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## **APPENDIX C**

**SENSITIVE PLANT SURVEY, ZANDER ASSOCIATES, JULY 2016**

July 19, 2016

Jim Coniglio  
Lamphier-Gregory  
1944 Embarcadero  
Oakland, CA 94606

**Plant Survey Results  
Fairview Meadow Project  
Alameda County, California**

Dear Jim:

At your direction, Zander Associates has completed a plant survey of the two parcels that comprise the Fairview Meadows Project Site; the 5.17-acre eastern parcel and the 4.61-acre western parcel. Both parcels front along D Street in the Fairview area of Alameda County. The purpose of the survey was to determine presence/absence of sensitive plant species that have been identified as potentially occurring on the site. This survey targeted four species; Loma Prieta hoita (*Hoita strobilina*), Santa Cruz tarplant (*Holocarpha macradenia*), woodland woollythreads (*Monolopia gracilens*), and Oregon polemonium (*Polemonium carneum*). These species typically bloom and are identifiable later in the season (May to October). Following is a description of the methods and results of our survey.

**Methods**

Zander Associates Principal Biologist, Leslie Zander, conducted a survey of the project site on July 14, 2016. The survey was performed following protocol developed by the California Department of Fish and Wildlife (2009); it was appropriately timed for the four targeted species, it was floristic in nature and conducted using systematic field techniques. Each parcel was systematically traversed and all plant species encountered were identified and recorded. A list of the species observed on each parcel during the July 14, 2016 survey and during a previous site reconnaissance on January 12, 2016 is provided on Table 1.

**Results**

None of the four sensitive plant species targeted in this survey was found on the project site. Both parcels are highly disturbed and the flora is dominated by non-native species (shown in red on Table 1). Horses were grazing in the eastern pasture at the time of the survey and the grassland around the existing abandoned buildings had been mowed, probably for fire abatement purposes. Grazing was also evident in the western pasture although no horses were present and the grass was not cropped close. Several deer were grazing in the western parcel when we

started the survey. Based on our assessment of the habitat conditions onsite, our knowledge of the habitat requirements for the four targeted species, and our survey results, we are confident that Loma Prieta hoita, Santa Cruz tarplant, woodland woollythreads, and Oregon polemonium are not present on the project site.

Should you have any questions regarding our survey results, please don't hesitate to call me.

Sincerely

A handwritten signature in blue ink that reads "Leslie Zander". The signature is written in a cursive, flowing style.

Leslie Zander  
Principal Biologist

Enclosure: Table 1: Plant Species Observed on the Fairview Meadows Project Site; 1/12/16 and 7/14/16

**Table 1: Plant Species Observed on the Fairview Meadows Project Site; 1/12/16 and 7/14/16:**

Scientific Name	Common Name	Western parcel	Eastern parcel
<i>Aira caryophylla</i>	silver hairgrass	x	
<i>Avena barbata</i>	slender wild oats	x	x
<i>Baccharis pilularis</i>	Coyote brush	x	x
<i>Brassica nigra</i>	black mustard	x	x
<i>Bromus diandrus</i>	ripgut brome	x	x
<i>Bromus hordeaceus</i>	soft chess	x	
<i>Calocedrus decurrens</i> **	incense cedar		x
<i>Carduus pycnocephalus</i>	Italian thistle	x	x
<i>Cedrus deodara</i>	deodara cedar	x	
<i>Chenopodium rubrum</i>	red goosefoot		x
<i>Cichorium intybus</i>	chicory	x	x
<i>Cirsium vulgare</i>	bull thistle	x	x
<i>Conium maculatum</i>	poison hemlock		x
<i>Convolvulus arvensis</i>	field bindweed	x	x
<i>Cyperus eragrostis</i>	tall flatsedge	x	
<i>Digitaria ciliaris</i>	crab grass	x	
<i>Dittrichia graveolens</i>	stinkwort		
<i>Ehrharta erecta</i>	panic veldtgrass	x	
<i>Erodium cicutarium</i>	red-stem filaree	x	x
<i>Eschscholzia californica</i>	California poppy	x	x
<i>Eucalyptus sp</i>	eucalyptus	x	x
<i>Frangula californica</i>	California coffeeberry	x	x
<i>Hedera canariensis</i>	canary ivy		x
<i>Helminthotheca echioides</i>	bristly ox-tongue	x	
<i>Hesperocyparis sp</i>	cypress		x
<i>Hirschfeldia incana</i>	short-podded mustard	x	x
<i>Hordeum marinum</i>	seaside barley	x	x
<i>Hordeum murinum</i>	foxtail barley	x	
<i>Hypochaeris glabra</i>	smooth cat's ears	x	x
<i>Juglans nigra</i>	black walnut	x	
<i>Juglans regia</i>	English walnut	x	
<i>Juniperus sp</i>	ornamental juniper		x
<i>Lactuca seriola</i>	prickly lettuce	x	
<i>Lolium perenne</i>	Italian ryegrass	x	
<i>Malva neglecta</i>	dwarf mallow		x
<i>Malva parviflora</i>	cheeseweed	x	x
<i>Marrubium vulgare</i>	horehound	x	x
<i>Morus sp.</i>	fruiting mulberry	x	

Scientific Name	Common Name	Western parcel	Eastern parcel
<i>Myoporum laetum</i>	lollipop tree	x	
<i>Nerium oleander</i>	oleander		x
<i>Nicotiana hybrid</i>	ornamental tobacco plant		x
<i>Oxalis pes-caprae</i>	sour grass	x	x
<i>Phleum pratense</i>	common timothy		x
<i>Phyla nodiflora</i>	common lippia		x
<i>Plantago lanceolata</i>	English plantain	x	
<i>Prunus (plum)</i>	plum tree	x	
<i>Pyracantha sp</i>	pyracantha		x
<i>Quercus agrifolia</i>	coast live oak	x	x
<i>Raphanus sativus</i>	wild radish	x	x
<i>Robinia psuedoacacia</i>	black locust	x	
<i>Rubus armeniicus</i>	Himalayan blackberry	x	x
<i>Rumex acetosella</i>	field sorrel	x	
<i>Rumex pulcher</i>	fiddle dock	x	x
<i>Sambucus nigra</i>	elderberry		x
<i>Schinus molle</i>	peppertree		x
<i>Sequoia sempervirens**</i>	coast redwood	x	
<i>Spergularia rubra</i>	red sandspurry	x	x
<i>Stipa pulchra</i>	purple needlegrass	x	
<i>Umbellularia californica</i>	California bay	x	
<i>Vicia sp</i>	vetch	x	

Black type = native

\*\* = native species, but probably planted onsite

Red type = non-native



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## **APPENDIX D**

**FIELD SURVEY AND ANALYSIS OF THE HABITAT VALUE AND POTENTIAL FOR  
PRESENCE OF ALAMEDA WHIPSNAKE, BIOMAAS. INC., OCTOBER 2016**



# Alameda Striped Racer Habitat Assessment

FOR

D Street Project, Hayward,  
Alameda County, California



*Prepared by:*



# BioMaAS

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**LAMPHIER-GREGORY**  
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94606

**November 14, 2016**



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## APPENDICES

APPENDIX A – Photographs

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## INTRODUCTION

At the request of Lamphier-Gregory, BioMaAS, Inc. conducted an assessment of habitat for Alameda striped racer (ASR; *Coluber lateralis euryxanthus*; =Alameda whipsnake; *Masticophis lateralis euryxanthus*) for a proposed development (Project) located along D Street in Hayward, Alameda County, California (Figures 1). The proposed Project consists of two tracts of housing to the east and west of the Bassard Convalescent Home site (Figure 2). Tract 8296 (1.9 hectares) consists of 16 lots and is located to the west of the convalescent home (Figure 3). Tract 8297 (2.1 hectares) consists of 15 lots and is located to the east of the convalescent home (Figure 2). The term Project Area refers to both tracts.

This report summarizes the results of the field survey and provides an analysis of the habitat value and potential for presence for ASR. In addition, this report discusses regulatory strategy and provides recommendations for avoidance and measures to reduce impacts to ASR.

## REGULATORY BACKGROUND

Special-status animal species include those listed as Endangered, Threatened, Rare, or as Candidates for listing by the United States Fish and Wildlife Service (USFWS, 2016) and/or California Department of Fish and Wildlife (CDFW, 2016). The California Department of Fish and Wildlife (CDFW) is the responsible agency for protecting State listed Species of Special Concern. Habitat for these species is not protected therefore no mitigation is required for projects that affect habitat; however the animal itself is protected. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act (CESA) allows for take incidental to otherwise lawful activity through section 2081(b) of the Fish and Game Code. For those state-listed species that are also listed under the federal Endangered Species Act, CESA allows for consistency determinations with federal incidental take statements under section 2080.1 of the Fish and Game Code.

Per the United States Fish and Wildlife Service (USFWS) - the Endangered Species Act of 1973, as amended, is Federal legislation that is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and animals. The law is administered by Interior Department's FWS and Commerce Department's National Oceanic and Atmospheric Administration (NOAA) Fisheries, depending on the species. Some relevant sections are:

- *Section 4.* Part of the Endangered Species Act that addresses the listing and recovery of species and designation of critical habitat.
- *Section 6.* Part of the Endangered Species Act that focuses on cooperation with the States and that authorizes USFWS and NOAA Fisheries to provide financial assistance to States that have entered into cooperative agreements supporting the conservation of endangered and threatened species.
- *Section 7.* Part of the Endangered Species Act that requires all Federal agencies, in





- Project Site
- Parcel

**Figure 1: General Location of the Project Area**

SOURCE: BioMaAs 2016, CBG 2016,  
ESRI Shaded Relief/Aerial Basemap 2016

D Street Development Project - Tracts 8296/8297





Path: F:\OnoDrive - Watson\_Geographic\Project\BioMaAs\20161020 - D\_Street\mxd\Figure2\_AerialViewOfTheProjectArea.mxd

**Figure 2: Aerial View of the Project Area**

D Street Development Project - Tracts 8296/8297

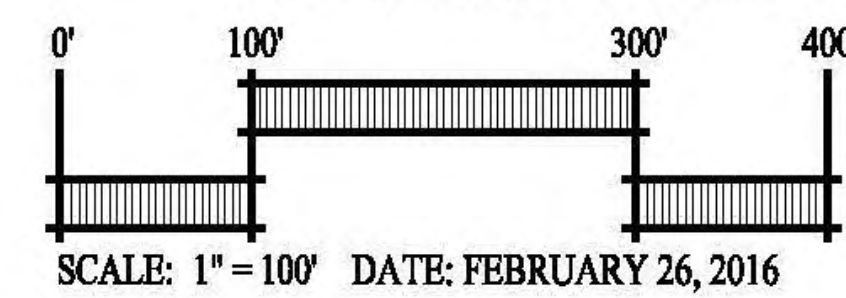
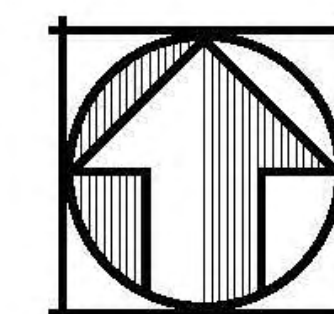
SOURCE: BioMaAs 2016, CBG 2016, City of Hayard 2016.  
TerraServer (imagery captured - 2016-06-15) 2016





# OVERALL SITEPLAN

CITY OF HAYWARD ALAMEDA COUNTY CALIFORNIA



	<b>Carlson, Barbee &amp; Gibson, Inc.</b> CIVIL ENGINEERS • SURVEYORS • PLANNERS
	<small>2633 CAMINO RAMON, SUITE 350          SAN RAMON, CALIFORNIA 94583          (925) 866-0322          www.cbang.com</small>



- consultation with USFWS or NOAA Fisheries, to use their authorities to further the purpose of the ESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat.
- *Section 9.* Part of the Endangered Species Act that defines prohibited actions, including the import and export, take, illegally taken possession of illegally taken species, transport, or sale of endangered or threatened species.
- *Section 10.* Part of the Endangered Species Act that lays out the guidelines under which a permit may be issued to authorize prohibited activities, such as take of endangered or threatened species. Section 10(a)(1)(A). Portion of section 10 that allows for permits for the taking of threatened or endangered species for scientific purposes or for purposes of enhancement of propagation or survival. Section 10(a)(1)(B). Portion of section 10 that allows for permits for incidental taking of threatened or endangered species.

The U.S. Army Corps of Engineers (Corps) is the agency typically involved in the Section 7 process detailed above. It exerts jurisdiction over “waters of the U.S.,” including, but not limited to, all waters which are subject to the ebb and flow of tide, wetlands, lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, natural ponds, and tributaries of the above features.

The extent of waters of the U.S. is generally defined as that portion which falls within the limits of “ordinary high water.” Field indicators of ordinary high water include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris. Typically, the width of waters corresponds to the two-year flood event.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes and similar areas, are defined by the Corps as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 [b]; 40 CFR 230.3 [t]). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetlands hydrology as determined by field investigation) must be present for a site to be classified as a wetland by the Corps (Environmental Laboratory, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008).

The USFWS defines Critical Habitat as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. When designating Critical Habitat, the Service looks at the Primary Constituent Elements<sup>1</sup> (PCEs) for each species.

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<sup>1</sup> A physical or biological feature essential to the conservation of a species for which its designated or proposed critical habitat is based on, such as space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the species historic geographic and ecological distribution.

The California Fish and Game Commission listed the ASR as a threatened species under the California Endangered Species Act on June 27, 1971. The Service listed the species as threatened on December 5, 1997. Critical habitat for the Alameda striped racer was first proposed on March 8, 2000 and a final determination for Critical Habitat was issued on October 2, 2006. A draft recovery plan was prepared in 2002 and a 5-year review was completed in 2011.

## **Racer Ecology**

The ASR is typically associated with scrub habitat - northern coastal sage scrub and coastal sage. Occupied areas usually support a prey base of at least two lizard species, especially the western fence lizard (*Sceloporus occidentalis*) (Stebbins 1985), and whipsnake populations thrive when lizards are abundant (McGinnis 1992 in USFWS 2002). Rock outcrops are particularly important foraging habitat for the Alameda whipsnake because they support many of the species' prey (USFWS 2000).

The following is an excerpt from the USFWS Species Account for ASR dated March 21, 2005:

“Recent telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, they venture up to 500 feet into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland.

Telemetry data indicate that whipsnakes remain in grasslands for periods ranging from a few hours to several weeks at a time. Grassland habitats are used by male whipsnakes most extensively during the mating season in spring. Female whipsnakes use grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites.

The only evidence of Alameda whipsnake egg-laying is within a grassland community adjacent to a chaparral community. This egg-laying occurred within a few feet of scrub on ungrazed grassland interspersed with lots of scattered shrubs. At two sites, gravid females have been found in scrub.

Core areas (areas of concentrated use) of the Alameda whipsnake most commonly occur on east, south, southeast, and southwest facing slopes. However, recent information indicates that whipsnakes do make use of north facing slopes in more open stands of scrub habitat.”

ASR trapping data has shown that the maximum distance between Alameda whipsnake observations and the nearest scrub is much larger, up to 4.5 mi (7.3 km), than either the home range diameter or average movements, suggesting more extensive use of grassland for either foraging or corridor movement (Swaim 2000, p. 5; Swaim 2003, Table 1; Swaim 2005b, p. 1; Alvarez 2005, p. 24).

Male home ranges varied from 1.9 to 8.7 ha (n = 4) with a high degree of overlap, while female home ranges averaged 3.4 ha (Swaim 1994). Dispersal habitats are essential for the conservation of Alameda whipsnake. Protecting the ability of Alameda whipsnake to move freely across the landscape in search of habitats is essential for: (1) Sustaining populations by providing opportunity for movement and establishment of home ranges by juvenile recruits, (2) maintaining gene flow by the movement of both juveniles and adults between subpopulations, and (3) allowing

recolonization of habitat after fires or other natural events that have resulted in local extirpations (USFWS 2006).

The PCEs of Critical Habitat for the Alameda whipsnake are the habitat components that provide:

- (1) Scrub/shrub communities with a mosaic of open and closed canopy: Scrub/shrub vegetation dominated by low- to medium-stature woody shrubs with a mosaic of open and closed canopy, as characterized by the chamise, chamise-eastwood manzanita, chaparral whitethorn, and interior live oak shrub vegetation series occurring at elevations from sea level to approximately 3,850 feet (1,170 meters). Such scrub/shrub vegetation within these series form a pattern of open and closed canopy used by the Alameda whipsnake for shelter from predators; temperature regulation, because it provides sunny and shady locations; prey-viewing opportunities; and nesting habitat and substrate. These features contribute to support a prey base consisting of western fence lizards and other prey species such as skinks, frogs, snakes, and birds.
- (2) Woodland or annual grassland plant communities contiguous to lands containing PCE 1: Woodland or annual grassland vegetation series comprised of one or more of the following: Blue oak, coast live oak, California bay, California buckeye, and California annual grassland vegetation series. This mosaic of vegetation supports a prey base consisting of western fence lizards and other prey species such as skinks, frogs, snakes, and birds, and provides opportunities for: Foraging, by allowing snakes to come in contact with and visualize, track, and capture prey (especially western fence lizards, along with other prey such as skinks, frogs, birds); short and long distance dispersal within, between, or adjacent to areas containing essential features ( i.e. , PCE 1 or PCE 3); and contact with other Alameda whipsnakes for mating and reproduction.
- (3) Lands containing rock outcrops, talus, and small mammal burrows. These areas are used for retreats (shelter), hibernacula, foraging, and dispersal, and provide additional prey population support functions.

## **METHODS**

A preliminary desktop analysis was performed on October 7, 2016 in coordination with CDFW to obtain suppressed ASR data within the vicinity of the Project Area and also to investigate Alameda Whipsnake Connectivity Modeling for the California Bay Area Linkage Network<sup>2</sup>. A

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<sup>2</sup> The primary objective of this effort is to identify lands essential to maintain or restore functional connectivity among wildlands for all species or ecological processes of interest in the California bay area and as a vital adaptation strategy to conserve biodiversity during climate change. This dataset represents potential cores and patches of breeding habitat for Alameda whipsnake. Potential breeding area is defined as a cluster of pixels that are good enough (habitat suitability score above 50) and big enough to support breeding by the focal species. The other primary input to the analysis is home range or territory size. Potential breeding habitat was classified into two size classes. A potential core was defined as a continuous area of suitable habitat large enough to sustain at least 50 individuals. Potential cores are probably capable of supporting the species for several generations (although with erosion of genetic material if isolated). A



reconnaissance survey of the Project Area was conducted by BioMaAS biologist Bill Stagnaro on October 20, 2016. The entire Project Area was surveyed on foot, and lands between the Project Area and nearest ASR occurrences were surveyed via car and foot to the extent feasible. Mr. Stagnaro has extensive ASR trapping and monitoring experience and also possesses a USFWS Recovery Permit and CDFW Scientific Collecting Permit for ASR.

## RESULTS

### ASR Occurrence Data and Connectivity Modeling Data

The nearest occurrence for Alameda whipsnake (AWS #136) is approximately 0.55 mile to the southeast of Tract 8297 (Figures 4a and 4b). The next nearest occurrence (AWS #41) is approximately 0.8 mile to the northeast of Tract 8297. AWS 41 is from 1991 and is listed as “Possibly Extirpated” and AWS #136 is from 1984 and is listed as “Presumed Extant”. The Study Area is not within USFWS designated Critical Habitat for this species. According to the Connectivity Modeling data, the nearest core or patch habitat for ASR is approximately one mile to the east (Figures 4a and 4b).

### Vegetation within the Project Area

The majority of the Project Area consists of ruderal grassland (Figure 2, Photos). Tract 8296 contained a few individual coyote brush (*Baccharis pilularis*) shrubs, a small patch of Himalayan blackberry (*Rubus armeniacus*) and a few ornamental tree species such as blue gum (*Eucalyptus globulus*). Tract 8297 also was predominantly non-native grassland but had a more developed stand of coyote brush habitat. The stand of coyote brush in Tract 8297 had an open canopy which became more mature (up to eight feet high) and closed in the southeast corner (Figure 3; Lot 7). A line of mature pine trees is planted along the southern border of the tract. This stand as well as the adjacent ornamental trees planted at the property margins create a relatively dense closed canopy. ASR typically prefer stands of scrub lower in stature with a more filtered canopy<sup>3</sup>. Stinkwort (*Dittrichia graveolens*), an invasive subshrub species, is prolific throughout both tracts.

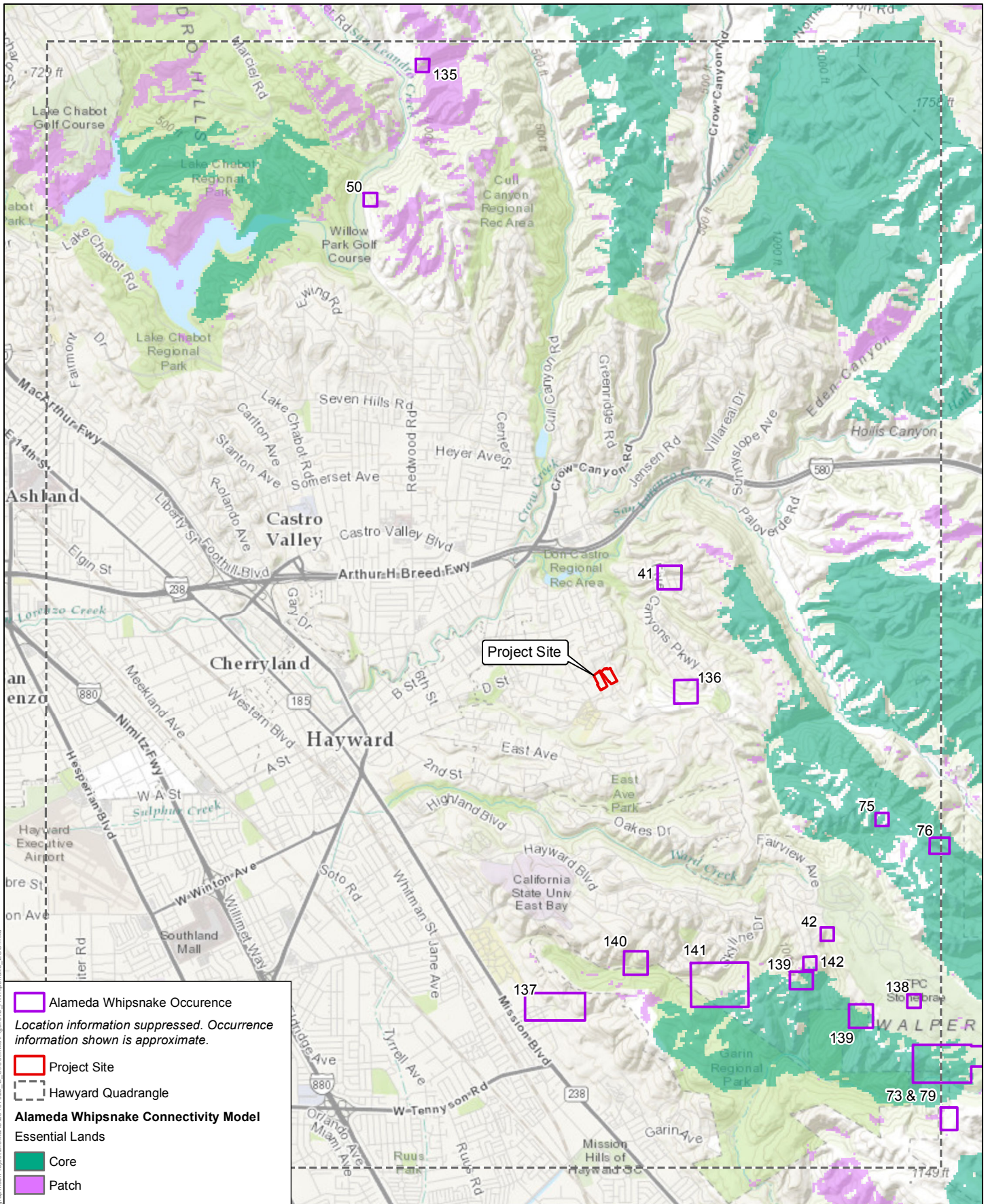
### Refugia

Both tracts showed little evidence of natural refugia. Some evidence (burrows) of Botta’s pocket gopher (*Thomomys bottae*) were observed in the grassland. A large pile of tree rounds exists in the northeast corner of the Tract 8296 (Figure 3; Lot 3; Photos). This pile of wood was investigated to the extent feasible. California vole (*Microtus californicus*) was observed but no herpetofauna were uncovered. Soil was somewhat compact as Tract 8297 appeared recently grazed by horses and Tract 8296 is currently being grazed by horses. The foundations of the unoccupied homes and stables may also provide refugia.

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breeding patch was defined as an area of suitable habitat large enough to support successful reproduction by a pair of individuals (perhaps more if home ranges overlap greatly), but smaller than a potential core area. Patches are useful to the species if the patches are linked via dispersal to other patches and core areas. For more information about the creation and utilization of this data, please see the report "Critical Linkages: Bay Area and Beyond" at <http://www.scwildlands.org/reports/Default.aspx>. Updated 11/21/14.

<sup>3</sup> Fire suppression leads to a closed scrub canopy which tends to reduce the diversity of microhabitats that whipsnakes require (Swaim 1994).



Alameda Whipsnake Occurrence  
 Location information suppressed. Occurrence information shown is approximate.

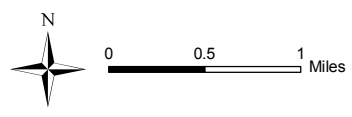
Project Site

Hayward Quadrangle

**Alameda Whipsnake Connectivity Model Essential Lands**

Core

Patch



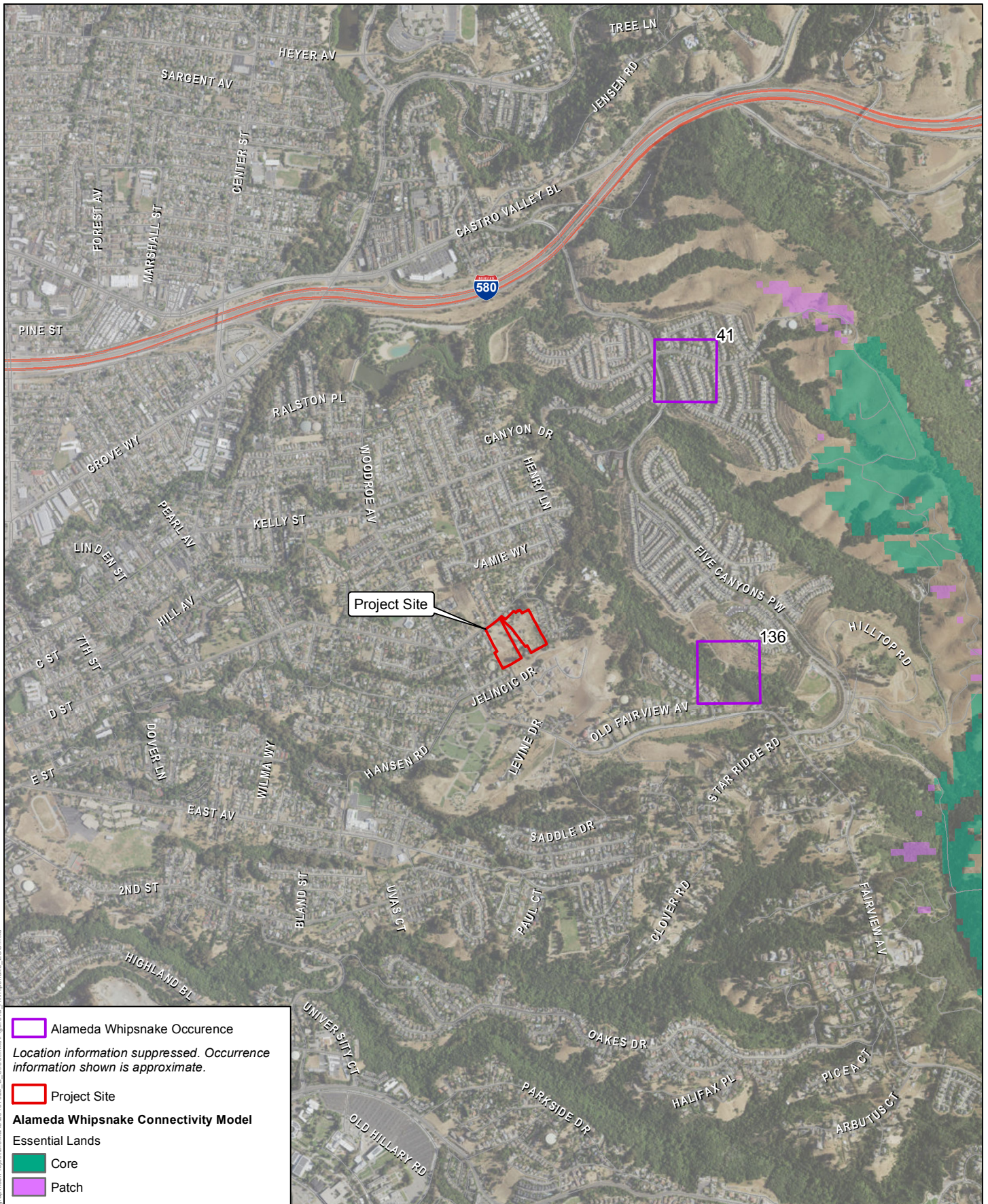
**Figure 4a: Alameda Striped Racer Occurrences in the Project Vicinity**

SOURCE: BioMaAs 2016, CBG 2016, CNDDb 2016, ESRI Aerial Imagery Basemap 2016

D Street Development Project - Tracts 8296/8297

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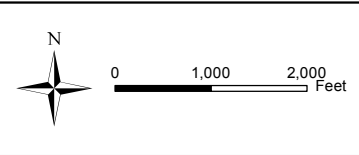
Alameda Whipsnake Occurrence  
 Location information suppressed. Occurrence information shown is approximate.

Project Site

**Alameda Whipsnake Connectivity Model**  
 Essential Lands

Core

Patch



**Figure 4b: Alameda Striped Racer Occurrences in the Project Vicinity**

SOURCE: BioMaAs 2016, CBG 2016, ESRI Aerial Imagery Basemap 2016

D Street Development Project - Tracts 8296/8297



### **Prey Base**

No lizard species were observed during the site visit. The visit occurred at approximately 1500. The weather was sunny and the temperature was in the low 80s F. Weather was suitable for lizard activity, the biologist observed fence lizards in Sunol earlier that day, however, no lizard species were observed during the site visit. In addition, the biologist spent approximately 30 minutes overturning tree stumps in the Tract 8296 pile. The only potential prey observed was a California vole.

### **Surrounding Habitat**

Residential development abuts the west, north and west sides of the Project Area. The south side of the Project Area borders a small patch (~200 feet by 700 feet) of ruderal grassland that appears to be a part of the Jelincic Drive development (APN 417-0261-061-00; Figure 2). This development consists of a number of recently built homes, a few homes under construction and a number of lots that were graded and prepared for future building (Figure 2). There was active construction of homes in this development at the time of the site visit. The aerial photo in Figure 2 captures most of this activity as it was taken on June 15, 2016. The next properties to the south (south of Karin Court) and east (east of Karina Street) consist of ruderal grassland that is grazed by horse, cow and possibly other livestock species (APNs 417-260-4, 6 and 9; Figure 2). A small rock outcrop appears just to the east of Karina Street and appears man made. This habitat was not surveyed by foot, rather it was viewed from Karina Street. The next parcel over (APN 417-260-5; Figure 2) is more grazed ruderal grassland and oak/bay woodland slope which abuts the Blackstone Court development and an unnamed tributary to San Lorenzo Creek/Don Castro Reservoir. It is along the south side of this tributary where an ASR was observed in 1984 (CDFW 2016). This drainage is part of the Five Canyons Open Space and Deer Canyon Trail traverses the east side of the drainage, due east of the Project Area. The next drainage to the east is also a tributary to San Lorenzo Creek and has a hiking trail that intersects with Deer Canyon Trail called Shady Canyon Trail. For the purposes of this report, the drainages will be referred to as Deer Canyon and Shady Canyon. Both Canyons consist predominantly of closed canopy live oak/bay laurel woodland communities.

### **Disturbance**

Tract 8296 has a stable at the south end and appears to have been recently and heavily grazed by horses. The east side of Tract 8297 was currently being grazed by horses. Both tracts also had unoccupied homes. Tract 8296 had one occupied home in the northwest corner and Tract 8297 had one occupied home in the southwest corner. Aerial photos show past evidence of mowing on the Tracts. Bassard Convalescent Home bisects the two Tracts. The west side of Bassard has a high retaining wall preventing west to east dispersal of most terrestrial species through this property.

### **Historic Aerial Photo Review**

The east side of the Project Area (Tract 8297) appears to have been an orchard as far back as 1946 and up until at least 1960 (Figure 5). Aerial images were not obtained before then. The images show the tracts completely surrounded by orchards prior to development in the north and the east in the early 1950s. By 1968 aerial photos show there may be some possible scrub habitat developing in the far south end of Tract 8297. It is unclear if the scrub invaded this tract or there



**Figure 5: Historic Aerial Photo of the Project Area**

SOURCE: BioMaAs 2016, CBG 2016, TerraServer Imagery 2016

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was a population there before conversion to orchard. The Machado Court development appears to have occurred in the 1980s. By the early 1990s grading is evident all along the Five Canyons Parkway. Figure 6 shows an image from 2016 adjacent to an image from 1946 to show the extent of recent development in the vicinity of the Project Area.

## **ANALYSIS**

The potential for ASR to occur in the Project Area is unlikely. Vegetation, refugia and most likely prey base for ASR in the Project Area is poor. In addition, nearby occurrence information is dated and habitat has been removed or altered dramatically by development since then. That said, presence cannot be entirely ruled out due to the dispersal capabilities of the species and the barrier free connectivity to the open space (Five Canyons Open Space and Garin Regional Park) to the east and southeast. The specific components that lead to this conclusion are discussed below.

### **Vegetation**

The vegetation in both tracts also has a history of agricultural use, mowing, grazing and residential use. Historical photo interpretation of the Project Area indicate that these tracts do not represent, and may never have represented, suitable vegetation for ASR, at least as far back as 1946. Scrub/shrub communities with a mosaic of open and closed canopy is non-existent in Tract 8296 and is maintained in an isolated patch in the southeast corner of Tract 8297 that appears to have recently (1968?) developed. The habitat value of this stand, however, is reduced due to adjacent development and its isolation from other scrub stands.

### **Refugia and Prey Base**

The highest quality refugia observed consisted of the pile of tree stumps and the basements/foundations of the unoccupied buildings. Fossorial mammal burrows were also present as refugia, but to a lesser degree. No rock outcrops or talus was observed. These habitat features appear marginal for shelter, hibernacula, foraging, dispersal, and prey population support functions.

No lizard species were observed during the site visit although conditions were adequate for lizard activity. This is not proof of absence, lizard activity decreases this time of year and there are most likely lizard species utilizing the Project Area, however this observation may indicate this potential prey species is not abundant in the Project Area.

### **Historic Use of the Project Area, Disturbance and Dispersal**

Historic photo interpretation shows that due to agricultural use, grazing, mowing and development, the habitat in the Project Area did not contain the quality or quantity of habitat components for ASR PCEs in its recent history (since 1946).

The development along Five Canyons Parkway is a significant barrier to east-west ASR movement and has effectively removed the open grassland and scrub habitat in between Deer Canyon and Shady Canyon. ASR attempting to access habitat in the Project Area would have to disperse through a narrow band (~200 feet; Photo 6) of grassland to the east, follow Deer Canyon to Quarry Road to D Street, or navigate the development barriers of Jelincic Drive to the south. ASR dispersing from the north and the west is highly unlikely due to development.





SOURCE: BioMaAs 2016, CBG 2016,  
TerraServer Imagery 2016

**Figure 6: Project Setting (Current and Historic)**

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ASR may disperse through Deer Canyon and Shady Canyon, however, they most likely do not reside in these features for very long due to the closed canopy nature of the canyons and the thermoregulation requirements of the ASR. ASR are capable of dispersal into the Project Area as well, however, the Project Area is essentially a “U” shaped dead end of marginal, highly fragmented habitat. The Project Area does not appear to meet the USFWS defined function of ASR dispersal habitat:

(1) *Sustaining populations by providing opportunity for movement and establishment of home ranges by juvenile recruits.* A home range in the Project Area is unlikely due to disturbance and isolation.

(2) *Maintaining gene flow by the movement of both juveniles and adults between subpopulations.* A subpopulation in Project Area is unlikely due to its isolation. The nearest subpopulations are most likely east of Five Canyons Parkway as the diversity and quality of habitat improves.

(3) *Allowing recolonization of habitat after fires or other natural events that have resulted in local extirpations.* Past and current development have likely preclude recolonization.

## **DISCUSSION**

Given the poor habitat components discussed above and the home range size of ASR, it is unlikely the Project Area provides a source habitat for ASR, rather, it could more accurately be labeled as a sink habitat that would have difficulty sustaining a population of ASR. Although the habitat is poor in the Project Area for ASR, there is a chance a dispersing individual could enter the Project Area via the barrier free property line to the south. Presence of ASR is unlikely, however, it is possible for this vagile species. Consultation with USFWS and CDFW is recommended in order to determine permitting options and appropriate mitigation, if necessary, for the proposed project.

If wetlands or water are disturbed as part of the proposed project, then a Corps permit may be required and the Corps could initiate consultation with USFWS as the lead agency via the Section 7 consultation process. If it is determined the proposed action is not likely to affect ASR, the proposed project may move ahead. If it appears that the proposed project may affect ASR, then a Biological Assessment is prepared to determine the project’s effect on ASR and the appropriate mitigation.

Because presence of ASR cannot be ruled out, consultation with CDFW may result in the recommendation of an Incidental Take Permit (Section 2081 process) to protect the project proponent from unauthorized take of species and insure potential impacts are minimized and fully mitigated. Measures to minimize the take of ASR are presented below.

### **Construction Related Measures**

In order to prevent ASR from entering construction areas during Project development, it is recommended a wildlife exclusion fence be placed at the property boundary at the southern end of the Project Area. The fence should be at least three feet high and should be entrenched three to six inches into the ground. It is recommended that exclusion funnels are included in the fence design so that terrestrial species are able to vacate the Project Area prior to disturbance.



Monofilament netting, which is commonly used in straw wattle and other erosion preventatives, should not be used on the Project Site in order to prevent possible entrapment of both common and special status terrestrial wildlife species.

Trenches should be backfilled, covered or left with an escape ramp at the end of each work day. Trenches left open overnight should be inspected each morning for trapped wildlife species.

Prior to initial ground disturbance, a qualified biologist should perform a pre-construction survey in order to insure no ASR are present. The biologist may remain on site for initial ground disturbance if suitable ASR refugia will be disturbed, e.g. small mammal burrows, foundations, large woody debris.

Prior to the initiation of work activities, the qualified biologist should also provide worker education regarding ASR. The training should cover identification of ASR and what to do should one be discovered in the Project Area.

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**Photo 1:** A view looking south across the Tract 8296.



**Photo 2:** A view looking north across the western half of Tract 8297, from the middle of the tract.





**Photo 3:** Looking north across Tract 8297.



**Photo 4:** Looking southeast across Tract 8297.





**Photo 5:** The stump pile in Tract 8296, Bassard retaining wall to the left.



**Photo 6:** Looking southeast from the Tract 8296 southern property margin across APN 417-0261-061-00.





**Photo 7:** Looking west from the top of Karina Street towards the Project Area.



**Photo 8:** Looking east from the top of Karina Street.