SKYPARK AT SANTA'S VILLAGE

UNINCORPORATED COMMUNITY OF SKYFOREST, SAN BERNARDINO COUNTY, CALIFORNIA

Habitat Assessment

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January 2016

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Habitat Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

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January 2016

Executive Summary

This report contains the findings of Michael Baker International's Habitat Assessment for Skypark at Santa's Village Project located in the unincorporated Community of Skyforest, San Bernardino County, California.

The majority of the project site is undeveloped, consisting of naturally occurring habitats which will continue to remain undeveloped. Dirt fire access roads traverse the site. These existing dirt access roads are proposed to be used for various mountain biking/hiking trail activities. The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the park's closure in 1998. The proposed new land use will renovate these existing buildings. The majority of the project site has been undisturbed from this previous development. Five (5) plant communities were observed on-site: mixed conifer, willow riparian scrub, chaparral, grassland (meadow), and pond. In addition, there are two (2) non-vegetative land cover types that would be classified as disturbed and developed.

No sensitive plant species were observed on-site during the habitat assessment. While most of the site is undeveloped and provides relatively undisturbed mixed conifer habitat, most sensitive plant species in the region occur in different habitats, microhabitats, or conditions than those that are present on-site. As a result, based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that the project site has a moderate potential to support silver-haired ivesia (*Ivesia argyrocoma var. argyrocoma*), Parish's yampah (*Perideridia parishii ssp. parishii*), and Laguna Mountains jewelflower (*Streptanthus bernardinus*), and a low potential to support southern jewelflower (*Streptanthus campestris*). All other sensitive plant species are presumed absent from the site.

Based on input from regulatory agencies and the San Bernardino Valley chapter of the Audubon Society, special attention was given to the suitability of the habitat within and adjacent to the project site to support four (4) sensitive wildlife species: southern rubber boa (*Charina umbratica*, SRB), San Bernardino flying squirrel (*Glaucomys sabrinus californicus*, SBFS), mountain yellow-legged frog (*Rana muscosa*), and California spotted owl (*Strix occidentalis occidentalis*, CASO), in addition to general sensitive wildlife species as determined through a literature search. This resulted in subsequent individual habitat suitability assessments for each of these four species. A single adult CASO was observed immediately offsite during the CASO suitability assessment in September 2015 and this species is expected to be present. Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has

a high potential to support Andrew's marble butterfly (*Euchloe hyantis andrewsi*), and a moderate to high potential to support bald eagle (*Haliaeetus leucocephalus*), lodgepole chipmunk (*Neotamias speciosus speciosus*), and white-eared pocket mouse (*Perognathus alticolus alticolus*). There is a low potential to support rosy boa (*Charina trivirgata*), coast horned lizard (*Phrynosoma blainvillii*), American badger (*Taxidea taxus*), and two-striped garter snake (*Thamnophis hammondii*). All remaining sensitive wildlife species are presumed to be absent from the project site.

It is recommended that the portions of the project site that contain suitable habitat for SRB, SBFS, and CASO remain undeveloped. These areas are generally in the northern section of the project site north the pond. Some of the areas containing moderate to high quality habitat for these species are also within areas that are proposed for minor development (foot trails) and that have some existing development already (primarily fire access roads and trails). It is recommended that these areas be preserved to the extent possible, or that a mitigation program be instated for the loss of these areas if not.

A total of four (4) drainage features are present on the project site; Hooks Creek and three (3) unnamed ephemeral drainage features (Drainages 1-3). Hooks Creek and Drainages 1-3 all qualify as waters of the United States, and fall under the regulatory authority of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW). However, since the Natural Resources Conservation Service (NCRS) is taking the federal lead in the meadow rehabilitation project they are the federal lead agency implementing Section 404 of the Clean Water Act (CWA). As a result, a CWA Section 404 permit from the Corps will not be required for this project. Based on current site conditions, the project applicant must obtain the following regulatory approvals for any impacts to Hooks Creek associated with the meadow rehabilitation project: Regional Board CWA Section 401 Water Quality Certification and CDFW Section 1602 Streambed Alteration Agreement (SAA).

The meadow rehabilitation project will entail constructing a lined waterway along the length of the meadow, periodically split by new water/sediment control basins, to connect to an on-site pond. Exotic vegetation and large obstructions will be removed throughout the meadow, and new hedgerows will be planted along its perimeter. Wildlife structures including nest boxes, downed wood, and rock piles will be strategically located at different locations along or near to the new waterway.

No impacts to Hooks Creek or Drainages 1-3 are anticipated from installation of the proposed trials. Construction of proposed new trails within the project site will avoid potential impacts to jurisdictional waters. The trials will avoid jurisdictional waters and will generally be left in a "rough" state, unpaved and with brush cleared and overhanging vegetation trimmed. No

dredging or fill material will be placed in any of the jurisdictional features on-site. Any proposed trail crossings (fallen logs) over the jurisdictional features will occur outside of the jurisdictional limits of Corps, Regional Board, and CDFW.

Pursuant to the Migratory Bird Treaty Act and California Fish and Game Code, construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from January 1 through September 15 (this time frame includes both the passerine and raptor nesting season), but can vary slightly from year to year based upon seasonal weather conditions. If construction or vegetation clearing activities occur during the avian nesting season a pre-construction nesting bird clearance survey will be required.

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LIST OF ACRONYMS

BIOS	Biogeographic Information and Observation System
CASO	California Spotted Owl
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
DPS	Distinct Population Segment
°F	Degrees Fahrenheit
DPS	Distinct Population Segment
FR	Federal Register
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LOP	Limited Operating Period
MBTA	Migratory Bird Treaty Act
Michael Baker	Michael Baker International
MYLF	Mountain Yellow-legged Frog
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Regional Board	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SR	State Route
SRB	Southern Rubber Boa
SBFS	San Bernardino Flying Squirrel
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WEAP	Worker Environmental Awareness Program

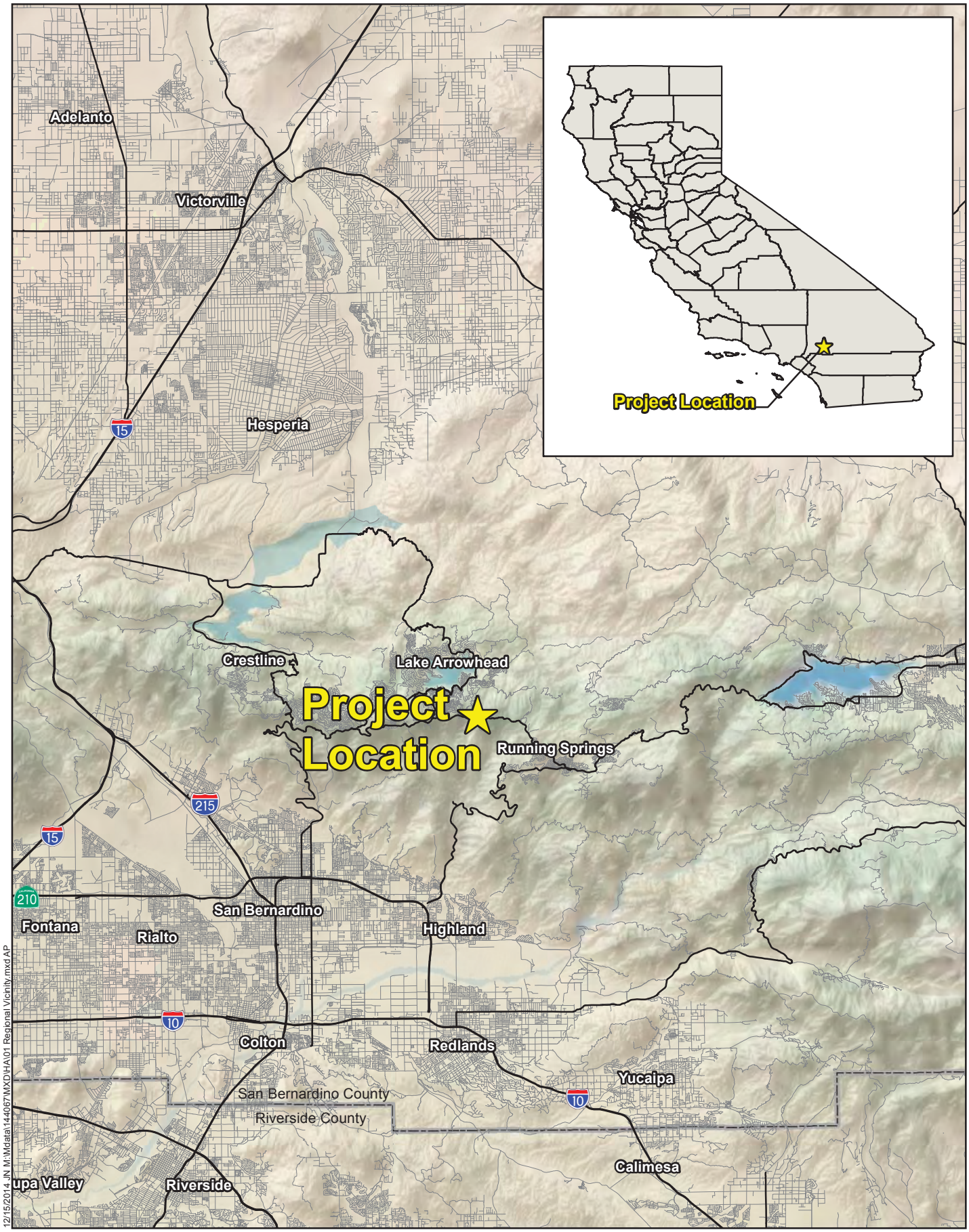
Section 1 Introduction

This report contains the findings of Michael Baker International's (Michael Baker) Habitat Assessment for the Skypark at Santa's Village project located in the Unincorporated Community of Skyforest, San Bernardino County, California (project site or site). A habitat assessment/field investigation was conducted by Michael Baker biologists Travis J. McGill, Thomas C. Millington, and Ashley M. Barton on November 6, 2014 to verify existing site conditions and assess the probability of occurrence for sensitive plant and wildlife species that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of the on-site habitat to support southern rubber boa (*Charina umbratica*, SRB), San Bernardino flying squirrel (*Glaucomys sabrinus californicus*, SBFS), mountain yellow-legged frog (*Rana muscosa*, MYLF), and California spotted owl (*Strix occidentalis occidentalis*, CASO), as well as several other sensitive species identified by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) and other electronic databases as potentially occurring on or within the general vicinity of the project site.

In addition to the initial general habitat assessment, several species-specific focused habitat suitability assessments were later conducted for the purposes of mapping habitat suitability throughout the project site. These assessments built upon the findings of the general 2014 habitat assessment. A SRB habitat suitability assessment was conducted on April 30, 2015 by Brian Leatherman of Leatherman Bioconsulting, Inc. and Michael Baker biologist Ryan S. Winkleman, and additional focused habitat suitability assessments for CASO, SBFS, and MYLF were conducted on September 23, 2015 by Mr. Winkleman, Mr. McGill, and Mr. Millington. A final field visit was made to the project site on December 3, 2015 by Mr. Winkleman and Mr. McGill to assess final impacts.

1.1 PROJECT LOCATION

The project site is located north of the City of Highland and south of Lake Arrowhead in the unincorporated community of Skyforest, San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Harrison Mountain quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Section 26 of Township 2 north, Range 3 west (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north and south of State Route 18 (SR-18) and west of Sycamore Drive in the San Bernardino National Forest (Exhibit 3, *Project Site*).



SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

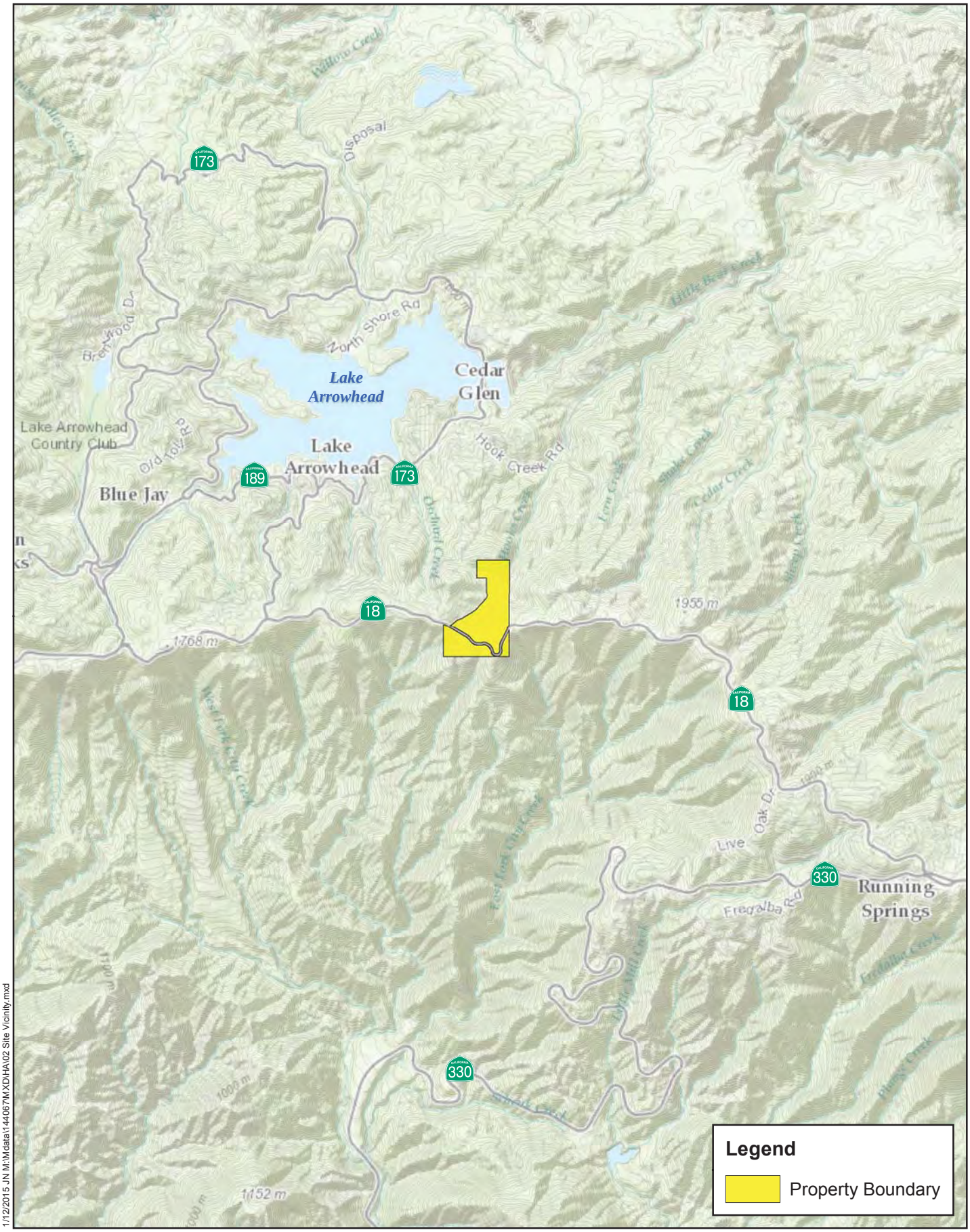
Michael Baker INTERNATIONAL

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1



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SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

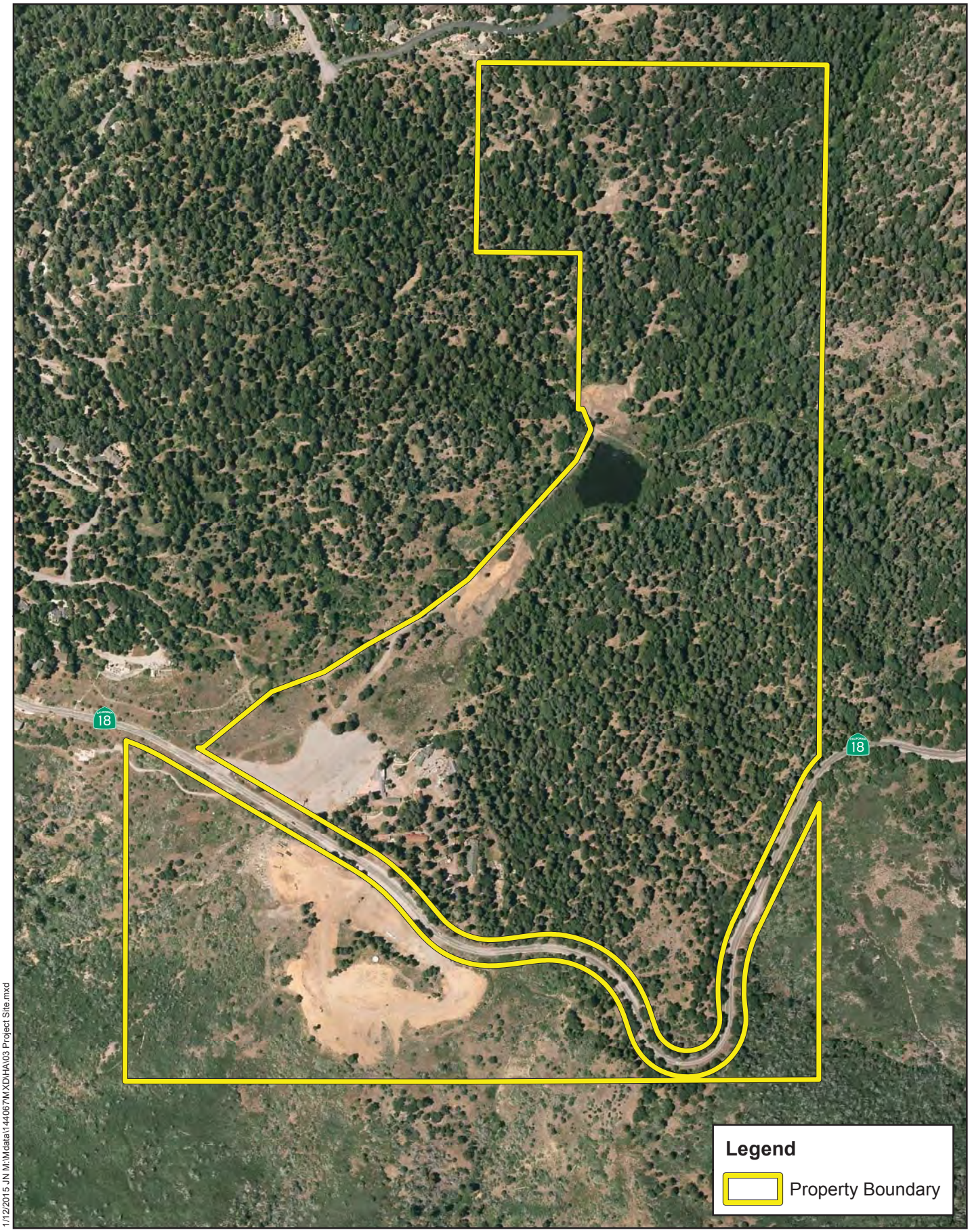
Michael Baker INTERNATIONAL

0 0.5 1 2 Miles

Source: San Bernardino County, USGS, ESRI World Topographic Map

Site Vicinity

Exhibit 2



1/12/2015 JN M:\Mdata\144067\MXD\HA\03 Project Site.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 250 500 1,000 Feet

Source: San Bernardino County, Eagle Aerial 2013

Project Site

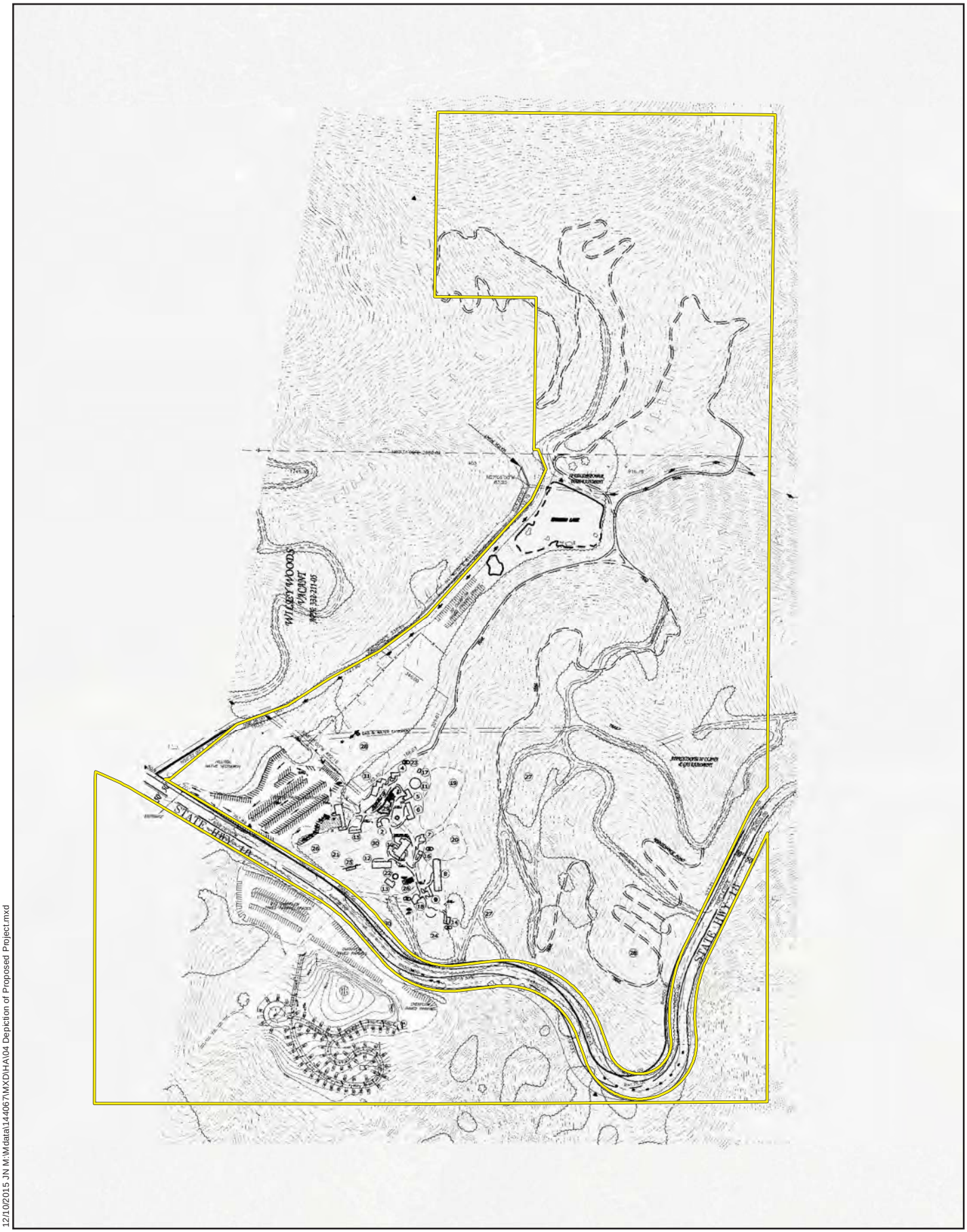
Exhibit 3

1.2 PROJECT DESCRIPTION

The proposed project includes a General Plan Amendment to change the Official Land Use District from Lake Arrowhead/Special Development- Residential (LA/SD-RES) & Lake Arrowhead/Single Residential-14,000 Square Foot Minimum lot size (LA/RS-14M) to Lake Arrowhead/Rural Commercial (LA/CR) on 152.92 acres. The proposed project requires a Conditional Use Permit to re-establish an Outdoor Commercial Entertainment Center which includes an Amusement Park, Campground, Meadow Rehabilitation, Restaurants, Bar, Wedding & Reception Facility, Retail, Trails, Recreational Activities and other Accessory Uses on 152.92 acres.

The proposed project includes the redevelopment and re-use of the existing Santa's Village attraction. The proposed project also includes the development of a mixed-use adventure park that would include a variety of activities and services. Nineteen original buildings exist on the project site totaling 23,389 square feet. It is intended that the exteriors of these original buildings would not be significantly altered. Rather, the exterior of the buildings will be rehabilitated (re-painted, repaired). The interiors will be redeveloped in order to fulfill a variety of uses. All existing buildings will remain. No buildings are proposed to be demolished. The existing buildings that are being rehabilitated are identified on Exhibit 4, *Depiction of Proposed Project*, and are listed in Table 1 below.

Improvements to Santa's Village attraction will also include the repair of hardscaping and landscaping. The asphalt pavement between the buildings will be replaced with concrete and rock and other hardscaping to improve on site drainage. The attraction is located within and includes native forest trees and native shrubs. The proposed improvements include only minimal landscaping which may include native and drought tolerant shrubs and annuals/flower beds commonly used in landscaping. The site currently has minimal landscaping and will continue to have minimal landscaping as the site does not have a formal irrigation system. Existing forest trees are supported by natural rainfall and snow. The understory landscaping is also supported by natural rainfall and snow and is only supplemented by hand watering.



12/10/2015 JN M:\Mdata\144067\MXD\HA\04 Depiction of Proposed Project.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

NOT TO SCALE

Source: Conceptual Site Plan.PDF

Depiction of Proposed Project

Exhibit 4

Table 1: Existing Buildings to be Rehabilitated

Building	Identification # on Exhibit	Square Footage
Welcome House & Gift Shop	1	Retail 2,122 Office 1,531
Santa's House	2	288
Billie's Patio Restaurant	3	1,856
Pedal Pub/Tavern	4	688
K's Candy Shop	5	905
The Gathering House	6	1,328
Coffee & Tea House	7	756
SkyPark Activity Center and Security Office	8	Activity Center 2,148 Security Office 1,227
Stone's Throw Gazebo	9	756
Sky Trading Company	10	2,952
Sky Pavilion	11	1,723
Reindeer Barn/ Retail & Crafts	12	1,950
Bouldering Room	13	720
Men's & Women's Restroom	14	750
Men's & Women's Restroom	15	272
Pebble Mine	16	192
Chapel	17	272
Good Witch's Bakery/Restaurant	18	990
Maintenance Building	25	405
Total		23,389

Additional recreational and entertainment amenities will be constructed as a part of the proposed project and are outlined in Table 2 below.

Table 2: New or Expanded Recreational and Entertainment Amenities

Amenity	Identification # on Exhibit
Reception Site	19
Wedding Ceremony Site	20
Skating Rink	21
Bouldering & Climbing Wall	22
Spider Jump/Amusement	23
Playground 777	24
Maintenance Building	25
Monorail	26
Aerial Adventure	27
Trail System	28
Water Features – Silver Slipper Pond & Lady Bug Pond	29
Treehouse Aerial Adventure/Playscape	30
Coaster Bike Play Area	31

The proposed Project consists of the following primary components:

Amusement Park Zone

The Amusement Park Zone is an area within the property boundary where more concentrated amusement park use will occur. The zone is identified as the area of historic commercial use, previously impacted by the original development of Santa's Village. In order for SkyPark at Santa's Village to retain repeat visitors, to remain competitive in the Adventure and Amusement Park Industry, and to continue to promote tourism in the mountain community, replacement of attractions and/or amenities with new attractions and amenities will be necessary and will occur in the Amusement Park Zone over time. The types of new attractions and amenities in the Amusement Park Zone that are predicted at this time (but not limited to) could include implementation of the original car ride, playground amenities, climbing walls, additional zip lines, snow play activities, and small support structures, such as storage sheds or concessions or other attractions that its primary function is entertainment or recreation. The attractions or features will be similar to the proposed project components outlined below and will not require extensive grading or vegetation clearing or result in a greater generation of noise or light These future attractions will not exceed 40 feet in height, using the existing 40-foot monorail as the baseline of existing improvements in the Amusement Park Zone. The existing 40-foot monorail does not extend higher than existing old growth forest. This height restriction will ensure the visual setting of the forest will be retained.

Trails

Existing and proposed trails are described below and are depicted on Exhibit 5, *Existing and Proposed Trails*.

Fantasy Forest Trail

The Fantasy Forest Trail is an existing trail that was used as a nature trail during the parks original years of operation. The trail cuts across the back of the park and is depicted as an existing hiking trail on the trail map. It is within the boundary of the Amusement Park Zone as it will be open during the operating hours of the park and lit as a nightime forest walk. It would be the only trail available after sun down and is very limited in its proximity to the park and distance. The trail distance is approximately 1/4 mile and is an interactive lighting attraction at night.

Improvement to the Fantasy Forest Trail includes clearing as needed for a width of 36-48-inch wide and sections of up to 100 feet in length will be elevated on a plank walkway. Un-elevated segments of the trail will be surfaced with decomposed granite.

Multi-Use Trail

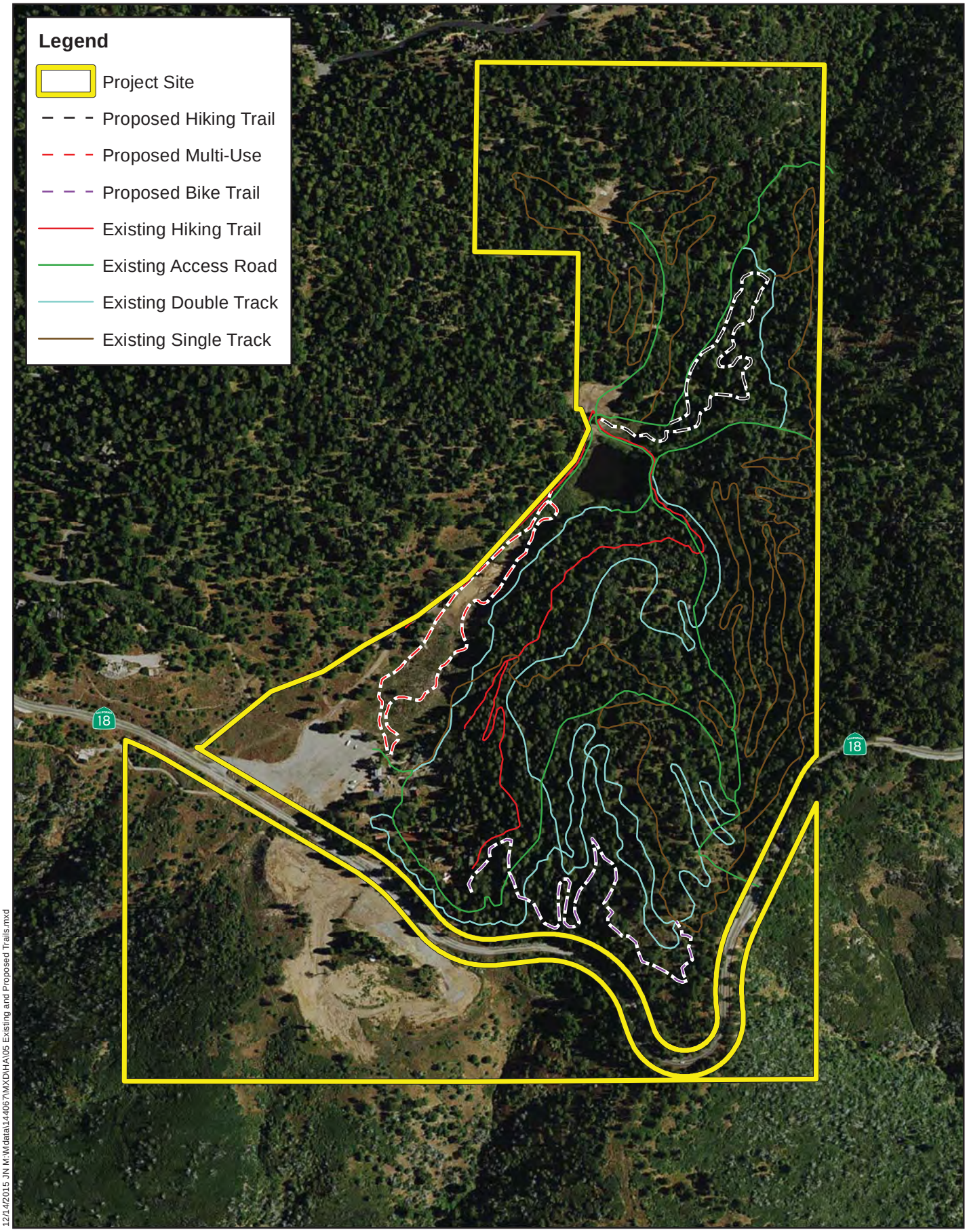
This is open for bicycle, wheel chair, pedal assist, and pedestrian traffic. This trail is specifically designed to accommodate special needs. It does not include motorized vehicles with the exception of electric assist vehicles for special needs. Construction techniques may include light weight track vehicles which include small backhoe and skid steer. It will be 5 feet to 8 feet maximum width, and surfaced with decomposed granite.

Hiking Trails

This is a special-use trail designed for hiking only. It is a single track trail not to exceed 36 inches in width. It will be used primarily for recreation; however, signage, fencing, and other forms of structures and materials will be used for educational purposes. The surface is the natural forest floor with the possible use of elevated walkways to prohibit soil disturbance in very wet conditions. Construction of these trails will be by hand tools and will McLeods, shovels, and rakes.

Mountain Bike Trail

This is a special-use trail for bicycles only. This trail is a single track trail designed for "one way" directional use. No double, side-by-side axle vehicles are allowed. Construction of these trails will be by hand tools and will include McLeods, shovels, and rakes. Special features are implemented, including log crossings, water bars for slope erosion, safety rail, and riding features such as protective berms and wood features.



12/14/2015 JN M:\Mdata\144067\MXD\HA\05 Existing and Proposed Trails.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 250 500 1,000 Feet

Source: San Bernardino County, Trail Map, ESRI World Imagery Basemap

Existing and Proposed Trails

Exhibit 5

Access Roads
This is a multi-use road for the continued purpose of accessing utility easements throughout the park. The road is a double wheel, side-by-side, 4-wheel drive roadway accessible to park guest, utility companies, and emergency vehicles. Most roads are dirt with the exception of some existing paved surfaces in the park and within property boundaries.

Existing Double Track
This is capable of holding a 4-wheel vehicle. Historically used for lumbering, emergency access and recreation. Existing double track trails have signage depicting their categorical use, many being multi-use trails including hiking, bicycle and emergency access use.

Existing Single Track
This is a special-use trail for bicycle use only. The trail system is "one way" directional traffic only. The width of the trail is closer to 24-inch and is constructed with hand tools to include McLeods, shovels, and rakes.

All of the trails will be maintained by hand tools. Techniques established by the U.S. Department of Agriculture, Forest Service (USFS) and the International Mountain Biking Association are implemented to reduce impacts to soils erosion, noise, off trail access and responsible forest practices.

Wilderness Adventure/Zipline and Aerial Park

This feature would include ziplines, rope courses, adventure swings, climbing walls, balance features, log crossings, and exploration trails. The Forest Zipline and tree house is estimated to be an average of 30 feet in height and approximately 1,200 feet in length; however the final designs would determine ultimate measurements. The tree house would have a zipline that is proposed to be approximately 16 feet high. A small children's zipline is proposed that would be approximately 8 feet high and 30 feet long. The tree house would be an engineered structure built among the trees. The final tree house platforms would either be constructed using a tree as the base or a standalone structure. Final design would be dependent on County approval.

Forest Playground

This feature would include bridges and swings. The playground would also provide seating, natural playscapes, and sensory challenges such as log walks, stepping stones, and exploration.

Skybike Monorail

The existing, electric, three-phase bumblebee ride would be converted to a pedal human powered operated bike monorail that would traverse the southern portion of the park. Existing infrastructure will be used. The bumblebee cars will be replaced with pedal operated bikes. The attraction will promote outdoor recreation and be a model for a new trend towards environmentally friendly attractions.

Fly Fishing Lake and Stream

Fly-fishing clinics, guides and lessons, and fly-fishing instruction would be offered at the site's improved and existing reservoir/pond system. The on-site ponds and steam would be stocked with fish per the California Department of Fish & Wildlife as permitted. Historically the pond has been stocked with trout. Trout fishing would be provided for catch and keep, or release as the guest wishes.

Hiking and Tours

Eco-tours, education, and wildlife viewing will be offered. The project will promote wildlife and habitat education. Job skills will be introduced through "Pathways," an ongoing Regional Occupational Program through local school districts. Ecotourism involving bird watching blinds, trails, and assisted programs will be implemented to educate the public and students on the importance of wildlife preservation.

Santa's Village/Winter Attractions

Winter attractions at Santa's Village will operate during the months of November and December or as weather permits. Winter attractions will include an outdoor ice rink, snowshoeing, sledding, and snow play. It is anticipated that these attractions will attract the largest number of visitors for the year.

Retail

A variety of related retail shops will be developed throughout the property. These uses will include gift shops, equipment rentals/purchases, and a variety of other retail uses that will be located within the existing buildings.

Restaurants

A full service restaurant, snack bar, pub, and bakery/candy store are proposed within the existing buildings.

Wedding Services

A wedding chapel, outdoor reception area, and full service wedding event center (including

bridal room) will be developed within the existing buildings.

Campground Site

A campground is proposed to be located south of SR-18. Minor grading will be required to improve the existing dirt road to provide access to and create 70 RV sites and approximately 35 tent campsites within the 20-acre campground. A restroom will be constructed on the campground site and will utilize a septic system that will be sized per restroom requirements and will have a tank with a leach field in the same design standards as the existing septic systems in the Santa's Village site. The chambers that separate the solids are pumped out periodically as needed. The proposed campground restroom building will be approximately 1,450-1,500 square feet. It will include 2 laundry units, 2 urinals, 8 toilets, 6 showers (4 standard and 2 handicap), and 8 wash basins/sinks.

Parking and Circulation

The existing paved parking lots, on the north and south side of SR-18, will continue to be used. The proposed project does not require expansion of parking lots. Parking lots will be resurfaced and re-striped for parking lots and circulation direction. There are approximately 550 spaces within the existing parking areas.

Utilities

The northern portion of the project site would utilize existing utilities already located on-site. Currently, there are no utilities located on the southern site. An existing water and gas line on the northern portion of the site will be extended to provide utility for the southern site for the restroom and fire flow at the campground area.

Operating Hours

Peak season for the proposed project is anticipated to be November and December (approximately 2,000 visitors per day). Low season is anticipated to be during spring and early fall. Summer is anticipated to have an average of 1,000 visitors per day. Operating hours are proposed to be 8AM to 10PM. The project is proposed to be fully operational year-round, with no planned closures.

Offsite Improvements

Offsite improvements would be included with the proposed project and would involve new dedicated left turn lanes and a signalized intersection with crosswalks on SR-18 at the revised entrance to SkyPark. SR-18 would be widened to accommodate two left-turn lanes into the driveways of the campground site and the Santa's Village site as vehicles approach from both directions of SR-18. Trees would be trimmed to provide improved vision if the trees surrounding the driveways conflict with vehicles safely exiting from the proposed

project driveways.

Meadow Rehabilitation

The project also includes the removal of waste from the site as well as the restoration and improvement of the upstream portions of Hook Creek. Previously, the project site was used as a storage site for wood material infested by bark beetles, which has left the site with debris, woodchips, firewood, bark, and trash. The project would include a watercourse that would allow for expansion and preservation of the wetland by a water aeration system controlled daily by the use of a solar array and water pumps. Ultimately, improvements to the health, beauty, and natural resources of the project area would serve as a balanced ecosystem that would be created for education, recreation, and wildlife.

Section 2 Methodology

Michael Baker conducted a thorough literature review and records search to determine which sensitive biological resources have the potential to occur on or within the general vicinity of the project site. In addition, a general habitat assessment and field investigation of the project site was conducted and provided information about the existing conditions on the project site and the potential for sensitive biological resources to occur.

2.1 LITERATURE REVIEW

Prior to conducting the field visit, a literature review and records search was conducted for sensitive biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of sensitive[1] plant and wildlife species and their proximity to the project site were determined through a query of the CNDDB Rarefind 5, CDFW's QuickView Tool in the Biogeographic Information and Observation System (BIOS), the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of sensitive species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

Literature detailing biological resources previously observed in the vicinity of the project site and historical land uses were reviewed to understand the extent of disturbances to the habitats on-site. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- San Bernardino County General Plan;
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey;
- USFWS Critical Habitat designations for Threatened and Endangered Species;
- Habitat requirements for SRB, SBFS, MYLF, and CASO; and
- Primary constituent elements for MYLF.

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the project site. Additional recorded occurrences of these species found on or near the project site were derived from database queries. The CNDDB ArcGIS

[1] As used in this report, "sensitive" refers to plant and wildlife species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society Rare Plant Rank; and wildlife species that are designated by the CDFW as fully protected, species of special concern, or watch list species.

database was used, in conjunction with ArcGIS software, to locate the nearest occurrence and determine the distance from the project site.

2.2 HABITAT ASSESSMENT AND FIELD INVESTIGATION

Michael Baker biologists Travis J. McGill, Thomas C. Millington, and Ashley M. Barton evaluated the extent and conditions of the plant communities found within the boundaries of the project site during a preliminary habitat assessment on November 6, 2014. Additional follow-up surveys were conducted on April 30, September 23, and December 3, 2015. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support sensitive plant and wildlife species. In addition, field staff identified any jurisdictional features, riparian/riverine habitat, and any natural corridors and linkages that may support the movement of wildlife through the area.

Special attention was given to sensitive habitats and/or undeveloped areas, which have higher potentials to support sensitive flora and fauna species. Areas providing suitable habitat for SRB, SBFS, MYLF, and CASO were closely surveyed during the habitat assessment. Methods to detect the presence of these species included direct observation, aural detection, and signs of presence including tracks, scat, or other sign.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

2.3 SOIL SERIES ASSESSMENT

On-site and adjoining soils were researched prior to the field visit using the USDA NRCS Soil Survey for San Bernardino County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes the project site has undergone.

2.4 PLANT COMMUNITIES

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with Sawyer, Keeler-Wolf and Evens (2009), CDFW (2010) and Holland (1986), delineated on an aerial photograph, and

then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

2.5 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field, and recorded in a field notebook. Unusual and less familiar plants were identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.6 WILDLIFE

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides were used to assist with identification of species during surveys included The Sibley Field Guide to the Birds of Western North America (Sibley 2003) for birds, A Field Guide to Western Reptiles and Amphibians (Stebbins 2003) for herpetofauna, and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are fairly well standardized, scientific names are provided immediately following common names in this report (first reference only).

2.7 JURISDICTIONAL AREAS

Aerial photography was reviewed prior to conducting the habitat assessment. The aerials were used to locate and inspect any potential natural drainage features and water bodies that may be considered riparian/riverine habitat and/or fall under the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory authorities.

2.8 FOCUSED HABITAT SUITABILITY ASSESSMENTS

Focused habitat suitability assessments were conducted in 2015 for SRB, CASO, SBFS, and MYLF. The SRB assessment was conducted on April 30, 2015 by Leatherman Bioconsulting, Inc. biologist Brian Leatherman and Michael Baker biologist Ryan S. Winkleman, while the remaining three assessments were conducted on September 23, 2015 by Michael Baker biologists Ryan S. Winkleman, Travis J. McGill, and Thomas C. Millington. In each instance the surveyors walked the project site, evaluating features and noting areas of suitable habitat for each species. The results were used to create species-specific habitat suitability maps. Habitat suitability reports for each of the four species are provided in Appendices D - G.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

San Bernardino County features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Relative to other areas in southern California, winters are colder with frost and with chilly to cold morning temperatures common. Climatological data obtained from nearby weather stations indicates the annual precipitation averages 16.4 inches per year. Almost all of the precipitation in the form of rain occurs in the months between October and April, with hardly any occurring between the months of May and September. The wettest month is February, with a monthly average total precipitation of 3.7 inches. The average maximum and minimum temperatures for the region are 80.1 and 51.2 degrees Fahrenheit (°F) respectively with July and August (monthly average 96°F) being the hottest months and December (monthly average 41°F) being the coldest.

3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 5,660 to 5,730 feet above mean sea level and generally slopes to the northeast. The southern portion of the project site, south of SR-18, abuts the steep south-facing mountain face of the San Bernardino Mountains. Based on the USDA Soil Survey, the project site is underlain by the following soil units: Morical-Wind River families complex (30 to 50 percent slopes), Morical-Wind River families complex (15 to 30 percent slopes), and Springdale family-Lithic Xerorthents association, dry (50 to 75 percent slopes) (Exhibit 6, *Soils*).

<u>Morical-Wind River families complex, 30 to 50 percent (MbF)</u>

The Morical-Wind River families complex (30 to 50 percent slopes) soil series is well drained and is developed in residuum weathered from granodiorite. In the San Bernardino area, it is found on mountains at an elevation of 4,500 to 6,000 feet. The mean annual precipitation for where this soil type occurs in the San Bernardino area is 25 to 35 inches, with a mean annual air temperature of 46 to 54ºF and a frost-free period of 120 to 175 days. The typical profile of this soil for the San Bernardino area includes loam 0 to 8 inches, loam 8 to 50 inches, and weathered bedrock 50 to 54 inches. The depth to a restrictive feature is 45 to 49 inches to paralithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is moderate at approximately 6.0 inches. The soil type is classified as not prime farmland.

<u>Morical-Wind River families complex, 15 to 30 percent (MbE)</u>

The Morical-Wind River families complex (15 to 30 percent slopes) soil series is well

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SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 275 550 1,100 Feet

Source: San Bernardino County, NRCS Soils Data Mart-CA777, Eagle Aerial 2013

Soils

Exhibit 6

drained and is developed from residuum weathered from granodiorite. In the San Bernardino area, it is found on mountains at an elevation of 4,500 to 6,000 feet. The mean annual precipitation for where this soil type occurs in the San Bernardino area is 25 to 35 inches, with a mean annual air temperature of 46 to 54ºF and a frost-free period of 120 to 175 days. The typical profile of this soil for the San Bernardino area includes loam 0 to 8 inches, loam 8 to 50 inches, and weathered bedrock 50 to 54 inches. The depth to a restrictive feature is 45 to 49 inches to paralithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is moderate at approximately 6.0 inches. The soil type is classified as not prime farmland.

Springdale family-Lithic Xerorthents association, dry, 50 to 75 percent (FLG)

The Springdale family-Lithic Xerorthents assoication (50 to 75 percent slopes) soil series is excessively drained and is developed from residuum weathered from granodiorite. In the San Bernardino area, it is found on mountains at an elevation of 3,000 to 7,000 feet. The mean annual precipitation for where this soil type occurs in the San Bernardino area is 15 to 25 inches, with a mean annual air temperature of 46 to 54ºF and a frost-free period of 120 to 175 days. The typical profile of this soil for the San Bernardino area includes gravelly loamy coarse sand 0 to 5 inches, very gravelly loamy sand 5 to 25 inches, very gravelly coarse sand 25 to 45 inches, and unweathered bedrock 45 to 49 inches. The depth to a restrictive feature is 45 to 49 inches to lithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is very low at approximately 2.5 inches. The soil type is classified as not prime farmland.

3.3 SURROUNDING LAND USES

The project site is located in a primarily undeveloped area approximately 1.5 miles southeast of the community of Lake Arrowhead. Big Bear Lake is located approximately 11 miles to the east of the project site. SR-18 bisects the project site into a northern and southern portion. In the vicinity of the project site, land uses include residential and commercial development and undeveloped forest land.

Section 4 Discussion

4.1 SITE CONDITIONS

The majority of the project site is undeveloped, consisting of naturally occurring habitats which will continue to remain undeveloped. Dirt fire access roads traverse the site. These existing dirt access roads are proposed to be used for various mountain biking/hiking trail activities. The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the park's closure in 1998. The proposed new land use will renovate these existing buildings.

After the park's closure, the parking lot on the north side of SR-18 (western portion of the project site) and the overflow parking lot south of SR-18 (southern portion of the project site) provided a storage yard and staging area for bark beetle infested lumber. The infested wood was chipped and spread out over the paved parking lots.

4.2 VEGETATION

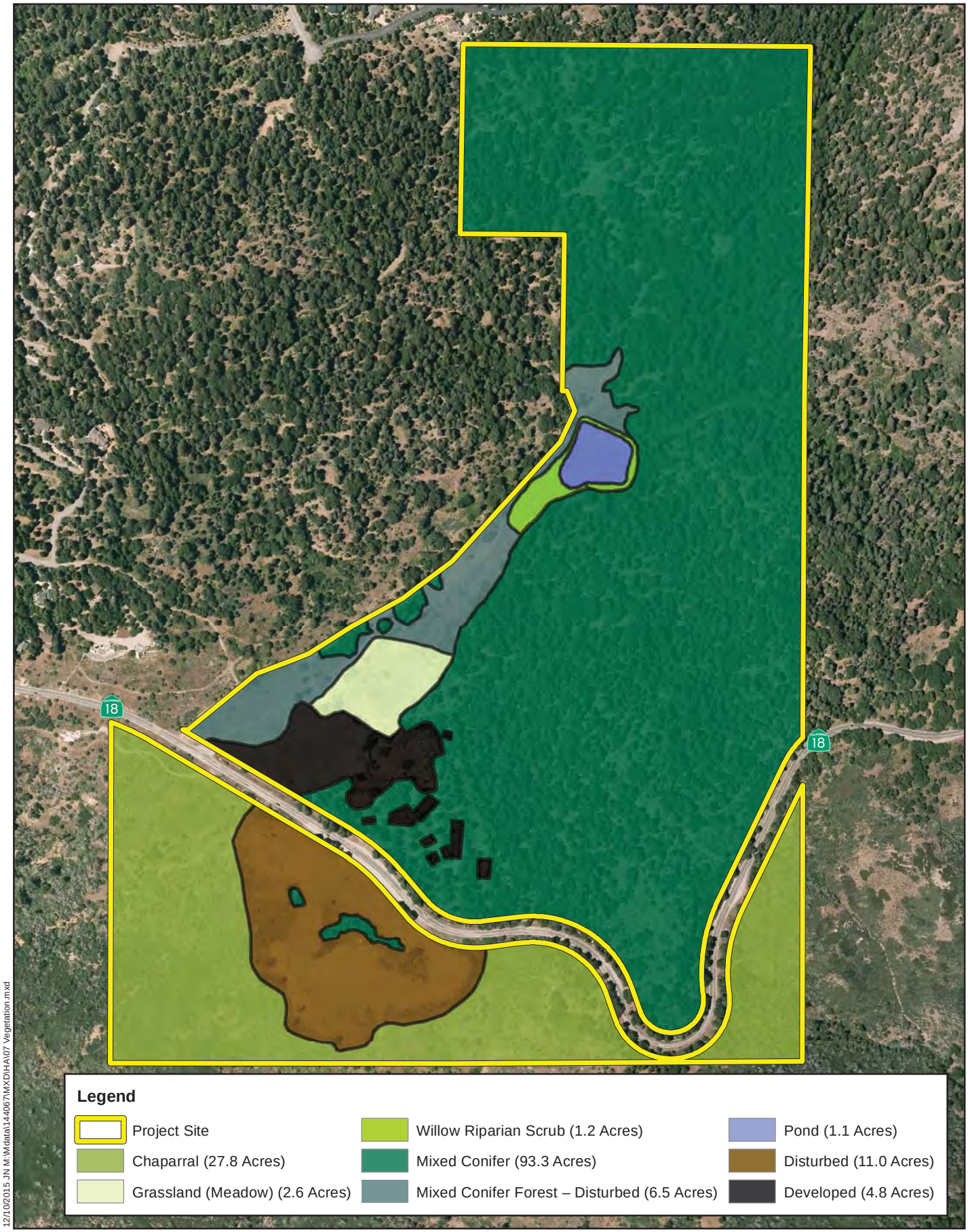
The majority of the project site has been undisturbed from previous development. Five (5) plant communities were observed on-site: mixed conifer, willow riparian scrub, chaparral, grassland (meadow), and pond (Exhibit 7, *Vegetation*). In addition, there are two (2) non-vegetative land cover types that would be classified as disturbed and developed. These six areas are described in further detail below.

4.2.1 Mixed Conifer

The mixed conifer plant community is found throughout the site and is probably the most prevalent of the four. This plant community is dominated by Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), white silver fir (*Abies concolor*), and California black oak (*Quercus kelloggii*).

4.2.2 Willow Riparian Scrub

The willow riparian scrub community is located in the northwestern portion of the project site within the undisturbed portion of Hooks Creek, south of the on-site pond, and is also found on the slopes surrounding the on-site pond. This plant community is dominated by arroyo willow (*Salix lasiolepis*) with cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), California mugwort (*Artemisia douglasiana),* sparse cattails (*Typha* sp.), sticktight (*Bidens frondosa*), stinging nettle (*Urtica dioica*), and northern water plantain (*Alisma triviale*).



12/10/2015 JN M:\Mdata\144067\MXD\HA\07 Vegetation.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Vegetation

Exhibit 7

4.2.3 Chaparral

The chaparral plant community is located on the slopes on the southern end of the project site on the south-facing mountain face of the San Bernardino Mountains. The plant community is dominated by large shrubs including lilac (*Ceanothus* spp.) and manzanita (*Arctostaphylos* sp.), with ripgut brome (*Bromus diandrus*) in some intershrub spaces and burned coniferous trees sparsely scattered throughout.

4.2.4 Grassland (Meadow)

The grassland plant community is found in the meadow area on the southwestern portion of the project site, north of the existing parking lot. This area is referred to on the Harrison Mountain USGS topo map as "Hencks Meadow." This plant community is dominated by native and non-native grass and meadow plant species. Plant species observed include spikerush (*Eleocharis* sp.), spiny rush (*Juncus acutus*), Pacific rush (*Juncus effuses* var. *pacificus*), ripgut brome, downey chess (*Bromus tectorum*), stinging nettle (*Urtica dioica*), horehound (*Marrubium vulgare*), and bull thistle (*Cirsium vulgare*), cattails, hillside pea (*Lathyrus vestitus*). The grassland (meadow) area has been subject to frequent human disturbances over the years.

4.2.5 Pond

A pond is found on the northwest portion of the project site that was established as a result of the damming of Hooks Creek. The proposed project includes the realignment, expansion, and restoration of the upstream portions of Hooks Creek that flow into the pond.

4.2.6 Disturbed

The disturbed areas on site no longer support vegetation or comprise a plant community. Disturbed areas are found in association with the existing buildings, the parking lot on the south side of SR-18, and the parking lot between the meadow and the willow riparian scrub plant community. The disturbed area inside Santa's village consists mainly of dirt paths while the two parking lots are covered in wood chips with sparse native/non-native shrubs and grasses. Dirt fire access roads located throughout the property are also included as disturbed areas.

4.2.7 Developed

The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the Park's closure in 1998.

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species observed, expected, or not expected to occur on-site. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted. Wildlife observations were based on calls, songs, scat, tracks, burrows, and actual sightings of animals.

4.3.1 Fish

No fish were observed on the project site. However, the project site contains a perennial pond that is known to contain catfish (*Order Siluriformes*) and bluegill (*Lepomis macrochirus*). No fish are expected to occur within Hooks Creek, which is ephemeral and only flows following storm events.

4.3.2 Amphibians

Baja California treefrogs (*Pseudacris hypochondriaca*) were heard and observed on-site. Amphibian habitat is generally restricted to Hooks Creek and the on-site pond which, due to the potentially predatory fish, may represent poor amphibian habitat. Hooks Creek runs ephemerally and presents a patchy distribution of water, particularly during the dry season. Suitable habitat is present within the project site to support California treefrog (*Pseudacris cadaverina*) in the northeast portion of the project site as well as garden slender salamander (*Batrachoseps major major*) along the creek.

4.3.3 Reptiles

No reptilian species were detected during the habitat assessment. However, the site is mostly undisturbed north of SR-18 and may support a wide variety of reptilian species that are adapted to coniferous forest habitats. As a result, the site has the potential to support several common reptilian species adapted to living in montane coniferous forest habitat, including southern Pacific rattlesnake (*Crotalus oreganus helleri*), gopher snake (*Pituophis catenifer*), California kingsnake (*Lampropeltis californiae*), western skink (*Plestiodon skiltonianus*), western fence lizard, alligator lizard (*Elgaria multicarinata*), and side-blotched lizard (*Uta stansburiana*).

4.3.4 Avian

The project site provides suitable nesting and foraging habitat for a variety of avian species. A total of forty-eight (48) avian species were identified during the initial habitat assessment and subsequent focused suitability assessments. Some of the more common avian species that were observed on-site included acorn woodpecker (*Melanerpes formicivorus*), Steller's jay

(*Cyanocitta stelleri*), mountain chickadee (*Poecile gambeli*), red-breasted nuthatch (*Sitta canadensis*), brown creeper (*Certhia americana*), American robin (*Turdus migratorius*), yellow-rumped warbler (*Setophaga coronata*), dark-eyed junco (*Junco hyemalis*), and house finch (*Haemorhous mexicanus*).

4.3.5 Mammals

Mammals and/or sign detected during the initial habitat assessment and subsequent focused suitability assessments included bobcat (*Lynx rufus*), woodrat (*Neotoma* sp.), mule deer (*Odocoileus hemionus*), California ground squirrel (*Otospermophilus beecheyi*), raccoon (*Procyon lotor*), gray squirrel (*Sciurus griseus*), cottontail rabbit (*Sylvilagus* sp.), and California black bear (*Ursus americanus*). The project site provides habitat for a variety of mammalian species adapted to forest habitats, as well as to human presence and disturbance. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit.

4.4 NESTING BIRDS

Only one indication of active nesting was observed during all surveys: an American robin was observed actively nesting just outside the patch of willow scrub in Hencks Meadow during the April 30, 2015 visit. In addition, on the September 23, 2015 visit, a previously-known CASO nest was observed immediately outside the site boundaries (with an adult spotted owl perched approximately 150 feet away), as well as a large platform nest to the south. The site contains abundant arboreal nesting habitat throughout, with minimal shrub or ground nesting habitat.

4.5 MIGRATORY CORRIDORS AND LINKAGES

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species, yet inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site is surrounded by natural plant communities and forest and is located entirely within a wildlife movement corridor, as designated by the San Bernardino County General Plan Open Space Element (Exhibit 8, *Wildlife Corridors*). The site is located within an area designated simply as “Dispersion Corridor,” which provides movement opportunities primarily between the Deep Creek and City Creek designated corridors. The dispersion

12/11/2015 JN: M:\Mdata\144067\MXD\HA\08 Wildlife Corridors v2.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 2 4 8 Miles

Source: San Bernardino County, ESRI World Imagery Basemap

Wildlife Corridors

Exhibit 8

corridor essentially allows wildlife an area to utilize for traversing the San Bernardino Mountains from the north (Deep Creek) end to the south (City Creek), and vice versa. The Lake Arrowhead policy area is located just to the northwest of the project site.

The proposed improvements will be confined to existing developed/disturbed areas. The undeveloped forest surrounding the existing buildings and infrastructure has the potential to support the movement of muledeer, bobcat, coyote (*Canis latrans*), and black bear through and around the site. Wildlife movement through these areas will be impeded by project-related disturbance, particularly use of hiking and riding trails. However, the northern half of the project site will remain generally undisturbed and should continue to provide relatively unimpeded movement opportunities for wildlife. As a result, the project site and the surrounding open space will continue to provide opportunities for local wildlife movement, and has the potential to function as a corridor for highly mobile wildlife species.

4.6 JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge and/or fill materials into "waters of the United States" pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the Fish and Game Code, and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

A total of four (4) drainage features are present on the project site; Hooks Creek and three (3) unnamed ephemeral drainage features (Drainages 1-3). Surface flows within Hooks Creek and the unnamed drainage features are provided by direct precipitation (i.e., rain, snow) and surface runoff from surrounding development and SR-18. Following significant storm events, surface flows collected within the pond and are anticipated permeate downstream within Hooks Creek via the high water table and then continue downstream to Deep Creek. Hooks Creek and Drainage 1, north of SR-18, are located within the southern portion of the Deep Creek subwatershed at the headwaters of the Mojave Watershed (Hydrologic Unit Code [HUC]18090208) in the San Bernardino National Forest. Drainage 2 and Drainage 3, south of SR-18, are located within the Upper Santa Ana River subwatershed at the headwaters of the Santa Ana Watershed (HUC 18070203).

Hooks Creek and Drainages 1-3 all qualify as waters of the United States, and fall under the regulatory authority of the Corps, Regional Board, and CDFW. However, since the NCRS is taking the federal lead in the meadow rehabilitation project they are the federal lead agency implementing Section 404 of the CWA. As a result, a CWA Section 404 permit from the Corps

will not be required for this project. Based on current site conditions, the project applicant must obtain the following regulatory approvals for any impacts to Hooks Creek associated with the meadow rehabilitation project: Regional Board CWA Section 401 Water Quality Certification and CDFW Section 1602 Streambed Alteration Agreement (SAA).

The meadow rehabilitation project will entail constructing a lined waterway along the length of the meadow, periodically split by new water/sediment control basins, to connect to an on-site pond. Exotic vegetation and large obstructions will be removed throughout the meadow, and new hedgerows will be planted along its perimeter. Wildlife structures including nest boxes, downed wood, and rock piles will be strategically located at different locations along or near to the new waterway.

No impacts to Hooks Creek or Drainages 1-3 are anticipated from installation of the proposed trials. Construction of proposed new trails within the project site will avoid potential impacts to jurisdictional waters. The trials will avoid jurisdictional waters and will generally be left in a "rough" state, unpaved and with brush cleared and overhanging vegetation trimmed. No dredging or fill material will be placed in any of the jurisdictional features on-site. Any proposed trail crossings (fallen logs) over the jurisdictional features will occur outside of the jurisdictional limits of Corps, Regional Board, and CDFW.

Hooks Creek and the three unnamed drainage features are further discussed below:

<u>Hooks Creek</u>

Hooks Creek is the primary hydrogeomorphic feature found on-site and generally flows in a southwest to northeast direction. Hooks Creek originates at SR-18 near the southwestern corner of the property and extends along the western boundary of the site before it exists near the northeastern corner of the property. From its origin at SR-18 Hooks Creek sheet flows for approximately 700 feet across the existing paved parking lot of Santa's village before flowing into the grassland (meadow). Hooks Creek extends through Hencks Meadow for approximately 530 feet before it continues for approximately 420 feet through the area previously disturbed when it was used as a storage yard and staging area for the bark beetle infested lumber. After the disturbed area, Hooks Creek extends through a southern willow scrub plant community for approximately 270 feet before entering into the existing pond. Downstream (north) of the pond, the creek runs through a mixed conifer forest and varies between being generally open and covered in vegetation for approximately 1,200 feet before exiting the property.

Generally, the ordinary high water mark (OHWM) ranged from 2 to 8 feet in width and was documented through the observation of the following indicators: flow patterns; drift deposits; saturation; and substrate characteristics. Due to historic on-site land uses (timber farm), the

upstream portions of Hooks Creek are heavily disturbed and covered with remnant debris from the processing and staging of timber. These areas are vegetated with isolated stands of riparian vegetation including arroyo willow, mulefat, fragrant everlasting (*Pseudognaphalium beneolens*), slender leaved sedge (*Carex athrostachya*), Pacific rush, and cattail. Further downstream, Hooks Creek becomes more densely vegetated and consists of a southern willow scrub plant community. Plant species observed within this community include arroyo willow, stinging nettle, sticktight, northern water plantain, horehound, and watercress.

Hooks Creek is tributary to Deep Creek (Relatively Permanent Water) and ultimately the Mojave River (Traditional Navigable Water) and falls under the regulatory authority of the Corps, Regional Board, and CDFW.

Drainage 1

Drainage 1 generally flows from southeast to northwest from the project's northeastern boundary for approximately 450 feet before converging into Hooks Creek. The OHWM ranged from 2 to 6 feet in width and was documented through the observation of the following indicators: flow patterns; drift deposits; saturation; and substrate characteristics. Drainage 1 flows through the mixed conifer forest and varies between being generally open and covered in vegetation. No impacts to Drainage 1 will occur as a result of installation of the proposed trials.

Drainage 2

Drainage 2 is located on the northwest portion of the property south of SR-18 west of the proposed campground. Drainage 2 generally flows in a northeast to southwest direction from SR-18 for approximately 850 feet down the south-facing slope of the San Bernardino Mountains via topography and is depicted as a blueline stream on USGS topographic maps. The OHWM ranged from 1 to 4 feet in width and was documented through the observation of the following indicators: flow patterns; drift deposits; saturation; and substrate characteristics. Drainage 2 flows through the chaparral plant community.

Drainage 2 flows south into City Creek which is tributary to the Santa Ana River (Relatively Permanent Water) and ultimately the Pacific Ocean (Traditional Navigable Water) and falls under the regulatory authority of the Corps, Regional Board, and CDFW. No impacts to Drainage 2 will occur as a result of installation of the proposed campground.

Drainage 3

Drainage 3 is located on the southeast portion of the property south of SR-18 east of the proposed campground. Drainage 3 generally flows in a north to south direction from SR-18 for approximately 500 feet down the south-facing slope of the San Bernardino Mountains via

topography and is depicted as a blueline stream on USGS topographic maps. The OHWM ranged from 1 to 4 feet in width and was documented through the observation of the following indicators: flow patterns; drift deposits; saturation; and substrate characteristics. Drainage 2 flows through the chaparral plant community.

Drainage 3 flows south into City Creek which is tributary to the Santa Ana River (Relatively Permanent Water) and ultimately the Pacific Ocean (Traditional Navigable Water) and falls under the regulatory authority of the Corps, Regional Board, and CDFW. No impacts to Drainage 3 will occur as a result of installation of the proposed campground.

4.7 SENSITIVE BIOLOGICAL RESOURCES

The CNDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDB Rarefind 5 online software and CNDDB Quickview Tool. The CNPS Inventory of Rare and Endangered Vascular Plants of California supplied information regarding the distribution and habitats of vascular plants in the vicinity of the project site. The habitat assessment was used to assess the ability of the plant communities found on-site to provide suitable habitat for relevant sensitive plant and wildlife species.

The literature search identified forty-four (44) sensitive plant species, twenty-four (24) sensitive wildlife species, and three (3) sensitive habitat as having potential to occur within the Harrison Mountain quadrangle. Sensitive plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix B, *Potentially Occurring Sensitive Biological Resources*, and discussed below.

4.7.1 Sensitive Plants

Forty-four (44) sensitive plant species have been recorded in the CNDDB and CNPS in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles (refer to Appendix C). The existing developed areas associated with the old Santa's Village and supporting infrastructure have mechanically disturbed surface soils, and have removed naturally occurring habitats. However, most of the project site, particularly the northern half of it north of the pond, is undeveloped and provides undisturbed native plant communities. Many of the plant species that have been documented in these areas are unlikely to occur within the habitats and/or specific conditions located on-site. Based on the habitat requirements for species and the availability and quality of habitats needed by each sensitive

plant species, it was determined that the undeveloped areas within the survey area have a moderate potential to provide habitat for silver-haired ivesia (*Ivesia argyrocoma var. argyrocoma*), Parish's yampah (*Perideridia parishii ssp. parishii*), and Laguna Mountains jewelflower (*Streptanthus bernardinus*), and a low potential to provide habitat for southern jewelflower (*Streptanthus campestris*). None of these sensitive plant species are expected to occur on-site in areas that have already been disturbed or developed. All other sensitive plant species are presumed absent from the project site due to a lack of suitable habitat or to the project site being outside of the known elevation range. Species accounts are provided below for those species determined to have a moderate potential to occur within the project site.

4.7.1.1 Silver-haired Ivesia

Silver-haired ivesia is a perennial herb that flowers between June and August. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is not endemic to California and also occurs in Baja California. In California it is only known to occur in San Bernardino County, where it can be found in alkaline meadows and seeps, pebble plains (where it is an early colonizer of disturbed pebble plains), and upper montane coniferous forest between 5,000 and 9,711 feet in elevation. Locally it is known to occur in the Big Bear and Holcomb Valleys in the San Bernardino Mountains.

According to the CNDDB, there are five (5) records of silver-haired ivesia in the CNDDB within the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence is approximately 2.4 miles west of the project site, approximately 2 miles southwest of Lake Arrowhead. Silver-haired ivesia has a moderate potential to occur within the project site.

4.7.1.2 Parish's Yampah

Parish's yampah is a perennial herb that flowers between June and August. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 2B.2, indicating that is rare, threatened, or endangered in California but more common elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is not endemic to California and also occurs in Arizona, New Mexico, and Nevada. In California it is only known to occur in San Bernardino County, where it can be found in lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest between 4,806 and 9,843 feet in elevation. Locally it is known to occur in the Holcomb Valley, south of Big Bear Lake, north of Lake Arrowhead, southeast of Green Valley Lake, near South Fork Meadows, Big Meadows, in and around the Snow Valley Summer Home Tract, and at Bluff Meadow.

According to the CNDDB, there are seventeen (17) records of Parish's yampah in the CNDDB within the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence is approximately 1.5 miles west of the project site, although it was not observed during a recent (2004-2005) post-fire survey of this area. Parish's yampah has a moderate potential to occur within the project site.

4.7.1.3 Laguna Mountains Jewelflower

Parish's yampah is a perennial herb that flowers between May and August. It is not state or federally listed. However, it is designated by the CNPS with the Rare Plant Rank 4.3, indicating that it is a plant of limited distribution and is not very threatened in California, with less than 20% of its known occurrences threatened. It is believed to be endemic to California, where it is only known to occur in Riverside, San Bernardino, and San Diego Counties. It is found in chaparral and lower montane coniferous forest between 2,198 and 8,202 feet in elevation. Locally it is known to occur in the eastern Transverse and Peninsular Ranges. On the San Bernardino National Forest, it occurs near Green Valley Lake, Little Green Valley, Crab Flats, Snow Valley, Running Springs, Cleghorn Ridge, Lake Arrowhead, north and east of Fawnskin, and below the Big Bear Dam.

According to the CNDDB, there are seven (7) records of Laguna Mountains jewelflower in the CNDDB within the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence is approximately 0.75 mile west of the project site just south of SR-18 at the Switzer Park Picnic Area. Laguna Mountains jewelflower has a moderate potential to occur within the project site.

4.7.2 Sensitive Wildlife

Twenty-two (22) sensitive wildlife species have been reported in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles (refer to Appendix C). A single CASO was observed on-site during the September 23, 2015 survey and this species is confirmed as present. Based on the focused habitat suitability assessments that were conducted in 2015 and the data provided by the NRCS, both SRB and SBFS are assumed to be present on-site. Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has a high potential to support Andrew's marble butterfly (*Euchloe hyantis andrewsi*), and a moderate to high potential to support bald eagle (*Haliaeetus leucocephalus*), lodgepole chipmunk (*Neotamias speciosus speciosus*), and white-eared pocket mouse (*Perognathus alticolus alticolus*). There is a low potential to support rosy boa (*Charina trivirgata*), coast horned lizard (*Phrynosoma blainvillii*), American badger (*Taxidea taxus*), and two-striped garter snake (*Thamnophis hammondii*). The other wildlife species not mentioned above are

presumed absent from the site due to a lack of suitable habitat. Species accounts are provided below for the four "focus" species, as well as for those species determined to have at least a moderate potential to occur within the project site.

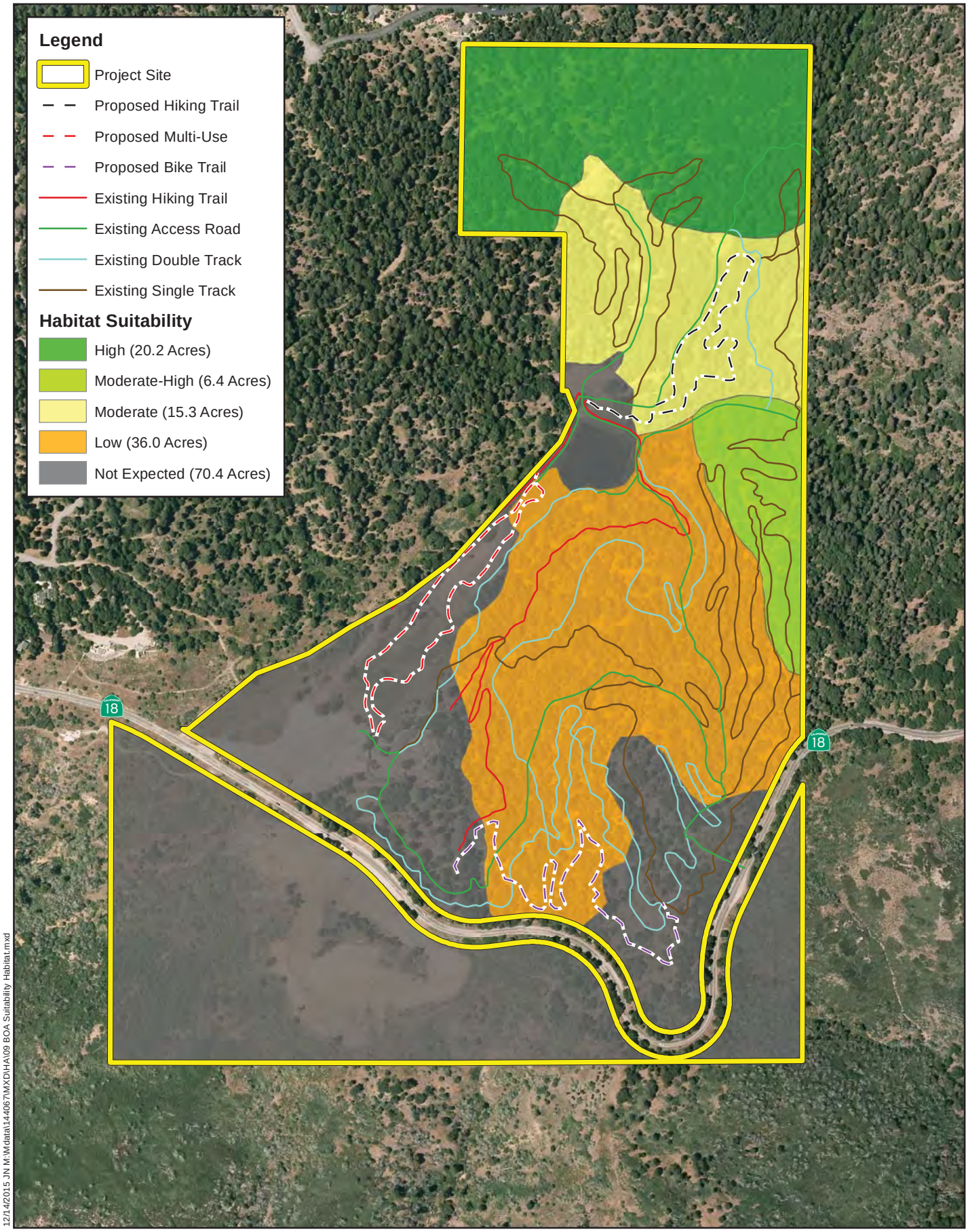
4.7.2.1 Southern Rubber Boa

The SRB has been designated by the CDFW as a threatened species under the California Endangered Species Act, and has been designated by the USFS Regional Forester as a Forest Service sensitive species. Although it is currently not protected under the federal Endangered Species Act, the USFWS published a 90-day finding in September 2015 on a petition to list the SRB as an endangered or threatened species and found that the petition presented substantial information indicating that the petitioned action may be warranted, thus initiating a 12-month review period. The SRB inhabits oak-conifer and mixed-conifer forests at elevations between 5,000 to 8,200 feet where rocks and logs or other debris provide shelter. It is semi-fossorial with either nocturnal or crepuscular tendencies, making it difficult to find in a general diurnal field survey. It is restricted to the San Bernardino and San Jacinto Mountains.

According to the CNDDB, there are twenty-four (24) records of SRB in the CNDDB within the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. However, the information on the exact locations of these sightings has been suppressed and is unavailable. Data provided by the NRCS also shows the site within a swath of occupied habitat, with two (2) records immediately adjacent to the site (to the east). It also shows two additional records within one mile. The source of the NRCS sightings is unknown, but it is assumed that it is CNDDB data that has otherwise been suppressed. Based on the habitat suitability assessment conducted by Leatherman Bioconsulting, Inc. and Michael Baker in April 2015, approximately 74.5 acres of suitable habitat are present within the project site, with high quality habitat located in the northern portion of the project site (20.2 acres) (Exhibit 9, *SRB Habitat Suitability Map*). The remainder of the project site supports moderate-high quality habitat (6.4 acres), moderate quality habitat (15.3 acres) low quality habitat (32.6 acres), or is considered unsuitable (73.8 acres) for this species. SRB is assumed present on-site based on the results of the habitat suitability assessment data and provided by the NRCS.

4.7.2.2 San Bernardino Flying Squirrel

The SBFS has been designated by the CDFW as a species of special concern and by the USFS Regional Forester as a Forest Service sensitive species. Although it is currently not protected under the federal Endangered Species Act, in response to a 2010 petition from the Center for Biological Diversity to list the SBFS as an endangered or threatened species, the USFWS issued a 90-day finding in 2012 determining that the petition presented substantial information indicating that the petitioned action may be warranted. This initiated a 12-month review period to determine final listing status. However, as of writing the finding has not been issued. The



12/14/2015 JN M:\Mdata\144067\MXD\HA\09 BOA Suitability Habitat.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

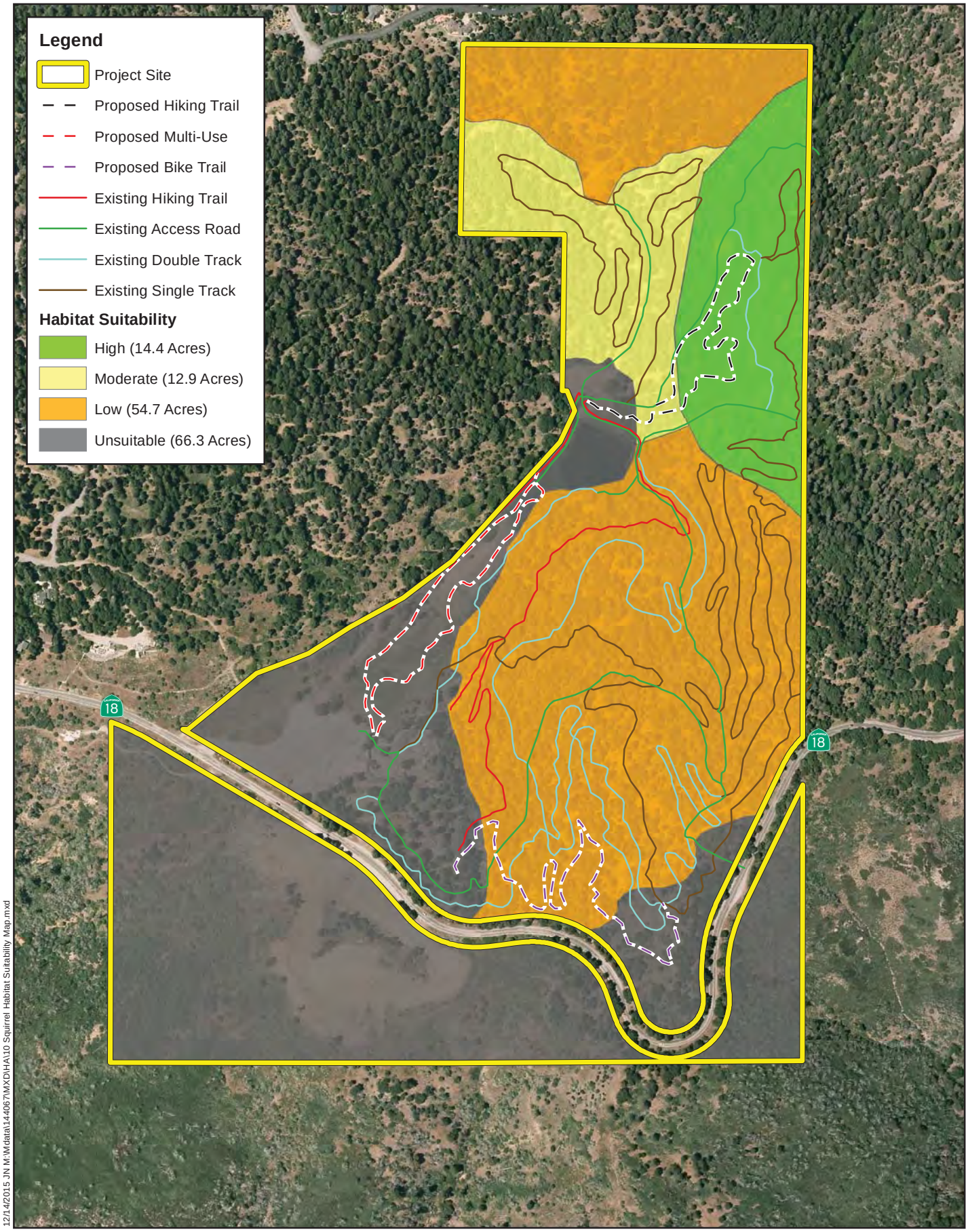
Source: San Bernardino County, Eagle Aerial 2013

SRB Habitat Suitability Map

Exhibit 9

historic distribution of the SBFS includes both the San Bernardino and San Jacinto Mountains and possibly the San Gabriel Mountains. Recent data analysis suggests that this subspecies may now only be extant in the San Bernardino Mountains, and could still be present and not detected in the San Jacinto Mountains. The SBFS is nocturnal and is rarely observed. It occurs in a range of coniferous and deciduous forests, including riparian forests and mixed conifer forests. They are usually found in mature old-growth forests, although forests with second-growth stands may also suffice. Occupied habitat tends to have an open understory with a heavy duff (organic debris) layer and a somewhat closed canopy. For locomotion/gliding purposes, they require somewhat dense tree cover (less than 120 feet between tall trees and preferably around 65 feet), although they may rarely glide across distances of over 300 feet. Trees with snags and cavities suitable for nesting and denning are required, and trees that are greater than 100 feet tall and greater than 30 inches diameter at breast height are preferred. In the absence of tree cavities flying squirrels may instead use existing stick or leaf nests or clumps of vegetation for nesting. However, this is also a seasonal preference, with cavity nests being used more often in cold winters than in warm springs and summers. The SBFS depends strongly on truffles and arboreal moss for food, as well as to a much lesser degree seeds, nuts, insects, fruit, birds eggs, and even sap. Larger, older trees with associated woody debris and decaying logs tend to indicate a higher potential for healthy truffle growth in the underlying soil. Riparian areas are favored, as the associated soil moisture tends to promote truffle growth.

According to the CNDDB, there are two (2) recorded occurrences of SBFS in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented approximately one mile northwest of the project site just west of Kuffel Canyon Drive. Both occurrences are presumed extant and this species is generally presumed to be extant rangewide in the San Bernardino Mountains. Data provided by the NRCS indicates that spotted owl pellets containing flying squirrel remains have been found throughout the northeastern section of the project site in association with a known owl nesting location. Michael Baker's September 2015 habitat suitability assessment for SBFS determined that approximately 82 acres of suitable habitat are present within the project site, with high quality habitat located in the northeastern portion of the project site (14.4 acres) (Exhibit 10, *SBFS Habitat Suitability Map*). The remainder of the project site supports moderate quality habitat (12.9 acres) or has either low quality habitat (54.7 acres) or is considered unsuitable (66.3 acres) for this species' foraging, nesting/denning, and gliding needs due to open canopy cover, lack of any downed woody debris on the forest floor, habitat fragmentation through existing development, and/or an abundance of newer tree growth. SBFS is assumed present on-site based on the results of the habitat suitability assessment data and provided by the NRCS.



12/14/2015 JN M:\Mdata\144067\MXD\HA\10 Squirrel Habitat Suitability Map.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

SBFS Habitat Suitability Map

Exhibit 10

4.7.2.3 California Spotted Owl

The CASO has been designated by the CDFW as a species of special concern and by the USFS Regional Forester as a Forest Service sensitive species. Although it is currently not protected under the federal Endangered Species Act, in response to a December 2014 petition from the Wild Nature Institute and the John Muir Project of the Earth Island Institute to list the CASO as an endangered or threatened species, the USFWS issued a 90-day finding in September 2015 determining that the petition presented substantial information indicating that the petitioned action may be warranted. This initiated a 12-month review period to determine final listing status. However, as of writing the finding has not been issued.

The CASO is distributed across the Sierra Nevada from Shasta County to Kern County, and along coastal southern California mountain ranges from Monterey County to San Diego County. CASO occur in four different types of old-growth forests: riparian/hardwood forest, live oak/bigcone Douglas-fir forest, mixed conifer forest, and redwood/California-laurel forest. In the San Bernardino Mountains, it has been found that 39 percent of CASO nest in mixed conifer habitat, 41 percent in oak/bigcone Douglas-fir, and 20 percent in hardwood/conifer habitat. In southern California, nest sites range from 1,000 feet elevation to 8,400 feet; in the San Bernardino Mountains the average elevation of occupied nest habitat is at 6,000 feet. Home ranges in the San Bernardino Mountains vary from approximately 800 acres to 2,200 acres. Eighty percent of nesting trees have canopy cover greater than 70 percent, with surrounding nesting habitat having at least two canopy layers. Nest trees often contain large cavities, broken tops, and/or dwarf mistletoe brooms. In southern California conifer forest, stick nests placed on platforms built by other species are most common. In coniferous forests, such as that on-site, large snags and fallen logs are typically present in nesting habitat; this appears to be less important in lower-elevation nesting habitat. Nesting trees are on average 37 inches diameter at breast height and at least 230 years old in the San Bernardino Mountains, and throughout southern California are typically on north-facing slopes where temperatures tend to be cooler. Roosting habitat is much the same as nesting habitat, but foraging habitat is more varied. While owls may forage in the same habitat that they use for nesting and roosting, foraging habitat is often much more open, with canopy cover as low as 40 percent to provide large amounts of open space for flying. Although CASO will forage opportunistically on a variety of different prey species, throughout southern California their primary prey (79 to 97 percent) is woodrats (typically dusky-footed woodrat, *Neotoma fuscipes*), which tend to have much larger populations (up to 10 times) than and weigh nearly twice as much on average as flying squirrels.

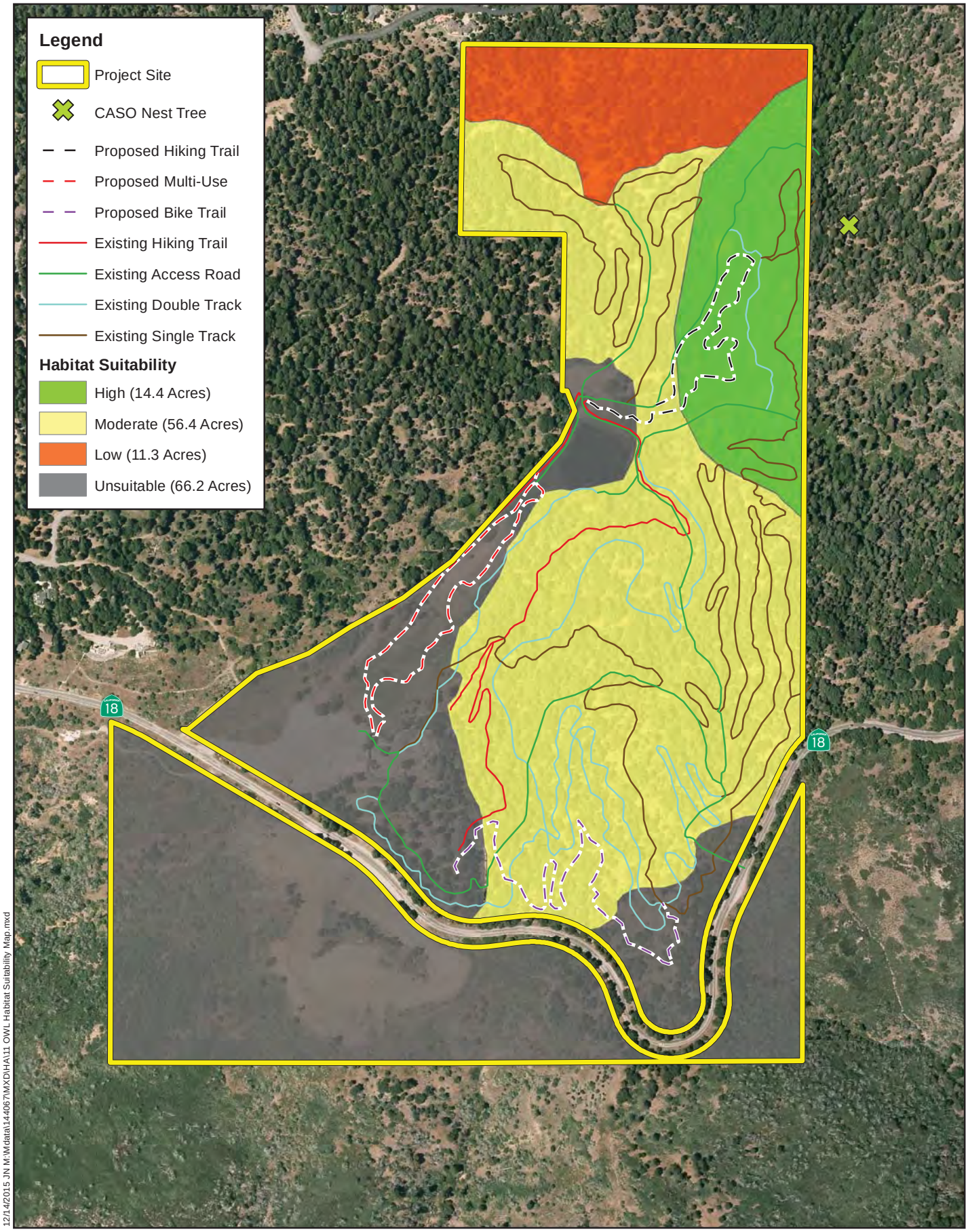
There are no recorded occurrences of CASO in the CNDDB in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. Data obtained from the CDFW's BIOS Spotted Owl Viewer indicates twenty-one (21) separate spotted owl sightings between 1976 and 2010 (mostly in the 1990s and 2000s) on or adjacent to the site

within the canyon between Mount Sorenson and Skyforest. Data provided by the NRCS indicated that CASO nesting occurred in 2014 just off the northeastern boundary of the project site, and that there were eleven (11) known CASO nesting locations, including the aforementioned location, within a 1.5-mile radius of the project site in 2014. Much of the forested portion of the project site has been mapped by the NRCS as a Protected Activity Center, defined as a single area in which individual or paired resident SPOW can nest, forage, and roost. Michael Baker's habitat suitability assessment for CASO determined that approximately 82.1 acres of suitable habitat are present within the project site, with high quality habitat located in the northeastern portion of the project site (14.4 acres) (Exhibit 11, *CASO Habitat Suitability Map*). The remainder of the project site supports moderate quality habitat (56.4 acres), low quality habitat (11.3 acres), or is considered unsuitable (66.2 acres) for this species' foraging, nesting, and roosting needs. In addition, a single adult CASO was found immediately offsite by Michael Baker during the suitability assessment in the vicinity of the nest tree and this species is expected to be present on-site.

4.7.2.4 Mountain Yellow-legged Frog

The MYLF has been designated by the CDFW and the USFWS as endangered under the California Endangered Species Act and the federal Endangered Species Act, respectively, as well as by the USFS Regional Forester as a Forest Service sensitive species. The only known remaining populations of MYLF in southern California are distributed over nine locations, including five populations in the San Gabriel, four in the San Jacinto, and one in the San Bernardino Mountains. This group of populations is collectively known as the Southern California Distinct Population Segment [DPS]). Another population is present at the southern end of the Sierra Nevada (known as the Northern California DPS).

MYLF is strongly associated with high-elevation creeks, meadows, and ponds that are fed by springs and/or snowmelt. In southern California their historic elevations have ranged from 1,200 to 7,500 feet, although current populations are restricted primarily to the mid to upper portions of this range. It is not uncommon for portions of occupied MYLF aquatic habitat to freeze over on the surface in the winter. While sections of creeks may dry up, at least some perennial water is required for MYLF to persist in an area due to reproductive, larval growth, and hydration needs. Ideal creek habitat for MYLF includes numerous pools and may include both rapid and slow flows as well with small waterfalls. Substrate within and surrounding the creek generally includes bedrock, fine sand, rubble, rocks, or boulders. Unlike most Anurans, MYLF is diurnal, and requires suitable basking habitat during the day. Downed logs are common elements of MYLF habitat and, along with rocks, function as basking sites and refugia. Open or semi-open canopies are required for basking purposes and to aid in algal growth. Eggs are laid in clusters of 15 to 350 in shallow areas with rocks, gravel, vegetation, or other surfaces to which they can be attached. They hatch within 18 to 20 days at a water temperature between 41 and 56°F. Tadpoles may take up to three years to metamorphose in



12/14/2015 JN M:\Mdata\144067\MXD\HA\11 OWL Habitat Suitability Map.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, NRCS, Eagle Aerial 2013

CASO Habitat Suitability Map

Exhibit 11

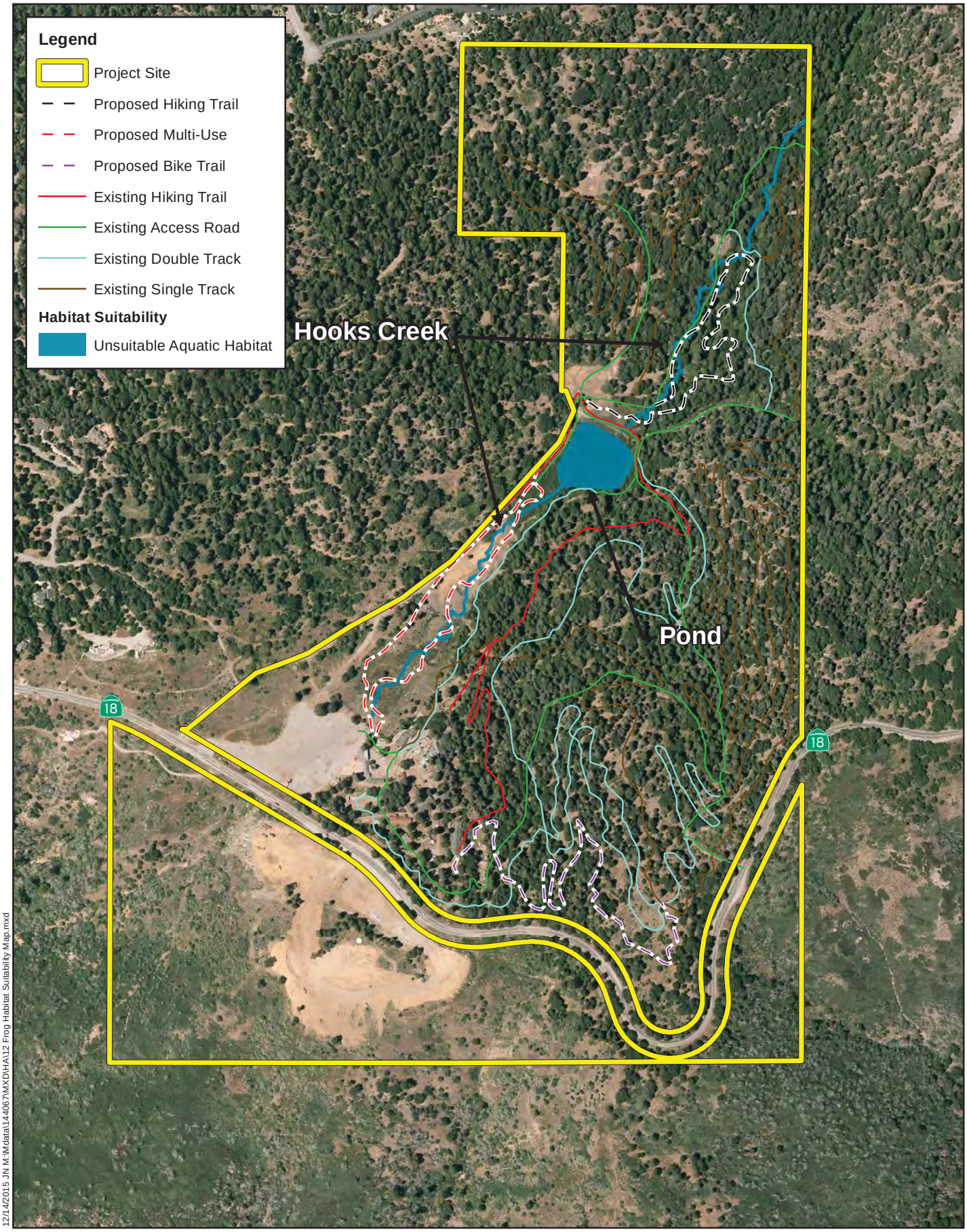
higher elevation areas (particularly in the Sierra Nevada), although in southern California tadpole metamorphosis is generally assumed to occur after approximately 1.5 years at the end of the second summer.

According to the CNDDB, there are six (6) recorded occurrences of MYLF in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. However, four of these occurrences are historic and are now extirpated and the remaining two are of the same population in East Fork City Creek. This population, the only population in the entire San Bernardino Mountain Range, is approximately 1.25 miles southeast of the project site. It was once estimated at 50 individuals based on USGS surveys in 2002 and 2003. However, this site was disturbed by a wildfire and later flooding in 2003, resulting in a lack of observations until 2006, when frogs were again found by USGS for the next six years. In 2011 all detected MYLF were salvaged from East Fork City Creek in an attempt to rescue the population through captive breeding and reintroduction. MYLF have subsequently failed to be detected during recent surveys over the last several years until September 2015, when a single adult male was found by USGS. Michael Baker's habitat suitability assessment for MYLF determined that no suitable habitat is present within the project site (Exhibit 12, *MYLF Habitat Suitability Map*). Hooks Creek is generally too narrow, too shaded, and provides too little, if any, perennial aquatic habitat, and the on-site pond, while perennial, provides no basking habitat due to dense surrounding vegetation and is known to contain thousands of potential predators including catfish and bluegill. MYLF is presumed absent from the project site.

4.7.2.5 Andrew's Marble Butterfly

Andrew's marble butterfly has no special regulatory protection, but its occurrences are tracked by the CNDDB. It is distributed near Lake Arrowhead and Big Bear Lake and in other locations across the crest and the north slope in the San Bernardino Mountains, including Baldwin Lake, Sugarloaf Mountain, and Wild Horse Meadow. Between 40 and 80 percent of its numbers are estimated to be located within the San Bernardino National Forest. It is found primarily in pine and mixed conifer forests, where it uses members of the mustard family (Brassicaceae) as larval hosts, including slender petaled thelypodium (*Thelypodium stenopetalum*; federally endangered and extremely rare) in wet meadows, woodland rockcress (*Boechera pinetorum*) in conifer/mixed conifer forests, and Laguna Mountains jewelflower (sensitive but relatively abundant) in chaparral, conifer forest, disturbed areas, and shaded and mesic areas near springs and seeps. The flight period is from late June to early July; they tend to fly along hilltops to search for mates in the eastern San Bernardino Mountains, and to fly through draws and canyons in the western San Bernardino Mountains. There is only one brood per year.

According to the CNDDB, there are two (2) recorded occurrences of Andrew's marble butterfly in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented in the vicinity of Lake



12/14/2015 JN M:\Mdata\144067\MXD\HA\12 Frog Habitat Suitability Map.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

MYLF Habitat Suitability Map

Exhibit 12

Arrowhead, but exact coordinates are not available. Andrew's marble butterfly has a high potential to occur within the project site.

4.7.2.6 Bald Eagle

The bald eagle has been designated by the CDFW as a fully protected species and as endangered under the California Endangered Species Act. It has been delisted from the federal Endangered Species Act. It has also been designated by the USFS Regional Forester as a Forest Service sensitive species. It occurs throughout the United States, and in California is generally a winter resident throughout much of the State except in the far north, the Central Coast, and select areas of southern California. It is known to breed in the San Bernardino National Forest around Big Bear Lake.

The bald eagle is found around lakes, reservoirs, rivers, and some rangelands and coastal wetlands in the winter. Its breeding habitat consists mainly of mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Nests are usually constructed in mature and old-growth forests within 1.24 miles of suitable water bodies, and in areas with extensive shoreline development or human activity, nests may be located farther from the water than otherwise. Nests are usually constructed greater than 0.3 mile from human development. Dead trees are preferred for perching if available, but if not then eagles will tend to look for tall, easily accessible, often open trees. Roost trees are generally large and are above the surrounding canopy and may be located farther from water than nesting trees. Wintering habitat is much the same and is determined based upon prey availability, quality of roost sites, and absence of human disturbance, although humans may be tolerated where prey is plentiful.

According to the CNDDB, there are three (3) recorded occurrences of bald eagle in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest CNDDB occurrence was documented approximately 0.4 mile northwest of the project site in the vicinity of Emerald Bay. The closest eBird occurrence is approximately 0.2 mile east of the project site at Heaps Peak Arboretum. The project site is located approximately one mile southeast of Lake Arrowhead and presents suitable nesting habitat throughout, particularly in its northern extent. There is no foraging habitat within the project site except at the on-site pond, which contains both catfish and bluegill. Bald eagle has a moderate to high potential to occur within the project site.

4.7.2.7 Lodgepole Chipmunk

The lodgepole chipmunk has no special regulatory protection, but its occurrences are tracked by the CNDDB. It has historically occurred around Whitewater Creek and Mt. San Bernardino in the San Bernardino Mountains; French Gulch in the Piute Mountains; Fawnskin Park, Sugarloaf, and Camp Angelus in the San Bernardino National Forest; and Dry Lake in the San

Gorgonio Wilderness Area. It has been apparently extirpated from the San Jacinto Mountains. This species is abundant in open-canopy lodgepole pine habitat, particularly those areas with about 40 percent cover of shrubs and trees, as well as large boulders and open ground. It is less common in closed-canopy forest with sparse undercover. It also occurs in isolated populations in southern California mountains within open-canopy forests of mixed conifer, Jeffrey pine, lodgepole and limber pine, and occasionally in chaparral. It is found at elevations ranging from about 4,921 to 9,843 feet. Trees are used for refuge, observation posts, and nests, but they will also use cavities in logs, snags and stumps, and underground burrows as necessary during any season. Breeding occurs in May and June and lasts for approximately four weeks. It has been observed to be active every month of the year in the San Bernardino and San Gabriel Mountains.

According to the CNDDB, there are five (5) recorded occurrences of lodgepole chipmunk in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented approximately 3.9 miles east of the project site in the vicinity of Green Valley Lake in 1964. The northern end of the project site in particular represents optimal habitat with relatively low canopy cover, an abundance of large boulders (particularly in the northeastern end), and abundant open ground. Lodgepole chipmunk has a moderate to high potential to occur within the project site.

4.7.2.8 White-eared Pocket Mouse

The white-eared pocket mouse has been designated by the CDFW as a species of special concern and by the USFS Regional Forester as a Forest Service sensitive species. It is known to occur in isolated montane populations in the Tehachapi Mountains and in the San Bernardino Mountains in the vicinity of Strawberry Peak. It occurs at elevations ranging from 3,500 to 5,900 feet. It is a scarce resident of ponderosa and Jeffrey pine habitats, and is uncommon in mixed chaparral and sagebrush habitats. Burrows are constructed in loose soil and nests are composed of dry grass built in a chamber of the underground burrow.

According to the CNDDB, there are three (3) recorded occurrences of the white-eared pocket mouse in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented approximately 1.40 miles west of the project site. However, all three occurrences are considered by the CDFW to be possibly extirpated, and this species has not been trapped in the San Bernardino Mountains since 1938. It is unknown if it is still extant in this mountain range, but suitable habitat is present throughout the undisturbed areas of the project site. If it is still extant, white-eared pocket mouse has a moderate to high potential to occur within the project site.

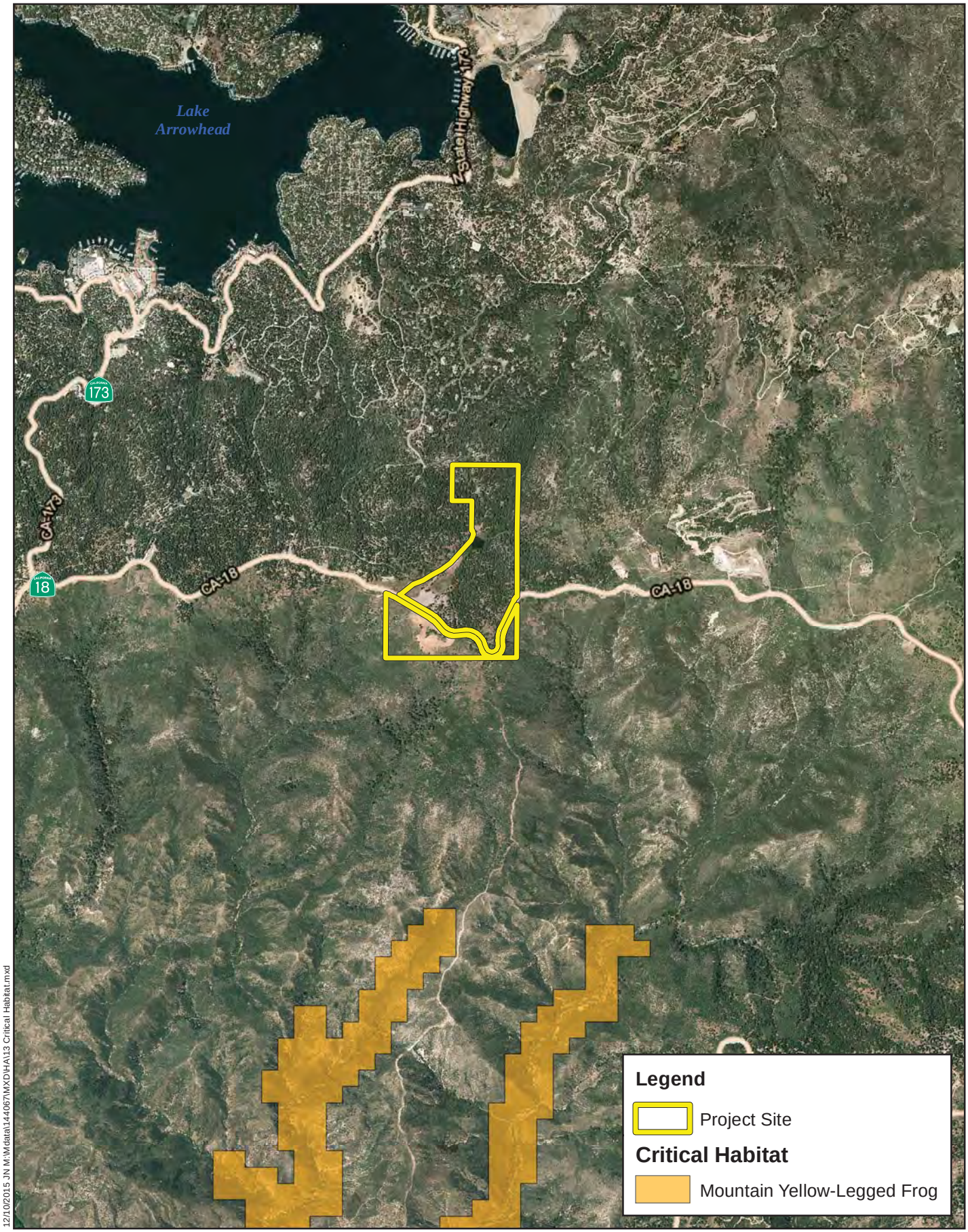
4.7.3 Sensitive Plant Communities

The CNDDB lists three (3) sensitive habitat as being identified within the Harrison Mountain quadrangle: Riversidian Alluvial Fan Sage Scrub, southern mixed riparian forest, and southern sycamore alder riparian woodland. No CDFW sensitive plant communities occur within the boundaries of the project site.

4.7.4 Critical Habitat

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. "Critical Habitat" refers to habitat or a specific geographic area that contains the elements and features that are essential for the survival and recovery of the species. In the event that a project may result in take or in adverse effects to a species' designated Critical Habitat, the project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus (i.e. occurs on federal land, is issued federal permits [e.g. Corps Section 404 Clean Water Act permit], or receives any other federal oversight or funding). If a project does not have a federal nexus, Critical Habitat consultations are not required.

The project site is not located within federally designated Critical Habitat. The closest designated Critical Habitat is located approximately 4 miles northeast of the site, where the southwestern willow flycatcher (*Empidonax trailli extimus*) Santa Ana Management Unit (78 Federal Register [FR] 343-534) and arroyo toad (*Anaxyrus californicus*) Critical Habitat Unit 22a (76 FR 7245-7467) are both present in Deep Creek (Exhibit 13, *Critical Habitat*).



12/10/2015 JN M:\Mdata\144067\MXD\HA\13 Critical Habitat.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
HABITAT ASSESSMENT

Michael Baker INTERNATIONAL

0 0.25 0.5 1 Miles

Source: San Bernardino County, USFWS Critical Habitat Portal, Eagle Aerial 2013

Critical Habitat

Exhibit 13

Section 5 Discussion of Sensitive Species Impacts and Mitigation

The discussion below provides a summary of survey results; avoidance and minimization efforts; direct and indirect project impacts; and compensatory mitigation measures for sensitive species determined to have a moderate or higher potential to occur within the project site.

***CEQA Threshold**: Would the proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?*

Species determined to have the potential to occur within the general vicinity are presented in Appendix B, *Potentially Occurring Sensitive Biological Resources*. The following analysis is restricted to those species that, based on habitat requirements and known distribution, are expected to have a moderate or higher potential to occur.

5.1 LISTED PLANT SPECIES

Based on Michael Baker's habitat assessment and focused surveys, there are no federally or State listed plant species known or expected to occur within the facility corridor. All federally or State listed plants are presumed absent or are expected to have a low potential to occur.

5.2 SPECIAL-STATUS PLANT SPECIES

Survey Results

Only three (3) special-status plant species were identified during a CNDDB and CNPS search as having moderate or higher potentials to occur on the project site: silver-haired ivesia, Parish's yampah, and Laguna Mountains jewelflower. No sensitive plant species were found within the project site during any of Michael Baker's field surveys. However, none of the general field surveys were conducted during the suitable blooming period for most sensitive plant species. The closest known record of silver-haired ivesia in the CNDDB is 2.4 miles west of the project site, for Parish's yampah is 1.5 miles west of the project site, and for Laguna Mountains jewelflower is 0.75 mile west of the project site.

Avoidance and Minimization Measures

Because focused sensitive plant surveys have not yet been conducted on this project site, it is unknown if any sensitive plants are present and thus the project is unable to avoid any areas that may have sensitive plants. However, construction of proposed new trails within the project

site will minimize potential impacts to sensitive plant species by reducing the amount of vegetation removal and disturbance that will be required to create the trails. Trails will generally be left in a "rough" state, unpaved and with brush cleared and overhanging vegetation trimmed. Surrounding vegetation and brush will be left in place to provide a more natural setting.

Direct and Indirect Project Impacts

Direct or indirect impacts could occur to special-status plant species, if present, as a result of project implementation. If they are present within areas that will be developed or otherwise used by the park, individuals would likely be lost. Construction activity could result in the spread of non-native weed seeds via clothing, tires, or vehicle undercarriages. In addition, vehicle travel and pedestrian foot traffic within the project boundaries during the construction phase could result in the trampling of plant species. If plants are present in the vicinity of trails or other park amenities, they may be subject to trampling, picking, or other forms of take by guests.

Mitigation

The following mitigation measures are proposed to reduce project impacts to less than significant if implemented:

> **BIO-1**: A qualified biologist or botanist shall conduct a pre-construction clearance survey for special-status plant species on the project site no more than 5 days prior to trail creation or construction in new areas. If present, any special-status plants shall be clearly flagged for avoidance with a suitable buffer zone during construction. If avoidance is not possible, the project applicant will discuss potential relocation strategies with applicable regulatory agencies.
>
> **BIO-2**:All work areas shall be visibly flagged or staked prior to construction. Construction activities shall be limited to these approved work areas except with prior authorization from regulatory agencies.
>
> **BIO-3**: A Worker Environmental Awareness Program (WEAP) shall be implemented to educate all construction personnel of the area's environmental concerns and conditions, including special-status species, and relevant environmental protection measures. The WEAP will constitute the conveyance of environmental concerns and appropriate work practices, including spill prevention, emergency response measures, protection of sensitive resources, and proper implementation of BMPs, to all construction and maintenance personnel. All new workers that arrive after construction has started shall be trained under the WEAP within two days' time.

BIO-4: All brush, debris, and cleared vegetation shall be removed from the project site and disposed of properly or reused elsewhere on-site in an approved location where it will not wash into any riparian areas.

BIO-5: For Class II streams, defined as those supporting aquatic life other than fish, a buffer of 75 feet (23 meters) on either side of the stream (measured from the high water mark) will be flagged and avoided. For Class III streams, defined as those not supporting aquatic life, a buffer of 25 feet (8 meters) on either side of the stream (measured from the high water mark) will be flagged and avoided. On-site streams are expected to be classified as a combination of Class II and Class III streams.

BIO-6: All trails shall be kept in a maintained state sufficient to clearly determine where the trail lies. Signs shall be strategically placed along the trail discouraging guests from wandering outside of the trail boundaries.

5.3 LISTED WILDLIFE SPECIES

5.3.1 SOUTHERN RUBBER BOA

Survey Results

According to the CNDDB, there are twenty-four (24) records of SRB in the CNDDB within the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. However, the information on the exact locations of these sightings has been suppressed and is unavailable. Data provided by the NRCS also shows the site within a swath of occupied habitat, with two (2) records immediately adjacent to the site (to the east). It also shows two additional records within one mile. The source of the NRCS sightings is unknown, but it is assumed that it is CNDDB data that has otherwise been suppressed. SRB is assumed present on-site based on the results of the habitat suitability assessment data and provided by the NRCS.

Avoidance and Minimization Efforts

Most of the proposed new trail system is located in habitat that is unsuitable for SRB, with the proposed hiking trail located mostly within habitat that is of moderate quality for this species. A small portion of the proposed bike trail is located in low quality habitat, and a very small portion of the hiking trail is located in good quality habitat. The low quality habitat contains little to no suitable habitat elements, particularly refugia, for SRB, and the proposed route of the hiking trail runs alongside Hooks Creek. Most of the suitable refugia in the northern portion of the project site is located in more upland areas, especially on slopes at the site's northern edge (Leatherman 2015).

Direct and Indirect Project Impacts

Construction of the new hiking trail north of the pond may result in direct impacts to this species through construction- and operations-related habitat loss. As noted in Leatherman's habitat suitability assessment (2015), there are rocks and surface litter along Hooks Creek north of the pond with associated mesic conditions. It is possible that this species is present in this general area, and thus removal of surface debris may result in habitat loss or habitat degradation. Similarly, park operations may result in indirect habitat loss/degradation if park guests venture off the trails and disturb surrounding habitat. Because this species is highly fossorial, nocturnal, and no mechanized equipment will be used to construct the trails, the potential for direct take of individual boas during construction or operations is very low.

Mitigation

In addition to BIO-2, -3, -4, and -6, the following mitigation measures are proposed to reduce project impacts to less than significant with mitigation incorporated:

> **BIO-7**: A qualified biologist shall conduct a pre-construction clearance survey for special-status wildlife species on the project site immediately prior to trail creation or construction in new areas. Special-status wildlife shall be avoided by waiting for them to leave an area before working in it. If avoidance is not possible, the project applicant will discuss potential relocation strategies with applicable regulatory agencies.
>
> **BIO-8**: A biologist shall be on-site when work (e.g. trail clearing) is conducted in suitable habitat for SRB. All duff, debris, and downed logs in proposed work areas shall be examined for SBR by a qualified biologist no more than 5 days prior to disturbance.
>
> **BIO-9**: Retain 9 logs per acre of all age and decay classes greater than or equal to 12 inches (31 centimeters) in diameter and 20 feet (6 meters) long. At least 3 of the logs should be Class 1 logs with a minimum diameter of 12 inches (31 centimeters). Half of the logs should be 20-36 inches (51-96 centimeters) in diameter. A biologist shall coordinate where the logs should be placed for maximum wildlife usability. Exceptions will be made in fuel break areas.
>
> **Bio-10**: All rocky outcrops shall be avoided.
>
> **BIO-11**: Brush piles for burning or chipping will not be created within 300 feet (92 meters) of rock outcrops and existing logs in rubber boa habitat. If this is not possible, exclusionary fencing will be placed around brush piles to prevent usage by boas prior to burning or chipping.

5.3.2 BALD EAGLE

Survey Results

According to the CNDDB, there are three (3) recorded occurrences of bald eagle in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest CNDDB occurrence was documented approximately 0.4 mile northwest of the project site in the vicinity of Emerald Bay. The closest eBird occurrence is approximately 0.2 mile east of the project site at Heaps Peak Arboretum. The project site is located approximately one mile southeast of Lake Arrowhead and presents suitable nesting habitat throughout, particularly in its northern extent. There is no foraging habitat within the project site except at the on-site pond, which contains both catfish and bluegill. Bald eagle has a moderate to high potential to occur within the project site.

Avoidance and Minimization Efforts

No construction or park amenities are planned for use within the on-site pond, and logging is generally only occurring where necessary (e.g., human safety, tree health).

Direct and Indirect Project Impacts

Impacts that could occur to bald eagles nesting or foraging in the area primarily include indirect disturbance of nesting or foraging activity from guest presence during the operations phase of the park. If eagles are actively nesting and guest-related disturbance is particularly high, a nesting effort may be lost. However, it is expected that most bald eagles in the area likely stay close to Lake Arrowhead and would be unlikely to leave to forage and/or nest in the vicinity of the pond on the project site.

Mitigation

In addition to BIO-2, -3, -6, and -7, the following mitigation measures are proposed to reduce project impacts to less than significant with mitigation incorporated:

> **BIO-12**: Brush piles for burning or chipping will not be created within bald eagle roosts during occupancy.
>
> **BIO-13**: All construction shall occur outside of January 1-September 15 (this time frame includes both the passerine and raptor nesting season). If construction occurs during this time period, a qualified biologist shall conduct a preconstruction nesting bird clearance survey in all work areas and all areas within 500 feet of the general construction zone. This shall occur no more than one week prior to construction. Active nests shall be given an avoidance buffer, typically 300 feet for non-listed, non-raptor species, and 500 feet for listed and raptor species. This buffer shall remain in place

until the young fledge or the nest otherwise becomes inactive, and may be reduced with approval from CDFW and/or USFWS. The nest(s) shall be monitored at least once each week during active construction to determine status. If an established buffer is still causing animal stress or potential abandonment of nest, work will stop until a biologist can establish a new buffer to ensure no take is incurred.

BIO-14: The applicant will retain 10-15 hard snags per 5 acres (minimum of 16 inches/41 centimeters diameter at breast height and 40 feet/12 meters tall). Live and dead oaks that are at least 14 inches (35 centimeters) diameter at breast height will be retained unless they pose falling hazards.

5.4 SPECIAL-STATUS WILDLIFE SPECIES

Survey results

Only one non-listed special-status wildlife species was observed during Michael Baker's field surveys: a single CASO was found immediately offsite of the northeast corner of the site. Data obtained from the CDFW's BIOS Spotted Owl Viewer indicates twenty-one (21) separate spotted owl sightings between 1976 and 2010 (mostly in the 1990s and 2000s) on or adjacent to the site within the canyon between Mount Sorenson and Skyforest. Data provided by the NRCS indicated that CASO nesting occurred in 2014 just off the northeastern boundary of the project site, and that there were eleven (11) known CASO nesting locations, including the aforementioned location, within a 1.5-mile radius of the project site in 2014. Much of the forested portion of the project site has been mapped by the NRCS as a Protected Activity Center, defined as a single area in which individual or paired resident SPOW can nest, forage, and roost. The CASO and its associated nest were observed immediately offsite and this species is considered to be present within the project site.

Based on a CNDDB search, four (4) additional non-listed special-status wildlife species were determined to have a moderate or higher potential to occur within the project site: SBFS, Andrew's marble butterfly, lodgepole chipmunk, and white-eared pocket mouse. Project-related surveys for these species have not been conducted. All four of these additional species are known to occur in the general vicinity of the project based on available CNDDB records. According to the CNDDB, there are two (2) recorded occurrences of SBFS in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented approximately one mile northwest of the project site just west of Kuffel Canyon Drive. Both occurrences are presumed extant and this species is generally presumed to be extant rangewide in the San Bernardino Mountains. Data provided by the NRCS indicates that spotted owl pellets containing flying squirrel remains have been found throughout the northeastern section of the project site in association with a known owl

nesting location. SBFS is assumed present on-site based on the results of the habitat suitability assessment data and provided by the NRCS.

According to the CNDDB, there are two (2) recorded occurrences of Andrew's marble butterfly in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented in the vicinity of Lake Arrowhead, but exact coordinates are not available. Andrew's marble butterfly has a high potential to occur within the project site.

According to the CNDDB, there are five (5) recorded occurrences of lodgepole chipmunk in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented approximately 3.9 miles east of the project site in the vicinity of Green Valley Lake in 1964. The northern end of the project site in particular represents optimal habitat with relatively low canopy cover, an abundance of large boulders (particularly in the northeastern end), and abundant open ground. Lodgepole chipmunk has a moderate to high potential to occur within the project site.

According to the CNDDB, there are three (3) recorded occurrences of the white-eared pocket mouse in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. The closest occurrence was documented approximately 1.40 miles west of the project site. However, all three occurrences are considered by the CDFW to be possibly extirpated, and this species has not been trapped in the San Bernardino Mountains since 1938. It is unknown if it is still extant in this mountain range, but suitable habitat is present throughout the undisturbed areas of the project site. If it is still extant, white-eared pocket mouse has a moderate to high potential to occur within the project site.

Avoidance and Minimization Measures

Construction of proposed new trails within the project site will minimize potential impacts to sensitive species by reducing the amount of vegetation removal and disturbance that will be required to create the trails. Trails will generally be left in a "rough" state, unpaved and with brush cleared and overhanging vegetation trimmed. Surrounding vegetation and brush will be left in place to provide a more natural setting. Wildlife that utilize areas that have already been developed or partially developed, such as around the main park facilities or around the trails in the southeastern corner of the project site, will be unavoidable.

Direct and Indirect Impacts

Direct construction-related impacts to special-status wildlife species are expected to be minor during construction and trail creation and would primarily be related to disturbance from human presence and noise. There may be small amounts of small mammal habitat loss or degradation related to the loss of surface litter/refugia or to soil compaction in areas subject to

heavy foot traffic. In extreme situations, excessive disturbance may cause individual animals to leave the area, temporarily or permanently. If any host plant species for Andrew's marble butterfly are present within areas that will be developed or cleared, their loss would reduce the amount of suitable on-site habitat for this species. Guest presence on the trails, particularly in the northeastern portion of the site where CASO was documented by Michael Baker or where SBFS is assumed present, may result in disturbance to these or other species. Any long-term loss of rodents as a result of guest disturbance will reduce the amount of on-site prey for CASO.

Mitigation

In addition to BIO-2, -3, -5, -6, -7, -9, and -14, the following mitigation measures are proposed to reduce project impacts to less than significant with mitigation incorporated:

> **BIO-15**: No work will be allowed within 400 meters of known CASO activity areas during the Limited Operating Period (LOP)[2] between February 1 and August 15.

The NRCS is leading the restoration of Hencks Meadow and is also serving as the project's federal lead agency for regulatory permitting. As part of their role in supporting the project, they have provided both required and suggested mitigation measures for project construction. The follow mitigation measures are required by the NRCS. These measures can be revised in the event of a threat to life and/or property as a result of the need for fuel treatment.

> **BIO-16**: No work will be allowed during the LOP in the entire project area.
>
> **BIO-17**: If owl surveys have not been conducted, all suitable habitat shall be avoided during the LOP.
>
> **BIO-18**: Known nest sites will be buffered by 400 meters and avoided in perpetuity.
>
> **BIO-19**: Wildlife trees[3] will be marked and avoided. All snags in nesting or foraging areas shall be left intact.
>
> **BIO-20**: In known or suitable nesting areas, percent canopy cover shall not be reduced below 70%. In areas of known or suitable foraging, percent canopy cover shall not be reduced below 50%.

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[2] The LOP is a term specific to spotted owls. It describes the period during which spotted owls are actively breeding, nesting, and fledging young. It restricts activities in the vicinity of spotted owl activity areas so that breeding and offspring development can proceed in an undisturbed manner.

[3] "Wildlife trees" are those trees that provide food, shelter, and nesting opportunities for wildlife. This may include features such as perch sites, cavities, loose bark, or other characteristics that enhance wildlife habitat.

BIO-21: Downed woody debris shall be left at 10-15 tons per acre in nesting and foraging habitat.

BIO-22: All woodrat nests shall be avoided and buffered by 10 feet.

The following mitigation measures are suggested by the NRCS:

BIO-23: Approximately 10 percent or more of stumps, targeting those showing some level of decomposition, should be left at two to three feet.

BIO-24: Slash piles[4] should be left in approved areas. Slash piles should be three to four feet high and four to six feet in diameter. There should be two to three slash piles per acre. They should not be burned. Slash piles should be placed approximately 50 feet from roads and houses.

[4] A "slash pile" is a pile of woody debris left naturally or by forestry management activities, including limbs, leaves, needles, and other miscellaneous fuel.

Section 6 Recommendations

6.1 SENSITIVE PLANT SURVEYS

Because the various surveys were generally conducted in April, September, November, and December outside of the blooming season for most plants, it is recommended that pre-construction sensitive plant clearance surveys be conducted within the appropriate blooming season (generally spring and summer) prior to trail installation. The surveys will follow the methodology described in the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009), CNPS *Botanical Survey Guidelines* (2001), and USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996).

6.2 HABITAT SUITABILITY ASSESSMENTS

Based on habitat suitability assessments conducted in April and September 2015 for southern rubber boa, San Bernardino flying squirrel, mountain yellow-legged frog, and California spotted owl, it was determined that suitable habitat is present within the project site for SRB, SBFS, and CASO. SRB and SBFS have a high potential to occur on-site, and CASO was documented as present. There is no suitable MYLF habitat on-site.

It is recommended that the portions of the project site that contain suitable habitat for SRB, SBFS, and CASO remain undeveloped. These areas are generally in the northern section of the project site north the pond. Some of the areas containing moderate to high quality habitat for these species are also within areas that are proposed for minor development (foot trails) and that have some existing development already (primarily fire access roads and trails). It is recommended that these areas be preserved to the extent possible, or that a mitigation program be instated for the loss of these areas if not.

6.3 JURISDICTIONAL AREAS

Four (4) drainage features are present on the project site; Hooks Creek and three (3) unnamed ephemeral drainage features (Drainages 1-3). Based on current site conditions, the project applicant must obtain the following regulatory approvals for any impacts to Hooks Creek associated with the meadow rehabilitation project: Regional Board CWA Section 401 Water Quality Certification and CDFW Section 1602 Streambed Alteration Agreement (SAA).

No impacts to Hooks Creek or Drainages 1-3 are anticipated from installation of the proposed trials. Construction of proposed new trails within the project site will avoid potential impacts to jurisdictional waters. The trials will avoid jurisdictional waters and will generally be left in a “rough” state, unpaved and with brush cleared and overhanging vegetation trimmed. No

dredging or fill material will be placed in any of the jurisdictional features on-site. Any proposed trail crossings (fallen logs) over the jurisdictional features will occur outside of the jurisdictional limits of Corps, Regional Board, and CDFW.

6.4 MIGRATORY BIRD TREATY ACT/FISH AND GAME CODE

Pursuant to the Migratory Bird Treaty Act (MBTA) and Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from January 1 through September 15, but can vary slightly from year to year based upon seasonal weather conditions. If ground disturbance and vegetation removal cannot occur outside of the nesting season, a pre-construction clearance survey for nesting birds should be conducted within three days of the start of any ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur. If there is a pause in construction in a particular area of more than one week or if construction enters a new area, a new nest clearance survey should be conducted and a biologist should monitor any new active nests that are found within the aforementioned buffers.

Pursuant to Fish and Game Code Section 3503, it is unlawful to destroy any bird's nest or any bird's eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls) are protected under Fish and Game Code Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Consultation with CDFW will be required prior to the removal of any raptor nest on the project site, if found.

Section 7 Conclusion

The majority of the project site is undeveloped, consisting of naturally occurring habitats which will continue to remain undeveloped. Dirt fire access roads traverse the site. These existing dirt access roads are proposed to be used for various mountain biking/hiking trail activities. The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the park's closure in 1998. The proposed new land use will renovate these existing buildings. The majority of the project site has been undisturbed from this previous development. Five (5) plant communities were observed on-site: mixed conifer, willow riparian scrub, chaparral, grassland (meadow), and pond. In addition, there are two (2) non-vegetative land cover types that would be classified as disturbed and developed.

No sensitive plant species were observed on-site during the habitat assessment. While most of the site is undeveloped and provides relatively undisturbed mixed conifer habitat, most sensitive plant species in the region occur in different habitats, microhabitats, or conditions than those that are present on-site. As a result, based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive plant species, it was determined that silver-haired ivesia, Parish's yampah, and Laguna Mountains jewelflower have a moderate potential to occur, and all other sensitive plant species have a low potential to occur or are presumed absent from the site.

Based on input from regulatory agencies and the San Bernardino Valley chapter of the Audubon Society, special attention was given to the suitability of the habitat within and adjacent to the project site to support four (4) sensitive wildlife species: SRB, SBFS, MYLF, and CASO, in addition to general sensitive wildlife species as determined through a literature search. This resulted in subsequent individual habitat suitability assessments for each of these four species. A single adult CASO was observed immediately offsite during the CASO suitability assessment in September 2015 and this species is expected to be present. Based on habitat requirements for specific species and the availability and quality of habitats needed by each sensitive wildlife species, it was determined that the project site has a high potential to support Andrew's marble butterfly, and a moderate to high potential to support bald eagle, lodgepole chipmunk, and white-eared pocket mouse. There is a low potential to support rosy boa, coast horned lizard, American badger, and two-striped garter snake. All remaining sensitive wildlife species are presumed to be absent from the project site.

It is recommended that the portions of the project site that contain suitable habitat for SRB, SBFS, and CASO remain undeveloped. These areas are generally in the northern section of the project site north the pond. Some of the areas containing moderate to high quality habitat for

these species are also within areas that are proposed for minor development (foot trails) and that have some existing development already (primarily fire access roads and trails). It is recommended that these areas be preserved to the extent possible, or that a mitigation program be instated for the loss of these areas if not. Recommended or required mitigation measures for impacts to special-status species are provided in Section 5.

A total of four (4) drainage features are present on the project site; Hooks Creek and three (3) unnamed ephemeral drainage features (Drainages 1-3). Hooks Creek and Drainages 1-3 all qualify as waters of the United States, and fall under the regulatory authority of the Corps, Regional Board, and CDFW. However, since the NCRS is taking the federal lead in the meadow rehabilitation project they are the federal lead agency implementing Section 404 of the CWA. As a result, a CWA Section 404 permit from the Corps will not be required for this project. Based on current site conditions, the project applicant must obtain the following regulatory approvals for any impacts to Hooks Creek associated with the meadow rehabilitation project: Regional Board CWA Section 401 Water Quality Certification and CDFW Section 1602 SAA. No impacts to Hooks Creek or Drainages 1-3 are anticipated from installation of the proposed trials. Construction of proposed new trails within the project site will avoid potential impacts to jurisdictional waters. The trials will avoid jurisdictional waters and will generally be left in a "rough" state, unpaved and with brush cleared and overhanging vegetation trimmed. No dredging or fill material will be placed in any of the jurisdictional features on-site. Any proposed trail crossings (fallen logs) over the jurisdictional features will occur outside of the jurisdictional limits of Corps, Regional Board, and CDFW.

Pursuant to the MBTA and Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from January 1 through September 15 (this time frame includes both the passerine and raptor nesting season), but can vary slightly from year to year based upon seasonal weather conditions. If ground disturbance and vegetation removal cannot occur outside of the nesting season, a pre-construction clearance survey for nesting birds should be conducted within three days of the start of any ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur.

Pursuant to Fish and Game Code Section 3503, it is unlawful to destroy any bird's nest or any bird's eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls) are protected under Fish and Game Code Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Consultation with CDFW will be required prior to the removal of any raptor nest on the project site, if found.

Section 8 Certification

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: 1/15/2016 Signed: _____

Thomas J. McGill, Ph.D.

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Appendix A Site Photographs

Photograph 1 – Facing east from the south side of State Route 18 where the campground is proposed to be installed. Wood chips have been scattered over the existing pavement.

Photograph 2 – Existing structures from the old Santa's Village that are proposed to be renovated.

Photograph 3 – Existing structures from the old Santa's Village that are proposed to be renovated.

Photograph 4 – Existing trail with a ladder bridge located on the eastern boundary of the project site.

Photograph 5 – Existing dirt access roads located on the eastern boundary of the project site. These dirt access roads will be used for mountain biking trails.

Photograph 6 – Facing northeast from the southern shore of the pond on the northern boundary of the project site.

Photograph 7 – From the southern shore of the pond, looking south at the willow riparian woodland.

Photograph 8 – Looking north at the open space area that was previously used for parking. Wood chips have been scatted over the pavement.

Photograph 9 – Just south of the front entrance into the existing park, looking north at the meadow.

Photograph 10 – Looking north at the meadow on the western boundary of the project site.

Appendix B Potentially Occurring Sensitive Biological Resources

Table B1: Potentially Occurring Sensitive Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Wildlife Species				
Anaxyrus californicus arroyo toad	Fed: **END** CA: None	Occurs in semi-arid regions near washes or intermittent streams, including valley-foothill grasslands, desert riparian, desert washes, and oak woodlands. Breeding habitat consists of shallow streams with a mixture of sandy and gravelly substrate and sandy terraces. Generally requires mulefat (*Baccharis salicifolia*) and willow (*Salix* sp.) in the streambed for vegetative canopy for breeding areas and forages for insects primarily under oak (*Quercus* sp.), cottonwood (*Populus fremontii*), and sycamore (*Platanus racemosa*) trees.	No	**Presumed absent**. There is no suitable habitat.
Catostomus santaanae Santa Ana sucker	Fed: **THR** CA: CSC	Occurs in the watersheds draining the San Gabriel and San Bernardino Mountains of southern California. Santa Ana sucker generally inhabits perennial streams with water ranging in depth from a few inches to several feet and with currents ranging from slight to swift.	No	**Presumed absent**. There is no suitable habitat.
Chaetodipus fallax pallidus pallid San Diego pocket mouse	Fed: None CA: CSC	Found in desert border areas in desert wash, desert scrub, desert succulent scrub, pinyon-juniper woodland, and similar habitats. Usually in sandy herbaceous areas with rocky or coarse gravelly groundcover.	No	**Presumed absent**. There is no suitable habitat.
Charina trivirgata rosy boa	Fed: None CA: None	Ranges from southern California and western Arizona in the United states, southward to Baja California and western Sonora in Mexico. Species often inhabits rocky areas in coastal sage scrub, chaparral, and desert environments.	No	**Low**. There is marginal habitat.
Charina umbratica southern rubber boa	Fed: None CA: **THR**	Found in a variety of montane forest habitats, particularly in the vicinity of streams or wet meadows. Requires loose, moist soil for burrowing and seeks cover in rotting logs. Restricted to the San Bernardino and San Jacinto Mountains.	No	**High**. There is suitable habitat on-site, particularly in the northern half of the project site.
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: **END** CA: CSC	Primarily found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidean upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidean alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Presumed absent**. There is no suitable habitat.
Empidonax traillii extimus southwestern willow flycatcher	Fed: **END** CA: **END**	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	**Presumed absent**. There is no suitable habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Euchloe hyantis andrewsi Andrew's marble butterfly	Fed: None CA: None	Inhabits yellow pine forests near Lake Arrowhead and Big Bear Lake at elevations between 5,000 and 6,000 feet. Uses Laguna Mountains jewelflower (*Streptanthus bernardinus*) and pine rockcress (*Arabis holboelli var. pinetorum*) as host plants; larvae feed on mountain tansy mustard (*Descurainia incana*).	No	**High**. There is suitable habitat on-site.
Eumops perotis californicus western mastiff bat	Fed: None CA: CSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least 3 meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Presumed absent**. There is no suitable habitat.
Gila orcuttii arroyo chub	Fed: None CA: CSC (**THR** in native range)	Warm streams of the Los Angeles Plain, which are typically muddy torrents during the winter, and clear quiet brooks in the summer, possibly drying up in places. They are found both in slow-moving and fast-moving sections, but generally deeper than 40 cm.	No	**Presumed absent**. There is no suitable habitat.
Glaucomys sabrinus californicus San Bernardino flying squirrel	Fed: None CA: CSC	Occurs at elevation between 5,200 and 8,500 feet in the San Bernardino and San Jacinto Mountains in woodlands dominated by California black oak (*Quercus kelloggii*) and white fir (*Abies concolor*). Requires cavities for nests, as well as nearby water.	No	**Assumed present**. There is suitable habitat in the northeastern portion of the site, as well as outside of the site. Based on a habitat suitability assessment and unpublished data, this species is assumed present.
Haliaeetus leucocephalus bald eagle	Fed: Delisted CA: **END**	Found along the ocean shore, lake margins, and on rivers, where it both nests and winters, typically within one mile of water. Nests in large, old-growth, or dominant live trees with open branches, favoring ponderosa pines. Roosts communally in winter.	No	**Moderate to High**. There is suitable nesting habitat in the vicinity. This species has been observed several times in the past flying around the project site.
Lasiurus xanthinus western yellow bat	Fed: None CA: CSC	Roosts in trees, especially palms, in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species forages over water and between trees.	No	**Presumed absent**. There is no suitable habitat.
Neotamias speciosus speciosus lodgepole chipmunk	Fed: None CA: None	Occurs on the summits of isolated Piute, San Bernardino, and San Jacinto Mountains, usually in open-canopy forests. In the San Bernardino Mountains is it usually found in lodgepole pine forests.	No	**High**. There is suitable habitat on-site.
Nyctinomops femorosaccus pocketed free-tailed bat	Fed: None CA: CSC	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	**Presumed absent**. There is no suitable habitat.
Perognathus alticolus alticolus white-eared pocket mouse	Fed: None CA: CSC	Inhabits ponderosa and Jeffrey pine forests, mixed chaparral, and sagebrush in the San Bernardino Mountains, constructing burrows in loose soil.	No	**Moderate to High**. There is suitable habitat on-site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Phrynosoma blainvillii coast horned lizard	Fed: None CA: CSC	Found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Low**. There is marginal habitat along the edges and outside of the site.
Rana draytonii California red-legged frog	Fed: **THR** CA: CSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamside's with plant cover. Most common in lowlands or foothills. Breeds in permanent or ephemeral waters sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.	No	**Presumed absent**. There is no suitable habitat.
Rana muscosa southern mountain yellow-legged frog	Fed: **END** CA: **END** CSC	Occurs in lower elevation habitats characterized by rocky streambeds and wet meadows, while higher elevation habitats include lakes, ponds, and streams. Occupy streams in narrow, rock-walled canyons. Often found along rock walls or vegetated banks and always within a few feet of the water.	No	**Presumed absent**. There is no suitable habitat.
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	Fed: None CA: CSC	Requires permanent flowing streams within summer water temperatures of 17 – 20 degrees Celsius. Inhabits shallow cobble and gravel riffles and small streams that flow through steep, rocky canyons with chaparral covered walls.	No	**Presumed absent**. There is no suitable habitat.
Siphateles bicolor mohavensis Mohave tui chub	Fed: **END** CA: **END**	Endemic to the Mojave River Basin and adapted to alkaline, mineralized waters. Requires deep pools, ponds, or slough-like areas and needs vegetation for spawning.	No	**Presumed absent**. There is no suitable habitat.
Taxidea taxus American badger	Fed: None CA: CSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	No	**Low**. There is marginal habitat.
Thamnophis hammondii two-striped garter snake	Fed: None CA: CSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**Low**. There is marginal habitat.
Vireo bellii pusillus least Bell's vireo	Fed: **END** CA: **END**	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities.	No	**Presumed absent**. There is no suitable habitat.
Plant Species				

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Acanthoscyphus parishii var. goodmaniana Cushenbury oxytheca	Fed: **END** CA: None CNPS: 1B.2	Occurs in pinyon-juniper woodland on limestone talus and rocky slopes. From 4,002 to 7,808 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Astragalus lentiginosus var. sierra Big Bear Valley milk-vetch	Fed: None CA: None CNPS: 1B.2	Found in Mojavean desert scrub, meadows, pinyon-juniper woodland, upper montane coniferous forest, stony meadows, and open pinewoods in sandy and gravelly soils. From 5,906 to 8,530 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Astragalus leucolobus Big Bear Valley woollypod	Fed: None CA: None CNPS: 1B.2	Occurs in lower montane coniferous forest, pebble plain, pinyon-juniper woodland, and upper montane coniferous forest in dry pine woods. Typically found in gravelly knolls among sagebrush or on stony lake shores in the pine belt. From 5,741 to 9,465 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Berberis nevinii Nevin's barberry	Fed: **END** CA: **END** CNPS: 1B.1	Occurs on steep, north-facing slopes or in low-grade sandy washes in chaparral, cismontane woodland, coastal scrub, and riparian scrub. From 951 to 5,167 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Boechera dispar pinyon rockcress	Fed: None CA: None CNPS: 2B.3	Found in Joshua tree woodland, pinyon-juniper woodland, and Mojavean desert scrub on granitic, gravelly slopes and mesas. It is often found underneath desert shrubs. From 3,937 to 8,038 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Boechera parishii Parish's rockcress	Fed: None CA: None CNPS: 1B.2	Occurs on pebble plain, pinyon-juniper woodland, and upper montane coniferous forest on clay soils with quartzite cobble and occasionally on limestone. From 5,807 to 9,810 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Boechera shockleyi Shockley's rockcress	Fed: None CA: None CNPS: 2B.2	Found in pinyon-juniper woodland on ridges, rocky outcrops, and openings on limestone or quartzite. From 2,871 to 7,579 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Calochortus palmeri var. palmeri Palmer's mariposa lily	Fed: None CA: None CNPS: 1B.2	Occurs in meadows and seeps, chaparral, and lower montane coniferous forest in vernally moist places. From 3,281 to 7,841 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Calochortus plummerae Plummer's mariposa lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley and foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. From 328 to 5,577 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Canbya candida white pygmy-poppy	Fed: None CA: None CNPS: 4.2	Occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland in sandy places. From 1,969 to 4,790 feet in elevation.	No	**Presumed absent**. There is no suitable habitat and the site is outside of the known elevation range of this species.
Castilleja cinerea ash-gray paintbrush	Fed: **THR** CA: None CNPS: 1B.2	Found in pebble plains, upper montane coniferous forest, Mojavean desert scrub, and pinyon-juniper woodland in clay openings, often in meadow edges. Endemic to the San Bernardino Mountains. From 5,906 to 9,301 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Castilleja lasiorhyncha San Bernardino Mountains owl's-clover	Fed: None CA: None CNPS: 1B.2	Occurs in mesic or drying sites along the edges of streams, meadows, and vernal pools. Found in meadows and seeps, pebble plains, upper montane coniferous forest, chaparral, and riparian woodland. From 4,265 to 7,841 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Centromadia pungens ssp. laevis smooth tarplant	Fed: None CA: None CNPS: 1B.1	Occurs in alkali meadow, alkali scrub, and disturbed areas within valley and foothill grassland, chenopod scrub, meadows, playas, and riparian woodland. From 3 to 2,100 feet in elevation.	No	**Presumed absent**. The site is outside of the known elevation range of this species.
Chorizanthe parryi var. parryi Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. From 131 to 5,594 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Deinandra mohavensis Mojave tarplant	Fed: None CA: **END** CNPS: 1B.3	Found in riparian scrub and chaparral in low sandbars in the riverbed. Mostly found in riparian areas or in ephemeral grassy areas. From 2,789 to 5,249 feet in elevation.	No	**Presumed absent**. There is no suitable habitat and the site is outside of the known elevation range of this species.
Drymocallis cuneifolia var. cuneifolia wedgeleaf woodbeauty	Fed: None CA: None CNPS: 1B.1	Found in riparian scrub and upper montane coniferous forest, sometimes in carbonate soils. From 5,906 to 7,267 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Dudleya abramsii ssp. affinis San Bernardino Mountains dudleya	Fed: None CA: None CNPS: 1B.2	Found in pebble plain, upper montane coniferous forest, and pinyon-juniper woodland in granite or quartzite outcrops. It is rarely found on limestone. From 4,101 to 8,530 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Eremogone ursina Big Bear Valley sandwort	Fed: **THR** CA: None CNPS: 1B.2	Occurs in pebble plains, pinyon-juniper woodland, and meadows and seeps on mesic, rocky sites. From 5,906 to 9,514 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Eremothera boothii ssp. boothii Booth's evening-primrose	Fed: None CA: None CNPS: 2B.3	Found in Joshua tree woodland and pinyon-juniper woodland. From 2,953 feet to 7,874 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	Fed: **END** CA: **END** CNPS: 1B.1	Coastal scrub, chaparral in sandy soils on river floodplains or terraces fluvial deposits. From 295 to 2,001 feet in elevation.	No	**Presumed absent**. There is no suitable habitat and the site is outside of the known elevation range of this species.
Erigeron parishii Parish's daisy	Fed: **THR** CA: None CNPS: 1B.1	Found in Mojavean desert scrub and pinyon-juniper woodland. Usually found on carbonate and limestone mountain slopes and is often associated with drainages. From 2,625 to 6,562 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Eriogonum kennedyi var. austromontanum southern mountain buckwheat	Fed: **THR** CA: None CNPS: 1B.2	Occurs on pebble plains and lower montane coniferous forest. From 5,807 to 9,482 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Eriogonum ovalifolium var. vineum Cushenbury buckwheat	Fed: **END** CA: None CNPS: 1B.1	Occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland on limestone mountain slopes. Usually in dry, rocky places. From 4,593 to 8,005 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Heuchera parishii Parish's alumroot	Fed: None CA: None CNPS: 1B.3	Found in lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest, and alpine boulder and rock fields in rocky places. It sometimes occurs on carbonate. From 4,921 to 12,467 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Horkelia bolanderi Bolander's horkelia	Fed: None CA: None CNPS: 1B.2	Grows in chaparral, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland, usually along edges and in vernally mesic areas. From 1,476 to 3,609 feet in elevation.	No	**Presumed absent**. The site is outside of the known elevation range of this species.
Imperata brevifolia California satintail	Fed: None CA: None CNPS: 2B.1	Occurs in mesic sites, alkali seeps, and riparian areas within coastal scrub, chaparral, riparian scrub, Mojavean scrub, and alkali meadows and seeps. From 0 to 1,640 feet in elevation.	No	**Presumed absent**. The site is outside of the known elevation range of this species.
Ivesia argyrocoma var. argyrocoma silver-haired ivesia	Fed: None CA: None CNPS: 1B.2	Found in meadows, pebble plains, and upper montane coniferous forest, often with other rare plants. From 4,790 to 9,711 feet in elevation.	No	**Moderate**. There is suitable habitat.
Lilium parryi lemon lily	Fed: None CA: None CNPS: 1B.2	Occurs in lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest. Generally occurs in wet, mountainous terrain; forested areas; on the shady edges of streams; or in open, boggy meadows and seeps. From 4,003 to 9,006 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Mimulus purpureus little purple monkeyflower	Fed: None CA: None CNPS: 1B.2	Found in meadows and seeps, pebble plain, and upper montane coniferous forest on dry clay or gravelly soils under Jeffrey pines or along annual or vernal streams, springs, or seeps. From 6,234 to 7,546 feet in elevation.	No	**Presumed absent**. There is no suitable habitat and the site is outside of the known elevation range of this species.
Monardella macrantha ssp. hallii Hall's monardella	Fed: None CA: None CNPS: 1B.3	Occurs in broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland along dry slopes and ridges. From 2,395 to 7,201 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Navarretia peninsularis Baja navarretia	Fed: None CA: None CNPS: 1B.2	Grows in wet areas in lower montane coniferous forest and chaparral. From 4,921 to 7,956 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Packera bernardina San Bernardino ragwort	Fed: None CA: None CNPS: 1B.2	Found in meadows and seeps, pebble plains, and upper montane coniferous forest in mesic or sometimes alkaline meadows, as well as dry rocky slopes. From 5,906 to 7,546 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Pediomelum castoreum Beaver Dam breadroot	Fed: None CA: None CNPS: 1B.2	Occurs in Joshua tree woodland and Mojavean desert scrub in sandy soils and in washes and roadcuts. From 2,001 to 2,707 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Perideridia parishii ssp. parishii Parish's yampah	Fed: None CA: None CNPS: 2B.2	Found in lower montane coniferous forest, meadows, and upper montane coniferous forest in damp meadows or along streambeds. It often grows in areas with an open pine canopy. From 4,806 to 9,843 feet in elevation.	No	**Moderate**. There is suitable habitat.
Phlox dolichantha Big Bear Valley phlox	Fed: None CA: None CNPS: 1B.2	Grows in pebble plains and upper montane coniferous forest, often on sloping hillsides, in shade under pines and California black oak where there is heavy pine litter, or in openings. From 6,562 to 9,744 feet in elevation.	No	**Presumed absent**. The site is outside of the known elevation range of this species.
Ribes divaricatum var. parishii Parish's gooseberry	Fed: None CA: None CNPS: 1A	Occurs in riparian woodland, usually in willow swales. From 213 to 328 feet in elevation.	No	**Presumed absent**. The site is outside of the known elevation range of this species. This species is presumed extirpated in California.
Saltugilia latimeri Latimer's woodland-gilia	Fed: None CA: None CNPS: 1B.2	Grows in chaparral, Mojavean desert scrub, pinyon-juniper woodland, and sometimes in washes in rocky or sandy substrate. From 1,312 to 6,234 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Sidalcea hickmanii ssp. parishii Parish's checkerbloom	Fed: None CA: Rare CNPS: 1B.2	Occurs in chaparral, cismontane woodland, and lower montane coniferous forest in disturbed, burned, or cleared areas on dry, rocky slopes, particularly in fuel breaks and on fire roads on mountain summits. From 3,281 to 8,202 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Sidalcea malviflora ssp. dolosa Bear Valley checkerbloom	Fed: None CA: None CNPS: 1B.2	Found in meadows and seeps, riparian woodland, lower montane coniferous forest, and upper montane coniferous forest in wet areas. It is highly affected by hydrological changes in its environment. From 4,905 to 8,809 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Sidalcea pedata bird-foot checkerbloom	Fed: **END** CA: **END** CNPS: 1B.1	Found in vernally mesic sites within meadows and seeps and on pebble plains. From 5,249 to 8,202 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Streptanthus bernardinus Laguna Mountains jewelflower	Fed: None CA: None CNPS: 4.3	Grows in chaparral and lower montane coniferous forest on clay or decomposed granite soils. It is sometimes found in disturbed areas such as streamsides or roadcuts. From 4,724 to 8,202 feet in elevation.	No	**Moderate**. There is suitable habitat.
Streptanthus campestris southern jewelflower	Fed: None CA: None CNPS: 1B.3	Occurs in open, rocky areas in chaparral, lower montane coniferous forest, and pinyon-juniper woodland. From 1,969 to 9,154 feet in elevation.	No	**Low**. There is marginal habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Symphyotrichum defoliatum San Bernardino aster	Fed: None CA: None CNPS: 1B.2	Grows in grasslands and disturbed areas in the San Gabriel and San Bernardino Mountains and Peninsular Range. Occurs in vernally wet sites including ditches, streams, and springs in many plant communities including meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous woodland, and grassland. From 7 to 6,693 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Thelypteris puberula var. sonorensis Sonoran maiden fern	Fed: None CA: None CNPS: 2B.2	Found in meadows and seeps along streams and other seepage areas. From 164 to 2,001 feet in elevation.	No	**Presumed absent**. The site is outside of the known elevation range of this species.
Sensitive Habitats				
Riversidian Alluvial Fan Sage Scrub	CDFW Sensitive Habitat	Considered a distinct and rare plant community found primarily on alluvial fans and flood plains along the southern bases of the Transverse Ranges and portions of the Peninsular Ranges in southern California. Relatively open vegetation type is adapted to periodic flooding and erosion and is comprised of an assortment of drought-deciduous shrubs and larger evergreen woody shrubs characteristic of both coastal sage scrub and chaparral communities.	No	**Absent**.
Southern Mixed Riparian Forest	CDFW Sensitive Habitat	Typically a younger successional stage of riparian forest, due to disturbance or more frequent flooding. Plant species include willow species, elderberry, oak species, sycamore, cottonwood, and smaller shrubs.	No	**Absent**.
Southern Sycamore Alder Riparian Woodland	CDFW Sensitive Habitat	Occurs below 2,000 meters in elevation, sycamore and alder often occur along seasonally-flooded banks; cottonwoods and willows are also often present. Poison oak, mugwort, elderberry and wild raspberry may be present in understory.	No	**Absent**.

U.S. Fish and Wildlife Service (Fed) - Federal
END- Federal Endangered
THR- Federal Threatened
Delisted- Removed from the Endangered Species List

California Department of Fish and Wildlife (CA) - California
THR- California Threatened
CSC- California Species of Concern
CSC- California Species of Concern

California Native Plant Society (CNPS)
California Rare Plant Rank
1A Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Appendix C Flora and Fauna Compendium

Table C-1: Plant Species

PLANT SPECIES	
Scientific Name	**Common Name**
Abies concolor	white silver fir
Achillea millefolium	mountain yarrow
Acmispon americanus var. americanus	Spanish clover
Agoseris grandiflora var. grandiflora	giant mountain dandelion
Alisma triviale	northern water plantain
Artemisia douglasiana	mugwort
Artemisia dracunculus	tarragon
Asclepias sp.	milkweed
Baccharis salicifolia	mulefat
Bidens frondosa	sticktight
Bromus diandrus	ripgut
Bromus tectorum	Downy chess
Calocedrus decurrens	incense cedar
Carex athrostachya	slender leaved sedge
Chenopodium sp.	pigweed
Cirsium vulgare	bull thistle
Cornus nuttallii	Pacific dogwood
Eleocharis sp.	spikerush
Erigeron canadensis	Canada horseweed
Juncus acutus	spiny rush
Juncus effusus var. pacificus	Pacific rush
Koeleria macrantha	June grass
Lathyrus vestitus	hillside pea
Marrubium vulgare	horehound
Mimulus brevipes	white-throated monkeyflower
Mimulus sp.	monkeyflower
Penstemon rostriflorus	Bridge's penstemon
Pinus jeffreyi	Jeffrey pine
Pinus lambertiana	sugar pine
Plantago major	common plantain
Polygonum lapathifolium	willow weed
Populus fremontii	cottonwood
Pseudognaphalium beneolens	fragrant everlasting
Pteridium aquilinum	western bracken fern
Quercus kelloggii	California black oak
Ribes roezlii	sierra gooseberry
Rubus sp.	blackberry
Rumex sp.	dock
Salix lasiolepis	arroyo willow
Sequoiadendron giganteum	giant sequoia
Sisymbrium altissimim	tumble mustard
Stephanomeria virgata	twiggy wreath plant
Tanacetum parthenium	feverfew
Thysanocarpus laciniatus	mountain fringepod
Typha latifolia	broadleaf cattail
Urtica dioica	stinging nettle

Table C-2: Wildlife Species

WILDLIFE SPECIES	
Scientific Name	**Common Name**
Aves	**Birds**
Aphelocoma californica	western scrub-jay
Ardea herodias	great blue heron
Buteo jamaicensis	red-tailed hawk
Calypte anna	Anna's hummingbird
Cardelina pusilla	Wilson's warbler
Certhia americana	brown creeper
Colaptes auratus	northern flicker
Contopus sordidulus	western wood-pewee
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Cyanocitta stelleri	Steller's jay
Euphagus cyanocephalus	Brewer's blackbird
Haemorhous mexicanus	house finch
Haemorhous purpureus	purple finch
Icterus bullockii	Bullock's oriole
Junco hyemalis	dark-eyed junco
Limnodromus scolopaceus	long-billed dowitcher
Melanerpes formicivorus	acorn woodpecker
Melospiza lincolnii	Lincoln's sparrow
Melospiza melodia	song sparrow
Molothrus ater	brown-headed cowbird
Oreortyx pictus	mountain quail
Oreothlypis celata	orange-crowned warbler
Oreothlypis ruficapilla	Nashville warbler
Patagioenas fasciata	band-tailed pigeon
Pheucticus melanocephalus	black-headed grosbeak
Picoides nuttallii	Nuttall's woodpecker
Picoides pubescens	downy woodpecker
Picoides villosus	hairy woodpecker
Pipilo maculatus	spotted towhee
Piranga ludoviciana	western tanager
Poecile gambeli	mountain chickadee
Psaltriparus minimus	bushtit
Regulus calendula	ruby-crowned kinglet
Sayornis nigricans	black phoebe
Selasphorus rufus/sasin	rufous/Allen's hummingbird
Setophaga coronata	yellow-rumped warbler
Setophaga nigrescens	black-throated gray warbler
Setophaga townsendi	Townsend's warbler
Sialia mexicana	western bluebird
Sitta canadensis	red-breasted nuthatch
Sitta carolinensis	white-breasted nuthatch
Spinus psaltria	lesser goldfinch
Strix occidentalis	spotted owl
Troglodytes aedon	house wren
Turdus migratorius	American robin
Vireo gilvus	warbling vireo
Zenaida macroura	mourning dove

WILDLIFE SPECIES	
Scientific Name	**Common Name**
Amphibia	**Amphibians**
Pseudacris hypochondriaca	Baja California treefrog
Mammalia	**Mammals**
Lynx rufus	bobcat (tracks)
Neotoma sp.	woodrat (midden)
Odocoileus hemionus	mule deer (tracks)
Otospermophilus beecheyi	California ground squirrel
Procyon lotor	raccoon (tracks)
Sciurus griseus	gray squirrel
Sylvilagus sp.	Cottontail rabbit (tracks)
Ursus americanus	California black bear (tracks and scat observed)

Appendix D Southern Rubber Boa Habitat Suitability Assessment

LEATHERMAN BIOCONSULTING, INC.
Biological Surveys, Management & Monitoring

October 25, 2015

Mr. Ryan Winkleman
MICHAEL BAKER INTERNATIONAL
3210 Guaste Road, Suite 100
Ontario, California 91761

Subject: Biological Assessment for Southern Rubber Boa at the Skypark at Santa's Village Project Site the San Bernardino Mts.

Dear Mr. Winkleman:

This letter reports the results of a habitat assessment to evaluate the potential for occurrence and extent of suitable habitat for the southern rubber boa (*Charina bottae umbratica*) on the approximately 148-acre Skypark at Santa's Village project site (Exhibit 1). The site is located east of Skyforest off State Route 18 (west of Sycamore Drive) in the San Bernardino Mountains, San Bernardino County, California. Specifically, the site is located on the Harrison Mountain USGS 7.5 minute series quadrangle map, in Township 2 North, Range 3 West, in sections 23 and 26. Elevation ranges from approximately 5,660 to 5,930 feet. The southern rubber boa is a state-listed threatened species, and is on the U.S. Forest Service sensitive species list, and is currently being reviewed to determine if it warrants listing under the federal Endangered Species Act. Mr. Brian Leatherman, who conducted the habitat assessment, holds a current Memorandum of Understanding with the California Department of Fish and Wildlife to conduct surveys for the southern rubber boa.

Southern Rubber Boa

The southern rubber boa is state-listed as a threatened species under the California Endangered Species Act (CDFW 2015a). It is considered a sensitive species by the U.S. Forest Service in the San Bernardino National Forest (Stephenson and Calcarone 1999), but currently has no status under the federal Endangered Species Act (USFWS 2015a). However, the U.S. Fish and Wildlife (2015b) recently published a 90-day finding on a petition to list the southern rubber boa as an endangered or threatened species and found that the petition presented substantial information indicating that the action may be warranted, thus initiating a 12-month review period. Threats to the species include development (the majority of known locations are on private lands) (Stewart 1988, 1991), off-road activity, commercial timber sales, personal fuelwood harvesting (Stewart et al. 2005), and habitat destruction by collectors (Steinhart 1990).

The southern rubber boa is semi-fossorial (living underground most of the time), nocturnal (active at night) or crepuscular (active early morning or late evening), and highly secretive, so individuals are rarely encountered and their seasonal activity and habitat use are difficult to determine. Rubber boas begin to emerge from hibernation in early April but most emerge in late April depending on climatic conditions (Hoyer and Stewart 2000a). Boas generally disappear during the summer months though may emerge after rains or periods of high humidity (Stewart et. al 2005). It is likely that some individuals remain at rock outcrops during the summer and retreat deeper into crevices (Steward et al. 2005), but others apparently move into cooler, moister forest and riparian habitats (Loe 1985, Stewart 1988). Boas have been observed on the surface as late as October (Hoyer and Stewart 2000a).

Habitat for the rubber boa includes mixed conifer-oak forest and woodland habitats at higher elevations in the San Bernardino and San Jacinto Mountains, at elevations between approximately 5,000 to 8,000 feet (Stewart 1988, 1991). In the San Bernardino Mountains, most of the records occur in a roughly 10-mile stretch of habitat between Twin Peaks on the west and Green Valley on the east, including the Running Springs and Lake Arrowhead areas (Stewart 1988, 1991). Populations appear to be isolated, with tracts of apparently suitable habitat unoccupied. Dominant trees in occupied areas include Jeffrey pine (*Pinus jeffreyi*), ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), and black oak (*Quercus kelloggii*) (Stewart 1988). In a multi-year study of the southern rubber boa in the San Bernardino Mountains, Hoyer and Stewart (2000a) found southern rubber boas in a variety of vegetation types and slope aspects, but all collection sites were on or around small to large rock outcrops, which are apparently important as hibernacula (Keasler 1982, Stewart 1988). In all habitat types, rock outcrops, rotten logs and a thick litter/duff layer are considered important habitat components because they provide cover and maintain soil moisture (Loe 1985).

(Stewart 1988) suggests that rock outcrops on southern exposures tend to be favored in the spring and that as the weather becomes warmer and dryer the snakes may move into cooler and moister habitats such as riparian areas and forest, but acknowledges that there is practically no data on their seasonal movements. Later, Hoyer and Stewart's (2000a) 5-year study produced evidence of high site fidelity by boas, with 19 of 21 recaptures being within 26 feet of their original capture location, and the two farthest recaptures being approximately 231-247 feet from their original capture location. One southern rubber boa is reported as moving up to 300 yards in a single season (Loe 1985).

Methods

Prior to conducting the habitat assessment, a search was conducted of the relevant literature for known records of the southern rubber boa in the vicinity of the site. The literature search included a review of CDFW's California Natural Diversity Database (CDFG 2015b), the U.S. Forest Service's Southern California Mountains and Foothills Assessment (Stephenson and Calcerone 1999), the San Bernardino County Official Land

Use Plan Biotic Resource Overlay map (San Bernardino County 2000), unpublished records, and reference books and research articles as appropriate.

The habitat assessment was conducted on April 30, 2015 by Mr. Ryan Winkleman (Michael Baker International), and Mr. Brian Leatherman (Leatherman BioConsulting, Inc.), a wildlife biologist with over 20 years of experience throughout southern California, including specific experience conducting habitat assessments and focused surveys for the southern rubber boa in the San Bernardino Mountains. The survey consisted of walking a meandering transect throughout the site starting at the north end and working south. A systematic survey of the entire site was not conducted. The locations of rock outcrops were recorded as waypoints using GPS technology and transferred to a 7.5 minute series USGS quadrangle using the program TOPO!™ for mapping purposes (Exhibit 2). The extent and quality of rock outcrops and other suitable mircrohabitat features used as refugia, including downed logs and trees, were estimated and recorded. Weather during the survey was very good with clear skies (and thin high-elevation clouds in the morning hours), a light breeze (2-7 mph) and moderate temperatures (low 60's to low 70's °F). During the assessment, several rotten logs and other surface objects were lifted and replaced opportunistically in search of southern rubber boa individuals.

Existing Conditions and Habitats

Skypark at Santa's Village is located on the crest of the San Bernardino Mountains east of Skyforest. Topography consists of a series moderate to steep slopes and ridges that drain into Hooks Creek, which roughly flows through the site from the southwest corner to the northeast corner. A small reservoir (or detension basin) is located near the western boundary in the northern third of the site. Surface water was present in Hooks Creek below the reservoir during the survey, but the length of the drainage was not walked to document surface flow throughout. No surface water was observed above the reservoir. State Route 18 crosses through the south end of the site in an east-west direction.

Soils appear to be moderately deep to deep, well-drained sandy loams and gravels from deposits and weathered (decomposed) granite. Rock outcrops and boulder piles occur throughout much of the south-facing slope at the north end of the site, and, to a lesser extent, along Hooks Creek north of the reservoir.

The majority of the site is currently undeveloped. Several dirt access roads and trails traverse the site, and an existing mountain bike course is located in the southeast portion of the site north of State Route 18. A portion of the site was developed in the past (Santa's Village), and a large section of the site south of State Route 18 was used as a staging area for operations associated with storing and chipping trees following the bark beetle infestation in the mid-2000s.

Vegetation communities on the site include grassland (meadow), willow riparian scrub, mixed conifer forest, disturbed mixed conifer forest, and pond habitat (RBF Consulting 2014). Montane chaparral and annual grassland also occur on the steep south facing

slope south of State Route 18. Most of the habitat on the site consists of mixed conifer forest. Common tree species include Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), California black oak (*Quercus kelloggii*), incense cedar (*Calocedrus decurrens*), and white fir (*Abies concolor*). The canopy of the forest varied from relatively open in some areas and nearly closed in others. The understory was relatively open with little vegetation, although a variety of perennial shrubs and annual plants occurred along the margins of the creek in some reaches.

Results

San Bernardino County's Biotic Resource Overlay map identifies the distribution southern rubber boa habitat in the San Bernardino Mountains (San Bernardino County 2000). The Skypark at Santa's Village site is mapped within the area delineated as Rubber Boa Habitat.

Seventeen records for the southern rubber boa were found in a search of the CNDDB (CDFW 2015b) for the Harrison Mountain quadrangle, on which the site occurs. Because the exact location of each occurrence is suppressed in the CNDDB for this species (to inhibit illegal collecting), the proximity of these observations relative to the site is unknown. However, the site is between Twin Peaks and Green Valley, where most of the known locations for southern rubber boa in the San Bernardino Mountains occur. In addition, specimens are known from Heaps Peak approximately 1.3 miles east of the site (Stewart et al. 2005), and boas were reported on the Blue Ridge Estates project site immediately west of the site in 2002. Two of those boas were purportedly released on the Santa's Village site, but that information has not been confirmed.

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) recently compiled data for southern rubber boa habitat and sightings (Exhibit 3 depicts the NRCS data). That exhibit shows the site within a swath of occupied habitat and two records immediately adjacent to the site (to the east). It also shows two additional records within one mile. These data appear to depict habitat information from San Bernardino County's Biotic Resource Overlay map (San Bernardino County 2000) and the locality data available in the CNDDB identified in the preceding two paragraphs.

Rock outcrops were observed throughout the south-facing slopes at the north end of the site. In addition, dead trees and tree stumps, fallen trees, rotten logs, and leaf litter that provide potentially suitable habitat for the southern rubber boa were widely distributed on those slopes and the slopes north of the reservoir. The distribution of the rock outcrops, which appear to provide suitable refugia for the southern rubber boa, are mapped in Exhibit 2. In these areas, higher tree densities (consisting primarily of Jeffrey pines, incense cedars, and black oaks) have resulted in leaf litter accumulation, well developed soils, and more mesic conditions overall. The mesic conditions and rocky areas along Hooks Creek and the slopes above it north of the reservoir, and the slopes of the tributary canyon east and southeast of the reservoir, which contain substantial numbers of fallen trees and rotten logs, provide higher soil moisture and deep leaf litter, also provide apparently suitable habitat.

The forested habitat south of the reservoir provides a similar tree composition and canopy as the habitat to the north; however, isolated rocks on the surface of the ground were observed in only one location (the southernmost point on Figure 2), large rock outcrops were not observed, and there was a dearth of downed trees and rotten logs, apparently because most were removed during management activities following the bark beetle (*Dendroctonus* spp.) infestation that occurred in the mid-2000's. Removal of infested trees and downed logs resulted in disturbed areas with less understory vegetation along skid roads and created a more open habitat that is exposed to direct sunlight. Therefore, although habitat in the more densely forested areas provide mesic conditions in limited areas, suitable refugia for the southern rubber boa appears to be largely absent.

The open meadow and disturbed mixed conifer forest habitats along the western side of the site south of the reservoir, and the knoll at the southeast corner (north of State Route 18) do not support suitable habitat where southern rubber boa is expected to occur. Habitat south of State Route 18 consisted of annual grasslands and montane chaparral. This area was open and exposed, and relatively arid. The central portion of this area is heavily disturbed from the logging operation associated with the removal of infested trees in the surrounding forest lands. Representative photographs of habitat on the project site are attached.

Conclusion

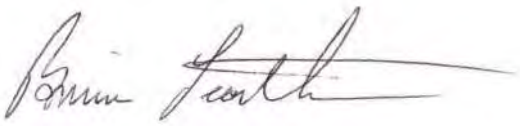
Records for this extremely secretive species occur in the vicinity of the Skypark at Santa's Village site and records for the southern rubber boas occur on the Harrison Mountain quadrangle and to the east and the west of the site. Suitable habitat occurs for the southern rubber boa in the mixed conifer forest at the north end of the site in association with the rock outcrops, rotten logs, leaf litter, and the mesic habitat along Hooks Creek north of the reservoir. Suitable habitat also occurs on the slopes southeast of the reservoir where numerous fallen trees, and rotten logs, and leaf litter were observed. Based on these conditions, the potential occurrence of the southern rubber boa is high to moderate-high in those areas, respectively. Moderately suitable habitat also occurs in the mixed conifer forest north and east of the reservoir where rotten logs, leaf litter, and mesic conditions occur but no rock outcrops were observed. The mixed conifer forest habitat south of the reservoir is essentially devoid of rock outcrops and most of the downed trees and logs have been removed from the site, although mesic conditions exist under the canopy in some areas. The potential occurrence of the southern rubber boa is low in that area. South of State Route 18, most of the habitat is disturbed or dominated by annual grasslands and montane chaparral where conditions are relatively dry. Southern rubber boas are not expected in this area, or in the open meadows, disturbed habitats, and developed portion of the site north of State Route 18. An estimate of the extent and quality of suitable habitat is provided in Exhibit 4.

* * *

Leatherman BioConsulting, Inc. appreciates the opportunity to provide these services. Exhibits 1 through 4, the references cited herein, and representative photographs are enclosed. Please contact us by phone at (714) 701-0863 or by email at bleathermanwlb@aol.com if you have any questions.

Sincerely,

LEATHERMAN BIOCONSULTING, INC.



Brian Leatherman
Principal Biologist

Enclosures

c:/…work/clients/rbf/rubber boa rpt draft

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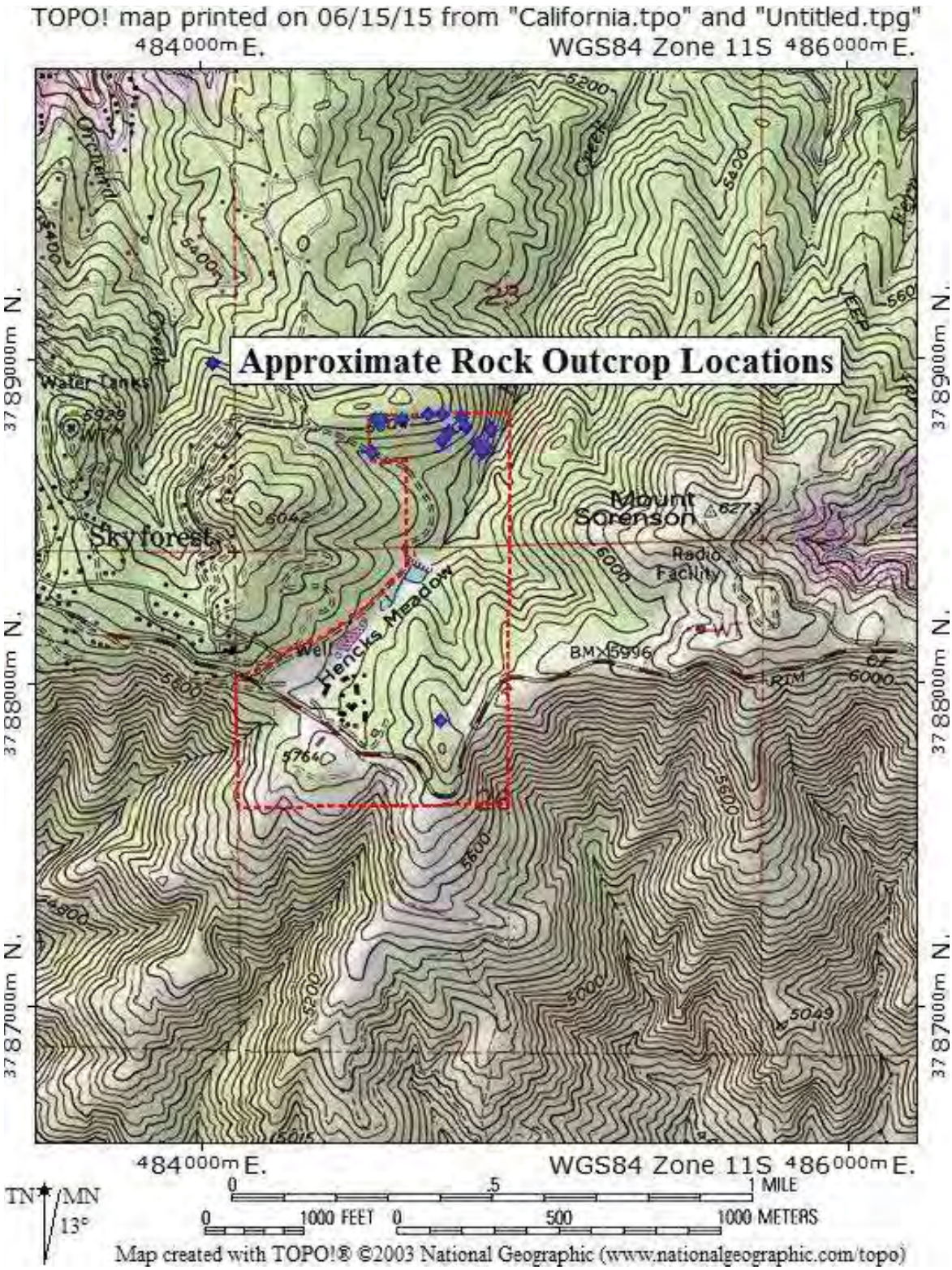
Skypark at Santa's Village

Project Location Map
Exhibit 1

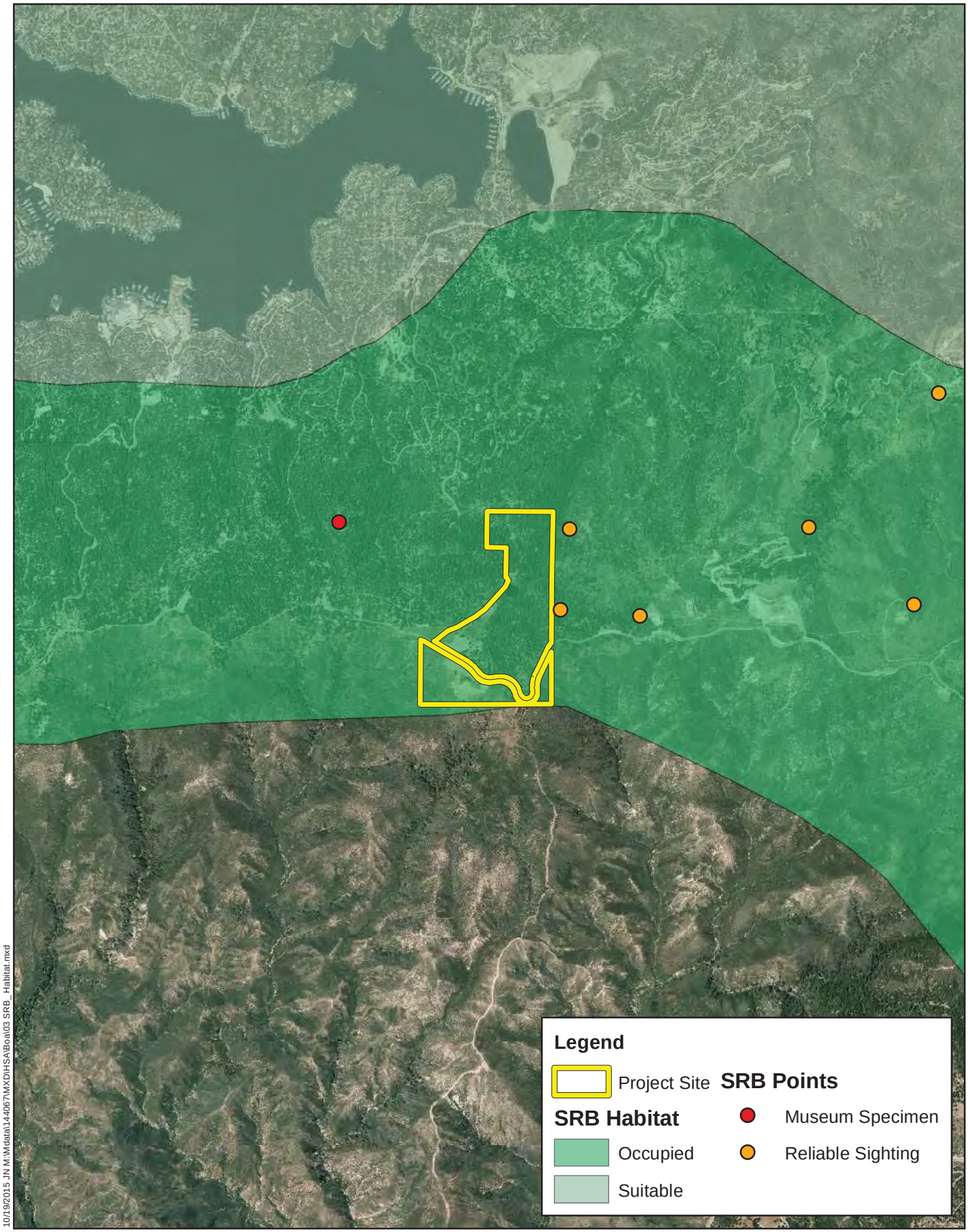
Leatherman BioConsulting, Inc.
Source TOPO! Harrison Mountain
USGS Quadrangle



Skypark at Santa's Village **Distribution of Rock Outcrops**

Exhibit 2

Leatherman BioConsulting, Inc.
Source TOPO! Harrison Mountain USGS Quadrangles



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SKYPARK AT SANTA'S VILLAGE PROJECT
SOUTHERN RUBBER BOA HABITAT SUITABILITY ASSESSMENT

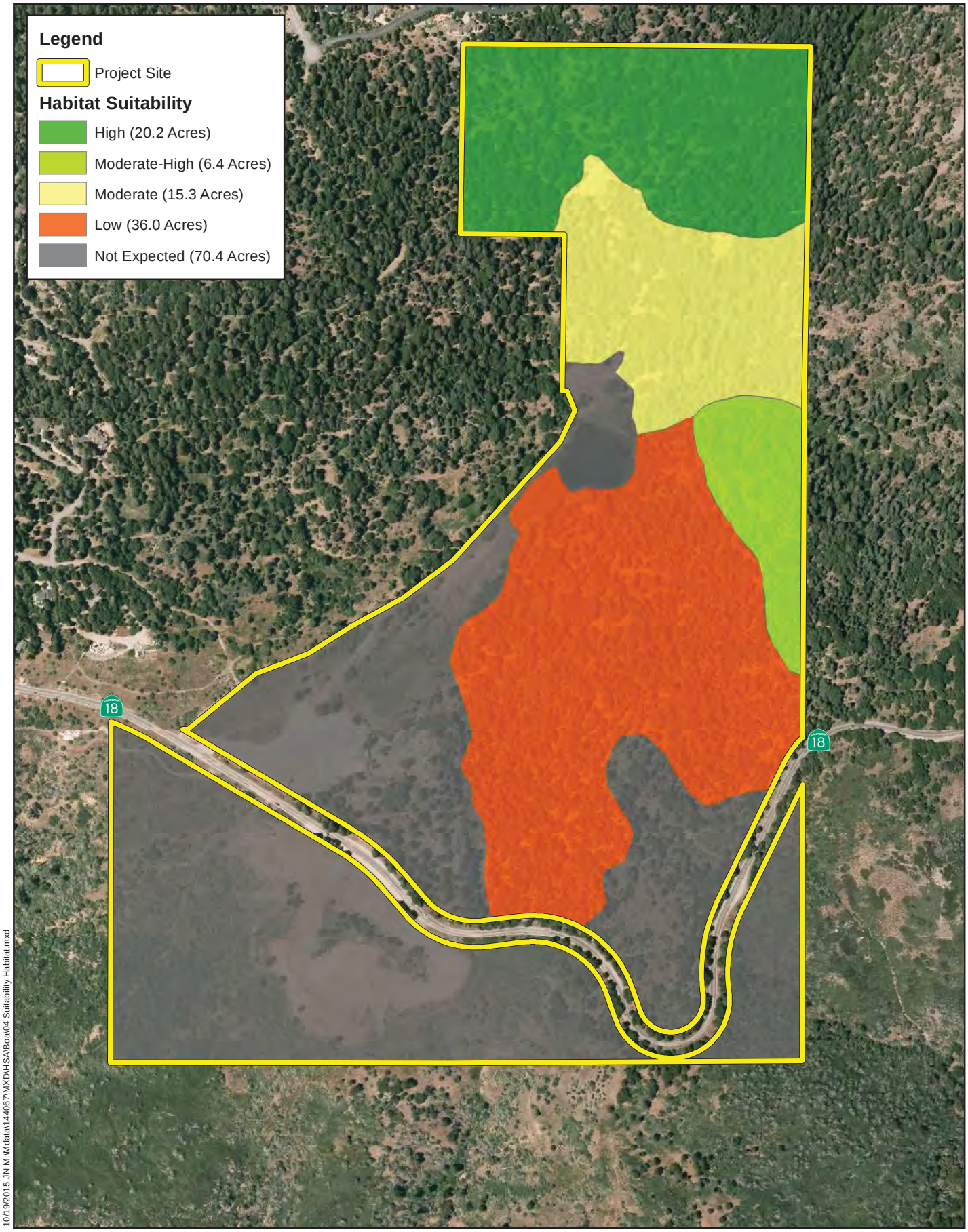
Michael Baker INTERNATIONAL

0 0.25 0.5 1 Miles

NRCS Data

Source: San Bernardino County, Eagle Aerial 2013, NRCS

Exhibit 3



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SKYPARK AT SANTA'S VILLAGE PROJECT
SOUTHERN RUBBER BOA HABITAT SUITABILITY ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Habitat Suitability Map

Exhibit 4

Rock outcrop at north end of site with access to potentially suitable refugia in crevices where potential for occurrence in High.

Rock outcrop at north end of site with access to potentially suitable refugia in crevices and underground retreats where potential for occurrence in High.

Half buried rotten log at north end of site providing suitable refugia habitat underground and within the rotted log where potential for occurrence is High.

Log piles at east side of site providing suitable refugia and cover habitat in thick leaf litter where potential for occurrence in Moderate-High.

Surface logs and branches near rock outcrops north of reservoir where potential for occurrence is Moderate.

Rocks and surface litter along Hooks Creek north of the reservoir with mesic conditions where potential for occurrence is Moderate.

Habitat in conifer forest in south half of site where downed logs have been removed and potential for occurrence is Low.

Habitat south of State Route 18 where southern rubber boas are Not Expected to occur.

Appendix E San Bernardino Flying Squirrel Habitat Suitability Assessment

September 30, 2015 JN 144067

SKYPARK, SANTA'S VILLAGE, LLC.
Contact: Bill Johnson
P.O. Box 369
28950 State Highway 18
Skyforest, California 92385

SUBJECT: San Bernardino Flying Squirrel (*Glaucomys sabrinus californicus*) Habitat Suitability Assessment for the Skypark at Santa's Village Project located in the Unincorporated Community of Skyforest, San Bernardino County, California

Dear Mr. Johnson:

Michael Baker International (Michael Baker) is pleased to submit this report to Skypark, Santa's Village, LLC documenting the results of a San Bernardino flying squirrel (SBFS) habitat suitability assessment for the Skypark at Santa's Village Project (project) located in the unincorporated community of Skyforest, San Bernardino County, California. The habitat suitability assessment was conducted on September 23, 2015. Suitable habitat for SBFS was found on-site by Michael Baker biologists.

Species Background

The SBFS is the smallest of 25 subspecies of northern flying squirrel (*Glaucomys sabrinus*).[1] Its dorsal surface is typically gray, wood-brown, or cinnamon, with a creamy or whitish ventral surface. It has a furred membrane between its wrist and ankle called a patagium that allows it to glide between trees. Adults are typically between 11 and 12 inches long and range in weight from 98 to 158 grams.[1,2]

The SBFS is currently in decline within its limited range. The primary causes of its decline include climate change resulting in changing distributions of coniferous forest; management-related fuel reductions on National Forest System (NFS) lands; habitat loss, degradation, and fragmentation due to development; and unnatural and potentially increasing predation by domestic and feral cats.[1] Population decline has resulted in a possible extirpation of this subspecies from the San Jacinto Mountains, leaving only the population in the San Bernardino Mountains. As a result, the SBFS has been designated by the California Department of Fish and Wildlife (CDFW) as a species of

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special concern. Although the project is not on NFS lands, by the Regional Forester has designated the SBFS as a Forest Service sensitive species.[3] In addition, in response to a 2010 petition from the Center for Biological Diversity, the U.S. Fish and Wildlife Service (USFWS) issued a 90-day finding in 2012 determining that protection of the SBFS under the Endangered Species Act may be warranted.[1] The act of agreeing with the petition obligates the USFWS to undergo a subsequent in-depth 12-month finding that could result in federal listing if warranted. However, as of writing the finding has not been issued.

The historic distribution of the SBFS includes both the San Bernardino and San Jacinto Mountains and possibly the San Gabriel Mountains.[1,2,4] Recent data analysis suggests that this subspecies may now only be extant in the San Bernardino Mountains, and could still be present and not detected in the San Jacinto Mountains. The Cajon Pass and the San Gorgonio Pass make natural recolonization of the San Gabriel Mountains or San Jacinto Mountains, respectively, by surviving squirrels from the San Bernardino Mountains highly unlikely. In the San Bernardino Mountains, the known extant range of the SBFS includes an area from Lake Silverwood southeast to Onyx Peak and south to include parts of the San Gorgonio Wilderness down to the Thurman Flats area along Mill Creek.

The SBFS is generally considered to use much the same habitat as one of its primary predators, the California spotted owl (*Strix occidentalis occidentalis*). It occurs in mixed conifer forests at elevations between 4,000 and 8,500 feet, typically using white fir (*Abies concolor*), Jeffrey pine (*Pinus jeffreyi*), and California black oak (*Quercus kelloggii*) for nesting, particularly white firs.[1,2,5] They are usually found in mature old-growth forests, although forests with second-growth stands may also suffice.[1,4] Occupied habitat tends to have an open understory with a heavy duff (organic debris) layer and a somewhat closed canopy.[4] For locomotion/gliding purposes, they require somewhat dense tree cover (less than 120 feet between tall trees and preferably around 65 feet),[2,4,5] although they may rarely glide across distances of over 300 feet.[1,4] Trees with snags and cavities suitable for nesting and denning are required, and trees that are greater than 100 feet tall and greater than 30 inches diameter at breast height are preferred.[1] In the absence of tree cavities flying squirrels may instead use existing stick or leaf nests or clumps of vegetation for nesting.[6] However, this is also a seasonal preference, with cavity nests being used more often in cold winters than in warm springs and summers.[2,4] The SBFS depends strongly on truffles and arboreal moss for food, as well as to a much lesser degree seeds, nuts, insects, fruit, birds eggs, and even sap. Larger, older trees with associated woody debris and decaying logs tend to indicate a higher potential for healthy truffle growth in the underlying soil.[1] Riparian areas are favored, as the associated soil moisture tends to promote truffle growth.

The SBFS is active throughout the year and is primarily nocturnal.[1] The breeding season of the northern flying squirrel is from late March through May; trapping in the Big Bear area of the San Bernardino Mountains has shown indications of reproduction through as late as the middle of July.[4]

Gestation typically takes 37-42 days, with two to four young. Each female typically only produces one litter of young per year.

Project Description

Skypark at Santa's Village is proposing to re-open the Santa's Village Amusement Park using the existing buildings and infrastructure. In addition to opening the existing buildings, the new park is proposing to use the existing dirt fire access roads for mountain biking/hiking trials. The proposed project will also include the construction of an overflow parking lot and the realignment, expansion, and restoration of the upstream portions of Hooks Creek on the western portion of the project site. South of State Route 18 (SR 18), Skypark at Santa's Village is proposing to develop a campground on the existing overflow parking lot that is currently covered in wood chips.

Project Location

The project site is located north of the City of Highland and south of Lake Arrowhead in the unincorporated community of Skyforest, San Bernardino County, California. The project site is depicted on the Harrison Mountain quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Section 26 of Township 2 north, Range 3 west. Specifically, the project site is located north and south of State Highway 18 and west of Sycamore Drive in the San Bernardino National Forest (refer to Attachment A).

Existing Site Conditions

The on-site elevation within the project site ranges from approximately 5,660 to 5,730 feet above mean sea level and generally slopes to the northeast. The southern portion of the project site, south of SR 18, abuts the steep mountain face of the San Bernardino Mountains. It should be noted that the project site was utilized as a staging/processing area for harvested timber since 2003. As a result, the on-site soils and vegetation within the southern portion of the project site have been heavily disturbed. The project site is located approximately 1.5 miles southeast of the community of Lake Arrowhead. In the vicinity of the project site, land uses include residential and commercial development and undeveloped forest land.

The majority of the project site is undeveloped, consisting of naturally occurring habitats which will remain undeveloped. Dirt fire access roads traverse the site. These existing dirt access roads are proposed to be used for various mountain biking/hiking trail activities. The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the Park's closure in 1998. The proposed new land use will renovate these existing buildings.

The project site supports a mixed conifer habitat (refer to Attachment A) and is dominated by Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus*

decurrens), white fir (*Abies concolor*), and California black oak (*Quercus kelloggii*). Riparian habitat occurs along Hooks Creek, although everything upstream of an existing detention basin (pond) is unsuitable for this species due to an open canopy. Downstream of the pond, the creek flows through the mixed conifer forest to Deep Creek. Other on-site habitats include grassland/meadow, willow riparian scrub, a pond, and developed areas.

Methodology

Prior to performing the surveys, available databases and documentation relevant to the project site were reviewed for known occurrences of SBFS in the area. The California Natural Diversity Database (CNDDB) Rarefind 5 online software[7] was queried for reported locations of SBFS and other sensitive species in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. This database is maintained by the CDFW and contains records of reported occurrences of sensitive species and habitats that may occur within the vicinity of a subject property.

The literature review included a review of standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- USFWS 90-Day Finding on a Petition to List the San Bernardino Flying Squirrel as Endangered or Threatened With Critical Habitat;[1]
- San Bernardino flying squirrel, *Glaucomys sabrinus californicus* (CDFW species account);[2]
- United States Department of Agriculture, Forest Service Pacific Southwest Region Land Management Plan;[4]
- The California Spotted Owl: A Technical Assessments of Its Current Status (U.S. Department of Agriculture, Forest Service General Technical Report PSW-GTR-133);[5]
- San Bernardino flying squirrel (*Glaucomys sabrinus californicus*) (Western Riverside County Multiple Species Habitat Conservation Plan species account);[6]
- Data provided by the Natural Resource Conservation Service (NRCS);[8] and
- Mammal Tracks & Sign: A Guide to North American Species.[9]

The habitat suitability assessment was conducted on September 23, 2015 by Michael Baker biologists Ryan S. Winkleman, Travis J. McGill, and Thomas C. Millington. Michael Baker's biological team has collectively conducted habitat suitability assessments for a number of small mammal species throughout the Inland Empire. Hooks Creek was walked from its upstream end at the existing Santa's Village parking lot (southwestern project site boundary) to its downstream end at the northeastern project site boundary, and meandering paths were taken along existing trails through the uplands of the site. A list of all detected wildlife species was recorded and incorporated into the Habitat Assessment.

Results

Previous Records

According to the CNDDB, there are two (2) recorded occurrences of SBFS in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles.[7] Both occurrences are presumed extant. This species is generally presumed to be extant rangewide in the San Bernardino Mountains. Data provided by the NRCS indicates that spotted owl pellets containing flying squirrel remains have been found throughout the northeastern section of the site in association with a known owl nesting location.[8]

2015 Habitat Suitability Assessment

High quality suitable habitat for SBFS is located in the northeastern portion of the project site (refer to Attachment A). This corresponds to the area where flying squirrel remains have been found in spotted owl pellets. Habitat in this area generally consists of larger, older trees with reasonably high canopy cover, a heavier but generally open duff layer, and relatively abundant downed woody debris. It is also centered around riparian habitat in Hooks Creek.

A small area of moderate quality habitat is present to the north of the pond. This area generally consists of a mixture of young and old trees. The canopy varies from closed to open but woody debris is generally still present in the otherwise reasonably open understory.

Low quality habitat is present throughout the remainder and majority of the site, including at the northern end of the project site and the entire forested area south of the pond. Both areas are in uplands away from Hooks Creek. The northern end of the project site generally consists of a mixture of young and old trees, with most of the trees younger and smaller and very few tall, large, old trees. The canopy is generally very open with few areas of closed canopy and few, if any, trees that match the habitat requirements for this species. The understory varies from an open duff layer with woody debris to larger areas of dense forb or new tree growth.

In addition, the entire forested area south of the pond is also low quality for this species. While larger trees with generally closed canopies are present in this area, the amount of foraging habitat is very low. The understory has been entirely cleared of all woody debris, and in many of the inter-tree spaces abundant and dense new tree growth has sprouted. In addition, this area is criss-crossed throughout with existing trails, further fragmenting whatever ground habitat there may otherwise be.

Areas that lack sutiable habitat for the SBFS are those that are open with few or no trees. This includes the entire portion of the project site south of SR 18, the southeastern portion of the site above SR 18, and the area along the western border of the project site from the parking lot to the pond, including the village itself.

<u>Conclusions</u>

Michael Baker's habitat suitability assessment for San Bernardino flying squirrel determined that approximately 82 acres of suitable habitat are present within the project site, with high quality

habitat located in the northeastern portion of the project site (14.4 acres). The remainder of the project site supports moderate quality habitat (12.9 acres) or has either low quality habitat (54.7 acres) or is considered unsuitable (66.3 acres) for this species' foraging, nesting/denning, and gliding needs due to open canopy cover, lack of any downed woody debris on the forest floor, habitat fragmentation through existing development, and/or an abundance of newer tree growth.

Please do not hesitate to contact me at (909) 974-4907 or tmcgill@mbakerintl.com or Ryan Winkleman at (909) 239-5381 or ryan.winkleman@mbakerintl.com should you have any questions regarding this report.

Sincerely,

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

Ryan S. Winkleman
Biologist
Natural Resources

Attachments:

A. Exhibits
B. Site Photographs

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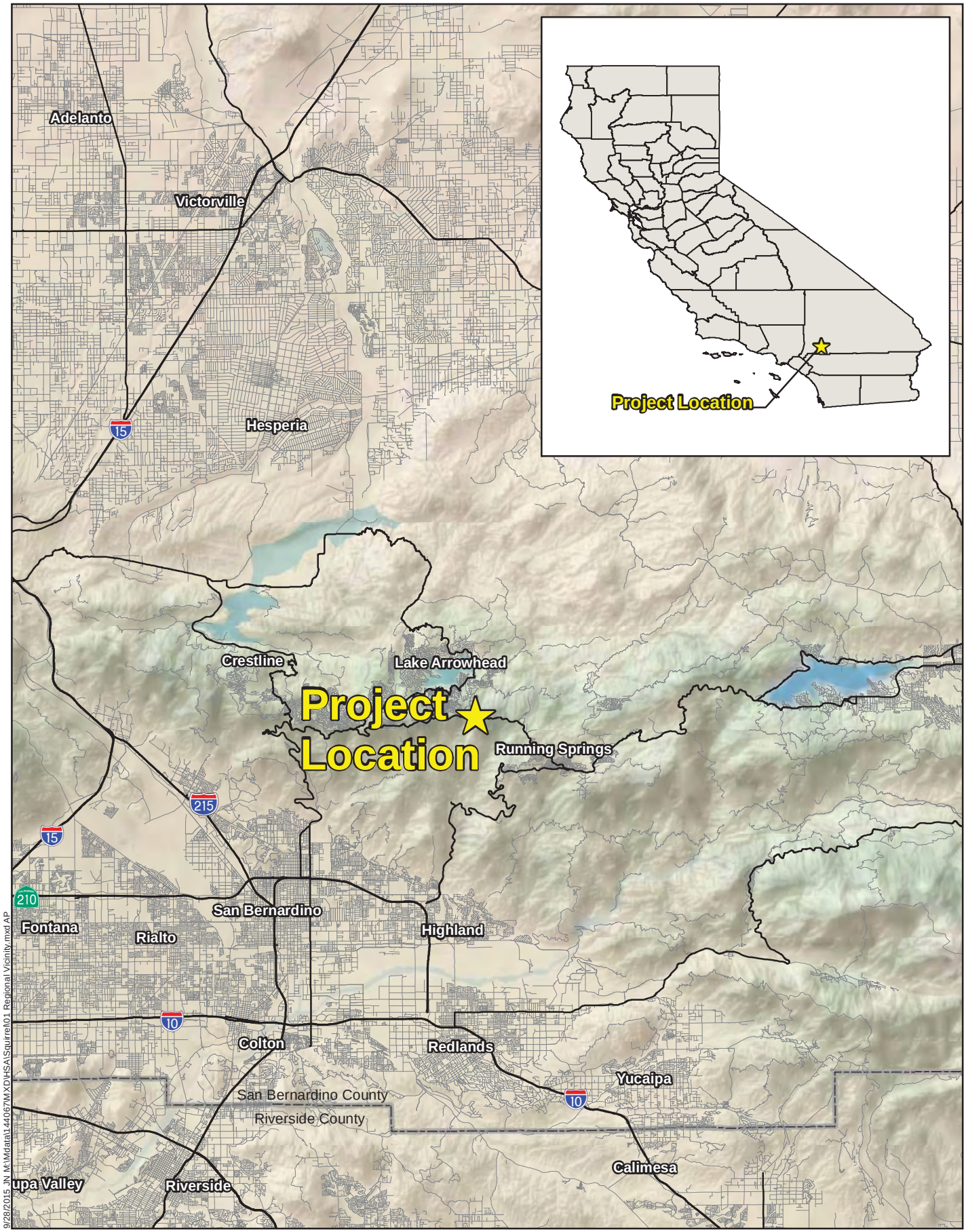
[1] U.S. Department of the Interior, Fish and Wildlife Service. 2012. 90-Day Finding on a Petition to List the San Bernardino Flying Squirrel as Endangered or Threatened With Critical Habitat. 77 FR 4973 4980.
[2] Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division, Nongame Bird and Mammal Conservation Program for Contract No.FG3146WM.
[3] California Department of Fish and Wildlife. 2015. Special Animals List. July 2015. Online at https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf.
[4] U.S. Department of Agriculture, Forest Service. 2005. Pacific Southwest Region Land Management Plan. September 2005.
[5] Williams, D.F., J. Verner, H.F. Sakai, and J.R. Waters. 1992. General Biology of Major Prey Species of the California Spotted Owl. *In*: Verner, J., K.S. McKelvey, B.R. Noon, R.J. Gutiérrez, G.I. Gould, Jr., and T.W. Beck. The California Spotted Owl: A Technical Assessments of Its Current Status. USDA Forest Service General Technical Report PSW-GTR-133.
[6] Dudek & Associates, Inc. 2003. San Bernardino flying squirrel (*Glaucomys sabrinus californicus*). Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Volume II – Section B, Species Accounts. Prepared for County of Riverside Transportation and Land Management Agency.
[7] California Department of Fish and Wildlife. 2015. California Natural Diversity Database RareFind 5.
[8] Natural Resource Conservation Service (NRCS). 2015. GIS data provided by Shea O'Keefe via email to Thomas J. McGill, PhD.
[9] Elbroch, M. 2003. Mammal Tracks & Sign: A Guide to North American Species. Stackpole Books, Mechanicsburg, PA.

Attachment A

Exhibits



SKYPARK AT SANTA'S VILLAGE PROJECT
SAN BERNARDINO FLYING SQUIRREL HABITAT SUITABILITY ASSESSMENT

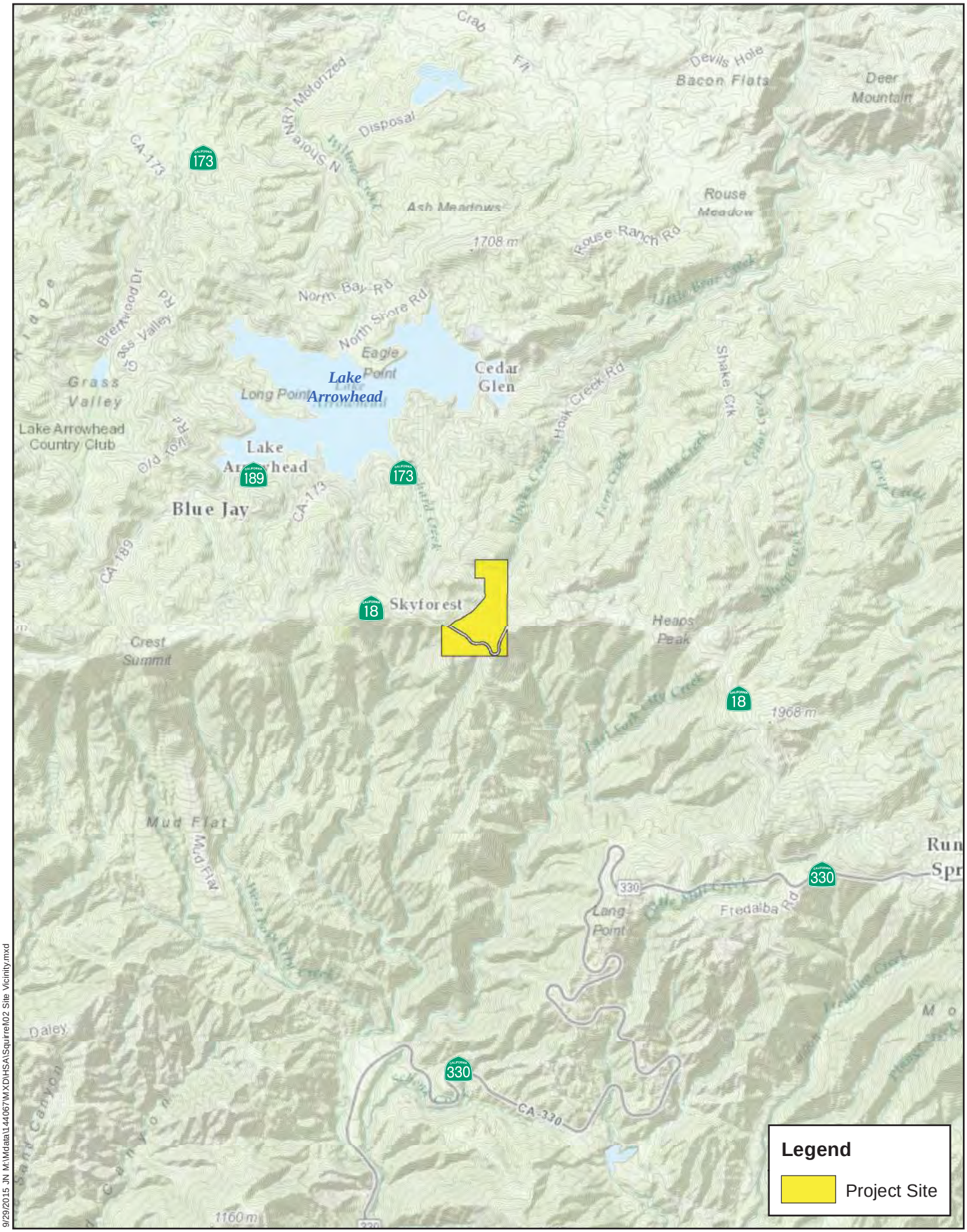
Michael Baker INTERNATIONAL

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1



9/29/2015 JN M:\Mdata\144067\MXD\HSA\Squirrel\02 Site Vicinity.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
SAN BERNARDINO FLYING SQUIRREL HABITAT SUITABILITY ASSESSMENT

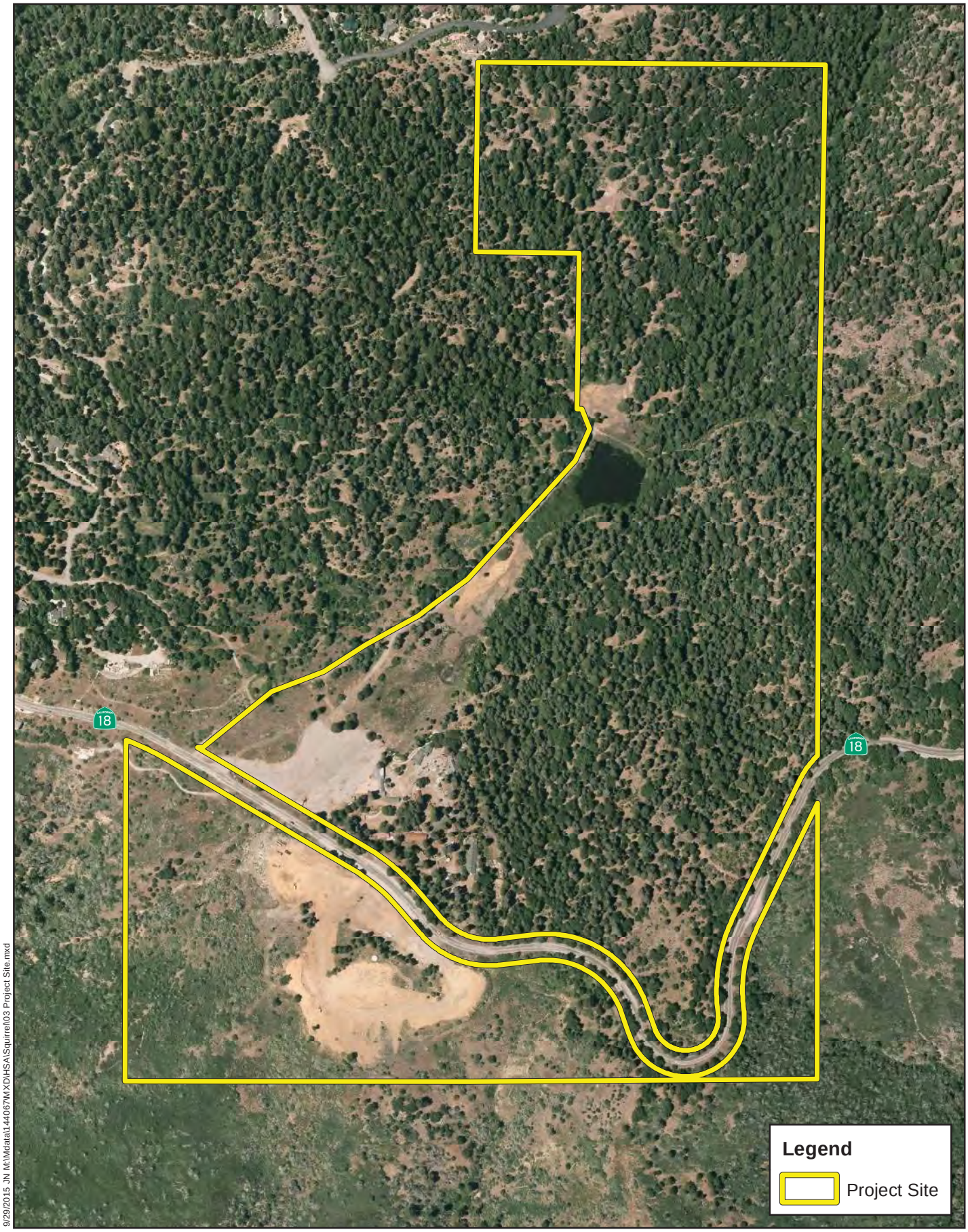
Michael Baker INTERNATIONAL

0 0.5 1 2 Miles

Source: San Bernardino County, USGS, ESRI World Topographic Map

Site Vicinity

Exhibit 2



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SKYPARK AT SANTA'S VILLAGE PROJECT
SAN BERNARDINO FLYING SQUIRREL HABITAT SUITABILITY ASSESSMENT

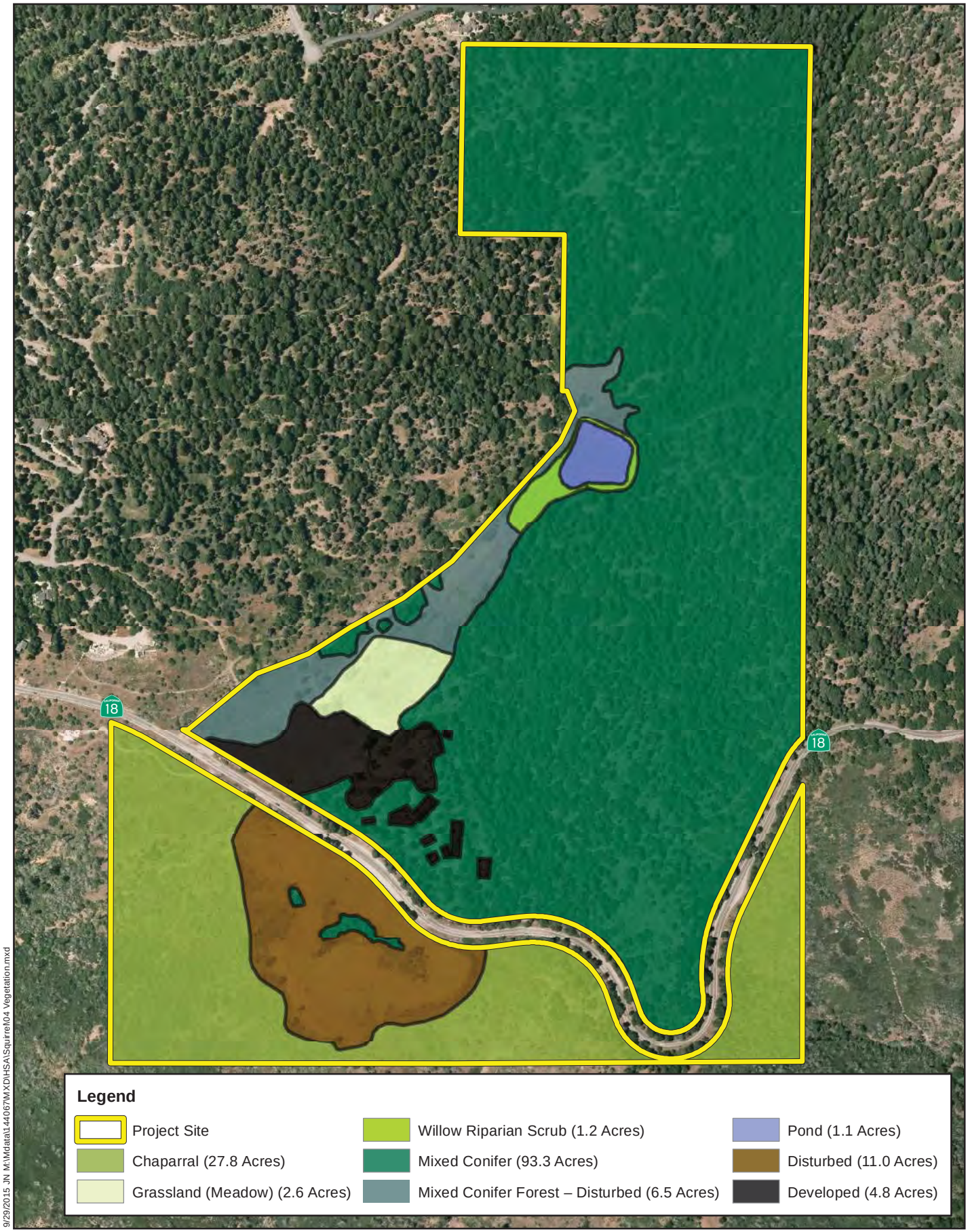
Michael Baker INTERNATIONAL

0 250 500 1,000 Feet

Source: San Bernardino County, Eagle Aerial 2013

Project Site

Exhibit 3



9/29/2015 JN M:\Mdata\144067\MXD\HSA\Squirrel\04 Vegetation.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
SAN BERNARDINO FLYING SQUIRREL HABITAT SUITABILITY ASSESSMENT

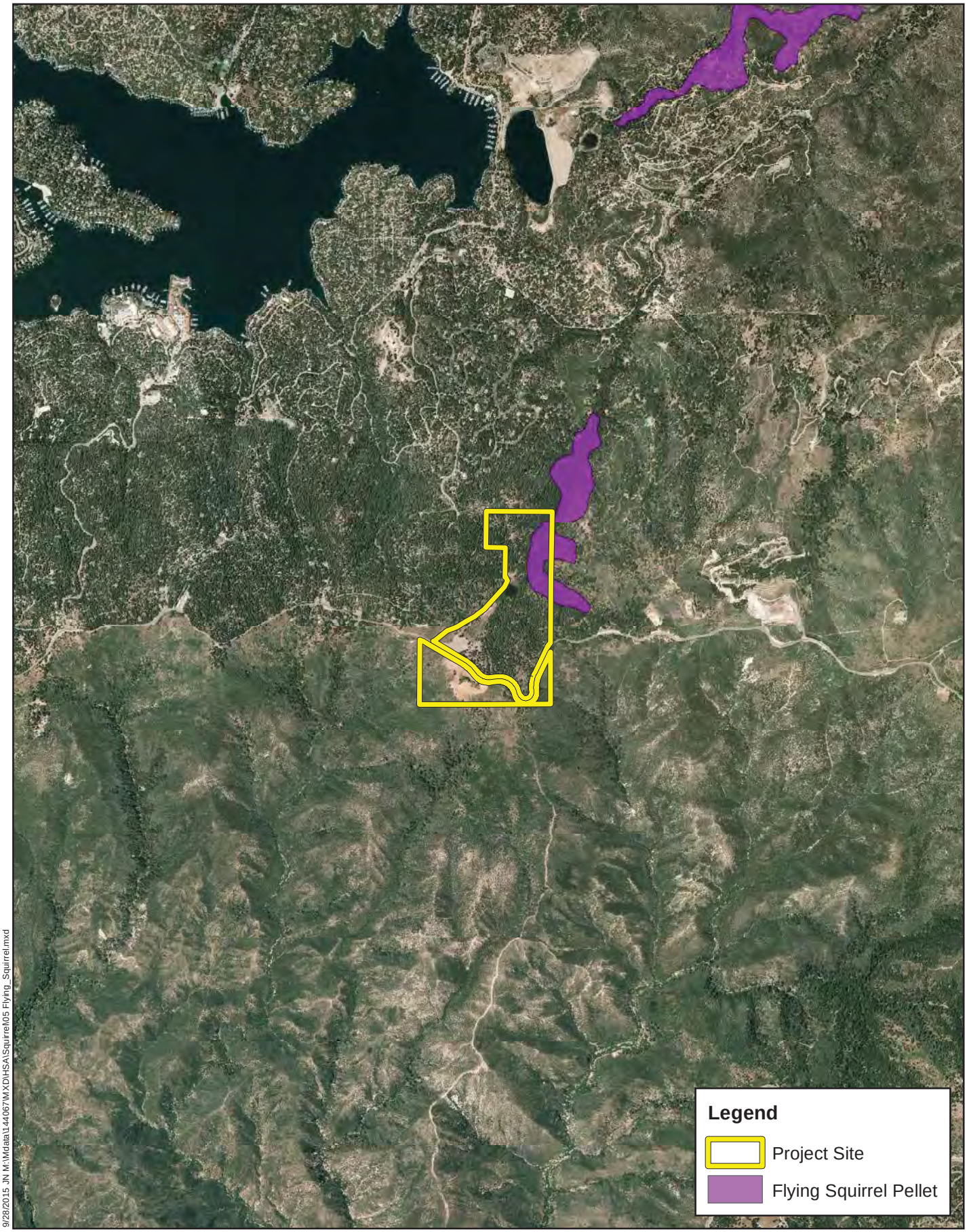
Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Vegetation

Exhibit 4



9/28/2015 JN M:\Mdata\144067\MXD\HSA\Squirrel\05 Flying_Squirrel.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
SAN BERNARDINO FLYING SQUIRREL HABITAT SUITABILITY ASSESSMENT

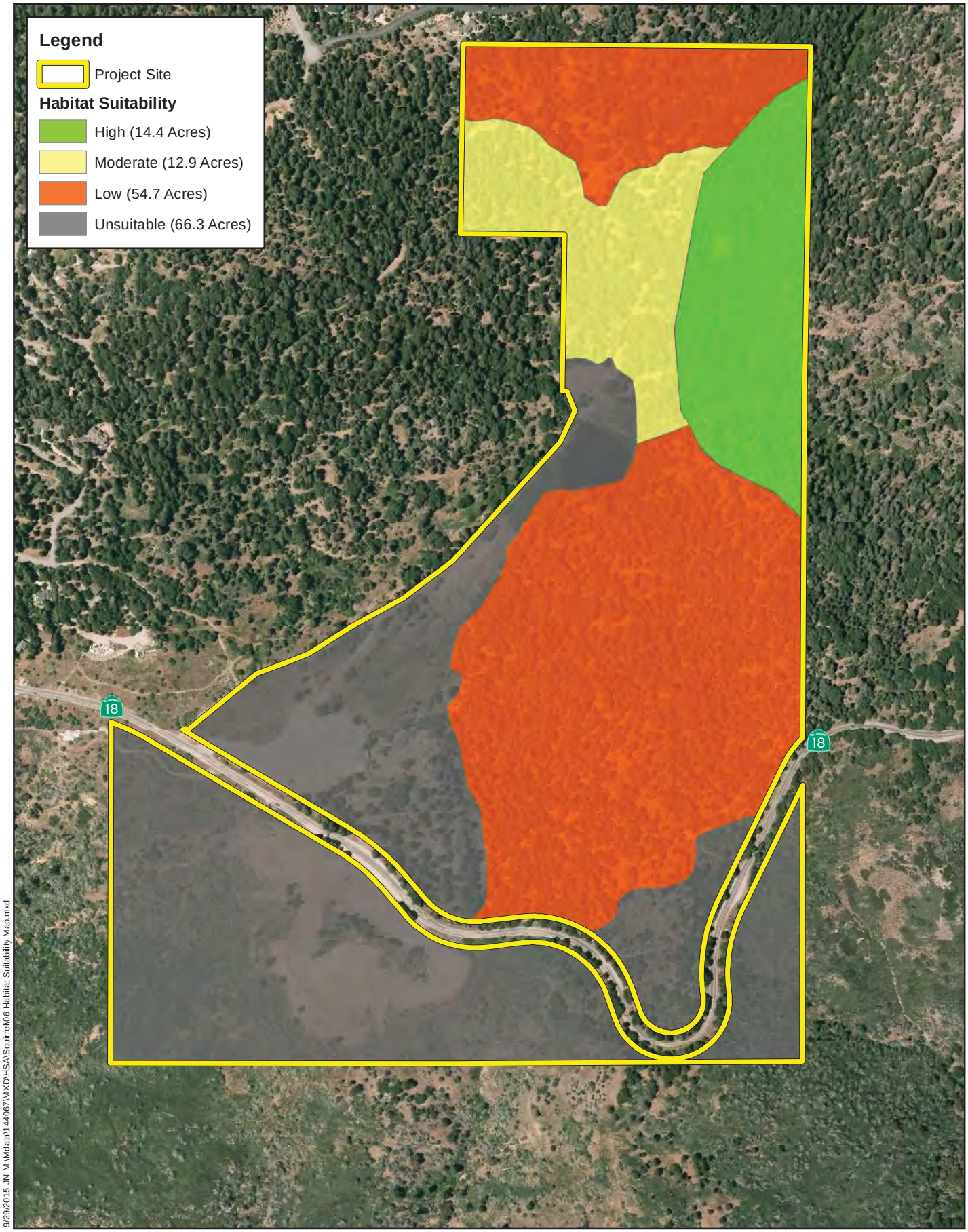
Michael Baker INTERNATIONAL

0 0.25 0.5 Miles

Source: San Bernardino County, Eagle Aerial 2013, NRCS

NRCS Data

Exhibit 5



9/29/2015 JN M:\Mdata\144067\MXD\HSA\Squirrel\06 Habitat Suitability Map.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
SAN BERNARDINO FLYING SQUIRREL HABITAT SUITABILITY ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Habitat Suitability Map

Exhibit 6

Attachment B

Site Photographs

Photograph 1: Looking northeast from just north of the parking lot. This area is an open grassy meadow and is unsuitable for San Bernardino flying squirrel (*Glaucomys sabrinus californicus*, SBFS).

Photograph 2: Hooks Creek north of the on-site pond generally contains an abundance of downed woody debris and logs that, when combined with the creek-related soil moisture, could provide suitable growing conditions for truffles, the preferred food of the SBFS.

Photograph 3: Looking north near the northwestern boundary of the project site. Most of this area consists of a mixture of young and old trees with a very open canopy. The understory here is covered in dense new growth.

Photograph 4: Most of the northern portion of the project site has a very open canopy. The understory varies from being open with a moderate amount of woody debris (background) to being covered in dense new growth (foreground).

Photograph 5: The northeastern portion of the project site provides the best habitat for the SBFS, with large, old trees and abundant woody debris just above Hooks Creek.

Photograph 6: The forested portion of the project site south of the on-site pond has old, tall trees with generally high canopy cover. However, for recreation and management reasons it has been almost entirely denuded of woody debris, and much of it contains dense new tree growth, drastically reducing the foraging potential for the SBFS.

Photograph 7: The forested portion of the project site south of the on-site pond has old, tall trees with generally high canopy cover. However, it has been almost entirely denuded of woody debris, drastically reducing the foraging potential for the SBFS.

Photograph 8: Much of the project site south of State Route 18 has been deforested, and the rest consists of slopes covered in chaparral. This is not suitable habitat for the SBFS.

Appendix F Mountain Yellow-Legged Frog Habitat Suitability Assessment

September 30, 2015 JN 144067

SKYPARK, SANTA'S VILLAGE, LLC.
Contact: Bill Johnson
P.O. Box 369
28950 State Highway 18
Skyforest, California 92385

SUBJECT: Mountain Yellow-legged Frog (*Rana muscosa*) Habitat Suitability Assessment for the Skypark at Santa's Village Project located in the Unincorporated Community of Skyforest, San Bernardino County, California

Dear Mr. Johnson:

Michael Baker International (Michael Baker) is pleased to submit this report to Skypark, Santa's Village, LLC documenting the results of a mountain yellow-legged frog (MYLF) habitat suitability assessment for the Skypark at Santa's Village Project (project) located in the unincorporated community of Skyforest, San Bernardino County, California. The habitat suitability assessment was conducted on September 23, 2015. No suitable habitat for MYLF was found on-site by Michael Baker biologists.

Species Background

The mountain yellow-legged frog, also known as the southern mountain yellow-legged frog or the Sierra Madre yellow-legged frog, is southern California's high-elevation specialist, occurring at elevations and in habitat that often exclude other Anurans. Its base color ranges and may be yellow, brown, reddish, or olive on the dorsal surface with a typically yellowish ventral surface, but it always has a series of sparse to dense brown or black spots/patches across its skin. Subtle dorsolateral folds are present. Snout-to-vent length averages between 2 and 3 inches as an adult, although females may grow slightly larger than this. Tadpoles are generally brownish and may reach up to 2.8 inches with tails.

The MYLF has experienced a precipitous population decline in recent years, with southern Californian populations at critically low levels. Primary causes of its decline include introduced predators (trout stocked in mountain streams for recreation by the California Department of Fish and Wildlife [CDFW]); air pollution resulting in nitrate/nitrite [from vehicle exhaust] and pesticide deposition in frogs; and the infectious disease chytridiomycosis, caused by the bacterium

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Batrachochytrium dendrobatidis (commonly known as amphibian chytrid fungus). Chytridiomycosis alone is believed to be responsible for the decline or extinction of up to 200 species of frogs, the largest disease-related loss of vertebrate biodiversity ever recorded,[1] and is known to be a significant factor in the decline of yellow-legged frogs in the Sierra Nevada, which have disappeared from over 90% of their historic range and which have seen up to 98.1% of local populations become extirpated based on historical records.[2,3] As such, the MYLF is designated by the CDFW and by the U.S. Fish and Wildlife Service (USFWS) as endangered under the California Endangered Species Act and the federal Endangered Species Act, respectively.[4] Although the project site is not on National Forest System lands, the MYLF has also been designated by the Regional Forester as a Forest Service sensitive species.

The only known remaining populations of MYLF in southern California are distributed over nine locations, including five populations in the San Gabriel, four in the San Jacinto, and one in the San Bernardino Mountains. This group of populations is collectively known as the Southern California Distinct Population Segment [DPS]).[5] Another population is present at the southern end of the Sierra Nevada (known as the Northern California DPS). North of this population in the northern and central Sierra Nevada is the Sierra Nevada yellow-legged frog (*Rana sierrae*), which until 2007 was considered to be the same species as MYLF.[6] Several captive breeding programs, currently led by the San Diego Zoo and the Los Angeles Zoo, are working at reintroducing captive-bred tadpoles into the wild in efforts to boost population sizes.[5] These programs have thus far yielded positive results, with possible wild breeding in 2015 in one of the reintroduced populations.[7]

MYLF is strongly associated with high-elevation creeks, meadows, and ponds that are fed by springs and/or snowmelt. In southern California their historic elevations have ranged from 1,200 to 7,500 feet, although current populations are restricted primarily to the mid to upper portions of this range. It is not uncommon for portions of occupied MYLF aquatic habitat to freeze over on the surface in the winter. While sections of creeks may dry up, at least some perennial water is required for MYLF to persist in an area due to reproductive, larval growth, and hydration needs. Ideal creek habitat for MYLF includes numerous pools and may include both rapid and slow flows as well with small waterfalls. Substrate within and surrounding the creek generally includes bedrock, fine sand, rubble, rocks, or boulders. Unlike most Anurans, MYLF is diurnal, and requires suitable basking habitat during the day. Downed logs are common elements of MYLF habitat and, along with rocks, function as basking sites and refugia. Open or semi-open canopies are required for basking purposes and to aid in algal growth.

The specific primary constituent elements for MYLF, as described in the "Designation of Critical Habitat for the Southern California Distinct Population Segment of the Mountain Yellow-Legged Frog (*Rana muscosa*); Final Rule" (71 FR 54344 54386) include the following:

(1) Water source(s) found between 1,214 to 7,546 feet (370 to 2,300 meter) in elevation that are permanent. Water sources include, but are not limited to, streams, rivers, perennial creeks (or permanent plunge pools within intermittent creeks), pools (*i.e.*, a body of impounded water that is contained above a natural dam) and other forms of aquatic habitat. The water source should maintain a natural flow pattern including periodic natural flooding. Aquatic habitats that are used by mountain yellow-legged frog for breeding purposes must maintain water during the entire tadpole growth phase, which can last for up to 2 years. During periods of drought, or less than average rainfall, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they would still be considered essential breeding habitat in wetter years. Further, the aquatic includes:

a. Bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel cobble, rock, and boulders;

b. Open gravel banks and rocks projecting above or just beneath the surface of the water for sunning posts;

c. Aquatic refugia, including pools with bank overhangs, downfall logs or branches, and/or rocks to provide cover from predators; and

d. Streams or stream reaches between known occupied sites that can function as corridors for movement between aquatic habitats used as breeding and/or foraging sites.

(2) Riparian habitat and upland vegetation (*e.g.*, ponderosa pine, montane hardwood-conifer, montane riparian woodlands, and chaparral) extending 262 feet (80 meters) from each side of the centerline of each identified stream and its tributaries, that provides areas for feeding and movement of mountain yellow-legged frog, with a canopy overstory not exceeding 85 percent that allows sunlight to reach the stream and thereby provide basking areas for the species.

The MYLF breeding period typically begins in April at lower elevations and June or July at higher elevations and continues for approximately one month.[5] Eggs are laid in clusters of 15 to 350 in shallow areas with rocks, gravel, vegetation, or other surfaces to which they can be attached. They hatch within 18 to 20 days at a water temperature between 41 and 56°F. Tadpoles may take up to three years to metamorphose in higher elevation areas (particularly in the Sierra Nevada), although in southern California tadpole metamorphosis is generally assumed to occur after approximately 1.5 years at the end of the second summer. Frogs hibernate in the winter, likely underwater or in streambank crevices, and may also aestivate during dry periods in the summer.

Project Description

Skypark at Santa's Village is proposing to re-open the Santa's Village Amusement Park using the existing buildings and infrastructure. In addition to opening the existing buildings, the new park is proposing to use the existing dirt fire access roads for mountain biking/hiking trials. The proposed project will also include the construction of an overflow parking lot and the realignment, expansion, and restoration of the upstream portions of Hooks Creek on the western portion of the project site. South of State Route 18 (SR 18), Skypark at Santa's Village is proposing to develop

a campground on the existing overflow parking lot that is currently covered in wood chips.

Project Location

The project site is located north of the City of Highland and south of Lake Arrowhead in the unincorporated community of Skyforest, San Bernardino County, California. The project site is depicted on the Harrison Mountain quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Section 26 of Township 2 north, Range 3 west. Specifically, the project site is located north and south of State Highway 18 and west of Sycamore Drive in the San Bernardino National Forest (refer to Attachment A).

Existing Site Conditions

The on-site elevation within the project site ranges from approximately 5,660 to 5,730 feet above mean sea level and generally slopes to the northeast. The southern portion of the project site, south of SR 18, abuts the steep mountain face of the San Bernardino Mountains. It should be noted that the project site was utilized as a staging/processing area for harvested timber since 2003. As a result, the on-site soils and vegetation within the southern portion of the project site have been heavily disturbed. The project site is located approximately 1.5 miles southeast of the community of Lake Arrowhead. In the vicinity of the project site, land uses include residential and commercial development and undeveloped forest land.

The majority of the project site is undeveloped, consisting of naturally occurring habitats that will remain undeveloped. Dirt fire access roads traverse the site. These existing dirt access roads are proposed to be used for various mountain biking/hiking trail activities. The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the Park's closure in 1998. The proposed new land use will renovate these existing buildings.

On-site aquatic habitat consists of Hooks Creek and an existing detention basin (pond). Hooks Creek traverses the project site and generally runs southwest to northeast for approximately 1,590 linear feet before discharging to the pond. Surface flows within Hooks Creek are provided by direct precipitation (i.e., rain, snow) and surface runoff from surrounding development and SR 18. Following significant storm events, surface flows collected within the detention basin are anticipated to overflow or to permeate downstream through the water table and continue to Deep Creek.

Due to historic on-site land uses (timber farm), the upstream portions of Hooks Creek, located north of the existing parking lot, are vegetated by a heavily disturbed grassy meadow and are covered with remnant debris from the processing and staging of timber (refer to Attachment A). This plant community is dominated by native and non-native grass species including ripgut brome

(*Bromus diandrus*), downy chess (*Bromus tectorum*), stinging nettle (*Urtica dioica*), horehound (*Marrubium vulgare*), bull thistle (*Cirsium vulgare*), cattails (*Typha* sp.), and hillside pea (*Lathyrus vestitus*). Further downstream before reaching the pond, Hooks Creek becomes more densely vegetated and consists of a southern willow scrub plant community; this community also surrounds the banks of the pond. The southern willow scrub community is dominated by arroyo willow (*Salix lasiolepis*) with cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), California mugwort (*Artemisia douglasiana),* sparse cattails (*Typha* sp.), sticktight (*Bidens frondosa*), stinging nettle (*Urtica dioica*), and northern water plantain (*Alisma triviale*). The remainder of Hooks Creek, downstream of the pond, is surrounded by a mixed coniferous forest. The surrounding coniferous forest is dominated by Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), and California black oak (*Quercus kelloggii*).

Methodology

Prior to performing the surveys, available databases and documentation relevant to the project site were reviewed for known occurrences of MYLF in the area. The California Natural Diversity Database (CNDDB) Rarefind 5 online software[8] was queried for reported locations of MYLF and other sensitive species in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. This database is maintained by the CDFW and contains records of reported occurrences of sensitive species and habitats that may occur within the vicinity of a subject property.

The literature review included a review of standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- USFWS Mountain yellow-legged frog (*Rana muscosa*) Southern California Distinct Population Segment 5-year Review: Summary and Evaluation;[5]
- United States Department of Agriculture, Forest Service Pacific Southwest Region Land Management Plan;[9] and
- USGS 2014 Southern California Mountain Yellow-legged Frog (*Rana muscosa*) Data Summary.[10]

The habitat suitability assessment was conducted on September 23, 2015 by Michael Baker biologist Ryan S. Winkleman. Mr. Winkleman has extensive experience working with southern California Anurans since 2008. He is familiar with the ecology of and is capable of identifying all life stages of all coastal southern California Anurans and has assisted with several focused MYLF surveys in the San Gabriel and San Jacinto Mountains with USGS scientists from the Western Ecological Research Center. Hooks Creek was walked from its upstream end at the existing Santa's Village parking lot (southwestern project site boundary) to its downstream end at the northeastern project site boundary. Canopy cover, vegetative cover, and general substrate, as well as the amount of water and width of the creekbed were

noted and photographed. A list of all detected wildlife species was recorded and incorporated into the Habitat Assessment.

Results

Previous Records

According to the CNDDB, there are six (6) recorded occurrences of MYLF in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles.[8] However, four of these occurrences are historic and are now extirpated and the remaining two are of the same population in East Fork City Creek. This population, the only population in the entire San Bernardino Mountain Range, is located approximately 1.25 miles southeast of the project site. It was once estimated at 50 individuals based on USGS surveys in 2002 and 2003.[9] This site was disturbed by a wildfire and later flooding in 2003,[9] resulting in a lack of observations until 2006, when frogs were again found by USGS for the next six years.[5] In 2011 all detected MYLF were salvaged from East Fork City Creek in an attempt to rescue the population through captive breeding and reintroduction. MYLF have subsequently failed to be detected during recent surveys over the last several years until September 2015, when a single adult male was found by USGS.[10,11,12]

2015 Habitat Suitability Assessment

No suitable MYLF habitat was found on the project site during Michael Baker's 2015 habitat suitability assessment. Upstream of the pond, Hooks Creek is ephemeral and only runs when it receives runoff from SR 18 or from general precipitation. Downstream of the pond, the creek is more intermittent, with (at the time of the 2015 assessment) patchy expanses of water that are primarily related to permeation from the water table. Water depth was generally 1-2 inches and, when present, mostly amounted to a thin trickle, with a few small pools of approximately six inches in depth. The creek substrate is mostly underlain by pine needles from the surrounding trees. Vegetation within the creek varies from being absent with an open bed to being almost entirely choked and overgrown. Overhanging tree canopy is generally at or approaching 100 percent cover, with very few areas of open canopy. Marginal basking habitat is primarily present far downstream at the edge of the site, where some boulders are present, but is lacking throughout most of the creek's length, which only has a layer of pine needles that makes up the substrate within and surrounding the creek. The pond is perennial and therefore provides marginal habitat, but does not provide basking habitat along the banks, which are densely vegetated with grasses or with willow scrub. In addition, the pond is known to contain multiple species of fish including catfish (Order Siluriformes) and bluegill (*Lepomis macrochirus*),[13] which would prey upon any MYLF if present.

Conclusions

Michael Baker's habitat suitability assessment for mountain yellow-legged frog determined that no suitable habitat is present within the project site. Hooks Creek is generally too narrow, too shaded, and provides too little, if any, perennial aquatic habitat, and the on-site pond, while

perennial, provides no basking habitat due to dense surrounding vegetation and is known to contain thousands of potential predators including catfish and bluegill.[13]

Please do not hesitate to contact me at (909) 974-4907 or tmcgill@mbakerintl.com or Ryan Winkleman at (909) 239-5381 or ryan.winkleman@mbakerintl.com should you have any questions regarding this report.

Sincerely,

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

Ryan S. Winkleman
Biologist
Natural Resources

Attachments:

A. Exhibits
B. Site Photographs

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[1] Skerratt, L.F., L. Berger, R. Speare, S. Cashins, K.R. McDonald, A.D. Phillott, H.B. Hines, and N. Kenyon. 2007. Spread of Chytridiomycosis Has Caused the Rapid Global Decline and Extinction of Frogs. EcoHealth 4: 125-134.
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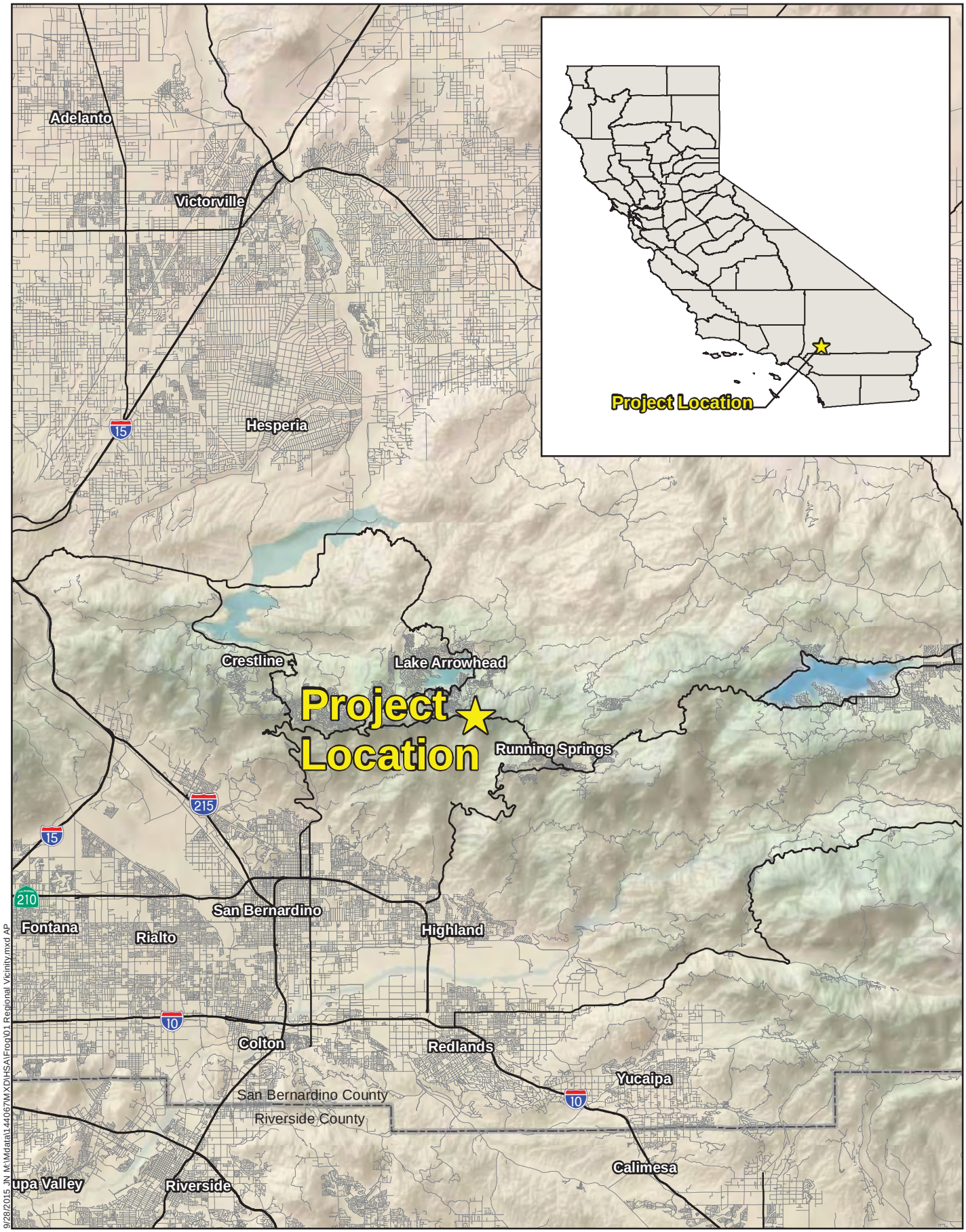
[3] Wake, D.B. and V.T. Vredenburg. 2008. Are we in the midst of the sixth mass extinction? A view from the world of amphibians. PNAS 105(supplement 1): 11466-11473.
[4] California Department of Fish and Wildlife. 2015. Special Animals List. July 2015. Online at https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf.
[5] U.S. Department of the Interior, Fish and Wildlife Service (USFWS). 2012. Mountain yellow-legged frog (*Rana muscosa*) Southern California Distinct Population Segment 5-year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office, Carlsbad, California. July 13, 2012.
[6] Vredenburg, V.T., R. Bingham, R. Knapp, J.A.T. Morgan, C. Moritz, and D. Wake. 2007. Concordant molecular and phenotypic data delineate new taxonomy and conservation priorities for the endangered mountain yellow-legged frog. Journal of Zoology 271: 361-374.
[7] Gallegos, E. 2015. Personal communication. Wildlife Biologist. U.S. Geological Survey, Western Ecological Research Center San Diego Field Station, Santa Ana Office. Email to Ryan Winkleman dated September 22, 2015.
[8] California Department of Fish and Wildlife. 2015. California Natural Diversity Database RareFind 5.
[9] U.S. Department of Agriculture, Forest Service. 2005. Pacific Southwest Region Land Management Plan. September 2005.
[10] Backlin, A. R., E. A. Gallegos, K. L. Baumberger, and R. N. Fisher. 2014. 2014 Southern California mountain yellow-legged frog (*Rana muscosa*) data summary. U. S. Geological Survey data summary prepared for the Southern California MYLF Working Group, Carlsbad, CA. 25 pp.
[11] Backlin, A. 2015. Personal communication. Ecologist. U.S. Geological Survey, Western Ecological Research Center San Diego Field Station, Santa Ana Office. Email to Ryan Winkleman dated April 23, 2015.
[12] Gallegos, E. 2015. Personal communication. Wildlife Biologist. U.S. Geological Survey, Western Ecological Research Center San Diego Field Station, Santa Ana Office. Email to Ryan Winkleman dated September 25, 2015.
[13] Johnson, B. 2015. Personal communication. Project manager, Skypark, Santa's Village, LLC. Email to Ryan Winkleman dated April 24, 2015.

Attachment A

Exhibits



SKYPARK AT SANTA'S VILLAGE PROJECT
MOUNTAIN YELLOW-LEGGED FROG HABITAT SUITABILITY ASSESSMENT

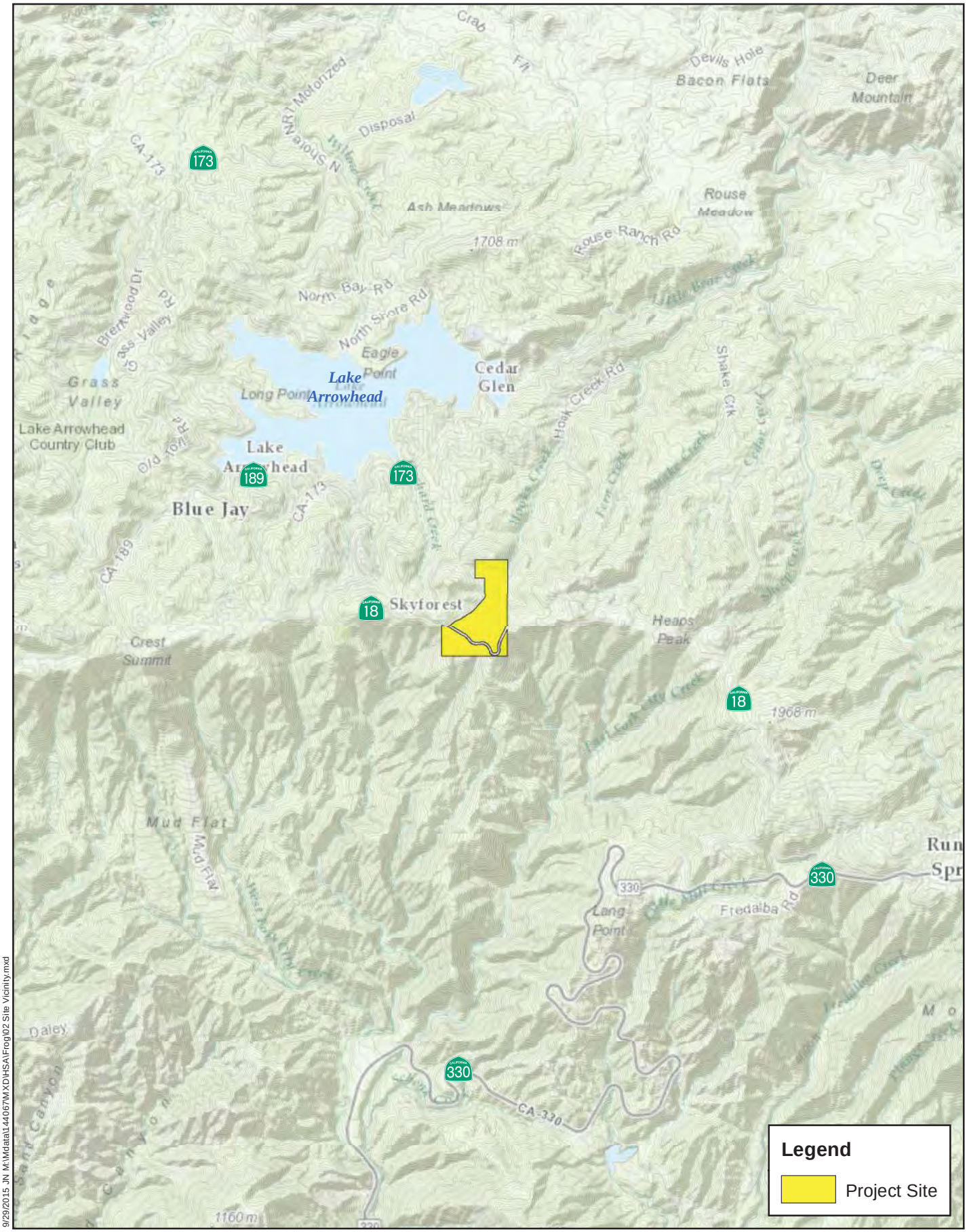
Michael Baker INTERNATIONAL

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1



Legend

Project Site

9/29/2015 JN M:\Mdata\144067\MXD\HSA\Frog\02 Site Vicinity.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
MOUNTAIN YELLOW-LEGGED FROG HABITAT SUITABILITY ASSESSMENT

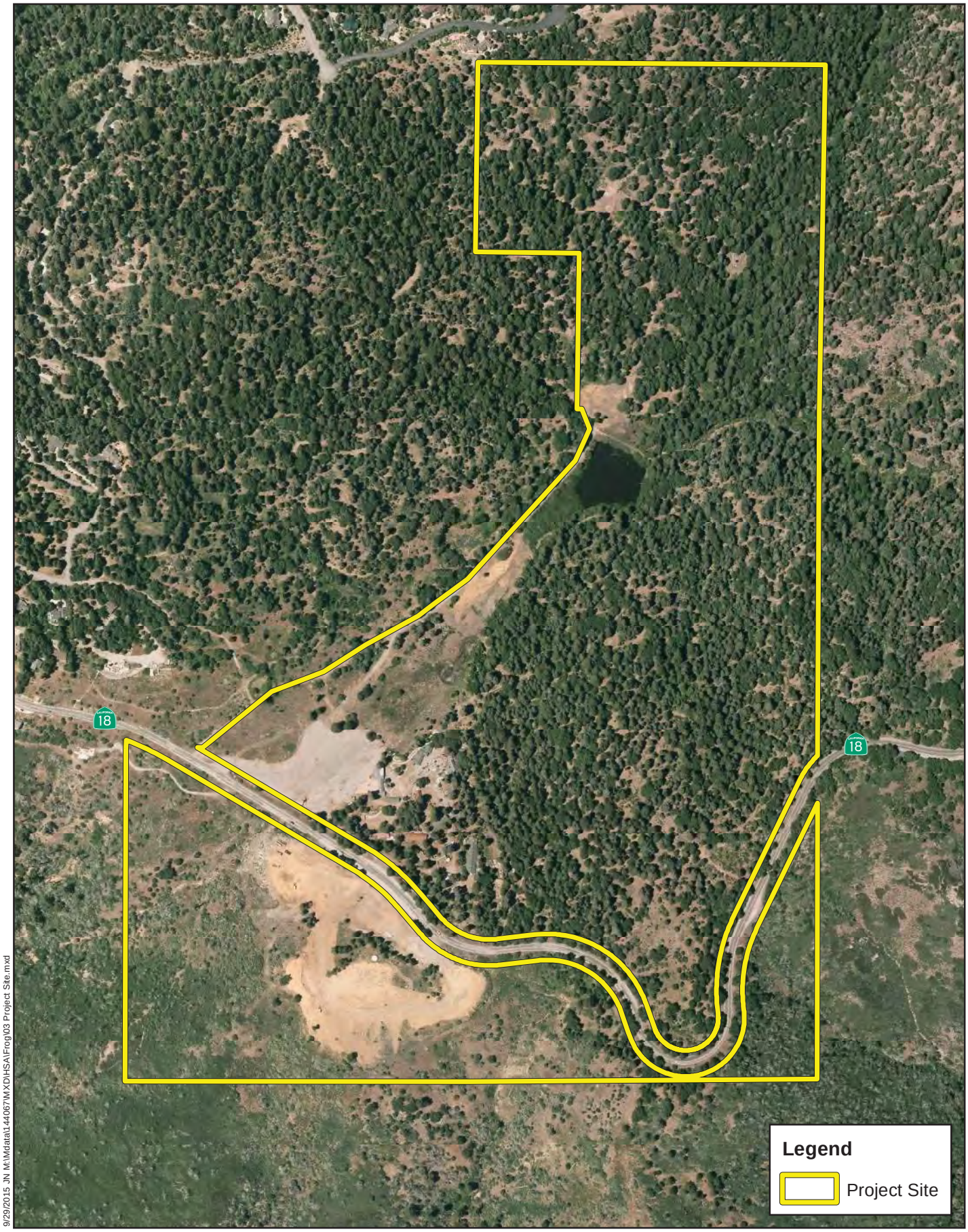
Michael Baker INTERNATIONAL

0 0.5 1 2 Miles

Source: San Bernardino County, USGS, ESRI World Topographic Map

Site Vicinity

Exhibit 2



9/29/2015 JN M:\Mdata\144067\MXD\HSA\Frog\03 Project Site.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
MOUNTAIN YELLOW-LEGGED FROG HABITAT SUITABILITY ASSESSMENT

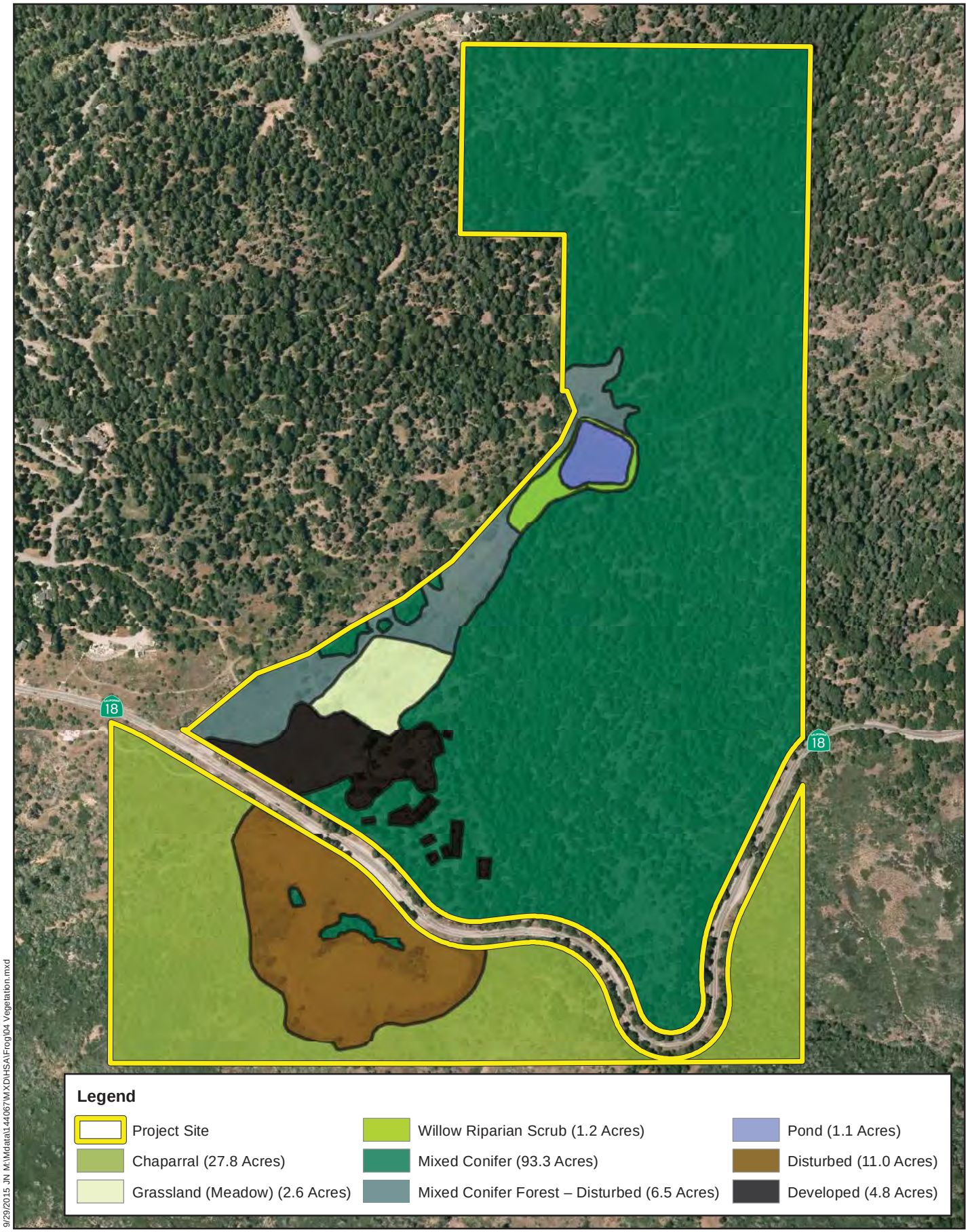
Michael Baker INTERNATIONAL

0 250 500 1,000 Feet

Source: San Bernardino County, Eagle Aerial 2013

Project Site

Exhibit 3



9/29/2015 JN M:\Mdata\144067\MXD\HSA\Frog\04 Vegetation.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
MOUNTAIN YELLOW-LEGGED FROG HABITAT SUITABILITY ASSESSMENT

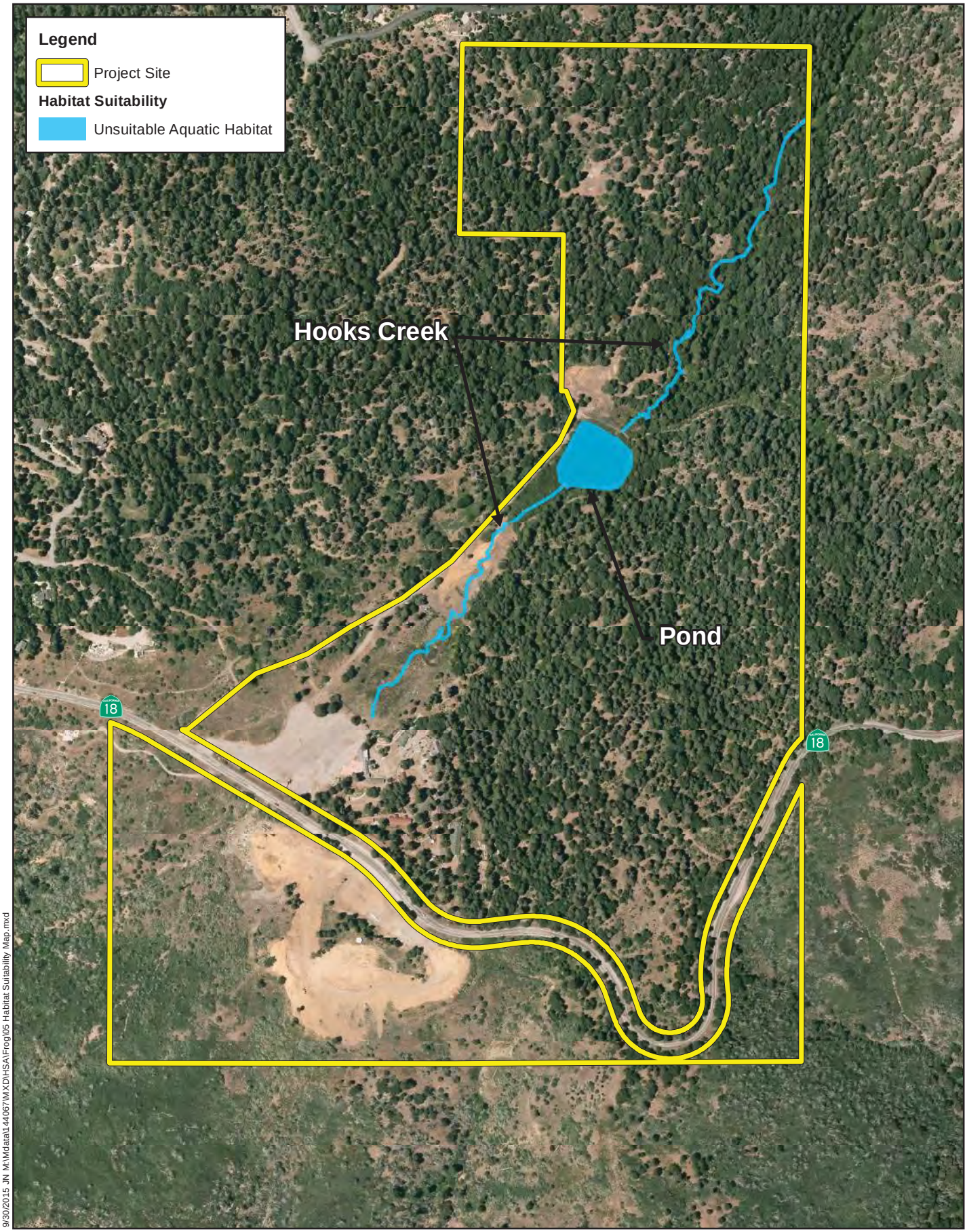
Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Vegetation

Exhibit 4



9/30/2015 JN M:\Mdata\144067\MXD\HSA\Frog\05 Habitat Suitability Map.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
MOUNTAIN YELLOW-LEGGED FROG HABITAT SUITABILITY ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Habitat Suitability Map

Exhibit 5

Attachment B

Site Photographs

Photograph 1: Looking northeast from just north of the parking lot. This area is an open grassy meadow that receives only ephemeral flows. It is unsuitable for mountain yellow-legged frog (*Rana muscosa*, MYLF).

Photograph 2: Looking northeast within the meadow area. This area receives only ephemeral flows. In the distance is a dense patch of willow scrub.

Photograph 3: The on-site pond is perennial, but has no open basking habitat along its banks, which are covered in dense grasses and willow scrub. It is also known to be inhabited by thousands of potentially predatory fish.

Photograph 4: Hooks Creek north of the on-site pond generally contains an abundance of downed woody debris and logs.

Photograph 5: Hooks Creek north of the on-site pond has patches of very low water. This area is dry. The creek throughout this area is generally underlain by pine needles and may be either wide open or densely covered in vegetation.

Photograph 6: Hooks Creek north of the on-site pond is generally underlain by pine needles and may be either wide open or densely covered in vegetation as in this photo.

Photograph 7: Much of the portion of Hooks Creek north of the on-site pond, where wet, was only a small trickle of water, completely insufficient for supporting MYLF.

Photograph 8: Some basking habitat is present at the northeastern end of the project site, where the most suitable MYLF habitat is. However, this portion of the creek, as observed in April and again in September during the suitability assessment, has insubstantial water flow and is thus not sufficient for supporting MYLF.

Photograph 9: Occupied MYLF habitat in nearby East Fork City Creek. Note the prominent rocky basking areas along the waterline, large and wide pool, and abundant sunlight. Photo taken on September 23, 2015 and provided by Elizabeth Gallegos of the U.S. Geological Survey, Western Ecological Research Center.

Appendix G California Spotted Owl Habitat Suitability Assessment

September 30, 2015 JN 144067

SKYPARK, SANTA'S VILLAGE, LLC.
Contact: Bill Johnson
P.O. Box 369
28950 State Highway 18
Skyforest, California 92385

SUBJECT: California Spotted Owl (*Strix occidentalis occidentalis*) Habitat Suitability Assessment for the Skypark at Santa's Village Project located in the Unincorporated Community of Skyforest, San Bernardino County, California

Dear Mr. Johnson:

Michael Baker International (Michael Baker) is pleased to submit this report to Skypark, Santa's Village, LLC documenting the results of a California spotted owl (CASO) habitat suitability assessment for the Skypark at Santa's Village Project (project) located in the unincorporated community of Skyforest, San Bernardino County, California. The habitat suitability assessment was conducted on September 23, 2015. Suitable habitat for CASO was found throughout most of the site, and one CASO was documented during the assessment.

Species Background

The CASO is one of three subspecies of spotted owl, along with the northern spotted owl (*S.o. caurina*) and the Mexican spotted owl (*S.o. lucida*). It has a generally mottled appearance; its back is brown with white spots and its belly has a mixture of white spots and brown barring.[1] A pale "X" is present between the eyes, which unlike most owls are blackish. Flight feathers are dark brown with light brown crossbars. Adult owls are approximately 18 inches long.

The CASO is currently in decline within its limited range, which is primarily across the Sierra Nevada and in disjunct populations down coastal southern California. This decline seems to be more heavily pronounced in southern California, where this subspecies is exceedingly rare in the San Jacinto Mountains and possibly extirpated from the Santa Ana Mountains. The healthiest populations are in the San Bernardino and San Gabriel Mountains.[2] The primary causes of the decline of CASO include excessive wildfires related to fire suppression and fuel buildup; fuel management including thinning, mortality removal, and prescribed fires; woodcutting; water diversion and groundwater extraction; pest- and disease-related tree mortality; drought; air

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Office: 909.974.4900 | Fax: 909.974.4004

pollution; habitat fragmentation; mining; and disturbance from human recreation and development. As a result, the CASO has been designated by the California Department of Fish and Wildlife (CDFW) as a species of special concern and, though the project is not on National Forest System or Bureau of Land Management (BLM) lands, it has also been designated individually by the Regional Forester and the BLM, respectively, as a sensitive species.[3] In addition, in response to a December 2014 petition from the Wild Nature Institute and the John Muir Project of the Earth Island Institute, the U.S. Fish and Wildlife Service (USFWS) issued a 90-day finding in September 2015 determining that protection of the CASO under the Endangered Species Act may be warranted.[4] The act of agreeing with the petition obligates the USFWS to then undergo a subsequent in-depth 12-month finding that could result in federal listing if warranted.

The CASO is distributed across the Sierra Nevada from Shasta County to Kern County, and along coastal southern California mountain ranges from Monterey County to San Diego County.[1] Certain areas of its historic range, such as Orange County, are now believed to be extirpated. CASO occur in four different types of old-growth forests: riparian/hardwood forest, live oak/bigcone Douglas-fir forest, mixed conifer forest, and redwood/California-laurel forest.[5] In the San Bernardino Mountains, it has been found that 39 percent of CASO nest in mixed conifer habitat, 41 percent in oak/bigcone Douglas-fir, and 20 percent in hardwood/conifer habitat.[2] In southern California, nest sites range from 1,000 feet elevation to 8,400 feet; in the San Bernardino Mountains the average elevation of occupied nest habitat is at 6,000 feet.[1] Home ranges in the San Bernardino Mountains vary from approximately 800 acres to 2,200 acres.[6] Eighty percent of nesting trees have canopy cover greater than 70 percent,[7] with surrounding nesting habitat having at least two canopy layers.[1] Nest trees often contain large cavities, broken tops, and/or dwarf mistletoe brooms. In southern California conifer forest, stick nests placed on platforms built by other species are most common.[2,7] In coniferous forests, such as that on-site, large snags and fallen logs are typically present in nesting habitat; this appears to be less important in lower-elevation nesting habitat. Nesting trees are on average 37 inches diameter at breast height and at least 230 years old in the San Bernardino Mountains,[1,2] and throughout southern California are typically on north-facing slopes where temperatures tend to be cooler.[2,6] Roosting habitat is much the same as nesting habitat, but foraging habitat is more varied. While owls may forage in the same habitat that they use for nesting and roosting, foraging habitat is often much more open, with canopy cover as low as 40 percent to provide large amounts of open space for flying.

Although CASO will forage opportunistically on a variety of different prey species, throughout southern California their primary prey (79 to 97 percent) is woodrats (typically dusky-footed woodrat, *Neotoma fuscipes*), which tend to have much larger populations (up to 10 times) than and weigh nearly twice as much on average as flying squirrels.[1] This may be somewhat less pronounced in the higher elevation San Bernardino Mountains, where San Bernardino flying squirrels (*Glaucomys sabrinus californicus*) are known to occur in a wide swath through the mountain range, or even on-site, where data provided by the Natural Resource Conservation Service (NRCS) indicates flying squirrel remains in spotted owl pellets found on the project site.[8]

Contrarily, lower elevation habitats in southern California tend to have greater woodrat populations due to the presence of surrounding chaparral, which is typically used by woodrats for nesting and constructing their middens.[2] This also results in higher productivity in lower elevation sites due to increased prey. Regardless of prey type, an abundance of large, decaying logs is imperative, as these provide refuge for small prey, and those logs that are positioned perpendicular to a slope will intercept water and help to provide it to other trees in the immediate vicinity.[1] Healthy woodpecker populations are also beneficial to spotted owls in higher elevation habitats, as flying squirrels often use old woodpecker cavities for nesting sites.

The CASO is active throughout the year and is primarily nocturnal.[1] However, they often do not nest every year. When they do, the CASO breeding season extends from mid-February to mid- or late September or early October, when young become independent. Timing tends to be about 2.5 weeks earlier in lower elevation southern California populations than in the Sierra Nevada, and 2 weeks earlier than those in the San Bernardino Mountains. Pairs begin roosting together and copulating on generally a nightly basis in late winter (by the end of February), with egg laying peaking from April 7-21 in the San Bernardino Mountains. Clutches are typically 2 eggs and egg-laying typically lasts 3 days but in rare cases may be as many as 4 eggs, lasting up to 9 days (with 72 hours between each egg). Incubation begins after the first egg is laid and lasts for another 30-32 days, with hatching typically peaking from May 3-17 in the San Bernardino Mountains. The subsequent nestling stage typically lasts another 34-36 days, with peak fledging occurring from June 8-22 in the San Bernardino Mountains. The period during which young birds have fledged but are still being fed by the adult birds typically lasts from 80-120 days, until mid- to late September. Young birds typically begin dispersing away from their natal grounds around October 1 and will usually move from 0.25 to 22.6 miles away.[1,6]

Project Description

Skypark at Santa's Village is proposing to re-open the Santa's Village Amusement Park using the existing buildings and infrastructure. In addition to opening the existing buildings, the new park is proposing to use the existing dirt fire access roads for mountain biking/hiking trials. The proposed project will also include the construction of an overflow parking lot and the realignment, expansion, and restoration of the upstream portions of Hooks Creek on the western portion of the project site. South of State Route 18 (SR 18), Skypark at Santa's Village is proposing to develop a campground on the existing overflow parking lot that is currently covered in wood chips.

Project Location

The project site is located north of the City of Highland and south of Lake Arrowhead in the unincorporated community of Skyforest, San Bernardino County, California. The project site is depicted on the Harrison Mountain quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Section 26 of Township 2 north, Range 3 west. Specifically, the project site is located north and south of State Highway 18 and west of Sycamore Drive in the

San Bernardino National Forest (refer to Attachment A).

Existing Site Conditions

The on-site elevation within the project site ranges from approximately 5,660 to 5,730 feet above mean sea level and generally slopes to the northeast. The southern portion of the project site, south of SR 18, abuts the steep mountain face of the San Bernardino Mountains. It should be noted that the project site was utilized as a staging/processing area for harvested timber since 2003. As a result, the on-site soils and vegetation within the southern portion of the project site have been heavily disturbed. The project site is located approximately 1.5 miles southeast of the community of Lake Arrowhead. In the vicinity of the project site, land uses include residential and commercial development and undeveloped forest land.

The majority of the project site is undeveloped, consisting of naturally occurring habitats which will remain undeveloped. Dirt fire access roads traverse the site. These existing dirt access roads are proposed to be used for various mountain biking/hiking trail activities. The developed portions of the project site include existing buildings and infrastructure associated with the Santa's Village Amusement Park that opened in 1955. The various buildings associated with the amusement park have remained intact since the Park's closure in 1998. The proposed new land use will renovate these existing buildings.

The project site supports a mixed conifer habitat (refer to Attachment A) and is dominated by Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), and California black oak (*Quercus kelloggii*). Riparian habitat occurs along Hooks Creek, although everything upstream of an existing detention basin (pond) is unsuitable for this species due to an open canopy. Downstream of the pond, the creek flows through the mixed conifer forest to Deep Creek. Other on-site habitats include grassland/meadow, willow riparian scrub, a pond, and developed areas.

Methodology

Prior to performing the surveys, available databases and documentation relevant to the project site were reviewed for known occurrences of CASO in the area. The California Natural Diversity Database (CNDDB) Rarefind 5 online software[9] was queried for reported locations of CASO and other sensitive species in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles. This database is maintained by the CDFW and contains records of reported occurrences of sensitive species and habitats that may occur within the vicinity of a subject property.

The literature review included a review of standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- CDFW BIOS Spotted Owl Viewer;[10]

- The California Spotted Owl: A Technical Assessments of Its Current Status (U.S. Department of Agriculture, Forest Service General Technical Report PSW-GTR-133);[1,5,7]
- United States Department of Agriculture, Forest Service Pacific Southwest Region Land Management Plan;[2]
- USFWS 90-Day Finding on a Petition to List the San Bernardino Flying Squirrel as Endangered or Threatened With Critical Habitat;[4]
- California spotted owl (*Strix occidentalis occidentalis*) (Western Riverside County Multiple Species Habitat Conservation Plan species account);[6] and
- Data provided by the NRCS.[8]

The habitat suitability assessment was conducted on September 23, 2015 by Michael Baker biologists Ryan S. Winkleman, Travis J. McGill, and Thomas C. Millington. Mr. Winkleman has experience conducting multiple focused surveys for CASO in the "Surveyor" role[11] and is familiar with the visual and aural identification of all owls occurring in southern California's Transverse Ranges. Hooks Creek was walked from its upstream end at the existing Santa's Village parking lot (southwestern project site boundary) to its downstream end at the northeastern project site boundary, and meandering paths were taken along existing trails through the uplands of the site. A previously-documented nesting location (as provided by NRCS)[8] was also visited to observe the surrounding habitat quality. A list of all detected wildlife species was recorded and incorporated into the Habitat Assessment.

Results

Previous Records

There are no recorded occurrences of CASO in the CNDDB in the Harrison Mountain, Lake Arrowhead, Butler Peak, and Keller Peak USGS 7.5-minute quadrangles.[9] Data obtained from the CDFW's BIOS Spotted Owl Viewer indicates twenty-one (21) separate spotted owl sightings between 1976 and 2010 (mostly in the 1990s and 2000s) on or adjacent to the site within the canyon between Mount Sorenson and Skyforest.[10] Data provided by the NRCS indicated that CASO nesting occurred in 2014 just off the northeastern boundary of the project site, and that there were eleven (11) known CASO nesting locations, including the aforementioned location, within a 1.5-mile radius of the project site in 2014.[8] Much of the forested portion of the project site has been mapped by the NRCS as a Protected Activity Center, defined as a single area in which individual or paired resident SPOW can nest, forage, and roost.

2015 Habitat Suitability Assessment

High quality suitable habitat for CASO is located in the northeastern portion of the project site (refer to Attachment A). This corresponds to the area surrounding a known nesting location from 2014.[8] Habitat in this area generally consists of larger, older trees with reasonably high canopy closure, a heavier but generally open duff layer, and abundant downed woody debris. It is also centered around riparian habitat in Hooks Creek.

Much of the project site, including the areas that are already in use through an established trail system, consists of moderate habitat for this species. These areas generally consist of a mixture of young and old trees. The canopy varies from closed to open, and much of the understory has dense new tree growth. Woody debris is almost entirely absent except in the northwestern portion of this designation. While the trees are generally undisturbed, numerous existing trails cross through this area, leaving small patches of relatively undisturbed forest floor and reducing the potential for a substantial prey base to develop on the ground. Eventual project development will also result in future human recreation along these trails.

Low quality habitat is present at the northern end of the project site and along a portion to the north of SR 18. The northern end of the project site generally consists of a mixture of young and old trees, with most of the trees younger and smaller and very few tall, large, old trees. The canopy is generally very open, providing very little overhead cover. The understory varies from an open duff layer with woody debris to larger areas of dense forb or new tree growth. Another area of low-quality habitat is located above SR 18, where larger trees with generally closed canopies are present, but where there are also numerous site-related buildings in place already, providing constant human disturbance, particularly once the park is open.

The southeastern portion of the site above SR 18 and the area along the western border of the project site from the parking lot to the pond, both lack suitable habitat for CASO.

Michael Baker's biological team visited the 2014 nesting location that had been provided by the NRCS.[8] This area is mapped, according to NRCS data, as being just outside the northeastern portion of the project site. The biologists were able to confirm the nest tree based on the large cavity near the top of it, and subsequently found a single adult CASO perched approximately 150 feet away. Based on Global Positioning System (GPS) location data taken in the field by the biologists, both the nest tree and the owl are located within the project site.

Conclusions

Michael Baker's habitat suitability assessment for California spotted owl determined that approximately 82.1 acres of suitable habitat are present within the project site, with high quality habitat located in the northeastern portion of the project site (14.4 acres). The remainder of the project site supports moderate quality habitat (56.4 acres), low quality habitat (11.3 acres), or is considered unsuitable (66.2 acres) for this species' foraging, nesting, and roosting needs. This is generally consistent with the mapping of habitat use provided by the NRCS.[8] Data provided by the NRCS also indicated that CASO nested immediately offsite in 2014; however, based on GPS data taken by Michael Baker, the nest tree is located on-site. In addition, a single adult CASO was found on-site by Michael Baker during the suitability assessment in the vicinity of the nest tree.

Please do not hesitate to contact me at (909) 974-4907 or tmcgill@mbakerintl.com or Ryan Winkleman at (909) 239-5381 or ryan.winkleman@mbakerintl.com should you have any questions regarding this report.

Sincerely,

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

Ryan S. Winkleman
Biologist
Natural Resources

Attachments:

A. Exhibits
B. Site Photographs

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[1] Verner, J., R.J. Gutiérrez, and G.I. Gould, Jr. The California Spotted Owl: General Biology and Ecological Relations. *In*: Verner, J., K.S. McKelvey, B.R. Noon, R.J. Gutiérrez, G.I. Gould, Jr., and T.W. Beck. The California Spotted Owl: A Technical Assessments of Its Current Status. USDA Forest Service General Technical Report PSW-GTR-133.
[2] U.S. Department of Agriculture, Forest Service. 2005. Pacific Southwest Region Land Management Plan. September 2005.
[3] California Department of Fish and Wildlife. 2015. Special Animals List. July 2015. Online at https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf.
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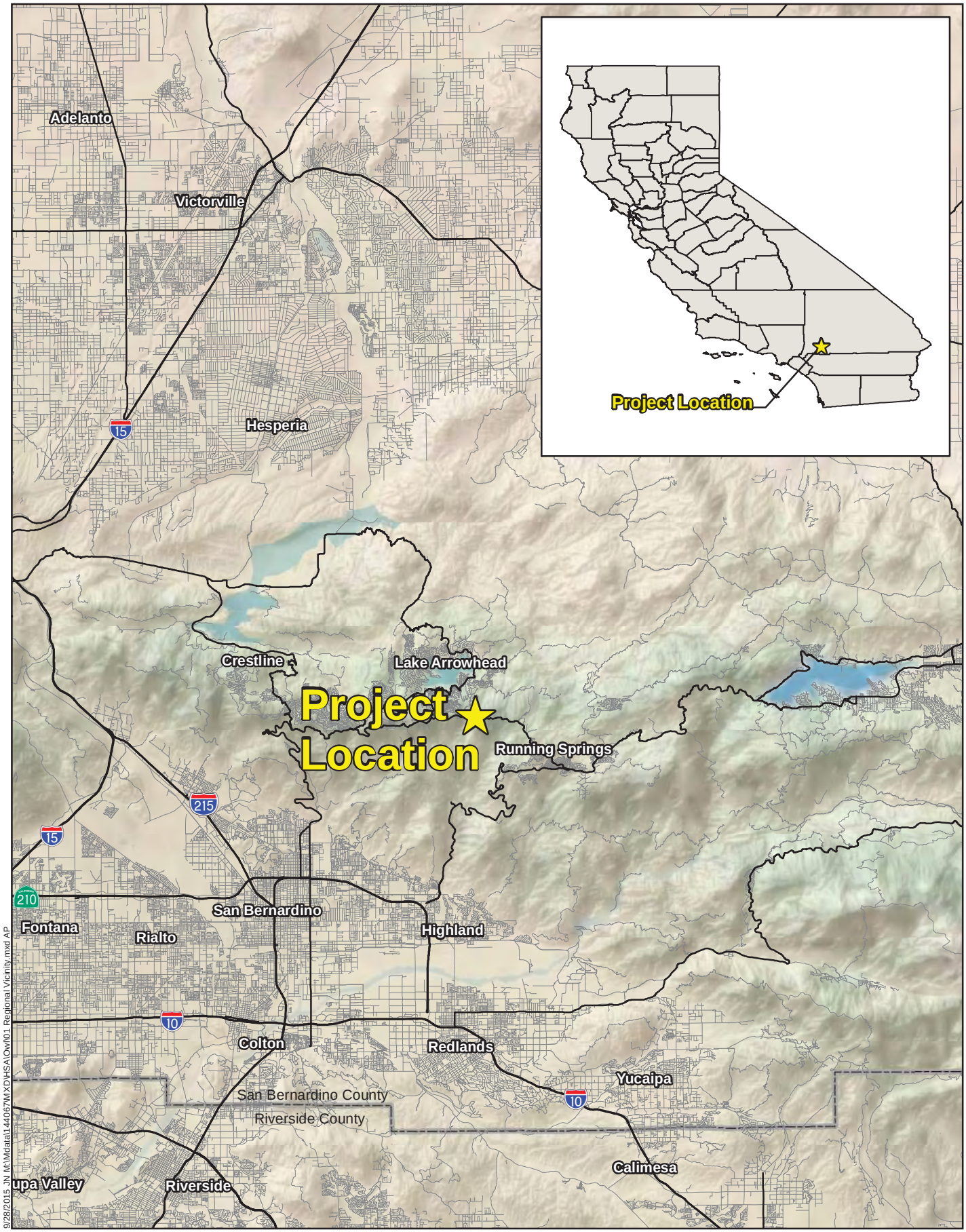
[5] Verner, J., K.S. McKelvey, B.R. Noon, R.J. Gutiérrez, G.I. Gould, Jr., and T.W. Beck. 1992. Assessment of the Current Status of the California Spotted Owl, with Recommendations for Management. *In*: Verner, J., K.S. McKelvey, B.R. Noon, R.J. Gutiérrez, G.I. Gould, Jr., and T.W. Beck. The California Spotted Owl: A Technical Assessments of Its Current Status. USDA Forest Service General Technical Report PSW-GTR-133.
[6] Dudek & Associates, Inc. 2003. California spotted owl (*Strix occidentalis occidentalis*). Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Volume II – Section B, Species Accounts. Prepared for County of Riverside Transportation and Land Management Agency.
[7] Gutiérrez, R.J., J. Verner, K.S. McKelvey, B.R. Noon, G.N. Steger, D.R. Call, W.S.LaHaye, B.B. Bingham, and J.S. Senser. 1992. Habitat Relations of the California Spotted Owl. *In*: Verner, J., K.S. McKelvey, B.R. Noon, R.J. Gutiérrez, G.I. Gould, Jr., and T.W. Beck. The California Spotted Owl: A Technical Assessments of Its Current Status. USDA Forest Service General Technical Report PSW-GTR-133.
[8] Natural Resource Conservation Service. 2015. GIS data provided by Shea O'Keefe via email to Thomas J. McGill, PhD.
[9] California Department of Fish and Wildlife. 2015. California Natural Diversity Database RareFind 5.
[10] California Department of Fish and Wildlife. 2015. Biogeographic Information and Observation System Spotted Owl Viewer.
[11] U.S. Department of Agriculture, Forest Service. 1993. Protocol for Surveying for Spotted Owls in Proposed Management Activity Areas and Habitat Conservation Areas. March 12, 1991, revised February 1993.

Attachment A

Exhibits



SKYPARK AT SANTA'S VILLAGE PROJECT
CALIFORNIA SPOTTED OWL HABITAT SUITABILITY ASSESSMENT

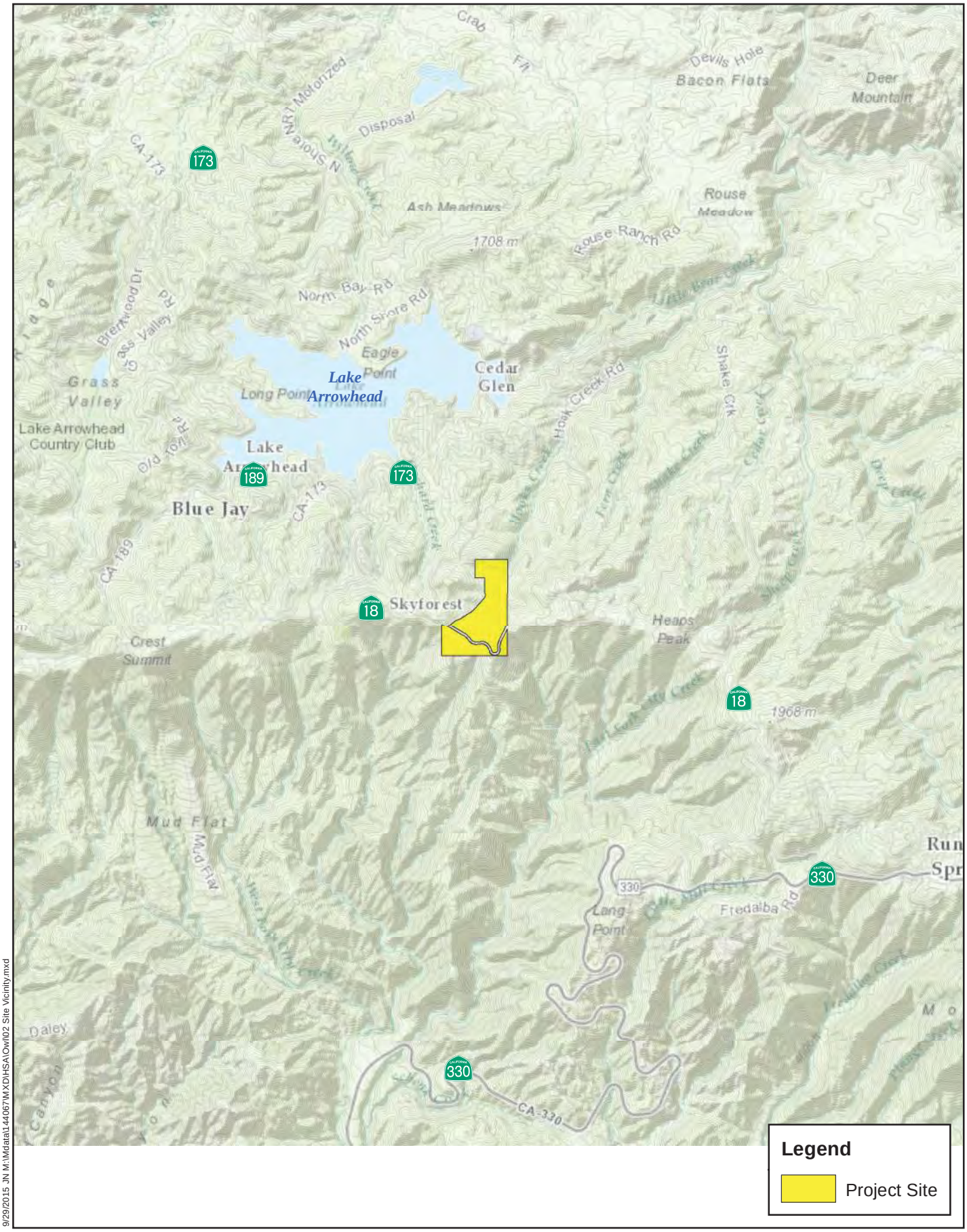
Michael Baker INTERNATIONAL

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1



Legend

Project Site

9/29/2015 JN M:\Mdata\144067\MXD\HSA\Owl\02 Site Vicinity.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
CALIFORNIA SPOTTED OWL HABITAT SUITABILITY ASSESSMENT

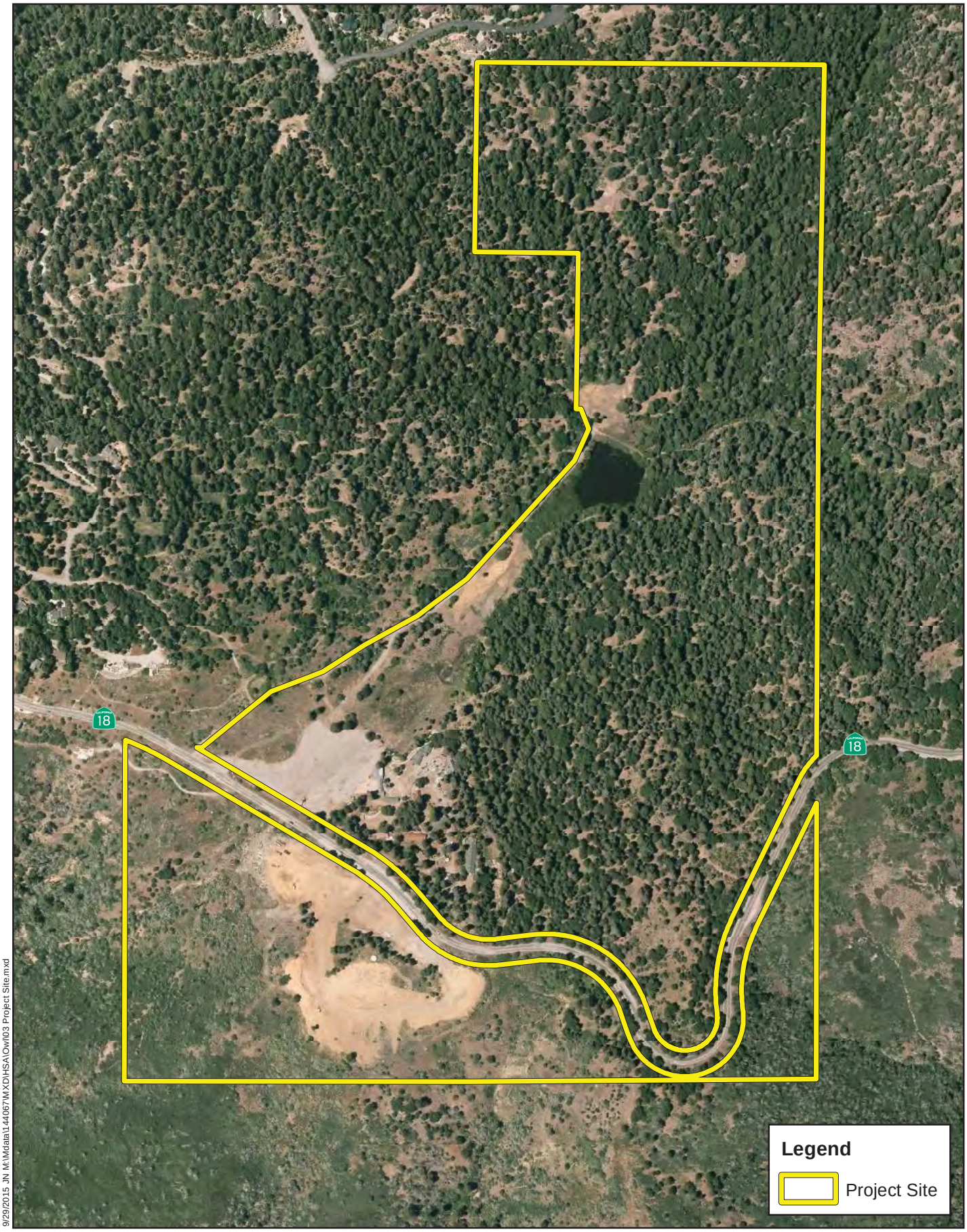
Michael Baker INTERNATIONAL

0 0.5 1 2 Miles

Source: San Bernardino County, USGS, ESRI World Topographic Map

Site Vicinity

Exhibit 2



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SKYPARK AT SANTA'S VILLAGE PROJECT
CALIFORNIA SPOTTED OWL HABITAT SUITABILITY ASSESSMENT

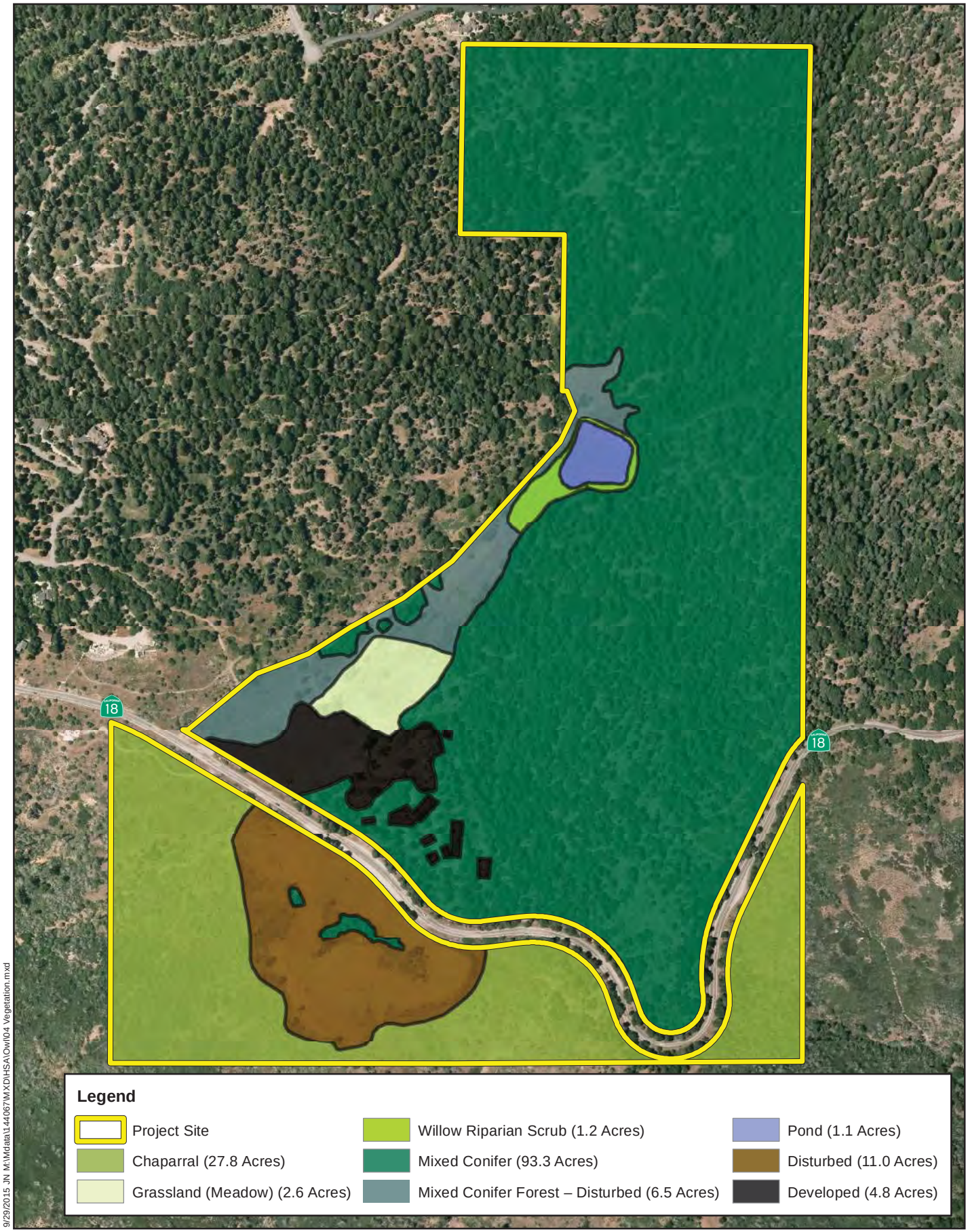
Michael Baker INTERNATIONAL

0 250 500 1,000 Feet

Source: San Bernardino County, Eagle Aerial 2013

Project Site

Exhibit 3



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SKYPARK AT SANTA'S VILLAGE PROJECT
CALIFORNIA SPOTTED OWL HABITAT SUITABILITY ASSESSMENT

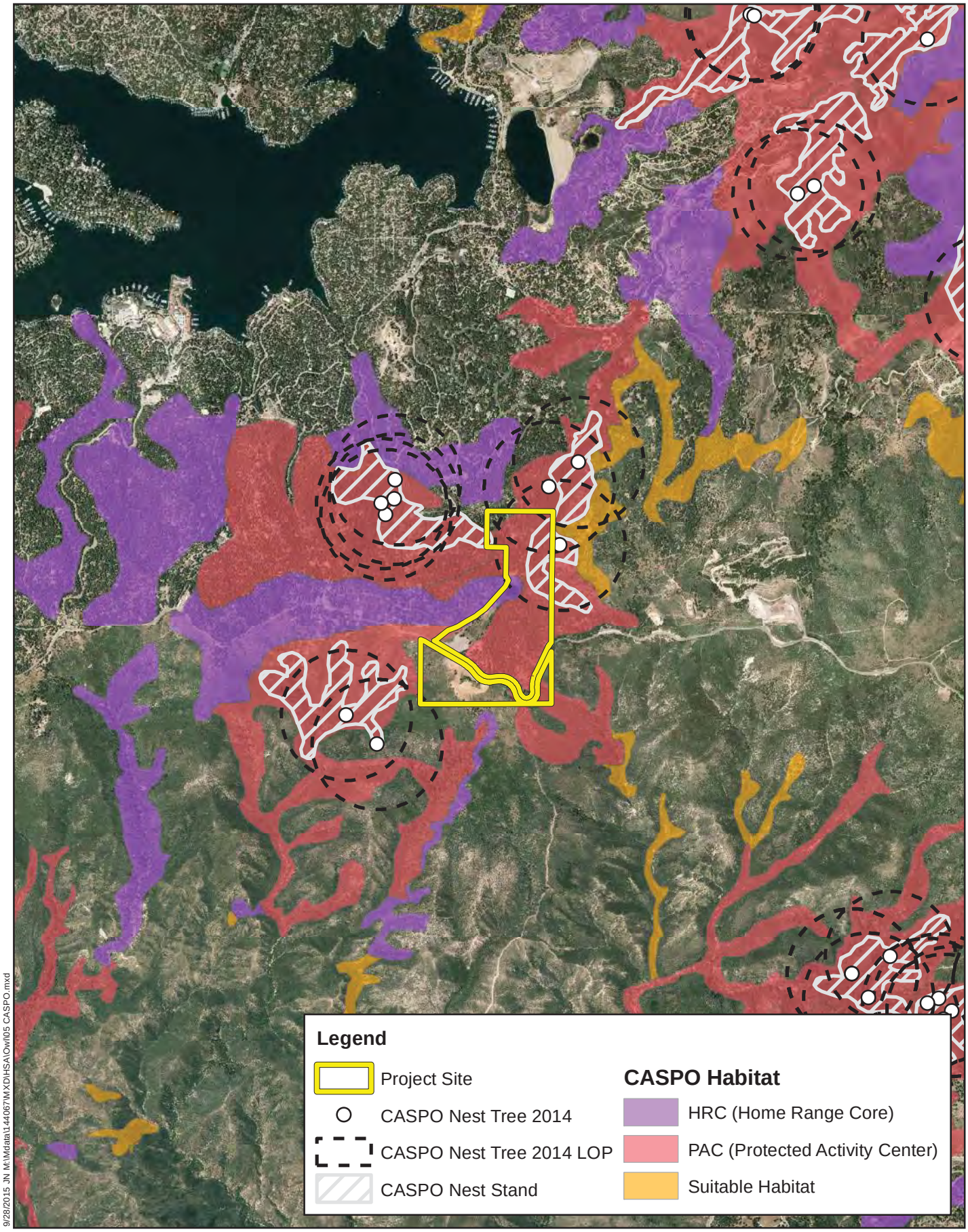
Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Vegetation

Exhibit 4



9/28/2015 JN M:\Mdata\144067\MXD\HSA\Owl\05 CASPO.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
CALIFORNIA SPOTTED OWL HABITAT SUITABILITY ASSESSMENT

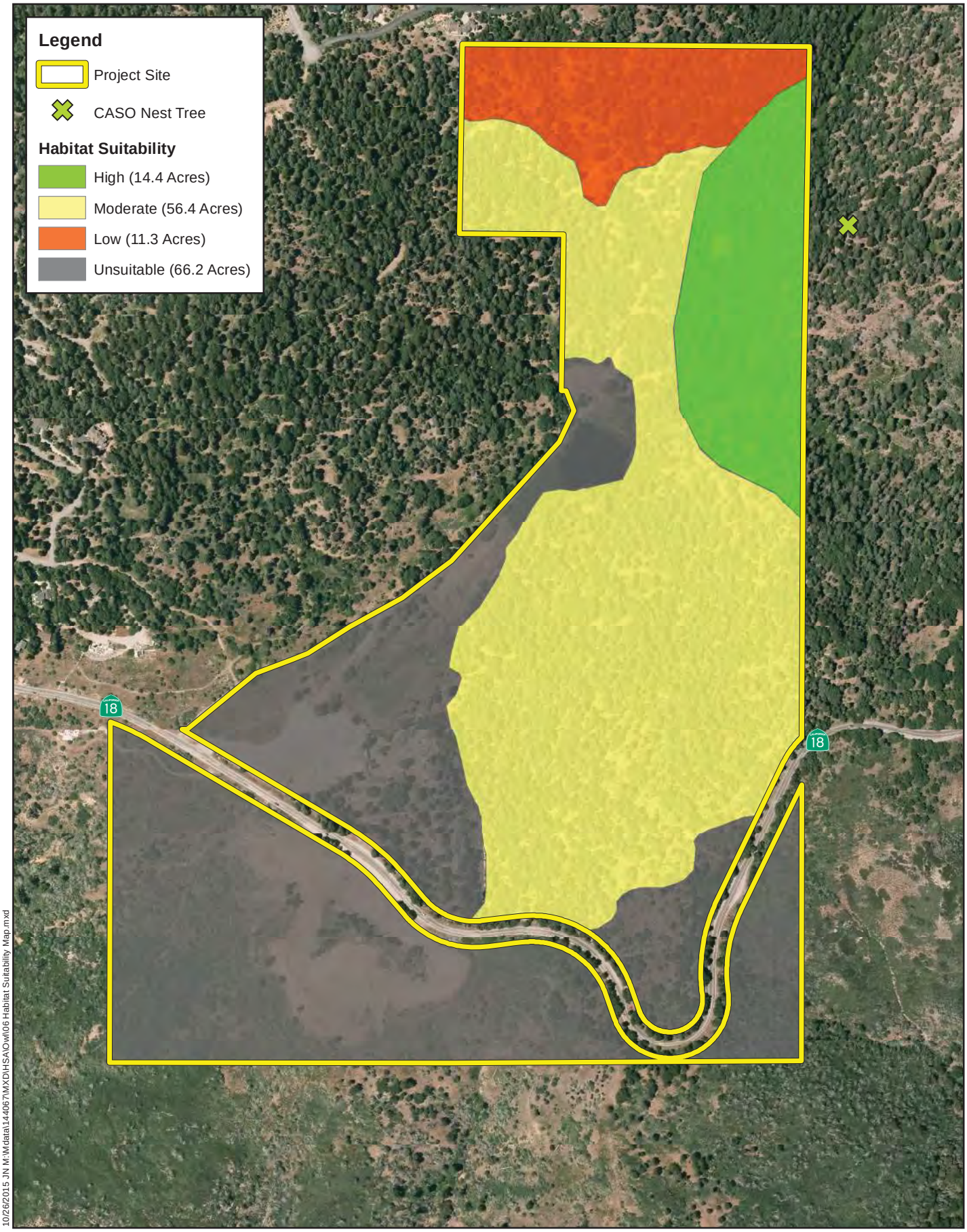
Michael Baker INTERNATIONAL

0 0.25 0.5 1 Miles

Source: San Bernardino County, Eagle Aerial 2013, NRCS

NRCS Data

Exhibit 5



10/26/2015 JN M:\Mdata\144067\MXD\HSA\Owl\06 Habitat Suitability Map.mxd

SKYPARK AT SANTA'S VILLAGE PROJECT
CALIFORNIA SPOTTED OWL HABITAT SUITABILITY ASSESSMENT

Michael Baker INTERNATIONAL

0 200 400 800 Feet

Source: San Bernardino County, Eagle Aerial 2013

Habitat Suitability Map

Exhibit 6

Attachment B

Site Photographs

Photograph 1: Looking northeast from just north of the parking lot. This area is an open grassy meadow and is unsuitable for California spotted owl (*Strix occidentalis occidentalis*, CASO).

Photograph 2: Looking north near the northwestern boundary of the project site. Most of this area consists of a mixture of young and old trees with a very open canopy. The understory here is covered in dense new growth. This is poor CASO habitat.

Photograph 3: The northeastern portion of the project site provides the best habitat for the CASO, with large, old trees and abundant woody debris for prey refuge.

Photograph 4: A single adult CASO was found in the northeastern portion of the project site in the vicinity of a documented nest tree.

Photograph 5: Occupied CASO habitat. Note the old, tall trees, high canopy cover, and abundant debris on the ground. An adult CASO is perched in the tall tree in the right foreground near the top of the photo. A nest tree was located approximately 50 feet to the north.

Photograph 6: The forested portion of the project site south of the on-site pond has old, tall trees with generally high canopy cover. However, for recreation and management reasons it has been almost entirely denuded of woody debris. This area is moderate quality habitat for CASO.

Photograph 7: Much of the project site south of State Route 18 has been deforested, and the rest consists of slopes covered in chaparral. This is not suitable habitat for the CASO.