APPENDIX B – BIOLOGICAL TECHNICAL REPORT

BIOLOGICAL TECHNICAL REPORT FOR THE PROPOSED OTAY LAKES CAMPGROUND PROJECT San Diego County, CALIFORNIA

PRIVILEGED AND CONFIDENTIAL COMMENTS

ATTORNEY CLIENT COMMUNICATION / ATTORNEY WORK PRODUCT

Prepared for:

Boy Scouts of America
San Diego – Imperial Council
1207 Upas Street
San Diego, California 92103

Prepared by:

CHAMBERS GROUP, INC.
5 Hutton Centre Drive, Suite 750
Santa Ana, California 92707
(949) 261-5414

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GLOSSARY OF TERMS AND ACRONYMS

California Rare Plant Rank (CRPR)

List 1A	=	Plants presumed extinct in California.
List 1B	=	Plants rare and endangered in California and throughout their range.
List 2	=	Plants rare, threatened, or endangered in California but more common elsewhere in their range.
List 3	=	Plants about which we need more information; a review list.
List 4	=	Plants of limited distribution; a watch list.

CRPR Extensions

0.1	=	Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2	=	Fairly endangered in California (20-80 percent occurrences threatened).
0.3	=	Not very endangered in California (less than 20 percent of occurrences threatened).

Federal

FE	=	Federally listed; Endangered
FT	=	Federally listed; Threatened

State

ST	=	State listed; Threatened
SE	=	State listed; Endangered
SC	=	State Candidate for listing
RARE	=	State-listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
BCC	=	Birds of Conservation Concern
SSC	=	State Species of Special Concern
FP	=	CDFW Fully Protected

Local

MSCP	=	San Diego County Multiple Species Conservation Plan South County Segment; Covered

°F	Degrees Fahrenheit
BGEPA	Bald and Golden Eagle Protection Act
BCC	Birds of Conservation Concern
BMPs	Best Management Practices
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
Chambers Group	Chambers Group, Inc.
CNDDB	California Natural Diversity Database

CNPS	California Native Plant Society
COPE	Challenging Outdoor Personal Experience
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
FESA	Federal Endangered Species Act
Ft.	Feet
GIS	Geographic Information System
GPS	Global Positioning System
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Plan
NCCP	Natural Community Conservation Plan
NOAA	National Oceanic and Atmospheric Administration
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
PFO	Potential for Occurrence
RWQCB	Regional Water Quality Control Board
SQ. FT.	Square Feet
SSC	California Species of Special Concern
SWRCB	State Water Resources Control Board
TNW	Traditional Navigable Waterway
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

This Biological Technical Report (BTR) has been prepared for the County of San Diego (County), as the lead agency under the California Environmental Quality Act (CEQA), for the Otay Lakes Campground Project (Proposed Project). The Proposed Project is located within the County's Multiple Species Conservation Program (MSCP) South County Subarea Plan, in an area designated as a "take authorized area" where no additional biological mitigation is required (for impacts to species covered under the plan) for development to occur. The purpose of this report is to document the biological resources identified as present or potentially present on the Project; identify potential biological resource impacts resulting from the Project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state and local rules and regulations under CEQA and MSCP South County Subarea Plan. This BTR incorporates the results of a biological reconnaissance survey and focused surveys.

The Proposed Project includes the development of new and restoration of existing camping facilities, a flag plaza, archery range, fire ring and amphitheater, zip-line, demolition of existing restroom and construction of a new and larger restroom facility with showers overlapping the existing restroom footprint, development of an activity/program area ('Camporee Field'), construction of a fenced storage facility, development of six Challenging Outdoor Personal Experience (COPE) stations, and minor road improvements on County property adjacent to existing active recreational facilities of Otay Lakes County Park. Each of these elements associated with the Proposed Project are explained in further detail within Section 1.3 of this report. The initial site survey was conducted over an approximately 69-acre parcel surrounding Proposed Project features (Study Area). Impacts to habitat were calculated for all project features and anticipated work areas (Project Area), as described in Section 1.3.

The northern portion of the Study Area includes a developed portion of the Otay Lakes County Park consisting of a playground, picnic area, and public restrooms. The remaining portion of the Study Area primarily consists of open space with previously developed campsites and restrooms that are no longer in use, as well as active hiking trails. The Otay River runs through the southern portion of the Study Area. The Project Area is primarily located within previously developed and disturbed areas and utilizes the existing hiking trails.

No listed plant species were identified within the Study Area. One species, San Diego viguiera (*Bahiopsis laciniata*; California Rare Plant Rank [CRPR] List 4.3 and not MSCP-covered), occurs on or near the edge of several Proposed Project features. This species will be flagged for prior to construction and avoided to the extent feasible. Multiple populations of ashy spike moss (*Selaginella cinerascens*; CRPR List 4.1 and not MSCP-covered), and San Diego barrel cactus (*Ferocactus viridescens*; CRPR List 2B.1 and MSCP-covered) are located adjacent to existing access roads and trails; all impacts associated with these features will occur to the existing bare ground of the feature during routine maintenance, with no added impacts as a result of Proposed Project-related activities. The remaining six sensitive plant species observed within the Study Area are far enough removed from the existing facilities that they are not anticipated to be impacted by Proposed Project-related activities. The remaining 60 plant species known from the vicinity are not expected to occur within the Study Area based on the results of focused surveys. Therefore, no significant impacts to sensitive plants are anticipated as a result of the Proposed Project.

One listed sensitive wildlife species that is not covered by the County of San Diego MSCP, the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB), was identified as present in the Study Area. This species was found on a west-facing slope on the eastern side of the Study Area, and suitable habitat with host plant was mapped in several areas of the Study Area. The Proposed Project

features have been designed to maintain a 100-foot buffer from host plants and QCB observation locations. In addition, through coordination with the County of San Diego and United States Fish and Wildlife Service (USFWS), mitigation measures have been developed which require physical barriers between host plant locations and permanent Proposed Project components, and environmental awareness training for personnel entering the site during construction and operation of the Proposed Project. Therefore, impacts to sensitive wildlife are anticipated as a result of the Proposed Project.

In addition to QCB, five sensitive wildlife species were observed within the Study Area, including two-striped gartersnake (*Thamnophis hammondii*), red diamond rattlesnake (*Crotalus ruber*), Cooper's hawk (*Accipiter cooperii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and least Bell's vireo (*Vireo bellii pusillus*). A total of 12 wildlife species have a high potential for Occurrence (PFO) including: western spadefoot (*Spea hammondii*), orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), coast horned lizard (*Phrynosoma blainvillii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), coastal California gnatcatcher (*Polioptila californica californica*), grasshopper sparrow (*Ammodramus savannarum*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and mule deer (*Odocoileus hemionus*). A total of eight wildlife species have a moderate PFO including: Baja California coachwhip (*Masticophis fuliginosus*), Townsend's big-eared bat (*Corynorhinus townsendii*), northern harrier (*Circus hudsinius*), southwestern willow flycatcher (*Epidonax trallii extimus*), least bittern (*Ixobrychus exilis*), yellow warbler (*Setophaga petechia*), San Diego desert woodrat (*Neotoma lepida intermedia*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). Various mitigation measures are proposed to minimize potential impacts to the above listed wildlife and plant species, such as but not limited to: any trimming and/or removal of coastal sage scrub habitat shall be conducted outside of the bird breeding season (outside of the period from February 15 through August 30), a monitor should conduct a nesting bird survey prior to construction related activities, and an environmental awareness training should be conducted prior to construction related activities. Therefore, impacts to sensitive wildlife as a result of the Proposed Project are anticipated to be less than significant.

Although jurisdictional features include the Otay River occur within the Study Area, these features are over 250 feet from Proposed Project features. No historic jurisdictional waters or wetlands are mapped near the Proposed Project features and associated work areas, and no potential water features were observed within the Project Area during the surveys.

Construction related to the Proposed Project would result in approximately 1.73 acres of permanent impacts to the surrounding developed lands and vegetation communities. This includes 1.14 acres of brome grass-wild oat grassland and 0.20 acre of California Sagebrush Scrub habitat. The remaining 0.59 acre of permanent impacts will to Bare Ground, Developed land, Landscape/Ornamental, and Disturbed areas.

Construction related to the Proposed Project would result in approximately 0.51 acres of temporary impacts to the surrounding developed lands and vegetation communities. There will be a temporary loss of approximately 0.12 acre of brome grass-wild oat grassland and California Sagebrush Scrub habitat during construction, which shall be restored to pre-construction conditions to the extent feasible after the Proposed Project is complete. The remaining 0.39 acre of temporary impacts will be to Bare Ground, Developed land, Landscape/Ornamental, and Disturbed areas.

Section 1.0 – INTRODUCTION

1.1 PURPOSE OF THE REPORT

Chambers Group, Inc. (Chambers Group) was retained by the Boy Scouts of America (BSOA) to conduct a literature review, desktop analysis, and field survey to map vegetation communities and identify rare or sensitive resources within and adjacent to the proposed Otay Lakes Campground project (Proposed Project); the Proposed Project is described in greater detail in Section 1.3, below. During the biological assessment, biologists documented vegetation communities and determined the Potential for Occurrence (PFO) of sensitive species and habitats that could support sensitive plant and wildlife species onsite. Information contained in this Biological Technical Report is in accordance with accepted scientific and technical standards that are consistent with the requirements of United States Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the County of San Diego.

The purpose of this report is to document the biological resources identified as present or potentially present on the Proposed Project; identify potential biological resource impacts resulting from the Proposed Project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state, and local rules and regulations including the California Environmental Quality Act (CEQA) and the San Diego County Multiple Species Conservation Program (MSCP) South County Subarea Plan.

1.2 PROJECT LOCATION

Otay Lakes County Park is located at 2270 Wueste Road in Chula Vista, California, San Diego County. The Proposed Project would occur within a 69-acre parcel of County of San Diego-owned property (APN: 644-10-019) within Otay Lakes County Park, herein referred to as the "Study Area" for the Proposed Project (Figure 1). The Study Area encompasses a larger area than what will be directly impacted for the Proposed Project in order to 1) adequately assess the biological resources within and adjacent to the Proposed Project features and associated work areas (herein referred to as the "Project Area") and 2) design the Proposed Project to avoid and minimize impacts to sensitive biological resources to the extent feasible.

The Study Area is located between Lower Otay Lake and Otay River along a gently sloping hillside on the northern escarpment of the Otay River Valley. Elevation in the Study Area ranges from approximately 255 to 662 feet above mean sea level (amsl). The northwestern quadrant of the Study Area is an active recreational site of Otay Lakes County Park consisting of a playground, landscaping, picnic area, restrooms, and parking lot. Well-maintained hiking trails and access roads originate from the parking lot and meander through open space within the remainder of the Study Area. A former campground that has been inactive for a number of years is situated in the approximate center of the Study Area. Existing facilities within this former campground include a large graded area, tent sites, and abandoned restroom facilities. The eastern portions of the Study Area consist of undeveloped lands dominated by a matrix of open scrub and grassland habitat. The southern areas of the Study Area are dominated by the steep rocky gorge of the eastern Otay River Valley. The Otay River is impounded by Savage Dam (located northeast of the Study Area) that last overflowed into the Otay River (Figure 2) in 2017 (Burks 2017). The Otay River flows east to west across the lower portions of the Survey Area and continues for approximately 25 miles before emptying into San Diego Bay. A diverse density and species composition of invasive species are located throughout the native habitat of the Study Area, most heavily concentrated along access roads in the unused portion of the park.

1.3 PROJECT DESCRIPTION

The Proposed Project includes the development of new camping facilities, a flag plaza, archery range, fire ring and amphitheater with an associated stage, zip-line, demolition of existing restroom and construction of a new and larger restroom facility with showers overlapping the existing restroom footprint, development of the Camporee Field, construction of a fenced storage facility, development of six Challenging Outdoor Personal Experience (COPE) stations, restore six existing camping sites, and minor road improvements, as necessary, on County property adjacent to Otay Lakes County Park; the location of each is detailed in Figure 3.

The following sections discuss each component of the Proposed Project.

1.3.1 Camping Facilities

The camping facilities component of the Proposed Project would include the establishment of seven new multipurpose campsites and rehabilitation of six existing campsites that are conducive to family-style or group camping. Each campsite would require surface preparation (i.e. site clearing and ground leveling) to adequately accommodate tents and would be located near a water source. Existing campsites, currently in disrepair, would be restored for camping purposes; work associated with the restoration of existing campsites would also require site clearing and ground leveling. It is anticipated that each campsite would be multipurpose, serving as an instructional and activity area and as a campsite. Each campsite would have a small, hard-covered area for food and personal equipment storage with two picnic tables and would be designed to accommodate 6 to 8 people. It should be noted that the camping facilities will be available for reservation by youth organizations or other not for profit organizations. Reservation approval would be at the sole discretion of BSA. Additionally, BSA would provide appropriate staffing for the days that outside organizations reserve the Proposed Project site.

1.3.2 Flag Plaza

The flag plaza would include construction of a concrete slab that would accommodate three flag poles. The flag plaza would be erected as a place of ceremony, commemoration, and communication, and would be located adjacent to the new campsite associated with the Proposed Project. The Flag Plaza would be approximately 30 feet (ft.) by 10 ft. and the flag poles would be approximately 25 feet in height. The areas adjacent to the Flag Plaza, including the area associated with the new campsites provide a place for youth to stand during ceremonies. A 15-foot temporary impact buffer will be established during construction to account for equipment positioning, staging, and access.

1.3.3 Restroom Facilities

The existing restroom facility, which is currently not in operation, would be demolished and replaced with a new comfort station. The new restroom facility would include twelve single-user bathrooms, two showers to support large group camping, family restrooms, and showers. The footprint of the restroom facility would be approximately 60 ft. by 30 ft. The replacement comfort station would be connected to the existing park sewer infrastructure and the showers would be coin operated. The new restroom facility would be designed for energy efficiency, including solar panels with an auxiliary battery storage system. All restroom facilities will comply with the Americans with Disabilities Act (ADA) and current state regulations. A 15-foot temporary impact buffer will be established during construction to account for equipment positioning, staging, and access.

1.3.4 Camporee Field

The primary activity/program area, or Camporee Field, would be developed to host large groups of up to 400 people; the Camporee Field area would require minor brush clearing to accommodate groups within the designated area. The Camporee Field would be four acres in size and would be used as a large activity field for traditional games (i.e. capture the flag, tag, tug-of-war, relay races, etc.), teambuilding activities, trainings, and ceremonies. Additionally, the Camporee Field area will be used as an overflow camping area. Although Camporee Field will not have a delineated campground area, overflow camping would be possible within the area designated as Camporee Field. These sites would only be available for camping during the special event weekends. The field will be maintained and/or mowed on an 'as needed' basis to keep non-native and shrub species from establishing to facilitate utilization.

Additionally, to serve the Camporee Field in the lower portion of the Proposed Project site, the Proposed Project will utilize portable toilets. The portable toilets would be delivered to the Proposed Project site prior to the special event weekends and picked up following the special event weekends. However, the County of San Diego is currently working on permitting and design of a permitting sewer service connection to the Proposed Project site. The County of San Diego has reached an agreement with the City of Chula Vista to tie into the City of Chula Vista's municipal sewer system south of the Proposed Project site. Although the permitting process for sewer service is underway, approval is expected following completion of this IS/MND.

1.3.5 COPE Course

The COPE Course would include six stations (four stations at 10 ft. by 20 ft., one plot at 20 ft. by 30 ft., and one at 15 ft. by 15 ft.) and would be located adjacent to an existing trail. General activities at each station include team initiative games that would require a group of participants to plan and work together to solve a problem or accomplish a goal. Most involve the team moving some or all members through or across an element made of wood and rope; each activity would be designed to be disabled when not in use. The stations would be designed in a way that guides users from one station to the next with the final station leading to the zip-line platform. When not in use, the COPE Course stations would be disassembled. Site preparation for the COPE Course stations include brush clearing and ground leveling.

1.3.6 Zip-line

The zip-line would include one platform and support columns at the top of the zip-line and one platform and support columns at the end. The upper platform would be approximately 15 ft. by 30 ft. and the lower platform would be 35 ft. by 40 ft. The platform and support column would be made from wood or trex. The distance from the upper platform to the lower platform is approximately 900 ft. The height of the support columns would be approximately 30 ft. high and the height of the zip-line would be approximately 25 ft. Installation of the poles would require a 3 ft. by 3 ft. work area to drill the holes approximately 5 ft. deep. Additionally, two anchor screws approximately 6 to 10 ft. from the support columns would be required for tension. The zip-line proposed is defined under California Labor Code § 7921 as a commercial zip-line; therefore, zip-line is subject to the California Division of Occupational Safety and Health regulatory authority. Prior to issuance of a permit, the zip-line must be evaluated by a professional engineer, and components would be tested to recognized standards. Additionally, the zip-line would always be operated by a trained professional. A 15-foot temporary impact buffer surrounding the zipline base stations will be established during construction to account for equipment positioning, staging, and access. In addition, the anchors will require a 3 ft. by 3 ft. temporary work area for installation and guy

wire attachment. If a pulling rig is required to ensure proper tension of the zip line, the puller will be located within the adjacent access road at either end of the line.

1.3.7 Fenced Storage

Storage facilities would be constructed with two large cargo containers adjacent to the new campsites; the storage containers would be inside a fenced area. Construction of the storage areas would require minor brush clearing and fence installation. The storage containers are 20 ft. by 20 ft. with a peak height of 12.5 ft. The storage containers would provide a secure storage area for equipment and materials used for instruction and enjoyment of the local surroundings, such as, but not limited to: mountain and road bikes, archery equipment, fishing rods, canoeing accessories, zip-line equipment, and/or COPE course equipment. It should be noted that no hazardous materials, aside from routine maintenance and cleaning supplies, would be stored in the storage facilities.

1.3.8 Proposed Project Site Circulation

The Proposed Project would include minor road improvements, as necessary, to the existing dirt road servicing the Proposed Project site. Improvements would involve minor ground leveling and pothole maintenance (i.e. decomposed granite installation) where needed. All vehicles travelling on access roads within the Proposed Project site, including porta-potty haulers, would be trucks or other utility vehicles capable of travelling on uneven dirt roads. The roads would be improved as needed to ensure safe travel within the Proposed Project site. All vehicles travelling within the Proposed Project site would be limited to 10 miles per hour and vehicles would be restricted to the existing dirt roads within the Proposed Project site. It should be noted that the roads are currently used by City and County vehicles for maintenance activities associated with the park and Lower Otay Reservoir.

1.3.9 Fire Ring and Amphitheater

The Proposed Project would include the construction of an amphitheater which includes an approximately 150 square foot stage and seating for approximately 100 people. Additionally, a fire ring three feet in diameter will be installed. The stage and seating would be constructed of wood. Minor brush clearing and ground leveling may be required; however, the site would not require grading or significant earthwork to accommodate the amphitheater. Events at the amphitheater would likely include programmed activities (i.e. informational presentations or talent shows). It should be noted that campfires contained within the fire ring would not be allowed during National Oceanic and Atmospheric Administration (NOAA) Red Flag days. A 15-foot temporary impact buffer will be established during construction to account for equipment positioning, staging, and access.

1.3.10 Archery Range

The Proposed Project would include the establishment of an archery range along the western edge of the Study Area in a generally northwest-southeast orientation. The range would include temporary bumpers that will be set up along the eastern and western sides of the range to contain any stray arrows and associated impacts associated with retrieval of lost arrows. The archery range is anticipated to be approximately 50 ft. by 100 ft. and south of an existing access road.

1.3.11 Construction Activities

Construction of the Proposed Project is anticipated to occur in a single phase, with the exception of the restroom facility, over a period of 6 months and is anticipated to take place from approximately January 2020 to June 2020. It should be noted that the restroom facility may be constructed at a later date.

Construction equipment utilized for the Project would include: a cement truck, truck mounted crane, augurs, a motograder for ground leveling, and hand tools for minor brush clearing.

1.4 Approvals and Permits Required

The County of San Diego is the lead agency under CEQA and is responsible for the approval and implementation of the Proposed Project. There are no responsible or trustee agencies.

Section 2.0 – APPLICABLE REGULATIONS

The following federal, state, and local regulations and policies pertain to biological resources and are relevant to the Proposed Project.

2.1 FEDERAL

The following are federal policies that apply to the Proposed Project.

2.1.1 Clean Water Act

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of fill material into waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater 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" (33 CFR § 328.3(b)). The goals and standards of the CWA are enforced through permit provisions. The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit.

When a project may create impacts for wetlands, the project requires a permit or a waiver. Substantial impacts to wetlands may require an Individual Permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required from the Regional Water Quality Control Board (RWQCB) for Section 404 permit actions.

Clean Water Rule

The Clean Water Rule: Definition of Waters of the United States—published in the Federal Register on June 29, 2015 and effective August 28, 2015—was enacted to ensure that waters protected under the CWA are more precisely defined and predictably determined.

2.1.2 Federal Endangered Species Act of 1973

When a private project that has no federal funding and for which no federal action is required may affect a listed species, the private applicant may receive authorization for incidental take of species listed under the Federal Endangered Species Act (FESA). In these situations, Section 10 of the FESA provides for issuance of incidental take permits (ITPs) to private entities with the development of a Habitat Conservation Plan (HCP). An ITP allows take of the species that is incidental to another authorized activity.

*Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) Critical Habitat Definition*

The QCB was listed as an endangered species on January 16, 1997 (62 FR 2313) and is protected under the provisions of the Endangered Species Act of 1973, as amended. Primary constituent elements (PCEs) for QCB Critical Habitat defined in the FR designating critical habitat for QCB (74 FR 28775) include, but are not limited to:

- Plant communities in their natural state or those that have been recently disturbed (e.g., by fire or grubbing) that provide populations of host plants, dwarf plantain and wooly plantain (*Plantago patagonica*), and nectar sources for the QCB.
- Habitat suitability is determined by larval host plant density, topographic diversity, nectar resource availability, and climatic conditions.
- PCEs can exist in undeveloped areas that support various types of sage scrub, chaparral, grassland, and similar plant communities that provide habitat for host and nectar sources.

2.1.3 Migratory Bird Treaty Act, as Amended

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC 703-711), provides legal protection for almost all bird species occurring in, migrating through, or spending a portion of their life cycle in North America by restricting the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. USFWS determined it was illegal under the MBTA to directly kill or destroy an active nest (nest with eggs or nestlings) of, nearly any bird species (with the exception of non-native species through the MBTA Reform Act of 2004). Certain game bird species are allowed to be hunted for specific periods determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities:

- Falconry
- Raptor propagation
- Scientific collecting
- Special purposes, such as rehabilitation, education, migratory game bird propagation, and salvage
- Take of depredating birds, taxidermy, and waterfowl sale and disposal

The regulations governing migratory bird permits can be found in Title 50, Part 13 (General Permit Procedures) and Part 21 (Migratory Bird Permits) of the CFR.

2.1.4 Bald and Golden Eagle Protection Act, as Amended

The Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended (16 USC. 668-668c), provides legal protection to bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) in addition to protection afforded under the MBTA. The BGEPA prohibits the "take" (to pursue, shoot, shoot at, wound, kill, capture, trap, collect, molest, or disturb) of bald and golden eagles including their nests, eggs, or parts. "Disturbance" of bald and golden eagles is also prohibited under the BGEPA; and "disturbance" relates to injuries to bald or golden eagles or a disruption to life cycles, productivity, and/or substantial interference of normal bald and golden eagle behavior. The BGEPA also extends to potential impacts to bald and golden eagles caused by human-induced environmental changes near a previously used nest when the eagles are not present.

2.2 STATE

The following sections detail specific California State regulations are applicable to the Proposed Project.

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Wildlife Code Sections 2050-2116) parallels the FESA. As a responsible agency, CDFW has regulatory authority over species State listed as endangered and threatened. The State Legislature encourages cooperative and simultaneous findings between State and federal agencies. Consultation with CDFW is required for projects with the potential to affect listed or candidate species. CDFW would determine whether a reasonable alternative would be required for the conservation of the species. CESA prohibits the "take" of these species unless an ITP is granted. Under California Fish and Wildlife Code Section 2081 (ITP), CDFW can authorize the "take" of a listed species (with exception to fully protected species) if the "take" of the listed species is incidental to carrying out an otherwise lawful project that has been approved under the California Environmental Quality Act (CEQA). Section 2080.1 allows for "take" once an applicant obtains a federal ITP which can be approved (Consistency Determination letter) within 30 days by the CDFW Director. If the federal Incidental Take Statement is determined not to be consistent with CESA, then application for a State ITP (2081) is required.

The California Fish and Wildlife Code outlines protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are "fully protected" (FP) may not be taken or possessed at any time. CDFW has designated certain species native to California as Species of Special Concern to "focus attention on wildlife at conservation risk by the Department, other State, Local and Federal governmental entities, regulators, land managers, planners, consulting biologists, and others; stimulate research on poorly known species; achieve conservation and recovery of wildlife before they meet CESA criteria for listing as threatened or endangered."

2.2.2 State Fully Protected Species

The State of California designated species as Fully Protected (FP) prior to the creation of CESA and FESA. Lists of FP species were initially developed to provide protection to species that were rare or faced possible extinction/extirpation. Most FP species have since been State listed as threatened or endangered species. Under California Fish and Wildlife Code Section 4700, FP species may not be taken or possessed at any time.

In September 2011, the California Legislature sent the Governor legislation authorizing CDFW to permit the incidental take of 36 FP species pursuant to a NCCP approved by CDFW (Senate Bill 618 [Wolk]). The legislation gives FP species the same level of protection as provided under the NCCP Act for endangered and threatened species (California Fish and Wildlife Code § 2835). The NCCP Act, enacted in the 1990s, authorizes the incidental take of species "whose conservation and management" is provided for in a conservation plan approved by CDFW.

2.2.3 Sections 1600-1602 of the California Fish and Wildlife Code

Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Wildlife Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW limits of jurisdiction include the maximum extent of the uppermost bank-to-bank distance or riparian vegetation dripline.

2.2.4 California Environmental Quality Act

The CEQA (Public Resources Code, Sections 21000-21177) requires that State and local agencies consider environmental consequences and project alternatives before a decision is made to implement a project requiring State or local government approval, financing, or participation by the State of California. In addition, CEQA requires the identification of ways to avoid or reduce environmental degradation or prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.

2.2.5 California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by the CDFW. The California Fish and Game Commission has the authority to designate native plants as "endangered" or "rare" and to protect them from take. Rare plants protected by CDFW generally include species with California Rare Plant Ranking (CRPR) 1A, 1B, 2A, and 2B of the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered rare if the population has local significance in the area and is impacted by a project.

When the CESA was passed in 1984, it expanded on the original NPPA, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel the FESA. The CESA converted all rare wildlife to threatened species under the NPPA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The NPPA remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between the CDFW and a project proponent.

2.2.6 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1966 (California Water Code §§ 13000-13999.10) mandates that activities that may affect waters of the State shall be regulated to attain the highest quality.

The State Water Resources Control Board (SWRCB) and the local RWQCB are the relevant permitting agencies. RWQCB provides regulations for a "non-degradation policy" that are especially protective of areas with high water quality. Porter-Cologne reserves the right for the State of California to regulate activities that could affect the quantity and/or quality of surface and/or ground waters, including isolated wetlands, within the State. Waters of the State include isolated waters that are no longer regulated by USACE. If the project is proposed to discharge into waters of the State, a Waste Discharge Report (WDR), or a waiver to WDRs, must be filed before beginning discharge.

2.3 LOCAL

The following discussion of local regulations relating to biological resources is provided for informational purposes.

2.3.1 County of San Diego General Plan

The *County of San Diego General Plan* provides direction for future growth in the unincorporated areas of San Diego County and provides policies related to land use, mobility, conservation, housing, safety, and noise. The *County of San Diego General Plan Land Use Element* provides a framework for managing future development in the County so that it is thoughtful of the existing character of the current communities and the sensitive natural resources within the County.

The *County of San Diego General Plan* contains the following relevant policies:

- **Conservation and Open Space (COS) Policy COS-1.2:** Minimize Impacts. Prohibit private development within established preserves. Minimize impacts within established preserves when the construction of public infrastructure is unavoidable.

- **COS Policy COS-1.3:** Management. Monitor, manage, and maintain the regional preserve system facilitating the survival of native species and the preservation of healthy populations of rare, threatened, or endangered species.

- **COS Policy COS-2.1:** Protection, Restoration and Enhancement. Protect and enhance natural wildlife habitat outside of preserves as development occurs according to the underlying land use designation. Limit the degradation of regionally important natural habitats within the Semi-Rural and Rural Lands regional categories, as well as within Village lands where appropriate.

- **COS Policy COS-2.2:** Habitat Protection through Site Design. Require development to be sited in the least biologically sensitive areas and minimize the loss of natural habitat through site design.

2.3.2 County of San Diego Multiple Species Conservation Plan Subarea Plan

The County of San Diego MSCP Subarea Plan, adopted on October 22, 1997, covers the southwestern portion of the County's unincorporated area, and applies to unincorporated lands within the Survey Area. It serves to protect designated sensitive plant and wildlife species and their habitats depending on location and site characteristics. The San Diego County MSCP Subarea Plan is divided into three segments, one of which is the South County Segment (SCS), within which the Proposed Project is located. The SCS contains areas in which landowners have negotiated with the Wildlife Agencies and County for areas that will be set aside as preserve lands in perpetuity. In return, there are also areas approved for development. The

Wildlife Agencies have agreed to the placement of conservation and development areas; accordingly, projects approved by the County consistent with the Subarea Plan SCS will not require additional approvals from the Wildlife Agencies. Wetlands impacts throughout the County Subarea will continue to be subject to the Federal Water Pollution Act and Fish and Game Code Section 1600 processes, as appropriate.

The SCS includes approximately 82,767 acres within the County jurisdiction, which includes approximately 48,240 acres of preserve area. The SCS covers substantial areas around the urban fringe of the southwestern portion of the County, from the international border to the Sweetwater River drainage, including major parts of the San Miguel, San Ysidro, and Jamul mountains. MSCP Subarea Plan authorizes use of the Project site as active recreation and excludes the site from preserve requirements.

The native vegetation of the SCS preserve area is dominated by coastal sage scrub and chaparral species. In addition, the largest stands of Tecate cypress (*Hesperocyparis forbesii*) woodland in the U.S. exist on the slopes of Otay and Tecate Peaks in the SCS. Other habitats in the preserve area include grasslands, coast live oak riparian forest, riparian forest, oak woodlands, and disturbed habitats.

2.3.3 Otay Valley Regional Park Concept Plan

The County and the cities of San Diego and Chula Vista adopted the Otay Valley Regional Park Concept Plan after a multi-year planning effort to coordinate an interjurisdictional approach to park and recreational planning for the area. The plan calls for a regional park to extend from the salt ponds on the coast, through the Otay River Valley, to Upper and Lower Otay Lakes. The goal of the Otay Valley Regional Park Concept Plan is to provide policy direction to the three jurisdictions for the acquisition of properties and development of a regional park. The plan also provides for a regional trail system to be developed along the river, as well as viewpoints, recreational areas, and two interpretive centers. The plan calls for sensitive areas within the boundaries established by the San Diego MSCP to be designated as Open Space/Core Preserve Areas. Efforts toward implementation of this plan have been made by the cooperating jurisdictions, including the partial development of a trail system and a large acquisition of open space by the County. The portions of the regional trail system that have been developed are outside of the Proposed Project area, but the land acquired for open space by the County is located immediately south of the Proposed Project.

2.3.4 County of San Diego Tree Ordinance

The San Diego Regulatory Code of Ordinances, Title 7, Division 1, Chapter 5 regulates the planting, trimming, and removal of trees on County-owned property and County highways. The Proposed Project is not anticipated to conflict with the County of San Diego tree ordinance.

2.4 APPLICABLE LISTING ABREVIATIONS

Below is a list of applicable abbreviations that are applied in the PFO ranking of sensitive plants and animals located within the Study Area.

2.4.1 California Rare Plant Rank (CRPR)

The following details the abbreviations applicable to sensitive plants identified within the Study Area:

List 1A = Plants presumed extinct in California.
List 1B = Plants rare and endangered in California and throughout their range.
List 2 = Plants rare, threatened, or endangered in California but more common elsewhere in their range.
List 3 = Plants about which we need more information; a review list.
List 4 = Plants of limited distribution; a watch list.

CRPR Extensions

The following extensions to the above noted Lists serve to further refine the level of threat experienced by sensitive plant species located within the Study Area:

0.1 = Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2 = Fairly endangered in California (20-80 percent occurrences threatened).
0.3 = Not very endangered in California (less than 20 percent of occurrences threatened).

2.4.2 Federal

Below is a list of abbreviations that are applied to PFO ranking of sensitive plants and animals located within the Study Area that are Federally listed:

FE = Federally listed; Endangered
FT = Federally listed; Threatened

2.4.3 State

Below is a list of abbreviations that are applied to PFO ranking of sensitive plants and animals located within the Study Area that are California state listed:

ST = State listed; Threatened
SE = State listed; Endangered
RARE = State-listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
BCC = Birds of Conservation Concern
SSC = State Species of Special Concern
FP = CDFW Fully Protected

2.4.4 Local

Below is a list of abbreviations that are applied to PFO ranking of sensitive plants and animals located within the Study Area that are listed within the County of San Diego:

MSCP = San Diego County Multiple Species Conservation Plan South County Segment; Covered

Section 3.0 – SURVEY METHODOLOGIES

Below is a summary of the various survey methodologies that were used for the initial site survey and subsequent focused surveys.

3.1.1 Biological Reconnaissance Survey

Chambers Group biologists Clark Austin and Laurie Gorman conducted a general reconnaissance survey to map vegetation communities and to identify habitats that could support sensitive plant and wildlife species. All vegetation communities observed within the Study Area were recorded as well as all sensitive plant and animal species observed. The survey was conducted over two site visits. The second site visit included a focused habitat assessment for QCB, in accordance with the USFWS QCB Survey Guidelines (QCB Survey Guidelines; USFWS 2014) to map all areas requiring QCB surveys. Survey conditions are provided below.

Table 1: Conditions for Initial Site Survey

Date	Survey Type	Surveyors	Temp	Weather	Wind (mph)
Nov. 26, 2018	Reconnaissance Survey	Clark Austin	71-74	15-20% Cloud Cover	1-5
Feb. 23, 2019	Reconnaissance Survey and QCB Habitat Assessment	Laurie Gorman and Clark Austin	63-64	0% Cloud Cover	1-7

3.1.2 Flora and Fauna

The most recent records of the California Natural Diversity Database (CNDDB) managed by the CDFW (CDFW 2019) and the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2019) were reviewed within five miles of the Study Area. These databases contain records of reported occurrences of federally- or state-listed as endangered or threatened species, proposed endangered or threatened species, California Species of Concern (SSC), or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Study Area.

All wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (native vegetation, wildlife trails, etc.) or in habitats with the potential to support federally, state-listed, or otherwise sensitive species. Notes were made on the general habitat types, species observed, and the conditions of the Study Area. Focused surveys were conducted for QCB in February, March, and April; and rare plant surveys in April and a second survey in June.

The following table was used to determine the PFO for each of the species identified within the literature search.

Table 2: Criteria for Evaluating Sensitive Species Potential for Occurrence

POTENTIAL FOR OCCURRENCE (PFO)	CRITERIA
Presumed Absent:	Species is restricted to habitats or environmental conditions that do not occur within the Study Area.
Low:	Historical records for this species do not exist within the vicinity (approximately five miles) of the Study Area, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the vicinity of the Study Area (approximately five miles) and marginal habitat exists within the site; or the habitat requirements or environmental conditions associated with the species occur within the Study Area, but no historical records exist within five miles of the Proposed Project site.
High:	Both a historical record exists of the species within the Study Area or its vicinity (approximately five miles), and the habitat requirements and environmental conditions associated with the species occur within the Proposed Project site.
Present:	Species was detected within the Study Area site at the time of the survey.

The location of prior CNDDB and USFWS records of occurrence were used as additional data, but since the CNDDB is a positive-sighting database; this data was used only in support of the analysis from the previously identified factors. The PFO was determined through a combination of these databases and habitat quality identified during field survey efforts. Species-based assessments were referenced through a variety of tools and publications including, but not limited to: Tremore *et al*. (2017), Unit and Klovstad (2004), and Calflora (2019).

3.1.3 Focused Sensitive Plant Surveys

Due to the spread of anticipated blooming periods and the presence of favorable environmental conditions (prolonged and prolific rain year) for sensitive plant species to occur within the Survey Area, two rounds of sensitive plant surveys were conducted in spring 2019 within the Survey Area to capture the blooming periods for each of the 68 targeted species with a low, moderate or high PFO. Three categories of special-status plant species were targeted. Category 1 species targeted all federally threatened or endangered plant species, Category 2 targeted all state threatened or endangered plant species, and Category 3 targeted plants not listed as federally and/or state threatened or endangered with a CRPR of 1 or 2. Special-status plant species targeted during the surveys are listed and evaluated in Section 4.1.3.

Focused plant surveys were performed in accordance with survey protocols set forth by CDFW, CNPS, and USFWS Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (CDFW 2009; CNPS 2001; USFWS 2000). Species identified as being sensitive and having the potential to occur within the Survey Area were reviewed by Chambers Group botanists prior to the beginning of surveys each day. Botanists walked transects within the Survey Area spaced approximately 30 feet apart and visually surveyed for any signs of the targeted plant species. A complete inventory of all plant species observed within the Survey Area was prepared. Sensitive plant species observed during the survey were documented by counting individuals or estimating numbers for larger populations, characterizing the approximate population size, and recording a Global Positioning System (GPS) location.

Areas that were designated as private property separated by fences and signs were not accessed on foot; surveys were conducted by binocular from outside the property boundary unless specific permission to enter was granted by the landowner.

The focused sensitive plant surveys were conducted by botanists John and Melanie Dicus. Survey conditions are provided in Table 3, below.

Table 3: Conditions for Focused Plant Surveys

Date	Survey Type	Surveyors	Temp	Weather	Wind (mph)
April 11, 2019	Focused Plant Survey (Round 1)	Melanie and John Dicus	62-67	20-50% Cloud Cover	1-4
May 30, 2019	Focused Plant Survey (Round 2)	Melanie and John Dicus	64-70	30-100% Cloud Cover	2-5

3.1.4 Focused QCB Surveys

Due to the presence of environmental conditions (accumulated rainfall, weather, and temperature conditions) suitable for QCB to occur within the Survey Area, QCB surveys were conducted according to the USFWS QCB Survey Guidelines (QCB Survey Guidelines; USFWS 2014). Surveys throughout all potentially suitable habitat (i.e., where no QCB excluded areas were mapped during the habitat assessment) were initiated at the beginning of the QCB flight season, following a 15-day survey notification submitted to USFWS on February 8, 2019. In order to maximize species detectability, surveys were continued up to twice per week, weather permitting, while maintaining a temporal spacing of at least four days apart.

The QCB surveys were conducted for the required minimum survey timeframe of five continuous weeks. Within the five-week period, QCB had been identified within the Study Area. The QCB Survey Guidelines state that if a QCB is detected during any survey within the first 5 weeks, surveys do not need to be conducted after the fifth week. Therefore, the surveys were concluded after the fifth week. When a QCB was detected in the QCB Survey Area, the USFWS was notified within 24 hours by the permitted QCB biologist.

Surveys were conducted by walking survey routes that were roughly parallel to each other, spaced approximately 30 ft. apart, and within 15 ft. of the Survey Area boundary and/or the perimeter of excluded areas. Chambers Group biologists conducted the surveys at a rate of approximately 5 to 10 acres per person/hour and under suitable weather conditions defined as (1) no significant precipitation (e.g., fog, drizzle, or rain); (2) sustained or gusting winds averaging less than 15 miles per hour over a 30 second period at a height of 4 to 6 ft. above ground level; and (3) temperatures of at least 60 degrees Fahrenheit (°F) in the shade at ground level on a clear, sunny day (i.e., less than 50 percent cloud cover), and temperatures of at least 70°F on cloudy days (i.e., greater than 50 percent cloud cover).

Butterfly species observed and numbers of each species were recorded during each weekly survey. Butterflies observed during the surveys were identified by sight and with the aid of binoculars. Biologists also recorded and updated information on host plant populations, including revised numbers, densities, and new locations, as well as a list of potential nectar sources. Additional observations of larval host plant populations were mapped with the aid of hand-held GPS units and/or hand-drawn onto high-resolution

aerial field maps, and potential nectar plant species were documented. Butterfly identification and nomenclature was based on field guides by Shiraiwa (2009) and Glassberg (2001).

Focused QCB surveys were conducted by USFWS-permitted biologists Laurie Gorman (TE-233367-3) and Travis Cooper (TE-170389-6), assisted by Clark Austin and Kaelin McAtee. Survey conditions are provided in Table 4, below.

Table 4: Conditions for Focused QCB Surveys

Date	Survey Type	Surveyors	Temp	Weather	Wind (mph)
Feb. 23, 2019	Focused QCB Survey (Round 1)	Laurie Gorman and Clark Austin	64-69	0% Cloud Cover	0-7
Mar. 1, 2019	Focused QCB Survey (Round 2)	Laurie Gorman and Clark Austin	70-74	40-80% Cloud Cover	0-3
Mar. 7, 2019	Focused QCB Survey (Round 3)	Laurie Gorman, Travis Cooper, and Clark Austin	70-71	55-90% Cloud Cover	0-3
Mar. 14, 2019	Focused QCB Survey (Round 4)	Travis Cooper	61-66	0% Cloud Cover	0-3
Mar. 15, 2019	Focused QCB Survey (Round 4)	Laurie Gorman and Clark Austin	64-74	30-50% Cloud Cover	0-3
Mar. 18, 2019	Focused QCB Survey (Round 5)	Laurie Gorman	70-72	0-25% Cloud Cover	0-2
Mar. 19, 2019	Focused QCB Survey (Round 5)	Laurie Gorman, Kaelin McAtee, and Clark Austin	62-74	2-5% Cloud Cover	0-2

3.1.5 Soils

Soil maps for San Diego County were referenced online (http://soils.usda.gov/technical/classification/osd/index.html) to determine the types of soil found within the Study Area. Soils were determined in accordance with categories set forth by the United States Department of Agriculture (USDA) Soil Conservation Service and by referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2019).

3.1.6 Vegetation

General vegetation communities within the Study Area were identified, qualitatively described, and mapped onto an aerial photograph. Plant communities were determined in accordance with the categories set forth in the Manual of California Vegetation (Sawyer et al. 2007). Plant nomenclature follows that of *The Jepson Manual* (Baldwin, B.G *et al*. 2012).

The Proposed Project is located within a "*Take Authorized*" area and therefore no mitigation is required for project related impacts; therefore, habitat sensitivity tier is not reported in this document.

3.1.7 Critical Habitat

USFWS critical habitat maps were consulted and analyzed for any designated areas within the general area of the Proposed Project.

3.1.8 Jurisdictional Waters

A general assessment of potential jurisdictional waters regulated by the USACE, RWQCB, and CDFW was conducted for the Study Area. The assessment was conducted by a desktop survey through the USGS National Hydrography Dataset for hydrological connectivity. In addition, USFWS National Wetlands Inventory (NWI) Maps were referenced to determine potential wetland or other water features occurring within the Study Area.

3.1.9 Preserve, Habitat Connectivity, and Wildlife Corridors

Preserve

The Proposed Project is located within the geographic area covered by the *County of San Diego General Plan* (see Section 2.3.1). As part of the literature review for the Proposed Project, project features and site boundaries were overlain on *County of San Diego General Plan* preserve maps to determine whether the Proposed Project falls within one of the County's designated Subarea preserve units.

Habitat Connectivity and Wildlife Corridors

Wildlife corridors are areas that connect fragmented habitats. They serve as wildlife linkages (wildlife travel corridors) between otherwise fragmented patches of habitat caused by changes in vegetation communities, rugged terrain, and human disturbances. These linkages may be drainages, canyons, or ridgelines that provide access to foraging areas, water, breeding sites, and dispersal areas. These corridors provide cover and shelter during travel. Disturbance to wildlife corridors such as anthropogenic activity and development can cause harm to migrating species, cause species to exceed their population thresholds, and/or prevent healthy gene flow between populations.

Section 4.0 – RESULTS

The following subsections detail the current state of the Study Area as recorded over the course of Spring 2019 initial and focused plant and animal surveys.

4.1 ENVIRONMENTAL SETTING

The following sections provide specific information that pertains to the natural environment within the Study Area; associated results maps are included within Appendix A and representative site photographs in Appendix B.

4.1.1 Soils

After review of USDA Soil Conservation Service and by referencing the USDA NRCS Web Soil Survey (USDA 2019), it was determined that the Study Area is located within the San Diego County Area (CA638). Based on the results of the database search, the Study Area is composed of the following five soil types and is represented in Figure 4:

Huerhuero Loam, 2 to 9 percent, 9 to 15 percent, and 15 to 30 percent

Huerhuero Loam soils are moderately well to somewhat poorly drained, with medium runoff potential and very slow permeability. They form in sandy marine sediments between 10 and 400 ft. above sea level with a clay subsoil. The Huerhuero series have light brownish gray and brown, medium acid, loam Ap and Al horizons, light gray A2 horizons, light yellowish brown, medium acid and moderately alkaline clay and clay loam B2t horizons. The mean annual precipitation is 12 to 20 inches and the mean annual temperature is about 58 ^{o}F. The parent material to Huerhuero soils is calcareous alluvium derived from sedimentary rock. These soils are not hydric. Huerhuero Loam soils are present along the western portion of the Study Area, beginning north of Otay River, as well as at the southeastern corner of the Study Area.

Olivenhain Cobbly Loam, 2 to 9 percent

Olivenhain Cobbly Loam is generally well-drained with slow to medium runoff potential and very slow permeability. The Olivenhain series is a member of the clayey-skeletal, kaolinitic, thermic family of Ultic Palexeralfs. Typically, Olivenhain soils have brown and reddish brown, medium acid, very cobbly loam A horizons, reddish brown and red, medium and strongly acid, very cobbly clay B2t horizons, grading to pinkish white cobbly loam C horizons. Olivenhain cobbly loam has moderately deep to deep cobbly loams with very cobbly clay subsoil and is primarily found at 100 ft. to 600 ft. in elevation. The mean annual precipitation is 12 to 16 inches and the mean annual temperature is about 62 ^{o}F. The parent material of the Olivenhain series is gravelly alluvium and is derived from mixed sources. These soils are not hydric. Olivenhain Cobbly Loam covers a portion of the northwestern corner of the Study Area, in the developed portion of Otay Lakes County Park.

San Miguel Exchequer Rocky Silt Loams, 9 to 70 percent

The San Miguel Exchequer Rocky Silt Loams are typically well-drained, have medium to very rapid runoff and very slow permeability. They generally have light yellowish brown, medium acid, silt loam A1 horizons, very pale brown, strongly acid, silt loam A2 horizons, strong brown and yellowish brown, strongly and very strongly acidic, clay and gravelly clay B2t horizons over hard metavolcanic bedrock at a depth of 23 inches.

The annual mean precipitation is 13 to 18 inches and the annual mean temperature is about 75°F. The parent material is residuum weathered from metavolcanics. The Exchequer series consists of shallow, somewhat excessively drained soils that formed in material weathered from hard andesitic breccia, schist and metamorphosed volcanic rocks. These soils are generally found on undulating to steep uplands. The mean annual precipitation is about 25 inches and the mean annual air temperature is about 61°F. These soils are somewhat excessively drained with medium to rapid runoff potential and moderate permeability. These soils are not hydric. San Miguel soils comprise the majority of the soils found within the Study Area, covering roughly the eastern two thirds of the Study Area.

Riverwash

Riverwash soils consist of very recent depositions of gravel, sand, and silt alluvium along major stream and their tributaries. These soils are excessively-drained and rapidly permeable, with negligible runoff potential. They are typically sandy, gravelly, or cobbly and are found in intermittent stream or channels that support little to no vegetation. Gravel bars make up the majority of these areas. During floods, alluvial areas are subject to repeated deposition, erosion, and shifting of transported material. Layering and gullying of soil and gravel brought from upstream areas has resulted in a varying topography. Riverwash provides gravel for commercial production, construction, and road fill. This soil type covers a narrow portion of the Study Area along the bottom of the Otay River Valley.

Terrace Escarpments

Terrace escarpments consist of long, narrow, rocky areas that rise abruptly from the mean tide line to the coastal plain terraces or plateaus. This land type consists of steep faces that separate the terraces from the lower lying land. The faces are composed of soft coastal sandstone, hard shale, or hard, weather-resistant, fine-grained sandstone. Vegetation is sparse and is made up of dwarfed shrubs, a few patches of grass, lichens, and moss. In seepage areas water grasses, a few cypress and oaks, and various weathered conifers also grow. Areas of Terrace escarpments are used mainly for watershed and as wildlife habitat. Most places have 4 to 10 inches of loamy or gravelly soil over soft marine sandstone, shale, or gravelly sediments. This soil type covers a small portion of the southwest corner of the Study Area, south of the Otay River.

4.1.2 Habitat Types/Vegetation Communities

Eight vegetation communities were observed within the Study Area: California Sagebrush Scrub, California Sagebrush-California Brittlebush Scrub, Purple Needlegrass Grassland, Brome Grass-Wild Oat Grassland, Eucalyptus Woodland, Maritime Succulent Bluff, Cattail Marsh, Red Willow Riparian Woodland, and Disturbed. In addition, Landscape/Ornamental, Developed, Bare Ground, and Pavement areas were present within the Study Area. A map showing the vegetation communities and land cover types is provided as Figure 5.

California Sagebrush Scrub

This habitat was located throughout the Study Area but is primarily located along the eastern and southern portions of Study Area and comprises a total of 33.80 acres. Dominant plant species observed within the California Sagebrush Scrub habitat included: Bigelow's spike-moss (*Selaginella bigelovii*), mesa spike-moss (*Selaginella cinerascens*), bird's-foot fern (*Pellaea mucronata*), blue elderberry (*Sambucus nigra* subsp. *caerulea*), laurel sumac (*Malosma laurina*), lemonadeberry (*Rhus integrifolia*), California

sagebrush (*Artemisia californica*), San Diego County viguiera (*Bahiopsis laciniata*), California poppy (*Eschscholzia californica*), California brickellbush (*Brickellia californica*), tocalote (*Centaurea melitensis*), tarplant (*Deinandra* sp.), common goldfields (*Lasthenia gracilis*), common sow thistle (*Sonchus oleraceus*), white fiesta flower (*Pholistoma membranaceum*), popcornflower (*Plagiobothrys* sp.), black mustard (*Brassica nigra*), field mustard (*Brassica rapa*), short-pod mustard (*Hirschfeldia incana*), field peppergrass (*Lepidium campestre*), shining peppergrass (*Lepidium nitidum*), common catchfly (*Silene gallica*), western bindweed (*Calystegia macrostegia*), bindweed (*Convolvulus arvensis*), pygmy-weed (*Crassula connata*), wild cucumber (*Marah macrocarpa*), golondrina (*Chamaesyce polycarpa*), deerweed (*Acmispon glaber*), strigose lotus (*Acmispon strigosus*), Gambell's dwarf locoweed (*Astragalus gambelianus*), wild sweet pea (*Lathyrus vestitus*), Bajada lupine (*Lupinus concinnus*), broad-lobed filaree (*Erodium botrys*), red-stemmed filaree (*Erodium cicutarium*), filaree (*Erodium* sp.), white sage (*Salvia apiana*), cheeseweed (*Malva parviflora*), red maids (*Calandrinia ciliata*), wishbone bush (*Mirabilis laevis*), California wood-sorrel (*Oxalis californica*), Nuttall's snapdragon (*Antirrhinum nuttallianum* subsp. *nuttallianum*), western plantain (*Plantago erecta*), angel gilia (*Gilia angelensis*), coastal California buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*), Padre's shooting star (*Dodecatheon clevelandii* subsp. *clevelandii*), virgin's bower (*Clematis ligusticifolia*), San Diego barrel cactus (*Ferocactus viridescens*), spiny redberry (*Rhamnus crocea*), narrow-leaved bedstraw (*Galium angustifolium*), mesa saxifrage (*Jepsonia parryi*), California figwort (*Scrophularia californica*), jojoba, goatnut (*Simmondsia chinensis*), Johnny-jump-up (*Viola pedunculata*), purple owl's-clover (*Castilleja exserta*), small-flowered amole (*Chlorogalum parviflorum*), our Lord's candle (*Hesperoyucca whipplei*), red-skinned onion (*Allium haematochiton*), wild oat (*Avena fatua*), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* subsp. *madritensis*), small fescue (*Festuca microstachys*), Italian ryegrass (*Festuca perennis*), and blue dicks (*Dichelostemma capitatum*). This habitat is generally open throughout the Project Area with large areas of open space dominated by purple needlegrass and non-native grassland with varying degrees of invasive species dominance.

California Sagebrush Scrub-California Brittlebush Scrub

This habitat was located along the northeastern portion of the Study Area and comprises a total of 2.09 acres. Dominant plant species observed within the California Sagebrush-California Brittlebush Scrub habitat included: California sagebrush, California bush sunflower (*Encelia californica*), white sage, goldenback fern (*Pentagramma triangularis*), wild cucumber, popcorn flower, California poppy, California polypody (*Polypodium californicum*), Nuttall's snapdragon, angel gilia, coastal California buckwheat, virgin's bower, narrow-leaved bedstraw, ripgut grass, small fescue, wild oat, wishbone bush, red-stemmed filaree, common catchfly, short-pod mustard, and field peppergrass.

Purple Needlegrass Grassland

This habitat was located in small patches that resembled the surrounding grassland areas except with the addition of substantial purple needlegrass (*Stipa pulchra*) populations. This habitat comprises a total of 0.56 acres within the Study Area. Dominant plant species observed within the Purple Needlegrass Grassland habitat include: purple needlegrass, wild oat, ripgut grass, foxtail chess, small fescue, Italian ryegrass, red-skinned onion, Johnny-jump-up, Padre's shooting star, purple owl's-clover, California poppy, common catchfly, and black mustard.

Brome Grass-Wild Oat Grassland

This habitat was located throughout the Study Area and comprises the majority of the inter-shrub matrix of the coastal sage scrub located within eastern and southern portions of the Study Area. This habitat was

found in more contiguous patches along the western and northern portions of the Study Area and comprises a total of 17.16 acres. Dominant plant species observed within the Brome Grass-Wild Oat Grassland habitat include: wild oat, ripgut grass, foxtail chess, small fescue, Italian ryegrass, red-skinned onion, Johnny-jump-up, Padre's shooting star, California poppy, common catchfly, short-pod mustard, field mustard, bindweed, pygmy-weed, strigose lotus, popcorn flower, San Diego barrel cactus, common goldfields, tocalote, sharp-toothed sanicle (*Sanicula arguta*), Bajada lupine, broad-lobed filaree, red-stemmed filaree, Bermuda buttercup (*Oxalis pes-caprae*), purple owl's-clover, jimson weed (*Datura wrightii*), Russian thistle (*Salsola* sp.), Mediterranean schismus (*Schismus barbatus*), and black mustard.

Eucalyptus Woodland

This habitat was generally open in nature and provided an overlay to existing habitat located directly below the canopy of the woodland. This habitat overlay is primarily located within the eastern and central portions of the Study Area and comprises a total of 20.02 acres (not included as impacts as the habitat primarily overlays disturbed areas with limited coastal sage scrub and/or grassland habitat. The canopy was generally sparse to open in coverage, with isolated areas containing overlapping branches that created a sparse but overall open woodland canopy. The understory of this habitat generally consisted of Brome Grass-Wild Oat Grassland, California Sagebrush Scrub, Landscape/Ornamental, and Disturbed areas with species compositions similar to those described in each's respective section. Dominant plant species unique to this habitat include: red gum (*Eucalyptus camaldulensis*), blue gum (*Eucalyptus globulus*), lemon-scented gum (*Eucalyptus citriodora*), and silver dollar gum (*Eucalyptus polyanthemos*).

Maritime Succulent Bluff

This habitat was found along the northern escarpment of the Otay River within the southern portion of the Study Area and comprises a total of 2.15 acres. Dominant plant species observed within the Maritime Succulent Bluff habitat include: fish-hook cactus (*Mammillaria dioica*), ladies-fingers (*Dudleya edulis*), chalk dudleya (*Dudleya pulverulenta*), San Diego barrel cactus, natal grass (*Melinis repens* subsp. *repens*), annual bluegrass (*Poa annua*), short-pod mustard, wishbone bush, California buckwheat, and foxtail chess.

Cattail Marsh

This habitat was found within an isolated patch within the Otay River at the southern end of the Study Area and comprises a total of 0.09 acres. Dominant plant species observed within the Cattail Marsh habitat include: cattail (*Typha* sp.), San Diego marsh-elder (*Iva hayesiana*), dock (*Rumex* sp.), and wild oat.

Red Willow Riparian Forest

This habitat was found immediately south of and adjacent to the Otay River and comprises as total of 2.15 acres. Dominant plant species observed within the Red Willow Riparian Forest habitat include: red willow (*Salix laevigata*), southwestern spiny rush (*Juncus acutus* subsp. *leopoldii*), stinging lupine (*Lupinus hirsutissimus*), wild oat, annual bluegrass, natal grass, Italian ryegrass, laurel sumac, wishbone bush, San Diego marsh-elder, and mulefat (*Baccharis salicifolia* subsp. *salicifolia*).

Disturbed

This habitat was found in primarily three areas within the Study Area and generally occurred where the Study Area was adjacent to existing access roads or developed areas and comprised a total of 3.37 acres. This habitat generally consisted primarily of bare ground dominated by non-native annual species including Russian thistle, hairy crabgrass (*Distichlis littoralis*), bristly ox-tongue (*Helminthotheca echioides*), black mustard, western plantain, fennel (*Foeniculum vulgare*), shortpod mustard, castor bean (*Ricinus communis*), London rocket (*Sisymbrium irio*), tocalote, rip-gut brome, foxtail chess, wild oat, red-stemmed filaree, white sweetclover (*Melilotus albus*), yellow sweetclover (*Melilotus officinalis*), Boccone's sandspurrey (*Spergularia bocconi*), coast cholla (*Cylindropuntia prolifera*), horehound (*Marrubium vulgare*), nightshade (*Solanum* sp.), dwarf nettle (*Urtica urens*), and goldentop (*Lamarckia aurea*).

Landscape/Ornamental

This habitat was found primarily within the northern portions of the Study Area within the developed and highly used portions of the existing County Park. This habitat type also occurred in smaller discontinuous patches surrounding the existing restroom facility. This habitat type comprises a total of 5.60 acres. Dominant Landscape/Ornamental plant species observed include Peruvian pepper tree (*Schinus molle*), red gum, olive (*Olea europaea*), jacaranda (*Jacaranda mimosifolia*), English ivy (*Hedera helix*), oleander (*Nerium oleander*), western sycamore (*Platanus racemosa*), sweetgum (*Liquidambar styraciflua*), star jasmine (*Trachelospermum jasminoides*), freeway iceplant (*Carpobrotus edulis*), Aleppo pine (*Pinus halepensis*), bougainvillea (*Bougainvillea* sp.), common dandelion (*Taraxacum officinale*), Indian hawthorne (*Rhaphiolepis indica*), ornamental rose (*Rosa* sp.), agave (*Agave* sp.), date palm (*Phoenix* sp.), aloe (*Aloe* sp.), bird of paradise (*Strelitzia reginae*), rosemary (*Rosmarinus officinalis*), greater periwinkle (*Vinca major*), and Mexican fan palm (*Washingtonia robusta*).

Developed

Developed areas typically include structures and associated infrastructure areas. These areas are primarily associated with the existing heavily-used portions of the County Park and isolated areas within the central and southern portions of the Study Area. This habitat type comprises a total of 1.10 acres.

Bare Ground

Bare Ground areas are devoid of vegetation. These areas are generally associated with existing dirt access roads and trails throughout the heavily-used portions of the County Park and the larger Study Area. This habitat type comprises a total of 3.27 acres.

Pavement

Areas paved with roads, parking lots, and sidewalks; can be comprised of cement or asphalt. These areas are generally restricted to existing and heavily-used portions of the County Park. This habitat type comprises a total of 2.59 acres.

4.1.3 Sensitive Plant Species

Current database searches (USFWS 2019, CDFW 2019, CNPS 2019) resulted in a list of 68 federal- and/or state-listed threatened and endangered or rare sensitive plant species documented to occur within the

vicinity of the Study Area (Figures 6 and 7). A complete list of plant species observed is located within Appendix C. After the literature review, the assessment of the various habitat types in the area of the site, and two rounds of focused rare plant surveys it was determined that 60 species are not expected to occur or are presumed absent and eight species are considered present within the Study Area. Additional species not identified in the CNDDB and USFWS databases may require analysis for future studies.

The Project Area is located within a county park that has two distinct areas. A currently active portion of the park features primarily landscape/ornamental vegetation that is regularly irrigated and maintained as well as paved and developed areas. Another portion of the park is currently set aside for limited use and contains a mosaic of grassland and California sagebrush scrub habitat set within the foothill region of Otay Mountain. Access to the Proposed Project site is primarily along existing access roads and trails.

Not Expected to Occur or Presumed Absent

The following 60 plant species are **not expected** within Study Area due to lack of suitable habitat, the species is a conspicuous perennial and was not observed during reconnaissance-level or focused plant surveys, and/or the species is found outside the elevation range. Due to highly favorable survey conditions during the 2019 spring season when focused plant surveys were conducted, annual plants that were not observed during the survey and where favorable habitat is present are considered **presumed absent**. The following species fall within these to absent categories:

- California adolphia (*Adolphia californica*) CRPR List 2B.1
- San Diego bur-sage (*Ambrosia chenopodiifolia*) CRPR 2B.1
- singlewhorl burrobrush (*Ambrosia monogyra*) CRPR 2B.2
- Otay manzanita (*Arctostaphylos otayensis*) CRPR 1B.2, MSCP
- western spleenwort (*Asplenium vespertinum*) CRPR 4.2
- south coast saltscale (*Atriplex pacifica*) CRPR 1.2
- golden-spined cereus (*Bergerocactus emoryi*) CRPR 2B.2
- Orcutt's brodiaea (*Brodiaea orcuttii*) CRPR 1B.1, MSCP
- Brewer's calandrinia (*Calandrinia breweri*) CRPR 4.2
- Dunn's mariposa lily (*Calochortus dunnii*) CRPR 1B.2, MSCP
- lakeside ceanothus (*Ceanothus cyaneus*) CRPR1B.2, MSCP
- Otay cenaothus (*Ceanothus otayensis*) CRPR 1B.2
- southern mountain misery (*Chamaebatia australis*) CRPR 4.2
- long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*) CRPR 1B.2
- delicate clarkia (*Clarkia delicata*) CRPR 1B.2
- San Miguel savory (*Clinopodium chandleri*) CRPR 1B.2
- small-flowered morning glory (*Convolvulus simulans*) CRPR 4.2
- summer holly (*Comarostaphylis diversifolia* subsp. *diversifolia*) CRPR 1B.2
- San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*) CRPR 1B.1
- Gander's cryptantha (*Cryptantha ganderi*) CRPR 1B.1
- Otay tarplant (*Deinandra conjugens*) FT, SE, CRPR 1B.1, MSCP
- Tecate tarplant (*Deinandra floribunda*) CRPR 1B.2
- Orcutt's bird's-beak (*Dicranostegia orcuttiana*) CRPR 2B.1
- western dichondra (*Dichondra occidentalis*) CRPR 4.2
- variegated dudleya (*Dudleya variegata*) CRPR 1B.2, MSCP
- Palmer's Goldenbush (*Ericameria palmeri* var. *palmeri*) CRPR 1B.1, MSCP
- cliff spurge (*Euphorbia misera*) CRPR 2B.2

- San Diego button-celery (*Eryngium aristulatum var. parishii*) FE, SE, CRPR 1B.1
- snake cholla (*Cylindropuntia californica* var. *californica*) CRPR 1B.1, MSCP
- Mexican flannelbush (*Fremontodendron mexicanum*) FE, RARE, CRPR 1B.1
- desert bedstraw (*Galium proliferum*) CRPR 2B.2
- San Diego gumplant (*Grindelia hallii*) CRPR 1B.2
- Palmer's grapplinghook (*Harpagonella palmeri*) CRPR 4.2
- Tecate cypress (*Hesperocyparis forbesii*) CRPR 1B.1
- Otay Mountain lotus (*Hosackia crassifolia* var. *otayensis*) CRPR 1B.1
- Coulter goldfields (*Lasthenia glabrata* subsp. *coulteri*) CRPR 1B.1
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) CRPR 4.3
- Gander's pitcher sage (*Lepechinia ganderi*) CRPR 1B.3, MSCP
- Humboldt lily (*Lilium humboldtii* subsp. *ocellatum*) CRPR 4.2
- Douglas' silverpuff (*Microseris douglasii*) CRPR 4.2
- felt-leaved monardella (*Monardella hypoleuca* subsp. *lanata*) CRPR 1B.2, MSCP
- Jennifer's monardella (*Monardella stoneana*) CRPR 1B.2
- willowy monardella (*Monardella viminea*) FE, SE, CRPR 1B.1, MSCP
- little mousetail (*Myosurus minimus* subsp. *apus*) CRPR 3.1
- spreading navarretia (*Navarretia fossalis*) FT, CRPR1B.1, MSCP
- mud nama (*Nama stenocarpa*) CRPR 2B.2
- California adder's tongue fern (*Ophioglossum californicum*) FE, SE, CRPR 1B.1 4.2
- California Orcutt grass (*Orcuttia californica*) FE, SE, CRPR 1B.1, MSCP
- Cooper's rein orchid (*Piperia cooperi*) CRPR 4.2
- Otay mesa mint (*Pogogyne nudiuscula*) CRPR 1B.1, MSCP
- Cedros Island oak (*Quercus cedrosensis*) CRPR 2B.2
- Nuttall's scrub oak (*Quercus dumosa*) CRPR 1B.1
- Engelmann oak (*Quercus engelmannii*) CRPR 4.2
- Munz's sage (*Salvia munzii*) CRPR 2B.2
- chaparral ragwort (*Senecio aphanactis*) CRPR 2B.2
- purple stemodia (*Stemodia durantifolia*) CRPR 2B.1
- Coulter's Matilija poppy (*Romneya trichocalyx*) CRPR 4.2
- small-leaved rose (*Rosa Minutifolia*) SE, CRPR 1B.1
- Laguna Mountains jewelflower (*Streptanthus bernardinus*) CRPR 4.3
- Parry's tetracoccus (*Tetracoccus dioicus*) CRPR 1B.2

Present within the Study Area

The analysis of the database searches as well as reconnaissance-level and focused plant surveys resulted in eight species that are considered **Present** within the Study Area (Figure 8):

- San Diego viguiera (*Bahiopsis laciniata*) CRPR 4.3
- San Diego goldenstar (*Bloomeria clevelandii*) CRPR 1B.1, MSCP
- San Diego barrel cactus (*Ferocactus viridescens*) CRPR 2B.1, MSCP
- decumbent goldenbush (*Isocoma menziesii* var. *decumbens*) CRPR 1B.2
- San Diego marsh-elder (*Iva hayesiana*) CRPR 2B.2
- Leopold's rush (*Juncus acutus* subsp. *leopoldii*) CRPR 4.2
- ashy spike moss (*Selaginella cinerascens*) CRPR 4.1
- San Diego County needle grass (*Stipa diegoensis*) CRPR 4.2

San Diego viguiera is a perennial shrub within the Asteraceae family that grows in coastal sage scrub habitat between 295 and 2,460 ft. elevation and blooms from February to August. This species was observed throughout the Study Area primarily along existing trails and within the coastal sage scrub covered hillside on the eastern portions of the Study Area during reconnaissance-level and focused plant surveys. Majority of the observed San Diego viguiera is located away from Proposed Project features, however, one of the mapped species polygons will be directly impacted by two of the proposed COPE stations as well as the amphitheater. A solitary individual may be impacted by a third COPE station located in close proximity (west) to new campground locations. Two individuals of this species are located within 20 ft. of the proposed restored camp sites and two individuals are located approximately 20 ft. from the proposed archery range. Impacts to this species are further detailed in Section 5.1.1, and the majority of impacts to this plant are anticipated to be avoidable through the use of the mitigation measures proposed in Section 5.3.

San Diego goldenstar is an annual herb in the Themidaceae family that grows in grassland and coastal sage scrub habitats below 328 ft. elevation and blooms from April to May. This species has been observed within the Study Area within grassland habitats east of the proposed campsites and south of the Otay River during the focused plant survey. Recorded occurrences of this species are located approximately 130 ft. east of the closest Proposed Project feature (north zipline base station).

San Diego barrel cactus is a shrub in the Cactaceae family that is grows in grassland and scrub communities between 32 and 492 ft. elevation and blooms from May to June. A large number of this species were observed within the Study Area primarily within the scrub covered slopes north and east of the Project area as well as on the northwest-facing slope between the proposed camp sites and the southern extent of the Study Area. The nearest new Proposed Project feature is located approximately 160 ft. from a San Diego barrel cactus; other cactus individuals are found adjacent to existing trails, however, these are not anticipated to be affected by Proposed Project related activities.

Decumbent goldenbush is a shrub in the Asteraceae family that grows in coastal sage scrub habitat and blooms from April to November. This species was observed within 1-mile of the Proposed Project area in 2015 (CDFW 2019). This species variety has a highly variable morphology and numerous individuals within the Study Area displayed some, but not all, of the traits associated with this variety. Due to the variability of this variety observed within the Study Area, individuals were not mapped, however, there is a high potential that some of the goldenbush present may contain enough characters to be considered valid populations of this variety. The majority of the potential goldenbush populations are located along the northern portions of the Study Area and adjacent to existing dirt access roads.

San Diego marsh elder is a shrub in the Asteraceae family that grows in wetland areas and along streams that blooms from April to October. This species was observed during the reconnaissance and focused plant surveys along the Otay River and is considered present within the Study Area. The proposed amphitheater is the closest new Project feature and is located approximately 615 ft. north of the mapped location of San Diego marsh elder. This same population of San Diego marsh elder is located approximately 290 ft. south of the nearest access road and the population is not anticipated to be affected by Proposed Project related activities.

Leopold's rush is a perennial herb in the Juncaceae family that grows in wetlands that blooms from May to June. This species was observed during reconnaissance and focused plant surveys along the Otay River and is considered present within the Study Area. The proposed amphitheater is the closest new Project feature and is located approximately 650 ft. north of the mapped location of San Diego marsh elder. This

same population of San Diego marsh elder is located approximately 330 ft. south of the nearest access road and the population is not anticipated to be affected by Proposed Project related activities.

Ashy spike moss is a rhizomatous fern in the Selaginellaceae family that grows in coastal sage scrub and chaparral habitats. This species was observed during reconnaissance and focused plant surveys and is considered present within the Study Area, primarily in coastal sage scrub habitat areas within openings between stands of woody perennials located in undeveloped portions of the Study Area. This species has several occurrences adjacent to existing access roads within the northern portion of the Study Area and adjacent to established trails within the southern portions of the Study Area. All observed populations of ashy spike moss are located within the matrix of coastal sage scrub shrubs and do not directly abut existing site features (roads and trails) and are not anticipated to be impacted by Proposed Project related activities.

San Diego County needle grass is a perennial bunchgrass in the Poaceae family that grows in coastal sage scrub and grassland habitats. This species was observed during focused plant surveys and is considered present within the Study Area, within the grassland habitats along the extreme northern areas of the Study Area and approximately 1,100 ft. north of the nearest new Proposed Project Feature. The observed populations of San Diego County needle grass are located approximately 310 ft. northwest of the closest existing access road. No Proposed Project related activities are located in close proximity to the observed occurrences of this species and therefore no impacts are anticipated.

4.1.4 Sensitive Wildlife Species

A current database search (CDFW 2019 and USFWS 2019) resulted in a list of 42 federally, state, and/or locally listed endangered or threatened, SSC, or otherwise sensitive wildlife species that may potentially occur within the Study Area (Figures 6 and 7). A complete list of wildlife species is located in Appendix D. After a literature review and the assessment of the various habitat types within the Study Area, these species were categorized as not expected to occur; having low, moderate, or high PFO; or as present within the Study Area, as described below. Factors used to determine PFO included the type of habitat, quality of habitat, and the location of prior records of occurrence. Note that five avian species are listed under more than one category, depending on their behavior and habitat use; in such incidences an asterisk (*) proceeds the common name of the species. Observed sensitive wildlife species are depicted in Figure 9.

Not Expected to Occur or Low Potential for Occurrence

The following 12 wildlife species are **not expected** to occur within the Study Area due to lack of suitable habitat present or because no historical database records show the existence of these species within 5 miles of the Study Area:

- Thorne's hairstreak (*Callophrys gryneus thronei*) – MSCP
- Riverside fairy shrimp (*Streptocephalus woottoni*) – FE, MSCP
- San Diego fairy shrimp (*Branchinecta sandiegonensis*) – FE
- San Diego banded gecko (*Coleonyx variegatus abbotti*) – SSC
- golden eagle (*Aquila Chryses's canadensis*; nesting and wintering) – BCC, WL, FP, MSCP
- coastal cactus wren (*Campylorhynchus brunneicapillus*; nesting and foraging) – BCC, SSC, MSCP
- southwestern willow flycatcher* (*Empidonax traillii extimus*; nesting) – FE, SE, MSCP

- American peregrine falcon (*Falco peregrinus anatum*; nesting and foraging) – BCC, FP, MSCP
- least bittern* (*Ixobrychus exilis hesperis*; nesting) – SSC
- light-footed Ridgeway's rail (*Rallus obsoletus levipes*) – FE, SE, FP, MSCP
- yellow warbler (*Setophaga petechia*; nesting) – BCC, SSC
- northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) - SSC

The following seven wildlife species have a **Low** PFO within the Study Area due known occurrences within five miles from the Study Area and/or habitat present is of low quality:

- coast patch-nosed snake (*Salvadora hexalepis virgultea*) – SSC
- burrowing owl (*Athene cunicularia*; nesting and wintering) – SSC, MSCP
- northern harrier* (*Circus hudsonius*; nesting) – SSC, MSCP
- loggerhead shrike (*Lanius ludovicianus*; nesting and foraging) – BCC, SSC
- Bell's sage sparrow (*Artemisiospiza belli belli*; nesting and foraging) – BCC, WL
- mountain lion (*Felis concolor*) – MSCP
- American badger (*Taxidea taxus*) – SSC, MSCP

Moderate Potential for Occurrence

The following ten species have a **Moderate** PFO within the Study Area due to known occurrences within three miles of the Study Area and the presence of low to moderate quality suitable habitat within the Study Area:

- Baja California coachwhip (*Masticophis fuliginosus*) - SSC
- Townsend's big-eared bat (*Corynorhinus townsendii*) - SSC
- northern harrier* (foraging) – SSC, MSCP
- Cooper's hawk* (*Accipiter cooperii*; nesting) – WL, MSCP
- southwestern willow flycatcher* (foraging, migration, and dispersal) – FE, SE, MSCP
- least bittern* (foraging) – SSC
- least Bell's vireo* (*Vireo bellii pusillus*; nesting) – FE, SE, MSCP
- yellow warbler (foraging) – BCC, SSC
- San Diego desert woodrat (*Neotoma lepida intermedia*) – SSC
- pocketed free-tailed bat (*Nyctinomops femorosaccus*) - SSC

High Potential for Occurrence within the Study Area

The following 11 species have a **High** PFO within the Study Area due to known occurrences within one mile of the Study Area and the presence of moderate to high quality suitable habitat within the Study Area:

- western spadefoot (*Spea hammondii*) - SSC
- coastal whiptail (*Aspidoscelis tigris stejnegeri*) - SSC
- coast horned lizard (*Phrynosoma blainvillii*) - SSC, MSCP
- white-tailed kite (*Elanus leucurus*; nesting and foraging) - FP
- yellow-breasted chat (*Icteria virens*; foraging and nesting) - SSC
- coastal California gnatcatcher (*Polioptila californica californica*; nesting and foraging) - FE, SSC, MSCP
- grasshopper sparrow (*Ammodramus savannarum*) - SSC

- western mastiff bat (*Eumops perotis californicus*) - SSC
- western red bat (*Lasiurus blossevillii*) - SSC
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) - SSC
- mule deer (*Odocoileus hemionus*) - MSCP

Present within the Study Area

The following seven species were observed within the Study Area during reconnaissance level surveys and are considered **Present**:

- QCB – FE
- orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) – SSC, MSCP
- two-striped gartersnake (*Thamnophis hammondii*) - SSC
- red diamond rattlesnake (*Crotalus ruber*) - SSC
- Cooper's hawk* (foraging) – WL, MSCP
- southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; foraging) – WL, MSCP
- least Bell's vireo* (foraging and migration/dispersal) – FE, SE, MSCP

Large areas of host-plant for QCB were observed during reconnaissance level survey and was further refined in a QCB host plant mapping survey. In addition, large areas of open California Sagebrush Scrub, grassland, and open areas throughout the Study Area provide potential nectar sources for the QCB. These areas are not found immediately within the Project Area and are located outside of the proposed 100-foot buffer from known sightings and host plant patches. A total of three QCB were identified during the focused surveys and is therefore considered Present within the Study Area. More details pertaining to the occurrence of this species is detailed within the QCB Focused Survey Report (Appendix E).

The western spadefoot toad was located in several areas less than 1 mile from the Study Area between 2013 and 2017 (CDFW 2019). High-quality riparian areas with slow moving water are found in the southern portions of the Study Area, suitable for the spadefoot toad to breed and lay eggs. Project sites are anticipated to be located in upland areas and away from water; however, there is a high potential for this species to occur within the more general Study Area.

The coast horned lizard, coast whiptail, orange-throated whiptail, red-diamond rattlesnake, and San Diego black-tailed jackrabbit were located in several areas less than 1 mile from the Study Area between 2001 and 2015 (CDFW 2019; SanGIS 2019). These species can occur in a variety of early successional stage habitats including forest, chaparral, sagebrush, juniper, and annual grassland habitats (CDFW 1997). Suitable grassland and scrub habitat exists within the southern and eastern portion of the Study Area. Of these species, a solitary orange-throated whiptail was observed along the northern banks of the Otay River and a solitary red-diamond rattlesnake was observe along an access road in the northern portions of the Study Area. These species are highly mobile and can be found in contiguous native habitat adjacent to developed areas; therefore, there is a high potential for these species to occur within the Study Area.

High-quality riparian habitat that supports foraging activities for numerous bird species including least Bell's vireo, yellow-breasted chat, and white-tailed kite is located within the Study Area. No impacts to riparian vegetation are anticipated within the Proposed Project. There are several records for each of these species within the Project Area and within 1 mile, from 2008 to 2013. The white-tailed kite is often found foraging along and above riparian corridors, while the yellow-breasted chat and least Bell's vireo

forage within the vegetation of riparian areas (Unitt 2004). Appropriate habitat exists along the Otay River in the southern portions of the Study Area. Eucalyptus trees within the Study Area provide potential nesting habitat for the white-tailed kite as well. Therefore, there is a high potential for these species to occur within the Study Area. Least Bell's vireo was heard singing from the Otay River during the last focused QCB survey; this individual was foraging and remained more than 500 ft. from the nearest Project feature. Although this species may utilize the southern portion of the Study Area along the Otay River for foraging, this species is not expected to move upland towards the Project Area.

The coastal California gnatcatcher is a FT and SSC. This species was identified within the Project Area boundaries as well as several locations less than 1 mile from the Project Area as recent as 2015 (CDFW and USFWS sensitive species occurrence). This species nests in buckwheat and coastal sage scrub habitats (CDFW 1997) and can exist in close proximity to residential areas. This species was heard calling from an area west of the Study Area along the Otay River, due to the high motility this species was included within the Sensitive Wildlife Observed map (Figure 9). Suitable habitat exists within the Project Area; therefore, this species has a high potential to occur within the Project Area.

The grasshopper sparrow was found in one location less than 1 mile from the Study Area in 2015. This species forages for insects and seeds within grassland habitats. The Study Area has suitable habitat for this species within the Brome Grass-Wild Oat Grassland and Purple Needlegrass Grassland as well as the margins of the California Sagebrush Scrub.

High-quality habitat for the western mastiff bat and western red bat exists along the Otay River and the associated riparian woodland and rocky escarpment. There are several records for these species within the Project Area and within 1 mile, from 2003. These bat species rely on rocky outcroppings and mature, protected riparian woodland (Tremor *et al* 2017). Suitable habitat for these species is located within the Otay River valley and associated rocky gorge located immediately east of the Study Area. These species are highly mobile and can be found in contiguous native habitat adjacent to the Project Area; therefore, there is a high potential for these species to occur within the Study Area.

The mule deer was located in several locations within 1 mile from 2002 to 2015. This species is typically found within open scrub habitats while foraging on herbaceous plant material (Tremore *et al* 2017). High-quality grassland and scrub habitat that is connected to larger areas of native habitat are found throughout the Study Area. Therefore, there is a high potential for this species to occur within the Study Area.

4.1.5 Critical Habitat

One sensitive wildlife species, QCB, has USFWS-designated critical habitat within the Study Area. Otay tarplant critical habitat is located west and adjacent to the Study Area but does not cross into the Study Area (Figure 10).

USFWS (2002)-designated critical habitat for QCB occurs throughout the majority of the Study Area, covering approximately 68.96 acres of the approximately 69-acre parcel. Paved and developed areas account for approximately 3.69 acres of land within the designated critical habitat area, with the remaining area consisting of habitat communities as described in Section 4.1.2. Numerous patches of host plant and multiple nectar sources were observed during the reconnaissance and host-plant mapping surveys.

A total of approximately 55.5 acres of suitable habitat for QCB were identified within the Proposed Project Study Area and surveyed as the QCB Survey Area. A total of two distinct QCB were observed during the 2019 focused surveys for the Proposed Project. Both of these observations were within the USFWS "Recommended Quino Survey Area".

Based on consultation with the USFWS on April 18, 2019 and August 15, 2019, Proposed Project features have been designed to avoid host plant locations, and the use of proposed camp facilities shall include public outreach and education, and additional protection measures such as access road use restrictions shall be implemented during the QCB flight season (Eric Porter, email communication, August 15, 2019).

4.1.6 Wetlands/Jurisdictional Waters

The Study Area is located in the 1807030410 (Otay River) watersheds (Hydrologic Unit Codes [HUC-10]; USDA 2019) in San Diego County, California. This watershed is the source the Otay River, a traditionally navigable waterway (TNW). The approximately 25-mile Otay River begins at San Miguel Mountain, flows through the Upper and Lower Otay Lakes westward to the Pacific Ocean, where it empties into Egger Highlands at the San Diego Bay National Wildlife Refuge. The Otay River is fed by controlled release from the Lower Otay Reservoir which acts as part of the municipal water supply and the terminus of Pipeline 3 of the Second San Diego Aqueduct. Jamul Creek and Dulzura Creek act as the primary tributaries into the watershed with numerous smaller named and unnamed creeks flowing into the area from the surrounding Jamul and Otay Mountains (Figure 2).

The Otay River flooded in 1916, resulting in widespread alluvium deposits throughout the Otay Valley and San Diego Bay (Reynolds 2008). These deposits were mined from the 1930s to the 1980s and resulted in the valley floor being marked by pits and tailing piles (Schoenherr 2015). Water primarily flows within a shallow groundwater system and is exposed in some of the deeper pits that were formed during aggregate mining operations. These exposed areas of groundwater contain freshwater marsh habitats and provide complex matrix of riparian, wetland, and upland vegetation types.

Savage Dam impounds Lower Otay Lake (Reservoir) and is located northeast of the Project Area. This dam is part of the local water supply and controls flow into the Otay River located within the Project Area buffer. There are several ephemeral drainages that follow the topography of the landscape within the Project Area. These drainages primarily act to facilitate the drainage of large storm events and terminate in the Otay River. The Otay River flows approximately 10 miles to the west and empties into San Diego Bay.

No formal jurisdictional delineation was performed during this report. The general area appears to be dominated by topographical features that facilitate ephemeral drainages that eventually connect to the Otay River to the south. A larger swale feature is located approximately 120 ft. east of the new tent locations that contained standing water during the month of March. Project related activities are not anticipated to impact any of the observed ephemeral drainage features or swales, or the Otay River. Proposed Project features were designed to avoid impacting any drainage or jurisdictional features and associated habitat and the small amounts of new pavement included in the Proposed Project are not expected to significantly contribute to urban runoff.

4.1.7 Preserve, Habitat Connectivity, and Wildlife Corridors

Preserve

The Proposed Project is located within the County of San Diego MSCP South County Subarea, in a region designated as "Take Authorized," within Otay Lakes County Park (Figure 11). In areas designated as "Take Authorized," no additional biological mitigation is required for development to occur. The South County Subarea Plan is intended to provide for the take of covered species and their habitats associated with development. Take of covered species associated with the on-going management of San Diego County Park Lands and construction of facilities consistent with existing (1996) park development plans is authorized consistent with the MSCP Subarea Plan (County of San Diego 1998).

Habitat Connectivity and Wildlife Corridors

The Study Area functions as part of the Otay River wildlife corridor. The approximately 25-mile Otay River begins at San Miguel Mountain, flows through the Upper and Lower Otay Reservoirs westward to the Pacific Ocean, where it empties into Egger Highlands at the San Diego Bay National Wildlife Refuge. The Otay River serves as a wildlife corridor for insect, amphibian, reptile, amphibian, mammal, and avian species. Riparian systems harbor a high abundance of diversity in southern California. Portions of the Otay River watershed have been ravaged by fire, overtaken with nonnative plant and wildlife species, and has diminished in wildlife corridor habitat values due to agriculture, urban development, gravel mining, and infrastructure developments.

The Study Area is located immediately south of the Lower Otay Reservoir and is within the Otay River floodplain. A mountain ridge separates the Otay River from the Study Area as the river flows southeast from the Lower Otay Reservoir for approximately 0.5 mile before curving southwest and crossing through the southern portion of the Study Area. Therefore, the southern portion of the Study Area functions to facilitate wildlife movement along the Otay River wildlife corridor.

The Project Area is situated on a hill outside of the Otay River floodplain and is not within the path of the wildlife corridor; however, the Project Area contributes to the functionality of the corridor by providing open space for foraging and dispersal of wildlife. Where the Otay River crosses through the Study Area, a steep, approximately 30-foot tall cliff face separates the Otay River floodplain from Proposed Project features, which are located approximately 250 feet north of the Otay River floodplain. This steep cliff decreases the quality of connectivity between the Otay River and the Project Area.

No direct impacts to wildlife corridors are anticipated as a result of the Proposed Project. None of the Proposed Project features are anticipated to be large enough to create physical barriers to wildlife movement, with the remodeled restroom facility comprising the largest new developed area at 0.03 acres. The tallest Proposed Project features are the 30-foot masts for the zipline, each of which will comprise of a single pole and will have negligible impact on surrounding wildlife. The quality of habitat for foraging and dispersal of wildlife may be diminished on a temporary basis from noise during construction; however, the surrounding area consists primarily of undeveloped open space containing high-quality habitat. Therefore, indirect impacts to wildlife movement corridors as a result of the Proposed Project are anticipated to be less than significant.

Section 5.0 – PROJECT IMPACTS

5.1 ANALYSIS OF PROJECT EFFECTS

Physical impacts associated with this site are anticipated to consist of a mix of permanent and temporary impacts to a variety of habitats detailed below in Table 5 and in Figure 5.

Table 5: Summary of Permanent and Temporary Impacts Associated with Project Related Activities

Habitat/Vegetation Community	Permanent Impacts (acres)	Temporary Impacts (acres)
Bare Ground	0.18	0.05
Brome Grass-Wild Oat Grassland	1.14	0.02
California Sagebrush Scrub	0.20	0.10
Developed	0.01	0.01
Disturbed	0.15	0.27
Landscape/Ornamental	0.05	0.06
Total	1.73	0.51

5.1.1 Direct Impacts

Direct impacts associated with the Proposed Project include: permanent removal or significant alteration of existing native habitat, increased land use and disturbance by humans, and potential temporary fragmentation of movement corridors for various species. Other permanent impacts associated with this Project are generally small in size and are not expected to affect the surrounding habitat or habitat functionality greatly.

Temporary direct project impacts will result from construction crews moving about a Project Area, or by the laydown of tools or equipment while the specific Proposed Project feature is being built or maintained. Impacts to surrounding vegetation are anticipated to be light and consist primarily of crushing and trimming rather than grubbing and vegetation root structure and functionality is expected to be recovered through natural means. Both permanent and temporary direct impacts for each Proposed Project feature are detailed below with the total impacts to each habitat detailed in acreage and in square feet (sq. ft.).

Work areas have been specifically designed to maintain a minimum of a 100-foot buffer from QCB host plant patches and recorded observations from the QCB focused survey. Therefore, no impacts to the QCB are expected from Proposed Project facilities. In addition, best management practices (BMPs) will alleviate many of the direct impacts to habitat, sensitive plant species, and potential and observed sensitive wildlife species associated with construction of Proposed Project related facilities (Section 5.3).

Direct impacts can be minimized through the appropriate implementation of mitigation measures proposed below. These mitigation measures address topics including but not limited to: limiting the location of earth-moving machinery to already developed areas; working within a specific time of year to avoid impacting nesting birds; and implementing proper methods of revegetation seedling recruitment so as to maximize erosion control by the next rainy season.

Camping Facilities

The restoration of existing camping facilities will result in only temporary impacts to: Disturbed habitat (0.167 acre; 7,285 sq. ft.) and Bare Ground (0.004 acre; 194 sq. ft.). These sites are located within the mapped Eucalyptus Woodland and impacts will only occur to the habitat located at ground level. Therefore, no additional impacts are anticipated to the Eucalyptus Woodland.

Sensitive plant resources, San Diego viguiera, are located within close proximity (within 20 ft.) of the location of two of the existing camping sites. This is a CRPR List 4 species and while afforded special protection by encouraging avoidance from unnecessary impacts, there are no regulations regulating take of this species. No direct impacts the species are expected at these camp sites.

The establishment of seven new camping locations will result in only permanent impacts to Bare Ground (0.087 acre; 3,789 sq. ft.) and Disturbed habitat (0.092 acre; 4,018 sq. ft.). Three of the proposed new campsites are located within the mapped Eucalyptus Woodland and impacts will only occur to the habitat located at ground level. Therefore, no additional impacts are anticipated to the Eucalyptus Woodland.

Flag Plaza

Establishment of the flag plaza will result in permanent impacts to Disturbed habitat (0.012 acre; 521 sq. ft.) and Landscape/Ornamental vegetation (0.000 acre; 8.5 sq. ft.). In addition, a 15-foot temporary impact buffer has been established around the permanent impact area and will result in temporary impacts to: Disturbed habitat (0.064 acre; 2,784 sq. ft.), Brome Grass-Wild Oat Grassland (0.006 acre; 246 sq. ft.), Landscape/Ornamental vegetation (0.007 acre; 312 sq. ft.), bare ground (0.013 acre; 572 sq. ft.), and developed land (0.009 acre; 382 sq. ft.).

Restroom Facilities

The demolition of the existing restroom facilities and the construction of a new larger restroom will result in permanent impacts to Disturbed habitat (0.010 acre; 440 sq. ft.), Brome Grass-Wild Oat Grassland (0.000 acre; 5 sq. ft.), Landscape/Ornamental vegetation (0.012 acre; 504 sq. ft.), Developed land (0.012 acre; 518 sq. ft.), and Bare Ground (0.008 acre; 353 sq. ft.). In addition, a 15-foot temporary impact buffer has been established around the permanent impact area and will result in temporary impacts to: Coastal Sage Scrub (0.002 acre; 87 sq. ft.), Brome Grass-Wild Oat Grassland (0.004 acre; 154 sq. ft.), Disturbed habitat (0.003 acre; 122 sq. ft.), and Landscape/Ornamental vegetation (0.027 acre; 1,166 sq. ft.).

Camporee Field

Establishing Camporee Field will only result in permanent impacts to: Coastal Sage Scrub (0.002 acre; 93 sq. ft.), Brome Grass-Wild Oat Grassland (1.045 acre; 45,522 sq. ft.), Landscape/Ornamental vegetation (0.015 acre; 643 sq. ft.), and Bare Ground (0.075 acre; 3,273 sq. ft.).

Camporee Field will be a drill field that will be cleared of its current primarily Brome Grass-Wild Oat Grassland and replace it with a field more indicative of landscape/ornamental settings. While the conversion of the non-native grassland will result in a decrease of habitat complexity, the area will still provide foraging opportunities for birds and mammals.

COPE Course

Establishing the six COPE course stations will result in permanent impacts to Brome Grass-Wild Oat Grassland habitat (0.006 acre; 278 sq. ft.), California Sagebrush Scrub (0.029 acre; 1,276 sq. ft.), Disturbed habitat (0.008; 344 sq. ft.), Landscape/Ornamental vegetation (0.001 acre; 60 sq. ft.), and bare ground (0.001; 26 sq. ft.). In addition, a 15-foot temporary impact buffer has been established around the permanent impact area and will result in temporary impacts to: Brome Grass-Wild Oat Grassland habitat (0.005 acre; 219 sq. ft.), California Sagebrush Scrub (0.028 acre; 1,201 sq. ft.), Disturbed habitat (0.031; 1,369 sq. ft.), Landscape/Ornamental vegetation (0.024 acre; 1,028 sq. ft.), and bare ground (0.030; 1,298 sq. ft.)The COPE stations are designed to be able to be collapsed and partially disassembled when not in use, resulting in less long-term impacts to the surrounding habitat.

Sensitive plant resources, San Diego viguiera, are located within the proposed location of three of the COPE stations. Proposed Project features have been designed to minimize the total impacts required to sensitive species, however, trimming and occasional grubbing of this species may be required to facilitate construction. Individuals of this species range in the 1,000s to 10,000s within the Study Area and long-term impacts to the species from Project related activities are not anticipated.

Zip-line

Establishing the two zip-line base stations and associated anchors will result in permanent impacts to Brome Grass-Wild Oat Grassland habitat (0.004 acre; 176 sq. ft.), California Sagebrush Scrub (0.007 acre; 324 sq. ft.), Disturbed habitat (0.008 acre; 347 sq. ft.), Landscape/Ornamental vegetation (0.024 acre; 1,052 sq. ft.), and bare ground (0.002 acre; 105 sq. ft.). In addition, a 15-foot temporary impact buffer has been established around the permanent impact area and will result in temporary impacts to: Brome Grass-Wild Oat Grassland habitat (0.009 acre; 384 sq. ft.), California Sagebrush Scrub (0.045 acre; 1,979 sq. ft.), and bare ground (0.001; 40 sq. ft.)

Fenced Storage

Establishing the fenced storage areas will only result in permanent impacts to the following habitats: Disturbed habitat (0.010 acre; 422 sq. ft.), Landscape/Ornamental vegetation (0.001 acre; 29 sq. ft.), and Bare Ground (0.010 acre; 451 sq. ft.).

Proposed Project Site Circulation

Direct permanent and temporary Proposed Project related impacts to the existing road and trail network are not addressed in this study. All impacts associated with these features will occur to the existing bare ground of the feature and is considered routine maintenance.

A solitary red-diamond rattlesnake was observed within an existing access road along the northern portions of the Study Area. This species is highly mobile and will likely flee from areas of activity (construction or general use) if given the opportunity. No lasting impacts to this sensitive species are anticipated from Proposed Project related activities.

Fire Ring and Amphitheater

Establishing the fire ring and amphitheater will result in permanent impacts to California Sagebrush Scrub (0.076 acre; 3,313 sq. ft.) and Brome Grass-Wild Oat Grassland (0.062 acre; 2,710 sq. ft.). In addition, a 15-foot temporary impact buffer has been established around the proposed stage location for construction purposes and will result in temporary impacts to: Brome Grass-Wild Oat Grassland habitat (0.000 acre; 10 sq. ft.) and California Sagebrush Scrub (0.026 acre; 1,145 sq. ft.).

Archery Range

Establishing the archery range will only result in permanent impacts to the following habitats: California Sagebrush Scrub (0.083 acre; 3,625 sq. ft.), Brome Grass-Wild Oat Grassland (0.026 acre; 1,115 sq. ft.), and Disturbed habitat (0.006 acre; 267 sq. ft.).

Sensitive plant resources, San Diego viguiera, are located within close proximity (within 20 ft.) of the location of the archery range and are not anticipated to be impacted by Proposed Project-related activities.

5.1.2 Indirect Effects

Temporary indirect project effects are anticipated to occur within the Project and larger Study Areas; and are expected to include diurnal and nocturnal noise and dust production from utilization of the camp ground and associated facilities. These may be alleviated through the use of proper implementation of mitigation measures detailed below. The majority of indirect Project-related impacts will occur a few times a year (3 to 4 occasions), when large numbers of people will be within the general area. Impacts associated with human use of the Proposed Project facilities will occur on a temporary basis, therefore, majority of the indirect project impacts will be short term. Construction is anticipated to occur during daylight hours and therefore, light pollution is not expected to be an issue with the Proposed Project.

Additionally, implementation of the Proposed Project may result in indirect effects to existing wild animals altering land use patterns while the campsite and associated facilities are being used. These effects are anticipated to be short term (2 to 3 days maximum) and are not anticipated to negatively affect long-term animal land use patters.

Overall, the Proposed Project has been designed to minimize impacts to native habitat as well as minimize habitat fragmentation. Proposed Project features were located adjacent to existing access roads and areas of non-native vegetation (e.g. Disturbed Habitat, Landscape/Ornamental, and Bare Ground). The COPE stations have been designed to be collapsible to minimize potential impacts when not in use. The anticipated sporadic use of the Proposed Project facilities also contributes to the minimal overall impact expected from the Project. Impacts expected to Coastal Sage Scrub habitat will occur to areas with minimal shrub density and impacts will affect annual species to a greater extent than perennial species.

5.2 CUMULATIVE IMPACT ANALYSIS

Cumulative impacts that may impact listed plant and animal species are expected to be temporary in nature. The Study Area is primarily composed of gentle slopes of coastal sage scrub as well as native and non-native grassland. The majority of the impacts are not expected to impact sensitive species or habitats within the Study Area. The Project Area has a large amount of connectivity to other native habitat and is

not located adjacent to any MHPA Preserve areas. A majority of the permanent impacts occur to Brome Grass-Wild Oat grassland that exhibits a high degree of disturbance indicated by the presence of various invasive weed species.

Furthermore, with the implementation of appropriate mitigation measures, any unexpected impacts to sensitive habitat can be minimized or eliminated.

5.3 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

It is recommended that the following mitigation measures be implemented to minimize impacts to sensitive habitat or species:

MM-BIO-1: The following measures will be implemented to avoid all impacts to the quino checkerspot butterfly.

- All direct impacts to locations of host plants, including a 100 ft buffer, as mapped during the QCB focused surveys and refined during the 2019 rare plant surveys conducted by Chambers Group;
- Prior to construction, but no more than two weeks prior to ground disturbing activities, pre-construction surveys to identify QCB host plant locations will be conducted;
- All construction or other ground-disturbing maintenance activities within a 100-ft. buffer of mapped QCB host plants will be prohibited during the QCB flight season (defined as the third week of February through the second Saturday of May).
- BSA will conduct environmental awareness training for all personnel entering the site during construction and operation of the Proposed Project.
- During flight season, limit activities within the campground to Project features or currently established and maintained trails; no activities will be permitted within area inhabited by host plants and their buffers.
- Due to the inherent sensitivity of QCB host plants and the proximity of suitable habitat to existing trails, larger events where the trails may be utilized increasing the propensity for people to venture off the established trails. Educational campaigns should be conducted to minimize potential impacts to host plant patches during host plant booming season (generally March to April).
- Install permanent physical barrier(s) (i.e., fence) and signage, as appropriate, between locations of host plants and project components to facilitate avoidance of host plant areas. Placement of fencing should be located immediately adjacent to developed areas rather than within habitat such that movement of QCB and other wildlife is not impeded; these areas include the entrance to and along the existing trails and roads in the northeastern portion of the campground, at the entrance to and along the existing trails and roads in the southern portion of the campground that connect the campsites to the Amphitheatre, and along the eastern edge of the campsites. Signage should clearly state that entry into the host plant area is prohibited.
- A speed limit of 10 miles per hour will be instituted for all access roads during the QCB flight season.

MM-BIO-2: To avoid the destruction of active nests and to protect the reproductive success of birds protected by Migratory Bird Treaty Act, nesting bird surveys shall be performed not more than 3 days (72 hours) prior to the scheduled construction in the Proposed Project site and surrounding area. In the event that active nests are discovered, a suitable buffer should be established around such active nests and no construction within the buffer allowed until a qualified biologist has determined that the nest is no longer active (e.g. the nestlings have fledged and are no longer reliant on the nest). No ground disturbing

activities shall occur within this buffer until the qualified biologist has confirmed that breeding/nesting is complete, and the young have fledged the nest. Survey results shall be presented in a letter report and submitted to the County. Nesting bird surveys are not required for construction activities occurring between September 16 and January 31.

MM-BIO-3: A qualified biological monitor should conduct an environmental awareness training prior to the start of any construction related activities. Special focus should be made on sensitive animals and plants that are present or have a PFO and sensitive habitat located adjacent to the Project Area and within the Study Area.

MM-BIO-4: Heavy equipment shall work from existing access roads, footpaths, and bare ground areas as much as possible to avoid unnecessary soil compaction or impacts.

MM-BIO-5: Environmentally sensitive areas, including sensitive plant resources, within 20 ft. of construction areas should be flagged for avoidance.

MM-BIO-6: A qualified biologist will monitor all construction activities to ensure that standard and special-status species-specific avoidance and minimization recommendations are adhered to. The biological monitor will conduct a general preconstruction survey no more than 14 days prior to the start of construction to verify that no special-status species are in the Proposed Project area or its buffers. The monitor shall also conduct a daily survey in and around work areas before activities start.

MM-BIO-7: BMPs should be implemented to prevent new erosional features from developing in any newly contoured areas (including access roads and footpaths).

MM-BIO-8: Newly exposed bare ground should be covered with native hydroseed appropriate to the immediately surrounding habitat.

5.4 CONCLUSIONS

Through the implementation of the above mitigation measures it is expected the Proposed Project will have a less than significant impact on species diversity or richness of the Study Area or surrounding ecosystem. Wildlife movement corridors may shift slightly when the newly development camp sites are in use; however, minimal disruption is expected while the Project Area is not in use. The implementation of the above suggested mitigation measures will help to alleviate any potential negative impacts to the existing habitat.

The observed sensitive plant species, San Diego viguiera, is located in close proximity to three of the proposed COPE stations as well as the northwestern edge of the Amphitheater. Additional populations of San Diego viguiera are located adjacent to existing access roads and footpaths. In addition, ashy spike moss and San Diego barrel cactus were recorded in close proximity to existing access roads in the northern portion of the Study Area (ashy spike moss only) and along the existing trail network in the southern portion of the Study Area (ashy spike moss and San Diego barrel cactus). Populations of these species that are located within 20 ft. of Proposed Project features will be flagged prior to construction and will be avoided to the extent feasible. Impacts to these species are not anticipated as a result of by project related activities.

Minor vegetation trimming may be required to facilitate construction activities, and minimal grubbing of vegetation may be required. Crews should remain within the Project Area boundary to minimize effects to sensitive habitat and resources.

Section 6.0 – SUMMARY OF PROJECT IMPACTS AND MITIGATION

6.1.1 Mitigation

This Proposed Project is located within a designated "*Take Authorized*" parcel, under the association of Otay Lakes County Park. This area was previously mitigated for at the inception of San Diego County's MSCP. The Take Authorized qualifier pertains only to species covered within the San Diego County MSCP, which does not include QCB. Since QCB is present within the Study Area, the Proposed Project has been designed to avoid impacts to this species. Project features will be placed more than 100 ft. from all QCB sightings and host plant patches, and project-specific mitigation measures were developed (Section 5.3 above). Through the implementation of these measures, no impacts are anticipated as a result of Proposed Project-related activities. Therefore, no additional mitigation specifically targeted for QCB is proposed at this time.

6.1.2 Sensitive Flora and Fauna

With the use of the project-specific mitigation measures listed in Section 5.3 above, no impacts to any listed species are anticipated. No sensitive animal resources were identified within any of the expected Proposed Project areas. San Diego viguiera is located within three areas associated with COPE stations and at the northwestern edge of the proposed Amphitheater location, and impacts are anticipated to include vegetation trimming and limited vegetation removal. Additional San Diego viguiera populations are located in close proximity to existing access roads and trails; however, with implementation of the mitigation measures above and the utilization of established work areas, no additional impacts are anticipated.

Multiple populations of ashy spike moss and San Diego barrel cactus are located adjacent to existing access roads and trails; however, these populations are far enough removed from the existing facilities that they are not anticipated to be impacted by Project-related activities.

6.1.3 Larger Project Effects

Permanent impacts are anticipated to be minimal and restricted to previously disturbed areas where feasible, and Proposed Project features are designed to collapse when not in use. The Proposed Project will utilize existing access roads and trails such that no new roads or trails will be created. Overall, the Proposed Project aims to rehabilitate and improve a former campground site for the occasional use of a civically-minded and environmentally-conscious group (BSOA). The Proposed Project provides an opportunity to expose BSOA youth to the urban-wildland interface and gain an understanding of the importance of ecological conservation.

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Section 8.0 – LIST OF PREPARERS

Preparers:
Clark Austin – Staff Biologist, report author
Laura Gorman – Senior Biologist, report author
Philip Carlos – GIS Technician, map designer