

**BIOLOGICAL SITE ASSESSMENT
FOR THE
Main Street Precise Plan**

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SUMMARY

A reconnaissance-level biological assessment was conducted on several contiguous parcels on Main Street between Veterans Boulevard and U.S. Highway 101 in Redwood City, California by TRA Environmental Sciences, Inc. This assessment was performed to characterize biological resources and determine potential impacts of a proposed Precise Plan by the City of Redwood City. The property is bounded on the east by Redwood Creek. Redwood Creek is a perennial creek, and is a tributary of San Francisco Bay. A Precise Plan and General Plan amendments are proposed to establish design guidelines and development standards for properties on the east side of Main Street between Veterans Boulevard and U.S. Highway 101. The properties are largely urbanized, with seven parcels of zoned commercial – office park space. The property is relatively flat, but drops steeply to Redwood Creek at the eastern property boundaries.

A site visit was made on December 11, 2006 to document species and habitats present and to investigate potential impacts to vegetation and wildlife resulting from the proposed project. Most of the site is dominated by developed commercial land use (8.8 acres), and the dominant vegetation is ornamental landscaping adjacent to the parking lots and commercial buildings onsite. The only native vegetation on site consists of a narrow band of northern coastal salt marsh (1.7 acres) that is present along the edge of Redwood Creek. One California species of concern, salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), was observed onsite in a redgum (*Eucalyptus camaldulensis*) tree during the site survey. In addition, fifteen special status species (twelve animals and three plants) were determined to have potential to occur on site. Recommendations with respect to biological resources and regulatory agency requirements are provided on page 26.

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I. INTRODUCTION

The proposed project consists of a Precise Plan and General Plan and Zoning Map amendments for properties located at 1001 Veterans Boulevard and 305, 333, 353, 369, and 373 Main Street. The property currently supports two restaurants, one vacant lot, and four office buildings. The majority of the property consists of developed commercial space. The proposed General Plan amendment would change the project area's current land use designation from Commercial/Office Park to Heavy Commercial/Mixed Use. The proposed zoning amendment would change the project area's current zoning designations from Industrial Park/Combined Vehicular (IP-V) and General Commercial (CG) Districts to Planned Community (P) District. Planned Community District is the zoning designation given to Precise Plan areas. The Precise Plan establishes development standards (i.e., land use, building height, streamside setbacks, and density), design guidelines, implementation policies, and administrative procedures the City will follow in processing development applications within the Precise Plan area. The Precise Plan for the subject location includes a circulation and parking plan, and a creek trail/access plan for Redwood Creek, which forms the properties eastern boundary. The Redwood City Community Development Services has formulated the Precise Plan to include development policies which encourage better integration of the parcels with the creek, including the possible development of a multi-use pathway.

The following report documents the existing biological resources on the project site including plant communities, potential for special-status plant and animal species, and the property's potential function as a wildlife corridor. This document is intended to assess the impact of the Main Street Precise Plan, with recommended measures to protect existing biological resources. Recommendations with respect to biological resource conservation and regulatory agency requirements are provided at the end of this document.

II. SETTING

The subject property is bordered on the south by Veterans Boulevard, on the west by Main Street in Redwood City, on the north by the Bayshore Freeway (U.S. 101), and on the east by Redwood Creek (Figures 1 and 2). The property is situated at approximately 5 feet above sea level. Redwood Creek flows into San Francisco Bay approximately three miles west of the project site. The section of Redwood Creek within the project area is influenced by tidal action.

Land use in the project area is primarily commercial/office parks. Historically, the surrounding area supported coastal marsh habitat (sometimes referred to as tidal marsh) with seasonal wetlands and grasslands on the adjacent lands to the west (Goals Project 1999). Currently the property is considered developed bay fill (Goals Project 1999). Remnants of coastal/brackish marsh habitats remain in those areas bordering Redwood Creek that have not been developed.

The project site is approximately one-quarter mile east of Bair Island, a 2600-acre open space area within the Don Edwards San Francisco Bay National Wildlife Refuge. Bair Island consists of primarily northern coastal salt marsh bordering San Francisco Bay. Though portions of the island are owned by the state of California, the entire island is managed by the USFWS as a Wildlife Refuge. Bair Island provides critical habitat for many species, such as the endangered California clapper rail (*Rallus longirostris obsoletus*) and the salt marsh harvest mouse (*Reithrodontomys raviventris*), and is important habitat for many migratory birds.

Figure 1. Property Location

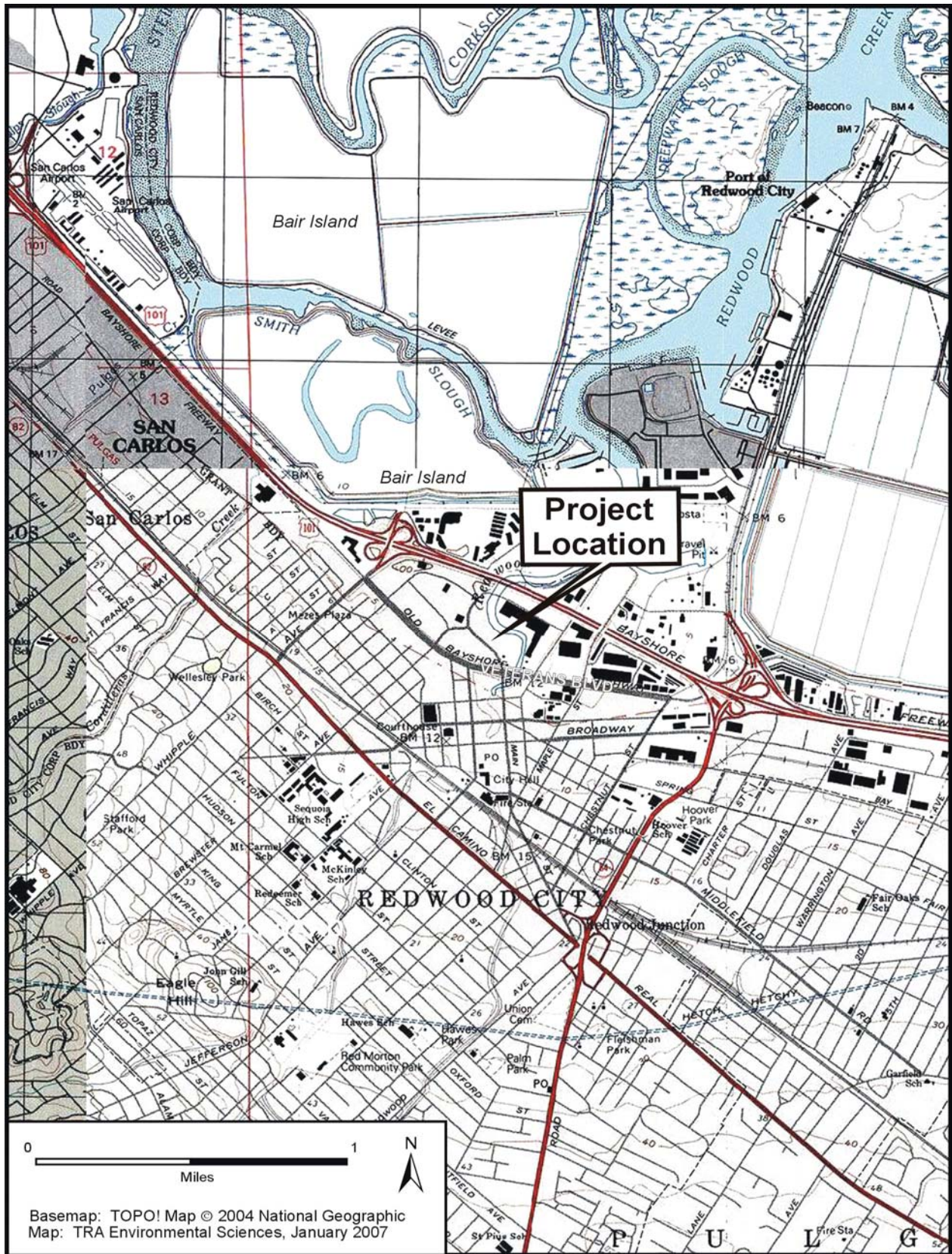
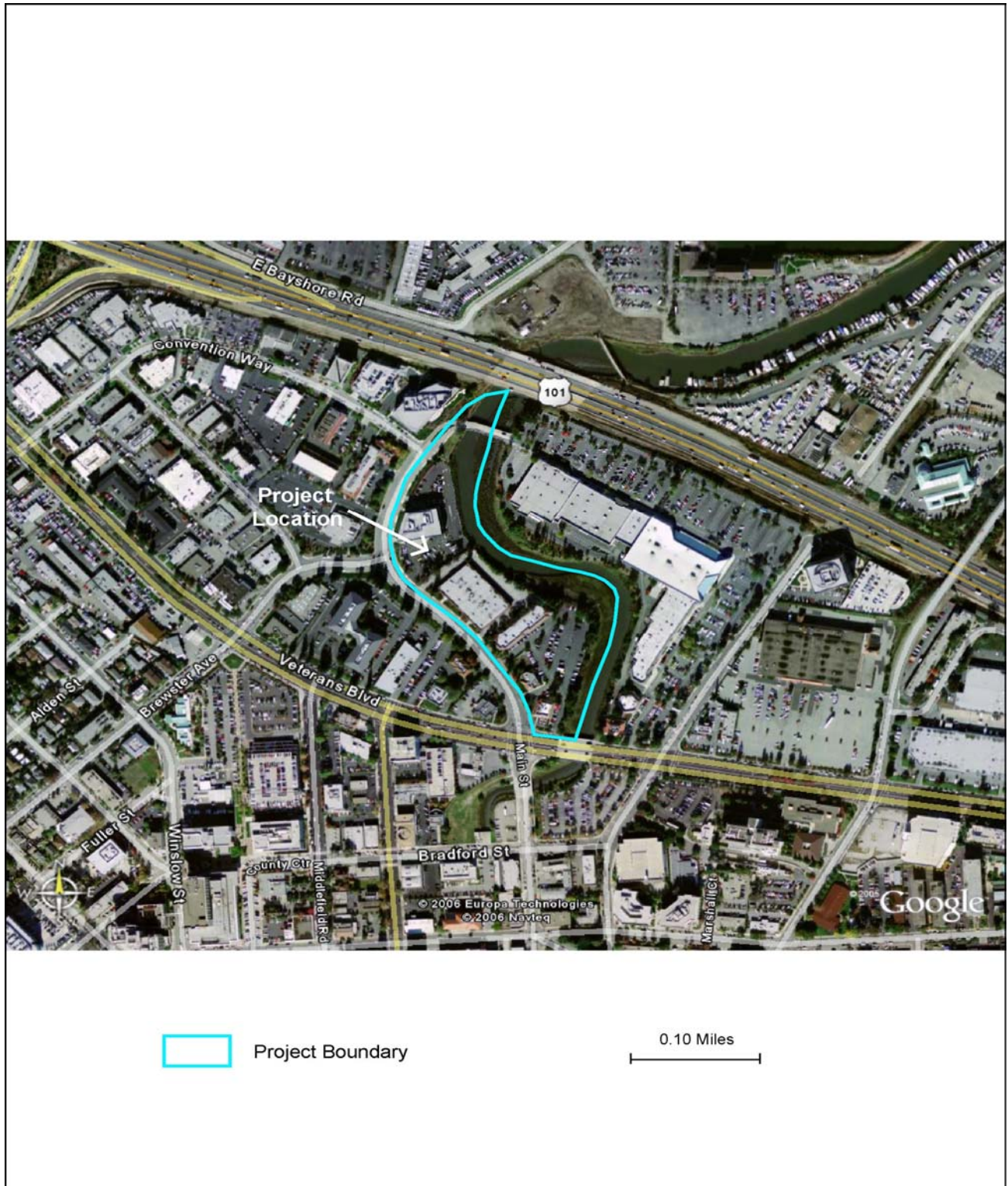


Figure 2. Aerial View of Property



III. METHODS

The property was surveyed for biological resources by TRA biologists Sara Krier, Terese Kastner and Patrick Kobernus on December 11, 2006 from approximately 10:30 AM to 1:00 PM to document existing vegetation, habitat types and function, and wildlife found or suspected to occur on site. Weather conditions during the survey were mild with a temperature of 56°, calm winds, and an overcast sky. The entire property, including developed and undeveloped portions of the property were inspected for biological resources. All wildlife and plant species observed were noted.

In addition to the site surveys, the California Natural Diversity Database (CNDDDB), the California Native Plant Society (CNPS) On-line Inventory, and local plant and wildlife information resources were searched to determine special-status species occurrences in the vicinity of the project site. Special-status species are plants or animals that are listed by the state and/or federal government as endangered, threatened, protected, or of special concern because of declining populations or habitats.

IV. RESULTS

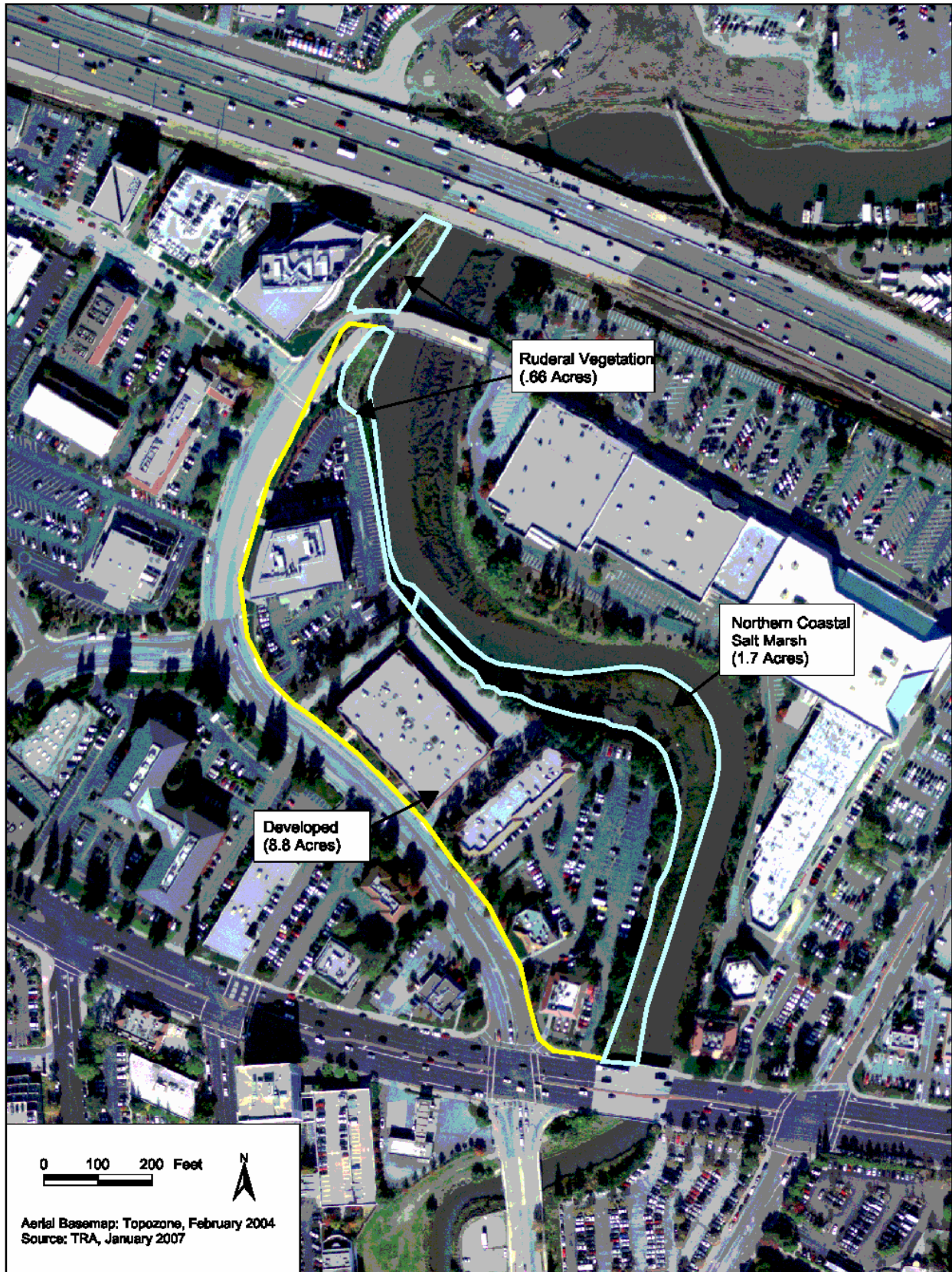
Results of findings on habitat types, wildlife and special-status species are presented below. Representative photos of the project site are provided in Appendix A. All species identified on site are provided in Appendix B.

A. Habitat Types

Coastal Salt Marsh (San Francisco Bay)

The undeveloped portion of the property consists of medium-high tidal marsh, supporting a mix of both native and non-native herbaceous plants (Figure 3). As classified by Holland (1986), this undeveloped portion is considered northern coastal salt marsh. Northern coastal salt marsh habitats are exposed to frequent tidal inundation by brackish and saline water. Species composition is determined by both inundation depth and water salinity. Within the wetland system, salinity fluctuates with season and with distance from respective fresh or saline water sources. Common herbaceous species occurring within the wetland include California cord grass (*Spartina foliosa*), pickleweed (*Salicornia virginica*), jaumea (*Jaumea carnosa*), alkali heath (*Frankenia salina*), and marsh gumplant (*Grindelia stricta*) among others. California cord grass is able to tolerate longer and deeper submergence than salt grass and pickleweed. However, the latter two species are able to tolerate higher salinities. Sawyer and Keeler-Wolf (1995) define this to be a saltgrass series and the Department of Fish & Game's Vegetation and Classification Program has listed the pickleweed-saltgrass association as rare and worthy of consideration by CNDDDB (CDFG 2003). A search of the CNDDDB does not indicate any such listing near the project site, but does consider the nearby northern coastal salt marsh at Bair Island as threatened. This portion of the property accounts for approximately 1.7 acres of the property.

Figure 3. Vegetation Communities



The coastal marsh within Redwood Creek along the project reach is heavily impacted by urbanization and was observed to have a large amount of accumulated garbage within the vegetation and concrete rubble in the creek. The garbage on site can negatively impact wildlife, and one female mallard was observed to have a paper cup stuck around her neck.

There are two areas along the creek that would not be considered salt marsh habitat. The most northern parcel (adjacent to Highway 101) is composed mostly of ruderal vegetation such as fennel (*Foeniculum vulgare*) and harding grass (*Phalaris aquatica*), with various ornamental trees and shrubs. Just to the south, bordering the creek, there is a thin strip of vegetation between the creek and a parking lot. This vegetation largely consists of ice plant (*Corpobrotus edulis*), with a thin strip of coastal marsh vegetation adjacent to the high water mark. These areas account for approximately 0.66 acres of the property.

Urban Landscape

The majority of the property has been developed for commercial uses. Bordering the parking lots there are landscape plants such as ornamental pine and palm trees, bottlebrush (*Callistemon citrinus*), and red gum trees. A full list of plant species observed during the site visit is provided in Appendix B.

Redwood Creek is a perennial creek that flows from the foothills in the west, through Redwood City and into San Francisco Bay. In the vicinity of the project site, Redwood Creek is highly influenced by tidal action. The creek begins in the foothills in Woodside as an open creek, but through the majority of its route through Redwood City it flows within underground culverts. Arroyo Ojo de Agua joins Redwood Creek underground just upstream of the project site. Redwood Creek daylights from its underground culvert near the corner of Bradford St. and Main Street, approximately 500 feet upstream of the project site. The developed portion of the property is approximately 8.8 acres.

B. Wildlife

The habitat observed on site consisted of coastal salt marsh and commercial urban development. Within or adjacent to the coastal marsh, wildlife observed includes various birds, such as mallard (*Anas platyrhynchos*), snowy egret (*Egretta thula*), common goldeneye (*Bucephala clangula*), ring-billed gull (*Larus delawarensis*), American coot (*Fulica americana*), and salt marsh common yellowthroat (*Geothlypis trichas*). Within the commercially developed areas along Main Street, approximately seven Anna's hummingbirds (*Calypte anna*), along with a Townsend's warbler (*Dendroica townsendi*) and a Yellow-rumped warbler (*Dendroica coronata*), were observed using a stand of redgum eucalyptus and bottlebrush along Main Street. A full list of wildlife species observed during the site visit is provided in Appendix B.

Species that were not detected during the site visit, but may be present in the coastal marsh associated with Redwood Creek on site include California vole (*Microtus californicus*), salt marsh wandering shrew (*Sorex vagrans halicoetes*), and salt marsh harvest mouse. Small rodents attract raptors that hunt at night such as short-eared owl (*Asio flammeus*) and barn owl (*Tyto alba*), as well as day-hunting raptors such as red-tailed hawk (*Buteo jamaicensis*). Birds that may use the marsh habitat on site for foraging or nesting include, California black rail (*Laterallus jamaicensis coturniculus*), Alameda song sparrow (*Melospiza melodia pusillula*), and California clapper rail among others. Other raptors that may use the Redwood Creek corridor for

foraging include Cooper's hawk (*Accipiter cooperi*), Northern harrier (*Circus cyaneus*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), peregrine falcon (*Falco peregrinus*), and merlin (*Falco columbarius*). Opportunistic species associated with urban creeks include raccoon (*Procyon lotor*) and opossum (*Didelphis marsupialis*).

The trees and shrubs on both the urban and undeveloped portions of the site may provide nesting habitat for a variety of birds, including raptors such as red-tailed hawk, Cooper's hawk and passerines such as American robin (*Turdus migratorius*) and bushtit (*Psaltiriparus minimus*), among others.

C. Wildlife Movement Corridors

Wildlife movement includes migration (*i.e.*, usually one way per season), inter-population movement (*i.e.*, long-term genetic flow) and small travel pathways (*i.e.*, daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations. These linkages among habitats can extend for miles and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas.

The subject property is situated in an area of commercial/retail development, with a corridor of creek and tidal marsh habitat that may provide limited wildlife movement. The riparian corridor of Redwood Creek provides a movement corridor from San Francisco bay up to where the creek is culverted underground, approximately 500 feet upstream of the project reach. On both local and larger scales, the property is limited in its function as a wildlife corridor due to extensive urbanization within the property boundary and in the surrounding area. However, the property's close proximity to the Don Edwards National Wildlife Refuge on Bair Island (Figure 1) and the San Francisco Bay makes it very accessible to migratory birds. Other wildlife that likely move through the corridor between urban areas and the refuge, especially at low tide, include raccoons, red fox (*Vulpes vulpes*), and opossum.

D. Special-Status Species

Special-status plant species include those listed as Endangered, Threatened, Rare, or as Candidates for listing by the U.S. Fish and Wildlife Service (USFWS; 2006b and c), the California Department of Fish and Game (CDFG; 2007a and 2007b), and the CNPS (2006). The CNPS listing is sanctioned by the CDFG and serves essentially as their list of candidate plant species. Special-status animal species include those listed as Endangered, Threatened, Rare, or as Candidates for listing by the USFWS (2006a and 2006c) and/or CDFG (2006).

Special-status species that were considered for their potential to occur onsite are listed in Table 1. This list was compiled from a review of the CNDDDB, CNPS online inventory, other relevant publications, and the preparers' knowledge of the area and local species.

Table 1. Special-status plant and animal species considered for their potential to occur onsite

Species that are considered to have either a moderate or high potential for occurring onsite are discussed in more detail following the table.

Species Name	Status	Habitat	Potential to occur on site
WILDLIFE			
California tiger salamander (<i>Ambystoma californiense</i>)	FT, CSC	Seasonal wetlands in grassland and oak-savannah	Low; preferred habitat not on site
Pallid bat (<i>Antrozous pallidus</i>)	CSC	Occurs in oak woodland habitat in central and northern California, among other habitat types. Day roost sites include rock outcrops, mines, caves, tree hollows, buildings, and bridges. Night roost sites are commonly under bridges, but also in caves and mines.	Low; preferred habitat not on site
Great blue heron (<i>Ardea herodias</i>)	S4	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes	Moderate; Redwood Creek provides good foraging habitat for this species.
Short-eared owl (<i>Asio flammeus</i>)	CSC	Nesting found in swamp lands, both fresh & salt; lowland meadows; irrigated alfalfa fields; nests on dry ground in depression concealed in vegetation	Moderate; Redwood Creek provides good foraging habitat for this species.
Edgewood blind harvestman (<i>Calicina minor</i>)	S1	Open grassland in areas of serpentine bedrock	Low; preferred habitat not on site
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT, CSC	Sandy beaches, salt pond levees & shores of large alkali lakes; needs sandy, gravelly, or friable soils for nesting	Low; preferred habitat not on site
Northern harrier (<i>Circus cyaneus</i>)	CSC	Nests in coastal salt & freshwater marsh; nest & forage in grasslands, from salt grass to desert sink	Moderate; Redwood Creek provides good foraging habitat for this species.
Western Pond Turtle (<i>Clemmys marmorata</i>)	CSC	Freshwater ponds and creeks in woodlands and grasslands	Low; preferred habitat not on site
Monarch butterfly (<i>Danaus plexippus</i>)	S3	Roosts located in wind-protected tree groves (Eucalyptus, Monterey Pine, Cypress), with nectar and water sources nearby	Low; preferred habitat not on site
Santa Cruz kangaroo rat (<i>Dipodomys venustus venustus</i>)	S1	Silverleaf manzanita mixed chaparral in the zayante sand hills ecosystem of the Santa Cruz mountains; needs soft well-drained sand	Low; preferred habitat not on site

Species Name	Status	Habitat	Potential to occur on site
White-tailed kite (<i>Elanus leucurus</i>)	S3	Nesting sites in rolling foothills/valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland; open grasslands, meadows, or marshes for foraging	Moderate; Redwood Creek provides good foraging habitat for this species.
Bay checkerspot butterfly (<i>Euphydryas editha bayensis</i>)	FT	Restricted to native grasslands on outcrops of serpentine soils	Low; preferred habitat not on site
Salt marsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	CSC	Resident in salt and fresh water marshes; requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting	High Species observed during site visit
San Francisco forktail damselfly (<i>Ischnura gemina</i>)	S2	Small, marshy ponds and ditches with emergent & floating aquatic vegetation	Low; limited in distribution, nearest occurrence was Coyote Point, San Mateo in 1999 (8.5 miles north)
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	ST	Tidal salt marsh heavily grown to pickleweed; also in fresh water & brackish marshes	Moderate; Redwood Creek provides potential nesting habitat, and good foraging habitat for this species.
Alameda song sparrow (<i>Melospiza melodia pusillula</i>)	CSC	Inhabits Salicornia marshes, nests low in Grindelia bushes and in Salicornia	High; Redwood Creek provides potential nesting habitat, and good foraging habitat for this species.
Edgewood Park micro-blind harvestman (<i>Microcina edgewoodensis</i>)	S1	Open grassland in xeric environments; found beneath serpentine rocks in grassland adjacent to scrub oaks	Low; preferred habitat not on site
San Francisco dusky-footed woodrat (<i>Neotoma fuscipes annectens</i>)	CSC	Forest and woodland habitats of moderate canopy & moderate to dense understory	Low; preferred habitat not on site
Black-crowned night heron (<i>Nycticorax nycticorax</i>)	S3	Rookery sites adjacent to foraging areas; lake margins, mud-bordered bays, marshy spots	Moderate; Redwood Creek provides good foraging habitat for this species.
Steelhead -- Central California coast esu (<i>Oncorhynchus mykiss irideus</i>)	FT	Ranges from the Russian River, south to Soquel Creek and to, but not including the Pajaro River. Also occurs in the San Francisco and San Pablo Bay basins.	Low; Preferred habitat components unlikely to be present
Double-crested cormorant (<i>Phalacrocorax auritus</i>)	CSC	Colonial nester on coastal cliffs, offshore islands, & along lake margins. Forages over open lakes and bays.	Low; preferred habitat not on site
California clapper rail (<i>Rallus longirostris obsoletus</i>)	FE, SE	Salt-water & brackish marshes traversed by tidal sloughs; associated with abundant growth of pickleweed	High; Redwood Creek provides potential nesting habitat, and good foraging habitat for this species.

Species Name	Status	Habitat	Potential to occur on site
California red-legged frog (<i>Rana aurora draytonii</i>)	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Low; preferred habitat not on site
Salt marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	FE, SE	Only found in saline emergent wetlands; pickleweed is primary habitat	High; Redwood Creek provides potential nesting habitat, and good foraging habitat for this species.
Salt marsh wandering shrew (<i>Sorex vagrans halicoetes</i>)	CSC	Tidal <i>Salicornia</i> and upland habitat	High; Redwood Creek provides potential nesting habitat, and good foraging habitat for this species.
Myrtle's silverspot (<i>Speyeria zerene myrtleae</i>)	FE	Inhabits coastal dune and/or coastal prairie habitat. Species is only known from four populations in Marin and Sonoma counties.	Low; habitat not present on site.
California least tern (<i>Sterna antillarum browni</i>)	FE, SE	Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, land fills, or paved areas	Moderate; unlikely to breed on site, may forage and stage prior to migration
American badger (<i>Taxidea taxus</i>)	CSC	Abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils	Low; preferred habitat not on site
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	FE, SE	Prefers dense cover & freshwater depths of up to one ft.	Low; prefers freshwater
PLANTS			
San Mateo thorn-mint (<i>Acanthomintha duttonii</i>)	FE, SE	Chaparral, valley and foothill grassland, coastal scrub	Low; preferred habitat not on site
Franciscan onion (<i>Allium peninsulare</i> var. <i>franciscanum</i>)	1B	Cismontane woodland, valley and foothill grassland	Low; preferred habitat not on site
Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>)	1B	Cismontane woodland, valley and foothill grassland	Low; preferred habitat not on site
Santa Cruz manzanita (<i>Arctostaphylos andersonii</i>)	1B	Broadleaved upland forest, chaparral, north coast coniferous forest -- open sites, redwood forest	Low; preferred habitat not on site
Kings Mountain manzanita (<i>Arctostaphylos regismontana</i>)	1B	Broadleaved upland forest, chaparral, north coast coniferous forest -- granitic or sandstone outcrops	Low; preferred habitat not on site
Coastal marsh milk vetch (<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>)	1B	Coastal dunes, coastal salt marshes; mesic sites in dunes or along streams or coastal salt marshes	Moderate; closest occurrence mapped at Upper Crystal Springs
Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congdonii</i>)	1B	Valley & foothill grassland, alkaline soils	Moderate; possible on upland portions of site bordering tidal marsh
San Francisco Bay spineflower (<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>)	1B	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub	Low; preferred habitat not on site

Species Name	Status	Habitat	Potential to occur on site
Fountain thistle (<i>Cirsium fontinale</i> var. <i>fontinale</i>)	FE, SE	Valley & foothill grasslands, chaparral	Low; preferred habitat not on site
Lost thistle (<i>Cirsium praeteriens</i>)	1A	Unknown	Low; presumed extinct in California
San Francisco collinsia (<i>Collinsia multicolor</i>)	1B	Closed-cone coniferous forest, coastal scrub; on decomposed shale mixed with humus	Low; preferred habitat not on site
Point Reyes bird's beak (<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>)	1B	Coastal salt marsh	Low; not seen in the area since 1908, presumed extirpated
Western leatherwood (<i>Dirca occidentalis</i>)	1B	On mesic sites of brushy slopes; mostly in mixed evergreen & foothill woodland communities	Low; preferred habitat not on site
San Mateo woolly sunflower (<i>Eriophyllum latilobum</i>)	FE, SE	Cismontane woodland; often on roadcuts	Low; preferred habitat not on site
Hoover's button celery (<i>Eryngium aristulatum</i> var. <i>hooveri</i>)	1B	Vernal pools, alkaline depressions, roadside ditches	Low; not seen in the area since 1907 and preferred habitat not on site
Hillsborough chocolate lily (<i>Fritillaria biflora</i> var. <i>Ineziana</i>)	1B	Cismontane woodland, valley and foothill grassland	Low; preferred habitat not on site
Fragrant fritillary (<i>Fritillaria liliacea</i>)	1B	Moist areas, often ultramafic, open hills, in coastal scrub, valley and foothill grasslands -- blooms Feb.-April	Low; preferred habitat not on site
Marin western flax (<i>Hesperolinon congestum</i>)	FT, ST	Chaparral, valley and foothill grassland; in serpentine barrens & in serpentine grassland & chaparral	Low; preferred habitat not on site
Crystal Springs lessingia (<i>Lessingia arachnoidea</i>)	1B	Coastal sage scrub, valley & foothill grassland, cismontane woodland; grassy slopes on serpentine	Low; preferred habitat not on site
Arcuate bush mallow (<i>Malacothamnus arcuatus</i>)	1B	Gravelly alluvium in chaparral	Low; preferred habitat not on site
Davidson's bush mallow (<i>Malacothamnus davidsonii</i>)	1B	Coastal scrub, riparian woodland, chaparral; sandy washes	Low; preferred habitat not on site
Hall's bush mallow (<i>Malacothamnus hallii</i>)	1B	Chaparral, some populations on serpentine soil	Low; preferred habitat not on site
White-rayed pentachaeta (<i>Pentachaeta bellidiflora</i>)	FE, SE	Valley & foothill grassland; open, dry, rocky slopes & grassy areas, often on soils derived from serpentine bedrock	Low; preferred habitat not on site
Choris's popcorn-flower (<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>)	1B	Mesic site in chaparral, coastal scrub, coastal prairie	Low; preferred habitat not on site
Slender-leaved pondweed (<i>Potamogeton filiformis</i>)	1B	Marshes & swamps; shallow, clear water of lakes and drainage channels	Low; preferred habitat (freshwater wetlands) not on site

Species Name	Status	Habitat	Potential to occur on site
San Francisco campion (<i>Silene verecunda</i> ssp. <i>verecunda</i>)	1B	Coastal scrub, valley & foothill grassland, coastal bluff scrub, chaparral, coastal prairie	Low; preferred habitat not on site
Saline clover (<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>)	1B	Marshes & swamps, valley & foothill grassland, vernal pools; mesic, alkaline sites.	Moderate; Redwood Creek provides potential habitat for this species.
Caper-fruited tropidocarpum (<i>Tropidocarpum capparideum</i>)	1B	Valley & foothill grassland; alkaline clay	Low; preferred habitat not on site
PLANT COMMUNITIES			
Northern coastal salt marsh	S3.2	This plant community observed onsite	High
Serpentine bunchgrass	S2.2	This plant community was not observed on project site	Not Present
Valley oak woodland	S2.1	This plant community was not observed on project site	Not Present

Notes: FE – Federal endangered; FT – Federal threatened; SE – State endangered; ST – State threatened; FSC – Federal species of concern; CSC – California species of special concern; CNPS 1B – Rare, threatened or endangered in California and elsewhere; S2.1 – Very threatened; S2.2 – Threatened; S3.2 – Threatened within California; S4 – Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.

Only one special status plant community, the northern coastal salt marsh, was observed onsite during the site visit. The salt marsh common yellowthroat was the only special-status animal species detected on the subject property during the site visit on December 11th, and no special status plants were observed. Three special-status plant species have potential to occur due to the presence of moderately suitable habitat and soils: Congdon's tarplant (*Centromadia parryi* spp. *congdonii*), coastal marsh milk vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), and saline clover (*Trifolium depauperatum* var. *hydrophilum*). These species would not have been in bloom during the December site visit, and therefore would have been difficult to detect. Saline clover flowers between April and June, Congdon's tarplant flowers between June and November, and coastal marsh milk vetch flowers between April and October. One to two follow up focused plant surveys are recommended during the flowering periods to determine whether these species are present.

Twelve special-status wildlife species have some potential to occur on site. Of those twelve species, there are five wildlife species that have a high probability of occurring on the project site, salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), Alameda song sparrow, California clapper rail, salt marsh harvest mouse, and salt marsh wandering shrew. All twelve species with some potential to occur onsite are discussed below.

The following is a discussion of species determined to have a high or moderate potential for presence within the project area. Additional species are discussed due to their combined special status and significance in the region.

Salt Marsh Common Yellowthroat (Geothlypis trichas sinuosa)

A small insectivorous warbler, this California Species of Concern is a sedentary (non-migratory) subspecies of the Common Yellowthroat and has undergone a severe decline in its population over the past 100 years due to habitat loss and alteration (Guzy and Ritchison 1999; Goals Project 2000). Although not directly dependent on water, salt marsh common yellowthroats require the dense growth associated with wet situations and the associated high densities of insects (Foster 1977). Optimal habitats are moist, dense woody swamps, salty, brackish, and freshwater marshes, coastal swales, and disturbed grasslands bordering waterlogged habitats in the San Francisco Bay (Foster 1977; Goals Project 2000). The common yellowthroat also occupies the borders between these habitats. Breeding typically lasts from mid-March and second clutches extend the breeding season into August. Nests are well concealed and are primarily found on or near the ground in grasses, low herbaceous vegetation, cattails, tules, and bushes up to approximately five feet above the ground (Stewart 1953). It is thought that yellowthroats that winter in *Salicornia* marshes breed in nearby brackish marshes (Foster 1977; Goals Project 2000). Foster (1977) found populations to be critically low in the South bay and Peninsula regions and greatly reduced from historic abundance throughout the breeding range. The CNDDDB only documents one record of salt marsh common yellowthroat within a 5-mile radius of the project site. A single salt marsh common yellowthroat was observed on site during the December 11, 2006 field visit. This species is locally common within the salt marshes, seasonal wetlands and adjacent upland habitats along levees within the salt marshes bordering San Francisco Bay.

Alameda Song Sparrow (Melospiza melodia pusillula)

Data for the actual locations and populations for this California species of concern appears to be sparse; however, there is data on the historic changes to the amount and quality of habitat (Goals Project 2000). Alameda song sparrows are somewhat smaller than other subspecies. Optimum habitat for the Alameda song sparrow consists of coastal salt marsh. The highest quality salt marsh habitat provides numerous small channels and a complex vegetation structure consisting of nest sites and song perches in *Grindelia* that often grows along small channels (Goals Project 2000). Alameda song sparrows also use adjacent uplands and may use uplands for nesting. Muddy edges of small channels are preferred forage sites, but they also forage for food on firmer ground under the marsh plants. They also feed from mature flowers of gumplant and the fruit and seeds of pickleweed (Goals Project 2000). Causes of the decline of Alameda song sparrow are habitat fragmentation and loss. The CNDDDB documents eight occurrences of the Alameda song sparrow within a 5-mile radius of the project site. The most recent of these occurrences were found on or near Bair Island. This species is locally common within tidal marshlands and immediate vicinity bordering the southern reaches of the San Francisco, and has potential for occurrence within the north coast salt marsh on the property within Redwood Creek.

California Clapper Rail (Rallus longirostris obsoletus)

Indigenous to the estuarine marshlands of San Francisco Bay, the California clapper rail is classified as endangered by the U.S. Department of the Interior and by the State of California. The California clapper rail's principal habitats are lower elevation coastal wetlands that are highly influenced by direct tidal circulation and dominated by cordgrass and pickleweed (Goals Project 2000; Eddleman and Conway 1998). Nesting habitat in San Francisco Bay is characterized by the presence of tidal sloughs, abundant invertebrates, and pickleweed coverage with extensive cordgrass coverage in the lower zones (Harvey 1988). Tall pickleweed, gum plant, and wrack (drifting dead vegetation) typify the upper zones (Harvey 1988). Highly opportunistic, the California clapper rail forages within emergent vegetation or along the edges

between marshes and mudflats. Threats to the California clapper rail include habitat loss and fragmentation, but predation by the non-native red fox might be the most serious threat. The CNDDDB documents four occurrences of the California clapper rail within a 5-mile radius of the project site. These occurrences were recent (2006) and were on Bair Island and nearby Greco Island. California clapper rail are locally common in tidal marshes and sloughs in San Francisco Bay and has potential for occurrence within the northern coastal salt marsh on the subject property.

Salt Marsh Harvest Mouse (Reithrodontomys raviventris)

Endemic to the salt marshes of the San Francisco Bay, the salt marsh harvest mouse was listed as a Federal Endangered species in 1970 and a State of California Endangered species in 1971. These mice are critically dependent on thick, perennial cover of salt marshes primarily characterized by pickleweed; they are seldom found in cordgrass or alkali bulrush (USFWS 2006). In marshes with an upper zone of peripheral salt-tolerant plants, mice are able to escape the higher tides (USFWS 2006, Goals Project 2000). Primarily vegetarian, they feed on leaves, seeds and stems of fresh green grasses, pickleweed, and salt grass (USFWS 2006, Goals Project 2000). They are very good swimmers and do not burrow, but will build nests on the ground or up in the pickleweed (USFWS 2006; Goals Project 2000). Major threats to their survival are habitat loss and fragmentation, changes in water salinity, and predation by non-native red fox and non-native feral cat (Goals Project 2000). The CNDDDB documents five occurrences of the salt marsh harvest mouse within a 5-mile radius. Most of these occurrences are associated with nearby Bair Island and Greco Island. With these habitat requirements and the proximity of the property to Bair Island, this species has potential to occur within the northern coastal salt marsh on site.

Salt Marsh Wandering Shrew (Sorex vagrans halicoetes)

Currently confined to the salt marshes of the South San Francisco Bay, this subspecies is considered a California Species of Concern. Little is known of the salt marsh wandering shrew, but shrews in general are insectivores, eating insects, worms, snails, slugs, and spiders. They also eat fungi, small mammals, roots, young shoots of plants, and probably seeds (CDFG 1999). The salt marsh wandering shrew prefers areas “in tidal marshes providing dense cover, abundant food (primarily invertebrates), suitable nesting sites, and fairly continuous ground moisture” (CDFG 1986). They tend to prefer marsh areas about six to eight feet above sea level and in areas not frequently inundated by tides. Common habitat locations are characterized by plentiful amounts of driftwood among pickleweed (CDFG 1986; Goals Project 2000). Serious threats to populations of salt marsh wandering shrew are habitat loss and fragmentation (Goals Project 2000). The CNDDDB documents two occurrences of the salt marsh wandering shrew within a 5-mile radius of the project site. The most recent documentation was in 1985 on nearby Bair Island. With these habitat requirements and the proximity of the property to Bair Island, this species has potential to occur within the northern coastal salt marsh on site.

California Black Rail (Laterallus jamaicensis coturniculus)

The smallest rail in North America, the California black rail is one of only two black rail subspecies that breed in North America. It is also the only subspecies that is mostly resident year-round. The California black rail is classified as threatened by the California Department of Fish and Game. The majority of the population (>90%) is associated with the tidal marshlands of the San Francisco Bay (Goals Project 2000). The California black rail nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation (Ehrlich et al 1988; Goals Project 2000). Most breeding areas are vegetated by fine-stemmed

emergent plants, rushes, grasses, or sedges (Eddleman et al. 1994). The California black rail tolerates a great deal of flooding provided upland vegetation is available during extreme high tides (Eddleman et al. 1994). This species feeds by ground gleaning on insects, aquatic invertebrates, and seeds (Goals Project 2000, Eddleman et al. 1994). Habitat fragmentation and loss in conjunction with historic and ongoing pressures of agricultural practices, salt production, and urbanization are identified as the primary causes of the decline of the California black rail (Goals Project 2000). The CNDDDB has only one record of the California black rail within a 5-mile radius. This documentation originates from 1972 in the nearby Belmont Slough. No rails were found in the south bay in a 1977 survey (CNDDDB). More recent surveys have found black rails north of the project site in San Pablo Bay. There have been observations of adult black rails in the South bay, but no breeding populations (Goals Project 2000). This species is locally found within tidal marshlands and immediate vicinity bordering the San Francisco Bay, and has potential for occurrence within the north coast salt marsh on the property within Redwood Creek.

Great blue heron (Ardea herodias)

These large birds are widespread and highly adaptable. Great blue herons feed mostly in slow moving or calm freshwater or along the coast. Nesting habitat primarily consists of trees, bushes, or on the ground of predator-free islands (Butler 1992). They nest as single pairs, but mostly in colonies. Feeding is opportunistic, but their diet is primarily made up of fish (Butler 1992). They hunt singly or in groups by wading or standing in wait for prey in shallow water. A recent nesting site was observed on Outer Bair Island in 2005 (SFBBO 2005). This species is locally common within tidal marshlands and immediate vicinity bordering the San Francisco Bay, and has potential for occurrence within the north coast salt marsh on the property within Redwood Creek.

California least tern (Sterna antillarum browni)

A summer migrant, the California least tern nests in colonies along the Pacific coast from San Francisco Bay south to northern Baja California. Nesting takes place on bare or sparsely vegetated, flat substrates, sandy beaches, alkali flats, landfills, or paved areas. Least tern nests are simple depressions in the substrate. Nesting colonies for this species exist in the North and East Bay at Alameda, Pittsburgh, and Albany shorelines. Recently fledged least terns leave breeding sites and disperse to post-breeding foraging areas consisting of calm waters and abundant fish. Several of these post-breeding areas are located in the South Bay “intake” salt ponds (Goals Project 2000). Shallow tidal areas are also important for post-breeding use. These birds are threatened by human impacts as well as by predation by red foxes and feral cats. The CNDDDB documents two occurrences within a 5-mile radius of the project site. These occurred on Bair Island in 1982 when 48 pairs nested and Greco Island in 1976 when just a few pairs nested. Currently, the only known nesting colony known in the South bay is in Alameda. Though no least terns have been recorded within the northern coastal salt marsh habitat within the project reach, there is some limited potential for occurrence on the subject property.

Short-eared owl (Asio flammeus)

A California species of concern, the short-eared owl is one of the most widely distributed owls. In North America, this owl primarily inhabits open grasslands, marshes, and tundra (Wiggins et al. 2006). The short-eared owl is a ground nester requiring dry sites with enough vegetation to conceal the female. Breeding takes place from mid-February through June. This owl hunts day and night feeding on small mammals and occasionally other birds. It uses hearing, vision, feathers, and flight adaptations for foraging (Wiggins et al. 2006). Within a 5-mile radius, the CNDDDB lists the most recent and nearest siting for the short-eared owl were nesting birds on

Bair Island in 1977 (CNDDDB 2006). The conversion of open grassland habitat to agriculture, grazing, recreation, housing, and resort development is considered to be the primary factor contributing to the decline of this species (Wiggins et al. 2006). The short-eared owl is locally found in both fresh and saline swamplands and lowland meadows of tall grasses, and has potential for occurrence within the northern coastal salt marsh bordering Redwood Creek.

Northern harrier (Circus cyaneus)

In the western part of the United States, this California species of concern breeds primarily in dry, upland habitats including prairies, grasslands, marshlands, croplands, and riparian woodland (MacWhirter and Bildstein 1996). During the winter, this species occupies a variety of habitats usually with a predominant herbaceous cover. These habitats include deserts, coastal dunes, prairies, grasslands, agriculture lands, estuaries, and salt and freshwater marshes (MacWhirter and Bildstein 1996). Nests are located on the ground in open, vegetated habitats. They are known to nest in both dry and wet environments. The two occurrences of northern harrier found by the CNDDDB are from 1971 and 1973. Both occurrences found eggs and nestlings in nests situated in Salicornia (CNDDDB 2006). The northern harrier forages over open areas primarily consuming small to medium sized mammals, birds, reptiles, and frogs (MacWhirter and Bildstein 1996). Locally, the northern harrier prefers to nest and forage in the salt and freshwater marshes of the San Francisco Bay, and has potential for occurrence within the northern coastal salt marsh bordering Redwood Creek.

White-tailed kite (Elanus leucurus)

The white-tailed kite generally occurs in open grasslands, wetlands, oak woodlands, and agriculture and savannah habitats (Dunk 1995). Nesting sites are typically found in rolling foothill and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes are used for foraging. Nests are built in trees with construction taking place January through August (Dunk 1995). The diet is varied, but the white-tailed kite primarily specializes in small mammals. The CNDDDB reported three nests in coyote bushes on Bair Island in 1971. Locally, the white-tailed kite could use the northern coastal salt marsh of this project site for foraging.

Black crowned night heron (Nycticorax nycticorax)

Largely dependent on wetlands for most of its lifecycle, the black-crowned night heron forages at the margins of lakes and streams, on brackish, salt, and freshwaters. Within these wet environments it commonly feeds on fish, crustaceans, insects, and amphibians (Goals Project 2000). It tends to use less open habitat than other egrets or herons. Roosting in trees during the day, the black-crowned night heron feeds during the night, and at dawn and dusk. The black-crowned night heron nests colonially in trees and shrubs. From 1969 to 1980 there was a nesting colony on Bair Island, but it was abandoned (Goals Project 2000). Throughout the Bay Area, the increasing population of red fox is the greatest hazard for the black-crowned night heron (Goals Project 2000). The nearest recorded occurrence by the CNDDDB is in Hayward, CA in 1993, about 10 miles away. More recently, the nearest heronry to our project site is at the Alviso Slough, about 12 miles away. From that area, the species has been observed leaving the heronry to forage on the tidal edge, the salt ponds, and along streams flowing to the Bay. This species is locally found within coastal marshlands and immediate vicinity bordering the San Francisco Bay, and has potential for occurrence within the north coast salt marsh on the property within Redwood Creek.

Additional species worthy of discussion due to their presence within the peninsula region, and high protection status:

California Red-legged Frog (Rana aurora draytonii)

The California red-legged frog (CRLF, hereafter) is a federally listed Threatened species and a California Species of Special Concern. Red-legged frogs are known to occur in grassland, riparian woodland, oak woodland, and coniferous forest but prefer quiet freshwater pools, slow-flowing streams, and freshwater marshes with heavily vegetated shores for breeding. These frogs stay near the shore hidden in vegetation rather than in open water. Red-legged frogs frequently occupy seasonal bodies of water, and in some areas these may be critical for persistence. It is speculated that California red-legged frogs may lie dormant during dry periods of the year or during drought. California red-legged frogs are thought to disperse widely during autumn, winter, and spring rains. Juveniles use the wet periods to expand outward from their pond of origin and adults may move between aquatic areas. Frogs disperse through many types of upland vegetation and use a broader range of habitats outside of breeding season.

A review of the California Natural Diversity Database identified four California red-legged frog observations within 5 miles of the proposed project site, but no observations from the Redwood Creek watershed. The closest recorded observation of CRLF to the project site is near Bear Gulch Reservoir, approximately 4.25 miles upstream from the project site. CRLF tend to avoid brackish and saline waters and cannot reproduce at salinities >4.5 ppt. (Jennings and Hayes 1990). Though CRLF can be found in slightly brackish waters, they cannot tolerate the higher salinities found in tidal slough and northern coastal salt marsh habitats. Redwood Creek in the vicinity of the project reach is a tidal slough, and salinity levels within San Francisco bay tidal sloughs fluctuate between 5 and 27 ppt. (Gross, et. al, undated). Thus, there is a very low potential for CRLF to occur within the project reach.

San Francisco garter snake (Thamnophis sirtalis tetrataenia)

SFGS are secretive residents of wetlands or grasslands near ponds, marshes, and sloughs and are likely to retreat into water when disturbed. They are usually found around ponds and marshes that support large populations of tree frogs (*Hyla regilla*), red-legged frogs and/or bullfrogs (*Rana catesbeiana*). SFGS are also known to disperse through a variety of vegetation types to reach breeding pond locations and they may spend some time in upland areas, especially during the autumn and winter. Because SFGS require the presence of frog species that only survive in freshwater and slightly brackish water habitats, there is a very low likelihood that the project area would support this species.

Burrowing Owl (Athene cunicularia)

The burrowing owl is a Federal and State Species of Special Concern. Burrowing owls typically use burrows constructed by fossorial rodents such as California ground squirrels (*Spermophilus beecheyi*), but may use man-made structures such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (California Burrowing Owl Consortium, 1993). Burrowing owls require open grassland habitat for hunting and feeding. They are opportunistic feeders taking a wide variety of prey (Goals Project 2000). Burrowing owls are thought to require freshwater for drinking. Breeding typically occurs from March through August, with the peak in April and May. They typically have a home range of 0.1 to 4 acres (Zeiner, et. al., 1990). Burrowing owls have experienced a 50% decline in their numbers in the past 15-20 years and there are approximately 170 burrowing owl nesting pairs (1.8% of California's population) remaining in the San Francisco Bay Area. Their decline is attributed to

conversion of grassland habitat to agricultural and urban land use (Burrowing Owl Consortium, 1993). Due to the lack of grassland habitat on site, there is a low likelihood this species would be present in the project area.

Monarch Butterfly (Danaus plexippus)

Monarch butterfly winter roost sites extend along the western coast from Mendocino in northern California, south to Baja California, Mexico. Roost habitat consists of wind-protected tree groves, typically eucalyptus, Monterey pine, or Monterey Cypress, with nectar and water sources nearby. Along the California coast, monarch butterflies typically roost between October and February. The CNDDDB documents Monarch butterflies approximately 8.4 miles north of the project site at Coyote Point. No monarch butterflies were observed during the December site visit. Due to the lack of adequate roosting habitat and nectar sources on site, there is a low likelihood this species would be present in the project area.

Steelhead (Oncorhynchus mykiss irideus)

Steelhead are a federally threatened species, and are an anadromous form of the rainbow trout. The species is found only in coastal and SF Bay Area streams where urbanization has not destroyed important spawning, rearing, and/or migration habitat. Steelhead require streams with deep low-velocity pools for resting and rearing, clean spawning gravels for spawning, and high dissolved oxygen concentrations and abundant aquatic insects for feeding.

As part of a fish distribution study, studies were performed in 1981 assessing the presence of steelhead in Redwood Creek (Leidy 1984 in Leidy et al. 2005). Two sites on Redwood Creek and two sites on its tributary, Arroyo Ojo, were assessed and no steelhead were found. At the Bay confluence, the Redwood Creek watershed encompasses approximately 9.3 square miles of land. Redwood Creek is a highly urbanized channel with the majority of the channel either in underground culverts or in an engineered channel. The underground culvert and engineered channel are considered a movement/migration barrier preventing or limiting access to the stream system. In addition, it is likely that the urbanized upper reaches do not provide adequate habitat for steelhead spawning and rearing.

Though Steelhead are unlikely to utilize Redwood Creek, and most return to their natal stream system, the species can sometimes 'wander' up different stream systems in search of spawning habitat. For this reason, steelhead may on an infrequent basis enter Redwood Creek, but are unlikely to move any farther upstream due to the culverts upstream and the potential lack of suitable spawning and rearing habitat in the watershed.

V. REGULATORY CONSIDERATIONS

Federal and State Regulations

A. Federal and State Endangered Species Acts

The United States Endangered Species Act (ESA) is administered by the United States Fish and Wildlife Service (USFWS). The California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), and the California Environmental Quality Act (CEQA) afford protection to species of concern included on State-maintained lists. The California Department of Fish and Game (CDFG) has statutory responsibility for the protection of State listed species, and is a trustee agency under CEQA.

Both the Federal and State endangered species acts provide protection for listed species. In particular, the Federal act prohibits "take". "Take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a federally listed, endangered species of wildlife, or to attempt to engage in any such conduct." Federal regulations also define take to include the incidental destruction of animals in the course of an otherwise lawful activity, such as habitat loss due to development. Under those rules the definition of take includes significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR Section 17.3).

Federal or State listed endangered species that have a high likelihood for occurring on site includes the California clapper rail and the salt marsh harvest mouse. Federal or State listed endangered species that could be considered to have a moderate potential to occur on site include the California least tern.

B. Species of Special Concern

The California Department of Fish and Game has designated certain animal species as "Species of Special Concern" due to concerns about declining population levels, limited ranges, and continuing threats that have made these species vulnerable to extinction. The goal of this designation is to bring attention to these species in the hope that their population decline will be halted through mitigation or project redesign to avoid impact. Species of special concern are protected only through environmental review of projects under CEQA. The California Department of Fish and Game is a trustee agency and is solicited for its comments during the CEQA process.

Species of Special Concern that have a high likelihood of occurring within the project area include salt marsh common yellowthroat, Alameda song sparrow, and salt marsh wandering shrew. Species of concern that could be considered to have a moderate chance of occurring within the project site include short-eared owl, northern harrier, and California red-legged frog.

C. Nesting Birds

Nesting birds, including raptors, are protected by the California Department of Fish and Game Code 3503, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Passerines and non-passerine landbirds are further protected under the Federal Migratory Bird Treaty Act. As such, the CDFG typically recommends pre-construction surveys for nesting birds that could potentially be directly (actual removal of trees/vegetation) or indirectly (noise disturbance) impacted by construction-related activities. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG.

The subject property supports trees such as ornamental pines, eucalyptus and palm trees as well as various other ornamental trees that provide nesting habitat for birds.

D. Bats

Special-status bats are widely distributed throughout California in a variety of habitats from man-made structures such as mines, bridges and buildings to natural habitats such as caves, rock outcrops, and trees. The pine and palm trees, bridges, and other structures on site provide potentially suitable habitat for several bat species. Tree-roosting bats will roost in tree snags or live trees supporting cavities, crevices, or loose bark. Some of the mature trees on site have these components. Some species of bats will temporarily roost in trees at night in-between bouts of foraging in the evening, and eventually return to a more protected day roost where they will settle during the day. However, some bat species will use trees for both day and night roosting habitat. The two bridges bordering either end of the project site (Veterans Blvd. and Bayshore Freeway) also provide possible day and night roosting habitat. Bat species that have the potential for using the site are the big brown bat (*Eptesicus fuscus*), Brazilian free-tailed (*Tadarida brasiliensis*), and Yuma myotis (*Myotis yumanensis*).

E. California Native Plant Society and CEQA

The California Native Plant Society (CNPS) has developed a rating system for the state's rare, threatened and endangered plants. Plants rated by CNPS are subject to protection under CEQA, and may also be protected by state and federal endangered species laws if they are listed by these governments.

Three CNPS-rated plants, Congdon's tarplant, coast marsh milk-vetch, saline clover have some potential to occur within the subject property.

F. Special-status Natural Communities

Special-status 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 CDFG §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 (CDFG 2003).

The subject property supports limited stands of northern coastal salt marsh, a threatened community as designated by the CNDDDB and defined under CEQA. The CDFG does not have specific guidelines for the protection of special-status natural communities, nor a means with which to regulate. Instead, a determination of the value of the habitat on site and whether or not avoidance or mitigation is required is up to the lead agency. Generally, factors such as the size of the habitat, percent cover, surrounding environmental conditions, and opportunities for avoidance or utilization of the community guide decision-making.

The riparian habitat along Redwood Creek receives regulatory protection under the California Fish and Game Code §1600 and locally under the Redwood City Stormwater Management & Discharge Control Program, the Redwood City Strategic General Plan and the San Mateo Countywide Stormwater Prevention Pollution Program.

G. Regulated Waters

Impacts to stream channels (bed and bank) are specifically addressed by the CDFG Code §§1600 *et seq.* and may fall under the jurisdiction of the Clean Water Act §404 permit process and the Porter-Cologne Water Quality Control Act. Permit provisions of the Clean Water Act regulating dredge and fill operation are enforced by the U.S. Army Corp of Engineers (USACE). Permit provisions of the Porter-Cologne Water Quality Control Act are enforced by the Regional Water Quality Control Board (RWQCB). The USACE also exerts jurisdiction over "waters of the U.S." which include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high water marks.

Were development of the subject property to result in impacts to Redwood Creek's banks or channel, such as through construction, consultation with the USACE, CDFG, and RWQCB may be required. Generally, the issuance of permits from these agencies for impact to regulated waters, wetlands, or riparian habitat requires mitigation at a 2:1 ratio.

Local Regulations

H. City of Redwood City Stormwater Management & Discharge Control Program

Section 27A.16 of the City Code of Redwood City includes provisions for the protection of watercourses by requiring permits for any of the following activities:

- Discharging into or connecting any pipe or channel to a watercourse;
- Depositing in, planting in, or removing any material from a watercourse including the banks, except as required for necessary maintenance;
- Constructing, altering, enlarging, connecting to, changing, or removing any structure in a watercourse; or
- Placing any loose or unconsolidated material along the side of or within a watercourse or so close to the side as to cause a diversion of the flow, or to cause a probability of such material being carried away by stormwaters passing through.

Development setbacks have been established to safeguard watercourses from activities modifying the natural water regime. Redwood City amended its Zoning Code in 2005 incorporating the San Mateo Countywide Stormwater Prevention Pollution Program (STOPP) requirements. The Code now "regulates areas with 30 feet of the creek centerline or 25 feet from top of bank" (City of Redwood City 2006). New building and impervious surface construction is limited in these areas. Prohibited activities within these areas include grading, filling, and any other land disturbance. The Redwood City Engineer shall make the determination as to setback limits and any permitted development within a setback.

I. City of Redwood City Tree Ordinance

Section 35.2 of the City Code of Redwood City states that the Parks and Recreation Commission of Redwood City "may declare any tree, regardless of size, to be a heritage tree... if said tree is healthy and has adapted will to the climatic conditions of the area, if said tree is visually accessible from a public right-of-way and if the Commission finds that at least one of the following conditions exist: that said tree has historical significance, that said tree is indigenous

to the area, that said tree is one of a group of trees and that each is dependent on the other tree for survival.” Redwood City’s street trees are protected and governed by Chapter 29 Article VI under Ordinance Number 1010 (Planting and Care of Trees and Other Vegetation on Public Streets) of the Redwood Municipal Code. A permit is required before any activities that can cause damage to any publicly-owned tree.

VI. RECOMMENDATIONS

Table 2. Mitigation Measures Suggested for Main Street, Redwood City, CA

Mitigation Measure	Effect
<p>1.) The Redwood City Watercourse Ordinance requires a developmental setback of 25 feet from the top-of-bank of Redwood Creek (Ord. 1130.336 § 26, eff. 1-5-06). A tentative plan for the property includes a potential linear park along Redwood Creek. The Redwood City Engineer will make a determination of compliance to the watercourse ordinance. Northern coastal salt marsh, a native plant community that is considered a special-status community by the CDFG, is present on the property along Redwood Creek (approximately 1.7 acres). Any future proposal that could impact the northern coastal salt marsh would require appropriate permits from the CDFG and the US Army Corps of Engineers (USACOE).</p>	<p>Northern coastal salt marsh on the property would be identified and protected and/or mitigated based on CDFG and USACOE permitting requirements.</p>
<p>2.) Because the proposed project area is potentially inhabited by state and federal threatened and endangered species, and has potential to support several California species of concern, the U.S. Fish and Wildlife Service and the California Department of Fish and Game should be consulted regarding any proposed modifications to the site/Redwood Creek channel, as any type of development including grading and paving could result in a “take” of a federal or state protected species. The USFWS may presume presence or recommend additional focused surveys to determine if any of these species are present on site. Project design modifications as well as appropriate mitigation measures may be required. Typical mitigation could include enhancement of on-site habitat conditions or enhancement/preservation of other existing habitat elsewhere in the watershed. However, enhancement of on-site habitat may be somewhat limited due to the small size of the site.</p>	<p>California black rail, California clapper rail, California least tern, salt marsh harvest mouse, salt marsh common yellowthroat, Alameda song sparrow, salt marsh wandering shrew, short-eared owl, northern harrier, and California red-legged frog, and steelhead populations would be protected from impacts during construction.</p>

Mitigation Measure	Effect
<p>3.) Activities that may impact nesting birds, including Cooper's hawk, short-eared owl and sharp-shinned hawk (<i>Accipiter striatus</i>), include tree removal and noise produced by grading or construction activity. To avoid or minimize impacts to nesting birds, all tree removal and trimming as well as ground disturbing activities should be scheduled to take place outside of the breeding season (February 15 to August 31). However, if construction is unavoidable during the breeding season, a qualified biologist should conduct a survey for nesting birds no more than three days prior to the removal or trimming of any tree and prior to the start of ground disturbing activities. If active nests are not present, project activities can take place as scheduled. However, if active nests are detected, CDFG should be contacted on how to proceed. Typically, a buffer will be established around the nest. CDFG usually accepts a 50-foot radius buffer around passerine and non-passerine nests, and up to a 250-foot radius for raptors.</p>	<p>Nesting birds, if present, would be protected from disturbance during construction activities.</p>
<p>4.) In order to avoid or minimize impacts to potential roosting bats, a pre-tree/structure (including bridges) survey should be conducted on site. All surveys should be conducted by a qualified bat biologist (<i>i.e.</i> a biologist holding a CDFG collecting permit and a Memorandum of Understanding with CDFG allowing the biologist to handle and collect bats). If no bats are detected, then no further surveys are required. However, if bats are found in a tree or structure on site, bats should be passively excluded/evicted from the roost site for two consecutive days. This is generally accomplished by opening up the roost area to allow airflow through the cavity/crevice. This work should be conducted by a CDFG approved bat biologist prior to demolition or tree removal. Tree removal should be conducted no less than the following day.</p>	<p>Roosting bats, if present, would be protected from disturbance.</p>

Mitigation Measure	Effect
<p>5.) A focused plant survey should be conducted in May/June/July to determine if Congdon's tarplant, coast marsh milk-vetch, and/or saline clover are present on site. One to two site visits may be necessary to intercept each species during its flowering period. If special status plant species are detected, the CDFG would be contacted to determine appropriate mitigation measures.</p>	<p>Any special status plant species detected on site would be mitigated for based on consultations with the CDFG.</p>
<p>6.) Erosion control methods and measures for the avoidance of stormwater pollution should be used where appropriate for all earth disturbances to control sediment and minimize potential water quality impacts. If more than one acre of ground will be disturbed by grading, the project is required by the Regional Water Quality Control Board to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Native plants species should be used for long-term erosion control. The City of Redwood City should be consulted for recommendations on current stormwater pollution guidelines.</p>	<p>Redwood Creek and San Francisco Bay would be protected from storm water pollution and increased runoff.</p>
<p>7.) Native and/or non-invasive species shall be used in landscaping in order to prevent negative impacts on nearby native habitats. The California Invasive Plant Council (CalIPPC 2005) has compiled a list of those species that are most invasive and pose the greatest threat to native vegetation.</p>	<p>The native vegetation on the property and in surrounding areas would not be impacted by invasive plants emanating from this project.</p>
<p>8.) If construction were to take place during the fall and winter migration period of Monarch butterfly, the site should have a pre-construction survey for Monarch butterflies that could utilize the eucalyptus trees on site. If Monarch butterflies are detected, the CDFG would be contacted to determine appropriate mitigation measures.</p>	<p>Monarch butterflies, if present, would be protected from disturbance.</p>

Mitigation Measure	Effect
9.) Were impacts to Redwood Creek anticipated, it is recommended that a wetland delineation be performed so that the regulating agencies could determine precise jurisdiction. Impacts would be regulated under the Clean Water Act, Fish and Game Code §1600, and the Porter-Cologne Water Quality Control Act. Impacts include the temporary or permanent placement of fill into regulated waters or wetlands, diversion or obstruction of flow, pollutant discharge, and the alteration or use of any material from the bed, channel, or bank.	Impacts to jurisdictional wetlands and waters of the U.S. would be avoided or mitigated.

VII. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Potential impacts to biological resources as a result of project activities can be rendered less than significant with incorporation of avoidance measures as described under recommendations above. Special-status resources that could potentially be impacted include northern coastal salt marsh, twelve special status animals, three special status plants, nesting birds, and roosting bats. The following questions are from the CEQA Guidelines (California Administrative Code 15000 et seq.) as amended.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Appendix A. Representative Photos of the Project Site, December 11, 2006



Photo 1 - View of Veterans Blvd bridge over Redwood Creek; pickleweed and cordgrass in the foreground



Photo 2 - Salt marsh bordering Redwood Creek



Photo 3 - Redwood Creek bordered by tidal marsh



Photo 4 - Salt marsh and tidal slough



Photo 5 - Redwood Creek



Photo 6 - Redwood Creek as it flows under Highway 101 (Bayshore Freeway) towards San Francisco Bay



Photo 7 - Urban development and landscaping on project site



Photo 8 - Urban landscaping

Appendix B. Species Observed Onsite, December 11, 2006Birds

Snowy egret (*Egretta thula*)
 Mallard (*Anas platyrhynchos*)
 Common goldeneye (*Bucephala clangula*)
 American coot (*Fulica americana*)
 Ring-billed gull (*Larus delawarensis*)
 Anna's hummingbird (*Calypte anna*)
 Black phoebe (*Sayornis nigricans*)
 Bushtit (*Psaltriparus minimus*)
 Chestnut-backed chickadee (*Poecile rufescens*)
 Common raven (*Corvus corax*)
 Dark-eyed junco (*Junco hyemalis*)
 Ruby-crowned kinglet (*Regulus calendula*)
 Northern mockingbird (*Mimus polyglottos*)
 Yellow-rumped warbler (*Dendroica coronata*)
 Townsend's warbler (*Dendroica townsendi*)
 Saltmarsh common yellowthroat (*Geothlypis trichas*)
 California Towhee (*Pipilo crissalis*)
 White-crowned sparrow (*Zonotrichia leucophrys*)
 Golden-crowned sparrow (*Zonotrichia atricapilla*)
 Lesser goldfinch (*Carduelis psaltria*)

Plants

English Ivy (*Hedera helix*)
 Fennel (*Foeniculum vulgare*)
 Pickleweed (*Salicornia virginica*)
 Salt grass (*Distichlis spicata*)
 Fat hen (*Atriplex triangularis*)
 Tall rye grass (*Leymus triticoides*)
 Cutleaf geranium (*Geranium dissectum*)
 Firethorn (*Pyracantha angustifolia*)
 Marsh gumplant (*Grindelia stricta*)
 Alkali heath (*Frankenia salina*)
 Fleshy jaumea (*Jaumea carnosa*)
 Cordgrass (*Spartina foliosa*)
 Lollypop tree (*Myoporum laetum*)
 Red gum (*Eucalyptus camaldulensis*)
 Ice plant (*Corpobrotus edulis*)
 Bermuda buttercup (*Oxalis*)
 Bristly ox-tongue (*Picris echioides*)
 Wild oat (*Avena fatua*)
 False soloman's seal (*Smilacina stellata*)
 Harding grass (*Phalaris aquatica*)
 Wild Radish (*Raphanus sativus*)
 Ash tree sp. (*Fraxinus*)
 Bottlebrush (*Callistemon citrinus*)
 Chard (*Beta vulgaris* var. *cicla*)

Palm spp.

Mustard sp. (*Brassica*)

Various ornamental trees and shrubs