

Biological Resource Assessment for The Terraces of Lafayette
Lafayette, California

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Prepared for:

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SUMMARY

Marylee Guinon, biological consultant, along with Jeff Olberding and Chris Bronny of Olberding Environmental conducted a reconnaissance-level biological assessment for the approximate 22.26-acre site for the proposed Terraces of Lafayette project in Lafayette, Contra Costa County, California.

Biologists Marylee Guinon and Jeff Olberding conducted a site reconnaissance on March 8, 2011. This report presents our findings and is intended to assist the City of Lafayette in the review process for the proposed project. Chris Bronny conducted a site assessment and formal wetland delineation and jurisdictional determination for the subject property on March 11, 2011 in accordance with the procedures outlined in the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2006). The Preliminary Wetland Jurisdictional Determination map is included in a map pocket (Appendix E) and the actual wetland report is in preparation by Olberding Environmental (anticipated to be completed in April 2011). Furthermore, Chris Bronny conducted focused protocol surveys for special status plant species on March 11, 2011. This report is also in preparation by Olberding Environmental and is anticipated to be completed at the conclusion of the protocol plant surveys, which are timed with anticipated blooming periods of particular target species.

Focused wildlife surveys were not conducted as part of this reconnaissance-level site evaluation. However, based on the reconnaissance survey, the highly disturbed nature of this site, and an assessment of habitats on site, certain special-status animal species are not expected to occur or can be entirely ruled out. Findings concluded that there is potential for nesting birds in the trees and grasslands, and potential for roosting bats in a few structures and trees on the site. Potential impacts to these wildlife species can be avoided by conducting pre-construction surveys, and if wildlife is detected, appropriate avoidance measures will be taken. In the event an active nest is found, construction setbacks can avoid disturbance until birds have fledged. In the event roosting bats are found in a structure prior to construction, these can be evicted prior to demolition by qualified biologists to fully avoid impacts. Trees slated for removal can be removed prior to the nesting season to avoid conflicts with potential nesting birds and construction. No federal- or state-listed sensitive plant and wildlife species are expected to occur at this site.

Based on the site evaluation, the study area contains jurisdictional waters or wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB). Jurisdictional features include a riparian drainage at the east portion of the site, and a small seasonal wetland in a depression near the Caltrans right-of-way (Appendix E). The March 11, 2011 site visit was conducted at an optimal to detect jurisdictional wetlands and waters because the visit followed significant rains. The creek drainage feature is regulated by the USACE, California Department of Fish and Game (DFG), and the Regional Water Quality Control Board (RWQCB).

Based on the present study, five of the 52 potentially occurring special-status plant species considered in this analysis have a low probability of occurring in the study area, due to lack of suitable habitat. Two of the five potential special-status plant species would have been detectable during the site visit, and their absences were confirmed in March 2001 survey by botanist, Chris Bronny. Further protocol plant studies will be conducted to determine species presence or absence for the remaining three annual species (Appendix A).

Within the study area, the potential presence of several special-status wildlife species in this region were ruled out, including Western pond turtle, a California species of special concern, California red-legged frog, a federally listed threatened and California species of special concern, foothill yellow-legged frog, a California species of special concern, and Alameda whipsnake, federally listed threatened and California-listed threatened species. The site is highly disturbed but does support a riparian drainage feature that crosses the eastern portion of the site before entering a storm drain, which ultimately drains to Las Trampas Creek. Several special-status bird and bat species have a high potential to nest, forage, or roost on site due to the presence of shrubs, grasslands, trees, and structures. Common bird species, which receive protection under DFG Code and the Migratory Bird Treaty Act, have a potential to nest on the site (Appendix B).

Based on our findings and an assessment of regional species occurrences and on-site habitats, we recommend the following measures:

Pre-construction surveys for nesting raptors and other birds, and roosting bats should be conducted prior to any tree removal, pruning of limbs, removal of structures, grading, or initiation of any construction activities.

1.0 INTRODUCTION AND METHODS

O'Brian Land Company contracted with Marylee Guinon and Olberding Environmental to conduct a reconnaissance-level biological assessment, formal jurisdictional wetland delineation, and protocol rare plant surveys for the 22.26-acre Terraces of Lafayette project located near the intersection Pleasant Hill Road and Deer Hill Road in Lafayette, Contra Costa County, California (Figure 1). The site is bordered by Highway 24, Pleasant Hill Road and Deer Hill Road. The study area coincides with the proposed project site, *i.e.* it was not deemed necessary to expand the study area to evaluate potential biological resources. In this report the project area is synonymous with the study area. This report presents the results of our site reconnaissance and background research, and includes a discussion of the existing conditions on site. Recommendations for further studies and focused biological surveys are also provided.

Biologists Marylee Guinon, Jeff Olberding and Chris Bronny conducted a site reconnaissance on March 8 and 11, 2011. The entire study area was surveyed on foot, including the property boundary to evaluate drainage patterns on adjacent parcels. Prior to conducting fieldwork, a search was made of the California Natural Diversity Data Base (CNDDDB and CDFG 2007a). Also reviewed were biological studies for other properties in the vicinity of the study area. We understand there is a biological report prepared by Nomad consultants for the City of Lafayette, for a larger study area that also includes this parcel.

We were not able to attain that report, but intend to incorporate its findings in the subsequent wetland and rare plant reports that are currently in preparation.

This survey was intended to evaluate potentially on-site habitat types (including wetlands and waters of the U.S.) and an assessment of the potential for occurrence of special-status plant and wildlife species. Focused wildlife surveys were not conducted as part of this reconnaissance-level site evaluation. However, based on the reconnaissance survey, the highly disturbed nature of this site, and an assessment of habitats on site, special-status animal species are not expected to occur or can be entirely ruled out. Findings concluded that there is potential for nesting or foraging birds in the trees and grassland, and potential for roosting bats in a few structures and trees on the site. Potential impacts to these species can be avoided by conducting pre-construction surveys. In the event an active nest is found, construction setbacks can avoid disturbance until birds have fledged. In the event roosting bats are found prior to demolition and construction, these can be evicted by qualified biologists to fully avoid impacts. No other sensitive plant and wildlife species are expected to occur at this site.

Chris Bronny of Olberding Environmental conducted a formal wetland delineation and jurisdictional determination for the subject property during the March 11, 2011 site visit in accordance with the procedures outlined in the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2006). Based on the site evaluation, the study area contains jurisdictional waters and wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB). The March 2011 site visit was conducted at an optimal time to detect jurisdictional wetlands and waters because the visit followed significant rains. The site supports a riparian drainage crossing the eastern portion of the site and a small seasonal wetland near the Caltrans right-of-way. In addition, the California Department of Fish and Game (DFG) regulates the riparian drainage.

Nomenclature used throughout this report conforms to Hickman (1993) for plants except where noted. Nomenclature for special-status plant species conforms to the California Department of Fish and Game (CDFG 2007b, c) and the California Native Plant Society (CNPS 2001, 2007); nomenclature for special-status animals conforms to the California Department of Fish and Game (CDFG 2006a, b); nomenclature for sensitive natural communities conforms to the California Department of Fish and Game (CDFG 2003, Holland 1986). Nomenclature for wildlife conforms to Sibley (2003) for birds, Stebbins (2003) for reptiles and amphibians, and Jameson Jr. and Peeters (2004) for mammals.

Figure 1. Project Vicinity Map

2.0 EXISTING CONDITIONS

2.1 Setting

The study area encompasses approximately 22.26 acres of land situated west of Pleasant Hill Road, south of Deer Hill Road, and north of Highway 24. The site is in the City of Lafayette just east of the downtown. Three major roadways border the study area, which is interspersed with buildings, asphalt paving and driveways. The site was mined historically and modified by Caltrans when constructing Highway 24. Outbuilding and storage sheds have potential to support bat species; however no sign of roosting bats was detected during the March visit. A detailed tree survey report is being prepared by Traverso, consulting arborist. This report describes and maps the larger native and ornamental trees that have the potential to support nesting birds, and that will be the target for pre-construction nesting surveys.

2.2 Plant Communities and Wildlife Habitats

The Property supports five habitat types that consist of non-native grassland, disturbed/ruderal herbaceous, seep, coast live oak woodland and riparian habitat along the drainage (which supports elements of arroyo willow thickets and poison hemlock patches). Each habitat is described in further detail below. A description of the plant and wildlife species present within each habitat type is provided below. Dominant plant species are noted.

Non-Native Grassland

This semi-natural herbaceous stand has *Avena* spp. as the dominant or co-dominant species in the herbaceous layer. Other cool-season non-native annuals found in association with this habitat type include bromes (*Bromus* spp.), hare barley (*Hordeum murinum*), rat-tail fescue (*Festuca myuros*), and perennial rye-grass (*Festuca perennis*). Non-native broad-leaved forbs (i.e., wildflowers) observed included wild geraniums (*Geranium dissectum* and *G. molle*), filarees (*Erodium cicutarium* and *E. botrys*), common groundsel (*Senecio vulgaris*), spring vetch (*Vicia sativa*), California bur-clover (*Medicago polymorpha*), rose clover (*Trifolium hirtum*), and Venus' needle (*Scandix pecten-veneris*).

While no native grasses were detected, native forbs observed included fiddleneck (*Amsinckia menziesii* and *A. intermedia*), California poppy (*Eschscholzia californica*), soap plant (*Chlorogalum pomeridianum*), *Clarkia* (*Clarkia* sp.), and miner's lettuce (*Claytonia perfoliata*). A few scattered seedlings of California buckwheat (*Eriogonum* sp.) were also observed along the east-facing hillslopes.

Seeds and vegetative cover provided by the non-native grassland habitat provide an abundance of foraging opportunities for a variety of animals. Mammal species observed in the non-native grassland habitat include California ground squirrel (*Spermophilus beecheyi*). Other mammals that might be expected to occur in this habitat include field mouse (*Peromyscus* sp.), California vole (*Microtus californicus*), striped skunk (*Mephitis mephitis*), opossum (*Didelphus virginianus*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and black-tailed deer (*Odocoileus hemionus*). Reptiles such as the gopher snake (*Pituophis*

melanoleuces) and common garter snake (*Thamnophis sirtalis*) may be present. The western fence lizard (*Sceloporus occidentalis*) was observed on the property. Amphibians that could utilize the non-native grassland habitat include the western toad (*Bufo boreas*).

A variety of bird species including black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), and Brewer's blackbird (*Spizella breweri*) were observed during the survey. Insects present in non-native grassland habitat provide food for species such as western meadowlark (*Sturnella neglecta*), blackbirds, loggerhead shrike (*Lanius ludovicianus*). Aerial foragers, including red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), and American crow (*Corvus brachyrhynchos*) were also observed.

Disturbed /Ruderal Herbaceous

Disturbed/ruderal lands are those on which the native vegetation has been completely removed by grading, cultivation, and development. Disturbed areas include paved and unpaved roadways, quarries, vacant lots, developments, parking areas, and storage yards. Such areas are not expected to support any naturally occurring vegetation, although invasive native and non-native plant species frequently colonize disturbed sites. Landscaped lands are similarly disturbed, in that all or most of the native vegetation has been removed and replaced with ornamental species. Disturbed and landscaped areas have little potential to support unique or rare botanical resources.

In this semi-natural herbaceous stand, mustards (*Brassica* spp.) and wild radish (*Raphanus sativus*) are the dominant species in the herbaceous layer. On certain hillslopes of the Property, mustards formed nearly pure stands. Depending on the amount of disturbance to the edaphic layer from past grading activities associated with the Caltrans borrow site, frequent overlap was observed between this vegetative assemblage and plant species observed in the non-native grassland stands (see above). Other commonly observed co-dominant species included Italian thistle (*Carduus pycnocephalus*) and yellow-star thistle (*Centaurea solstitialis*); gravelly soils on the graded terraces often had stands of stinkweed (*Dittrichia graveolens*) and telegraphweed (*Heterotheca grandiflora*) intergrading with this habitat type.

Wildlife species associated with disturbed/ruderal lands identified on the subject property are similar to those occurring in the non-native grasslands. Several additional species observed on the property included European starling (*Sturnus vulgaris*), and killdeer (*Charadrius vociferous*). These species are also often associated with open disturbed substrates. Wildlife that feed upon seeds within ruderal and ornamental vegetation includes such species as finches, goldfinches, sparrows, and a variety of rodents.

Seep

A single seep feature was mapped in the south-central portion of the Property. This feature is an extremely shallow concave microtopographical feature that appears to pond water for brief hydroperiods during the rainy season and supports a mix of upland and hydrophytic species including black mustard (*Brassica nigra*), birdsrape mustard (*Brassica rapa*), bitter-

cross (*Cardamine oligosperma*), cut-leaf geranium (*Geranium dissectum*), and perennial ryegrass; green algae (*Zygnema* sp.) formed a biotic crust in the bare soil portions of the seep.

In addition to the species associated with non-native grassland habitats, the seasonal seep may attract aquatic invertebrates such as the pacific tree frog (*Pseudacris regilla*). Wading birds such as snowy egret (*Egretta thula*) and great egret (*Ardea alba*) may forage in these areas during wet conditions as well.

Coast Live Oak Woodland

A remnant of coast live oak woodland occurs along the eastern boundary of the Property. The extant oaks form a nearly monotypic stand, with a shrub and herbaceous groundlayer largely absent due to the presence of heavy leaf litter and closed canopy. They vary in age and size class, with most mature trees multitrunked and fairly large in diameter at breast height (dbh). Associate shrubs included a single blue elderberry (*Sambucus mexicana*), coyote brush (*Baccharis pilularis*), California bay laurel seedlings (*Umbellularia californica*), and a few adventive cultivars of firethorn (*Pyracantha* sp.) and olive (*Olea europaea*).

Oak woodlands serve as habitat to a wide variety of wildlife species. Grey squirrel (*Sciurus carolinensis*), raccoon, and a variety of bat species may roost or nest in cavities in oak trees.

3.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

Prior to conducting fieldwork, the California Natural Diversity Data Base was reviewed for the most recent distribution information for special-status plant and animal species within the project's quadrangle and the surrounding adjacent quadrangles.

Information on special-status plant species was compiled through a review of the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (CNPS 2001, 2007), the California Department of Fish and Game's *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFG 2007c) and *Special Vascular Plants, Bryophytes, and Lichens List* (CDFG 2007b), and the U.S. Fish and Wildlife Service's *Endangered and Threatened Wildlife and Plants; Proposed Rule* (USFWS 1996, 1997, 2001, 2004) and *Federal Endangered and Threatened Species List* for the region (USFWS 2007). Also reviewed was *Unusual and Significant Plants of Alameda and Contra Costa Counties* (Lake 2001).

Information on special-status animal species was compiled through a review of the California Natural Diversity Database (CDFG 2007a), the California Department of Fish and Game's *State and Federally Listed Endangered and Threatened Animals of California* (CDFG 2006b) and *Special Animals List* (CDFG 2006a), and the U.S. Fish and Wildlife Service's *Endangered and Threatened Wildlife and Plants; Proposed Rule* (USFWS 1996, 1997, 2001, 2004) and *Federal Endangered and Threatened Species List* for the region (USFWS 2007).

3.1 Special-Status Plants

Special-status plant species include those listed as endangered, threatened, rare or those species proposed for listing by the U.S. Fish and Wildlife Service (USFWS 1996, 1997, 2001, 2004), the California Department of Fish and Game (CDFG 2007b,c) and the California Native Plant Society (CNPS 2001, 2007). The California Native Plant Society's listing is sanctioned by the California Department of Fish and Game and serves essentially as their list of "candidate" plant species. The CNPS List 1B and List 2 species are considered eligible for state listing as endangered or threatened under the California Department of Fish and Game Code. Such species should be fully considered during preparation of environmental documents subject to the California Environmental Quality Act (CEQA). The CNPS List 3 and List 4 species are considered to be either plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and the California Native Plant Society and California Department of Fish and Game recommend that these species be evaluated for consideration during the preparation of CEQA documents.

Based on a literature review and a familiarity with the flora within the project region, a total of 52 special-status plant species were considered to have at least some potential to occur within the region or have been recorded historically in the project vicinity (Appendix A). Of those 52, only five species were determined to have a low potential to be present on site. There are several special-status plant species known from within 5 miles of the study area. The closest known occurrence of any special-status plant species is Diablo helianthella (*Helianthella castanea*), CNPS List 1B, over 3 miles east of the study area. This species was detectable during the March 11, 2011 plant survey, therefore is presumed absent. One of two extant native populations of California black walnut (*Juglans hindsii*), CNPS List 1B, is located west of the study area in Lafayette. Walnuts on this site will be evaluated by the consulting arborists and addressed in the rare plant report. At the time of our March 2011 surveys, there were no leaves on these trees to enable identification. Western leatherwood (*Dirca occidentalis*) has a low potential to occur on the site, and because it would have been detectable, it is presumed absent. Three other annual species, Bent-flowered fiddleneck (*Amsinckia lunaris*), round-leaved fillaree (*California macrophylla*), and Large-flowered fiddleneck (*Amsinckia grandiflora*) have a low potential to occur at this site and were not detected in March survey. However, additional surveys during blooming period will be conducted according to survey protocol. The rare plant report is anticipated in June 2011.

3.2 Special-Status Wildlife

Special-status animal species include those listed by the U.S. Fish and Wildlife Service under the federal Endangered Species Act (USFWS 1996, 1997, 2001, and 2004) and by the California Department of Fish and Game under the California Endangered Species Act (CDFG 2006a, b). The U.S. Fish and Wildlife Service officially lists species as either threatened, endangered, or as candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (*e.g.*, bald eagle, golden eagle), the Migratory Bird Treaty Act (MBTA) and state protection under CEQA §15380(d). All birds, except European starlings, English house sparrows, and rock doves (pigeons), are protected

under the Migratory Bird Treaty Act. However, non-migratory game birds are protected under California Fish and Game Code §3503. Many other species are considered by the California Department of Fish and Game to be California species of special concern, listed in Remsen (1978), Williams (1986), and CDFG (2006b). In addition, the California Department of Fish and Game's California Natural Diversity Database tracks species within California for which there is conservation concern, including many which are not formally listed, and assigns them a CNDDDB Rank (CDFG 2006a). Although California species of special concern and species that are tracked by the CNDDDB but not formally listed are afforded no official legal status, they may receive special consideration during the CEQA review process. Although such species are afforded no official legal status, they may receive special consideration during the CEQA review process. The California Department of Fish and Game further classifies some species under the following categories: "Fully Protected", "Protected birds" (California Department of Fish and Game Code §3511), "Protected mammals" (California Department of Fish and Game Code §4700), "Protected amphibian" (California Department of Fish and Game Code §5050 and Chapter 5, §41), "Protected reptile" (California Department of Fish and Game Code §5050 and Chapter 5, §42), and "Protected fish" (California Department of Fish and Game Code §5515). The designation "Protected" indicates that a species may not be taken or possessed except under special permit from California Department of Fish and Game; "Fully Protected" indicates that a species can be taken for scientific purposes by permit only (CDFG 2006a). The Fish and Game Code §§3503, 3505, and 3800 prohibits the take, destruction or possession of any bird, nest or egg of any bird except English house sparrows and European starlings unless express authorization is obtained from California Department of Fish and Game.

Based on a literature review and a familiarity with the fauna within the project region, a total of 65 special-status animal species were considered to have at least some potential to occur within the region or have been recorded historically in the project vicinity (Appendix B). Special status wildlife species associated with habitats not present on the site are not discussed in this report. For a full listing of all species considered as part of this project, see Appendix B. Those special-status species that have potential to occur on site and/or are prominent in the present regulatory environment are discussed in detail herein.

Invertebrates

Several special-status invertebrate species were considered during the preparation of this report because the study area falls within or in the vicinity of the historical range of these species, including longhorn fairy shrimp (*Branchinecta longiantenna*), federally listed endangered, vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed threatened, San Bruno elfin butterfly (*Desmoceris californicus dimorphus*), federally listed endangered, bay checkerspot butterfly (*Eupydryas editha bayensis*), federally listed threatened, vernal pool tadpole shrimp (*Lepidurus packardi*), federally listed endangered, California linderiella or California fairy shrimp (*Linderiella occidentalis*), a CNDDDB tracked species, and callippe silverspot butterfly (*Speyeria callippe callippe*), federally listed endangered. Potential habitat within the study area is absent; therefore these species are not expected to occur. There are no vernal pools or seasonal wetlands to support the fairy shrimp or tadpole shrimp species, and the study area is beyond the range of the valley elderberry longhorn beetle. There is also a lack of open hillside habitat and potential host plants that could

support for the listed butterfly species. The Antioch efferian robberfly is not expected to occur as there are no recent occurrences in the region nor open grassland habitat comparable to that of locations where robberfly occurrences have been recorded.

Bridges' Coast Range Shoulderband Snail

The Bridges' Coast Range shoulderband snail (*Helminthoglypta nickliniana bridgesii*), a species tracked by the California Natural Diversity Database, occurs in many habitats, including tall grassland, thistles, weeds, and rock piles. They have also been found underneath woody debris under streamside oak woodland (Roth 1999). The Bridge's Coast Range shoulderband snail range includes Contra Costa County and northern Alameda Counties. It has been recorded on the west slope of the Berkeley Hills and along San Pablo Creek, San Pablo Ridge above Wildcat Creek, Point Isabel, near the Caldecott Tunnel, Moraga Canyon, Coyote Gulch in Moraga, Marsh Creek Canyon, near Marsh Creek Springs, and Tilden Park (Roth 1999).

Potential habitat does exist for Bridge's Coast Range shoulderband snail on the site. There have been occurrences reported within five miles of the study area, including Parcel number 16 on Deer Hill Road. Because this species is a former candidate for listing by USFWS, distributional information on this snail is maintained by CNDDDB. Additional surveys are not warranted.

Fish

Several special-status fish species were considered during the preparation of this report because the study area falls within or in the vicinity of the historical range of these species, including green sturgeon (*Acipenser medirostris*), federally listed threatened and California species of special concern, Sacramento perch (*Archplites interruptus*), California species of special concern, tidewater goby (*Eucyclogobius newberryi*), federally listed endangered and California species of special concern, delta smelt (*Hypomesus transpacificus*), federally listed and state-listed threatened, central California coast ESU and central valley ESU steelhead, federally listed threatened, central valley spring run ESU and winter run ESU Chinook salmon (*Onchoryhncus tshawytscha*), federally listed and state-listed threatened and federally listed and state-listed endangered, respectively, and Sacramento splittail (*Pogonichthys macrolepidotus*), a California species of special concern. Due to the lack of suitable habitat, there is no potential for occurrence to fish species within the study area.

Amphibians

Several special-status amphibian species were considered during the preparation of this report because the study area falls within or in the vicinity of the historical range of these species, including California tiger salamander (*Ambystoma californiense*), federally listed threatened and California species of special concern. However, based on the absence of suitable habitat, this species is not expected to occur on site (see Appendix B), but is discussed due its prominence in the regulatory environment and historical occurrences in the vicinity.

California Tiger Salamander

The California tiger salamander (Central Population), federally listed threatened and a California species of special concern, is a relatively large, terrestrial salamander that inhabits grasslands and oak savanna habitats in the valleys and low hills of central and northern California (Storer 1925, Stebbins 2003, Barry and Shaffer 1994, USFWS 2004). The California tiger salamander has been recorded from all of the nine Bay Area counties at elevations ranging from approximately 10 to 3,500 feet above mean sea level (Shaffer and Fisher 1991). California tiger salamanders appear to be in the initial stages of habitat fragmentation and decline (Fisher and Shaffer 1996). They require vernal pools, ponds (natural or man-made), or semi-permanent calm waters (where ponded water is present for a minimum of three to four months) for breeding and larval maturation, and adjacent upland areas that contain small mammal burrows or other suitable refugia for aestivation.

Adult California tiger salamanders spend most of their lives underground in small mammal burrows typically those of Beechey's (=California) ground squirrels (*Spermophilus beecheyi*) (Loredo *et al.* 1996). Adults emerge from underground retreats to feed, court and breed during warm winter rains typically from November through March. Adults may migrate long distances, up to a kilometer or more, to reach pools for breeding and egg laying (Jennings and Hayes 1994). The eggs are attached singly or in small groups of 2-4 to vegetation under water or directly on the bottom of the pool if emergent vegetation is sparse or nonexistent (Storer 1925, Jennings and Hayes 1994). After hatching in about 10-14 days the larvae continue to develop in the pools for several months until they metamorphose, which takes a minimum of 10 weeks (Anderson 1968, Feaver 1971).

Following metamorphosis, juvenile salamanders seek refugia, typically mammal burrows, traveling distances of 1.6 km (about 1 mile) or more from their breeding sites (Austin and Shaffer 1992) in which they may remain until they emerge during a Trenham *et al.* 2000). California tiger salamander populations and breeding habits are vitally influenced by environmental conditions including seasonal rainfall and pond duration (Loredo and Van Vuren 1996). California tiger salamanders are dependent on the integrity of both breeding ponds and adjacent upland habitat, especially long-lasting vernal pool complexes (Jennings and Hayes 1994). The alteration of either habitat component through the introduction of exotic predators or the construction of barriers (e.g. roads, berms, and certain types of fences) that fragments habitat and reduces connectivity can be detrimental to the survival of the California tiger salamander (Jennings and Hayes 1994).

The site does not fall within federally designated California tiger salamander Central California DPS Critical Habitat. None of the proposed Critical Habitat units in Contra Costa County were included in the final designation of California tiger salamander Critical Habitat due their inclusion in the East Contra Costa Habitat Conservation Plan (Jones and Stokes 2006).

Three occurrences of California tiger salamander are known within five miles of the study site, observed in 1938, 1952, and 1954 (Figure 5). California tiger salamander is recognized as being extirpated from these recorded sites (Jennings and Hayes 1994). Thus the study site is not in the vicinity or within dispersal range of any recent known occurrences (CDFG

2007a). Given the lack of suitable habitat and recent known occurrences, California tiger salamander are not expected to occur on site.

California Red-legged Frog

The California red-legged frog (*Rana* (= *aurora draytonii*) *draytonii*) is federally listed threatened and a California species of special concern. Optimal habitat includes ponds, stream courses, permanent pools (Storer 1925) and intermittent streams fed by drainage areas no larger than 300 km² (Hayes and Jennings 1988, USFWS 2004). This species occurs between sea level and 1,500 meters (5,000 feet) in elevation (USFWS 2004). Typical habitat characteristics include water depth of at least 0.7 meters (2.5 feet), largely intact emergent or shoreline vegetation, *e.g.* cattails (*Typha* spp.), tules (*Scirpus* spp.) or willows (*Salix* spp.), and absence of competitors/predators such as bullfrogs (*Rana catesbeiana*) and largemouth bass (*Micropterus salmoides*) (Hayes and Jennings 1988). However, according to Jennings (pers. comm. 2003), California red-legged frog will use a wide variety of habitats, including temporary pools and streams, permanent watercourses, ponds, concrete-lined pools, isolated wells, stock ponds absent of shoreline vegetation, and in refuse piles near ponds. However, permanent aquatic habitat is essential to the survival of local California red-legged frog populations.

Adults are highly aquatic and are most active at night (Storer 1925). California red-legged frogs also make use of terrestrial habitat, especially after precipitation events for non-migratory forays into adjacent upland habitats and for migratory overland movements to breeding sites. In a study conducted by Bulger *et al.* (2003) at a coastal site in northern Santa Cruz County, California red-legged frog typically remained within 5 meters (16 feet) of aquatic habitat during dry periods, but moved into upland habitat as far as 130 meters (426 feet) during summer rains. Overland routes were often highly oriented toward the nearest pond and were typically traversed in direct, point-to-point movements with little to no preference or avoidance toward any particular topography or habitat type. California red-legged frogs were documented to migrate between aquatic sites at distances up to 3,200 meters (approximately two miles).

Breeding typically begins between November and mid-December and lasts through April in most years, but is dictated by winter rainfall (Stebbins 2003, Jennings and Hayes 1994, Bulger *et al.* 2003). Breeding typically occurs in permanent ponds and may occur in slower water of streams (*i.e.* pools or backwaters) (Hayes and Jennings 1988). At breeding sites males call in groups, or leks, of three to seven individuals to attract females (Jennings and Hayes 1994). During amplexus (breeding posture), eggs are fertilized by the male while the female deposits the egg mass on emergent vegetation (Storer 1925, Jennings and Hayes 1994). However, breeding has also been documented to occur in ponds that lack emergent vegetation (Bobzien *et al.* 2000). Larvae typically hatch in six to twenty-two days and metamorphosis is usually completed in four to five months (Bobzien *et al.* 2000, Jennings and Hayes 1994). There have been several documented cases of tadpoles overwintering to then metamorphose the following spring (Storer 1925, Fellers *et al.* 2001, Bobzien *et al.* 2000). Males and females usually attain sexual maturity at two and three years, respectively (Jennings and Hayes 1994).

The study area does not fall within federally designated California red-legged frog Critical Habitat, the closest of which is Critical Habitat Unit CCS-1A in Contra Costa County (USFWS 2006a), located several miles northeast of the study area. This critical habitat is displaced from the study site by multiple barriers including hillsides and ridgelines as well as multiple residential roads, many throughways, and the major California State Highways 24 and 680.

The closest recorded occurrence (1994) of the red-legged frog to the study area is in Las Trampas Creek, in the Burton Valley near to Moraga. Several more-recent (in the past 10 years) protocol-focused surveys in upper and lower Las Trampas Creek have shown negative findings, supporting a widely held belief that the California red-legged frog is eventually extirpated from densely populated urban areas. Dependable breeding sites for this frog are largely stock ponds. Breeding habitat is essential to the continuation of this species. These frogs are known to travel from a breeding pond to another permanent water source, such as a stock pond or lake. Even if red-legged frog were to occur in nearby lower reach of Las Trampas Creek, there is no such water body to attract dispersing frogs to cross the study area. Given the lack of suitable dispersal and breeding habitat on the site, the lack of breeding sites in the area, the numerous surveys showing negative findings in the general area, and the distance and barriers from the site to Las Trampas Creek, there is no potential for occurrence in the study area.

Foothill Yellow-Legged Frog

The foothill yellow-legged frog (*Rana boylei*), a California species of special concern, is a moderate-sized (37-82 mm SUL [snout-urostyle length]) frog that inhabits the Coast Range from the Oregon border to San Luis Obispo County and the western foothills of the Sierra Nevada. This species occurs from sea level to about 6,000 feet in elevation (Stebbins 2003, Jennings and Hayes 1994). Historically, the foothill yellow-legged frog occurred in most Pacific drainages west of the Sierra/Cascade Crest, and was found from Marion County, Oregon to Los Angeles County, California. It has been extirpated from most historic locations in southern California and throughout much of the foothills in the Sierra Nevada (Jennings and Hayes 1994).

Information regarding the life history of this species is limited (Jennings and Hayes 1994). The foothill yellow-legged frog occurs in rocky stream habitats, usually in woodland, chaparral or forest, with little to no pooling or bank vegetation cover (Stebbins 2003). These frogs are highly aquatic and when disturbed will dive to the bottom of the stream for cover (Stebbins 2003). Breeding occurs mid-March to early June after high flows have subsided (Stebbins 2003) in shallow, slow flowing water, usually pebble/cobble river bars along pools and riffles. Under natural flow regimes, foothill yellow-legged frog has been observed to deposit eggs earlier in the breeding season during drought conditions (Kupferberg 1996). Egg masses are usually attached to the downstream side of cobbles or pebble in backwater pools (Lind and Welsh 1996), but have also been found attached to aquatic vegetation, woody debris, and gravel. Alterations of natural flow regimes in lotic systems due to flood control and reservoir construction have caused loss of egg masses during high flows as well as desiccation during low flows (Kupferberg 1996).

Eggs typically hatch within five to thirty days or more, with metamorphosis taking three to four months (Zweifel 1955). Larvae are often difficult to observe in a flowing stream environment, and can appear similar to juvenile western toads (*Bufo boreas*). Metamorphosis occurs between July and September, so metamorphs require perennial streams or at least watercourses that flow late in the season. Tadpoles feed on algae, while adults feed on terrestrial and aquatic invertebrates. Tadpoles appear to be negatively affected by non-native species such as predatory fish and bullfrogs due to predation and competition (Kupferberg 1997, Hayes and Jennings 1988). Numerous aquatic insects, garter snakes, and birds prey upon tadpoles, while predatory fish and mammals and birds prey upon adults.

Threats to the foothill yellow-legged frog include altered flow regimes from the construction of reservoirs leading to loss of breeding habitat, high flow releases which can scour egg masses off the substrate, and low flows in the spring leading to desiccation of egg masses. Siltation of the stream course due to activities such as urban development, landslides and logging can cause smothering of the eggs, loss of larval habitat (the interstitial spaces between substrate used for refugia), and a reduction in the aquatic invertebrate abundance, which serves as the prey base for adult frogs.

One occurrence of foothill yellow-legged frog is known in the surrounding nine quadrangles, observed in 1997. This occurrence was located over five miles away to the west of the study site (CDFG 2007a). Given that the yellow-legged frog prefers a cobble or rocky substrate, there is no suitable breeding habitat present within the study area. Given the lack of suitable habitat and recent known occurrences and their distance from the site, there is no potential for occurrence of foothill yellow-legged in the study area.

Reptiles

Special-status reptile species were considered during the preparation of this report because the study area falls within or in the vicinity of the historical range of these species, including the California horned lizard (*Phrynosoma coronatum frontale*), a California species of special concern. However, based on the absence of suitable habitat and lack of recent occurrences in the region, this species is not expected to occur on site (Appendix B).

Western Pond Turtle

The western pond turtle (*Clemmys marmorata*), a California species of special concern, is the only fresh-water turtle native to greater California (Storer 1930). The literature describes two subspecies of western pond turtle; the northwestern pond turtle (*C. m. marmorata*) and the southwestern pond turtle (*C. m. pallida*). Overall, western pond turtles are habitat generalists, and have been observed in slow-moving rivers and streams (*e.g.* in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, stock ponds, and sewage treatment plants. They prefer aquatic habitat with refugia such as undercut banks and submerged vegetation (Holland 1994), and require emergent basking sites such as mud banks, rocks, logs, and root wads to thermoregulate their body temperature (Holland 1994, Bash 1999).

Western pond turtles regularly utilize upland terrestrial habitats, most often during the summer and winter, especially for oviposition (females), overwintering, aseasonal terrestrial

habitat use, and overland dispersal (Reese 1996, Holland 1994). Females have been reported ranging as far as 500 meters (1,640 feet) from a watercourse to find suitable nesting habitat (Reese and Welsh 1997). Nest sites are most often situated on south- or west-facing slopes, are sparsely vegetated with short grasses or forbs, and are scraped in sands or hard-packed, dry, silt or clay soils (Holland 1994, Rathbun *et al.* 1992, Holte 1994, Reese and Welsh 1997). Western pond turtles exhibit high site fidelity, returning in sequential years to the same terrestrial site to nest or overwinter (Reese 1996).

Females lay their clutch as early as late April in southern and Central California to late July, although they predominantly lay in June and July. In the early morning or late afternoon, gravid females leave the water and move upland to nest (Holland 1994). Natural incubation times vary, ranging from 80 – 100+ days in California. In northern California and Oregon, hatchlings remain in the nest after hatching and overwinter, emerging in the spring. In southern and central California, those that don't overwinter emerge from the nest in the early fall (Holland 1994).

Western pond turtle is known from areas around the region including San Pablo Reservoir, Mount Diablo State Park, along Bolinas Creek (a tributary of Crow Creek) and Alamo Creek. The nearest occurrence reported by CDFG (2007a) is Pine Creek Pond, over five miles east of the study area. None of the occurrences are closely connected by hydrology to Las Trampas Creek. No known occurrences are present within five miles of the site CDFG (2007a). Given the lack of recent occurrences in the area and lack of suitable habitat, there is no potential for occurrence in the study site.

Alameda Whipsnake

The Alameda whipsnake (*Masticophis lateralis euryxanthus*), federally and state-listed threatened, is a fast moving, diurnal snake with large eyes like all species within the genus *Masticophis* (Stebbins 2003). It is also known as the “Alameda striped racer” (Stebbins 2003). It typically measures three to five feet in length, with a fairly wide head and slender neck. The Alameda whipsnake is considered to be a subspecies of the California whipsnake (*Masticophis lateralis*), which ranges from Red Bluff in northern California to Central Baja California, inhabiting the Coast Ranges and foothills of the Sierra Nevada. The Alameda whipsnake is restricted to the hills of Alameda, Contra Costa, and northern Santa Clara counties within the San Francisco Bay region (Stebbins 2003). There are five remaining populations with little to no genetic flow between them: Sobrante Ridge, Oakland Hills, Hayward Hills, Mount Diablo vicinity, the Black Hills, and Wauhab Ridge. This regional restriction corresponds to the distribution of coastal scrub and chaparral within the area (Stebbins 2003). This habitat restriction may reflect the species' preference for friable, well-drained soils. The Alameda whipsnake is distinguished from other California whipsnakes by the thickness of the orange stripes on its sides.

Primary habitats for Alameda whipsnake typically include east, southeast, south and southwest facing slopes containing coastal scrub and chaparral, including rock outcrops that are within approximately 0.5 miles (Swaim 1994). However, current unpublished data suggests Alameda whipsnake may also utilize a wider range of habitat types. Canopy cover within these habitats is typically open (over 75 percent cover of total area) with little to no

herbaceous understory (Swaim 1994). Recent telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, whipsnakes frequently venture into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland. Swaim (1994) recorded male Alameda whipsnake home ranges of 1.9 ha (4.7 acres) to 8.8 ha (21.7 acres).

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 (Swaim 1994). Rock outcrops can be an important feature of Alameda whipsnake habitat because they provide retreat opportunities for whipsnakes and support lizard populations. Lizards, especially the western fence lizard, appear to be the primary prey item of whipsnakes (Stebbins 2003, Swaim 1994, Ellis 1987), although other prey items are taken, including skinks, frogs, snakes, and birds (Stebbins 2003, Swaim 1994).

Alameda whipsnake retreat in November into hibernacula and have been reported emerging March-April, with the males emerging from their hibernacula first (Ellis 1987). Courtship and mating occurs from late-March to mid-June. Hatchlings emerge in the first part of August through November (Swaim, pers. comm. 1996).

The site does not fall within federally designated Alameda whipsnake Critical Habitat. The Alameda whipsnake is known to occur within two miles of the study site. The study area does not contain coastal scrub and chaparral habitat normally used by the Alameda whipsnake. In addition, the study site lacks natural rock outcroppings that are preferred by the Alameda whipsnake where its major prey source of western fence lizards is found. Due to the lack of suitable habitat at the site and the lack of biological connectivity of the site to known occurrences of Alameda whipsnake, there is no potential for occurrence of this snake species.

Birds

Several special-status bird species were considered during the preparation of this report because the study area falls within or in the vicinity of the historical range of these species, including tricolored blackbird (*Agelaius tricolor*), a California species of special concern, burrowing owl, (*Athene cunicularia*), a California species of special concern, prairie falcon (*Falco mexicanus*), a California species of special concern, American peregrine falcon (*Falco peregrinus anatum*), state-listed endangered and California fully protected species, and Suisun and Alameda song sparrows (*Melospiza melodia maxillaries* and *M. melodia pusillula*), both California species of special concern. However, based on the absence of suitable habitat, these species are not expected to occur on site (Appendix B).

Raptors

Most raptors, such as golden eagles (*Aquila chrysaetos*), white-tailed kites (*Elanus leucurus*), red-tailed hawks, red-shouldered hawks, and Cooper's hawk (*Accipiter cooperii*), nest in mature, large coniferous or deciduous trees and use twigs or branches as nesting material. Smaller raptors such as American kestrel and western screech-owl (*Otus*

kennicottii) may nest in cavities in anthropogenic structures and trees. Short-eared owls (*Asio flammeus*) and northern harriers (*Circus cyaneus*) nest on the ground in grassland, marshes, and agricultural fields with tall vegetation. Burrowing owls typically nest in small mammal burrows in open dry lands, but have been known to utilize any ground cavity of similar size as well as anthropogenic structures. Common raptors such as American kestrels, great horned owl (*Bubo virginianus*), common barn owl (*Tyto alba*), and red-tailed hawks could nest on site and are afforded protection under the Migratory Bird Treaty Act and California Department of Fish and Game code. The nesting period for raptors generally occurs between December 15 and August 31. No active nests were detected during the March site visit.

The few larger native and ornamental trees on the site provide suitable nesting habitat for red-tailed hawk, Cooper's hawk, a California species of special concern, sharp-shinned hawk (*Accipiter striatus*), a California species of special concern, white-tailed kite, a California fully protected species, and long-eared owl (*Asio otus*), a California species of special concern. The potential for rodents to exist on the site is moderate and thus provides foraging opportunities for these bird species. In addition, the surrounding native trees and ornamental landscapes in the neighborhood provide potential foraging opportunities as they provide habitat for small reptiles, mammals, and birds. Travers's tree report maps the native and ornamental trees, which potentially provide nesting habitat for raptors.

Special-Status Passerine and Non-Passerine Landbirds

Passerines (perching birds) are a taxonomic grouping that consists of several families including swallows (*Hirundinidae*), larks (*Alaudidae*), crows, ravens and jays (*Corvidae*), shrikes (*Laniidae*), vireos (*Vireonidae*), finches (*Fringillidae*) and Emberizids (*Emberizidae*; warblers, sparrows, blackbirds, etc.), among others. Non-passerine land birds are a non-taxonomic based grouping typically used by ornithologists to categorize a loose assemblage of birds. Families grouped into this category include kingfishers (*Alcedinidae*), woodpeckers (*Picidae*), swifts (*Apodidae*), hummingbirds (*Trochilidae*), and pigeons and doves (*Columbidae*), among others. Habitat, nesting, and foraging requirements for these species are wide ranging, therefore outlining generic habitat requirements for this grouping is difficult. These species typically use most habitat types and are known to nest on the ground, in shrubs and trees, on buildings, under bridges, and within cavities, crevices, and created structures. Many of these species migrate long distances and all species except starlings, English house sparrows, and rock doves (pigeons), are protected under the federal Migratory Bird Treaty Act and California Fish and Game Code. The nesting period for passerines and non-passerine land birds occurs between February 1 and August 31.

Suitable nesting and foraging habitat is present within the native and ornamental trees and shrubs on site. The riparian habitat within the study area provides the potential for several special-status passerine species.

Mammals

Several special-status mammal species were considered during the preparation of this report because the study area falls within or in the vicinity of the historical range of these species,

including San Joaquin kit fox (*Vulpes macrotis mutica*), federally listed endangered and state-listed threatened, salt-marsh harvest mouse (*Reithrodontomys raviventris*), federally listed and state-listed endangered, Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), Alameda Island mole (*Scapanus latimanus parvus*), a California species of special concern, and Suisun shrew (*Sorex ornatus sinuosus*), a California species of special concern. However, based on the absence of suitable habitat and distance from known populations, these species are not expected to occur on site (Appendix B).

Special Status Bats

There are ten known species of bats in California classified as California species of special concern (CDFG 2007a). Seven bat species have at least some potential to occur within the project area, including the pallid bat (*Antrozous pallidus*), a California species of special concern, silver-haired bat (*Lasionycteris noctivagans*), a California species of special concern, hoary bat (*Lasiurus cinereus*), Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*), a California species of special concern, western mastiff bat (*Eumops perotis californicus*), a California species of special concern, long-eared myotis bat (*Myotis evotis*), long-legged myotis bat (*Myotis volans*), and Yuma myotis bat (*Myotis yumanensis*). These species use mature trees, snags, crevices and created structures (such as buildings) for roosting, either for winter roosting (hibernacula) or for forming nursery colonies. Bats are generally site faithful and will not abandon an established roosting area unless disturbed.

Four occurrences of pallid bats are reported within five miles of the study site. The pallid bat, like other bats, has roosting and maternity site opportunities within the study area, mainly in trees, but also in building structures, which encounter little or no disturbance. Pre-construction surveys are recommended because bats could feasibly move into and occupy the site.

Four occurrences of hoary bat and one occurrence of the silver-haired bat are known within the surrounding quadrangles, although none of these occurrences are within five miles of the study site (CDFG 2007a). Taking into account the few previous occurrences but given the potential habitat available on site, these species and other special-status bat species discussed above have a low potential to occur in the study site.

American Badger

The American badger (*Taxidea taxus*), a California Species of Special Concern, is a carnivore in the family Mustelidae (weasels). They range throughout California except for the humid forested regions in the state's extreme northwest (Larsen 1987). The American badger is most abundant in drier areas of shrub, forest, and herbaceous habitats, but can be found anywhere with friable soils and a suitable prey base (Albhorn 1988-1990). They have decreased substantially in abundance throughout their range since historic times, particularly in the Central Valley and northern Coast Range (Larsen 1987).

American badgers spend much of their time underground, where they prey primarily upon ground squirrels (*Spermophilus* spp.) and pocket gophers (*Thomomys* spp.), although they may also take other rodents, reptiles, birds, eggs, insects, and carrion (Williams 1986). Their

front legs bear large claws adapted for digging after their prey in underground burrows, and they may dig extensively within levees, fields, and other areas with high concentrations of fossorial rodents (Jameson Jr. and Peeters 2004).

American badgers are active year-round, though they tend to have smaller home ranges in winter than in other seasons (Albhorn 1988-1990). Mating takes place in late summer, and one to four young are born in spring within a burrow complex, usually in areas of sparse overstory cover (Jameson Jr. and Peeters 2004, Albhorn 1988-1990).

There are no reported occurrences of American badger within ten miles of the study area in the CNDDDB (CDFG 2007a). However, an American badger was recently killed by a vehicle on Ygnacio Valley Road approximately 6 miles from the study area (Adams, pers. comm., 2007). No suitable habitat for American badger occurs in the highly urbanized study area. In addition, there is a lack of abundant fossorial mammals for use as a prey base. Based on the presence of no suitable habitat, the American badger is considered to have no potential to occur within the study area.

3.3 Wildlife Movement Corridors and Habitat Fragmentation

Considering the impacts resulting in potential fragmentation of primary habitat types and loss of valuable wildlife dispersal corridors is important when assessing the potential biological impacts of a project. The 22.26-acre study site is located in Lafayette, just east of downtown, and is surrounded by Highway 24, Pleasant Hill Road, Deer Hill Road, and open space to the west. These roads present significant barriers to wildlife. Wildlife species generally associated with disturbed lands and non-native grasslands include, among other species, raccoon (*Procyon lotor*), opossum (*Didelphus virginianus*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*). Killdeer (*Charadrius vociferous*) are also often associated with open disturbed substrates. Wildlife that feed upon seeds or other parts of ruderal and ornamental vegetation include such species as finches, goldfinches, sparrows, and a variety of rodents. The site does not function as a potential wildlife movement corridor. Given the study area's location surrounded by developed areas and its disturbed nature, development of the site is not expected to have a long-term affect on wildlife movements. Any disturbance associated with such construction would be expected to be temporary, and appropriate avoidance measures would be taken.

3.4 Sensitive Natural Communities

Sensitive natural communities are those that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection (*i.e.*, §404 of the Clean Water Act and/or the §§1600 *et seq.* of the California Fish and Game Code). In addition, the CNDDDB has designated a number of communities as rare; these communities are given the highest inventory priority (Holland 1986, CDFG 2003). For communities tracked by the CNDDDB, northern maritime chaparral, northern coastal salt marsh, coastal brackish marsh, and serpentine bunchgrass, do not occur in the study area. The site does support riparian vegetation. Chris Bronny conducted a formal wetland delineation and jurisdictional determination for the subject property during the March 2011 site visit in accordance with the procedures outlined in the U.S. Army Corps of Engineers *Wetlands*

Delineation Manual (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2006). Based on the site evaluation, the study area contains jurisdictional waters or wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB). The March 2011 site visit was conducted at an optimal time to detect jurisdictional wetlands and waters because the visit followed significant rains.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Sensitive Natural Communities

The riparian drainage and associated plant community will be discussed in the forthcoming formal jurisdictional wetland determination.

4.2 Special-Status Plants

No state- or federally listed endangered, threatened, rare or candidate plant species were detected during the single, March 11, 2011 protocol-level survey. Based on the present study, all but five of the 52 potentially occurring special-status plant species considered in this analysis can be presumed absent from the study area either due to a lack of suitable habitat (Appendix A). In the March survey, two plant species with potential to occur are presumed absent because they would have been detectable. Additional focused plant surveys are anticipated to confirm presence or absence of three annual special-status species. The rare plant report is anticipated to be complete in June 2011.

4.3 Special-Status Wildlife

No state- or federally listed endangered, threatened, rare or candidate animal species were detected during this single, reconnaissance-level survey. Within the study area, several special-status bird and bat species have the potential to nest or roost in large trees or in unoccupied structures on site. Additionally, certain bird species could potentially nest in the non-native grasslands on site.

The nesting season for birds extends from December 15 through August 31. Given the high potential for occurrence of special-status bird species and the possibility of overlap of construction with the nesting season, pre-construction surveys for nesting raptors and other tree and ground nesting birds should be conducted prior to any tree removal, pruning of limb, grading, structure removal, or initiation of construction activities. If an active nest is detected, generally, a buffer zone of 50-300 feet is necessary to protect adults and nestlings from construction disturbances. If occupied nests are detected, exclusion areas should be required until young birds have fledged. Destruction of occupied nests would be in violation of the federal Migratory Bird Treaty Act and the Fish and Game Code.

Pre-construction surveys for roosting bats should be conducted concurrent with those for nesting birds. If roosting bats are detected, a qualified biologist in consultation with DFG, can exclude/evict the bats prior to removal of the occupied structure or tree. It is recommended that, if feasible within the CEQA approval process, that trees proposed for

removal be fallen before the spring construction season begins to avoid conflicts with potential nesting. This proactive tree removal would require that a qualified biologist clear the trees for potential nests, regardless of the time of year. Later, just prior to construction, another pre-construction survey would be conducted to detect presence and confirm absence of active nesting in those trees that will remain. If active nests are found, a buffer zone is established to exclude construction disturbance until birds has fledged. Pre-construction surveys for birds or roosting bats should be conducted no more than one week prior to tree removal or construction site disturbance.

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APPENDIX D
Site Photographs