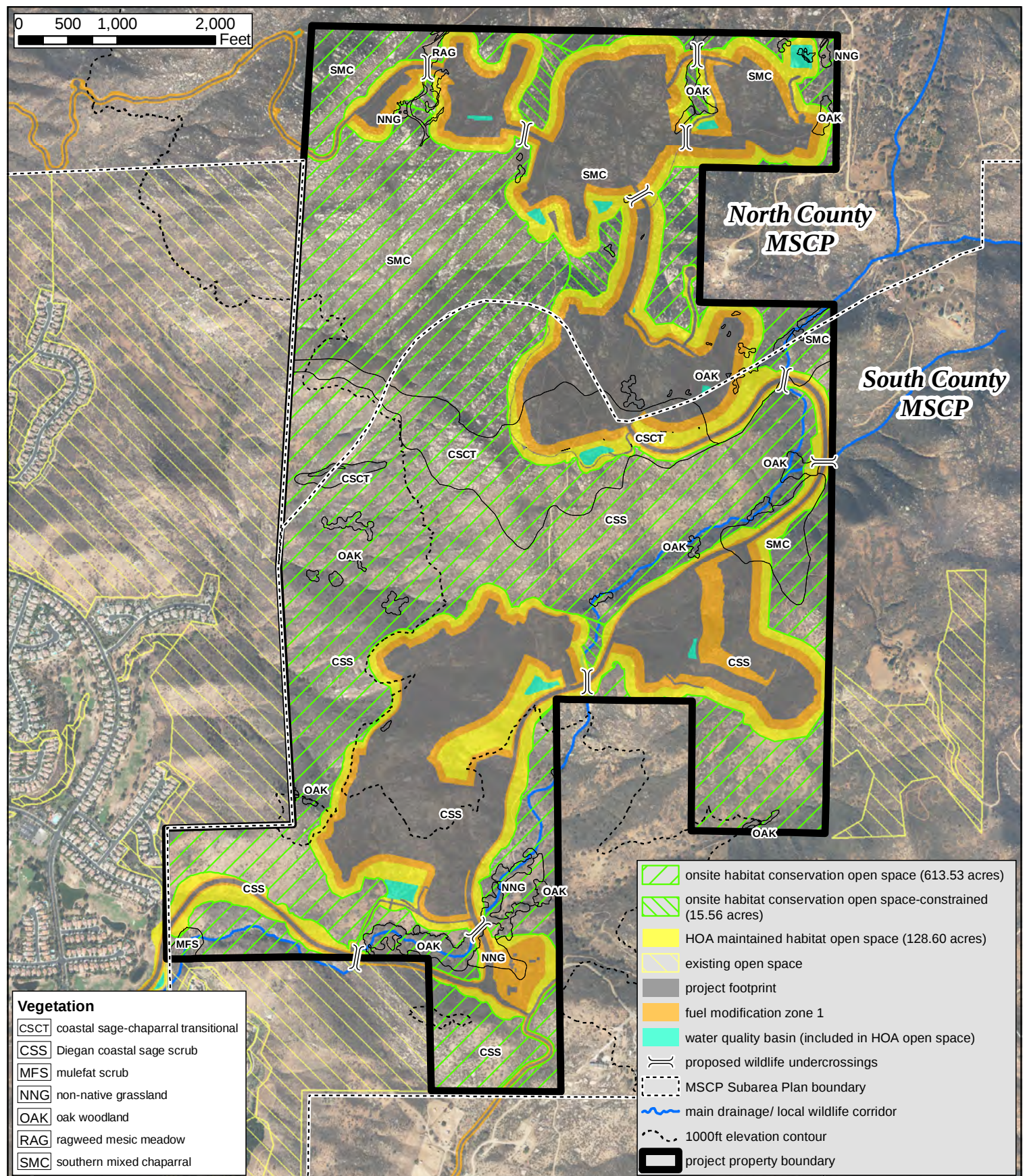
Table 15. Project Habitat Conservation Open Space and Habitat Mitigation Ratios/Requirements

Vegetation Community	MSC P Tier	Total Project Site (Onsite and Offsite) Acreage	Project Total Impacts	Approved MSCP Mitigation Ratio	Required Mitigation Acreage	Conservation Open Space	Conservation Open Space- Constrained	Total Proposed Conservation Open Space
Ragweed Mesic Meadow	I	1.29	0.15	2:1	0.30	0.99	0.15	1.14
Mulefat Scrub	I	1.89	0.07	2:1	0.14	1.82	0.00	1.82
Oak Riparian Woodland	I	20.45	2.62	3:1*	7.86	16.20	1.63	17.83
Oak Woodland	I	5.01	2.58	3:1*	7.74	2.43	0.00	2.43**
Cactus Scrub	II	0.63	0.00	1.5:1	0.00	0.63	0.00	0.63
Diegan Coastal Sage Scrub (includes rock outcroppings)	II	574.83	236.01	1.5:1	354.02	337.26	1.54	338.80***
Coastal Scrub-Chaparral Transitional (includes rock outcroppings)	II	67.70	26.91	1.5:1	40.37	40.78	0.00	40.78
Southern Mixed Chaparral (includes rock outcroppings)	III	424.32	206.21	1:1	206.21	206.30	11.82	218.12
Non-native Grassland	III	7.88	3.06	1:1	3.06	4.67	0.14	4.81
Disturbed Habitat	n/a	18.84	16.15	n/a	0.00	2.38	0.28	2.66
Agricultural Lands	n/a	2.14	2.14	n/a	0.00	0.00	0.00	0.00
Developed	n/a	6.83	6.76	n/a	0.00	0.07	0.00	0.07
Total:		1,131.81	502.66	-	619.70	613.53	15.56	629.09

* The applied mitigation ratio for oak riparian woodland and oak woodland impacts is from the MHCP and City of Escondido draft Subarea Plan since it is greater than the adopted South County MSCP mitigation ratio.

** The required project habitat mitigation for oak woodland (7.74 acres) would be met through onsite conservation of 2.43 acres of oak woodland as well as onsite conservation of 5.31 acres of oak riparian woodland.

*** Proposed onsite habitat mitigation for Diegan coastal sage scrub is deficient by 15.22 acres and shall be met through a small amount of cactus scrub (0.63 acre) and an excess of 0.41 acre of coastal-scrub-chaparral transitional habitats to be conserved onsite as well as offsite habitat mitigation for the remainder 14.18 acre.



Proposed Open Space
Safari Highlands Ranch

Figure 12

The proposed project design features including those described above would lessen potential adverse effects of the project to sensitive habitats and vegetation communities. Mitigation Measures B-1, B-2, B-3, B-7, B-10, B-11, B-12, and B-13 would reduce the project's residual impacts to sensitive habitats/vegetation communities as well as to suitable habitat for sensitive species to below the level of significance under CEQA. A subset of these applicable mitigation measures are described below. A complete list of project design features and mitigation measures are provided in Section 5.

The project's habitat mitigation obligation requires that a Biological Resource Management Plan (BRMP) be prepared and implemented for the proposed onsite habitat conservation open space to be conserved and managed in perpetuity. This BRMP would be consistent with USFWS and/or CDFW standards and County of San Diego Biology Guidelines and reviewed and approved by the Wildlife Agencies and County. The project BRMP should include specifications for signage and appropriate fencing that will restrict access to the biological open space areas except along designated trails.

The remaining habitat mitigation requirements for the proposed project (consisting of 14.18 acres of Diegan coastal sage scrub habitat) would be met through offsite habitat conservation at an appropriate mitigation site or approved mitigation bank. Further, an additional 17.23 acres of coastal sage scrub offsite conservation would be required to meet the adopted MSCP coastal sage scrub habitat conservation goal of 64% for the Metro-Lakeside-Jamul Segment, as assessed in the project MSCP Consistency Analysis Report (Appendix G). A total of 31.41 acres of coastal sage scrub habitat shall be conserved offsite in perpetuity.

To ensure avoidance or minimization of potential unforeseen impacts during project construction to oak woodland habitat in proximity to the construction limits that are proposed to be conserved; the contractor shall implement minimization measures involving Tree Protection Zones (TPZs) under the direction of an ISA-certified arborist.

4.2 Jurisdictional Waters

The proposed project has minimized impacts to jurisdictional resources to the maximum extent practicable, as evident by the avoidance of the main drainage and adjacent oak riparian habitats and the only federally jurisdictional wetland, except at road crossings. Further, the project includes control of stormwater runoff through a comprehensive water retention system that meets current RWQCB and City regulations for drainage and stormwater runoff pollutants.

The proposed project design features provided above would minimize potential adverse effects to jurisdictional resources. Mitigation Measures B-4, B-5, B-6, B-11, B-12, and B-13 would reduce the residual impacts to these resources to below the level of significance under CEQA. A subset of these applicable mitigation measures are described below. A complete list of project design features and mitigation measures are provided in Section 5.

Mitigation for unavoidable impacts to federal, state, and County jurisdictional waters and/or wetlands would be accomplished through the combination of the following: preparation and implementation of a conceptual wetland mitigation plan; and the creation, restoration and/or enhancement of jurisdictional resources within onsite conserved open space and/or at an offsite mitigation site or approved wetland mitigation bank. In addition, the project is required to obtain a Clean Water Act (CWA) section 404 permit, a CWA section 401 water quality certification, and a CDFW Streambed Alteration Agreement from the applicable regulatory agencies for impacts to jurisdictional resources.

The proposed mitigation for unavoidable impacts to the wetland habitat (i.e., ragweed mesic meadow, mulefat scrub) onsite requires a mitigation ratio of 2:1, as provided in the adopted South County MSCP Subarea Plan/BMO. Mitigation for impacts to wetlands must at a minimum create wetlands at a 1:1 ratio to achieve a no net loss of wetland area, while the remaining 1:1 requirement may be achieved through wetland creation, restoration, and enhancement of existing disturbed wetlands and other waters. The proposed mitigation for impacts to oak riparian woodland (adjacent riparian) onsite is a 3:1 mitigation ratio. The project proposes to apply the greatest mitigation requirements among all of the MSCP/MHCP Plans considered for this project (even though the City's draft plan is not adopted and only a guideline). The proposed mitigation for impacts to non-wetland waters of the U.S./streambed would be at a 1:1 mitigation ratio. The proposed project mitigation is summarized in the following table.

Wetland and Non-Wetland Jurisdictional Resources	Total Project Impacts	Mitigation Ratio	Proposed Mitigation
<i>Wetland</i>			
Ragweed Mesic Meadow	0.15	2:1	0.30
Mulefat Scrub	0.07	2:1	0.14
<i>Non-Wetland/Waterways</i>			
Oak Riparian (adjacent riparian)	2.53	3:1	7.59
Non-wetland waters of the U.S. and Streambeds	1.58 (10,700 linear feet)	1:1	1.58 (10,700 linear feet)
Total (acreage):	4.33		9.61

4.3 Sensitive Plants

The proposed project would not have direct impacts to any MSCP narrow endemic plant species or to any core populations of MSCP narrow endemic plant species.

The proposed project would only result in direct impacts to the following sensitive plant species: Brewer's redmaid and Engelmann oak. The proposed project design features provided above would lessen potential adverse effects to these sensitive plant species, but would still result in residual significant impacts. Mitigation Measures B-1, B-7, B-11, B-12, and B-13 would reduce these potential significant impacts to below the level of significance under CEQA. A subset of these applicable mitigation measures are described below. A complete list of project design features and mitigation measures are provided in Section 5.

To ensure the conservation and management of suitable habitat for sensitive plant species within the proposed habitat conservation open space, the project's habitat mitigation obligation requires that a BRMP be prepared and implemented for the proposed onsite habitat conservation open space to be conserved and managed in perpetuity.

To ensure avoidance or minimization of potential unforeseen impacts during project construction to Engelmann oaks in proximity to the construction limits that are proposed to be conserved; the contractor shall implement minimization measures involving TPZs under the direction of an ISA-certified arborist.

To avoid impacts to these sensitive plant species outside of the project limits during the construction activities, the project shall be monitored by a qualified biologist and construction Best Management Practices (BMPs) shall be implemented.

4.4 Sensitive Wildlife Species

The proposed project design features would lessen potential adverse effects to sensitive wildlife species, but would still result in residual significant impacts to California gnatcatcher, Cooper's hawk, turkey vulture, rufous-crowned sparrow, loggerhead shrike, western spadefoot toad, San Diego horned lizard, and red diamond rattlesnake. Mitigation Measures B-1, B-2, B-8, B-9, B-10, B-11, B-12, and B-13 would reduce these direct impacts to below the level of significance under CEQA. A subset of these applicable mitigation measures are described below. A complete list of project design features and mitigation measures are provided in Section 5.

To avoid and/or minimize direct impacts to federally-listed California gnatcatcher, all vegetation clearing activities shall be conducted outside of gnatcatcher occupied habitat during the gnatcatcher breeding season (February 15 to August 15). Further, within areas adjacent to gnatcatcher occupied habitat, onsite noise reduction/attenuation techniques and monitoring shall be incorporated during the gnatcatcher breeding season to ensure that the potential elevated construction noise levels are appropriately attenuated at the edge of occupied habitat.

To avoid and/or minimize direct impacts to nesting Cooper's hawk, turkey vulture, rufous-crowned sparrow, loggerhead shrike (also protected under the federal MBTA and California Fish and Game (CFG) Code Sections 3503 and 3513), the removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the general breeding season for these categories of birds (County of San Diego recognized MBTA breeding season is February 15 to August 31). If construction-related vegetation clearing and grubbing activities cannot be conducted outside the general avian breeding season, then pre-construction active nest surveys are required within the applicable potentially suitable nesting habitat.

To avoid and/or minimize potential direct inadvertent impacts to sensitive wildlife species (e.g., San Diego horned lizard, red diamond rattlesnake) during construction activities, a qualified biologist shall be retained to monitor the installation of the construction temporary fencing and/or flagging, and other BMP's along the construction limits prior to construction activities. Further, the qualified biologist shall be present during all initial vegetation clearing and grubbing ground-disturbing activities and throughout the construction period as necessary.

4.4 Wildlife Movement and Linkages

A total of ten wildlife road undercrossing areas are incorporated into the project. Noticing signs making the presence of wildlife crossing areas known to drivers will be installed at the ten crossing segments on the project site. The arched culverts (or comparable) at five locations along the main drainage/primary corridor will be sized sufficiently to meet or exceed an Openness Ratio of 0.75. The arched culverts in these locations will have natural substrate bottoms (or comparable). The other five locations, which include those expected to facilitate

small wildlife species (i.e., small mammals and herpetofauna), will be sized to accommodate the hydrology requirements that are also expected to fulfill the wildlife movement needs.

This proposed project design feature is expected to avoid any potential adverse effects to wildlife movement. Therefore, the proposed project is not expected to result in significant impacts to wildlife movement and linkages, and does not require any applicable mitigation measures.

5.0 Proposed Project Design Features and Mitigation Measures for Biological Resources

Project Design Features:

Onsite Habitat Conservation

The project will conserve 629.09 acres of onsite habitat conservation open space in perpetuity. The conserved habitats will consist of the following acreages:

Vegetation Community	MSCP Tier	Total Conservation Open Space (acres)
Ragweed Mesic Meadow	I	1.14
Mulefat Scrub	I	1.82
Oak Riparian Woodland	I	17.83
Oak Woodland	I	2.43
Cactus Scrub	II	0.63
Diegan Coastal Sage Scrub (includes rock outcroppings)	II	338.80
Coastal Scrub-Chaparral Transitional (includes rock outcroppings)	II	40.78
Southern Mixed Chaparral (includes rock outcroppings)	III	218.12
Non-native Grassland	III	4.81
Disturbed Habitat	n/a	2.66
Agricultural Lands	n/a	0.00
Developed	n/a	0.07
Total:		629.09

The applicant will place an open space conservation easement (or comparable) over the proposed onsite habitat conservation open space areas. The primary purpose of the conservation easement(s) will be conservation of onsite sensitive vegetation communities and habitats for sensitive species. Conservation easement(s) shall be held in perpetuity by a qualified easement holder, be subject to the management requirements outlined in the Biological Resource Management Plan (see Measure B-1), and be subject to a legally binding agreement that shall: (1) be recorded with the County Recorder(s); and (2) contain a succession clause for a subsequent qualified easement holder if the original holder is dissolved. Other specific

conditions for the conservation easement may be outlined in permits issued by regulatory agencies for this project and/or in the executed multi-party annexation agreement.

Oak Riparian Woodland Habitat Avoidance

The project has been designed to avoid oak riparian woodland habitat to the maximum extent practicable, except for necessary road crossings.

Neighborhood Clustering

Clustering of neighborhoods where topography and drainages allow maximizing open space blocks and minimizing edge effects;

HOA Maintained Habitat Open Space

The establishment of 128.60 acres of HOA maintained habitat open space (consisting primarily of FMZ II but also includes graded areas to be revegetated, and vegetated water quality basins) reduces potential significant indirect impacts and edge effects (i.e., elevated noise, artificial lighting, invasive weeds) from the development to the proposed onsite conservation open space. This HOA maintained habitat open space provides a non-irrigated, intermittently thinned native habitat area that is expected to support habitat function as a secondary goal to fire protection within FMZ II. An extensive revegetation program within the HOA maintained habitat open space would be implemented.

Design of Designated Wildlife Road Undercrossings

Preservation of primary and secondary local onsite wildlife movement corridors through the design of designated wildlife road undercrossings, as provided by the following:

- a. Providing ten wildlife movement undercrossings locations at key points primarily along the main access road (i.e., Safari Highlands Ranch Road) including the primary and secondary riparian wildlife movement corridors, along with traffic calming features including signage, speed bumps/rumble strip, and speed enforcement;²
- b. Designing appropriately sized and suitable wildlife undercrossings. Wildlife undercrossing suitability relates to the ratio of the cross-sectional area to the length of an undercrossing. This is known as the Openness Ratio ($OR = [\text{height} \times \text{width}] / \text{length}$). Many researchers have recommended a minimum OR of 0.75 (Ford 1976, Cain et al. 2003, Clevenger and Waltho 2005) to support a wide range of small- and large-sized wildlife species. Using the OR formula, it can be seen that the longer an undercrossing is, the greater the cross-sectional area must be to support high wildlife use. Other design factors also play a role in the enhancement of the suitability

² Signs with or without accessories (flashing/blinking lights, warning messages) would notify approaching motorists of the presence of wildlife crossings. Speed bumps/rumble strips may be used to reduce vehicle speeds and the potential for vehicle/animal conflicts, especially where sight distance is limited by a curve in the road or concealing vegetation, and where surrounding habitat increases the risk of such collisions (Carr et al. 2003). Controlling traffic speed is often the least expensive way to reduce rates of vehicle-wildlife collisions combined with enforcement.

of undercrossings, including providing a dry floor, native substrate on the bottom of the culvert/bridge, outer-culvert/bridge funneling features (e.g., fencing, wingwalls), and inner-culvert/bridge predator defense features (e.g., water resources, cover vegetation [but not too dense], scattered boulders/rocks along the inside outer edges). Wildlife undercrossings #1-#5 along the primary local wildlife movement route/main drainage, where larger animals move through the site, would meet or exceed the recommended OR of 0.75. The three undercrossings (#6a, #6b, “no #”) along the secondary local movement route (small ephemeral drainage) in the northern portion of the site consist of smaller culverts (e.g., 60 inch RCP) will facilitate wildlife movement of the smaller wildlife species that are expected to currently move through the site along this drainage. Although not required for wildlife movement, two additional wildlife undercrossings are proposed in the northwestern portion of the site where culverts (i.e., 48 inch RCP) are proposed for hydrology.

- c. Controlling other roadway design conditions that otherwise create greater risks of vehicle-wildlife collisions at proposed wildlife crossings such as providing suitable off-surface movement routes, minimizing crossings at tight corners, and avoiding roadside conditions that trap animals on road surfaces (e.g., impervious fencing or steep banks that do not provide escape areas or vegetation cover);
- d. Limiting vehicle speeds on Safari Highlands Ranch Road to 30 mph;
- e. Retaining riparian corridor widths as they emerge from narrow drainages to facilitate; continued use by wildlife, such as deer and coyote;

Trail System

The proposed trail system will predominately utilize existing dirt roads/trails through the proposed habitat conservation open space and/or HOA maintained habitat open space;

Water Quality Basins/Stormwater Control

The project includes a comprehensive water retention system that will meet the latest RWQCB and City regulations to control drainage and stormwater runoff pollutants. This system includes hydro-modification management practices that use biofilters, retention and detention basins to prevent scouring, erosion, sedimentation, siltation, and other water quality impacts from urban runoff constituents, within downstream water bodies and associated biological systems (e.g., wetlands, riparian, aquatic organisms).

Mitigation Measures (MM):

MM-BIO 1 Biological Resource Management Plan

To ensure the success of the proposed onsite conservation open space/ habitat mitigation areas required for compensation of permanent and temporary impacts to vegetative communities and habitat for several special status wildlife species, the applicant shall retain a qualified biologist to prepare and implement a Biological Resource Management Plan (BRMP) for the 629.09 acres of habitat conservation open space. The BRMP shall be submitted by the applicant to the City, County, USFWS, and CDFW for review to ultimately ensure consistency with the project annexation agreement to be prepared and negotiated between the same five parties.

The BRMP shall follow the USFWS and County guidelines for preparation of the BRMP and include at a minimum the following:

- Purpose and Objectives
- Site legal description, land use, and history including past management if applicable,
- Summary of onsite and surrounding biological resources,
- Implementation Components including:
 - Resource Manager
 - Land Owner
 - Easement Holder
 - Restoration Entity
 - Financial Mechanism
 - Management Cost Estimate
 - Reporting Requirements
 - Limitations and Constraints
- Biological Resources Management Plan Tasks including
 - Biological management goals
 - Adaptive management
 - Operations
 - Maintenance
 - Administration
 - Public use,
 - Fire management

Timing/Implementation: Prior to issuance of a grading permit

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 2 Offsite Habitat Conservation

To meet the mitigation ratio requirement for Diegan coastal sage scrub, 14.18 acres of offsite Diegan coastal sage scrub habitat shall be conserved in perpetuity at an appropriate mitigation site or approved mitigation bank, in addition to the 629.09 acres of onsite habitat conservation.

Further, an additional 17.23 acres of coastal sage scrub offsite conservation would be required to meet the MSCP coastal sage scrub habitat conservation goal of 64% for the Metro-Lakeside-Jamul Segment, as assessed in the project MSCP Consistency Analysis Report. A total of 31.41 acres of coastal sage scrub habitat shall be conserved offsite in perpetuity.

The applicant shall verify the total acreages required to meet all compensatory mitigation obligations and submit these totals to the City prior to the issuance of grading permits. The applicant shall then obtain City approval of the holder of conservation easements, and the restrictions contained in the easement(s) created for the permanent protection of these lands. Documentation of recorded easement(s) shall be submitted to and approved by the City.

Timing/Implementation: Prior to issuance of a grading permit

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 3: Habitat Revegetation Plan

The restoration of temporarily impacted habitats within the HOA maintained habitat open space shall prevent loss or degradation of adjacent sensitive communities and maintain and facilitate habitat functions and values for special status species through contributory edge habitat and buffering from development. Specifically, this restoration is to minimize potential impact to the proposed habitat conservation open space that may result from spread of invasive species or sharp boundaries with developed lands. Areas where temporary, construction-related impacts have taken place shall be restored in accordance with a Habitat Revegetation Plan (HRP). The HRP shall prescribe restoration actions needed to treat temporarily disturbed soils and vegetation, in order to promote native species coverage, remove the establishment of damaging invasive species, and protect the integrity of the adjacent conserved habitat open space. The applicant shall contract a qualified restoration biologist, knowledgeable in upland and wetland habitat restoration to prepare the HRP.

The HRP shall set forth trigger points to identify where restoration shall be required in response to construction-related impacts. It shall also explicitly detail the process or processes required to restore these temporarily impacted areas. The HRP may include the following Project-specific information and sections, where applicable and feasible:

1. Soils and Seed Bank Management
 - a. The HRP shall include details for topsoil salvage, where practical, and proper storage, and shall identify areas within the construction footprint where topsoil is present, supports native vegetation or common non-native grasses characteristic of the grasslands on the site, does not support dense weed infestations, and can be salvaged and stockpiled for later replacement following ground-disturbing activities.
 - b. The HRP shall require that at 3 to 6 inches of topsoil be salvaged from the areas identified in the plan. These stockpiles shall not be mixed with spoil material, trash, materials such as road base or aggregate, or topsoil containing heavy weed seed banks. The allowable duration for stockpiling and management of stockpiles that will maintain healthy soil conditions shall be stipulated in the HRP. The HRP shall stipulate BMPs to discourage erosion of the topsoil stockpiles, including planting cover crops, roughening the pile, using fiber rolls, employing temporary stabilization measures, or other measures, as determined by the potential for erosion of the pile from rain and wind.

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- c. All redistribution of stored topsoil shall be completed prior to final site inspection (for the close of Project construction work).
 - d. Areas where substantial soil compaction has occurred shall be treated with light ripping or other methods intended to rectify compaction, as recommended by the qualified restoration ecologist. The HRP shall outline the methods for assessing whether substantial compaction requiring active restoration has occurred.
 - e. No fertilization of disturbed soils shall be prescribed unless recommended by a qualified restoration ecologist. As appropriate, highly disturbed soils lacking topsoil replacement may be amended with certified weed-free mulch.
 - f. For wetlands and stream habitats where needs differ from the soil restoration needs in upland soils, the HRP shall stipulate measures to completely restore fragile soils in wetlands and to maintain existing streambed substrate characteristics following restoration of these habitats after temporary disturbance.
2. Temporary Disturbance Mapping
 - a. The HRP shall include detailed figures showing the areas proposed to be temporarily disturbed during Project construction. Such figures shall be updated, as needed, to reflect design changes and areas requiring active restoration actions.
3. Supplemental Restoration Actions
 - a. The HRP will stipulate specific performance criteria that identify when areas require additional methods beyond topsoil replacement and soil restoration. In areas requiring active reseeding beyond topsoil replacement, the species composition proposed for reseeding shall be substantially similar to or improve on pre-construction vegetation community composition, excluding invasive non-native species and rare plant species. The latter may have very specific microhabitat requirements that may not be possible to replicate after disturbance. The intent of the seeding palettes shall be to opportunistically promote native species coverage, remove damaging invasive species, and preserve the integrity of the adjacent vegetation types present within the conserved open space on the site. When applicable, a description of the preferred methods for planting (e.g., hydroseeding, drill seeding, aerial broadcast seeding, or others) within differing habitats or impact types shall be provided, as well as details regarding irrigation, if needed. If seed is to be collected for redistribution from onsite species, collection protocols and areas shall be outlined.
4. Monitoring
 - a. All areas subject to temporary disturbance and included in the restoration effort under the HRP shall be monitored by a qualified restoration ecologist so that restoration objectives can be assessed and relevant recommendations can be made to prevent loss or degradation of adjacent conserved habitats. Monitoring shall consist of both qualitative and quantitative assessment programs.
 - b. Qualitative monitoring of the revegetation areas is sufficient to determine the periodic status and appropriate recommendations to ensure these areas meet the objective of the HRP.
 - c. Qualitative survey results shall discuss species composition, growth and survivorship, germination success, invasive plant infestations, and erosion. The

frequency of the e monitoring would be determined by the qualified restoration ecologist that would implement the HRP. Brief monitoring reports shall be submitted to the City after qualitative monitoring events.

Timing/Implementation: Prior to issuance of a grading permit

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 4 Jurisdictional Resources Mitigation

To compensate for permanent impacts to federally and/or state jurisdictional wetlands (i.e., ragweed mesic meadow, mulefat scrub) in compliance with the no net loss policy, the project shall create ragweed mesic meadow and mulefat scrub habitat at a minimum 1:1 mitigation ratio, with the residual amount based on a 1:1 mitigation ratio being implemented through creation, restoration, and/or enhancement, both to be implemented either (1) within an appropriate mitigation location onsite within the proposed habitat conservation open space to ensure conservation and management in perpetuity; or (2) within an offsite agency-approved wetland mitigation bank. Wetland mitigation requirement total acreage for the project would be 0.30 acre of ragweed mesic meadow and 0.14 acre of mulefat scrub.

To compensate for permanent impacts to oak riparian woodland habitat, the project shall mitigate at a 3:1 ratio for a total of 7.59 acres of oak riparian woodland.

To compensate for permanent impacts to non-wetland waters of the U.S./streambed impacts shall be mitigated at a 1:1 ratio (linear feet preserved: linear feet impacted) for a total of 10,700 linear feet.

Project jurisdictional resource mitigation shall be consistent with wetland regulatory permits and/or agreement conditions of approval.

The applicant shall verify the total acreages required to meet all compensatory wetland mitigation obligations and submit these totals to the City prior to issuance of the first grading permit. The applicant shall then obtain City and wetland regulatory agency approval of the conceptual wetland mitigation plan, the holder of conservation easement(s), and the restrictions created for the permanent protection of these wetland mitigation lands. Documentation of such recorded easement(s) shall be submitted to and approved by the City and regulatory agencies. The City shall review all legal documentation and agreements associated with the establishment and recordation of separate conservation easement(s) for the wetland mitigation sites, if not already within the conservation easement for the proposed reserve, and securing a conservation lands management entity or qualified easement holder/manager.

Timing/Implementation: Prior to issuance of a grading permit

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 5 Conceptual Wetland Mitigation Plan

A project conceptual wetland mitigation plan shall be prepared to present the required mitigation by jurisdictional agencies in order to achieve a “no net loss” of wetland habitats (i.e., mitigation through wetland creation, restoration, and/or enhancement). The conceptual mitigation plan shall provide conceptual revegetation plans, including site preparation, consideration for

hydrology and flood flows, planting designs and materials, as well as maintenance and monitoring success criteria and schedule requirements.

Timing/Implementation: Prior to issuance of a grading permit

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 6 Jurisdictional Resources Impact Avoidance/Minimization

All jurisdictional resources in the project impact area shall be clearly shown on project plans and the project impacts limits marked with highly visible flagging, rope, or similar materials in the field. Further, jurisdictional resources in proximity to impact/construction areas that are to be avoided shall be fenced or flagged for avoidance prior to construction, and a biological monitor shall be present to ensure compliance with avoidance areas. Project staging and laydown activities shall not occur within jurisdictional resources during construction. Access allowed within these features for the purposes of construction in and near such features (e.g., road crossings) shall be clearly delineated on project plan sets, and these allowed work limits shall also be staked in the field, to prevent construction personnel/equipment from impacting avoidance areas in close proximity. Where necessary, silt fencing and/or other storm water BMP's shall be used to protect adjacent jurisdictional resources from sediment transport or other potential indirect runoff/erosion impacts that could result from adjacent grading through the implementation of a stormwater pollution prevention plan (SWPPP) during construction.

The applicant shall submit documentation to the City demonstrating that the applicant is in compliance with the jurisdictional resource avoidance/minimization measures through ongoing reporting of biological monitoring activity on a monthly basis through the preparation and submission of summary monitoring reports.

Timing/Implementation: Prior to construction activities

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 7 Oak Woodland/Tree Impact Minimization

Prior to the commencement of construction, where conserved oak trees occur adjacent to the project impact area, a qualified biologist shall establish a buffer of 50 feet from the driplines of oak trees. The County of San Diego requires a 50-foot oak root zone buffer. The applicant shall submit documentation that either no oak woodlands or no individual oaks were recorded within 50 feet of proposed impact areas, or that appropriate minimization measures have been implemented to minimize impacts to conserved oak trees and oak woodlands prior to issuance of grading permits. Unavoidable construction activities within the buffer shall be monitored by an ISA-certified arborist. All buffers shall be marked using highly visible flagging or fencing. Oak trees within fuel modification zones shall be retained wherever practicable. The applicant shall submit documentation to the County that an ISA-certified arborist has been contracted to develop conserved oak tree TPZs prior to issuance of a grading permit.

During project construction, impacts to native trees proposed to be conserved but in proximity to the project footprint and at risk of being damaged by Project activities shall be avoided and/or minimized to the maximum extent practicable through the establishment, in consultation with an ISA-certified arborist, of Tree Protection Zones (TPZs) that include at least a 50-foot buffer around oak driplines within project disturbance areas. The health and stability of trees is best

protected by minimizing impacts to root systems. Such impacts are typically caused by vehicles, heavy equipment, foot traffic, and stored materials. For all retained trees, the minimum TPZ shall be defined as the area within the tree's dripline, unless incursions within the dripline are specifically reviewed and approved by the ISA-certified arborist. The applicant shall submit documentation of ISA-certified arborists monitoring of any project activity within TPZs. Around each tree or group of trees to be preserved in or next to an impact area, highly visible flagging or fencing shall be erected along the approximate dripline(s) of such protected trees to define the construction boundary and create a TPZ for trunks and roots. Within TPZs, work shall be limited as follows:

1. No storage of equipment or construction materials, parking of vehicles, or operation of equipment shall be permitted within the TPZ unless specifically reviewed and authorized by the ISA-certified arborist. Additional protective measures, such as use of fabric overlain by six inches of wood chips, shall be used to protect the affected rooting areas within the TPZ.
2. No soil shall be removed from within the dripline of any tree, and no fill of additional soil shall exceed two inches within the driplines of trees, unless it is part of approved construction and is reviewed by an ISA-certified arborist. Because trees are sensitive to the addition of fill, excavated material shall either be removed from the site or retained at least one foot away from oak trunks and from as much rooting area as is feasible.
3. Bark injury caused by equipment or materials shall be prevented by the protective fencing described above.
4. Roots exposed by excavation shall be pruned and recovered as quickly as possible to promote callusing, closure, and healthy regrowth. Where excavation occurs within TPZs, the following root-severing procedures shall be followed during excavation and trenching unless otherwise approved by an ISA-certified arborist: gently expose and cleanly sever roots one foot farther from the tree than the final limit of grading, then hand-dig the final foot of width. Roots are then cleanly pruned to the side wall of the excavation with a saw, narrow trencher with sharp blades, or clippers. Hydraulic or pneumatic excavation technologies that expose and minimize damage to roots may be used. Exposed roots shall be draped immediately with at least two layers of untreated burlap or carpets, secured to cover the excavated surface to a depth of 3 feet. Burlap or carpeting (or temporary fill) shall be soaked nightly and kept in place until the excavated surface is backfilled and watered.
5. All tree work shall be guided by an ISA-certified arborist, and work shall be completed by qualified tree service personnel.
6. Oaks shall not be trimmed during periods of rapid growth in the spring and early summer, to prevent growth of deformed "witches brooms."
7. Where trees are removed within 15 feet of retained trees, roots of the removed tree shall be severed by grinding the stump to grade or slightly below grade, rather than excavating the stump. If grinding is infeasible, sharp vertical cuts shall be made at the limits of approved excavation before pushing over or excavating the root wad and trunk.
8. Special construction methods that minimize root loss may be necessary to permit healthy retention of certain trees. These measures may include, but are not restricted to,

minimizing native soil excavation or using forms to retain subgrade and surfacing slightly above the existing soil surface. Posts or caissons shall be attached to retention structures, including forms, in place of continuous structures.

9. Semipermeable surfaces shall be used wherever feasible for proposed road, parking, or walkway surfaces that cross the roots of trees.
10. Wood chips or other mulch shall be applied to TPZs within 15 feet of construction activities; however, chips and mulch shall not be left mounded against tree trunks.

Timing/Implementation: Prior to construction activities; during project construction activities

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 8 California Gnatcatcher Breeding Season Avoidance and Minimization Measure

All vegetation clearing activities shall be conducted outside of the federally-listed California gnatcatcher occupied habitat during the breeding season (February 15 to August 15) to avoid impacts to nesting gnatcatchers. Additionally, for any work proposed adjacent to gnatcatcher occupied habitat during the gnatcatcher breeding season, occupied habitat shall be delineated by orange biological fencing to ensure that no work shall occur within gnatcatcher occupied habitats.

Further, within areas adjacent to gnatcatcher occupied habitat, onsite noise reduction/attenuation techniques shall be incorporated during the gnatcatcher breeding season. In addition, noise monitoring may be required to ensure that the potential elevated construction noise levels are appropriately attenuated at the edge of occupied habitat to a level that is not expected to adversely affect nesting bird behavior (i.e., not to exceed an hourly average of 60 dB(A) or ambient whichever is greater, at the edge of any occupied territory).

Timing/Implementation: Prior to construction activities; during project construction activities

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 9 MBTA/CFG Code Bird Breeding Season Avoidance/ Preconstruction Surveys for Nesting Birds

To avoid any direct impacts to migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game (CFG) Code Sections 3503 and 3513, respectively, the removal of habitat that supports active nests in the proposed area of disturbance shall occur outside of the general breeding season for these categories of birds (County of San Diego recognized MBTA breeding season is February 15 to August 31).

If construction-related vegetation clearing and grubbing activities cannot be conducted outside the general avian breeding season (February 15th to August 31st), then pre-construction active nest surveys shall be conducted within potentially suitable nesting habitat.

All gnatcatcher occupied habitat must be avoided during the gnatcatcher breeding season. This requirement is therefore not applicable to gnatcatcher occupied habitat.

Not more than 5 days prior to initiation of construction activities (including mobilization, staging and ESA fence installation) during the bird breeding season, a qualified biologist shall conduct pre-construction surveys for nesting birds protected under the MBTA and CFG Code Sections 3503 and 3513. The survey area for nesting bird species shall include the disturbance footprint

plus a 100-foot buffer. The surveys shall be repeated prior to the restart of construction activities that have been dormant onsite for up to 3 weeks, and prior to the start of each successive breeding season for each subsequent year of construction to ensure that construction activities avoid impacts to nesting birds.

If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 30 to 500 feet based on the species and the current and anticipated disturbance levels occurring in vicinity of the nest. The objective of the buffer shall be to reduce disturbance of active nesting birds. All buffers shall be marked using high-visibility flagging or fencing, and, unless approved by the qualified biologist, no construction activities shall be allowed within the buffers until the young have fledged from the nest.

At the completion of the pre-construction MBTA/CDFG Code nest surveys, the applicant shall submit documentation to the City that either 1) no nesting birds were recorded within the area to be cleared, grubbed, and/or graded within the project site surveyed by the qualified biologist, or 2) appropriate avoidance measures were implemented in consultation with the qualified biologist to ensure avoidance of impacts to an active nest or nesting bird protected under MBTA and CFG Code prior to the start of construction activity.

Timing/Implementation: Prior to construction activities; during project construction activities

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 10 Night Lighting Spill Avoidance

To ensure project artificial night lighting for the project development would not spill into the onsite habitat conservation open space, a lighting plan or comparable document shall be prepared and implemented to shield and/or direct night lighting sources away from the onsite conservation open space.

Timing/Implementation: Prior to issuance of grading permit

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 11 Biological Construction Monitoring

Prior to vegetation/ground disturbance or site mobilization activities, a qualified biologist(s) shall be retained by the applicant to monitor the project construction activities. The applicant shall submit documentation to the City demonstrating that the applicant has contracted qualified biologists to conduct biological monitoring prior to issuance of a grading permit. The applicant shall also report results of biological monitoring activity to the City on a monthly basis through the preparation and submission of summary monitoring reports. Each qualified biologist shall have demonstrated expertise with the special status plants and wildlife of the region. Expertise must include the ability to recognize special status and common species of the region, as well as sign, including scat, pellets, tracks, hair, fur, feathers, dens, and burrows. One or more of the qualified biologists shall also, as necessary, have the ability to monitor, handle, and relocate (where practical) special status species observed within the construction footprint. This activity does not apply to California gnatcatcher, the only federally listed species onsite, since the project construction would not occur during the gnatcatcher breeding season within the gnatcatcher occupied habitat. Further, additional measures may be required for gnatcatchers through the annexation agreement transfer of take from the County to the City.

The qualified biologist(s) shall monitor the installation of the construction temporary fencing and/or flagging, silt fencing, and other BMP's along the construction limits prior to construction activities. The qualified biologist shall be present during all initial vegetation clearing and grubbing ground-disturbing activities.

If a special status wildlife species is encountered during project construction, the following protocol shall be implemented to minimize losses of individual special status animals:

1. All work that could result in death, or injury of an individual animal shall be monitored by a qualified biologist; and
2. When practical, the qualified biologist shall remove the individual animal to an appropriate relocation site outside the project impact areas, or the individual animal shall be allowed to leave unimpeded. If construction activities have been diverted or halted for wildlife rescue as directed by the qualified biologist(s), construction shall be allowed to resume as soon as the individual animal either leaves or is removed from the disturbance area.

Since the project construction would be implemented in seven phases over several years, prior to the initiation of construction activities for each subsequent new development phase, a qualified biologist shall assess the construction area to determine the presence of suitable habitat for sensitive species that were not present or not expected to be present during the previous biological surveys to ensure that no impacts to these species would occur as analyzed in the project biological technical report.

Timing/Implementation: Prior to issuance of grading permit; during project construction

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 12 Biological Construction Best Management Practices

The following Best Management Practices (BMPs) shall be implemented to avoid and minimize impacts to special status species.

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1. Prior to ground disturbance, all permanent and temporary disturbance areas shall be clearly delineated by stakes, flags, or another clearly identifiable system.
 2. To minimize disturbance of areas outside the project site, all construction and operation vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas shall be included in pre-construction surveys and, to the extent possible, shall be established in locations disturbed by previous activities to prevent further impacts.
 3. Construction and operation vehicles shall observe a 25 mile-per-hour (MPH) maximum speed limit during daylight hours within Project areas, except on county roads and state and federal highways. During limited night-time activities, all construction vehicles shall observe a 20 MPH speed limit. Speed limit signs shall be installed at the project site entrance and every half mile along the project site access roads, and at the end points of the roads upon initiation of site disturbance and/or construction.
 4. Materials that could provide shelter/nesting habitat for birds during the nesting season may be covered with netting or treated with other exclusion methods, where feasible and appropriate, to prevent birds from constructing nests. In addition, materials such as wooden pallets, wooden power poles, and metal tubing, providing nesting and shelter habitat for birds during the nesting season and artificial refugia for other special-status species shall be thoroughly inspected before use.
 5. If encountered, wildlife within the project site shall be allowed to escape unimpeded, removed by a qualified biologist and placed in a designated safe area away from construction activities, or left in place when required by regulations, policies, permits, and/or conditions of approval.
 6. To prevent entrapment of special-status wildlife, all excavations (e.g., steep-walled holes, or trenches) more than six inches deep shall be fitted with at least one escape ramp constructed of earth dirt fill, wooden planks, or another material that wildlife could ascend. All excavations more than six inches deep shall be inspected daily for entrapped wildlife before construction activities begin. Before excavations are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered shall be allowed to escape unimpeded before construction activities resume or shall be removed from excavated areas by a qualified biologist and released at a safe nearby location.
 7. Avoidance and minimization of impacts on sensitive biological resources within active construction areas shall be aided through identification of ESAs with flagging or fencing.
 8. Dust suppression shall occur during construction activities when necessary to meet air quality standards and protect biological resources.
 9. No vehicles or equipment shall be refueled or undergo maintenance within 100 feet of a jurisdictional waters feature. Spill kits shall be maintained on the site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of contaminated fluids.
 10. All general trash, food-related trash items (wrappers, cans, bottles, food scraps, cigarettes, etc.), and other human-generated debris scheduled to be removed shall be stored in animal-proof containers and removed from the site on a regular basis (weekly

during construction, and at least monthly during operations). No deliberate feeding of wildlife shall be allowed.

11. If necessary, construction-related night lighting sources shall be minimized, and designed (e.g., using shielding and/or downcast lights) to limit the lighted area to the minimum necessary contained within the construction limits. No light spillover shall be allowed outside of the construction limits or light pollution into the sky to avoid any adverse effects to wildlife species.
12. Use of chemicals, fuels, lubricants, or biocides shall be in compliance with all local, state, and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation. Use of first- and second- generation rodenticides shall not be permitted except for the limited use of zinc phosphide, or a rodenticide approved by the City, and only after other means of pest control (e.g. rodent traps) have proven to be ineffective.
13. Cap Vertical Pipes and Piles. To prevent cavity-dwelling birds from entering open vertical pipes and piles, all open vertical pipes and piles shall be capped or otherwise modified to prevent use by birds. Caps or other modifications shall be put in place before or immediately after pipe or pile installation. All caps or other exclusionary modifications shall be maintained for the duration of construction and operation. A qualified biologist shall periodically monitor the site to ensure that all pipes or piles are appropriately capped.

The applicant shall include details regarding construction BMPs in biological monitoring status reports that are to be submitted to the City as outlined in MM BIO-11.

Timing/Implementation: Prior to the initiation of construction activities or during construction activities

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

MM-BIO 13 Worker Environmental Awareness Program

The applicant shall retain qualified biologists to prepare a Worker Environmental Awareness Program (WEAP) that shall be presented to all construction personnel and employees before any ground-disturbing activities commence at the project site. This presentation shall explain to construction personnel how best to avoid impacts to special status species during construction. The program shall consist of a brief presentation explaining listed and other special status species concerns to all personnel involved in the project. The program shall include a description of all special status species potentially on the project site and their habitat needs; an explanation of the status of the species and their protection under the state and federal regulations; specific mitigation measures applicable to listed and other special status species; permit conditions, and the penalties for violation of applicable laws.

The program shall also explain to construction personnel how to minimize impacts to jurisdictional waters, including wetlands. The program shall include a description of jurisdictional waters on the site, specifically permitted impacts to jurisdictional waters, measures to protect waters to be avoided, and maps showing the location of jurisdictional waters and

permitted impact areas. If acceptable to agencies, the program shall be recorded electronically, and all future employees shall be required to review the recording before the initiation of work on the project site. The WEAP shall be implemented by the applicant before the start of vegetation clearing, grubbing, and/or ground disturbance and shall be continued through the construction phase for all new construction personnel.

Timing/Implementation: Prior to the issuance of a grading permit; prior to project construction activities

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

6.0 Permitting Requirements

Wetland Regulatory Permitting:

Since the proposed project would impact jurisdictional resources regulated by ACOE, RWQCB, CDFW, and/or the County, the following wetland regulatory permits and/or agreements would be required for the project: ACOE 404 permit, RWQCB 401 water quality certification, CDFW 1602 Streambed Alteration Agreement. Through the permitting processes, these applicable regulatory agencies would require appropriate mitigation for unavoidable project impacts to jurisdictional resources (typically consistent and not in addition to the mitigation required under CEQA). Further, it is anticipated that the ACOE would consult with USFWS through Section 7 consultation to obtain take authorization for California gnatcatcher during the 404 permit process.

South County MSCP- Incidental Take Authorization for California Gnatcatcher.

Since the potential proposed impacts to gnatcatcher would occur predominately within the approved South County MSCP Subarea, the adopted Habitat Conservation Plan would be able to provide incidental take authorization for gnatcatcher, a MSCP Covered Species. The proposed annexation agreement language would be agreed upon between all involved parties (County, Wildlife Agencies, City, and applicant) to potentially provide a transfer of take authorization for Covered Species and in particular California gnatcatcher from the County of San Diego to the City of Escondido.

North County MSCP Habitat Loss Permit

The project would prepare Draft NCCP 4d Findings to ensure consistency with the North County MSCP Planning Agreement and in support of a Habitat Loss Permit that is required for the project's proposed permanent loss of coastal sage scrub habitat in the Draft North County MSCP Subarea.

Multi-Party Annexation Agreement

Through implementation of the multi-party annexation agreement for the proposed project, the proposed project habitat conservation and loss acreages would be retained within the County of San Diego's MSCP tracking system. The project's proposed onsite habitat conservation open space reserve would contribute to the County's habitat conservation goals as provided in the adopted South County MSCP, and the County would retain conservation allocation accounting opportunity to fulfill its MSCP preserve goals.

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