

APPENDIX B
BIOLOGICAL RESOURCES REPORTS

APPENDIX B-1
BIOLOGICAL CONSTRAINTS
ANALYSIS

UPDATED FINAL

BIOLOGICAL CONSTRAINTS ANALYSIS

CAVALLO HIGHLANDS
HAYWARD, CALIFORNIA



LSA

April, 2018

UPDATED FINAL

BIOLOGICAL CONSTRAINTS ANALYSIS

CAVALLO HIGHLANDS
HAYWARD, CALIFORNIA

Submitted to:

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LSA

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EXECUTIVE SUMMARY

This letter presents the results of LSA Associates, Inc. (LSA) biological survey and constraints analysis on the Cavallo Highlands site. This study was conducted to determine the vegetation and wildlife resources present within the site area and to assess the potential presence of special-status species. This study could form the basis for the CEQA analysis on biological resources.

This report includes: (1) a summary of relevant State and federal regulations that may apply to the project; (2) a description of the methods used to conduct the survey; (3) existing conditions on the site; and (4) an analysis of special-status plant and animal species and sensitive habitats potentially present.

The findings presented in this biological report are intended for the use of Hayden Land Company and the property owner in evaluating the property and proposed development. A discussion of the permits that will likely be required and a strategy to obtain the permits to develop the property is included.

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SITE LOCATION

The Cavallo Highlands site is located on the east side of Carden Lane, in Hayward, California. The property is situated on the 7.5-minute USGS Hayward, California quadrangle, and is centered at UTM 4167727 Northing / 586959 Easting. Figures 1 and 2 depict the regional location and vicinity of the project site, respectively.

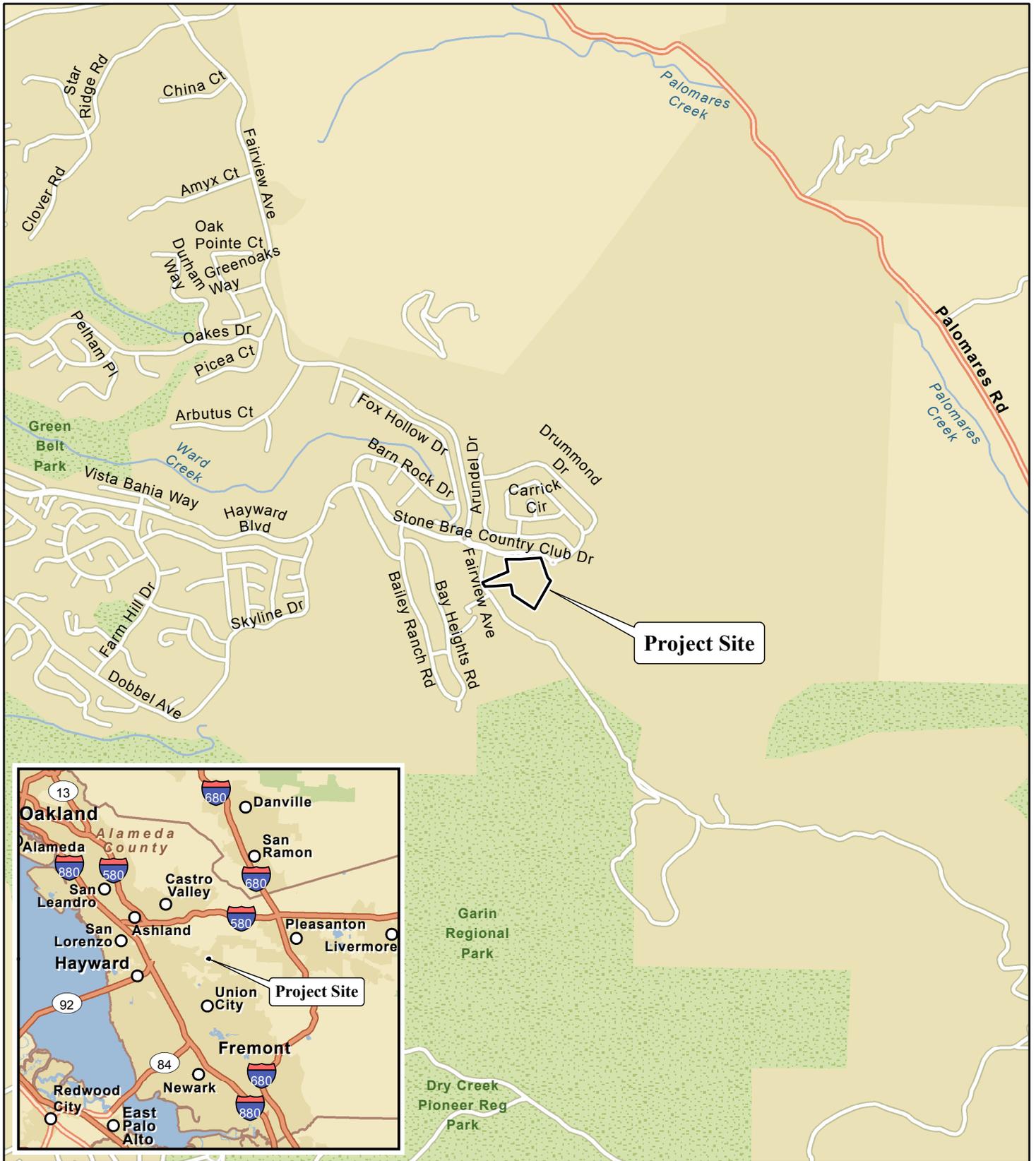
REGULATORY CONTEXT

The project site is within the general geographic range of several special-status plant and wildlife species. Biological resources, waterways, and wetlands on the project site may fall under the jurisdictions and regulations of the agencies listed below and described in more detail in Attachment A: Regulatory Context.

1. **U.S. Fish and Wildlife Service (USFWS).** Species listed under the federal Endangered Species Act; birds protected by the Migratory Bird Treaty Act.
2. **California Department of Fish and Wildlife (CDFW).** Streambed Alteration Agreements; Species listed under the State Endangered Species Act and Fully Protected species. Fish and Game Code also addresses birds protected by the Migratory Bird Treaty Act.
3. **U.S. Army Corps of Engineers (Corps).** Fill of Waters of the United States, including wetlands subject to Section 404 of the Clean Water Act.
4. **Regional Water Quality Control Board (RWQCB).** Water quality certification under Section 401 of the Clean Water Act; Porter-Cologne state water quality standards.
5. **City of Hayward.** Tree protection.

METHODS

Prior to conducting field work, LSA searched the CDFW California Natural Diversity Data Base (CNDDDB, CDFW 2016) for occurrences of special-status plants and animals for occurrences within 5 miles of the site. Based on this search, LSA compiled a list of special-status species and habitats known to occur within the vicinity of the site. This list was used as a reference for field surveys. LSA also reviewed the Alameda County Breeding Bird Atlas (Richmond et. al.). We also reviewed unpublished biological information for the site and immediate area (LSA 2005). In April 2018, LSA searched the CNDDDB again (CDFW 2018) to see if any new occurrences for special-status species had been entered. LSA has been the biological consultant for the Stonebrae Country Club for over 20 years and has conducted extensive plant and wildlife surveys in the surrounding area.

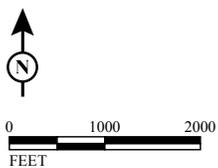


Project Site

Project Site

LSA

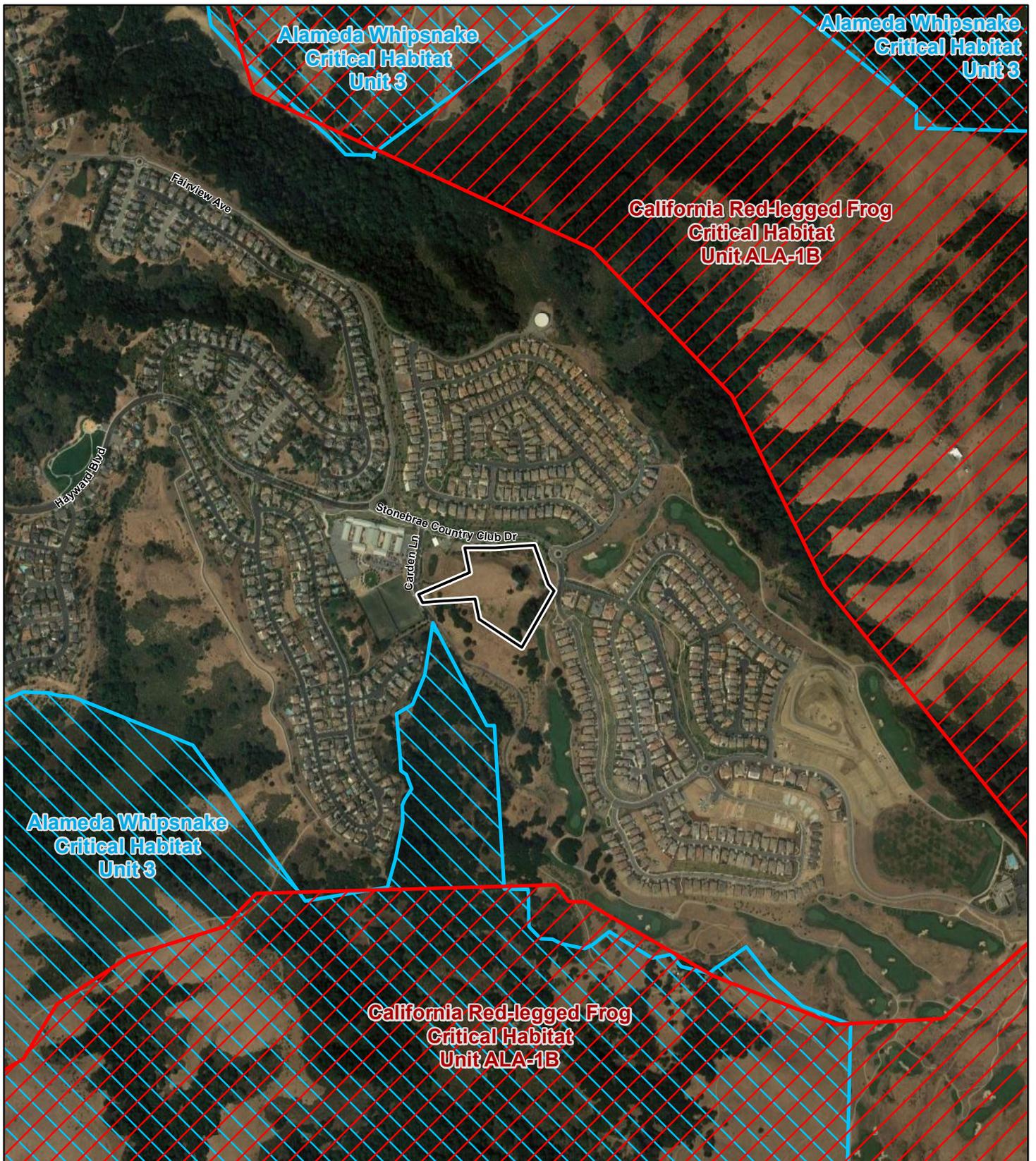
FIGURE 1



*Cavallo Highlands
Hayward, Alameda County, California
Regional Location*

SOURCE: ESRI StreetMap North America (2012).

F:\HLC1601\GIS\Maps\Biological Survey\Figure 1_Regional Location.mxd (2/19/2016)



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LEGEND

-  Project Site
-  Alameda Whipsnake Critical Habitat
-  California Red-legged Frog Critical Habitat



SOURCE: USFWS (10/2006 and 03/2010); Google Imagery (08/2017).

F:\HLC1601\GIS\Maps\Biological Survey\Figure 2_Site Location and Critical Habitat.mxd (4/26/2018)

FIGURE 2

*Cavallo Highlands
Hayward, Alameda County, California
Site Location and Critical Habitat*

For the purposes of this report, 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).
- Plant species on Lists 1B and 2 in the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2009).
- Animal species designated as Species of Special Concern by CDFW.
- Animal species designated as Fully Protected by Fish and Game Code.
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act guidelines.

A reconnaissance-level general field survey of the site was conducted by LSA Senior Biologist John Kunna on February 3, 2016. The survey was conducted to assess current habitat conditions and evaluate the site's potential to support special-status plant and/or animal species, as well as sensitive habitats. During this visit, the biologist walked the entire site recording plant and wildlife species observed, classifying vegetation types, and searching for the presence of sensitive habitats and special-status species. The biologist made a preliminary determination regarding potential seasonal wetlands and Waters of the U.S. The biologist also noted protected trees on the property. All observations were recorded in field notes and on maps. Focused or protocol-level surveys for California red-legged frogs and rare plants were not within the scope of this survey. A wetland delineation and preliminary jurisdictional survey of drainages was not conducted either.

Additional surveys were conducted by LSA Biologist Bernhard Warzecha on May 6, 2016; John Kunna and Tim Milliken on June 1, 2016; Bernhard Warzecha on May 12, 2017, and John Kunna on April 19, 2018. The purposes of these surveys were to evaluate the site's potential to support special-status species and sensitive natural communities, delineate potential jurisdictional features, inventory trees on the site, and conduct focused surveys for a rare plant.

Nomenclature for plants and vegetation communities used in this report is based on multiple sources, primarily *A Manual of California Vegetation* (Sawyer et al, 2008). Plant taxonomy and nomenclature follows Hickman (1993). Common and scientific names for animals are based on the CDFW Special Animals list.

The Natural Resources Conservation Service Web Soil Survey (NRCS) was reviewed to determine soil types on the site and identify any soil types (e.g., sandy, acidic, or highly alkaline soils; serpentinite, etc.) that may support special-status plants and/or sensitive communities, including wetlands.

RESULTS

Surroundings. The Stonebrae residential development and golf course is to the north, east, and southeast of the property. A detention basin that was constructed as part of the development is adjacent to the property's northwest side. Stonebrae Elementary School and associated sports fields

are located to the west of the property, on the other side of Carden Lane. South of the property are grasslands and mature riparian woodland that are part of Garin Regional Park.

Land use. The Cavallo Highlands site has a currently occupied single-family house and associated outbuildings. One outbuilding is a small concrete block structure with a door and no windows. Other outbuildings are used for storage and for boarding horses. Six horses were being boarded at the time of the first field survey. A few cattle were also grazing the site at the time of the April 2018 site visit. Two cars are abandoned on the property. The property is fenced around the perimeter, with remnant internal fences of old pastures. A paved, approximately 8-foot wide driveway runs from Carden Lane approximately 750 feet to the house.

Soils. The soils are mapped by NRCS as predominantly “Gaviota rocky sandy loam, 5 to 40 percent slopes, eroded.” A small portion of the site is mapped as “Los Osos loam, seeped variant, 3 to 15 percent slopes.” No serpentine soils occur on or near the property.

Elevation. The elevation ranges from approximately 1153 feet above sea level (ASL) at the property boundary at Carden Lane to approximately 1275 feet ASL at the southern corner of the parcel.

Vegetation. Vegetation at the site includes non-native annual grassland, scattered planted ornamental and fruit trees, a grove of eucalyptus trees, a grove of California bay laurel (*Umbellularia californica*) trees, and other native trees including trees including coast live oak (*Quercus agrifolia*). Coyote brush (*Baccharis pilularis*) is the most common shrub species on the property, followed by poison oak (*Toxicodendron diversilobum*). A small area with standing water south of the driveway and outside the gate supports a few rush (*Juncus effuses*) plants. The invasive plant Italian thistle (*Carduus pycnocephalus*) is present, most dominantly in the flat parts of the swale on the north side of the property.

Grasslands: Most of the property is covered in non-native annual grasslands typical of historically grazed ranches in the area. It is dominated by Italian ryegrass (*Lolium multiflorum*). Clovers (*Trifolium* sp.) and other small herbaceous plants are mixed in with the grasses. A small patch of bracken fern (*Pteridium aquilinum pubescens*) grows out of the grassland on the north side of the property, on the steep north-facing slope on the southern side of the drainage. Several rock outcroppings are scattered throughout the grasslands, as shown in Photograph 1. The grassland has consistently been grazed by horses, and a few cattle were also grazing the site at the time of the April 2018 site visit. Old pens, fences, troughs, and other structures indicate that the property had historically been used for horses, cattle, and chickens. Less rocky portions of the grasslands have meadow vole (*Microtus californicus*) runways and Botta's pocket gopher (*Thomomys bottae*) burrows.

Eucalyptus Woodland: A grove of approximately 55 blue gum eucalyptuses with a diameter at breast height (dbh) of 8 inches or more is on the eastern side of the property. There are few other large eucalyptus trees on the property outside of this grove. Eucalyptus produce water-soluble toxins which inhibit the growth of herbaceous plants. No stick nests were observed in the eucalyptus, but the large trees provide suitable nest locations for red-tailed hawks, owls, and other bird species.

California Bay Laurel Woodland: There is a small grove of California bay laurels growing in a rock outcrop in the southern corner of the property, as shown in Photograph 3. Most of the trees in the

grove have multiple trunks. There are approximately 26 trunks with a dbh of 8 inches or more in the grove. The largest multi-stemmed tree had a total dbh of approximately 200 inches. Some of the trees had cavities which could be used by nesting birds. Please refer to the Tree Inventory and Valuation (LSA 2016) for a complete description of trees on the site.

Regulated Waters and Wetlands

During the reconnaissance survey, four features potentially subject to regulation by the Corps, RWQCB, and/or CDFW were identified:

- 1) A seasonal swale that runs along the northern side of the property
- 2) The roadside drainage ditch on the north side of the driveway
- 3) A seasonal stream that is parallel to the driveway on the south side
- 4) A wet area south of the driveway near the gate, that is fed by the preceding two drainages

The seasonal swale that runs along the northern side of the property had flowing water at the time of the survey, as shown in Photograph 4. This drainage was previously impacted by the Stonebrae development. Approximately 350 linear feet of the drainage is lined with plastic sheeting, as shown in Photograph 4. Near its western end stormwater flow enters a culvert, as shown in Photograph 5. The culvert then carries the water to a constructed detention basin, as shown in Photograph 6. The remains of other derelict erosion control measures, such as wattles and straw bales, are present in the drainage as well. Raccoon prints were seen on the plastic sheeting, as shown in Photograph 7. Lining the drainage with plastic sheeting has reduced its biological value. This feature has previously been delineated as a freshwater wetland. As such, this feature is regulated by the Corps and the RWQCB under the jurisdiction of the federal Clean Water Act. The swale does not have much indication of a bed and bank. As such, this feature is unlikely to be regulated by the CDFW under Section 1600 of the Fish and Game Code.

The drainage ditch on the north side of the driveway had flowing water at the time of the survey, as shown in Photograph 8. It has an ordinary high water mark.

The seasonal or intermittent stream approximately 20 feet south of and parallel to the driveway also had flowing water, as shown in Photograph 9. This feature does not appear to be located on the Cavallo Highlands site, but could be impacted by development of the property.

The water from the drainage ditch crossed the driveway just outside of the gate and entered a small wet area with typical wetland vegetation, as shown in Photograph 10. The seasonal stream also feeds into this wet area. The water then enters a plastic culvert and passes under Carden Lane.

In a guidance letter written after the court cases *Rapanos vs. The United States* and *Carabell vs. United States*, the Corps stated that it generally will not assert jurisdiction over the following features:

- Swales or erosional features (*e.g.*, gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

However; in LSA's recent experience, the Corps has exerted jurisdiction over many features that meet the definition above. In 2016 it was determined that it was likely the Corps would again take jurisdiction over the seasonal wetland in the swale on the north side of the property. It is an upslope extension of what was called "Seasonal Wetland Number 5" during the development of Stonebrae.

The seasonal creek on the south side of the driveway is also probably jurisdictional, but it is not on the property. Grading and construction activities should avoid all impacts to this creek.

LSA conducted a wetland delineation of the site on May 6, 2016 (LSA 2017). The Corps surveyed the site in May 2017, and provided a letter verifying the preliminary jurisdiction dated October 26, 2017. The Corps only took jurisdiction over the seasonal swale along the northern side of the property.

Sensitive Habitats

CDFW monitors the status of uncommon and declining plant communities/sensitive habitats in California, and has published a protocol for surveying and evaluating impacts to special status native plant populations and natural communities. The protocol is beyond the scope of this report. The only CNDDDB occurrence for a special status terrestrial community within 5 miles of the property is Northern Coastal Salt Marsh, which is not present on the site. Wetlands, native grasslands, and California bay forest are also considered to be special-status natural communities. These communities are present on the site; but due to their small size, the presence of non-native species and their disturbed and fragmented nature they are not high-quality occurrences.

Protected Trees

Please refer to the updated Tree Inventory and Valuation (LSA, 2016) for a complete description of the trees on the site.

Special-Status Plant Species

The CNDDDB contained occurrences for six special-status plant species within 5 miles of the site. The two occurrences for one of these species, alkali milk-vetch (*Astragalus tener* var. *tener*) is considered extirpated, and no suitable vernal pool habitat is present on the site. Therefore the species was not considered further. The remaining five species are summarized in Table A: Special-Status Plant Species with Extant Occurrences within 5 Miles of the Site. Upon further review, suitable habitat for only one of the species, Diablo helianthella, has potential to occur on the property.

Diablo helianthella (*Helianthella castanea*) is a spring blooming perennial that occurs in broadleafed upland forests and woodlands, riparian woodlands, coastal scrub, chaparral, and valley and foothill grassland, usually in chaparral/oak woodland interface; in rocky azonal soils, often in partial shade. There is one CNDDDB occurrence for the species, approximately 1 mile from the property. This species generally does not persist in heavily grazed areas. This plant can be identifiable outside of its blooming period, and it was not detected during the brief reconnaissance survey. Floristic inventories conducted in 1998 throughout the adjacent and much larger Stonebrae development did not find Diablo helianthella, or any other special-status plant species (LSA, 2002). LSA biologist Bernhard Warzecha surveyed the Cavallo Highlands site for Diablo helianthella in May of 2017 when it would have been easily detected, and the species was not found. LSA biologist John Kunna also searched for the species in April of 2018 and also did not detect it. It is therefore now determined to be absent from the property.

Table A: Special-Status Plant Species with Extant Occurrences within 5 Miles of the Site

| Species | Status* | Habitat Requirements and Blooming Period | Potential to Occur on the Site |
|--|---------------|---|--|
| Diablo helianthella <i>Helianthella castanea</i> | -/-/List 1B | Rocky soils in chaparral/oak woodland interface. Blooms from March to June. | None. The CNDDDB lists one occurrence, approximately 1 mile away, within Garin Regional Park. Two focused surveys have not detected the species on the site. |
| Hairless Popcornflower <i>Plagiobothrys glaber</i> | -/-/List 1A | Coastal salt marshes, alkaline meadows, and seeps. Blooms from March to May. | None. The species is believed to be extinct in California. No suitable habitat on the property. |
| Most Beautiful Jewelflower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i> | -/-/List 1B | Serpentine soils in chaparral, cismontane woodland, and grassland. Blooms from April to September. | None. The property does not have any serpentine soils. |
| Oregon Polemonium <i>Polemonium carneum</i> | -/-/List 2 | Coastal prairie, opening in coastal scrub and lower montane coniferous forests. Blooms from April to September. | None. No suitable habitat on the property. The CNDDDB contains one occurrence for this species, approximately 2 miles east of the property. The sighting was made in 1932. |
| Santa Cruz Tarplant <i>Holocarpha macradenia</i> | FT/CE/List 1B | Occurs in sandy-clay soil in coastal prairie, coastal scrub, and in valley and foothill grassland. Blooms from June to October. | None. No suitable habitat on the property. The CNDDDB contains one “possibly extirpated” occurrence 4.2 miles from the property. Other sources say that the last remaining natural population in the Bay Area was extirpated by development in 1993. |

* Status:

FE - Federally-listed as endangered

CE - California state-listed as endangered

List 1A - California Native Plant Society; plants presumed extinct in California

List 1B - California Native Plant Society; plants rare, threatened, or endangered in California and elsewhere

List 2 - California Native Plant Society; plants rare, threatened in California but more common elsewhere

Special-Status Animal Species

The list of CNDDDB occurrences within 5 miles of the property indicated the potential presence of nine special-status animal species in the vicinity of the site (Table B). For five of these species, there is little or no potential for them to occur on the property. The potential presence of special-status animal species is discussed in greater detail in the following section.

Table B: Special-Status Wildlife Species with Extant Occurrences within 5 Miles of the Site

| Species | Status* | Habitat Requirements | Potential to Occur on the Site |
|---|---------|--|--|
| Amphibians | | | |
| California tiger salamander <i>Ambystoma californiense</i> | FT/CT | Breeds in seasonal pools and stock ponds. Requires upland grasslands adjacent to aquatic breeding habitat with small mammal burrows. | None. The CNDDDB contains only one occurrence within 5 miles of the property. The Observation was made in a pond in Pleasanton Ridge Regional Park, approximately 2.5 miles east of the property, on the other side of Stonebrae. There are no suitable seasonal pools or ground squirrel burrows on the property. Has not been identified on Stonebrae with over 20 years of aquatic surveys. |
| California red-legged frog <i>Rana draytonii</i> | FT/CSC | Inhabits marshes, slow parts of streams, lakes, reservoirs, ponds, and other permanent or nearly permanent water with emergent vegetation. When not breeding the frogs may be found in damp woods and uplands. Uses rodent burrows and soil cracks for cover during periods of hot, dry weather. | Moderate. The CNDDDB contains 13 occurrences within 5 miles of the property. Individuals from nearby known breeding ponds may move through the site property, which is suitable upland and dispersal habitat. |
| Reptiles | | | |
| Alameda whipsnake <i>Masticophis lateralis euryxanthus</i> (also known as Alameda Striped Racer, <i>Coluber lateralis euryxanthus</i>) | FT/SC | Slopes and ravines where chaparral shrubs and oak trees form a vegetative mosaic with grasslands. Rock outcrops and an abundance of prey species such as western fence lizard. | Moderate. The CNDDDB contains numerous recent occurrences within 5 miles of the project area. Alameda whipsnakes have been trapped at Stonebrae development to the south and east and at the Bailey Ranch development to the west. The property contains some suitable habitat with rock outcroppings that is contiguous with known populations to the south. However, the small size of the property and surrounding development limit the potential for the species to be on the property. |
| Birds | | | |
| White-tailed kite <i>Elanus leucurus</i> | -/-/CFP | Hunts in open grassland habitats with sparse shrubs and trees. Nests near the top of trees. | Moderate. Suitable nesting and foraging habitat present. LSA biologists have observed kites at Stonebrae. |

| Species | Status* | Habitat Requirements | Potential to Occur on the Site |
|---|---------|--|--|
| Golden eagle <i>Aquila chrysaetos</i> | --/CFP | Hunts in rolling foothills and mountain areas. Usually nests on cliffs but will also use large trees and electrical transmission towers in open areas. | Low. Although golden eagles are often seen in the area, they are unlikely to nest on the property. The CNDDDB has one presumed extant occurrence within 5 miles of the project. The observation was made in 1993, of a nest in Sibley Volcanic Regional Preserve. There is a known golden eagle nest approximately 1 mile southwest of the property, in Garin Regional Park. |
| Burrowing owl <i>Athene cunicularia</i> | --/CSC | Inhabits open, dry, nearly or quite level grassland, prairie, and desert floor. Subterranean nester that generally uses existing mammal burrows (especially of ground squirrels), but will also excavate its own burrows or use culverts or pipes. | Low. The CNDDDB contains only one occurrence within 5 miles of the property, and that site was subsequently developed. LSA biologists have seen burrowing owls around rock outcrops on the Stonebrae Country Club. Not expected to nest on the property due to lack of suitable burrows and flat, open habitat for foraging. |
| Mammals | | | |
| Pallid bat <i>Antrozous pallidus</i> | --/CSC | Roost in caves, tunnels, and occasionally buildings and hollow trees. Forages over a variety of habitats. | Low. One of the two CNDDDB occurrences within 5 miles of the property is from an observation made in 1932; the other is of a single specimen collected in Hayward at an unknown date. Marginal roosting habitat in buildings and possibly trees is present on the property. |
| San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i> | --/CSC | Chaparral and woodlands. Feeds mainly on woody plants. An agile climber that builds conspicuous stick houses in trees and on the ground. | High. One old, inactive woodrat house and one active house were observed just south of the property. |
| Western mastiff bat <i>Eumops perotis californicus</i> | --/CSC | Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, chaparral, and urban. Roosts in crevices in cliffs, large rock outcroppings, and tall buildings. | None. The CNDDDB contains only one occurrence within five miles of the project, based on a specimen collected from "Hayward" in 1899. No suitable roost sites are present on the property. |

*Status:

- FT = Federally listed as threatened
- CT = California state listed as threatened
- CSC = California species of special concern

Alameda Whipsnake. The Alameda whipsnake (*Masticophis lateralis euryxanthus*) was recently renamed to the Alameda striped racer (*Coluber lateralis euryxanthus*) (Crother). This did not change its regulatory status or legal protections. For this report the older, more commonly used name is used.

Alameda whipsnake is a State- and federally threatened species that primarily occurs in areas that support scrub plant communities, including mixed chaparral and coastal scrub. This species also occurs in annual grassland and oak woodlands that lie adjacent to scrub habitats. Within these plant communities, specific habitat features needed by whipsnakes include, but are not limited to, small mammal burrows, rock outcrops, talus, and cover types that provide temperature regulation, shelter from predators, egg-laying sites, and winter hibernation refuges. Many of these same elements are important in maintaining prey species (e.g., western fence lizards).

Alameda whipsnake are known to be present in the Stonebrae development, north and east of the property. They were also trapped at the Bailey Ranch development west of the property.

During the development of the Stonebrae, a fence was erected around the property that also encompassed the site. The fence was intended to exclude Alameda whipsnakes from the development area. Alameda whipsnakes were trapped inside the fence and then relocated outside the fence to the south. This was not entirely effective, because individually-marked Alameda whipsnakes returned to their home ranges after relocation, either by climbing over the fence, going through gaps in the fence created by damage or access roads, or by using small mammal burrows that went under the fence. During the initial reconnaissance survey the biologist noted that the fence is still present to the south of the site. The fence is in disrepair and has mostly collapsed, so it no longer forms any barrier to Alameda whipsnake movement.

Although the Stonebrae and Bailey Ridge residential developments displaced Alameda whipsnakes and form partial barriers to their movement, the site is still mostly connected to contiguous high-quality Alameda whipsnake habitat to the south in Garin Regional Park, where whipsnakes are known to occur. The Stonebrae (at the time known as Blue Rock) Biological Opinion was issued to authorize “take” of Alameda whipsnakes and their habitat (USFWS 1999). It stated that the residential parts of the development would totally block the snake from moving over that part of Walpert Ridge, and that the golf course would partially block movement.

Aside from the limited access Alameda whipsnakes have to the Cavallo Highlands site, the habitat on the property is of low quality. The small size of the property is not enough to support a breeding population of whipsnakes. A radio-tracking study of four male whipsnakes in high-quality habitat in Tilden Regional Park found that the snakes had a mean home range size of 13.6 acres (Swaim). The entire Cavallo Highlands site is 8.88 acres, but it is contiguous with thousands of acres of suitable, protected habitat to the south in Garin Regional Park. The eucalyptus grove does not provide any habitat value for the Alameda whipsnake. Radio-tracked Alameda whipsnakes avoided large stands of eucalyptus (Swaim 1994), probably because the deeply shaded interiors of groves lack prey for the whipsnake and basking areas. The very short, grazed grass in the pastures provides little cover for Alameda whipsnakes, leaving them vulnerable to predators such as raptors. A domestic cat was seen on the property, and it is likely other cats from nearby neighborhoods also hunt on the property. Cats were also listed as a threat to Alameda whipsnakes in the Blue Rock Biological Opinion.

Our assessment is that the habitat value of the Cavallo Highlands site area for the Alameda whipsnake is low and that individual Alameda whipsnakes may use the property only rarely. However, we believe the CDFW and USFWS may consider the property to still provide habitat for the snake because it has been captured multiple times on surrounding parcels. Additionally, the eastern edge of the property is only 154 feet away from designated Critical Habitat (Figure 2). When Critical Habitat was originally proposed, the Cavallo Highlands site was within the boundary. During the public response period the developers of Stonebrae requested their lands be removed from critical habitat because of the pre-existing Biological Opinion from USFWS. When the Critical Habitat boundary line was redrawn the Stonebrae lands and Cavallo Highlands site were no longer included in the Critical Habitat.

California Red-legged Frog. California red-legged frogs are known to be present in the Stonebrae development, and have been observed within one mile of the site many times over the past 20 years. Most recently, LSA biologists documented breeding activity at Stonebrae Pond 3-P, which is 0.78 mile southeast of the site during the 2017 breeding season (LSA 2018). Breeding was also observed at 15 other Stonebrae ponds in 2017.

The detention basin immediately northwest of the site was constructed for the Stonebrae development and is named Water Quality Pond #2. It was designed to detain water and then drain within 7 days following a storm event. It was full of emergent vegetation and only a small pool of open water near the culvert that drains it, as shown in Photograph 6. Therefore it is not suitable breeding habitat for California red-legged frogs.

Our assessment is that the habitat value of the site for the California red-legged frog is low. There is no breeding habitat on the property or in the adjacent detention basin. The surrounding residential developments limit the potential for frogs to disperse into the property from breeding ponds to the east and west; however, there are no barriers to frogs dispersing from known populations to the south. Historically frogs used the property as upland and dispersal habitat. It is possible that during the rainy season individual frogs move into the property, following watercourses and taking shelter in burrows or under debris.

We believe the property is now an “ecological sink” for the frog (i.e., very low quality habitat that, on its own, would not be able to support a population and which does not contribute to/results in the loss of individuals in higher quality areas). The Stonebrae and Bailey Ridge residential developments have created an increase in pets and other urban-adapted predators (e.g. raccoons) that prey on the frog. Raccoon prints and a domestic cat were seen on the Cavallo Highlands site.

We believe the USFWS will likely consider the property to provide upland habitat for the frog given the observations of non-breeding frogs on the property within the last 20 years, and the proximity of known breeding ponds and Garin Regional Park. Additionally, the property is only approximately 0.3 mile away from designated critical habitat, as shown in Figure 2. The USFWS considers undeveloped land, including various vegetation types such as grassland, woodland, forest, and wetland, within 1 mile of breeding ponds (depending on surrounding landscape and dispersal barriers) to be “upland habitat” for the frog. Suitable upland habitat would therefore likely include the entire property acreage, less the footprint of any buildings.

San Francisco Dusky-footed Woodrat. The San Francisco dusky-footed woodrat is a subspecies that is classified as a State Species of Special Concern. The large stick houses that these woodrats build are their most conspicuous feature. Suitably-sized sticks for building houses may limit their population density in some areas. The woodrat is one of the few animals that can feed on oak leaves, despite their high tannin content. They are highly arboreal and also feed on a variety of fruits, nuts, seeds, and foliage. Woodrats are considered a keystone species, because their houses also provide shelter for a variety of other small animal species. Woodrats are a prey item for owls, snakes, and carnivorous mammals. Species of Special Concern must be addressed in California Environmental Quality Act (CEQA) documents.

Pallid Bat. The buildings on the property and some of the larger trees on the site could provide roost locations for pallid bat, which is classified as a State Species of Special Concern. The degree of activity surrounding the buildings reduces the likelihood for bat roosting but does not prevent it. No evidence of bats, such as guano, was detected during the survey. A small cavity in the eave of the house had some whitewash, indicating that it had been used by a bird, most likely a European starling (*Sturnus vulgaris*).

White-tailed Kite. The white-tailed kite is a raptor that hunts in grasslands and savannahs. It is known to nest in Alameda County, and LSA biologists have seen the species on the Stonebrae development. It is Fully Protected under Fish and Game Code, but is not listed under the CESA.

RECOMMENDATIONS

Tree Removal / Nesting Birds

A full inventory of the trees on the property was conducted by a Certified Arborist in 2016, and was updated in April 2018. It is likely that nesting birds that are protected by the Migratory Bird Treaty Act and Fish and Game Code nest in the trees on the property. There is no mechanism to permit the take of nesting birds, so tree removal and construction activities would have to be implemented to avoid impacts to nesting birds.

The trees should therefore be removed outside of the nesting bird season. While the actual timing of nesting varies by species, weather and location, the generally accepted breeding timeframe is February 1 through August 31. Some bird species that are present on or near the property, such as great horned owls and hummingbirds, nest before February 1, so the ideal time to remove the trees would be between September 1 and December 31. Because brush piles serve as an attractive refuge for wildlife including special-status species, the wood from the trees should be removed from the site or chipped immediately. If the trees are removed during the nesting bird season, a qualified avian biologist would be required to conduct nesting bird surveys prior to removal. Trees containing active nests and adjacent trees would not be permitted to be removed until after the young birds had fledged.

Birds may also nest on the structures on the property, or in shrubs, grasslands, or bare soil. In April 2018 an LSA biologist observed a pair of killdeer (*Charadrius vociferus*) with young on the site. Killdeer nest on bare ground, often in areas with gravel.

PERMITTING STRATEGIES

Non-listed Special Status Species

The white-tailed kite, burrowing owl, golden eagle, pallid bat, and San Francisco dusky-footed woodrat are not listed under either the ESA or CESA. However, they are considered rare, and Section 15380 of the CEQA guidelines states that they may be treated as rare or endangered even though they are not listed. Therefore they will have to be addressed in CEQA documents, and the impacts to them will have to be less than significant or reduced to less than significant with the implementation of mitigation. The golden eagle is also protected under the Bald and Golden Eagle Protection Act of 1940. It is recommended that a survey is conducted immediately prior to tree removal or demolition of buildings on the property to confirm that bats and birds are not roosting or nesting in them.

Regulated Waters and Wetlands

The Corps' Nationwide Permit (NWP) program issues general permits authorizing activities that have minimal adverse environmental impacts on jurisdictional waters. Nationwide Permit 29, for residential development, applies to projects with maximum cumulative impacts to jurisdictional wetlands and waterbodies of less than 0.5 acre or less than 300 feet of stream or tributary. For projects with impacts exceeding these thresholds, an Individual Permit must be obtained. Based on our understanding of the proposed development plans for the site, it would likely qualify for authorization under NWP 29. Administrative time frames between an Individual Permit and a NWP are not significantly different; both can be technically issued 60 to 90 days after submittal of applications although actual time frames are usually longer and are dependent on Endangered Species Act (ESA) consultation requirements. Also due to requirements of the RWQCB, the required supporting documents are also not significantly different. The RWQCB requires an alternatives analysis (the need to justify wetland fill for non-water dependent projects) for all projects involving wetland impacts while the Corps requires it only for individual permits.

Alameda Whipsnake

The Alameda whipsnake is listed as threatened under CESA. Under Section 1081 of CESA, CDFW is able to permit the "take" of Alameda whipsnakes that is incidental to an otherwise lawful activity. This is referred to as an incidental take permit (ITP). The applicant must complete the necessary steps under CEQA before CDFW can issue the ITP. The impacts to Alameda whipsnake would have to be minimized and mitigated for. The ITP would specify Avoidance and Minimization measures, which would largely overlap with requirements from the USFWS' Biological Opinion, which is further discussed below.

The Alameda whipsnake is also listed as threatened under ESA. An Endangered Species Act Section 7 consultation is one process by which "take" of a federally listed species can be authorized. In a Section 7 Consultation, a federal agency consults with the USFWS if there is a federal nexus. In this case, the Corps would be that agency, and the nexus would be impacts to Waters of the U.S. As part of the Corps permit application, consultation with the USFWS regarding threatened and endangered species is required. Under the Endangered Species Act (ESA) regulations, consultation is to be completed within a 180-day consultation period; however, final approval is rarely issued within this period and there is no penalty for the USFWS not meeting the time lines. Furthermore, recent USFWS funding constraints have caused short-staffing problems at USFWS offices. As a result, LSA

anticipates even longer than usual consultation periods and recommends budgeting at least a year to complete the approval process for the Alameda whipsnake consultation.

California Red-legged Frog

The California red-legged frog is not listed under CESA, so the ITP process described for Alameda whipsnake in the preceding section would not apply.

The California red-legged frog is listed as threatened under ESA, and the Section 7 consultation process described in the preceding section would result in a Biological Opinion that covered both Alameda whipsnake and California red-legged frog.

Mitigation for impacts to Alameda whipsnake and California red-legged frog habitat may be a significant biological resource cost consideration. The typically range of mitigation to impact ratio is from 3:1 to 4:1 (of mitigated acres: impacted acres); however, lower ratios can be justified in cases where impacted habitat values are low and proposed mitigation sites have high habitat values. Despite being disturbed, all land providing California red-legged frog upland habitat and Alameda whipsnake habitat will likely need to be included in impact calculations.

Since the property is not located within designated critical habitat, we believe it will be extremely unlikely the USFWS would deny take permits for the frog or snake if a reasonable level of mitigation is provided. Mitigation options include:

- Preservation, enhancement and long-term management (including a management endowment) of existing suitable frog and whipsnake habitat. This will likely need to be within Alameda County. This can be accomplished with dedication of fee title to suitable lands or a conservation easement over mitigation lands where the lands are retained in private ownership and some agricultural uses may be allowed (e.g., livestock grazing).
- Funding to provide for habitat restoration, enhancement, and long-term management of existing conserved lands such as Garin / Dry Creek Regional Park.
- Purchasing credits from an established mitigation bank. The Ohlone Preserve Mitigation Bank in southern Alameda County currently has mitigation credits available for California red-legged frog and Alameda whipsnake, and the Cavallo Highlands site is within the bank's service area. The credits are currently priced at \$25,000 per acre per species, but this price is subject to market fluctuations.
- A combination of approaches.

Due to the small size of the property, it is unlikely on-site mitigation would be approved. On-site mitigation would require an approved Mitigation Monitoring Plan, and long-term funding. Given the significant potential economic cost of the mitigation, LSA recommends evaluating potential mitigation options and commencing discussions with the USFWS as early as possible.

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APPENDIX A: REGULATORY CONTEXT

Biological resources on the Cavallo Highlands site fall under the jurisdictions and regulations of the agencies listed below:

U.S. Fish and Wildlife Service (USFWS)

The USFWS has jurisdiction over federally-listed threatened and endangered species under the federal Endangered Species Act (ESA). The ESA protects listed species “take” which is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” An activity can be defined as a “take” even if it is unintentional or accidental. In 1999 a final rule was published to define the word “harm”. It defined “the term ‘harm’ to include any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” This is more broadly interpreted to mean that the act of altering habitat is take.

An endangered species is one which is 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. In addition to endangered and threatened species, which are legally-protected under the federal Endangered Species Act, the USFWS maintains a list of candidate species. Candidate species are specifically included on a list published in the federal register. Federal candidate species are not afforded legal protection under the federal Endangered Species Act.

California Department of Fish and Wildlife (CDFW)

The CDFW has jurisdiction over state-listed threatened, endangered, and rare (plant) species under the California Endangered Species Act (CESA). In addition, species proposed for listing under the State act are also protected until a determination is made on the listing proposal. “Take” is defined as to “hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill.” The State and federal lists are generally similar, although a species present on one list may be absent from the other list.

CDFW permits take of listed species via an Incidental Take Permit as allowed by CESA Section 2081.

The State also maintains lists of special-status wildlife species identified as Species of Special Concern. These are species whose status is being monitored due to one or more threats. Species on these lists are not afforded legal protection, but they must be addressed in California Environmental Quality Act (CEQA) documents.

Fish and Game Code also has some wildlife protections that predate CESA. In the 1960’s a list of Fully Protected animals was created. CDFW cannot authorize take of Fully Protected species.

The CDFW also exerts jurisdiction over the bed and bank of watercourses according to the provisions of Section 1601 to 1603 of the Fish and Game Code. The CDFW typically requires a Streambed

Alteration Agreement for the fill or removal of material from any natural drainage. The jurisdiction of the CDFW under Section 1600 of the Fish and Game Code extends to the top of bank of a stream.

U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the Corps is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 Code of Federal Regulations (CFR) Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed “isolated wetlands” and may be subject to Corps jurisdiction.

In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the U.S. The type of permit depends on the acreage involved and the purpose of the proposed fill. Nationwide Permits are available for projects that are anticipated to have minimal impacts on waters of the U.S. and wetlands and meet the general terms of the specific Nationwide Permit and the standard conditions for all Nationwide Permits. An Individual Permit is required for projects that result in more than a “minimal” impact on wetlands. The Corps will be required to consult with the USFWS under Section 7 of the ESA if a project subject to Clean Water Act permitting may result in take of a federally listed species within its jurisdiction.

Regional Water Quality Control Board

Pursuant to Section 401 of the Clean Water Act, projects that require a permit from the Corps under Section 404 must also obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification ensures that the project will uphold state water quality standards. The RWQCB requires mitigation for any loss of jurisdictional area. The RWQCB also has independent regulatory authority over the fill of waters of the state under the Porter-Cologne Act.

APPENDIX B

PHOTOGRAPHS



Photograph 1: A small rock outcropping in grassland on the northern side of the property



Photograph 2: The leaf litter inside deeply-shaded eucalyptus grove



Photograph 3: Bay laurel trees growing out of a rock outcropping on the southern side of the property



Photograph 4: Water flowing under disintegrating plastic sheeting in the swale at the north end of the property



Photograph 5: The culvert at the western end of the swale.



Photograph 6: The detention basin northwest of the property



Photograph 7: Raccoon and deer prints on the degraded plastic sheeting in the swale on the north side of the property



Photograph 8: Water flowing in the ditch along the north side of the driveway



Photograph 9: The seasonal stream south of the driveway



Photograph 10: The small wet area on the south of the driveway, east of Carden Lane