

**BIOLOGICAL SITE ASSESSMENT –
WILDLIFE SPECIES**

**MARINDA HEIGHTS PROJECT
FAIRFAX, MARIN COUNTY, CALIFORNIA**

LSA

September 2016

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WILDLIFE SPECIES**

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Submitted to:

Mr. Marshal Rothman
P.O. Box 2434
Mill Valley, California 94942

Prepared by:

LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801

Project No. MRN1601

LSA

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1.0 INTRODUCTION

LSA Associates, Inc. (LSA) has completed a reconnaissance-level biological survey of the Marinda Heights project site north of Sir Francis Drake Boulevard in the City of Fairfax, Marin County. The purpose of the survey was to evaluate the site's potential to support special-status wildlife species. This report includes the following: (1) a summary of relevant federal and State regulations pertaining to wildlife species; (2) a brief description of the proposed project; (3) a description of the methods used to conduct the survey; (4) a description of existing habitat conditions at the project site; and (5) an analysis of special-status wildlife species and wildlife corridors potentially present in the project vicinity.

2.0 REGULATORY CONTEXT

This section provides a summary of federal and State laws, and/or local regulations that apply to the wildlife resources that occur on the project site.

2.1 APPLICABLE FEDERAL LAWS AND REGULATIONS

2.1.1 Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over species that are formally listed as threatened or endangered under the federal Endangered Species Act (ESA). The federal ESA prohibits “take” of listed wildlife, where “take” is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct” (16 U.S. Code [U.S.C.] §§ 1532[19], 1538). An activity is defined as “take” even if it is unintentional or accidental. The USFWS has jurisdiction over federally listed terrestrial and freshwater wildlife species, while National Marine Fisheries Service (NMFS) (formally known as NOAA Fisheries) has jurisdiction over federally listed anadromous and marine fish, marine mammals, and sea turtles.

An endangered wildlife species is one that is considered to be in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. Under Section 10 of the ESA, private entities with no federal funding or federal action can apply for an Incidental Take Permit (ITP) for any activity that could result in the take of a federally listed species. Under Section 7 of the ESA, federal agencies must engage in consultation with the USFWS or NMFS for any activities that may result in take of federally listed species. This consultation is to ensure that any activity authorized, funded, or carried about by the federal agency is not like to jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of critical habitat designated for these species. Only activities that are authorized, funded, or carried out by federal agencies are required to consult with the USFWS and NMFS regarding critical habitat.

In addition to endangered and threatened species, the USFWS maintains a list of proposed and candidate species. Proposed species are those for which a proposed rule to list them as endangered or threatened has been published in the Federal Record. A candidate species is one for which the USFWS currently has enough information to support a proposal to list it as a threatened or endangered species. These latter species are not afforded legal protection under the federal ESA. Nonetheless, project-related impacts to federally listed, proposed, and candidate species or their habitats are considered “significant” under CEQA Guidelines (discussed below).

2.1.2 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 USC 703), which is enforced by the USFWS, prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. In addition, it contains a clause that prohibits baiting or poisoning of these birds. As

used in the MBTA, the term “take” is defined “to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires.” Most bird species native to North America are covered under this act.

2.2 APPLICABLE STATE LAWS AND REGULATIONS

2.2.1 California Endangered Species Act

California Department of Fish and Wildlife (CDFW) has jurisdiction over wildlife species listed as endangered or threatened under the California Endangered Species Act (CESA). CESA is similar to the federal ESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of species listed as endangered, threatened, or candidate species under CESA, unless otherwise authorized by permit or in the regulations. “Take” as used in this context is defined as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA. The CESA allows for take of state-listed species that is incidental to otherwise lawful projects and also allows for sufficient mitigation to offset losses of state-listed wildlife species and their essential habitats.

State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

2.2.2 California Fish and Game Code

CDFW is also responsible for enforcing the California Fish and Game Code, which contains several provisions potentially relevant to construction projects.

The Fish and Game Code designates wildlife species as Fully Protected or Protected. Fully Protected or Protected wildlife species may not be taken or possessed at any time. CDFW does not issue licenses or permits for take of these species except for necessary scientific research or live capture and relocation pursuant to a permit for the protection of livestock. Fully Protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while Protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42.

Section 3503 of the Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their nests. These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including European starling, house sparrow, and rock pigeon, are not afforded any protection under the MBTA or the California Fish and Game Code.

2.2.3 California Species of Special Concern

CDFW maintains an administrative list of Species of Special Concern, defined as a “species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- is listed as federally, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.”

Section 15380 of the CEQA Guidelines indicates that Species of Special Concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein. In contrast to species listed under the federal ESA or CESA, however, Species of Special Concern have no formal legal status.

2.2.4 CEQA

The California Environmental Quality Act (CEQA) applies to “projects” that are proposed to be undertaken or those requiring approval by State or local government agencies. Projects are defined actions that have the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list “shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria” for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a “de facto” endangered species. CDFW maintains a list of species of special concern, defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Species of special concern are not afforded legal protection under the CESA but impacts to these species are typically considered significant under CEQA.

2.3 APPLICABLE LOCAL LAWS AND REGULATIONS

This section highlights ordinances regulating biological resources that may be applicable to the project.

County of Marin. The Marin Countywide Plan includes sections that address the identification and protection of biological resources within the county of Marin. Specifically, the following policies and associated implementation programs from the Countywide Plan emphasize the conservation and enhancement of special-status species and their habitats, wetlands, riparian areas, and baylands: Policy Bio 1.1-1.9, 2.1-2.9, 3.1-3.2, 4.1-4.20, and 5.1-5.10.

Town of Fairfax. The Town of Fairfax General Plan includes sections that address the identification and protection of biological resources within the Town of Fairfax. Specifically, the following policies from the Town of Fairfax General Plan address the conservation and enhancement of open spaces, special-status species, and their habitats: Policy LU 1.1.1, 1.2.-1.2.4; Policy OS 1.2.1, 1.3.1, 1.4.1, 1.4.2, 1.4.5, 3.1.1, 3.2.2, 3.2.3; and Policy CON 5.2.1, 6.1.1, 6.1.2.

3.0 METHODS

Prior to visiting the project site, LSA searched the California Natural Diversity Database (CNDDDB) (CDFW 2016) for records of special-status wildlife species and sensitive habitat occurrences within 5 miles of the project site. LSA also reviewed the USFWS Critical Habitat Portal, current Google Earth (Google 2016) aerial images of the property, the list of special-status species in Figure 5-1 of the Marin Countywide Plan, lists of flora and fauna observed on the project site (Dreskin, 2008 and Dreskin & Keener, 2008), and Environmental Impact Reports (EIR) from the project vicinity (Marin County Open Space District, 2005). LSA biologist Yasmine Akky conducted a reconnaissance-level survey on August 10, 2016 to assess current habitat conditions and evaluate the potential for the site to support special-status wildlife species. The survey was conducted on foot in order to provide visual coverage of the entire project site. All wildlife species observed were recorded in field notes. For the purposes of this assessment, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Wildlife species designated as Species of Special Concern or Fully Protected by the California Department of Fish and Wildlife (CDFW)¹;
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act (CEQA) guidelines; or
- Species that are considered a taxa of special concern by local agencies.

¹ Effective January 1, 2013, the California Department of Fish and Game (CDFG) was renamed California Department of Fish and Wildlife (CDFW). References published under the CDFG name continue to be cited as published.

4.0 PROJECT DESCRIPTION

The proposed project involves the construction of ten residential lots on the site with associated infrastructure and landscaping. Residential lots will comprise 5 acres of the approximately 100-acre site, with the remaining acreage devoted to open space.

5.0 EXISTING CONDITIONS

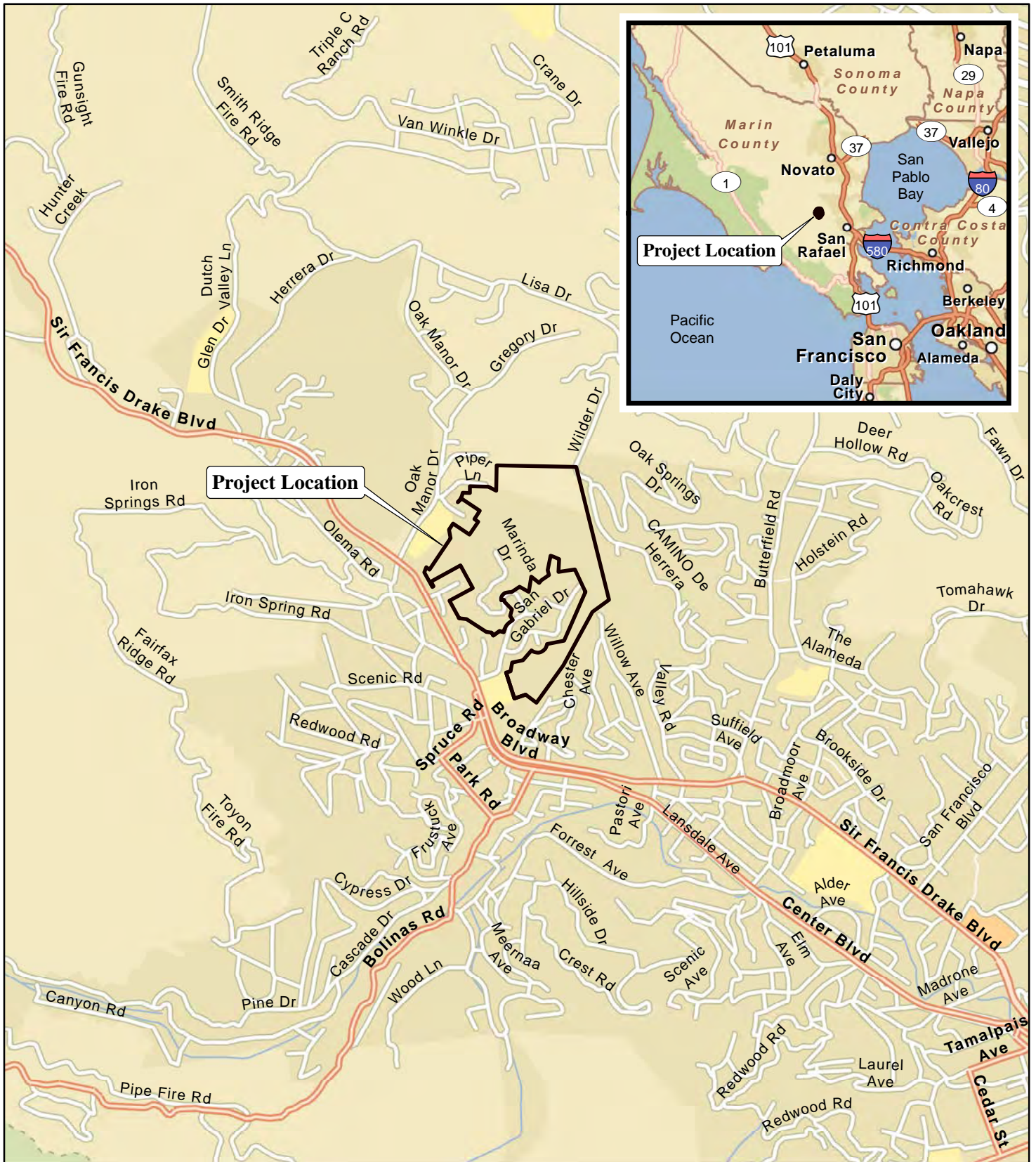
5.1 SITE LOCATION AND LAND USE

The approximately 100-acre Marinda Heights project site is located in the town of Fairfax, northeast of Sir Francis Drake Boulevard. The site consists of Marin County Parcel Numbers 001-150-12, 001-251-31, and 001-160-09. The site is situated on the northern boundary of the 7.5 minute USGS San Rafael, California quadrangle, centered at latitude 38.59 degrees North and longitude 122.35 degrees West. Figures 1 and 2 depict the regional vicinity and project location, respectively. The site is accessible via a private road located at the end of Marinda Drive and another at the end of Ridgway Avenue. The properties surrounding the site are developed, with the exception of undeveloped land to the north and southeast. All surrounding properties are designated for single-residence land use with one school located to the east of the project site.

5.2 TOPOGRAPHY AND SOILS

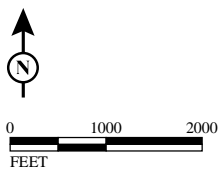
The project site ranges in elevation from approximately 200 feet to 700 feet (61 meters to 213 meters) above mean sea level and is within the Fairfax Creek/San Anselmo Creek watershed. According to the National Hydrography Dataset maintained by the U.S. Geological Survey (USGS) and the National Wetlands Inventory maintained by the USFWS, there are no existing watercourses on the site (EPA 2016 and USFWS 2016b).

The soil on the site, as mapped by the NRCS, is predominantly of the association: Tocaloma-Saurin, extremely steep. A smaller portion of the project site is composed of the soil series: Xerorthents-Urban land complex, 0 to 9 percent slopes (UCD & NRCS 2016). Both of these series are considered to be normally hydric (NRCS 2015).



LSA

FIGURE 1



SOURCE: ESRI StreetMap North America (2012).

I:\MRN1601\GIS\Maps\Figure 1_Regional Project Location Map.mxd (9/12/2016)

Marinda Heights
Marin County, California
Regional Project Location Map

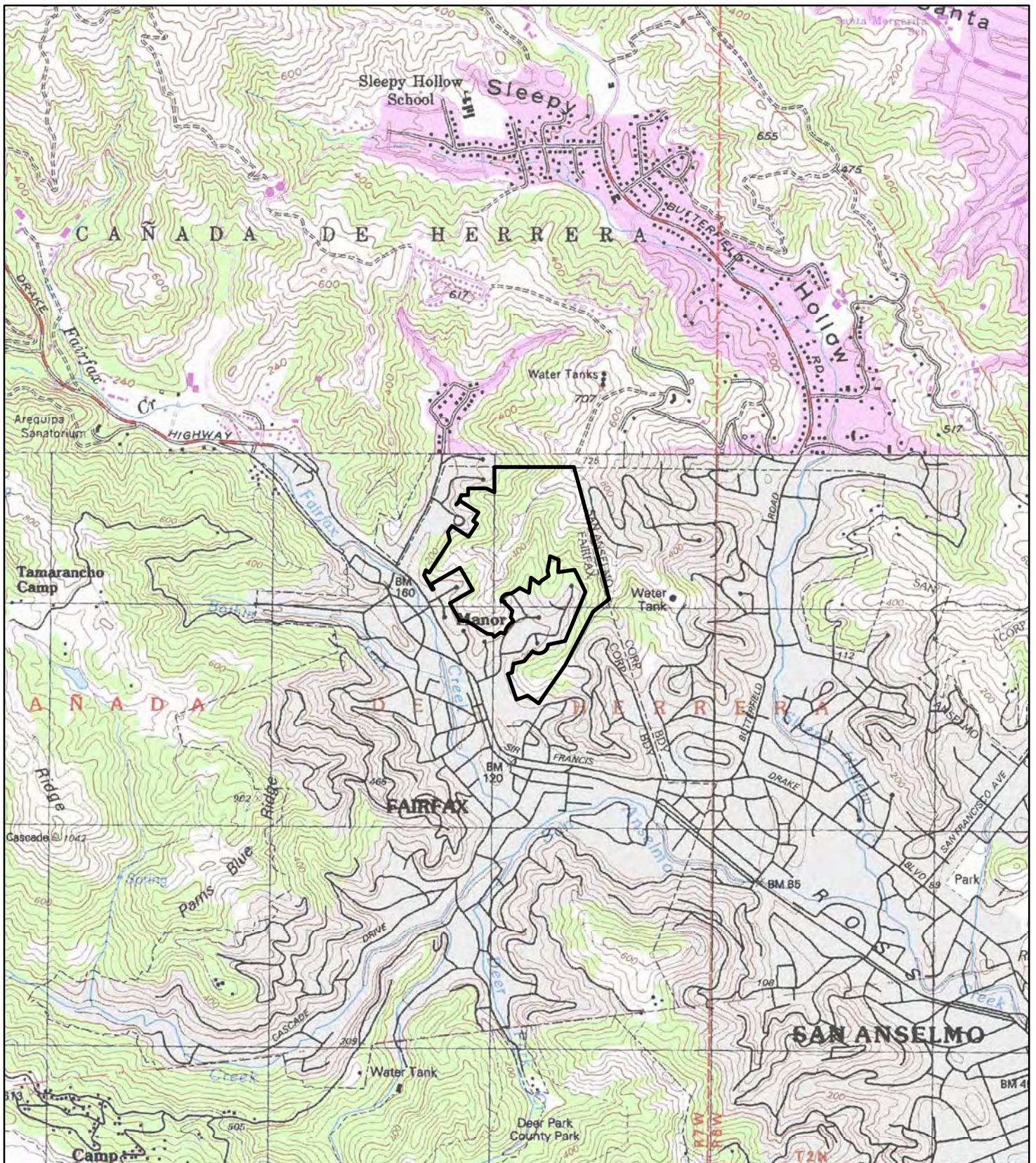


FIGURE 2

LSA

LEGEND

 Project Boundary



0 1000 2000
FEET

SOURCE: USGS 7.5-minute Topo Quads: *Oakland West, Calif.* (1980) and *Oakland East, Calif.* (1980).

F:\MRN1601\GIS\Maps\Figure 2_ Project Location Map.mxd (9/12/2016)

Marinda Heights
Marin County, California
Project Location Map

5.3 VEGETATION

The vegetation types on the project site consists of annual grassland, disturbed annual grassland, Eucalyptus groves, chamise chaparral, California bay forest, and coast live oak woodland (Figure 3). The developed areas on the project site include a network of cleared trails and a few dirt roads, which are encompassed in the disturbed annual grassland. Complete descriptions of each vegetation alliance are provided in the sections below.

California Bay Forest (*Umbellularia californica* Forest Alliance)

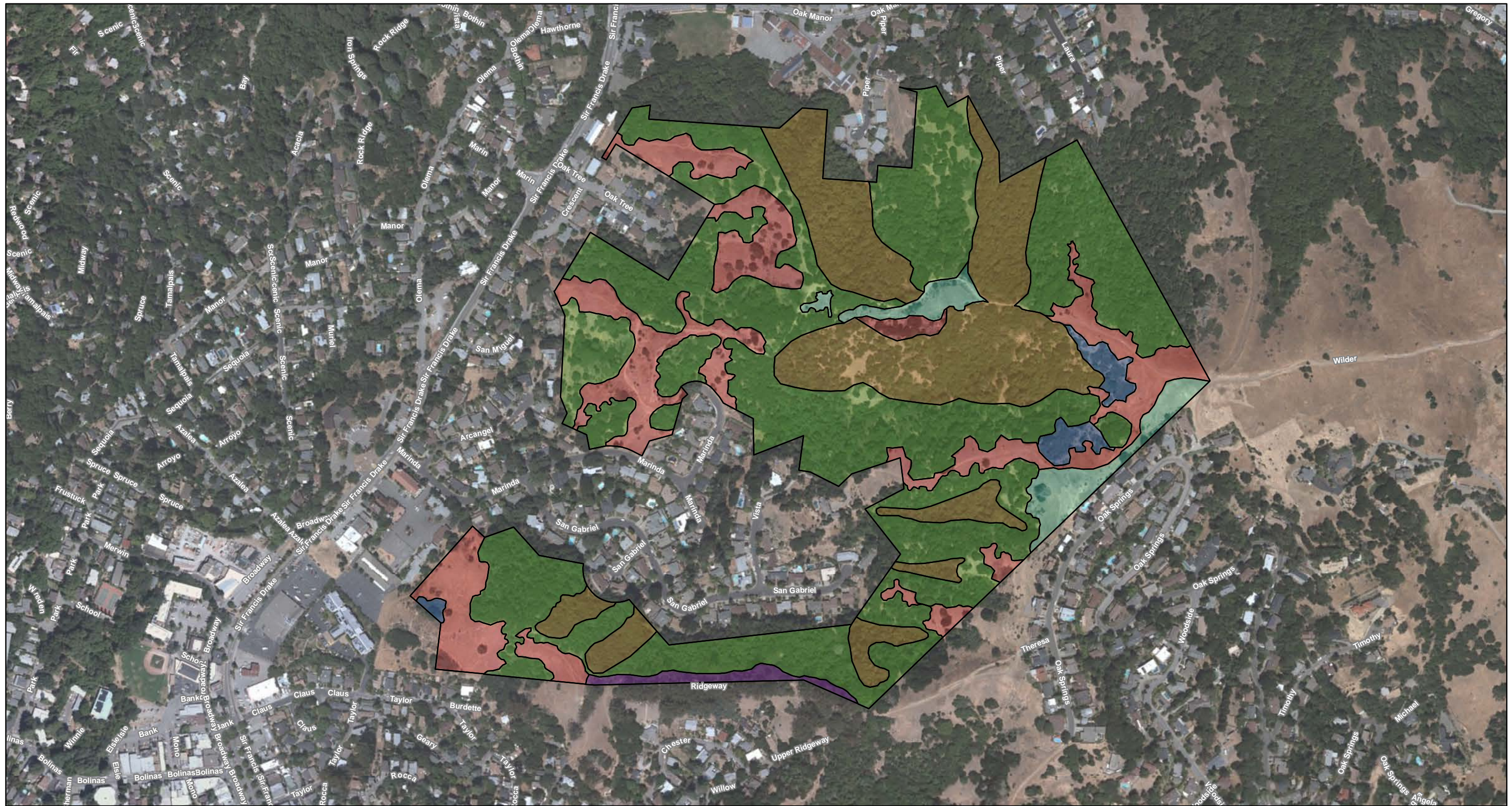
California bay forest covers approximately 22.7 acres within the project site and the dominant species within this alliance is California bay. This alliance can also include a variety of other tree species in the canopy layer. Within the project site, other tree species found in the California bay forest include coast live oak (*Quercus agrifolia* var. *agrifolia*), Pacific madrone (*Arbutus menziesii*), and big-leaf maple (*Acer macrophyllum*). Common species in the understory are sticky monkey flower (*Mimulus aurantiacus*), coyote brush (*Baccharis pilularis* ssp. *consanguinea*), and chamise (*Adenostoma fasciculatum*). The herbaceous component of the understory varies from sparse to complete cover. Within the project site, large areas of the understory consist of fallen oak leaves. This forest alliance predominantly occurs on steep, north-facing slopes. Wildlife species typically associated with California bay forest include several bird species, such as California towhee, spotted towhee, California thrasher, Bewick's wren, and western scrub-jay. This habitat also provides cover and forage for mammal species, including California ground squirrel and mule deer. Gopher snake and western fence lizard are also commonly found in this habitat. The California bay forest alliance and all of its associations are considered sensitive natural communities by CDFW (CDFW 2016d, Sawyer et al. 2008).

Coast Live Oak Woodland (*Quercus agrifolia* Woodland Alliance)

The Coast Live Oak Woodland Alliance covers 53.0 acres and is the most dominant vegetation type within the project site. This alliance is dominated by coast live oak with a variety of co-dominant or co-occurring species (e.g., big-leaf maple, madrone, etc.), with the composition of these species varying depending upon the specific vegetation association. Within the project site, chamise chaparral borders the coast live oak woodlands where it transitions to grassland. Other tree species that occur in smaller numbers in this alliance include California bay and California buckeye (*Aesculus californica*). The understory is similar to the understory of the California bay forest alliance; mostly herbaceous or bare, but poison oak (*Toxicodendron diversilobum*) is dominant where a shrub layer is present. Coast live oak woodlands provide habitat for a variety of wildlife species, such as quail, wild turkey, squirrels, and southern mule deer. One of the associations within this vegetation alliance, the coast live oak-valley oak association (*Quercus agrifolia-Quercus lobata* association), is considered a sensitive natural community by CDFW. The coast live oak woodlands will need to be re-visited in the spring of 2017 and further described in order to determine if this sensitive vegetation association is present within the alliance.

Eucalyptus Groves (*Eucalyptus* sp. Semi-Natural Woodland Stands)

This alliance covers 1.1 acres within the project site. Eucalyptus groves are usually dominated by several species of eucalyptus, which are native to Australia and are considered an invasive species because of their rapid growth rate and broad cover. These trees were historically planted as windbreaks and for aesthetic and horticultural purposes around houses and other developed areas.



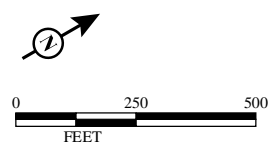
LSA

Legend

Project Boundary - 100.1 ac.

Vegetation Cover

- Annual Grassland - 17.7 ac.
- Annual Grassland - Disturbed - 3.8 ac.
- California Bay Forest - 22.7 ac.
- Coast Live Oak Woodland - 53.0 ac.
- Chimise Chaparral - 1.8 ac.
- Eucalyptus Grove - 1.1 ac.



SOURCE: ESRI Aerial Basemap

I:\MRN1601\GIS\Maps\Figure 3_ Vegetation Cover.mxd (9/13/2016)

FIGURE 3

*Marinda Heights
Marin County, California
Vegetation Cover*

Many eucalyptus species have become naturalized, including in riparian areas. The understory within well-established groves of eucalyptus is usually very sparse due to the closed canopy and the allelopathic¹ nature of the leaf litter. Within the project site, there is one stand of blue gum (*Eucalyptus globulus*) mixed with Monterey cypress (*Hesperocyparis macrocarpa*). This stand is located at the southeastern portion of the project, along Ridgeway, and was most likely planted as a screen and windbreak for the residential area immediately downslope and southeast of the grove. The understory is sparse with scattered French broom (*Genista monspessulana*) throughout. As a wildlife habitat, these woodlands provide nesting sites for a variety of raptors. During winter migrations, a variety of warblers may be found feeding on the insects that are attracted to eucalyptus flowers. The sparse understory, however, offers limited wildlife habitat.

Chamise Chaparral (*Adenostoma fasciculatum* Shrubland Alliance)

This alliance covers 1.8 acres within the project site. Co-occurring shrubs can include a variety of species. Within the project site, these species include California sagebrush (*Artemisia californica*) common manzanita (*Arctostaphylos manzanita* subsp. *manzanita*), toyon (*Heteromeles arbutifolia*), California honeysuckle (*Lonicera hispidula*), sticky monkey flower, and poison oak. This community is often associated with soils that are shallow and dry, and often on xeric slopes and ridges. Within the project site, there is a small amount of chamise chaparral on the fringes of coast live oak woodland that transitions to annual grassland. Wildlife species typically associated with this alliance are similar to those found in California bay forest. Some associations within this vegetation alliance (e.g., chamise chaparral-common manzanita [*Adenostoma fasciculatum* - *Arctostaphylos manzanita*], etc.) are considered sensitive natural communities by CDFW. The chamise chaparral will need to be re-visited in spring 2017 and further described in order to determine if any sensitive vegetation associations are present within the currently mapped alliance.

Annual Grassland and Disturbed Annual Grassland

This vegetation community is a broad characterization of approximately 17.7 acres of grassland and an additional 3.8 acres of disturbed grassland within the project site. Due to the late-season timing of the field visit and the state of senescence of the grass species, it was difficult to ascertain which species of grass were present and/or dominant. These areas will be re-visited twice in the spring of 2017 and further refined in order to define the specific vegetation alliance(s) and/or association(s) present. Within the project site, the grasslands are concentrated at the edges of the coast live oak woodlands and chamise chaparral. An area of the grasslands in the northeast portion of the project site has been mowed, most likely for fire safety for the adjacent residential area. Non-native grass species observed include wild oat (*Avena fatua*), ripgut grass (*Bromus diandrus*), and hedgehog dogtail (*Cynosurus echinatus*). Native species observed include Junegrass (*Koeleria macrantha*) and purple needlegrass (*Stipa pulchra*). The on-site grassland is too patchy and small in total area to attract wildlife species typical of grasslands that are more extensive; however, chaparral species, such as California quail and spotted towhee, often forage on the ground in grassland along chaparral edges. Once these areas have been revisited and classified in spring 2017, a determination can be made as to the presence or absence of vegetation alliances and associations that are considered sensitive natural communities (e.g., purple needle grass grassland [*Nassella pulchra* herbaceous alliance]).

¹ Allelopathy is a biological phenomenon that is characteristic of some plants. An allelopathic plant produces chemicals that can have a negative or positive result on neighboring organisms, including other plants.

6.0 RESULTS

6.1 WILDLIFE

Wildlife species observed and expected to occur on the site are those adapted to oak woodlands, annual grassland, chaparral, bay forest, and eucalyptus groves. A western fence lizard (*Sceloporus occidentalis*) was observed during the reconnaissance-level survey. No amphibians were observed during the survey. The project site is not expected to support amphibians due to the lack of aquatic habitat.

The vegetation communities present within the project site provide nesting and foraging habitats for a number of species of birds. Avian species observed during the field survey are listed in Table A.

Black-tailed mule deer (*Odocoileus hemionus*) were the only mammal species detected during the field survey. No burrows created by mammal species were detected. Other common mammals likely to occur on site include black-tailed jackrabbit (*Lepus californica*), coyote (*Canis latrans*), northern raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

Table A: Wildlife Species Observed

Reptiles
Western fence lizard (<i>Sceloporus occidentalis</i>)
Birds
Osprey (<i>Pandion haliaetus</i>)
Band-tailed pigeon (<i>Columba fasciata</i>)
Anna’s hummingbird (<i>Calypte anna</i>)
Acorn woodpecker (<i>Melanerpes formicivorus</i>)
California scrub-jay (previously, western scrub-jay) (<i>Aphelocoma californica</i>)
American crow (<i>Corvus brachyrhynchos</i>)
Common raven (<i>Corvus corax</i>)
Oak titmouse (<i>Baeolophys inornatus</i>)
Lesser goldfinch (<i>Carduelis psaltria</i>)
House finch (<i>Carpodacus mexicanus</i>)
Turkey vulture (<i>Cathartes aura</i>)
Pileated woodpecker (<i>Dryocopus pileatus</i>)
Chestnut-backed chickadee (<i>Poecile rufescens</i>)
Mammals
Black-tailed mule deer (<i>Odocoileus hemionus columbianus</i>)

6.2 SPECIAL-STATUS WILDLIFE SPECIES

From the results of the literature review and reconnaissance level survey, LSA developed a list of 23 special-status wildlife species that occur or may occur in the project area (Table B). Based on a review of the distribution and habitat requirements of these species and the habitat conditions within the project area, LSA determined that 17 of these species are not likely to occur on the project site. The remaining six species have either been recorded in the project area or could potentially occur based on the presence of habitat. A list of all wildlife species observed during the reconnaissance survey is provided in Table A. CNDDB species occurrences and critical habitat within 5 miles of the project site are depicted in Figure 4.

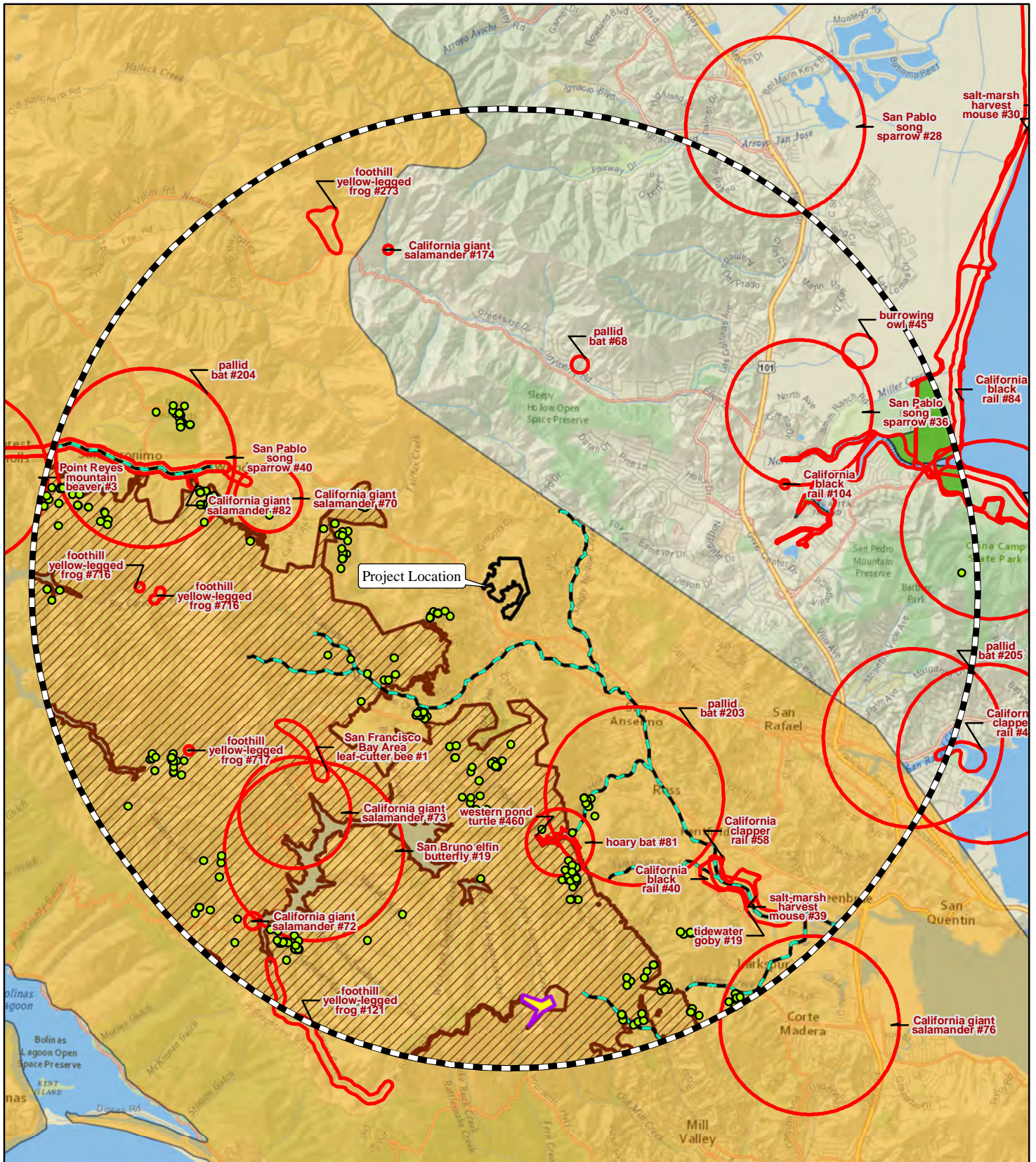


FIGURE 4

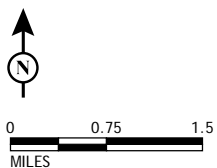
LSA

Legend

- Project Area
- 5-mile Buffer of Project Area
- CNDDDB Occurrence - Animals
- Spotted Owl Observations

Critical Habitat

- Steelhead
- Marbled murrelet
- Northern spotted owl
- Coho Salmon
- Green Sturgeon Critical Habitat - Marsh Areas



SOURCE: CDFW CNDDDB (07/31/2016).

CNDDDB Species Occurrences and Critical Habitat within 5 Miles

*Marinda Heights
Marin County, California*

Table B: Special-Status Wildlife Species Evaluated

Name	Status (Federal/ State)	Habitat	Potential for Occurrence within Project Site
Invertebrates			
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE/-	Rocky outcrops and cliffs in coastal scrub, which support the host plant, <i>Sedum spathulifolium</i> (stonecrop).	All known populations are restricted to San Mateo County, outside of the project vicinity. Habitat for host plant absent from project site.
Monarch butterfly (California overwintering population) <i>Danaus plexippus</i> pop. 1	-/-	Overwinters along the Pacific coast in dense groves of trees (e.g., eucalyptus, Monterey pine, Monterey cypress) with nectar and water sources nearby.	May occur between October and March in dense stands of trees within the project site.
Fish			
Coho Salmon (Central California Coast Evolutionarily Significant Unit) <i>Oncorhynchus kisutch</i>	FE/SE	Requires beds of loose, silt-free coarse gravel for spawning; also need cover, cool water and sufficient dissolved oxygen.	No aquatic habitat present within the project site.
Longfin smelt <i>Spirinchus thaleichthys</i>	CT/FT CSC	Open water within the San Francisco bay, estuary, and nearshore coastal environments.	No aquatic habitat present within the project site.
Steelhead (Central California Coast Distinct Population Segment) <i>Oncorhynchus mykiss</i>	FT/-	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat.	No aquatic habitat present within the project site.
Tidewater goby <i>Eucyclogobius newberryi</i>	FE/CSC	Still, but not stagnant, brackish water in shallow lagoons and in lower stream reaches.	No aquatic habitat present within the project site.
Tomales roach <i>Lavinia symmetricus</i> ssp. 2	-/CSC	Small, warm streams primarily, but may occupy a variety of aquatic habitats including cold-water streams, main channels of rivers, and heavily modified waterways.	No aquatic habitat present within the project site.
Amphibians			
California Giant Salamander <i>Dicamptodon ensatus</i>	-/CSC	Wet coastal forests in or near clear, cold permanent and semi-permanent streams and seeps.	No aquatic habitat present within the project site.
Foothill yellow-legged frog <i>Rana boylei</i>	-/CSC	Open rocky or gravelly banks of clear creeks with shallow backwaters for breeding habitat.	No aquatic habitat present within the project site.
Reptiles			
Western pond turtle <i>Actinemys marmorata</i>	-/CSC	Found in ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and adjacent grasslands or other open habitat for egg-laying.	No aquatic habitat is present within the project vicinity.

Table B: Special-Status Wildlife Species Evaluated

Name	Status (Federal/ State)	Habitat	Potential for Occurrence within Project Site
Birds			
American peregrine falcon <i>Falco peregrinus anatum</i>	Delisted/CFP	Open country, mountains, and sea coasts; nests on high cliffs, bridges, and buildings.	Known to forage from perches on nearby church, may occasionally forage over site. No suitable nesting habitat present.
White-tailed kite <i>Elanus leucurus</i>	-/CFP	Forages over open habitats, such as grasslands, pastures, and fields with good populations of voles and other small rodents. Nests in isolated trees and along the edges or woodlands near open areas.	Trees on and adjacent to site provide suitable nesting habitat and on-site grasslands provide suitable foraging habitat.
Loggerhead shrike <i>Lanius ludovicianus</i>	-/CSC	Found in grasslands and open shrub or woodland communities. Nests in dense shrubs or trees and forages in scrub, open woodlands, grasslands, and croplands. Frequently uses fences, posts, and utility lines as hunting perches.	Grasslands and woodland communities within the project site provide suitable nesting and foraging habitat.
Northern spotted owl <i>Strix occidentalis caurina</i>	FT/CT CSC	Stands of old growth forest stands with large trees, multiple canopy layers, and moderate to high canopy closure.	No suitable forest stands or spotted owl occurrences within the project site.
Marbled murrelet <i>Brachyramphus marmoratus</i>	FT/SE	Stands of old growth forest stands with large trees, multiple canopy layers, and moderate to high canopy closure.	No suitable forest stands or marbled murrelet occurrences within the project site.
California Clapper (Ridgway's) rail <i>Rallus obsoletus obsoletus</i> (formerly <i>Rallus longirostris obsoletus</i>)	-/ST CFP	Coastal saltmarsh.	No saltmarsh habitat within the project site.
Great blue heron <i>Ardea herodias</i>	-/-	Marshes, mud flats, and agricultural areas at low to mid elevations. Nest colonially in trees near water.	No aquatic habitat or known nesting colonies within the project site.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	-/CSC	Coastal saltmarsh.	No saltmarsh habitat within the project site.
California Black rail <i>Laterallus jamaicensis coturniculus</i>	-/ST CFP	Coastal saltmarsh.	No saltmarsh habitat within the project site.
Mammals			
Pallid bat <i>Antrozous pallidus</i>	-/CSC	Roosts in crevices in rock outcrops, in the expansion joints under bridges, buildings, mines, and hollow trees; forages on large terrestrial insects in open habitats.	May forage on site and may roost in large trees within the project site.

Table B: Special-Status Wildlife Species Evaluated

Name	Status (Federal/ State)	Habitat	Potential for Occurrence within Project Site
Long-eared myotis bat <i>Myotis evotis</i>	-/CSC	.Brush, woodland, and forested habitats. Roosts in buildings, crevices, snags, or under bark of trees.	May forage on site and may roost in large trees within the project site.
Point Reyes mountain beaver <i>Aplodontia rufa phaea</i>	-/CSC	Springs/seeps with dense cover.	No aquatic habitat within the project site.
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE/SE CFP	Coastal salt marsh.	No saltmarsh habitat within the project site.

Status Codes:

- FE = Federally-listed as an endangered species
 - FT = Federally-listed as a threatened species
 - SE = State-listed as an endangered species
 - ST = State-listed as a threatened species
 - CT = Candidate state-listed threatened
 - CFP = State-listed as a fully protected
 - CSC = State Species of Special Concern
- Source: LSA Associates, Inc., 2016; CNDDDB

Monarch butterfly. Monarch butterflies travel to roost sites along the Pacific coast from northern Mendocino County to Baja California, Mexico during the fall and winter months. Overwintering habitat suitable for monarch butterflies along the Pacific Coast includes dense groves of trees (e.g., eucalyptus, Monterey pine, Monterey cypress) that provide shelter from winds with sources for water and nectar nearby. Overwintering populations of monarch butterflies may utilize the eucalyptus grove on the southern end of the project site as wintering grounds. However, the eucalyptus grove is not comprised of a very dense aggregation of trees and is therefore fairly exposed. In addition, overwintering populations of monarch butterflies have not been documented within the project site, and monarch butterflies are not listed on the list of flora and fauna commonly observed on the project site (Dreskin 2008).

Birds. The white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrinus anatum*), and loggerhead shrike (*Lanius ludovicianus*) have the potential to occur on the project site. The large shrubs and trees within the project site provide potential nesting habitat for white-tailed kite and loggerhead shrike (Shuford & Gardali 2008). The grasslands within the project site provide potential foraging habitat for both species. The American peregrine falcon may periodically fly or forage over the site, but no nesting habitat for this species occurs on or in the near vicinity of the project site. American peregrine falcons have been observed preying on rock pigeons at the church tower located to the west of the project site.

Nesting Birds. Nests of all native birds, regardless of their regulatory status, are protected by the MBTA and provisions of the California Fish and Game Code. Suitable nesting habitat is present on and adjacent to the site for both special-status and common bird species, and these nesting birds may be present during the breeding season (February through August).

Bats. The pallid bat (*Antrozous pallidus*) and long-eared myotis (*Myotis evotis*) may forage on the site. In addition, large trees with hollow portions located in the project site may provide roosting habitat for these bat species.

6.3 WILDLIFE CORRIDORS

Wildlife corridors connect habitat for species, thereby facilitating animal movement in areas otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Corridors are essential for maintaining connectivity within a region and provide access to resources such as mates, food, and water within a species' home range. In addition, corridors facilitate seasonal migration; immigration and emigration between populations; repopulation following local extinction; genetic diversity; and population movement in response to altered landscapes. Features, such as ridgelines, riparian corridors, canyon drainages, or areas with vegetation cover, provide corridors for wildlife travel.

The Critical Linkages: Bay Area and Beyond, a project initiated to identify critical areas for wildlife connectivity in the Bay Area, designated large blocks of open space to the north, south, and west of the project site as areas of high ecological integrity that require linkages to one another (Penrod et al., 2013). However, the project site is surrounded by urban development on all sides, separating it from these high quality areas. In addition, Highway 101, located to the southwest of the project site, functions as a barrier to larger wildlife movement both into and out of the project site.

The project site is situated between open spaces to the north and southeast of the project boundary. The area between these open spaces could serve as a corridor for wildlife movement into and out of the project site (Figure 5). Several features that may be suitable for wildlife movement within this area include several canyon drainages/heavily vegetated areas and ridgelines. In addition, the project is located in the Pacific Flyway, a major north-south avian migratory corridor that extends across the west coast from Alaska to Patagonia. An abundance of avian species utilize this migratory corridor, which links breeding grounds in the north to more southerly wintering areas. The project site consists of open space that can be used for avian species as a migratory corridor within the Pacific Flyway. The project site does not support areas with surface water and therefore, does not provide migratory habitat for aquatic species.

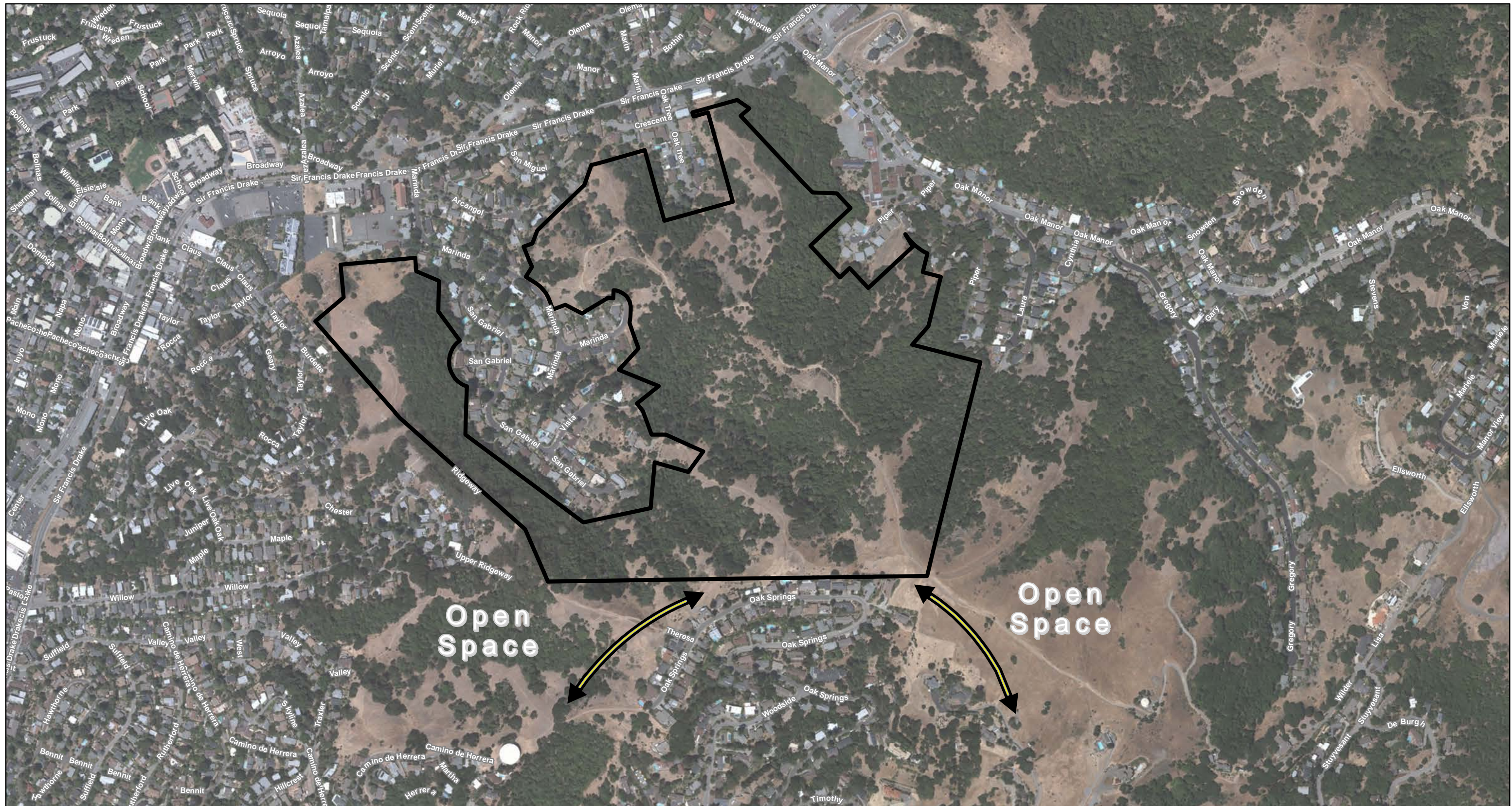




FIGURE 5

LSA

- Legend**
-  Wildlife Corridors
 -  Project Boundary



0 250 500
FEET

SOURCE: ESRI Aerial Basemap

I:\MRN1601\GIS\Maps\Figure 5_ Wildlife Corridors.mxd (9/13/2016)

Marinda Heights
Marin County, California
Wildlife Corridors

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