



SNOWLINE SCHOOL DISTRICT PIÑON HILLS SOLAR PV PROJECT

FOCUSED SURVEYS FOR BURROWING OWL

**PIÑON HILLS AREA OF UNINCORPORATED SAN BERNARDINO COUNTY,
CALIFORNIA
USGS 7.5' MESCAL CREEK, CA QUADRANGLE
TOWNSHIP 4 NORTH, RANGE 7 WEST, SOUTH ½ OF NORTHEAST ¼ OF
SECTION 7
APN 3068-191-01 & APN 3068-191-02**

Prepared for Owner/Applicant:

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1.0 EXECUTIVE SUMMARY

AMEC was contracted by Reno Contracting, Inc. to conduct a general biological resources assessment at the site of a proposed photovoltaic (PV) solar project site (Project) located in Piñon Hills CDP, San Bernardino County (see Figure 1 in Appendix A). No special status species were observed, but potential habitat for burrowing owl (*Athene cunicularia*) is present. AMEC performed a habitat assessment and completed California Department of Fish and Wildlife (CDFW) protocol focused surveys for burrowing owl (*Athene cunicularia*) on and adjacent to the project site. No burrowing owls or their sign were detected on the project site or within the 500 foot survey buffer around the subject property.

2.0 INTRODUCTION

AMEC was contracted by Reno Contracting, Inc. to conduct a general biological resources assessment at the site of a proposed PV solar project site located in Piñon Hills CDP, San Bernardino County (see Figure 1 in Appendix A). AMEC was also contracted to perform habitat assessments and focused surveys for a variety of sensitive biological resources that have potential to occur on or adjacent to the project site. This report provides results and discussion of the protocol surveys for burrowing owl.

2.1 Project and Property Description

The Project site consists of two parcels: APN: 3068-191-01 and APN: 3068-191-02, both of which are 10.07 acres (for a total 20.14-acres). Additionally, there are two easements that are intended to serve as corridors for "gen-tie" lines. The northern 60 foot-wide easement extends from the northeast corner of APN: 3068-191-01 and runs east to Oasis Road, and the southern 30 foot-wide easement extends from the southeast corner of APN: 3068-191-02 and also runs east to Oasis Road. The property is bordered by undeveloped lands to the south and west; low density residential development and undeveloped land to the northwest and north respectively; and undeveloped land, a photovoltaic array, and the Piñon Hills Elementary School to the east (see Figure 1, Appendix A). The property is located on the 7.5-minute Mescal Creek, CA United States Geological Survey (USGS) quadrangle in Township 4 North, Range 7 West, southern ½ of the northeast ¼ of Section 7 (see Figure 2). The Project site is almost level, gently sloping from an elevation of approximately 3,880 feet above mean sea level (AMSL) on the southern edge of the site to approximately 3,850 feet AMSL on the northern edge of the site.

Vegetation on the Project site is an intergrade between Joshua Tree Woodland and Mojavean Juniper Woodland and Scrub. Dominant arborescent species include Joshua tree (*Yucca brevifolia*) and California juniper (*Juniperus californica*). Dominant "understory" species include peach thorn (*Lycium cooperi*), Nevada ephedra (*Ephedra nevadensis*), blue sage (*Salvia dorrii*), California buckwheat (*Eriogonum fasciculatum*), Cooper's goldenbush (*Ericameria cooperi* var. *cooperi*), and bladder-sage (*Scutellaria mexicana*). Creosote bush (*Larrea tridentata*) is distributed sparsely on the Project site. The habitat shows signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, off road vehicle tracks, presence of dirt roads on some parts of the site, domestic dog "diggings" (dug out burrows), and trash.

Three soil types are mapped on the Project site (USDA 2013): Tujunga Sand, 2 to 9 percent slopes, is the only soil type mapped on APNs -01 and -02. A small area of Cajon Sand, 2 to 9 percent slopes, is

mapped on the eastern end of the northern “gen-tie” easement, and another small area of Soboba Gravelly Sand, 2 to 9 percent slopes, is mapped on the southern edge of the western end of the southern “gen-tie” easement (see Figure 2 in Appendix A). The Cajon series consists of very deep, somewhat excessively drained soils on alluvial fans and river terraces. Cajon soils formed in alluvium from dominantly granitic sources. Soils in this series have slopes ranging from 0 to 15 percent. The Tujunga-Soboba soil association is similar to the Cajon series in that they are also formed in alluvium from granitic sources and are also very deep, somewhat excessively drained to excessively drained soils. The main “differences” from the Cajon series are that soils of the Tujunga-Soboba association have slopes that range from 0 to 9 percent, and are often associated with alluvial valley floors.

The solar power developer for this project will be Sun Edison (in partnership with Reno Consulting, Inc.). This Project site is one of three sites that taken in sum total approximately 66.6 acres. These three sites are considered Phase 2 of a past project completed by Sun Edison and Reno Contracting in 2011. The surrounding area is a patchwork of undeveloped lands, paved and unpaved roads, and low density rural residences. The undeveloped lands provide potential wildlife corridors to/from the site between disturbed areas.

3.0 BURROWING OWL SURVEY

3.1 Burrowing Owl Background

The burrowing owl is a small, tan, short-tailed, ground-dwelling owl that occupies underground burrows. A member of the Strigidae (typical owls family), this species is associated with grasslands and other arid open terrain, including Mojave Creosote Bush Scrub, throughout much of the western United States. Burrowing owls are opportunistic in their selection of burrows, typically utilizing the burrows of small mammals (e.g., ground squirrels, kit fox (*Vulpes macrotis*), but also use desert tortoise burrows, drain pipes, culverts, and other suitable natural or manmade cavities at or below ground level. In California, the species often occurs in association with colonies of the California ground squirrel (*Spermophilus beecheyi*), where it makes use of the squirrel’s burrows. The entrance of the burrow is often adorned with animal dung, feathers, debris, and other small objects. The species is active both day and night, and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows. Due to the characteristic fossorial habits of burrowing owls, nest burrows are a critical component of their habitat.

In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. In spite of their apparent tolerance to human activities, burrowing owl populations in California are clearly declining and, if declines continue, the species may qualify for listing under the state and/or federal Endangered Species Acts (California Department of Fish and Game [CDFG] 1995). The declines in Burrowing Owl populations are attributed to loss and degradation of habitat, to ongoing residential and commercial development, and to rodent control programs. The burrowing owl is currently designated a California Species of Concern (CSC) by the CDFG (note that the CDFG changed their name in 2013 to the California Department of Fish and Wildlife [CDFW]), managed as a Bird of Conservation Concern by the U.S. Fish and Wildlife Service (USFWS), is considered “sensitive” by the U. S. Bureau of Land Management (BLM), and protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

The California Burrowing Owl Consortium (CBOC) developed the Burrowing Owl Survey Protocol and Mitigation Guidelines to meet the need of uniform standards when surveying burrowing owl populations and evaluating impacts from development projects (CBOC 1993). In 1995 the CDFG issued the Staff Report on Burrowing Owl Mitigation to all of its regional managers to ensure consistency in standards, policies, and regulatory mandates relating to the burrowing owl (CDFG 1995). Due to the continued decline of burrowing owl populations statewide and as an attempt to reverse this trend, the CDFG issued more effective, viable, coordinated and concerted approach to burrowing owl conservation actions with the release of an updated Staff Report on Burrowing Owl Mitigation (CDFG 2012).

3.2 Burrowing Owl Survey Methods

A protocol level habitat assessment for the burrowing owl was conducted by AMEC Biologist Nathan T. Moorhatch and subconsultants Ted Rado and Phillip Clevinger on April 10 and 11, 2013. The habitat assessment was conducted on foot, visually inspecting and mapping all areas of the site and adjacent areas (a 500 foot buffer around the site) for components of burrowing owl habitat (i.e., sparsely vegetated areas with appropriate sized burrows or man-made structures suitable for burrowing owl use). The first of four focused surveys was conducted concurrent with the habitat assessment. That survey visit and the subsequent surveys were conducted between morning civil twilight sunrise and 10:00 AM. Straight line transects spaced no more than 20 meters apart (ten meters apart on the Project site) were walked throughout all suitable areas of the site and buffer area in order to identify occupiable habitat. Trimble Juno series hand-held global positioning system (GPS) units pre-loaded with transect route coordinates were used by surveyors to navigate along each survey transect line. Burrows suitable for burrowing owl occupation were recorded with the Trimble Juno unit, and closely monitored and inspected during each subsequent visit for evidence of burrowing owl use (i.e., whitewash, pellets, feathers and other adornments). Binoculars were used to identify birds and to survey perches and potential burrows prior to closer approach. A handheld anemometer was used to record temperatures and wind speeds. Survey dates, times, and weather conditions are presented in Table 1 below.

Table 1. Burrowing Owl Focused Survey Data

Date	Time	Sky (% cloud cover)	Temp. (°F)	Wind
10 April 2013	0906-1407	Clear	63-72°F	0-4 mph
11 April 2013	0620-0817	Clear	60-60°F	0-6 mph
8 May 2013	0645-0731	Clear	63-66	0-5 mph
3 June 2013	0840-0912	Clear	80-81	0-4 mph
28 June 2013	0800-0844	Clear	86-88	0-1 mph

3.3 Burrowing Owl Survey Results

The habitat assessment/first focused survey detected only three burrows that were potentially suitable for burrowing owl occupation (see Figure 3 in Appendix A). Two of these were in the buffer zone south and southeast of the site. The third burrow was located on the northern “Gen-Tie” alignment (see Figure 3 in Appendix A). No burrowing owls or evidence thereof (i.e., whitewash, pellets, feathers, tracks, prey remains, egg shell fragments, nest adornment materials, etc.) were observed onsite or on adjacent properties surveyed during any of the four survey visits (or even during the “Zone of Influence” transects walked up to 600 meters around the site during the focused desert tortoise surveys).

3.4 Discussion of Burrowing Owl Survey Results

The results of the breeding season focused survey indicate that the burrowing owl does not currently occupy the site or immediately adjacent areas. However, because the area continues to provide suitable shelter and nesting habitat for burrowing owls, the potential remains for the species to occur on or adjacent to the site in the future. In accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012), a “take avoidance survey” for the burrowing owl should be conducted no less than 14 days prior to the initiation of ground disturbance activities and a final survey should also be conducted within 24 hours prior to ground disturbance. If no burrowing owls are detected during the take avoidance surveys, implementation of ground disturbance activities could proceed without further consideration of this species. If burrowing owls are detected during the take avoidance survey, avoidance and minimization measures would then be required, under the guidance of the CDFW.

4.0 REFERENCES

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- Legislative Counsel of California. 2008. California Fish And Game Code. <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=fgc&codebody=&hits=20>
- United States Fish and Wildlife Service (USFWS). 2012. Birds Protected by the Migratory Bird Treaty Act. Online at: <http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/mbtintro.html>

5.0 CERTIFICATION

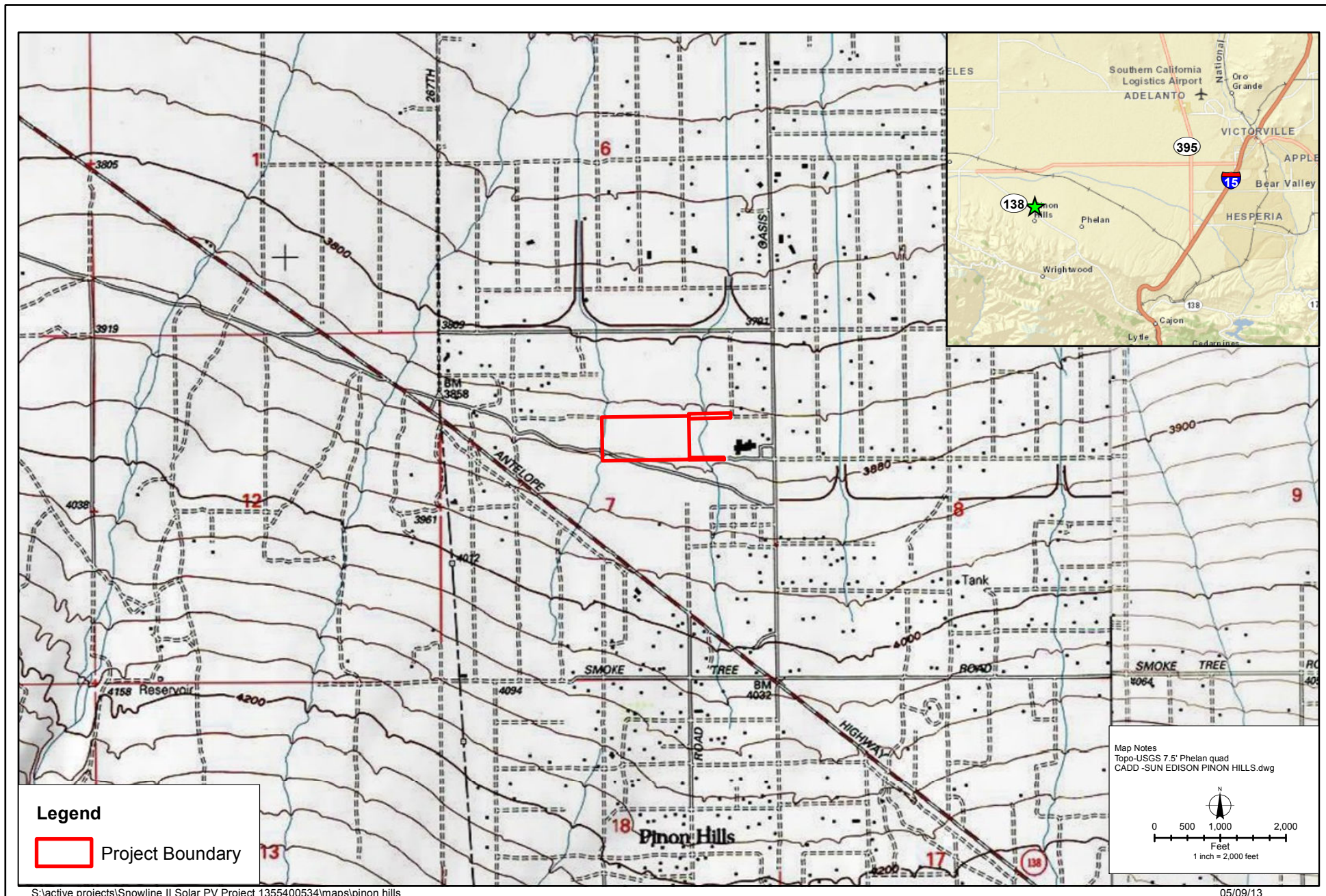
CERTIFICATION: "I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project."

DATE: 17 July 2013

SIGNED: *Nathan Moorhatch*

- 1) Fieldwork Performed By:
Nathan T. Moorhatch

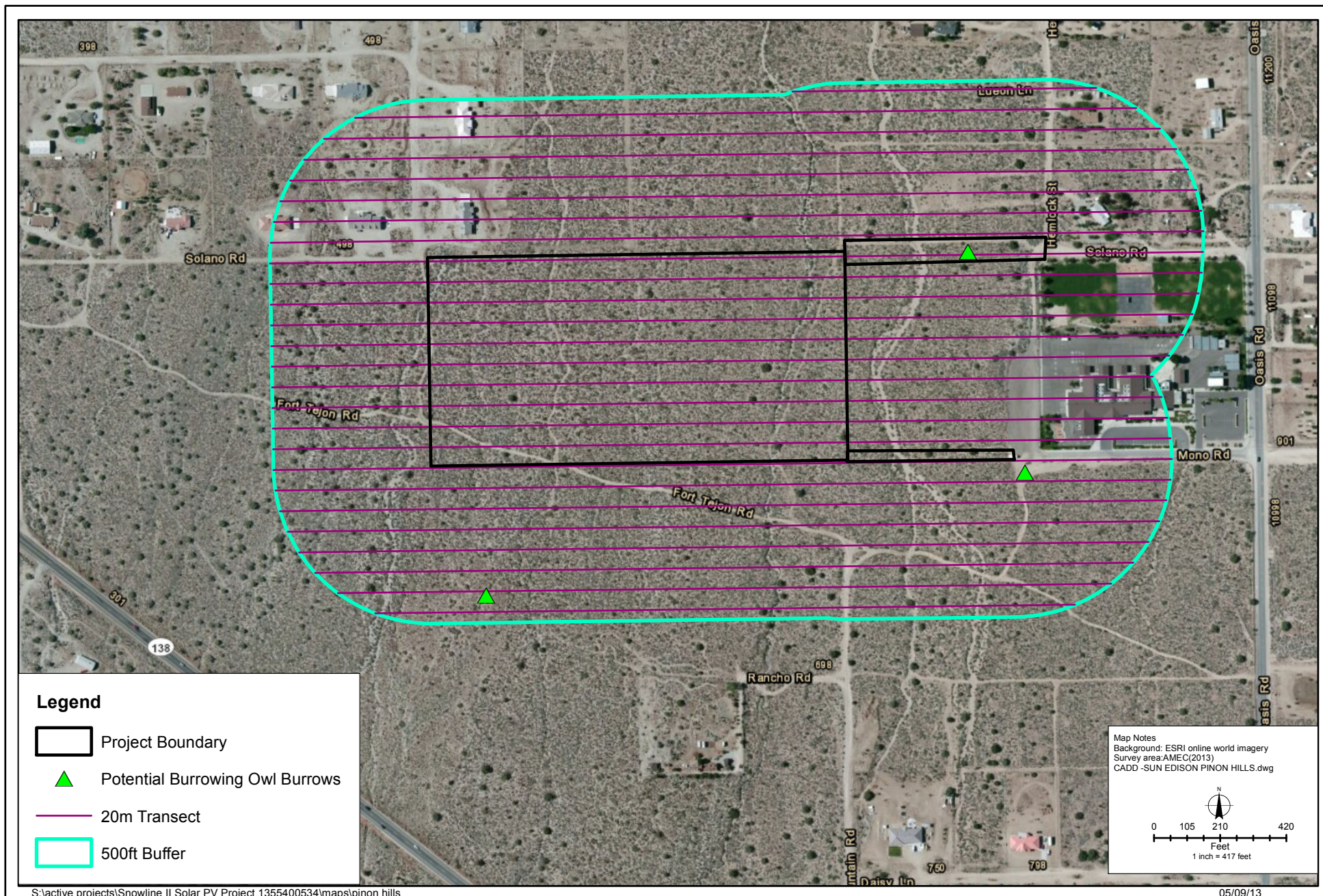
Appendix A Project Map Figures



Vicinity & Location
 Focused Burrowing Owl Survey

FIGURE

1



Appendix B Site Photographs



Photograph 1. Representative view of Semi-desert Chaparral/Joshua Tree Woodland intergrade habitat on the Piñon Hills project site.



Photograph 2. Small drainage on the site.



Photograph 3. Dirt road on the project site.



Photograph 4. ORV tracks on the Piñon project site.



Photograph 5. California ground squirrel burrow on northern “Gen-tie” line, one of only three burrows that had potential for burrowing owl use.

Appendix C Vertebrate Wildlife

**Vertebrate Species Observed on the Project Site and Buffer
Transects**

REPTILIA

Phrynosomatidae

Sceloporus magister
Uta stansburiana

Teiidae

Aspidozelis tigris tigris

Colubridae

Coluber flagellum piceus

AVES

Odontophoridae

Callipepla californica

Columbidae

Columba livia
Streptopelia decaocto
Zenaidura macroura

Cuculidae

Geococcyx californianus

Trochilidae

Calypte costae

Picidae

Picoides scalaris

Tyrannidae

Empidonax wrightii
Sayornis saya
Myiarchus cinerascens
Tyrannus verticalis

Corvidae

Aphelocoma californica
Corvus corax

Alaudidae

Eremophila alpestris

Hirundinidae

Hirundo rustica

REPTILES

Spiny and Horned Lizards

desert spiny lizard
side-blotched lizard

Whiptails and Relatives

Great Basin whiptail

Harmless Egg-laying Snakes

red racer

BIRDS

New World Quail

California quail

Pigeons and Doves

rock pigeon
Eurasian collared-dove
mourning dove

Cuckoos, Roadrunners, and Anis

greater roadrunner

Hummingbirds

Costa's hummingbird

Woodpeckers and Allies

ladder-backed woodpecker

Tyrant Flycatchers

gray flycatcher
Say's phoebe
ash-throated flycatcher
western kingbird

Crows, Jays

western scrub-jay
common raven

Larks

horned lark

Swallows

barn swallow

Remizidae

Auriparus flaviceps

Troglodytidae

Thryomanes bewickii

Campylorhynchus brunneicapillus

Mimidae

Mimus polyglottos

Toxostoma redivivum

Sturnidae

Sturnus vulgaris

Parulidae

Oreothlypis celata

Emberizidae

Melospiza crissalis

Spizella breweri

Amphispiza bilineata

Zonotrichia leucophrys

Icteridae

Euphagus cyanocephalus

Fringillidae

Haemorhous mexicanus

Passeridae

Passer domesticus

MAMMALIA**Leporidae**

Lepus californicus

Sylvilagus audubonii

Sciuridae

Spermophilus beecheyi

Ammospermophilus leucurus

Muridae

Neotoma lepida

Canidae

Canis latrans

Penduline Tits and Verdins

verdin

Wrens

Bewick's wren

cactus wren

Mockingbirds and Thrashers

northern mockingbird

California thrasher

Starlings

European starling

Wood-Warblers

orange-crowned warbler

Emberizids

California towhee

Brewer's sparrow

black-throated sparrow

white-crowned sparrow

Blackbirds

Brewer's blackbird

Fringilline and Cardueline Finches, Allies

house finch

Old World Sparrows

house sparrow

MAMMALS**Rabbits, Hares**

black-tailed jackrabbit

desert cottontail

Squirrels and Chipmunks

California ground squirrel (burrow)

white-tailed antelope squirrel

Mice, Rats, and Voles

desert woodrat (middens)

Wolves, Foxes, Coyote

coyote (scat, burrow)

KEY

* = non-native species

This list reports only animals observed on the site by this study. Other species may have been overlooked or undetectable due to their growing season (plants) or their activity patterns and/or subterranean habitats (animals). Nomenclature and taxonomy for fauna generally follows the American Ornithologists' Union Checklist (2013) for avifauna and CDFG (2008) for herpetofauna and mammals.