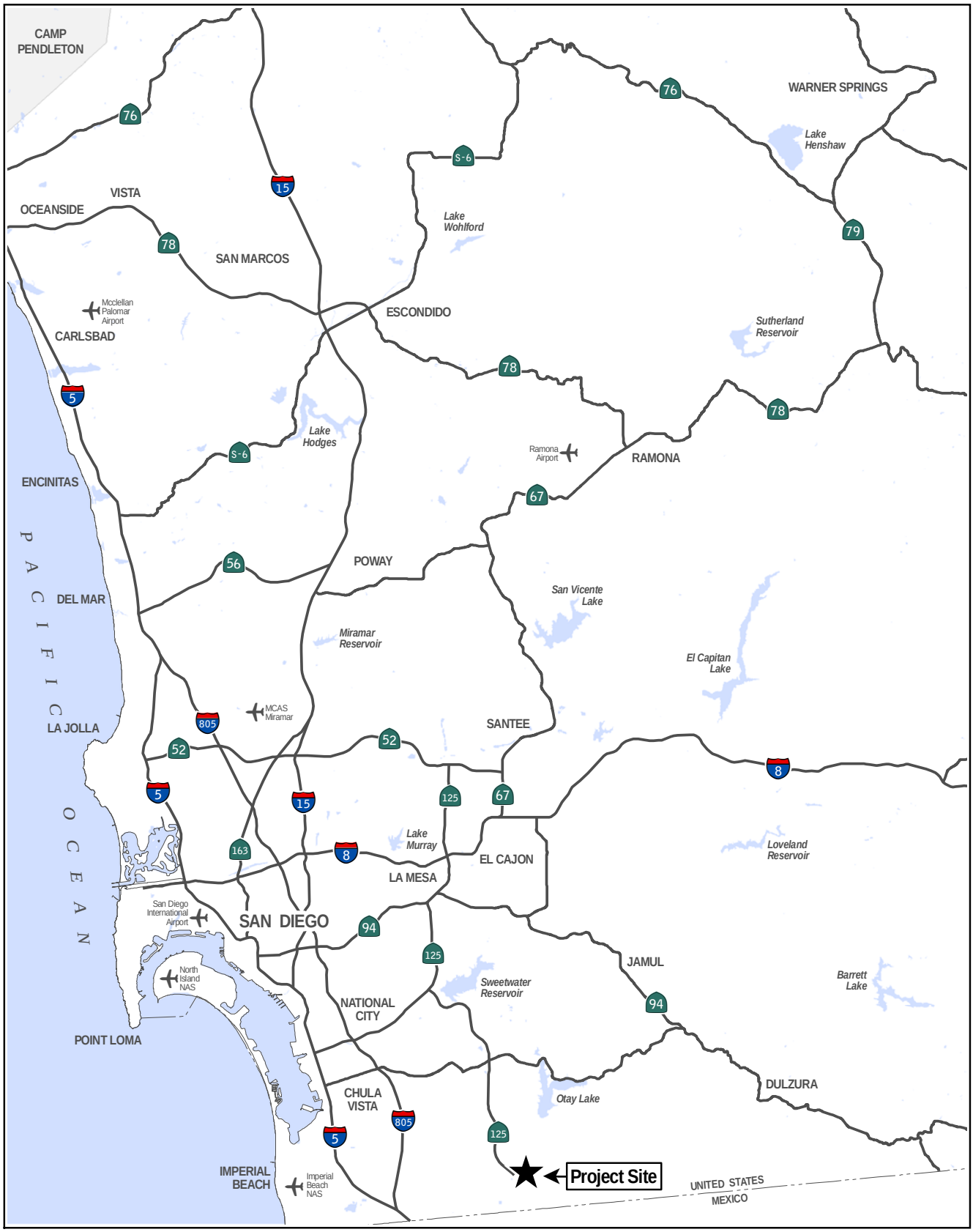


Regional Location

Miles 0 3 6

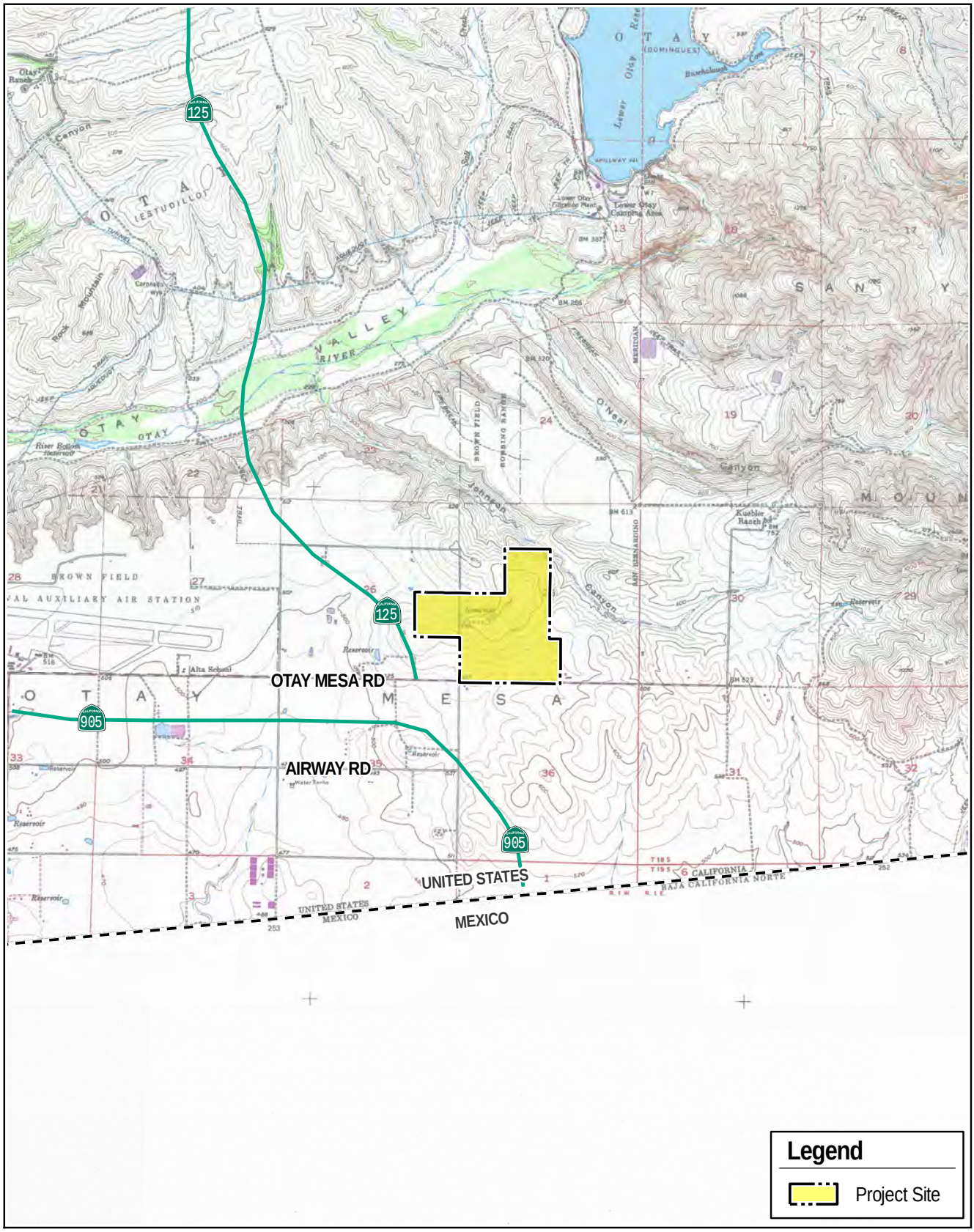
FIGURE 1

REC Consultants, Inc.

SUNROAD OTAY 250

Source: SANGIS GIS Data, 2011.

July 2015



T:\Project_Data\Sunroad_Otay_250\Final_Maps\2015-06-04_BioFigures\Fig-02_VicinityMap_060515.mxd

R·E·C Consultants, Inc.

Vicinity Map

SUNROAD OTAY 250

0 2,000 4,000 Feet

Source: USGS DRG Mosaic

FIGURE 2

July 2015

T:\Project_Data\Sunroad_Otay_250\Final_Maps\2015-06-04_BioFigures\Fig-03_Aerial_060515.mxd

R·E·C Consultants, Inc.

Vicinity Map

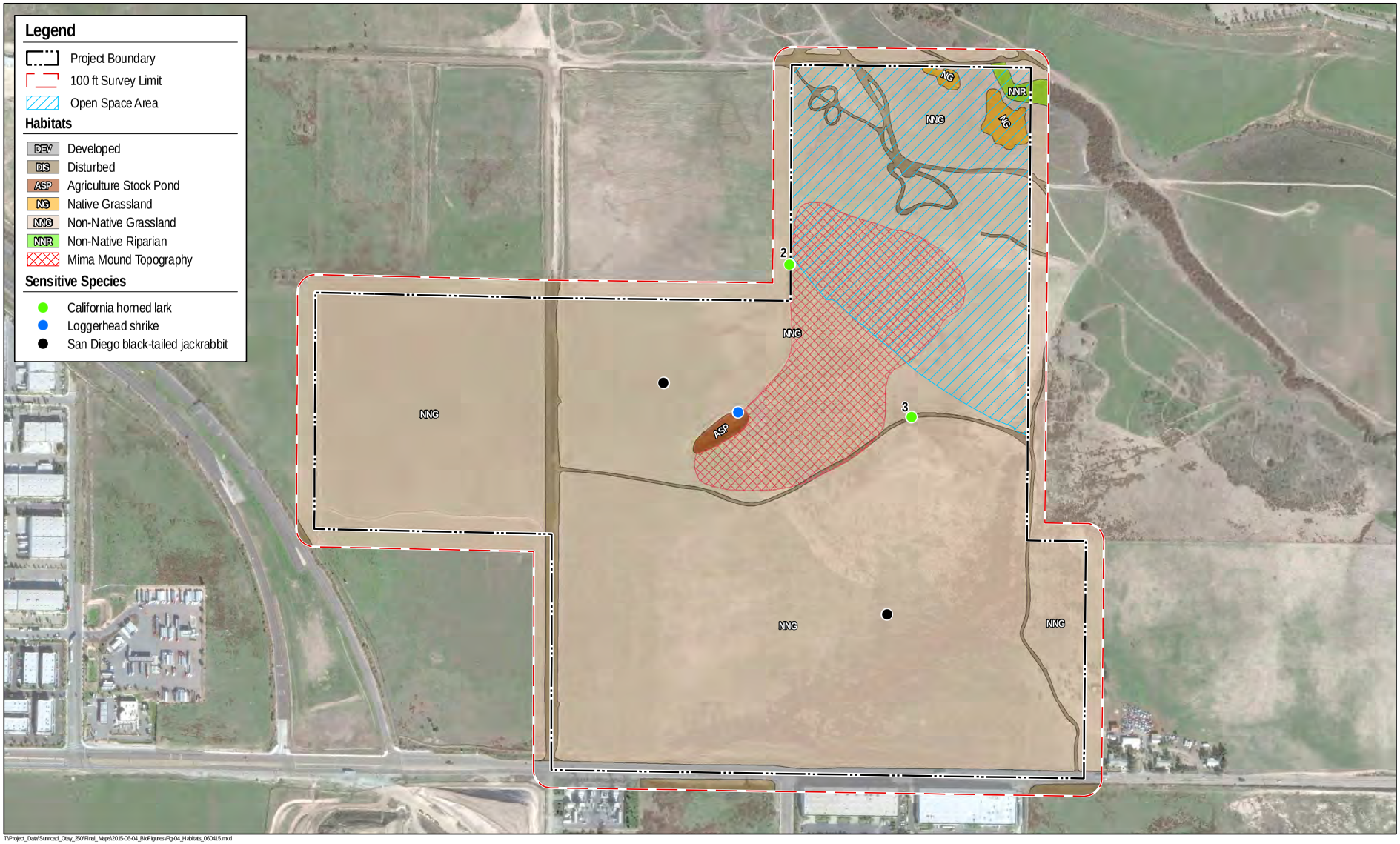
SUNROAD OTAY 250

0 1,000 2,000 Feet

Source: Esri Basemap

FIGURE 3

July 2015



T:\Project_Data\Sunroad_Otay_250\Final_Maps\2015-06-04_BioFigures\Fig-04_Habitats_060415.mxd

Biological Resources (Observed in 2015)

REC Consultants, Inc. | SUNROAD OTAY 250

0 250 500 Feet

Source: Google January 2015

FIGURE 4

July 2015

APPENDIX F

Burrowing Owl Survey Report, 2016

BURROWING OWL PROTOCOL SURVEY REPORT
for the
Sunroad Centrum 250 Project, TM 5538

Prepared by:

R·E·C
Consultants, Inc.

2442 Second Avenue
San Diego, California 92101
(619) 232-9200

Prepared for:

California Department of Fish and Wildlife
South Coast Regional Office
3883 Ruffin Road
San Diego, CA 92123

and

Andrea Rosati
Sunroad Enterprises
4445 Eastgate Mall, Suite 400
San Diego, CA 92121

Catherine MacGregor
Senior Biologist

July 2016

Table of Contents

SUMMARY

1.0 INTRODUCTION 2
- 1.1 Project Location 2
- 1.2 Site Characteristics 2
- 1.3 Surrounding Land Use 8
- 1.4 Project Description 8

2.0 METHODOLOGY 9
- 2.1 Habitat Assessment and Background Research 10
- 2.2 Breeding and Non-breeding Season Survey Transects 10

3.0 RESULTS 12
- 3.1 Burrows and Sign 12
- 3.2 Potential Perches 13
- 3.3 Potential Prey 13
- 3.4 Summary of Results 13

4.0 CONCLUSIONS 13

TABLES
1. Burrowing Owl Surveys Conducted on the Sunroad Centrum 250 Site……...11

FIGURES
1. Regional Location Map
2. Site Vicinity Map
3. Aerial Map
4. Biological Resources
5. Project Impacts

APPENDICES
A. Plants Observed on the Sunroad Centrum 250 Project Site
B. Animals Observed on the Sunroad Centrum 250 Project Site
C. Site Photographs

1.0 INTRODUCTION

REC Consultants, Inc. conducted focused protocol surveys for burrowing owl (*Athene cunicularia*) on the Sunroad Centrum 250 project site ("Project"), located in unincorporated Otay Mesa, County of San Diego, California. The purpose of these surveys was to determine if the site is currently or has been recently been used by burrowing owls. Surveys were conducted according to the standards and protocols set forth by the California Department of Fish and Wildlife in their March 2012 "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), and this report provides the results of the surveys.

1.1 Project Location

The 253.14-acre Sunroad Centrum 250 Project site is located on eight parcels (APNs 646-080-26, -27, -28, -29, -32, -33m 646-240-30, and 646-310-17) in eastern Otay Mesa, on the east and west sides of Harvest Road (**Figures 1** and **2**). Associated offsite improvements would impact 2.69 acres on portions of an additional seven parcels (646-070-07, -23, -24, 646-080-11, and -21). Harvest Road (unpaved) bisects the site north-south. The planned Lone Star Road alignment crosses the northeastern section of the site. An aerial photograph of the site and vicinity is provided in **Figure 3**.

1.2 Site Characteristics

1.2.1 Geography, Geology, and Topography

The Project is located on eastern Otay Mesa in southern San Diego County. The Otay Mesa area consists of a relatively level mesa top that meets the foothills of the San Ysidro Mountains at the eastern end of the mesa, and drops down abruptly to the coastal terrace on the western end. The northern limit is formed by the Otay River valley, and tributary canyons cut through the mesa down to the river valley below. The southern limit of the area within the United States is the US-Mexican border. Historically, the flat land in eastern Otay Mesa was used for agriculture. In the 1960s, land use began to shift from agriculture, with its relatively high water and labor costs, to industrial and commercial development. In the 1980s, the Mexican maquiladora program further increased the demand for industrial distribution and warehousing just north of the border.

The parcel to the west of Harvest Road, and the southern section of the area to the east of Harvest Road, have been altered by historical agricultural activity, but are not currently farmed.

Four soil series are mapped onsite (USDA 1973, 2015): Diablo clay, Stockpen gravelly clay loam, Linne clay loam, and Salinas clay. The Diablo series consists of well-drained, moderately deep to deep clays derived from soft, calcareous sandstone and shale; it is the most common soil series onsite and is present in all areas of the site except for small areas in the center, extreme south and extreme north of the site. The Stockpen series

consists of moderately well drained, moderately deep gravelly clay loams; it is the second most common soil series onsite and occurs in the central region of the site corresponding to mima mound topography. The Linne series consists of well-drained, moderately deep clay loams derived from soft calcareous sandstone and shale. It is only present in the northeastern portion of the site. The Salinas series consists of well drained and moderately well drained clay loams that formed in sediments washed from Diablo, Linne, Las Flores, Huerhuero, and Olivenhain soils. It is only present onsite in a small pocket running southwest to northeast at the southern central edge of the site.

The land on the Project site has the greatest elevation in the central region and slopes downward in all directions from there. The northwestern area slopes steeply down into Johnson Canyon, along the northern property boundary. Site elevation ranges from approximately 445 feet above mean sea level (AMSL) in Johnson Canyon at the northeastern corner of the site, to approximately 600 feet AMSL in the central portion of the property.

1.2.2 Vegetation

Eight vegetation categories or land cover types, classified according to Oberbauer et al. (2008), were observed within the Project area and are described below. Vegetation categories on the Project site and within a 150-m buffer around the site are shown in **Figure 4**.

1.2.2.1 Wetland Vegetation Categories

Disturbed Wetland (County Habitat Code 11200), 0.11 Acre

Disturbed wetlands are areas permanently or periodically inundated by water, which have been significantly modified by human activity. These wetlands are often unvegetated, but may contain scattered native or non-native vegetation. This habitat type includes portions of wetlands with obvious artificial structures and lined channels, Arizona crossings, detention basins, culverts, and ditches. (Oberbauer et al. 2008)

One of the areas of disturbed wetland onsite is a shallow swale along the western edge of the site, in which water intermittently ponds after rain. The swale does not appear to drain to another location, and may have formed when an agriculture-related berm was created along the western side. During the 2015 surveys, the only hydrophytic vegetation observed was a very small patch of pale spike-rush (*Eleocharis macrostachya*). The 1998 and 1991 surveys reported spike-rush (*Eleocharis* sp.). Although this swale was classified as a vernal pool in the 1993 EOMSP BTR, no true vernal pool indicator plants have been observed in the swale, and it was reclassified as disturbed wetland in 1998. The size of "wetland" within the swale varies depending on rainfall, but based on review of historical aerial photographs and 1998 habitat mapping it appears to occupy approximately 0.09 acre.

The second area of disturbed wetland is within an abandoned excavated agriculture-

related pond in the central area of the site. The upper banks of the former pond consist of minimally vegetated soil and upland vegetation. Much of the bottom also supports only upland vegetation, such as filarees (*Erodium* spp.), red brome (*Bromus madritensis* subsp. *rubens*), telegraph weed (*Heterotheca grandiflora*) and oats (*Avena* spp.) The basin has relatively low cover that includes many of the non-native grasses that occur in the surrounding non-native grassland described below. Along the lower banks are dead and dying hydrophytic shrubs and trees (a red willow [*Salix laevigata*], a black willow [*S. gooddingii*], small amounts of mule-fat [*Baccharis salicifolia* subsp. *salicifolia*]) and tamarisk (*Tamarix ramosissima*) among upland plants. Within the lowest part of the basin bottom is a small area where water ponds after rain events, and patches of herbaceous hydrophytes such as spike-rush grow. This small disturbed wetland covers approximately 0.02 acre.

Non-Native Riparian (County Habitat Code 65000), 0.39 Acre

Non-native riparian habitat consists of densely vegetated riparian thickets dominated by non-native, invasive species. This habitat is common along major river channels, often where disturbance has occurred. This designation is used only where non-native, invasive species account for greater than 50% of the total vegetative cover within a mapping unit. As described in "Draft Vegetation Communities of San Diego County" (Oberbauer et al. 2008) characteristic plants include non-native species such as giant reed (*Arundo donax*), pampas grass (*Cortaderia* spp.), Bermuda grass (*Cynodon dactylon*), eucalyptus (*Eucalyptus* spp.), non-native palms (*Phoenix* spp. and *Washingtonia* spp.) and tamarisk (*Tamarix* spp.) as well as native species such as arrow weed (*Pluchea sericea*), western cottonwood (*Populus fremontii* subsp. *fremontii*) and willows (*Salix* spp.).

Onsite non-native riparian habitat is a monotypic stand of tamarisk with a sparse understory composed almost entirely of non-natives such as dwarf nettle (*Urtica urens*) and scarlet pimpernel (*Anagallis arvensis*). Other invasives along the disturbed edges included stinkwort (*Dittrichia graveolens*) and milk thistle (*Silybum marianum*). Scattered natives species saltgrass (*Distichlis spicata*), salt heliotrope (*Heliotropium curassavicum* var. *oculatum*), and Coulter's fleabane (*Laennecia coulteri*) were also observed along the edges of the riparian vegetation. In 1998 this area was mapped as 0.35 acre of disturbed southern willow scrub, but no willows were observed during the February 2015 survey. The non-native riparian habitat covers approximately 0.39 acre.

San Diego Mesa Claypan Vernal Pool (County Habitat Code 44322), 0.21 Acre

Seven vernal pools have been documented onsite. Vernal pools are seasonally flooded depressions that support a distinctive living community adapted to extreme variability in hydrologic conditions (seasonally very dry and very wet conditions). In San Diego, vernal pools often retain pooled water for about two weeks after significant rain events. Vernal pools are differentiated from other temporary wetlands by the following criteria: (1) the basin is at least partially vegetated during the normal growing season or is unvegetated due to the heavy clay (or hardpan) soils that do not support plant growth; and (2) the basin contains at least one vernal pool indicator species (e.g. *Psilocarphus* spp.,

Downingia cuspidata, *Eryngium aristulatum* var. *parishii*, or crustaceans such as *Branchinecta* spp., *Streptocephalus* spp., and others). Two types of vernal pools are found in San Diego County: San Diego mesa hardpan vernal pools and San Diego mesa claypan vernal pools. The pools on Otay Mesa are of the claypan type, occurring on fine-textured soils where water ponds due to a clay impermeable layer rather than a hardpan layer. These claypan pools are almost entirely restricted to marine terraces between San Diego and Ensenada, Mexico, and have been much reduced by agriculture and development. (Oberbauer et al. 2008)

The claypan vernal pools are typically associated with a small-scale topography of low hummocks, called mima mounds, clustered on the mesa top. The vernal pools form in the depressions between the mima mounds. In drier years, the pools are typically isolated with very small watersheds of surrounding mima mound slopes. During wet years, pools between mima mounds may join if water levels are high enough. The area of mima mound topography onsite is clearly visible in aerial photographs, and occurs over the Stockpen soil unit. This soil type has a surface layer of gravelly clay loam to 3 inches over a subsoil of calcareous gravelly clay and clay from 3 to 31 inches, and is often associated with mima mounds.

Seven vernal pools were mapped onsite by REC in 1998. The group of pools onsite is known as the J22 complex and has been documented since at least 1978, when it was mapped in the "San Diego Vernal Pool Study, 1978" prepared for CDFW (Beauchamp 1979). Although only three J22 pools were documented in the 1979 publication and in Bauder's 1986 "San Diego Vernal Pools" report for CDFW (Bauder 1986), the 1991 "Biological Technical Report for the East Otay Mesa Specific Plan Area" (EOMSP BTR) indicated seven pools were present (Ogden 1993). However, one of the seven vernal pools in the 1993 EOMSP BTR was a swale parallel to a man-made berm, which has since been reclassified as a disturbed wetland (see above).

Vernal pools plants documented in the J22 pools in the 1991 EOMSP BTR include dwarf woolly-marbles (*Psilocarphus brevissimus*), pale spike-rush (*Eleocharis macrostachya*), annual hairgrass (*Deschampsia danthonioides*), water pygmyweed (*Crassula aquatica*), American pillwort (*Pilularia americana*), flowering quill wort (*Triglochin* [*Lilaea*] *scilloides*), waterwort (*Elatine* sp.), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), and prostrate navarretia (*Navarretia fossalis*). One pool (presumably the manmade swale) contained only pale spike-sedge. The 1979 report, which mentioned only special-status vernal pool plants, reported San Diego button-celery and prostrate navarretia.

Due to the severe drought beginning in 2011, neither evidence of vernal pool ponding nor vernal pool indicator species were observed in 2015. The vernal pool locations provided in REC's 2000 "Sunroad Centrum Biological Technical Report" were refined through use of Google Earth aerial photographs between 1994 and present.

1.2.2.2 Upland Vegetation Categories

Native Grassland (Habitat Code 42100) 1.65 Acres

Native grassland, and more specifically valley needlegrass grassland, is described as "A midheight (to 2 ft) grassland dominated by perennial, tussock-forming *Stipa* (*Nasella*) *pulchra*. Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. In San Diego County, native perennial herbs such as *Sanicula*, *Sidalcea*, *Sisyrinchium*, *Eschscholzia* or *Lasthenia* are present. The percentage cover of native species at any one time may be quite low, but is considered native grassland if 20% aerial cover of native species is present." Native grassland usually occurs on fine-texture (often clay) soils, moist or even waterlogged during winter, but very dry in summer. (Oberbauer et al. 2006)

Although patches with greater concentrations of needlegrass occur within the non-native grassland in the mima mound area, more substantial patches occur on the southern north-facing slope of Johnson Canyon. These larger patches, apparently limited to the Diablo clay soil with 15 to 30 percent slope, are overwhelmingly dominated by native needlegrass (*Stipa* sp. [*cernua* or *pulchra*]). Individual bunchgrasses are well spaced, to the degree that the pattern of the large individual bunches is visible in aerial photographic imagery. Native herbs such as red-skin onion (*Allium haematochiton*) and morning-glory (*Calystegia macrostegia*) were observed in the rich, cracking clay soil between the bunchgrasses. The native grassland patches had visibly lower cover of invasive species than any other habitat onsite. The areas of native grassland did not have distinct boundaries, but were mapped over approximately 1.65 acres based on site observations and aerial photography.

Non-Native Grassland (County Habitat Code 42200), 240.55 Acres

According to the County of San Diego, non-native grassland is described as "A dense to sparse cover of annual grasses with flowering culms 0.2-0.5 (1.0) m high. Often associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. In San Diego County the presence of *Avena, Bromus, Erodium,* and *Brassica* are common indicators. In some areas, depending on past disturbance and annual rainfall, annual forbs may be the dominant species; however, it is presumed that grasses will soon dominate. Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer-fall dry, persisting as seeds. Remnant native species are variable. This can include grazed and even dry-farmed (i.e., disked) areas where irrigation is not present." (Oberbauer et al. 2008) Additional habitat identification information provided in the County's "Report Format and Content Requirements" (County of San Diego 2010a) specifies that "Non-native grasses typically comprise at least 30 percent of the vegetation […]. Usually, the annual grasses are less than 1 m (3 ft) in height, and form a continuous or open cover. Emergent shrubs and trees may be present, but do not comprise more than 15 percent of the total vegetative cover. Characteristic non-native grassland species include foxtail

chess (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), red-stem filaree (*Erodium cicutarium*), mustards (*Brassica* spp.), lupines (*Lupinus* spp.) and goldfields (*Lasthenia* spp.), among others. (Oberbauer et al. 2006)

The onsite non-native grassland community is characterized by annual non-native grasses such as oats, brome grasses (*Bromus* spp.), and glaucous barley (*Hordeum murinum* subsp. *glaucum*); and forbs such as black mustard (*Brassica nigra*), short-pod mustard (*Hirschfeldia incana*), filarees, and Russian-thistle (*Salsola* sp.). Plant density and dominance vary throughout the site. Some areas are strongly dominated by Russian-thistle, other areas have been characterized by thick, tall stands of mustards, and within the mima mound area the vegetation is characterized by shorter and more open grasses, both native and non-native, with spring-blooming annuals and deciduous perennials. The Lone Star Road alignment, formerly a dirt road, supports greater numbers of native herbs and wildflowers such as small-flower soap plant (*Chlorogalum parviflorum*), fascicled tarweed (*Deinandra fasciculata*), rayless gumplant (*Grindelia camporum*), and common goldfields (*Lasthenia gracilis*). Non-native grassland occupies approximately 240.55 acre onsite.

1.2.2.3 Other Land Cover Categories

Developed Land (County Habitat Code 12000), 2.97 Acres

Urban and/or developed land consists of "Areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that require irrigation. Areas where no natural lands is evident due to a large amount of debris or other materials being placed upon it may also be considered urban/developed (e.g. car recycling plan, quarry)." (Oberbauer et al. 2008) Additional habitat identification information provided in the County's "Report Format and Content Requirements" (County of San Diego 2010a) includes "Land that has been constructed upon or otherwise covered with a permanent unnatural surface shall be considered Developed…"

The portion of the parcel overlapping Otay Mesa Road is developed land lacking native vegetation. Developed areas cover 2.97 acres along the southern edge of the site.

Disturbed Land (County Habitat Code 11300), 7.26 Acres

The County of San Diego describes disturbed land as "Areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association, but continues to retain a soil substrate. Typically vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance, or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Examples of disturbed land include areas that have

been graded, repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e. dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites." (Oberbauer et al. 2008) Additional habitat identification information provided in the County's "Report Format and Content Requirements" (County of San Diego 2010a) specifies that "Disturbed land includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops) and where there is evidence of soil surface disturbance and compaction from previously legal human activity; or where the vegetative cover is greater than 10 percent, there is soil surface disturbance and compaction, and the presence of building foundations and debris…resulting from legal activities (as opposed to illegal dumping). Examples include recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites." (Oberbauer et al. 2008)

Harvest Road and the larger unpaved roads and trails throughout the site are considered disturbed land. These roads and trails have small amounts of herbaceous vegetation at the edges, but are almost entirely bare highly compacted soil. Most trails in the northern and central areas are likely associated with historical agricultural activity. Disturbed land in the more sloping northern section of the site includes off-road recreational vehicle trails used by trespassers, and a trail to cross the creek in the canyon bottom.

1.3 Surrounding Land Use

Johnson Canyon and undeveloped land border the site to the north, residential and undeveloped parcels are located to the east, undeveloped land and State Route (SR) 125 abut the site to the west, and Otay Mesa Road forms the southern boundary. South of Otay Mesa Road, development is dense and predominantly light-industrial and commercial.

The Project site falls within the South County segment of the Multiple Species Conservation Program (MSCP). The site lies within the northwestern area of the EOMSP, which provides comprehensive development guidelines for the area. Most of the southern and western section of the site, south of the Lone Star Road alignment, is classified in the East Otay Mesa Specific Plan Amendment (2015) as a Minor Amendment Area, the entire property to the north of Lone Star Road is classified as a Major Amendment Area with G-Designator, and a small area in the center of the site is classified as a Minor Amendment Area Subject to Special Consideration and with G-Designator.

1.4 Project Description

Project Background

The Project site was approved for development in 2012 to subdivide the site into 55 lots. Tentative Map 5538 (TM 5538) consisted of 52 technology business park lots ranging in size from 1.8 acres to 5.3 acres, one lot for a sewer pump station, one storm water

detention lot, and a 51.3-acre dedicated open space lot. A 0.41-acre lot within the subdivision is identified as an open space easement established for the protection of biological resources (vernal pools).

Project Description

The Project proposes a Specific Plan Amendment (SPA) to the EOMSP to establish a new Mixed-Use Village Core area, which would allow for the establishment of a mix of employment, retail, and residential uses. Approval of the project would allow for the entitlement of a maximum of 3,158 dwelling units, 84,942 square feet of general commercial uses, and 1.4 million square feet of employment uses, and approximately 51.3 acres of permanent biological open space.

The proposed Project would include construction of public streets within the Project boundary, and would construct off-site half-width improvements to Vann Center Boulevard from Otay Mesa Road to just south of Lone Star Road, and to Zinser Road from west of Sunroad Boulevard to Alejandro Drive. The Project would require the extension of utility lines including sewer, water, electric, and gas lines. Sewer lines would be provided within all Project roadways, as well as the portions of off-site roadways within the Project footprint. The Project would not require off-site improvements for stormwater conveyance. The Project includes a trail segment that would occur in the north-central portion of the Project site, providing pedestrian connectivity along the off-site portion of Zinser Road between the Project's proposed mixed-use neighborhood in the central portion of the site and open space element in the northeastern portion of the site.

Project grading and construction schedules and timing have not been set.

2.0 METHODOLOGY

REC Senior Biologist Catherine MacGregor and Field Biologist Lee BenVau followed the standard protocol developed by the Burrowing Owl Consortium and updated by CDFW in their March 2012 Staff Report on Burrowing Owls Mitigation, Appendix D "Breeding and Non-breeding Season Surveys and Reports."

The habitat assessment and breeding season methodology consists of 1) background research for any historical burrowing owl records, 2) an initial habitat assessment site visit to evaluate the presence and/or quality of burrowing owl potential habitat on the site and within a 150-m (500-ft) buffer zone around it, and 3) a minimum of four survey visits at least three weeks apart. The four survey visits should be conducted between February 15 and July 15. One of the four should be between February 15 and April 15, and three survey visits should be during the peak breeding season of April 15 and July 15, with at least one of those three after June 15. The survey technique consists of walking transects through suitable habitat spaced adequately to provide complete coverage for the habitat (typically 7 to 20 m apart), with stops at the beginning of each transect and approximately every 100 m to scan the entire visible area with binoculars. While walking the transects,

the biologist records all potential burrows and sign such as pellets, prey remains, and whitewash. The surveys should be conducted under suitable weather conditions, either in the morning between morning civil twilight and 10:00 AM, or in the evening between two hours prior to sunset and evening civil twilight.

The surveys were also conducted according to County of San Diego guidelines, which include the additional requirement for evening surveys. The County guidelines also refer to the 1995 CDFG Staff Report on Burrowing Owl Mitigation, which recommended that surveys be conducted during both the wintering and breeding seasons. (County of San Diego 2010)

2.1 Habitat Assessment and Background Research

A preliminary habitat assessment and one-time winter season survey were conducted on February 24, 2015 by REC Senior Biologist Catherine MacGregor and Field Biologist Lee BenVau. A formal pre-breeding season habitat assessment was conducted on February 4, 2016. The assessment provided 100 percent visual coverage of all potential BUOW areas on the Project site. Most adjacent private lands were surveyed with binoculars from the site. One adjacent property was visited for a general survey, during which burrowing owl habitat potential was evaluated and any burrows would have been detected. Satellite imagery from Google Earth was used to help locate all burrows.

Background research consisted of searching the California Natural Diversity Data base (CNDDB) and SanBIOS for burrowing owl records in the Otay Mesa region. Numerous records of burrowing owls in the Project area can be found in the CNDDB, including four within a mile to the south and southeast, two just a short distance to the southwest, and another two within a mile radius to the west. The four records to the south and southeast are from 2006 and 2009, but appear to be located in areas that are now developed. The locations of the two nearby records to the southwest are from 2006, within the footprint of the SR 125 extension. The two records to the west are also from 2006 and 2009; one appears to be on Brown Field airport land, and the other is close to SR 125. No newer records were found in CNDDB, but the Lone Star mitigation conservation area to the northwest of the site has reportedly had success with introduction of breeding burrowing owls in manmade burrows.

2.2 Protocol Survey Transects

Based on the habitat assessment and background research, four burrowing owl breeding season surveys were performed according to the 2012 updated protocol to provide complete coverage of potential BUOW habitat on the site. See Table 1 below for a listing of all survey visits associated with the burrowing owl survey.

Table 1. Burrowing Owl Surveys Conducted on the Sunroad Centrum 250 Site

Date	Time	Temp (°F)	Sky	Wind (MPH)	Survey Type	Personnel
02/24/2015	0955 to 1730	60 to 62	Clear	6-9 to 6-11	BUOW Winter Season Check	C. MacGregor, L. BenVau
02/04/2016	0945 to 1415	61 to 66	Sunny, hazy	0-1 to 0-2	BUOW Habitat Assessment	C. MacGregor
04/01/2016	0705 to 1000	53 to 63	Partly cloudy to sunny, hazy	1-2 to 0-2	BUOW 1a	C. MacGregor, L. BenVau
04/05/2016	0700 to 1010	57 to 64	Hazy with light clouds	0 to 1-2	BUOW 1b	C. MacGregor, L. BenVau
04/28/2016	1735 to 1955	66 to 57	Sunny with clouds to partly cloudy	5-8 to 2-5	BUOW 2a	C. MacGregor, L. BenVau
04/29/2016	1730 to 1955	64 to 57	Light clouds to partly cloudy	3.5-6 to 2-5	BUOW 2b	C. MacGregor, L. BenVau
05/03/2016	1800 to 1910	71 to 64	Clear except for light clouds	5-10 to 1-3	BUOW 2c	C. MacGregor
05/26/2016	0600 to 1005	57 to 67	Overcast	0-3 to 2-6	BUOW 3a	C. MacGregor, L. BenVau
05/27/2016	0600 to 0950	60.5 to 64	Overcast	3-5 to 2.5-7	BUOW 3b	C. MacGregor, L. BenVau
06/21/2016	0615 to 1015	69 to 77	Partly cloudy to overcast	0 to 3-7	BUOW 4a	C. MacGregor, L. BenVau
06/22/2016	0625 to 1035	68 to 84	Sunny with light clouds	0-2 to 0-3	BUOW 4b	C. MacGregor, L. BenVau

It should be noted that REC and REC's subconsultants have surveyed the site over 30 other times since REC began work on the project in 1998, and no sign of burrowing owl was detected onsite prior to 2015-2016.

All of the 2016 breeding season surveys were conducted within the California burrowing owl breeding season of February 1 through August 31 (Appendix B in CDFG 2012). The first survey was conducted during the early period of February 15 and April 15, and the second, third and fourth surveys were conducted during the peak breeding season of April 15 through July 15, with one survey after June 15, as recommended in the 2012 protocol. Each of the four surveys required two days of field work to cover all potential BUOW habitat. The two days for each of the four surveys are noted with an "a" and a "b" after the number of the survey in Table 1, above. The second survey was conducted during evenings and required a third day, marked with a "c".

Acreage excluded from survey transects consisted of areas supporting continuous cover of tall Russian-thistle. However, all excluded areas were reviewed on Google Earth satellite images from earlier years, as the height and density vary from year to year. For instance, many areas that were mapped as excludable based on 2015 conditions of dense and tall Russian-thistle had to be added to the 2016 survey area because the Russian-thistle did not grow as much this year.

3.0 RESULTS

3.1 Burrows and Sign

REC biologists found 39 inactive BUOW burrows onsite in 2016. Of these, 24 are within the proposed Biological Open Space (BOS) and 15 within the proposed project footprint. The locations of all burrows are shown in Figure 4. Photographs of the burrows and site are provided in **Appendix C**. Satellite imagery in Google Earth was used to help locate all burrows, including those that were highly degraded by the time of the survey.

Burrows within the project footprint were located in previously farmed land in the field west of Harvest Road (photo 1), and in the southern portion of the eastern field (photos 2 and 3). In the eastern field, most were adjacent to Harvest Road and just north of Otay Mesa Road. Based on review of Google Earth satellite imagery, the burrows appeared between 2012 and 2014. Most burrows in the western field and in the southern portion of the eastern field appeared in the satellite images in 2012, with some appearing in the 2014 image (the 2013 image was not useful because it was obscured by cloud cover). The burrows within the northern BOS were located on the hillside above Johnson Canyon (photos 4 and 5). The burrows on the northern hillside appeared on the images during the same time period, but were most likely created slightly later because they were less eroded and collapsed than the southern burrows.

Burrows in the southern and western fields had no white-wash, pellets, feathers, or small mammal bones. They were recognizable only by the remains of the distinctive burrow aprons and holes. All of these burrows were weathered, holes were filled with eroded soil, and most aprons were colonized by plants such as Russian-thistle (see **Appendix C** photos 7 and 8). Of the burrows on the northern hillside, some were also highly degraded (photo 9) but some were in better condition, with unfilled holes and more substantial apron structure (photo 10). At 14 of the burrows, the holes were filled with weather-eroded soil. Four aprons had at least one small mammal bone. Three had a very small amount of white-wash, only one of which also had bones. The burrow with both a spot of whitewash and bones also had an intact hole and remains of pellets (photos 11 and 12). However, that burrow was colonized by western honey bees (*Apis mellifera*) and the entrance was partially blocked by a western black widow (*Latrodectus hesperus*) web, and it did not appear to have been recently used by owls. All other unfilled burrow openings were also covered by spider webs and/or light debris, and showed no evidence of recent owl use.

The northern hillside burrows were located within an area of grassland characterized by shorter vegetation height and fewer invasive plants than most of the non-native grassland on the mesa. The grassland here was more characteristic of typical non-native grassland with relatively low cover of Russian-thistle. Three of the hillside burrows were located in native grassland strongly dominated by needlegrass, with much lower invasive species cover than other grassland onsite. It appears that the potential habitat on the northern hillside, where most burrows were located, is the best burrowing owl habitat onsite.

Ground squirrels and their burrows were most common in the western field and its surrounding berms, the southeastern corner of the site, and the berm on the western side of the biological open space area. No ground squirrel burrows were observed in the central mima-mound area (which is very cobbly). Very few were observed in the main southern grassland or northern hillside. Soil berms occur along the edges of, and within the site, but none of the detected burrows was located in a berm. Potential surrogate burrows such as a culvert, rock piles, and debris piles showed no sign of burrowing owl use.

3.2 Potential Perches

Perches onsite include 6-ft posts, shrubs, large rocks, dead trees, wooden stakes, and an entry sign/trellis. No burrowing owl sign was found under or around any of these potential perches. One owl pellet and few shed feathers were found under a post, but they were identified as barn owl (*Tyto alba*) sign based on the size of the pellet and the coloration of the feathers.

3.3 Potential Prey

Botta's pocket gopher (*Thomomys bottae*) activity and small rodent (mouse) holes were observed throughout the fields. Pocket gopher activity was common in the cobbly mima-mound area, but little evidence of other fossorial mammal activity was observed in that area. Several potential prey small bird species and many invertebrate prey species were observed throughout the site. Few suitable reptile or amphibian prey were observed.

3.4 Summary of Results

In summary, REC's 2016 protocol surveys documented 39 inactive burrowing owl burrows, most of which appeared to have been created between 2012 and 2014. No burrows showed signs of recent activity (i.e. 2015 or 2016). Of these, 24 were within the proposed northern biological open space and 15 were within the proposed Project footprint. Many burrows were highly weathered and degraded; the burrows in the best condition were on the northern hillside above Johnson Canyon. The large number of burrows was surprising, considering that burrowing owls had not been detected onsite during surveys before 2015.

4.0 CONCLUSIONS

The Project site contains suitable grassland habitat of varying quality, nearby extensive open space, prey, perches, and 39 inactive burrowing owl burrows. It is unclear why the burrows appeared in 2012-2014 but are no longer in use. Possible factors include use of recorded Cooper's hawk (*Accipiter cooperi*) calls at the power plant adjacent to the southern site boundary, the presence of SR 125 a short distance to the west, and ongoing freeway construction to the south.

5.0 REFERENCES

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken (eds.). 2012. *The Jepson Manual: Vascular Plants of California* (2nd edition). Berkeley and Los Angeles: University of California Press.

Bowman, R. H. 1973. Soil Survey, San Diego Area, California. United States Department of Agriculture. 104 pp. + appendices.

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April 1993.

CDFG (California Department of Fish and Game). 1993. Staff Report on Burrowing Owl Mitigation. September 1995.

CDFG. 2012. Staff Report on Burrowing Owl Mitigation. March 7, 2012.

CNDDB (California Natural Diversity Data Base). 2016. RareFind5 searchable database, California Department of Fish and Wildlife. Accessed April 2016.

County of San Diego. 2010. Report Format and Content Requirements, Biological Resources (4th rev.). Land Use and Environment Group, Department of Planning and Land Use. September 15, 2010.

ISUDE (Iowa State University Department of Entomology). 2015. BugGuide. http://bugguide.net/

ITIS. 2015. Integrated Taxonomic Information System (ITIS). http://itis.gov

Jepson Flora Project (eds.). 2016. *Jepson eFlora*. http://ucjeps.berkeley.edu/eflora/

Lepage, D. 2015. Avibase, the World Bird Database. http://avibase.bsc-eoc.org/

Nafis, G. 2015. A Guide to the Amphibians and Reptiles of California. Available at: http://www.californiaherps.com/

Warren, A.D., K.J. Davis, E.M. Stangeland, J.P. Pelham, and N.V. Grishin. 2015. Illustrated Lists of American Butterflies. http://www.butterfliesofamerica.com/

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California" prepared by Robert F. Holland, Ph.D., October 1986. San Diego, CA: County of San Diego. March 2008.

Rebman, J.P. and M.G. Simpson. 2014. *Checklist of the Vascular Plants of San Diego County* (5th edition). San Diego, CA: San Diego Natural History Museum.

REC (REC Consultants, Inc.). 2000. Sunroad Centrum Biological Technical. Prepared for Sunroad Enterprises, June 2000.

REC. 2016. Biological Technical Report for the Sunroad Centrum 250 Project, TM 5538 (Draft). Prepared for Sunroad Enterprises. June 2016 Draft.

SDNHM (San Diego Natural History Museum). 2002. Butterflies of San Diego County. http://www.sdnhm.org/archive/research/entomology/sdbutterflies.html. Accessed July 2013.

SDNHM. 2005. Spiders of San Diego County. http://www.sdnhm.org/archive/research/entomology/sdspider.html. Accessed July 2013.

SDNHM. (Undated.) Amphibians of San Diego County. http://www.sdnhm.org/archive/research/herpetology/sdamphib.html. Accessed July 2013.

SDNHM. (Undated) Reptiles of San Diego County. http://www.sdnhm.org/archive/research/herpetology/sdreptil.html. Accessed July 2013.

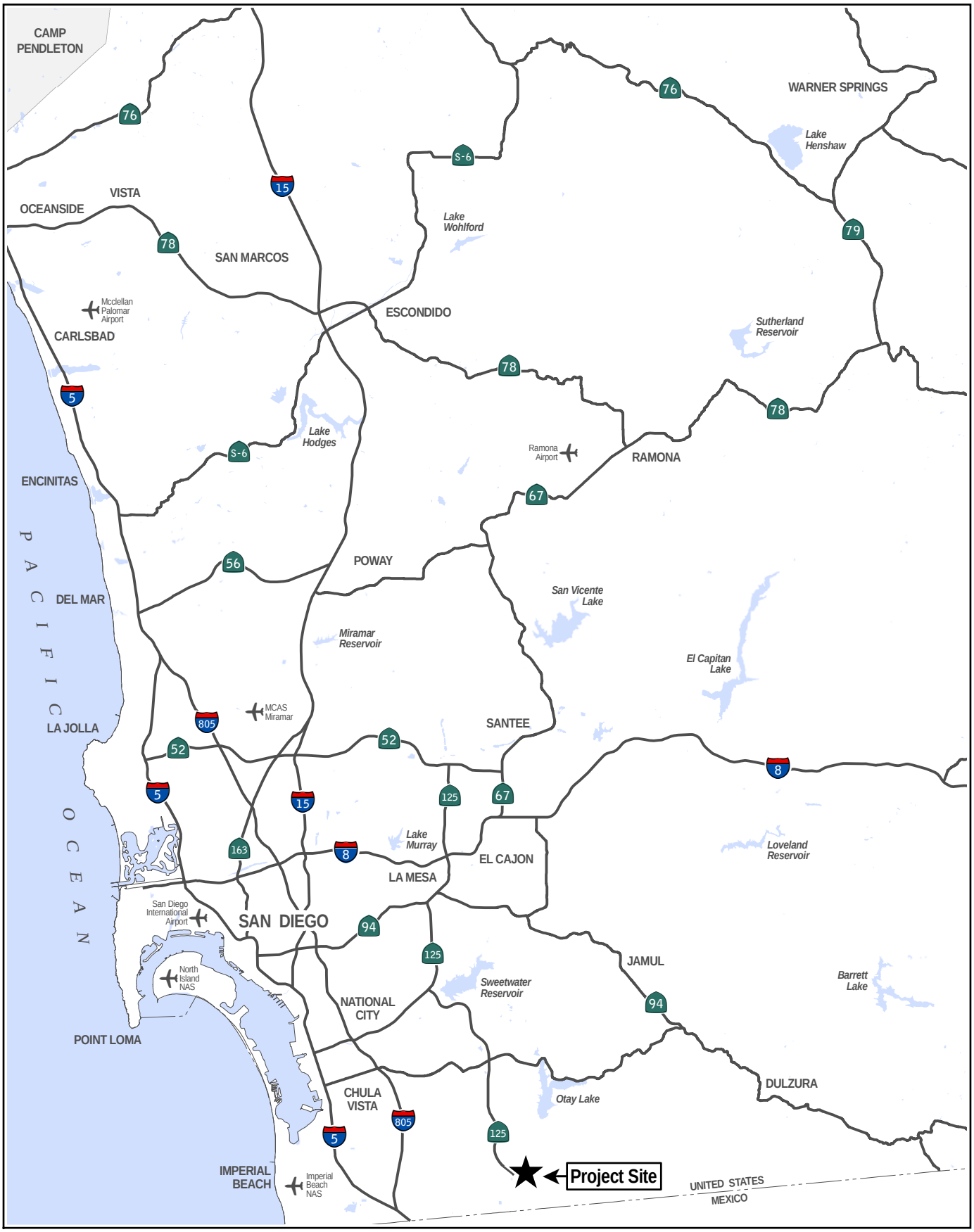
SDNHM. (Undated) Checklist of Birds Recorded in San Diego County, California. http://www.sdnhm.org/archive/research/birds/sdbirds.html. Accessed July 2013.

SDNHM. (Undated) Checklist of Mammal Species Recorded in San Diego County. http://www.sdnhm.org/archive/research/birds/sdmamm.html. Accessed July 2013.

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

Wilson, D.E. and D.M. Reeder (eds.). 2005. *Mammal Species of the World. A Taxonomic and Geographic Reference* (3rd ed.). Baltimore, MD: Johns Hopkins University Press.

USDA (United Stated Department of Agriculture). 2016. Natural Resource Conservation Service Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/app/



Regional Location

REC Consultants, Inc.

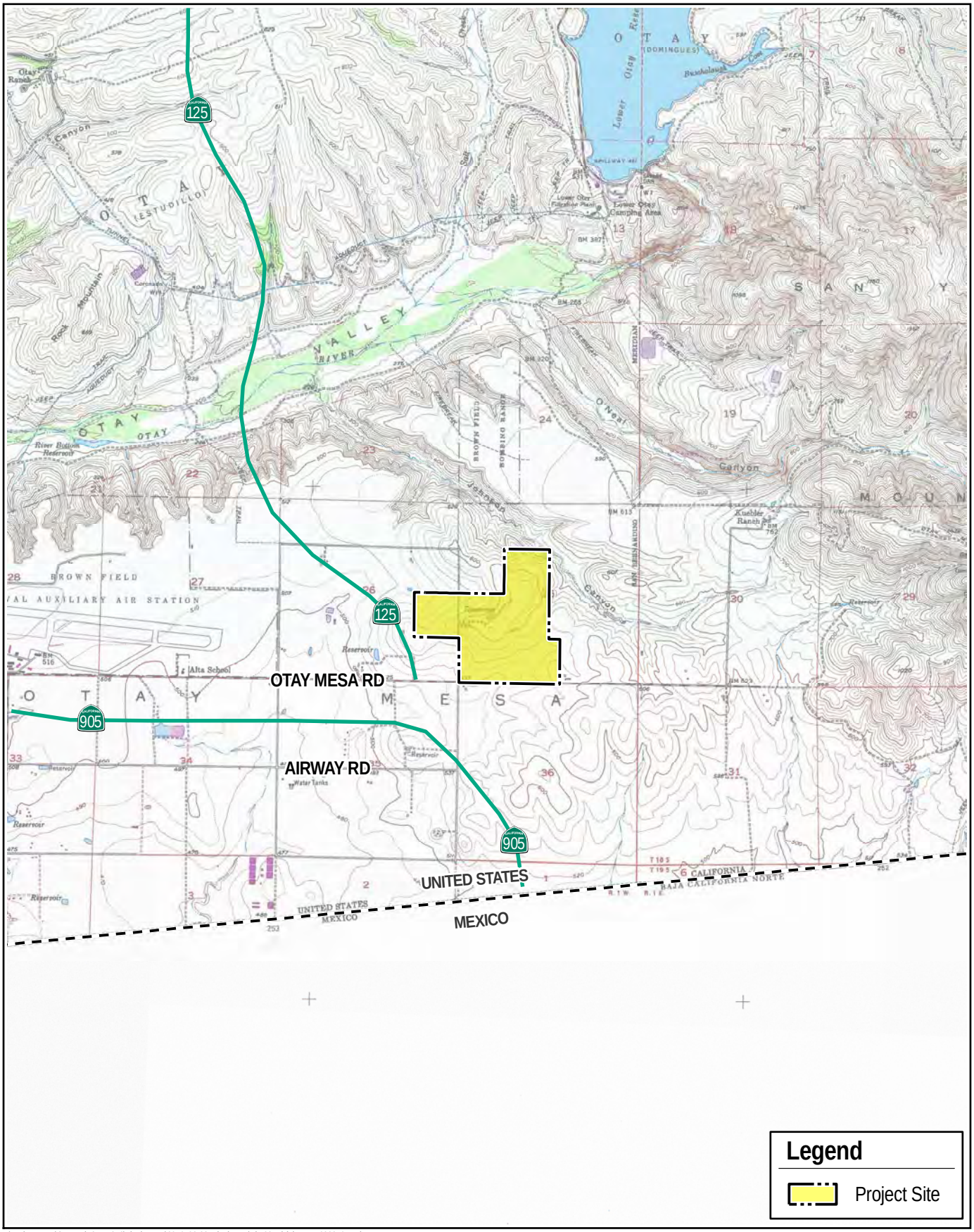
SUNROAD CENTRUM 250

0 3 6 Miles

Source: SANGIS GIS Data, 2011.

FIGURE 1

June 2016



T:\Project_Data\Sunroad_Otay_250\Final_Maps\2016_02-22_BioFigures\Fig-02_VicinityMap_022216.mxd

R·E·C Consultants, Inc.

Vicinity Map

SUNROAD CENTRUM 250

0 2,000 4,000 Feet

Source: USGS DRG Mosaic

FIGURE 2

June 2016

T:\Project_Data\Sunroad_Otay_250\Final_Maps\2016_02-22_BioFigures\Fig-03_Aerial_022216.mxd

R·E·C Consultants, Inc.

Aerial Map

SUNROAD CENTRUM 250

0 1,000 2,000 Feet

Source: Esri Basemap

FIGURE 3

June 2016

Legend

Project Boundary
Impacts Boundary
500-ft Offsite Mapping Limit

Vegetation/Land Cover

DEV Developed
DIS Disturbed
DW Disturbed Wetland
NG Native Grassland
NNG Non-Native Grassland (including abandoned agricultural pond)
NNR Non-Native Riparian
VP Vernal Pool

Special-Status Plants and Years Observed

Cs [year] — *Convolvulus simulans* area, small-flower bindweed
Dv [year] — *Dudleya variegata* area, variegated dudleya
Ea [year] — *Eryngium aristulatum var. parishii*, San Diego button-celery
Fv [year] — *Ferocactus viridescens* area, coast barrel cactus
Nf [year] — *Navarretia fossalis*, spreading navarretia

Non-Point Special-Status Plants Observations:
Bahiopsis laciniata 1999 (CSS/NNG mima mounds)
San Diego sunflower

Special-Status Animals and Years Observed

★ — *Athene cunicularia* inactive burrow, 2016, burrowing owl
Bs(a) [year] — *Branchinecta sandiegensis* (adult), San Diego fairy shrimp
Bs(c) [year] — *Branchinecta sandiegensis* (cyst), San Diego fairy shrimp
Cc [year] — *Circus cyaneus*, northern harrier
Eaa [year] — *Eremophila alpestris actia*, California horned lark
Ll [year] — *Lanius ludovicianus*, loggerhead shrike
Lcb [year] — *Lepus californicus bennettii*, San Diego black-tailed jackrabbit

Non-Point Special-Status Animals Observations:
Diadophis punctatus similis, 1998-99, San Diego ring-necked snake
Accipiter cooperii, 2015 (NNG flyover), Cooper's hawk
Aimophila ruficeps canescens, 1999, Southern California rufous-crowned sparrow
Buteo regalis, 1998-99, ferruginous hawk
Cathartes aura, 2015 (NNG flyover), turkey vulture
Circus cyaneus, 1999, 2015 (NNG flyover), northern harrier
Elanus leucurus, 1998-99, white-tailed kite
Tyto alba, 1998-99, 2016, barn owl

LONESTAR RD
OTAY MESA RD
CALIFORNIA 125
Google earth

Cs Area 2015
Lcb 2016
Eaa 2016 (2)
Lcb 2016
Cc 2016 (2)
Ea and Bs(c) 1998, Ea 1998, 2005
Dv Area 2006
Ea and Bs(c) 1998
Nf 1991
Fv area 1998
Bs(c) 1998
Bs(c) 1998
Dv Area 1998
Dv 2001
Eaa 2015 (2)
Ea and Bs(c) 1998, Ea 2005
Ea and Bs(c) 1998, Ea 2005
Dv Area 1998
Bs(c) 1998
Bs(c) 1999
Lcb 2015
Ea 1998, 2001
Ea 2001, 2004
Bs(a) 1999
Ll 2015
Dv Area 1998
Abandoned Agriculture Pond
Vernal Pool Watershed
Eaa 2015 (3)
Eaa 2016 (5)
Fv area 1998
Lcb 2016
Eaa 2016 (20)
Lcb 2015
Cs 2016 (1)

DIS
NNG
NNR
NG
DEV
DW
VP

T:\Project_Data\Sunroad_Otay_250\Final_Maps\Sunroad_BTR_June2016\Fig-04_BiologicalResourcesOwl_062816.mxd

R·E·C Consultants, Inc.

Biological Resources

SUNROAD CENTRUM 250

0 300 600 Feet

Aerial Source: Google March 2016

FIGURE 4

June 2016

Legend

- Project Boundary
- 100-ft Offsite Mapping Limit
- Impacts Boundary
- Biological Open Space

Vegetation/Land Cover

- DEV Developed
- DIS Disturbed
- DW Disturbed Wetland
- NG Native Grassland
- NNG Non-Native Grassland (including abandoned agricultural pond)
- NNR Non-Native Riparian
- VP Vernal Pool

Special-Status Plants and Years Observed

- Cs [year] — *Convolvulus simulans* area, small-flower bindweed
- Dv [year] — *Dudleya variegata* area, variegated dudleya
- Ea [year] — *Eryngium aristulatum var. parishii*, San Diego button-celery
- Fv [year] — *Ferocactus viridescens* area, coast barrel cactus
- Nf [year] — *Navarretia fossalis*, spreading navarretia

Non-Point Special-Status Plants Observations:
Bahiopsis laciniata 1999 (CSS/NNG mima mounds)
San Diego sunflower

Special-Status Animals and Years Observed

- ★ — *Athene cunicularia* inactive burrow, 2016, burrowing owl
- Bs(a) [year] — *Branchinecta sandiegensis* (adult), San Diego fairy shrimp
- Bs(c) [year] — *Branchinecta sandiegensis* (cyst), San Diego fairy shrimp
- Cc [year] — *Circus cyaneus*, northern harrier
- Eaa [year] — *Eremophila alpestris actia*, California horned lark
- Ll [year] — *Lanius ludovicianus*, loggerhead shrike
- Lcb [year] — *Lepus californicus bennettii*, San Diego black-tailed jackrabbit

Non-Point Special-Status Animals Observations:
Diadophis punctatus similis, 1998-99
San Diego ring-necked snake
Accipiter cooperii, 2015 (NNG flyover)
Cooper's hawk
Aimophila ruficeps canescens, 1999
Southern California rufous-crowned sparrow
Buteo regalis, 1998-99
ferruginous hawk
Cathartes aura, 2015 (NNG flyover)
turkey vulture
Circus cyaneus, 1999, 2015 (NNG flyover)
northern harrier
Elanus leucurus, 1998-99
white-tailed kite
Tyto alba, 1998-99, 2016
barn owl

T:\Project_Data\Sunroad_Otay_250\Final_Maps\Sunroad_BTR_June2016\Fig-04_ImpactsBUOW_062816.mxd

R·E·C Consultants, Inc.

Project Impacts

SUNROAD CENTRUM 250

0 260 520 Feet

Aerial Source: Google March 2016

FIGURE 5

June 2016

APPENDIX A PLANTS OBSERVED ON THE SUNROAD CENTRUM 250 SITE			
Species Name	**Common Name**	**Family**	**Habitat**
*Acacia cyclops**	Cyclops acacia	Fabaceae	NNG
Allium haematochiton	red-skin onion	Alliaceae	NG, NNG
Artemisia californica	coastal sagebrush	Asteraceae	NNG
*Arundo donax**	giant reed	Poaceae	NNG
*Atriplex semibaccata**	Australian saltbush	Chenopodiaceae	NNG
*Avena barbata**	slender wild oat	Poaceae	NNG, VP
*Avena fatua**	wild oat	Poaceae	NNG, VP
*Avena sp.**	oats	Poaceae	NNG, NG, VP
Baccharis salicifolia subsp. salicifolia	mule-fat, seep-willow	Asteraceae	DW, NNG
Baccharis sarothroides	broom baccharis	Asteraceae	NNG
Bahiopsis laciniata!	San Diego sunflower	Asteraceae	CSS/NNG (1999)
Bloomeria crocea var. crocea	common goldenstar	Themidaceae	NNG
*Brassica nigra**	black mustard	Brassicaceae	NNG, NG
*Bromus diandrus**	ripgut grass	Poaceae	NNG
*Bromus madritensis subsp. rubens**	red brome, foxtail chess	Poaceae	NNG
Calochortus splendens	splendid mariposa lily	Liliaceae	NNG
Calystegia macrostegia	morning-glory	Convolvulaceae	NNG, NG
*Centaurea diluta**	pale-flower centaurea	Asteraceae	NNG
*Centaurea melitensis**	tocalote	Asteraceae	NNG
*Chenopodium murale**	nettle-leaf goosefoot	Chenopodiaceae	NNG
Chlorogalum parviflorum	small flower soap plant/amole	Agavaceae	VP, NNG
*Convolvulus arvensis**	field bindweed	Convolvulaceae	NNG
Convolvulus simulans!	small-flower bindweed	Convolvulaceae	NNG
Corethrogyne filaginifolia	sand-aster	Asteraceae	NNG
Croton setiger	doveweed	Euphorbiaceae	NNG
Cyperus sp.	sedge	Cyperaceae	NNG
Deinandra fasciculata	fascicled tarweed	Asteraceae	VP, NNG, DIS
Dichelostemma capitatum	blue dicks	Themidaceae	NNG, VP
Distichlis spicata	saltgrass	Poaceae	NNR
*Dittrichia graveolens**	stinkwort	Asteraceae	NNR
Dudleya variegata!	variegated dudleya	Crassulaceae	NNG
Eleocharis sp.	spike-rush	Cyperaceae	VP
Erigeron canadensis	horseweed	Asteraceae	NNG
*Erigeron sumatrensis**	asthmaweed	Asteraceae	NNG
Eriogonum fasciculatum	California buckwheat	Polygonaceae	VP, NNG
*Erodium botrys**	long-beak filaree/storksbill	Geraniaceae	NNG, VP
*Erodium brachycarpum**	short-beak filaree/storksbill	Geraniaceae	NNG, VP
*Erodium cicutarium**	red-stem filaree/storksbill	Geraniaceae	DIS, NNG
Eryngium aristulatum var. parishii!	San Diego button-celery	Apiaceae	VP
Ferocactus viridescens!	coast barrel cactus	Cactaceae	VP, NNG
*Festuca perennis**	perennial rye grass	Poaceae	DW
*Foeniculum vulgare**	sweet fennel	Apiaceae	NG, NNG
*Glebionis coronaria**	garland daisy, crown daisy	Asteraceae	DW, NNG
Grindelia camporum	rayless gumplant	Asteraceae	NNG, DIS
*Hedypnois rhagadioloides**	Crete hedypnois	Asteraceae	NNG
Helianthus annuus	western sunflower	Asteraceae	NNG
Heliotropium curassavicum var. oculatum	salt heliotrope	Boraginaceae	NNR
*Helminthotheca echioides**	bristly ox-tongue	Asteraceae	NNG
Heteromeles arbutifolia	toyon, Christmas berry	Rosaceae	NNG

Species Name	Common Name	Family	Habitat
Heterotheca grandiflora	telegraph weed	Asteraceae	NNG
*Hirschfeldia incana**	short-pod mustard	Brassicaceae	NNG
*Hordeum murinum subsp. glaucum**	glaucous barley	Poaceae	NNG
Isocoma menziesii var. vernonioides	coastal goldenbush	Asteraceae	NNG
Jepsonia parryi	coast jepsonia	Saxifragaceae	NNG
*Lactuca serriola**	prickly lettuce	Asteraceae	NNG
Laennecia coulteri	Coulter's fleabane	Asteraceae	NNG, NNR
*Lamarckia aurea**	golden-top	Poaceae	NNG
Lasthenia gracilis	common goldfields	Asteraceae	NNG
Lepidium nitidum	shining peppergrass	Brassicaceae	VP
Logfia arizonica	Arizona Filago	Asteraceae	VP, NNG
*Lysimachia arvensis**	scarlet pimpernel	Primulaceae	NNR, NNG, NG
*Malva neglecta**	common mallow	Malvaceae	NNG
*Malva parviflora**	cheeseweed	Malvaceae	NNG
Malvella leprosa	alkali mallow	Malvaceae	NNG
*Marrubium vulgare**	horehound	Lamiaceae	NNG
*Medicago polymorpha**	California burclover	Fabaceae	NNG
*Melilotus indicus**	Indian sweetclover	Fabaceae	NNG
*Melilotus sp.**	sweetclover/sourclover	Fabaceae	NNG
*Mesembryanthemum crystallinum**	crystalline iceplant	Aizoaceae	NNG
Mirabilis laevis var. crassifolia	coastal wishbone plant	Nyctaginaceae	NNG
*Nicotiana glauca**	tree tobacco	Solanaceae	NNG
*Olea europaea**	olive	Oleaceae	NNG
Opuntia sp.	prickly-pear cactus (native)	Cactaceae	NNG, VP
Osmadenia tenella	osmadenia	Asteraceae	NNG
Peritoma arborea var. arborea	bladderpod	Cleomaceae	NNG
*Phalaris minor**	little-seed canary grass	Poaceae	DW, NNG
Plantago erecta	dot-seed plantain	Plantaginaceae	DIS, NNG
Poaceae	unidentified non-native grass	Poaceae	DW, NNG
Pseudognaphalium biolettii	bicolor cudweed	Asteraceae	NNG
Pseudognaphalium californicum	California everlasting	Asteraceae	NNG
Rhus integrifolia	lemonadeberry	Anacardiaceae	NNG
*Rumex crispus**	curly dock	Polygonaceae	NNR
Salix gooddingii	Goodding's black willow	Salicaceae	NNG
Salix laevigata	red willow	Salicaceae	DW
*Salsola sp.**	Russian-thistle	Chenopodiaceae	NNG, VP
*Salsola tragus**	prickly Russian-thistle, tumbleweed	Chenopodiaceae	NNG, VP, DIS
Sidalcea sparsifolia	checker-bloom	Malvaceae	NNG
*Silybum marianum**	milk thistle	Asteraceae	NNR, NNG
*Sinapis arvensis**	charlock	Brassicaceae	NNG
*Sisymbrium irio**	London rocket	Brassicaceae	NNG
Sisyrinchium bellum	blue-eyed-grass	Iridaceae	VP, NNG
*Sonchus asper subsp. asper**	prickly sow-thistle	Asteraceae	NNG
*Sonchus oleraceus**	common sow-thistle	Asteraceae	NNG, NG
Stipa cernua	nodding needle grass	Poaceae	NG, NNG, VP
Stipa pulchra	purple needle grass	Poaceae	NG, NNG, VP
*Tamarix ramosissima**	tamarisk/salt-cedar	Tamaricaceae	NNG, DW, NNR
*Tragopogon porrifolius**	salsify, oyster plant	Asteraceae	NNG
Uropappus lindleyi	silver puffs	Asteraceae	NNG
*Urtica urens**	dwarf nettle	Urticaceae	NNR, NNG
Vicia sp.(*)	vetch	Fabaceae	NNG

Species Name	Common Name	Family	Habitat
*Washingtonia robusta**	Mexican fan palm	Arecaceae	DIS

*Non-native

! State or Federal special-status (State endangered, threatened, or rare, CRPR 1-4; Federal endangered, threatened, or candidate for listing)

DIS = Disturbed Land
DW = Disturbed Wetland
NG = Native Grassland
NNG = Non-Native Grassland
NNR = Non-Native Riparian
VP = Vernal Pool

APPENDIX B BIRDS OBSERVED ON THE SUNROAD CENTRUM 250 PROJECT SITE						
Species Name	**Common Name**	**Habitat**	**Survey 1**	**Survey 2**	**Survey 3**	**Survey 4**
Corvus brachyrhynchos hesperis	American crow	FO	1			1
Falco sparverius sparverius	American kestrel	NNG	1	1	1	
Tyto alba (pratincola)	barn owl	NNG		pellet and feathers		
Sayornis nigricans semiater	black phoebe	NNG	1			
Athene cunicularia (hypugaea)!	burrowing owl	NNG			burrows	
Petrochelidon pyrrhonota tachina	cliff swallow	NNG		2	25-30	5
Corvus corax clarionensis	common raven	FO	2	2	2	2
*Streptopelia decaocto**	Eurasian collared-dove	NNG			2	
*Sturnus vulgaris vulgaris**	European starling	NNG			2	
Haemorhous mexicanus frontalis	house finch	NNG	several	~30	9	10
Eremophila alpestris actia!	California horned lark	NNG	2, flock of ~20	7+	9	several
Icterus cucullatus nelsoni	hooded oriole	NNG			pair	
*Passer domesticus domesticus**	house sparrow	NNG	several			
Zenaida macroura marginella	mourning dove	NNG, FO	1	8	4+	2
Circus cyaneus!	northern harrier	NNG	1			
Mimus polyglottos polyglottos	northern mockingbird	NNG	1			
Buteo jamaicensis	red-tailed hawk	NNG, FO	1	2		
Agelaius phoeniceus	red-winged blackbird	NNG, FO	4	2	6	
Passerculus sandwichensis	savannah sparrow	NNG	several			
Melospiza melodia	song sparrow	NNG	several		4	
Family Emberizidae	sparrow (unidentified)	NNG	several			
Zonotrichia leucophrys	white-crowned sparrow	NNG	small flock			
Tyrannus verticalis	western kingbird	NNG	1		3	
Sturnella neglecta	western meadowlark	NNG	many	10+	~13	5
Setophaga coronata	yellow-rumped warbler	NNG	several			
Larus sp.	larus gull (unidentified)	FO				1
Calypte anna	Anna's hummingbird	NNG				1

* non-native

! State or federal special-status species (State endangered, threatened, endangered candidate, fully protected, watchlist, or CDF sensitive; or federal endangered, threatened, candidate for listing, USFWS Bird of Conservation Concern)

Habitat Abbreviations

FO = Flyover

NNG = Non-native Grassland

APPENDIX C
Sunroad Centrum 250 2016 Burrowing Owl Report

1. Field west of Harvest Road, view toward north.

2. Field east of harvest road and site entry, view toward east.

3. Southern field east of Harvest Road, view toward south-southeast.

4. Non-native grassland on northern hillside, area of most burrows, view toward east.

5. Native grassland on northern hillside, view toward north.

6. Example of area excluded due to tall, dense Russian-thistle.

7. Example of abandoned burrow in western field.

8. Example of abandoned burrow near Harvest road in southern field.

APPENDIX C
Sunroad Centrum 250 2016 Burrowing Owl Report

9. Example of eroded abandoned burrow on northern hillside.

10. Example of abandoned burrow with spot of whitewash, but hole no longer open.

APPENDIX C
Sunroad Centrum 250 2016 Burrowing Owl Report

11. Burrow in best condition but inactive, with whitewash, pellets and bones, on northern hillside.

12. Disintegrating pellets and small mammal bones on apron of the best burrow, northern hillside.

APPENDIX G

Quino Checkerspot Butterfly Reports, 1999, 2001, and 2016

Quino Checkerspot Butterfly Report, 1999

Report of a Directed Survey for the Quino Checkerspot Butterfly over the Sunroad Centrum Property, Otay Mesa San Diego, California

Prepared For:

R•E•C Environmental
2650 Jamacha Road
Suite 147/202
El Cajon CA 92109

Prepared By:

RBRiggan and Associates
11228 Zapata Avenue
San Diego, California 92126
619-233-5454

12 June 1999
RBR Job Number 1730.10C